Aadland, E.; Steene-Johannessen, J. (2012):

The use of individual cut points from treadmill walking to assess free-living moderate to vigorous physical activity in obese subjects by accelerometry: is it useful?

In: *BMC Med.Res Methodol.* 12 (1471-2288 (Linking)), S. 172. DOI: 10.1186/1471-2288-12-172.

Abstract:

ABSTRACT: BACKGROUND: Variation in counts between subjects at a given speed or work rate are the most important source of error in physical activity (PA) measurements with accelerometers. The aim of this study was to explore how the use of individual accelerometer cut points (ICPs) affected the analysis of PA field data. METHODS: We performed a treadmill calibration protocol to determine cut points for moderate to vigorous PA (MVPA) (>/=3 metabolic equivalents) and assessed free-living PA in 44 severely obese subjects using the Actigraph GT1M accelerometer. We obtained cut points in 42 subjects (11 men, mean (standard deviation) of body mass index (BMI) 39.8 (5.7), age 43.2 (9.2) years), of whom 35 had valid measurement of free-living PA (minutes of MVPA/day). Linear regression was used to analyze associations with the ICPs and time in MVPA/day. MVPA/day was also compared with values derived using a group cut point (GCP). RESULTS: Resting oxygen consumption (partial r = 0.74, p < .001), work economy (partial r = -0.76, p < .001) and BMI (partial r = 0.52, p = .001) explained 68.4% of the variation in the ICPs (F = 26.7, p < .001). The ICPs explained 79.1% of the variation in the minutes spent in MVPA/day. Moderate to vigorous PA/day derived from the ICPs vs. the GCP varied substantially (R2 = 14%, p = .023, coefficient of variation = 45.1%). CONCLUSIONS: The results indicate that the use of ICPs had a strong influence on the PA level. Two thirds of the variation in the ICPs could be explained, however, a certain degree of measurement error will be present. Thus, we are not able to conclude with respect to the most appropriate procedure for analyzing time in MVPA

Aan Het Rot, Marije; Moskowitz, D. S.; Young, Simon N. (2014):

Impulsive behaviour in interpersonal encounters: Associations with quarrelsomeness and agreeableness.

In: *Br J Psychol* 106 (1), S. 152–161. DOI: 10.1111/bjop.12070.

Abstract:

Associations between impulsivity and interpersonal behaviours have rarely been examined, even though impulsivity may disrupt the flow of social interactions. For example, it is unknown to what extent the commonly used Barratt Impulsiveness Scale (BIS-11) predicts impulsive behaviour in social situations, and how behaving impulsively during interpersonal encounters might influence levels of quarrelsomeness and agreeableness. In this study, 48 healthy working individuals completed the BIS-11 and recorded their behaviour in social situations using event-contingent recording. Record forms included items representing quarrelsome, agreeable, and impulsive behaviours. BIS-11 motor impulsiveness scores predicted impulsive behaviour in social situations. Impulsive behaviour was associated, in different interactions, with both agreeableness and quarrelsomeness. Behaving impulsively in specific interactions was negatively associated with agreeableness in participants with higher BIS-11 motor impulsiveness and positively associated with agreeableness in participants with lower BIS-11 motor impulsiveness. Impulsive quarrelsome behaviour may cause interpersonal problems. Impulsive agreeable behaviour may have positive effects in individuals with low trait impulsivity. The idea that there are between-person differences in the effects of state impulsivity on the flow of social interaction deserves further study.

Abbasi, Mohammad-Reza; Lessan-Pezeshki, Mahboob; Najafi, Mohammad-Taghi; Gatmiri, Seyed-Mansour; Karbakhsh, Mojgan; Mohebi-Nejad, Azin (2014):

Comparing the frequency of hypertension determined by peri-dialysis measurement and ABPM in hemodialysis patients.

In: *Ren Fail* 36 (5), S. 682–686. DOI: 10.3109/0886022X.2014.883933.

Abstract:

Abstract Controlling blood pressure in hemodialysis patients is crucial but not always easy. The most common blood pressure measurement method is peri-dialysis measurement, but due to interdialytic blood pressure fluctuations, we are unsure if it is the proper way for evaluating blood pressure. Some studies have shown the superiority of 24-h ambulatory blood pressure monitoring over peri-dialysis blood pressure measurement. We aimed to compare the consistency of these methods in

determining hypertension among hemodialysis patients. We studied 50 patients (mean age: 55.8 years) on regular hemodialysis in Imam Khomeini University Hospital, Tehran, Iran. Peri-dialysis blood pressure and interdialytic 24-h ambulatory blood pressure monitoring were recorded for each patient. Patients' demographic data and peri-dialysis weight were recorded too. All data were analyzed using the PASW Statistics 18.0, SPSS Inc. (Chicago, IL). There was a significant difference between pre-dialysis mean systolic blood pressure (146.1 +/- 23.3 mmHg) and mean systolic blood pressure recorded by ambulatory blood pressure monitoring (135.3 +/- 19.3 mmHg) (p = 0.001). There was also a significant difference between pre-dialysis mean diastolic blood pressure (83 +/- 14 mmHg) and mean diastolic blood pressure recorded by ambulatory blood pressure monitoring (77.3 +/- 10 mmHg) (p = 0.003). But the frequencies of hypertension measured with both methods were significantly consistent and the Kappa agreement coefficient was 0.525 (p = 0.001). Considering ambulatory blood pressure monitoring as the gold standard for blood pressure measurement, our recommendation for the best cutoff point to diagnose hypertension, with the highest sensitivity and specificity would be 135/80 mmHg for pre-dialysis blood pressure and 115/70 mmHg for post-dialysis blood pressure.

Abdel-Kader, Khaled; Jhamb, Manisha; Mandich, Lee Anne; Yabes, Jonathan; Keene, Robert M.; Beach, Scott et al. (2014):

Ecological momentary assessment of fatigue, sleepiness, and exhaustion in ESKD.

In: *BMC Nephrol* 15, S. 29. DOI: 10.1186/1471-2369-15-29.

Abstract:

BACKGROUND: Many patients on maintenance dialysis experience significant sleepiness and fatigue. However, the influence of the hemodialysis (HD) day and circadian rhythms on patients' symptoms have not been well characterized. We sought to use ecological momentary assessment to evaluate day-to-day and diurnal variability of fatigue, sleepiness, exhaustion and related symptoms in thrice-weekly maintenance HD patients. METHODS: Subjects used a modified cellular phone to access an interactive voice response system that administered the Daytime Insomnia Symptom Scale (DISS). The DISS assessed subjective vitality, mood, and alertness through 19 questions using 7- point Likert scales. Subjects completed the DISS 4 times daily for 7 consecutive days. Factor analysis was conducted and a mean composite score of fatigue-sleepiness-exhaustion was created. Linear mixed regression models (LMM) were used to examine the association of time of day, dialysis day and fatigue, sleepiness, and exhaustion composite scores. RESULTS: The 55 participants completed 1,252 of 1,540 (81%) possible assessments over the 7 day period. Multiple symptoms related to mood (e.g., feeling sad, feeling tense), cognition (e.g., difficulty concentrating), and fatigue (e.g., exhaustion, feeling sleepy) demonstrated significant daily and diurnal variation, with higher overall symptom scores noted on hemodialysis days and later in the day. In factor analysis, 4 factors explained the majority of the observed variance for DISS symptoms. Fatigue, sleepiness, and exhaustion loaded onto the same factor and were highly intercorrelated. In LMM, mean composite fatigue-sleepiness-exhaustion scores were associated with dialysis day (coefficient and 95% confidence interval [CI] 0.21 [0.02 - 0.39]) and time of day (coefficient and 95% CI 0.33 [0.25 - 0.41]. Observed associations were minimally affected by adjustment for demographics and common confounders. CONCLUSIONS: Maintenance HD patients experience fatigue-sleepiness-exhaustion symptoms that demonstrate significant daily and diurnal variation. The variability in symptoms may contribute to poor symptom awareness by providers and greater misclassification bias of fatigue related symptoms in clinical studies.

Aboy, Mateo; Fernández, José R.; McNames, James; Hermida, Ramón C. (2006):

The individual RDH index: a novel vector index for statistical assessment of antihypertensive treatment reduction, duration, and homogeneity.

In: *Blood Press Monit* 11 (2), S. 69–78. DOI: 10.1097/01.mbp.0000209070.07837.45.

Abstract:

We propose a new vector index for the statistical assessment of antihypertensive treatment duration and homogeneity from ambulatory blood pressure monitoring. We termed this approach for evaluating and comparing blood pressure coverage offered by antihypertensive drugs over 24 h as the reduction-duration-homogeneity index. The reduction-duration-homogeneity index is a three-component vector index that incorporates information about the reduction, duration, and homogeneity of antihypertensive treatment, as well as their statistical significance. The advantages of the reduction-duration-homogeneity index are demonstrated by several comparative examples.

Abraham, Lucy; Humphrey, Louise; Arbuckle, Rob; Dennerstein, Lorraine; Simon, James A.; Mirkin, Sebastian et al. (2014):

Qualitative cross-cultural exploration of breast symptoms and impacts associated with hormonal treatments for menopausal symptoms to inform the development of new patient-reported measurement tools.

In: *Maturitas* 80 (3), S. 273–281. DOI: 10.1016/j.maturitas.2014.11.019.

Abstract:

To explore cross-cultural experiences of women taking estrogen plus progestin therapies (EPT) and develop a symptom-based electronic diary and impact questionnaire for EPT-related breast symptoms. (1) Concept elicitation interviews were conducted with women in the US (n=14), Italy (n=15), Mexico (n=15) and China (n=15) to explore breast symptoms associated with EPT. Patients completed the Breast Sensitivity Questionnaire (BSQ) to evaluate understanding and comprehensiveness. (2) Based on concept elicitation, a 6-item eDiary (Breast Pain/Tenderness Daily Diary - BPT-DD) was generated and the BSQ modified forming the 18-item Breast Sensations Impact Questionnaire (BSIQ). (3) The measures were pilot-tested and then cognitively debriefed with US women receiving EPT. All qualitative data was subject to thematic analysis. Concept elicitation identified breast pain/tenderness, swollen breasts and sensitivity to contact as important symptoms, impacting women's emotional well-being, relationships with family/friends, social life, sleep, ability to move freely, contact, clothing and sexual activity. Experiences were relatively consistent across the country samples. Based on pilot testing and cognitive debriefing, the BPT-DD was reduced to 4 items (and renamed the Breast Pain Daily Diary - BP-DD) and the BSIQ was reduced to 13 items due to conceptual redundancy. Women taking EPT in the US, China, Mexico and Italy reported breast sensations that have a detrimental impact on quality of life. Two new measures were developed to assess the severity and impact of breast pain specific to EPT. This work highlights that EPT-related symptoms should be part of treatment decision-making, and treatments with less burdensome side effects are needed.

Abroms, L. C.; Lee, Westmaas J.; Bontemps-Jones, J.; Ramani, R.; Mellerson, J. (2013):

A content analysis of popular smartphone apps for smoking cessation.

In: *Am.J.Prev.Med.* 45 (6), S. 732–736. DOI: 10.1016/j.amepre.2013.07.008.

Abstract:

BACKGROUND: Smartphone applications (apps) are increasingly available for smoking cessation. PURPOSE: This study examined the content of popular apps for smoking cessation for both iPhone and Android operating systems in February 2012. METHODS: A total of 252 smoking-cessation apps were identified for the iPhone and 148 for the Android. Across both operating systems, the most popular apps were identified (n=47 for the iPhone and n=51 for the Android) and analyzed for their (1) approach to smoking cessation and (2) adherence to an index based on the U.S. Public Health Service's Clinical Practice Guidelines for Treating Tobacco Use and Dependence. Where available, apps were coded for frequency of downloads. The analysis took place in 2012. RESULTS: Overall, popular apps have low levels of adherence, with an average score of 12.9 of a possible 42 on the Adherence Index. No apps recommended calling a quitline, and only a handful of apps recommended using approved medications (4.1%). Android apps in the sample were downloaded worldwide between 310,800 and 1,248,000 times per month. For both the iPhone and Android, user ratings were positively associated with scores on the Adherence Index. For the iPhone, display order was also positively associated with scores on the Adherence Index. CONCLUSIONS: Apps could be improved by better integration with the Clinical Practice Guidelines and other evidence-based practices

Abuhamdeh, Sami; Csikszentmihalyi, Mihaly (2012):

Attentional involvement and intrinsic motivation.

In: *Motivation and Emotion* 36 (3), S. 257–267. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-20780-002%26site%3dehost-live;samiabuhamdeh@sehir.edu.tr.

Abstract:

The current study used the Experience Sampling Method to examine attentional involvement-the degree to which one's attention is devoted to moment-to-moment activity-as a potential mediator of two previously identified relationships within the field of intrinsic motivation: (1) the positive relationship between a balance of challenges and skills and enjoyment, and (2) the positive relationship between competence valuation and enjoyment. Multilevel, within-person analyses indicated attentional involvement fully mediated both relationships. Implications of the findings for intrinsic motivation processes are discussed. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Ad, Niv; Henry, Linda; Hunt, Sharon; Barnett, Scott; Stone, Lori (2009):

The Cox-Maze III procedure success rate: comparison by electrocardiogram, 24-hour holter monitoring and long-term monitoring.

In: *The Annals of thoracic surgery* 88 (1), S. 101–105. DOI: 10.1016/j.athoracsur.2009.04.014.

Abstract:

BACKGROUND\r\nThe detection of atrial arrhythmia recurrence is more accurate when using long-term (5 days to 3 weeks) continuous monitoring devices. In this study, we focus on the comparison of the recurrence of atrial arrhythmias in patients after the Cox-Maze III procedure obtained by three modalities: electrocardiography (ECG), 24-hour Holter monitoring, and long-term monitoring (LTM).\r\nMETHODS\r\nPatients with follow-up longer than 6 months who reported sinus rhythm while not taking antiarrhythmic drugs were eligible. Atrial arrhythmias longer than 30 s were considered a recurrence. The ECG, 24-hour Holter monitoring, and LTM (5 days) reports were ascertained and compared at the same time.\r\nRESULTS\r\nPatients (n = 291) underwent the full Cox-Maze III procedure, with 194 eligible for the study and 76 agreeing to participate. The average time to monitoring after surgery was 9.8 (+/- 7.7) months. The ECGs determined 96% of patients in sinus rhythm, Holter monitoring determined 91% in sinus rhythm, and LTM indicated 84% in sinus rhythm. Comparing ECG results and LTM results revealed that 9 patients (12%) had a significant rhythm change. Holter monitoring did not capture all the patients having events lasting longer than 1 hour. No additional information was captured by the use of LTM in patients with paroxysmal atrial fibrillation.\r\nCONCLUSIONS\r\nThis study reconfirmed that ECG overestimated the success rate after the Cox-Maze III operation by 12% compared with LTM. These changes may carry clinical significance when determining the success of the Cox-Maze III procedure and determining the medical management, including antiarrhythmic and anticoagulation therapy, of the patients who were found to have significant events.

Adamo, K. B.; Langlois, K. A.; Brett, K. E.; Colley, R. C. (2012):

Young children and parental physical activity levels: findings from the canadian health measures survey.

In: *Am.J Prev.Med.* 43 (2), S. 168–175. DOI: 10.1016/j.amepre.2012.02.032.

Abstract:

BACKGROUND: Physical inactivity is a global public health concern. The relationship between dependent children in the home and parental physical activity has not been quantified using objective measures, nor has the relative association of the physical activity levels of mothers and fathers been examined. PURPOSE: To investigate the association of children of different ages in the home on two measures of parental physical activity: daily moderate-to-vigorous physical activity (MVPA) and likelihood of meeting the guideline of 150 minutes of MVPA per week accumulated in 10-minute bouts. METHODS: Data were from the 2007-2009 Canadian Health Measures Survey (n=2315), and analyses were conducted between February and December 2011. MVPA was measured directly using accelerometry. Linear (minutes of MVPA) and logistic (meeting physical activity guidelines) regression models were performed to determine if the presence, number of children, or the age of the youngest child at home was associated with parental physical activity. All models were adjusted for parental age, marital status, household income, employment, and BMI. RESULTS: Mothers whose youngest child was aged <6 years and fathers whose youngest was aged 6-11 years engaged in fewer minutes of daily MVPA than those without dependent children. Linear regression results identified that in comparison to those without children, women whose youngest child in the home was aged <6 years participated in 7.7 minutes less activity per day (p=0.007) whereas men engaged in 5.7 fewer minutes per day, or 54 and 40 minutes per week less, respectively. Similarly, logistic regression analyses indicated that both women and men were less likely to meet guidelines if their youngest child in the home was aged <6 years (OR=0.31, 95% CI=0.11, 0.87; OR=0.34, 95% CI=0.13, 0.93). CONCLUSIONS: The physical activity level of parents with young children present in the home was lower than that of those without children. Given the many physiologic, psychological, and social benefits of healthy active living, research efforts should continue to focus on strategies to encourage parents with young children to establish or re-engage in a physically active lifestyle, not only for their own health but to model healthy behavior for the next generation

Adams, Philippe; Abela, John R. Z.; Auerbach, Randy; Skitch, Steven (2009):

Self-criticism, dependency, and stress reactivity: an experience sampling approach to testing Blatt and Zuroff's (1992) theory of personality predispositions to depression in high-risk youth.

In: *Pers Soc Psychol Bull* 35 (11), S. 1440–1451. DOI: 10.1177/0146167209343811.

Abstract:

S. J. Blatt and D. C. Zuroff's 1992 theory of personality predispositions to depression posits that individuals who possess high levels of self-criticism and/or dependency are vulnerable to developing depression following negative events. The current study used experience sampling methodology to test this theory in a sample of 49 children ages 7 to 14. Children completed measures of dependency, self-criticism, and depressive symptoms. Subsequently, children were given a handheld computer that signaled them to complete measures of depressive symptoms and negative events at randomly selected times over 2 months. Results of hierarchical linear modeling analyses indicated that higher levels of both self-criticism and dependency were associated with greater elevations in depressive symptoms following negative events. Furthermore, each personality predisposition remained a significant predictor of such elevations after controlling for the interaction between the other personality predisposition and negative events. The results suggest that dependency and self-criticism represent distinct vulnerability factors to depression in youth.

Adams, Marc A.; Johnson, William D.; Tudor-Locke, Catrine (2013):

Steps/day translation of the moderate-to-vigorous physical activity guideline for children and adolescents.

In: *Int J Behav Nutr Phys Act* 10 (49), S. 2–11. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-18159-001%26site%3dehost-live;marc.adams@asu.edu.

Abstract:

Background: An evidence-based steps/day translation of U.S. federal guidelines for youth to engage in ≥60 minutes/day of moderate-to-vigorous physical activity (MVPA) would help health researchers, practitioners, and lay professionals charged with increasing youth's physical activity (PA). The purpose of this study was to determine the number of free-living steps/day (both raw and adjusted to a pedometer scale) that correctly classified children (6–11 years) and adolescents (12–17 years) as meeting the 60-minute MVPA guideline using the 2005–2006 National Health and Nutrition Examination Survey (NHANES) accelerometer data, and to evaluate the 12,000 steps/day recommendation recently adopted by the President's Challenge Physical Activity and Fitness Awards Program. Methods: Analyses were conducted among children (n = 915) and adolescents (n = 1,302) in 2011 and 2012. Receiver Operating Characteristic (ROC) curve plots and classification statistics revealed candidate steps/day cut points that discriminated meeting/not meeting the MVPA threshold by age group, gender and different accelerometer activity cut points. The Evenson and two Freedson age-specific (3 and 4 METs) cut points were used to define minimum MVPA, and optimal steps/day were examined for raw steps and adjusted to a pedometer-scale to facilitate translation to lay populations. Results: For boys and girls (6–11 years) with ≥ 60 minutes/day of MVPA, a range of 11,500–13,500 uncensored steps/day for children was the optimal range that balanced classification errors. For adolescent boys and girls (12–17) with ≥60 minutes/day of MVPA, 11,500–14,000 uncensored steps/day was optimal. Translation to a pedometer-scaling reduced these minimum values by 2,500 step/day to 9,000 steps/day. Area under the curve was ≥84% in all analyses. Conclusions: No single study has definitively identified a precise and unyielding steps/day value for youth. Considering the other evidence to date, we propose a reasonable 'rule of thumb' value of ≥ 11,500 accelerometer-determined steps/day for both children and adolescents (and both genders), accepting that more is better. For practical applications, 9,000 steps/day appears to be a more pedometer-friendly value. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Addy, C. L.; Trilk, J. L.; Dowda, M.; Byun, W.; Pate, R. R. (2013):

Assessing Preschool Children's Physical Activity: How Many Days of Accelerometry Measurement.

In: *Pediatr.Exerc.Sci.* 26 (1), S. 103–109.

Abstract:

The purpose of this study was to determine the minimum number of days of accelerometry required to estimate accurately MVPA and total PA in 3- to 5-year-old children. The study examined these metrics for all days, weekdays, and in-school activities. Study participants were 204 children attending 22 preschools who wore accelerometers for at least six hour per day for up to 12 days during most waking hours. The primary analysis considered the intraclass correlation coefficient (ICC) for each metric to estimate the number of days required to attain a specified reliability. The ICC estimates are 0.81 for MVPA-all days, 0.78 for total PA-all days, 0.83 for MVPA-weekdays, 0.80 for total PA-weekdays, 0.81 for in-school MVPA, and 0.84 for in-school total PA. We recommend a full seven days of measurement whenever possible, but researchers can achieve acceptable reliability with fewer days as indicated by the Spearman-Brown prophecy: 3-4 days for any weekday measure and 5-6 days for the all-days measures

Adibi, Sasan (2014):

Biomedical sensing analyzer (BSA) for mobile-health (mHealth)-LTE.

In: *IEEE J Biomed Health Inform* 18 (1), S. 345–351. DOI: 10.1109/JBHI.2013.2262076.

Abstract:

The rapid expansion of mobile-based systems, the capabilities of smartphone devices, as well as the radio access and cellular network technologies are the wind beneath the wing of mobile health (mHealth). In this paper, the concept of biomedical sensing analyzer (BSA) is presented, which is a novel framework, devised for sensor-based mHealth applications. The BSA is capable of formulating the Quality of Service (QoS) measurements in an end-to-end sense, covering the entire communication path (wearable sensors, link-technology, smartphone, cell-towers, mobile-cloud, and the end-users). The characterization and formulation of BSA depend on a number of factors, including the deployment of application-specific biomedical sensors, generic link-technologies, collection, aggregation, and prioritization of mHealth data, cellular network based on the Long-Term Evolution (LTE) access technology, and extensive multidimensional delay analyses. The results are studied and analyzed in a LabView 8.5 programming environment.

Adiyaman, Ahmet; Dechering, Dirk G.; Boggia, José; Li, Yan; Hansen, Tine W.; Kikuya, Masahiro et al. (2008):

Determinants of the ambulatory arterial stiffness index in 7604 subjects from 6 populations.

In: *Hypertension* 52 (6), S. 1038–1044. DOI: 10.1161/HYPERTENSIONAHA.108.119511.

Abstract:

The ambulatory arterial stiffness index (AASI) is derived from 24-hour ambulatory blood pressure recordings. We investigated whether the goodness-of-fit of the AASI regression line in individual subjects (r(2)) impacts on the association of AASI with established determinants of the relation between diastolic and systolic blood pressures. We constructed the International Database on the Ambulatory Blood Pressure in Relation to Cardiovascular Outcomes (7604 participants from 6 countries). AASI was unity minus the regression slope of diastolic on systolic blood pressure in individual 24-hour ambulatory recordings. AASI correlated positively with age and 24-hour mean arterial pressure and negatively with body height and 24-hour heart rate. The single correlation coefficients and the mutually adjusted partial regression coefficients of AASI with age, height, 24-hour mean pressure, and 24-hour heart rate increased from the lowest to the highest quartile of r(2). These findings were consistent in dippers and nondippers (night:day ratio of systolic pressure >or=0.90), women and men, and in Europeans, Asians, and South Americans. The cumulative z score for the association of AASI with these determinants of the relation between diastolic and systolic blood pressures increased curvilinearly with r(2), with most of the improvement in the association occurring above the 20th percentile of r(2) (0.36). In conclusion, a better fit of the AASI regression line enhances the statistical power of analyses involving AASI as marker of arterial stiffness. An r(2) value of 0.36 might be a threshold in sensitivity analyses to improve the stratification of cardiovascular risk.

Affuso, Olivia; Stevens, June; Catellier, Diane; McMurray, Robert G.; Ward, Dianne S.; Lytle, Leslie et al. (2011):

Validity of self-reported leisure-time sedentary behavior in adolescents.

In: *J Negat Results Biomed* 10 (2), S. 1–9.

Abstract:

BACKGROUND:

To evaluate the concordance between leisure-time sedentary behavior in adolescents assessed by an activity-based questionnaire and accelerometry. A convenience sample of 128 girls and 73 boys, 11-15 years of age (12.6 ± 1.1 years) from six states across the United States examined as part of the feasibility studies for the Trial of Activity in Adolescent Girls (TAAG). Three days of self-reported time spent watching TV/videos, using computers, playing video/computer games, and talking on the phone was assessed using a modified version of the Self-Administered Physical Activity Checklist (SAPAC). Criterion measure of sedentary behavior was via accelerometry over three days using a cut point of < 50 counts · 30 sec^{-1} epoch. Comparisons between sedentary behavior by the two instruments were made.

RESULTS:

Adolescents generally underestimated minutes of sedentary behavior compared to accelerometry-measured minutes. The overall correlation between minutes of sedentary behavior by self-report and accelerometry was weak (Spearman r = 0.14; 95% CI 0.05, 0.23). Adjustment of sedentary minutes of behavior for total minutes assessed using either percentages or the residuals

method tended to increase correlations slightly. However, regression analyses showed no significant association between self-reported sedentary behavior and minutes of sedentary behavior captured via accelerometry.

DISCUSSION:

These findings suggest that the modified 3-day Self-Administered Physical Activity Checklist is not a reliable method for assessing sedentary behavior. It is recommended that until validation studies for self-report instruments of sedentary behavior demonstrate validity, objective measures should be used.

Afsar, Baris (2013):

The impact of different anthropometric measures on sustained normotension, white coat hypertension, masked hypertension, and sustained hypertension in patients with type 2 diabetes.

In: *Endocrinol Metab (Seoul)* 28 (3), S. 199–206. DOI: 10.3803/EnM.2013.28.3.199.

Abstract:

BACKGROUND: Many studies have aimed to determine whether body mass index (BMI), waist circumference (WC), or waist to hip ratio (WHR) best predicts hypertension in diabetic patients, with conflicting results. However, no study has examined the specific relationship between these anthropometric parameters with sustained normotension (SNT), white coat hypertension (WCHT), masked hypertension (MHT), and sustained hypertension (SHT) based on office and ambulatory blood pressure (BP) measurements in these patients. METHODS: Patients with newly diagnosed type 2 diabetes underwent the following procedures: history taking, measurements of anthropometric parameters, office and ambulatory BP measurements, physical examination, laboratory analysis, and random and 24-hour urine analysis. RESULTS: In total, there were 65 dippers and 37 nondipper patients. None of the anthropometric parameters were different between the dippers and the nondippers. There were 25 patients with SNT, 32 with WCHT, seven with MHT, and 38 with SHT. A comparison of anthropometric parameters between these four groups of patients showed that WC (P=0.016) and WHR (P=0.015) were different among all groups. According to regression analysis, only BMI was independently related with MHT (odds ratio [OR], 1.373, P=0.022), whereas only WC has been associated with SHT (OR, 1.321, P=0.041). CONCLUSION: Among anthropometric parameters, only WC and WHR were different in SNT, WCHT, MHT, and SHT in newly diagnosed patients with type 2 diabetes.

Afsar, Baris; Elsurer, Rengin (2014):

The relationship between magnesium and ambulatory blood pressure, augmentation index, pulse wave velocity, total peripheral resistance, and cardiac output in essential hypertensive patients.

In: *J Am Soc Hypertens* 8 (1), S. 28–35. DOI: 10.1016/j.jash.2013.10.006.

Abstract:

Magnesium levels have been shown to be associated with elevated blood pressure (BP), endothelial dysfunction, insulin resistance, vascular calcification, inflammation, and atherosclerosis. It was also demonstrated that patients with hypertension have increased inflammation, insulin resistance, and endothelial dysfunction. However, the relationship between magnesium, ambulatory BPs, and central hemodynamic parameters were not evaluated extensively. Serum magnesium levels, ambulatory blood pressures, augmentation index (Aix), pulse wave velocity, total peripheral resistances, and cardiac output were measured for all patients. In total, 184 essential hypertension patients were enrolled. In univariate analysis, magnesium levels were correlated with hemoglobin (r = +0.155; P = .037), albumin (r = +0.180; P = .018), pulse pressure (daytime; r = -0.170; P = .021), pulse pressure (24-hour; r = -0.156; P = .035), Aix (daytime; r = -0.223; P = .002), Aix (nighttime; r = -0.169; P = .022), and Aix (24-hour; r = -0.247; P = .001). In regression analysis, magnesium levels were independently and conversely associated with daytime Aix (P < .0001), nighttime Aix (P = .019), and 24-hour Aix (P < .0001). We suggest that magnesium levels were associated with Aix but not with total peripheral resistances, pulse wave velocity, cardiac output, and central BPs. The unique mechanisms related with magnesium and Aix but not shared by other central parameters needs to be determined.

Agarwal, Rajiv (2009):

Volume-associated ambulatory blood pressure patterns in hemodialysis patients.

In: *Hypertension* 54 (2), S. 241–247. DOI: 10.1161/HYPERTENSIONAHA.109.136366.

Abstract:

Although volume excess causes hypertension, whether it also affects circadian patterns of arterial pressures among hemodialysis patients remains unknown. To test the notion of whether volume overload is associated with a unique blood pressure (BP) \"signature,\" a posthoc analysis was performed among 145 patients participating in the Dry-Weight Reduction in Hypertensive Hemodialysis Patients randomized, controlled trial. Using 400 ambulatory BP recordings over 8 weeks composed of 35 302 measurements, the trended cosinor model was found to be the best descriptor of BP chronobiology. The trended cosinor model may be described as a pattern of sinusoidal oscillation around a straight line with an upward trend during the interdialytic period that has an intercept at the postdialysis time. Augmented volume removal therapy reduced the intercept systolic BP and increased the rate of rise in systolic BP over the interdialytic interval but had no effect on the systolic BP fluctuation (amplitude). Thus, an elevated intercept and blunted slope pattern characterize the \"volume-overload BP pattern\" on ambulatory BP monitoring. Similar changes were seen for diastolic BP. Augmented volume removal therapy neither restored dipping nor was associated with a lag phenomenon for either the wake or the sleep systolic BP. Lowering of systolic BP was greater than diastolic BP such that pulse pressure was reduced. An observational cohort of 37 patients followed for 6 months confirmed these findings. Randomized trials are now needed to evaluate the clinical impact of augmented volume removal therapy on hard outcomes, because reduction of pulse pressure with this simple expedient has the potential to improve survival in hemodialysis patients.

Agarwal, Rajiv; Light, Robert P. (2008):

Physical activity and hemodynamic reactivity in chronic kidney disease.

In: *Clinical journal of the American Society of Nephrology : CJASN* 3 (6), S. 1660–1668. DOI: 10.2215/CJN.02920608.

Abstract:

BACKGROUND AND OBJECTIVES\r\nPatients with chronic kidney disease (CKD) have an elevated cardiovascular risk. This study was designed to understand better the presence and strength of the relationship between physical activity and BP and to explore determinants of hemodynamic reactivity.\r\nDESIGN, SETTING, PARTICIPANTS, & MEASUREMENTS\r\nTwenty-four patients with CKD (mean age 69.5 yr; 3.1 antihypertensive drugs; estimated GFR 47 ml/min per 1.73 m(2), albumin/creatinine ratio 403 mg/g) were studied on three occasions during a 6-wk period with 24-h ambulatory BP monitoring and simultaneous activity monitoring with wrist actigraphy.\r\nRESULTS\r\nNondippers were found have a greater level of sleep activity compared with dippers, although the awake activity level was similar (7.06 versus 6.73) between groups (P = 0.042 for interaction). In 3587 BP activity pairs, hemodynamic reactivity was variable between individuals (systolic BP reactivity 1.06 [SD 10.50]; diastolic BP reactivity 0.89 [SD 7.80] heart rate reactivity 1.18 [SD 11.00]); those who were more sedentary had a greater increment in systolic BP compared with those who were less sedentary. Antihypertensive drugs blunted hemodynamic reactivity. Hemodynamic reactivity was greatest between 12 a.m. and 8 a.m., making this a vulnerable period for cardiovascular events.\r\nCONCLUSIONS\r\nGreater hemodynamic reactivity in sedentary people with CKD offers a possible and thus far unrecognized mechanism of cardiovascular damage. Besides reducing BP, antihypertensive drugs reduce hemodynamic reactivity, which offers another plausible mechanism of cardiovascular protection with their use.

Agarwal, Rajiv; Light, Robert P. (2010):

Physical activity is a determinant of circadian blood pressure variation in chronic kidney disease.

In: *American journal of nephrology* 31 (1), S. 15–23. DOI: 10.1159/000252878.

Abstract:

BACKGROUND\r\nCircadian variation in blood pressure (BP), which is commonly blunted among patients with chronic kidney disease (CKD), has been associated with increased cardiovascular risk. The causes of this blunted circadian variation remain incompletely understood.\r\nMETHODS\r\nWe hypothesized that physical activity is a determinant of circadian BP variation. Accordingly, we studied 101 patients with CKD (mean age 69 years, mostly men) with 24-hour ambulatory BP monitoring and simultaneous monitoring of physical activity on 2 occasions 4 weeks apart.\r\nRESULTS\r\nMeasured by wrist actigraphy, a higher level of physical activity was associated with lower overall mean BP. A higher level of activity also altered the circadian systolic BP rhythm; this alteration was characterized by both a higher amplitude of variation (and thus greater dipping) and restoration of acrophase (time at peak BP) to a less vulnerable period for cardiovascular events. Among the most sedentary

participants, both systolic and pulse pressure acrophases were seen in the early hours of the morning which is also the most vulnerable period for cardiovascular events.\r\nCONCLUSION\r\nPhysical activity is an independent determinant of circadian variation in BP. We speculate that among patients with CKD, a sedentary lifestyle, rather than non-dipping, mediates increased cardiovascular risk.

Agarwal, Rajiv; Light, Robert P. (2010):

The effect of measuring ambulatory blood pressure on nighttime sleep and daytime activity--implications for dipping.

In: *Clinical journal of the American Society of Nephrology : CJASN* 5 (2), S. 281–285. DOI: 10.2215/CJN.07011009.

Abstract:

BACKGROUND AND OBJECTIVES\r\nAmbulatory blood pressure (BP) monitoring is commonly used to assess the circadian pattern of BP. Circadian BP pattern is influenced by physical activity and sleep cycle. The effect of BP monitoring itself on the level of physical activity and sleep remains unknown. If BP monitoring affects these parameters, then monitoring itself may influence the circadian BP pattern.\r\nDESIGN, SETTING, PARTICIPANTS, & MEASUREMENTS\r\nTo assess the effect of ambulatory BP monitoring on sleep duration, sleep efficiency, and daytime activity, we measured physical activity using wrist actigraphy in 103 veterans with chronic kidney disease. After 6 to 7 days of continuous activity monitoring, participants underwent ambulatory BP monitoring with simultaneous actigraphy. The above experiment was repeated after 1 mo.\r\nRESULTS\r\nAmong the top tertile of patients (most sleep), when wearing ambulatory BP patients spent less time in bed at night (-92 min, P < 0.0001), were less asleep during those hours (-98 min, P < 0.0001), and had reduced sleep efficiency (82% versus 77%, -5% P = 0.02). On the day of ambulatory BP monitoring, patients were more sedentary during waking hours (+27 minutes, P = 0.002). During ambulatory BP monitoring, waking after sleep onset more than median was associated with greater odds for nondipping (odds ratio 10.5, P = 0.008).\r\nCONCLUSIONS\r\nAmbulatory BP monitoring is associated with disturbed sleep and reduced physical activity, characteristics that influence dipping. Ambulatory BP monitoring may itself induce nondipping and may thus mitigate the prognostic significance of the dipping phenomenon.

Agarwal, Rajiv; Peixoto, Aldo J.; Santos, Sergio F. F.; Zoccali, Carmine (2009):

Out-of-office blood pressure monitoring in chronic kidney disease.

In: *Blood Press Monit* 14 (1), S. 2–11. DOI: 10.1097/MBP.0b013e3283262f58.

Abstract:

Blood pressure (BP) control is vital to the management of patients with chronic kidney disease (CKD) yet most treatment decisions use BPs obtained in the clinic. The purpose of this report is to review the importance of self-measured and automatic ambulatory BPs in the management of patients with CKD. Compared with clinic-obtained BPs, self-measured BP more accurately defines hypertension in CKD. Masked hypertension seems to be associated with higher risk of end-stage renal disease in CKD patients. Conversely, white-coat hypertension seems to be associated with better renal outcomes than those who have persistent hypertension. Ambulatory BP monitoring is the only tool to monitor BP during sleep, diagnose nondipping, and, as self-measured BPs, have greater prognostic power in CKD compared with clinic BP. In hemodialysis patients, self-measured BP, but not pre/post-dialysis BP, shares the combination of high sensitivity and high specificity of greater than 80% to make a diagnosis of hypertension with the reference standard of ambulatory BP monitoring. In addition, self-measured and ambulatory BPs seem to be better correlates of left-ventricular hypertrophy and mortality in hemodialysis patients compared with pre/post-dialysis BP. Emerging data suggest that out-of-office BP monitoring is superior to BP obtained in the clinic when predicting target-organ damage and prognosis. Out-of-office BP monitoring is recommended for the management of hypertension in all stages of CKD.

Agiovlasitis, S.; Motl, R. W.; Foley, J. T.; Fernhall, B. (2012):

Prediction of energy expenditure from wrist accelerometry in people with and without Down syndrome.

In: *Adapt.Phys.Activ.Q.* 29 (2), S. 179–190. Online verfügbar unter PM:22467836.

Abstract:

This study examined the relationship between energy expenditure and wrist accelerometer output during walking in persons with and without Down syndrome (DS). Energy expenditure in metabolic equivalent units (METs) and activity-count rate were respectively measured with portable spirometry and a uniaxial wrist accelerometer in 17 persons with DS (age: 24.7+/-6.9 years; 9 women) and 21 persons without DS (age: 26.3+/-5.2 years; 12 women) during six over-ground walking trials. Combined groups regression showed that the relationship between METs and activity-count rate differed between groups (p<.001). Separate models for each group included activity-count rate and squared activity-count rate as significant predictors of METs (p</=.005). Prediction of METs appeared accurate based on Bland-Altman plots and the lack of between-group difference in mean absolute prediction error (DS: 17.07%; Non-DS: 18.74%). Although persons with DS show altered METs to activity-count rate relationship during walking, prediction of their energy expenditure from wrist accelerometry appears feasible

Ahola, Kirsi; Salminen, Simo; Toppinen-Tanner, Salla; Koskinen, Aki; Väänänen, Aki (2013):

Occupational burnout and severe injuries: An eight-year prospective cohort study among Finnish forest industry workers.

In: *Journal of occupational health* 55 (6), S. 450–457.

Abstract:

OBJECTIVES:

Burnout is a psychological consequence of prolonged work stress. Studies have shown that it is related to physical and mental disorders. The safety outcomes of burnout have been studied to a lesser extent and only in the work context. This study explored the effect of burnout on future severe injuries regardless of their context.

METHODS:

A total of 10,062 forest industry employees (77% men, 63% manual workers) without previous injuries participated in 1996 or 2000 in the "Still Working" study examining the work-related antecedents of health and mortality. Burnout was assessed using the Maslach Burnout Inventory-General Survey. Injuries leading to death or hospitalization were regarded as severe. We extracted such injuries from independent national registers. The relationship between burnout and new injuries was analyzed using Cox proportional regression. The analyses were adjusted for age, sex, marital status, and occupational status.

RESULTS:

There were 788 new injuries over eight years. Injuries were more common among male and manual workers. After adjustments, each one-unit increase in the burnout score was related to a 9% increase in the risk of injury (95% confidence interval: 1.2-1.17). Experiencing symptoms at least monthly was related to a 1.18-fold adjusted injury risk (95% CI: 1.2-1.36). Of the subscales of burnout, exhaustion and cynicism but not lack of professional efficacy predicted injuries after adjustments.

CONCLUSIONS:

In addition to mental and physical disorders, burnout predicts severe injuries. Developing work conditions and optimizing workload may enhance safety and decrease health expenses related to all injuries.

Ainsworth, J.; Palmier-Claus, J. E.; MacHin, M.; Barrowclough, C.; Dunn, G.; Rogers, A. et al. (2013):

A Comparison of two delivery modalities of a mobile phone-based assessment for serious mental illness: native smartphone application vs text-messaging only implementations.

In: *J Med Internet Res* 15 (4), S. e60. DOI: 10.2196/jmir.2328.

Abstract:

BACKGROUND: Mobile phone-based assessment may represent a cost-effective and clinically effective method of monitoring psychotic symptoms in real-time. There are several software options, including the use of native smartphone applications and text messages (short message service, SMS). Little is known about the strengths and limitations of these two approaches in monitoring symptoms in individuals with serious mental illness. OBJECTIVE: The objective of this study was to compare two different delivery modalities of the same diagnostic assessment for individuals with non-affective psychosis-a native smartphone application employing a graphical, touch user interface against an SMS text-only implementation. The overall hypothesis of the study was that patient participants with sewrious mental illness would find both delivery modalities feasible and acceptable to use, measured by the quantitative post-assessment feedback questionnaire scores, the number of data points completed, and the time taken to complete the assessment. It was also predicted that a native smartphone application would (1) yield a greater

number of data points, (2) take less time, and (3) be more positively appraised by patient participant users than the text-based system. METHODS: A randomized repeated measures crossover design was employed. Participants with currently treated Diagnostic and Statistical Manual (Fourth Edition) schizophrenia or related disorders (n=24) were randomly allocated to completing 6 days of assessment (four sets of questions per day) with a native smartphone application or the SMS text-only implementation. There was then a 1-week break before completing a further 6 days with the alternative delivery modality. Quantitative feedback questionnaires were administered at the end of each period of sampling. RESULTS: A greater proportion of data points were completed with the native smartphone application in comparison to the SMS text-only implementation (beta = -.25, SE=.11, P=.02), which also took significantly less time to complete (beta =.78, SE= .09, P<.001). Although there were no significant differences in participants' quantitative feedback for the two delivery modalities, most participants reported preferring the native smartphone application (67%; n=16) and found it easier to use (71%; n=16). 33% of participants reported that they would be willing to complete mobile phone assessment for 5 weeks or longer. CONCLUSIONS: Native smartphone applications and SMS text are both valuable methods of delivering real-time assessment in individuals with schizophrenia. However, a more streamlined graphical user interface may lead to better compliance and shorter entry times. Further research is needed to test the efficacy of this technology within clinical services, to assess validity over longer periods of time and when delivered on patients' own phones

Aizawa, Kiyoharu; Maeda, Kazuki; Ogawa, Makoto; Sato, Yohei; Kasamatsu, Mayumi; Waki, Kayo; Takimoto, Hidemi (2014):

Comparative Study of the Routine Daily Usability of FoodLog: A Smartphone-based Food Recording Tool Assisted by Image Retrieval.

In: *J Diabetes Sci Technol* 8 (2), S. 203–208. DOI: 10.1177/1932296814522745.

Abstract:

The health care field is focusing considerable attention on dietary control, which requires that individuals record what they eat. We have developed a novel smartphone application called FoodLog, a multimedia food recording tool that allows users to take photos of their meals and to produce textual food records. Unlike conventional smartphone-based food recording tools, FoodLog allows users to employ meal photos to help them to input textual descriptions based on image retrieval. In this study, we conducted usability experiments to evaluate the routine daily use of FoodLog systems with and without image-based assistance. We produced 2 food recording tools: FoodLog with image-based assistance (FL-I) and FoodLog with text input only (FL-T). We recruited 18 university students (age = 18-24 years), all of whom performed food recording for the first time. The participants used FoodLog on a daily basis for 1 month. In the subjective evaluation, FL-I had higher average scores for questions related to ease of use, fun, frequency of browsing, and intention to continue. In particular, the latter 3 factors received significantly higher scores with FL-I than with FL-T. In the quantitative evaluation, the daily average number of meal events and food records did not differ significantly between FL-I and FL-T. A detailed analysis of the individual records showed that 1 participant produced 3 times as many records using FL-I compared with FL-T. The subjective assessment showed that our new tool, which fully exploits the use of images, is a promising method for food recording.

Al Dhahri, Khalid N.; Potts, James E.; Chiu, Christine C.; Hamilton, Robert M.; Sanatani, Shubhayan (2009):

Are implantable loop recorders useful in detecting arrhythmias in children with unexplained syncope?

In: *Pacing and clinical electrophysiology : PACE* 32 (11), S. 1422–1427. DOI: 10.1111/j.1540-8159.2009.02486.x.

Abstract:

INTRODUCTION\r\nSyncope and presyncope are symptoms that occur infrequently in children, are unpredictable, and represent a diagnostic challenge to the physician. Conventional diagnostic investigations are often unable to establish a diagnosis, making it difficult to determine patient risk and direct appropriate therapy. The implantable loop recorder (ILR) is a medical device that was created for prolonged monitoring of heart rate and rhythm and has been used in a limited number of pediatric studies in which the cause of the syncope is unknown.\r\nMETHODS\r\nThis is a retrospective review of the clinical, surgical, and follow-up data of patients who had ILR devices implanted after conventional testing failed to identify a cause for their symptoms.\r\nRESULTS\r\nThe diagnostic yield of the ILR device in unmasking the cause for symptoms in our patient cohort was 64%. In our study, manually activated events accounted for 71% of all documented episodes and 68% of the cases involving hemodynamically important arrhythmias or transient rhythm changes. The ILR device can be safely implanted and explanted in children without significant morbidity, in most cases. None of our patients experienced any long-term adverse events associated with placement of the device and all were alive at last follow-up.\r\nCONCLUSIONS\r\nThe use of the ILR device is a useful tool to help unmask arrhythmias as a cause of unexplained syncope in children. Patient selection for who should and should not have an ILR device implanted will continue to influence its diagnostic utility and generate controversy among stakeholders.

Al'Absi, Mustafa; Khalil, Najat Sayem; Habori, Molham Al; Hoffman, Richard; Fujiwara, Koji; Wittmers, Lorentz (2013):

Effects of chronic khat use on cardiovascular, adrenocortical, and psychological responses to stress in men and women.

In: *The American Journal on Addictions* 22 (2), S. 99–107.

Abstract:

Background: Khat is a psychostimulant plant widely used in Africa and its use has been growing rapidly in Europe and North America. Objectives:We investigated effects of chronic khat (Catha edulis) use on cardiovascular, adrenocortical, and psychological responses to acute stress. Methods: Chronic khat users and nonusers were compared on physiological measures and mood reports in a cross-sectional, mixed design. Measurements were conducted during 24-hour ambulatory monitoring and during a laboratory session. A total of 152 participants (58 women) were recruited by flyers posted around Sana'a University campus and the surrounding community in Sana'a, Yemen. Salivary cortisol and self-report measures were collected during a 24-hour ambulatory period prior to a lab testing session. In addition, blood pressures (BP), salivary cortisol, and mood measures were assessed during rest and in response to acute mental stress. Results: Khat users exhibited enhanced evening and attenuated morning cortisol levels, reflecting a blunted diurnal pattern of adrenocortical activity compared to nonusers. Khat users reported greater negative affect during the ambulatory period and during the laboratory session. In addition, they exhibited attenuated BP responses to stress. Conclusions and Scientific Significance: These novel results demonstrate altered adrenocortical activity and increased dysphoric mood among khat users. The extent to which these associations are due to effects of chronic khat use per se or instead reflect predisposing risk factors for khat use is yet to be determined. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Al'Absi, M.; Khalil, N. S.; Al, Habori M.; Hoffman, R.; Fujiwara, K.; Wittmers, L. (2013):

Effects of chronic khat use on cardiovascular, adrenocortical, and psychological responses to stress in men and women.

In: *Am J Addict* 22 (2), S. 99–107. DOI: 10.1111/j.1521-0391.2013.00302.x.

Abstract:

BACKGROUND: Khat is a psychostimulant plant widely used in Africa and its use has been growing rapidly in Europe and North America. OBJECTIVES: We investigated effects of chronic khat (Catha edulis) use on cardiovascular, adrenocortical, and psychological responses to acute stress. METHODS: Chronic khat users and nonusers were compared on physiological measures and mood reports in a cross-sectional, mixed design. Measurements were conducted during 24-hour ambulatory monitoring and during a laboratory session. A total of 152 participants (58 women) were recruited by flyers posted around Sana'a University campus and the surrounding community in Sana'a, Yemen. Salivary cortisol and self-report measures were collected during a 24-hour ambulatory period prior to a lab testing session. In addition, blood pressures (BP), salivary cortisol, and mood measures were assessed during rest and in response to acute mental stress. RESULTS: Khat users exhibited enhanced evening and attenuated morning cortisol levels, reflecting a blunted diurnal pattern of adrenocortical activity compared to nonusers. Khat users reported greater negative affect during the ambulatory period and during the laboratory session. In addition, they exhibited attenuated BP responses to stress. CONCLUSIONS AND SCIENTIFIC SIGNIFICANCE: These novel results demonstrate altered adrenocortical activity and increased dysphoric mood among khat users. The extent to which these associations are due to effects of chronic khat use per se or instead reflect predisposing risk factors for khat use is yet to be determined

Albert, Benjamin B.; Bock, Martin; Derraik, Jose G. B.; Brennan, Christine M.; Biggs, Janene B.; Hofman, Paul L.; Cutfield, Wayne S. (2014):

Among overweight middle-aged men, first-borns have lower insulin sensitivity than second-borns.

In: *Sci Rep* 4, S. 3906. DOI: 10.1038/srep03906.

Abstract:

We aimed to assess whether birth order affects metabolism and body composition in overweight middle-aged men. We studied 50 men aged 45.6 +/- 5.5 years, who were overweight (BMI 27.5 +/- 1.7 kg/m(2)) but otherwise healthy in Auckland, New Zealand. These included 26 first-borns and 24 second-borns. Insulin sensitivity was assessed by the Matsuda method from an oral glucose tolerance test. Other assessments included DXA-derived body composition, lipid profiles, 24-hour ambulatory blood pressure, and carotid intima-media thickness. First-born men were 6.9 kg heavier ($p = 0.013$) and had greater BMI (29.1 vs 27.5 kg/m(2); $p = 0.004$) than second-borns. Insulin sensitivity in first-born men was 33% lower than in second-borns (4.38 vs

6.51; p = 0.014), despite adjustment for fat mass. There were no significant differences in ambulatory blood pressure, lipid profile or carotid intima-media thickness between first- and second-borns. Thus, first-born adults may be at a greater risk of metabolic and cardiovascular diseases.

Albert, M. V.; McCarthy, C.; Valentin, J.; Herrmann, M.; Kording, K.; Jayaraman, A. (2013):

Monitoring Functional Capability of Individuals with Lower Limb Amputations Using Mobile Phones.

In: *PLoS One* 8 (6), S. e65340. DOI: 10.1371/journal.pone.0065340.

Abstract:

To be effective, a prescribed prosthetic device must match the functional requirements and capabilities of each patient. These capabilities are usually assessed by a clinician and reported by the Medicare K-level designation of mobility. However, it is not clear how the K-level designation objectively relates to the use of prostheses outside of a clinical environment. Here, we quantify participant activity using mobile phones and relate activity measured during real world activity to the assigned K-levels. We observe a correlation between K-level and the proportion of moderate to high activity over the course of a week. This relationship suggests that accelerometry-based technologies such as mobile phones can be used to evaluate real world activity for mobility assessment. Quantifying everyday activity promises to improve assessment of real world prosthesis use, leading to a better matching of prostheses to individuals and enabling better evaluations of future prosthetic devices

Aldinger, Maren; Stopsack, Malte; Ulrich, Ines; Appel, Katja; Reinelt, Eva; Wolff, Sebastian et al. (2014):

Neuroticism developmental courses - implications for depression, anxiety and everyday emotional experience; a prospective study from adolescence to young adulthood.

In: *BMC Psychiatry* 14 (1), S. 210. DOI: 10.1186/s12888-014-0210-2.

Abstract:

BACKGROUND: Neuroticism is frequently discussed as a risk factor for psychopathology. According to the maturity principle, neuroticism decreases over the course of life, but not uniformly across individuals. However, the implications of differences in personality maturation on mental health have not been well studied so far. Hence, we hypothesized that different forms of neuroticism development from adolescence to young adulthood are associated with differences in depression, anxiety and everyday emotional experience at the age of 25. METHODS: A sample of 266 adolescents from the general population was examined three times over ten years (age at T0: 15, T1: 20 and T2: 25) using questionnaires, interviews and ecological momentary assessment (EMA). At all measurement points, neuroticism was assessed with the NEO inventory. At T2, diagnoses of major depression and anxiety disorders were captured with a structured clinical interview (M-CIDI). Phone-based EMA was used to assess emotional experience and affective instability over a two-week period at T2. RESULTS: The best fitting model was a latent class growth analysis with two groups of neuroticism development. Most individuals (n = 205) showed moderate values whereas 61 participants were clustered into a group with elevated neuroticism levels. In both groups neuroticism significantly changed during the ten year period with a peak at the age of 20. Individuals with a higher absolute level were at 14-fold increased risk for depression and 7-fold risk for anxiety disorders at the age of 25. In EMA, increased negative affect and arousal as well as decreased positive emotions were found in this high group. CONCLUSIONS: Other than expected, personality did not mature in our sample. However, there was a significant change of neuroticism values from adolescence to young adulthood. Further, over 20% of our participants showed a neuroticism development which was associated with adverse outcomes such as negatively toned emotional experience and a heightened risk to suffer from depressive and anxiety disorders in young adulthood. These high-risk persons need to be identified early to provide interventions supporting continuous personality maturation.

Alexander, Gerianne M.; Saenz, Janet (2012):

Early androgens, activity levels and toy choices of children in the second year of life.

In: *Hormones and Behavior* 62 (4), S. 500–504. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-26107-001%26site%3dehost-live;galexander@tamu.edu.

Abstract:

The hypothesis that stronger preferences for active play styles contribute to stronger preferences for male-typical toys was examined in 47 boys and 37 girls at 19-months of age using ambulatory monitoring technology (i.e., actigraphy) to measure activity levels during contact with male-typical, female-typical, and gender-neutral toys. Digit ratios and salivary testosterone levels were measured earlier in children at 3-4 months of age. There were no significant sex differences in digit ratios, salivary testosterone levels, or overall activity levels during toy play. In contrast, contact times showed large sex differences in infants' toy preferences. The within-sex comparisons showed that infant girls had significant preferences for female-typical toys over male-typical toys, whereas infant boys showed only a small preference for male-typical toys over female-typical toys. More male-typical digit ratios in early infancy predicted higher activity counts during toy play and less female-typical toy preferences in girls. However, in both sexes, activity levels were unrelated to toy preferences suggesting that factors other than activity level preferences contribute to the early emergence of gender-linked toy preferences. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Algar, Lori; Valdes, Kristin (2014):

Using smartphone applications as hand therapy interventions.

In: *J Hand Ther*, S. 254–256. DOI: 10.1016/j.jht.2013.12.009.

Abstract:

In the hand therapy clinic, smartphones can be used as an educational resource, to view a photo or video of a home exercise program, or as a method of electronically documenting progress related to healing from an injury. Smartphone applications may also serve as appropriate therapy interventions to address deficits often presenting with common hand injuries. For individuals with trapeziometacarpal arthrosis, gaming can encourage radial abduction range of motion and neuromuscular control required for joint stability. People with distal radius fractures may benefit from smartphone applications for range of motion and proprioceptive training. These treatments may assist with addressing client-centered goals and be motivating in the current technology driven times.

Alhassan, S.; Lyden, K.; Howe, C.; Kozey, Keadle S.; Nwaokelemeh, O.; Freedson, P. S. (2012):

Accuracy of accelerometer regression models in predicting energy expenditure and METs in children and youth.

In: *Pediatr.Exerc.Sci.* 24 (4), S. 519–536. Online verfügbar unter PM:23196761.

Abstract:

This study examined the validity of commonly used regression equations for the Actigraph and Actical accelerometers in predicting energy expenditure (EE) in children and adolescents. Sixty healthy (8-16 yrs) participants completed four treadmill (TM) and five self-paced activities of daily living (ADL). Four Actigraph (AG) and three Actical (AC) regression equations were used to estimate EE. Bias (+/- 95% CI) and root mean squared errors were used to assess the validity of the regression equations compared with indirect calorimetry. For children, the Freedson (AG) model accurately predicted EE for all activities combined and the Treuth (AG) model accurately predicted EE for TM activities. For adolescents, the Freedson model accurately predicted EE for TM activities and the Treuth model accurately predicted EE for all activities and for TM activities. No other equation accurately estimated EE. The percent agreement for the AG and AC equations were better for light and vigorous compared with moderate intensity activities. The Trost (AG) equation most accurately classified all activity intensity categories. Overall, equations yield inconsistent point estimates of EE

Allard, Michele; Husky, Mathilde; Catheline, Gwenaelle; Pelletier, Amandine; Dilharreguy, Bixente; Amieva, Helene et al. (2014):

Mobile technologies in the early detection of cognitive decline.

In: *PLoS One* 9 (12), S. e112197. DOI: 10.1371/journal.pone.0112197.

Abstract:

The identification of biological and pathophysiological processes implicated in different forms of dementia is itself dependent on reliable descriptions of cognitive performance and capacities. However, traditional instruments are often unable to detect subtle declines in cognitive functions due to natural variation at the time of testing. Mobile technologies permit the repeated assessment of cognitive functions and may thereby provide more reliable descriptions of early cognitive difficulties that are

inaccessible to clinic or hospital-based instruments. This assessment strategy is also able to characterize in real-time the dynamic associations between cognitive performance and specific daily life behaviors or activities. In a cohort of elderly rural residents, 60 individuals were administered neuropsychological and neuroimaging exams as well as a one-week period of electronic ambulatory monitoring of behavior, semantic memory performance, and daily life experiences. Whereas imaging markers were unrelated to traditional neuropsychological test scores, they were significantly associated with mobile assessments of semantic memory performance. Moreover, certain daily life activities such as reading or completing crossword puzzles were associated with increases in semantic memory performance over the subsequent hours of the same day. The revolution in mobile technologies provides unprecedented opportunities to overcome the barriers of time and context that characterize traditional hospital and clinical-based assessments. The combination of both novel and traditional methods should provide the best opportunity for identifying the earliest risk factors and biomarkers for Alzheimer's disease and other forms of dementia.

Allen, Kelli D.; Golightly, Yvonne M.; Olsen, Maren K. (2006):

Pilot study of pain and coping among patients with osteoarthritis: a daily diary analysis.

In: *Journal of clinical rheumatology : practical reports on rheumatic & musculoskeletal diseases* 12 (3), S. 118–123. DOI: 10.1097/01.rhu.0000221801.63880.3f.

Abstract:

BACKGROUND AND OBJECTIVES\r\nFew studies have examined patterns of pain and coping among patients with osteoarthritis (OA). This pilot study used a daily diary approach to examine pain and coping strategy use among white and nonwhite veterans with OA.\r\nMETHODS\r\nParticipants (23 white, 13 nonwhite; 89% male; mean age = 63 years) completed diaries of pain (10-cm visual analog scale) and coping (total, problem-focused, and emotion-focused) for 30 days. Analyses examined relationships of mean self-reported pain severity and variability with coping strategy use as well as racial differences in these associations.\r\nRESULTS\r\nThe mean pain level (4.46 [scale of 0-10], standard deviation [SD] = 2.12) and mean within-subject pain variance (1.94, SD = 1.79) were similar between white and nonwhite participants. With respect to pain variability, 2 distinct subgroups were observed, with approximately half of participants reporting high variability and half reporting low variability. The mean total coping score (on a scale of 0-7) was 2.62 (SD = 1.77), with problem-focused strategies being used more often than emotion-focused. There were no significant associations between coping (total, problem-focused, and emotion-focused) and mean pain severity, but the direction of these relationships differed according to race.\r\nCONCLUSION\r\nResults of this pilot study showed considerable between-subject variability in pain and coping strategy use as well as some racial differences. Medical treatment and self-management approaches may be improved if they can be tailored according to patients' pain patterns and preferred coping strategies.

Allen, Jerilyn K.; Stephens, Janna; Dennison Himmelfarb, Cheryl R.; Stewart, Kerry J.; Hauck, Sara (2013):

Randomized controlled pilot study testing use of smartphone technology for obesity treatment.

In: *J Obes* 2013, S. 151597. DOI: 10.1155/2013/151597.

Abstract:

BACKGROUND: The established interventions for weight loss are resource intensive which can create barriers for full participation and ultimate translation. The major goal of this pilot study was to evaluate the feasibility, acceptability, and preliminary efficacy of theoretically based behavioral interventions delivered by smartphone technology. METHODS: The study randomized 68 obese adults to receive one of four interventions for six months: (1) intensive counseling intervention, (2) intensive counseling plus smartphone intervention, (3) a less intensive counseling plus smartphone intervention, and (4) smartphone intervention only. The outcome measures of weight, BMI, waist circumference, and self-reported dietary intake and physical activity were assessed at baseline and six months. RESULTS: The sample was 78% female and 49% African American, with an average age of 45 years, and average BMI of 34.3 kg/m(2). There were trends for differences in weight loss among the four intervention groups. Participants in the intensive counseling plus self-monitoring smartphone group and less intensive counseling plus self-monitoring smartphone group tended to lose more weight than other groups (5.4 kg and 3.3 kg, resp.). CONCLUSIONS: The results of this pilot trial of a weight loss intervention provide preliminary support for using a smartphone application for self-monitoring as an adjunct to behavioral counseling.

Almeida, Edgar A F de; Oliveira, Eduardo I. De; Lopes, José A.; Almeida, Ana G.; Prata, M. Martins (2006):

Tissue Doppler imaging in the evaluation of left ventricular function in young adults with autosomal dominant polycystic kidney disease.

In: *American journal of kidney diseases : the official journal of the National Kidney Foundation* 47 (4), S. 587–592. DOI: 10.1053/j.ajkd.2005.12.023.

Abstract:

BACKGROUND\r\nHypertension and increased left ventricular mass index (LVMI) have been reported in patients with early stages of autosomal dominant polycystic kidney disease (ADPKD). Whether these abnormalities are associated with diastolic dysfunction in this stage remains to be established. The aim of the study is to evaluate diastolic function in young normotensive patients with ADPKD by using tissue Doppler imaging (TDI), the most sensitive method available to date.\r\nMETHODS\r\nThirty-two young clinically normotensive patients aged 21 to 30 years were compared with 23 controls with similar ages. Ambulatory blood pressure measurement (ABPM) was performed to confirm normal blood pressure. Subsequently, patients and controls underwent echocardiography using transmitral Doppler and TDI.\r\nRESULTS\r\nLVMI was greater in patients with ADPKD than controls (89.3 +/- 17.7 versus 77.6 +/- 15.9 g/m2; P < 0.02). No significant differences were found in transmitral Doppler and TDI results. When ABPMs were taken into account, 11 patients had mild hypertension and showed increased LVMI and decreased early diastolic peak velocity (E wave: 67.0 +/- 12.0 cm/s in hypertensive patients with ADPKD versus 81.4 +/- 3.3 cm/s in normotensive patients with ADPKD versus 79.3 +/- 2.9 cm/s in controls; P < 0.04) and decreased TDI peak early diastolic annular velocity (11.6 +/- 2.8 cm/s in hypertensive patients with ADPKD versus 13.2 +/- 1.6 cm/s in normotensive patients with ADPKD versus 13.4 +/- 1.6 in controls; P < 0.05).\r\nCONCLUSION\r\nDiastolic dysfunction is not a prominent sign in young normotensive patients with ADPKD.

Alosco, Michael L.; Spitznagel, Mary Beth; Cohen, Ronald; Raz, Naftali; Sweet, Lawrence H.; Josephson, Richard et al. (2014):

Decreased physical activity predicts cognitive dysfunction and reduced cerebral blood flow in heart failure.

In: *J Neurol Sci* 339 (1-2), S. 169–175. DOI: 10.1016/j.jns.2014.02.008.

Abstract:

OBJECTIVE: Cognitive impairment in heart failure (HF) is believed to result from brain hypoperfusion subsequent to cardiac dysfunction. Physical inactivity is prevalent in HF and correlated with reduced cardiac and cognitive function. Yet, no longitudinal studies have examined the neurocognitive effects of physical inactivity in HF. The current study examined whether reduced physical activity increases risk for cognitive impairment and brain hypoperfusion over time in HF. METHODS: At baseline and 12months later, 65 HF patients underwent neuropsychological testing, transcranial Doppler ultrasonography, and were asked to wear an accelerometer for seven days. RESULTS: Lower baseline step count and less time spent in moderate free-living activity best predicted worse attention/executive function and decreased cerebral perfusion at the 12-month follow-up. Decreased baseline cerebral perfusion also emerged as a strong predictor of poorer 12-month attention/executive function. CONCLUSIONS: Lower physical activity predicted worse cognition and cerebral perfusion 12months later in HF. Physical inactivity in HF may contribute to cognitive impairment and exacerbate risk for conditions such as Alzheimer's disease. Larger studies are needed to elucidate the mechanisms by which physical inactivity leads to cognitive dysfunction in HF, including clarification of the role of cerebral hypoperfusion.

Alpers, Georg W. (2009):

Ambulatory assessment in panic disorder and specific phobia.

In: *Psychological Assessment* 21 (4), S. 476–485. DOI: 10.1037/a0017489.

Abstract:

Anxiety disorders are among the most prevalent mental disorders. In panic disorder, panic attacks often occur at unpredictable times, making it difficult to study these episodes in the laboratory. In specific phobias, symptoms occur in very circumscribed situations and specific triggers are sometimes difficult to reproduce in the laboratory. Ambulatory assessment, or ecological momentary assessment, can further the understanding of the natural course and scope of symptoms under ecologically valid circumstances. Because bodily symptoms are integral to the diagnosis of anxiety disorders, the objective assessment of physiological responses in the patients' natural environment is particularly important. On the one hand, research has highlighted intriguing discrepancies between the experience of symptoms and physiology during panic attacks. On the other hand, it has validated symptom reporting during therapeutic exposure to phobic situations. Therefore, ambulatory assessment can yield

useful information about the psychopathology of anxiety disorders, and it can be used to monitor change during clinical interventions.

Alschuler, Kevin N.; Hoodin, Flora; Murphy, Susan L.; Geisser, Michael E. (2011):

Ambulatory monitoring as a measure of disability in chronic low back pain populations.

In: *Clin J Pain* 27 (8), S. 707–715. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-20610-008&site=ehost-live;kalschul@uw.edu.

Abstract:

Purpose: The link between chronic back pain and disability is well established. Despite this, the literature also reflects an inconsistency in methods of assessing disability, as studies interchangeably use self-report measures, clinical tests, and electronic monitoring. The purpose of this study was to conduct a multimethod comparison of disability measures to identify similarities and differences in the constructs measured by each. Method: Twenty chronic back pain patients participated in a clinic visit to complete questionnaires and clinical tests, followed by 5 days of wearing a wrist-worn electronic ambulatory monitoring device to measure activity. Results: Multiple regression analyses were conducted to identify the significant predictors of each disability assessment. Results showed that operant variables were predictive of physical activity, cognitive-behavioral variables were predictive of perceived disability, and no variables were predictive of physical ability. Discussion: The results indicate substantial differences in the types of variables that predict disability when measured through 3 different methods. This is suggestive of differences in the constructs measured by each type of disability assessment. The implications for researchers who assess predictors of disability and clinicians who use disability measures in their assessment of patients are that the measures of disability they select should be carefully matched to the proposed purposes. Strong theoretical and practical considerations support using electronic ambulatory monitoring in future research and clinical service. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Altunkan, şekip; Genç, Yasemin; Altunkan, Erkan (2007):

A comparative study of an ambulatory blood pressure measuring device and a wrist blood pressure monitor with a position sensor versus a mercury sphygmomanometer.

In: *European journal of internal medicine* 18 (2), S. 118–123.

Abstract:

Background

Self-measurements of blood pressure (BP) and 24-hour BP measurements are better predictors of cardiovascular mortality and morbidity than office BP measurements. The objective of this study was to compare the accuracy and precision of a wrist BP monitor with a position sensor (Omron 637IT) and of an ambulatory BP measuring monitor (ABPM; Nissei DS-250) with a mercury sphygmomanometer.

Methods

A total of 139 patients (69 women and 70 men) were included in the study. The BP of each subject was first measured with a mercury device using the same (left) arm. After this, the wrist monitor was used for BP measurement. Upon completion of the BP readings, 24-hour BP monitoring was performed using Nissei DS-250 monitors. Mean and standard deviations were calculated for all devices. In order to assess the agreement between the measurement methods, the Bland–Altman method and graphics were utilized.

Results

The mean systolic BP measured by the mercury device was 133.2 ± 18.4 mmHg and the diastolic BP was 85.4 ± 12.5 mmHg, whereas the digital device measured systolic BP as 135.7 ± 17.2 mmHg and diastolic BP as 87.0 ± 12.5 mmHg. The 24-hour BP measurement was 134.6 ± 16.6 mmHg for systolic BP and 85.6 ± 11.1 mmHg for diastolic BP. The difference with regard to systolic BP between the mercury and the Omron devices was − 2.5 ± 5.3 mmHg, which is within the AAMI standard. However, while the mean values of the differences between the mercury and ABPM devices remained under 5 mmHg, their standard deviation was above ± 8 mmHg. For diastolic BP, the difference between all of the devices was below 5 ± 8 mmHg.

Conclusions

The wrist BP monitor produced results consistent with those of the mercury sphygmomanometer when both were compared with the results of the ABPM. As BP measurement with these devices is a practical and repeatable method, they can be used instead of ABPM in the diagnosis and monitoring of hypertension. However, there is a need for further comparative studies.

Keywords

ABPM; Wrist monitors; Blood pressure measurement; Omron 637 IT; Nissei DS-250

Alwan, Heba; Pruijm, Menno; Ponte, Belen; Ackermann, Daniel; Guessous, Idris; Ehret, Georg et al. (2014):

Epidemiology of Masked and White-Coat Hypertension: The Family-Based SKIPOGH Study.

In: *PLoS One* 9 (3), S. e92522. DOI: 10.1371/journal.pone.0092522.

Abstract:

OBJECTIVE: We investigated factors associated with masked and white-coat hypertension in a Swiss population-based sample. METHODS: The Swiss Kidney Project on Genes in Hypertension is a family-based cross-sectional study. Office and 24-hour ambulatory blood pressure were measured using validated devices. Masked hypertension was defined as office blood pressure<140/90 mmHg and daytime ambulatory blood pressure>/=135/85 mmHg. White-coat hypertension was defined as office blood pressure>/=140/90 mmHg and daytime ambulatory blood pressure<135/85 mmHg. Mixed-effect logistic regression was used to examine the relationship of masked and white-coat hypertension with associated factors, while taking familial correlations into account. High-normal office blood pressure was defined as systolic/diastolic blood pressure within the 130-139/85-89 mmHg range. RESULTS: Among the 652 participants included in this analysis, 51% were female. Mean age (+/-SD) was 48 (+/-18) years. The proportion of participants with masked and white coat hypertension was respectively 15.8% and 2.6%. Masked hypertension was associated with age (odds ratio (OR) = 1.02, p = 0.012), high-normal office blood pressure (OR = 6.68, p<0.001), and obesity (OR = 3.63, p = 0.001). White-coat hypertension was significantly associated with age (OR = 1.07, p<0.001) but not with education, family history of hypertension, or physical activity. CONCLUSIONS: Our findings suggest that physicians should consider ambulatory blood pressure monitoring for older individuals with high-normal office blood pressure and/or who are obese.

Ambrosi, Pierre; Kreitmann, Bernard; Habib, Gilbert (2014):

Home blood pressure monitoring in heart transplant recipients: comparison with ambulatory blood pressure monitoring.

In: *Transplantation* 97 (3), S. 363–367. DOI: 10.1097/01.TP.0000435704.55805.f9.

Abstract:

BACKGROUND: How reliable is home blood pressure monitoring (HBPM) in heart transplant recipients is not known. Possibly, it may underestimate hypertensive burden, because blood pressure (BP) nondipper profile is frequent among these patients. This prospective study has been designed to determine whether HBPM adequately identifies hypertension in heart transplant recipients. METHOD: We compared HBPM with ambulatory blood pressure monitoring (ABPM) for the diagnosis of uncontrolled hypertension in 74 patients 13.5+/-6.7 years after heart transplantation. HBPM was measured with a validated semiautomatic device twice every morning and twice every evening on 7 consecutive days, within 15 days of ABPM. We also measured the relationship between HBPM, ABPM, and organ damage as measured by albuminuria and left ventricular mass. RESULTS: A nondipper profile was found in 53 (72%) patients. HBPM and ABPM were close according to Pearson bivariate correlations. There was no significant correlation between left ventricular mass and BP either at HBPM or ABPM. Proteinuria significantly correlated with systolic BP either at HBPM (R=0.42; P=0.0002) or ABPM (R=0.25; P=0.03). HBPM adequately classified 61 of 74 (82%) patients as hypertensives or as nonhypertensives or controlled hypertensives. CONCLUSION: Despite a high prevalence of nondipper profile, HBPM gives a reliable estimate of BP burden in most heart transplant recipients. Thus, our results strongly suggest that HBPM is useful for the long-term follow-up of heart transplant recipients.

Amici, A.; Cicconetti, P.; Sagrafoli, C.; Baratta, A.; Passador, P.; Pecci, T. et al. (2009):

Exaggerated morning blood pressure surge and cardiovascular events. A 5-year longitudinal study in normotensive and well-controlled hypertensive elderly.

In: *Archives of gerontology and geriatrics* 49 (2), S. e105-9. DOI: 10.1016/j.archger.2008.10.003.

Abstract:

Cardiovascular events (CE) occur most frequently in the morning hours in hypertensive subjects. We studied the association between the morning blood pressure (BP) surge and CE in prognosis of 10 normotensive and 32 well-controlled hypertensive elderly, in whom ambulatory BP monitoring was performed and who were followed prospectively for 5 years. The morning surge (MS) of BP was calculated as mean systolic BP during 2h after awakening--mean systolic BP during 1h that included the lowest sleep BP. During an average of 60 months, five CE occurred. When the patients were divided into two groups according to MS, those in the top terzile (MS group; MS> or =34 mmHg, n=14) had a higher prevalence of CE (5 versus 0, p=0.001) during the follow-up period, than the others (non-MS group; MS<34 mmHg, n=28). The logistic regression analysis showed the MS sleep-trough surge as predictive variable of CE (odds ratio, OR=0.794, p=0.022). In conclusion, in older normotensives and well-controlled hypertensives, a higher BP MS is associated with vascular risk independently of clinical and ambulatory BP. Reduction of the MS could thus be a therapeutic target for preventing vascular events also in non-hypertensive patients.

Aminian, S.; Hinckson, E. A. (2012):

Examining the validity of the ActivPAL monitor in measuring posture and ambulatory movement in children.

In: *Int.J.Behav.Nutr.Phys.Act.* 9 (1479-5868 (Linking)), S. 119. DOI: 10.1186/1479-5868-9-119.

Abstract:

BACKGROUND: Decreasing sedentary activities that involve prolonged sitting may be an important strategy to reduce obesity and other physical and psychosocial health problems in children. The first step to understanding the effect of sedentary activities on children's health is to objectively assess these activities with a valid measurement tool. PURPOSE: To examine the validity of the ActivPAL monitor in measuring sitting/lying, standing, and walking time, transition counts and step counts in children in a laboratory setting. METHODS: Twenty five healthy elementary school children (age 9.9 +/- 0.3 years; BMI 18.2 +/- 1.9; mean +/- SD) were randomly recruited across the Auckland region, New Zealand. Children were fitted with ActivPAL monitors and observed during simulated free-living activities involving sitting/lying, standing and walking, followed by treadmill and over-ground activities at various speeds (slow, normal, fast) against video observation (criterion measure). The ActivPAL sit-to-stand and stand-to-sit transition counts and steps were also compared with video data. The accuracy of step counts measured by the ActivPAL was also compared against the New Lifestyles NL-2000 and the Yamax Digi-Walker SW-200 pedometers. RESULTS: We observed a perfect correlation between the ActivPAL monitor in time spent sitting/lying, standing, and walking in simulated free-living activities with direct observation. Correlations between the ActivPAL and video observation in total numbers of sit-to-stand and stand-to-sit transitions were high (r = 0.99 +/- 0.01). Unlike pedometers, the ActivPAL did not misclassify fidgeting as steps taken. Strong correlations (r = 0.88-1.00) between ActivPAL step counts and video observation in both treadmill and over-ground slow and normal walking were also observed. During treadmill and over-ground fast walking and running, the correlations were low (r = 0.21-0.46). CONCLUSION: The ActivPAL monitor is a valid measurement tool for assessing time spent sitting/lying, standing, and walking, sit-to-stand and stand-to-sit transition counts and step counts in slow and normal walking. The device did not measure accurately steps taken during treadmill and over-ground fast walking and running in children

Anan, Futoshi; Takahashi, Naohiko; Shimomura, Tsuyoshi; Imagawa, Muneharu; Yufu, Kunio; Nawata, Tomoko et al. (2006):

Hyperhomocysteinemia is a significant risk factor for silent cerebral infarction in patients with chronic renal failure undergoing hemodialysis.

In: *Metabolism: clinical and experimental* 55 (5), S. 656–661. DOI: 10.1016/j.metabol.2005.12.007.

Abstract:

In patients with chronic renal failure undergoing hemodialysis (HD), the presence of silent cerebral infarction (SCI) is associated with high mortality. Plasma total homocysteine (tHcy), which increases with renal dysfunction, has been flagged as a novel predictor for cerebrovascular events. We tested the hypothesis that the presence of SCI correlates with tHcy in HD patients. Based on brain magnetic resonance imaging findings, 44 patients undergoing HD were divided into a with-SCI group (61+/-9 years [mean+/-SD]; n=24) and a without-SCI group (60+/-8 years, n=20), in whom 24-hour ambulatory blood pressure monitoring was performed. The number of patients with diabetes or hypertension was not different between the 2 groups. We made the following observations: (1) the percentage of smokers was higher in the with-SCI group than in the without-SCI group (P<.05); (2) plasma levels of high-density lipoprotein cholesterol were lower and tHcy was higher in the with-SCI group than in the without-SCI group (P<.05 and P<.0001, respectively); (3) and systolic ambulatory blood pressure and mean heart rate during nighttime were higher in the with-SCI group than in the without-SCI group (P<.05). Multivariate logistic analysis identified hyperhomocysteinemia as an independent and significant risk factor for SCI (odds ratio, 1.22; 95% CI, 1.10-1.36; P<.01). Our findings indicate that plasma tHcy may be a novel useful predictor for SCI in patients with chronic renal failure undergoing HD.

Anastasopoulou, P.; Tansella, M.; Stumpp, J.; Shammas, L.; Hey, S. (2012):

Classification of human physical activity and energy expenditure estimation by accelerometry and barometry.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 6451–6454. DOI: 10.1109/EMBC.2012.6347471.

Abstract:

Regular exercise and physical activity are among the most important factors influencing the quality of life and make a significant contribution to the maintenance of health and well-being. The assessment of physical activity via accelerometry has become a promising technique often used as means to objectively measure physical activity. This work proposes a simple and reliable method to assess human physical activity and calculate the energy expenditure (EE) by using an acceleration and an air pressure sensor. Our proposed algorithm differentiates between 7 activities with an average accuracy of 98.2% and estimates the second by second EE with an average percent error of 1.59 +/- 8.20% using a single measurement unit attached to the subject's hip

Anastasopoulou, Panagiota; Tubic, Mirnes; Schmidt, Steffen; Neumann, Rainer; Woll, Alexander; Hartel, Sascha (2014):

Validation and Comparison of Two Methods to Assess Human Energy Expenditure during Free-Living Activities.

In: *PLoS One* 9 (2), S. e90606. DOI: 10.1371/journal.pone.0090606.

Abstract:

BACKGROUND: The measurement of activity energy expenditure (AEE) via accelerometry is the most commonly used objective method for assessing human daily physical activity and has gained increasing importance in the medical, sports and psychological science research in recent years. OBJECTIVE: The purpose of this study was to determine which of the following procedures is more accurate to determine the energy cost during the most common everyday life activities; a single regression or an activity based approach. For this we used a device that utilizes single regression models (GT3X, ActiGraph Manufacturing Technology Inc., FL., USA) and a device using activity-dependent calculation models (move II, movisens GmbH, Karlsruhe, Germany). MATERIAL AND METHODS: Nineteen adults (11 male, 8 female; 30.4+/-9.0 years) wore the activity monitors attached to the waist and a portable indirect calorimeter (IC) as reference measure for AEE while performing several typical daily activities. The accuracy of the two devices for estimating AEE was assessed as the mean differences between their output and the reference and evaluated using Bland-Altman analysis. RESULTS: The GT3X overestimated the AEE of walking (GT3X minus reference, 1.26 kcal/min), walking fast (1.72 kcal/min), walking up-/downhill (1.45 kcal/min) and walking upstairs (1.92 kcal/min) and underestimated the AEE of jogging (-1.30 kcal/min) and walking upstairs (-2.46 kcal/min). The errors for move II were smaller than those for GT3X for all activities. The move II overestimated AEE of walking (move II minus reference, 0.21 kcal/min), walking up-/downhill (0.06 kcal/min) and stair walking (upstairs: 0.13 kcal/min; downstairs: 0.29 kcal/min) and underestimated AEE of walking fast (-0.11 kcal/min) and jogging (-0.93 kcal/min). CONCLUSIONS: Our data suggest that the activity monitor using activity-dependent calculation models is more appropriate for predicting AEE in daily life than the activity monitor using a single regression model.

Anderson, Rachel J.; Goddard, Lorna; Powell, Jane H. (2011):

Social Problem-Solving and Depressive Symptom Vulnerability: The Importance of Real-Life Problem-Solving Performance.

In: *Cogn Ther Res* 35 (1), S. 48–56. DOI: 10.1007/s10608-009-9286-2.

Abstract:

Previous research suggests poor social problem-solving may function as a vulnerability factor for depressive symptoms. However, the ecological validity of previous findings is questionable, with recent research using real-life performance based approaches to ascertain how solutions are implemented in the 'real world'. The current study employed a longitudinal design to examine the role of real-life problem-solving as a predictor of future depressive symptoms. Participants completed a diary of the interpersonal problems they encountered, and their attempts to solve them. They also completed traditional measures of social problem-solving (SPSI-R and MEPS task). Real-life problem-solving performance predicted depressive symptoms 3 months after the initial testing session, beyond the variance accounted for by traditional measures of social problem-solving. This suggests that the ability to hypothetically problem-solve is distinct from the ability to generate and implement problem-solving strategies in real-life, and that it is the latter which is most important in predicting depressive symptoms.

Anderson, David E.; McNeely, Jessica D.; Chesney, Margaret A.; Windham, Beverly G. (2008):

Breathing variability at rest is positively associated with 24-h blood pressure level.

In: *Am J Hypertens* 21 (12), S. 1324–1329. DOI: 10.1038/ajh.2008.292.

Abstract:

BACKGROUND\r\nPrevious research has reported that inhibition of breathing can be observed in hypertensive patients at rest during the daytime, as well as in sleep at night. The present study hypothesized that the variability of breathing and end-tidal CO(2) (PetCO(2)) in seated women at rest is positively associated with their 24-h blood pressure level.\r\nMETHODS\r\nBreath-to-breath measures of breathing rate and tidal volume were recorded via inductive plethysmography in each of 54 women during two 20-min sessions of seated rest, and in 32 women during night time sleep. PetCO(2) was also recorded during these sessions via a respiratory gas monitor. Ambulatory blood pressure was recorded for 24 h between the two clinic sessions via oscillometry.\r\nRESULTS\r\nBreath pauses >10 s were observed significantly more often in women in the upper than the lower tertile of 24-h systolic blood pressure. Breath-to-breath variability in breathing rate, tidal volume, and minute ventilation were greater in the higher blood pressure tertile women. Variability in PetCO(2) was also greater in high blood pressure tertile. These associations were independent of age, weight, and body surface area (BSA). Breathing variability was inversely correlated with heart rate variability (HRV).\r\nCONCLUSION\r\nGreater variability in breathing at rest that is independent of metabolic activity characterizes women with elevated blood pressure. The linear association of breathing variability with 24-h blood pressure level is consistent with the hypothesis that intermittent breathing inhibition may predispose to the development of some forms of hypertension.

Andreadis, E. A.; Angelopoulos, E. T.; Kolyvas, G. N.; Agaliotis, G. D.; Mousoulis, C. G.; Mousoulis, G. P. (2014):

The effect of aliskiren versus ramipril-based treatment on the Ambulatory Arterial Stiffness Index in hypertensive patients.

In: *Int Angiol* 33 (1), S. 78–83.

Abstract:

AIM: Aim of the present study was to compare the effectiveness of two renin-angiotensin-aldosterone system inhibitors in arterial stiffness reduction in previously untreated hypertensive patients. METHODS: In this open label study, 154 naive, or not treated in the last six months hypertensive patients were randomly assigned to receive aliskiren 300 mg or ramipril 5 mg daily. Six weeks after the initiation of treatment, patients were evaluated for blood pressure (BP) control. Patients with SBP >/=140 and/or DBP >/=90 mmHg were assigned to an adjunct of 25 mg hydrochlorothiazide as combination treatment. A re-evaluation of BP control was done after another 6 weeks. Individuals with BP >/=140/90 mmHg were further administered amlodipine 5 mg. The final evaluation was performed six months after the start of the study. Twenty four-hour ambulatory blood pressure monitoring was carried out and the ambulatory arterial stiffness index (AASI) was calculated at baseline and after 6 months of treatment. RESULTS: Aliskiren-based therapy, as compared with ramipril-based therapy reduced BP to a similar degree: 13+/-11 vs. 12+/-11 mmHg reduction in systolic (P=0.34) and 8+/-7 vs. 7+/-7 mmHg reduction in diastolic BP (P=0.44). AASI was reduced by 0.04+/-0.1 in the aliskiren group and by 0.02+/-0.2 in the ramipril group. AASI reduction did not differ significantly in the two groups (P=0.13). CONCLUSION: In hypertensive patients, aliskiren-based treatment as well as ramipril-based treatment appears to have a beneficial effect on arterial stiffness. As arterial stiffness is an important modifiable risk factor, our findings highlight the value of aliskiren beyond BP lowering properties.

Andrews, N. E.; Strong, J.; Meredith, P. J.; D'Arrigo, R. G. (2013):

Association Between Physical Activity and Sleep in Adults With Chronic Pain: A Momentary, Within-Persons Perspective.

In: *Phys.Ther.* (0031-9023 (Linking)). DOI: 10.2522/ptj.20130302.

Abstract:

BACKGROUND: Individuals with chronic pain consider improved sleep as one of the most important outcomes of treatment. Physical activity has been shown to have beneficial effects on sleep in the general population. Despite this, the physical activity-sleep relationship has not been directly examined in a chronic pain sample. OBJECTIVE: This study aimed to examine the association between objective daytime physical activity and subsequent objective sleep for individuals with chronic pain while controlling for pain and psychosocial variables. DESIGN: An observational prospective within-persons study design was employed. METHODS: A clinical sample of fifty adults with chronic pain was recruited. Participation involved completing a demographic questionnaire followed by five days of data collection. Over this period participants wore a tri-axial accelerometer to monitor their daytime activity and sleep. Participants also carried a Palm Hand Held Computer that administered a

questionnaire measuring pain, mood, catastrophizing, and stress, six times throughout the day. RESULTS: Results demonstrated that higher fluctuations in daytime activity significantly predicted shorter sleep duration. Furthermore, higher mean daytime activity levels and a greater number of pain sites contributed significantly to the prediction of longer periods of wakefulness at night. LIMITATIONS: The small sample size used in this study limits the generalizability of findings. Missing data may have led to over- or under-estimations of effect sizes, and additional factors that may be associated with sleep (such as medication usage and environmental factors) were not measured. CONCLUSIONS: Results of this study suggest engagement in high intensity activity and high fluctuations in activity are associated with poorer sleep at night; hence, activity modulation may be a key treatment strategy to address sleep complaints in individuals with chronic pain

Antoni, Michael H.; Lechner, Suzanne C.; Kazi, Aisha; Wimberly, Sarah R.; Sifre, Tammy; Urcuyo, Kenya R. et al. (2006):

How stress management improves quality of life after treatment for breast cancer.

In: *Journal of Consulting and Clinical Psychology* 74 (6), S. 1143–1152. DOI: 10.1037/0022-006X.74.6.1143.

Abstract:

The range of effects of psychosocial interventions on quality of life among women with breast cancer remains uncertain. Furthermore, it is unclear which components of multimodal interventions account for such effects. To address these issues, the authors tested a 10-week group cognitive-behavioral stress management intervention among 199 women newly treated for nonmetastatic breast cancer, following them for 1 year after recruitment. The intervention reduced reports of social disruption and increased emotional well-being, positive states of mind, benefit finding, positive lifestyle change, and positive affect for up to 12 months (indeed, some effects strengthened over time). With respect to mechanisms tested, the intervention increased confidence in being able to relax at will. There was also evidence that effects of the intervention on the various outcomes examined were mediated by change in confidence about being able to relax. Thus, this intervention had beneficial effects on diverse aspects of quality of life after treatment for breast cancer, which appear linked to a specific stress management skill taught in the intervention. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Antonicelli, Roberto; Mazzanti, Ilaria; Abbatecola, Angela M.; Parati, Gianfranco (2010):

Impact of home patient telemonitoring on use of β-blockers in congestive heart failure.

In: *Drugs & aging* 27 (10), S. 801–805.

Abstract:

Introduction Congestive heart failure (CHF), which typically affects older people, is characterized by high short- and mid-term mortality rates. However, despite accumulating evidence showing that administration of β-blockers (β-adrenoceptor antagonists) can improve the clinical status of CHF patients, use of these agents in adequate dosages in this setting is not routine. One reason for this appears to be a concern about a possible risk of bradyarrhythmia associated with use of β-blockers. Telecardiology has recently been investigated as a means of constantly monitoring the heart rate of CHF patients in their homes. Its use may allay concerns about the risk of bradyarrhythmia and facilitate a more widespread use of β-blockers in this context.

Objectives The primary objectives of this study were to assess the impact of telemonitoring on patients' adherence to prescribed therapeutic regimens, particularly β-blockers, and to explore whether use of home telemonitoring reduces mortality and rate of re-admission to hospital in elderly CHF patients compared with normal specialized CHF team care.

Methods A total of 57 patients with CHF (31 New York Heart Association [NYHA] class II, 23 NYHA class III and 3 NYHA class IV), with a mean ±SD age of 78.2±7.3 years, were randomized to a control group who received standard care, based on routinely scheduled clinic visits, from a team specialized in CHF patient management, or to a home telemonitoring group (TM group), managed by the same specialized CHF team. Patients were followed up over 12 months.

Results Compared with the control group, the TM group had a significant increase in the use of β-blockers, HMG-CoA reductase inhibitors (statins) and aldosterone receptor antagonists. A reduction in nitrate administration compared with baseline was also seen in the TM group. The 12-month occurrence of the primary combined endpoint of mortality and hospital re-admission for CHF was significantly lower in the TM group than in the control group ($p < 0.01$).

Conclusions This study showed that a home-care model including telemonitoring of relevant clinical parameters may provide useful support in the management of patients with CHF. Home telemonitoring in CHF patients was associated with increased use of β-blockers at appropriate doses, suggesting that this strategy reassured physicians regarding the safety of careful use of these agents in this setting. However, larger studies are required to confirm these findings. Our findings indicate that there is a need to investigate relevant parameters in CHF patients at the point of care (i.e. in patients' daily lives), which can in turn optimize β-blocker and other drug therapy.

Antonini, Lanfranco; Mollica, Cristina; Auriti, Antonio; Pristipino, Christian; Pasceri, Vincenzo; Leone, Francesca; Greco, Salvatore (2014):

A prognostic index for risk stratification for acute heart failure and death in subjects with ischemic cardiomyopathy and cardiac defibrillator.

In: *Heart Vessels. DOI:* 10.1007/s00380-014-0494-7.

Abstract:

To propose a clinical prognostic index for death and heart failure in patients with ischemic cardiomyopathy implanted with an ICD. This prospective study included 192 consecutive patients (age 68 +/- 10) recruited from 2004 to 2009 and implanted with an ICD for MADIT II criteria. All patients performed 24-h ambulatory blood pressure monitoring after discharge and common haematological samples. The prognostic index (PI) was built according to the formula: 120 - age + mean 24 h systolic blood pressure - (creatinine x 10). Other variables were assessed: EF, haemoglobin concentration, mean 24 h heart rate and diastolic blood pressure, sodium level, pacing mode and diabetes. Non-arrhythmic cardiac death and new hospitalizations for heart failure during 1-year follow-up were the combined end point. A total of 48 events (25 %) occurred during the follow-up: 7 cardiac deaths and 41 hospitalizations for acute heart failure. Cox proportional-hazards model showed that PI was the only predictor of events (HR = 0.96; CI 95 % 0.944-0.976, p < 0.0001). ROC curve showed that PI best cut-off was 144, with AUC 0.79, p < 0.0001; sensitivity 77 %, specificity 74 %, positive predictive value 50 %, negative predictive value 90 %. PI was predictive of events in a clinical setting where EF had no predictive value. PI works according to the rule "the lower the worse". The high negative predictive value (90 %) of PI allows to identify subjects at lower risk for death and heart failure. PI can be a practical tool to stratify risk in ischemic cardiomyopathy.

Antos, S. A.; Albert, M. V.; Kording, K. P. (2013):

Hand, belt, pocket or bag: Practical activity tracking with mobile phones.

In: *J.Neurosci.Methods* (0165-0270 (Linking)). DOI: 10.1016/j.jneumeth.2013.09.015.

Abstract:

For rehabilitation and diagnoses, an understanding of patient activities and movements is important. Modern smartphones have built in accelerometers which promise to enable quantifying minute-by-minute what patients do (e.g. walk or sit). Such a capability could inform recommendations of physical activities and improve medical diagnostics. However, a major problem is that during everyday life, we carry our phone in different ways, e.g. on our belt, in our pocket, in our hand, or in a bag. The recorded accelerations are not only affected by our activities but also by the phone's location. Here we develop a method to solve this kind of problem, based on the intuition that activities change rarely, and phone locations change even less often. A hidden Markov model (HMM) tracks changes across both activities and locations, enabled by a static support vector machine (SVM) classifier that probabilistically identifies activity-location pairs. We find that this approach improves tracking accuracy on healthy subjects as compared to a static classifier alone. The obtained method can be readily applied to patient populations. Our research enables the use of phones as activity tracking devices, without the need of previous approaches to instruct subjects to always carry the phone in the same location

Antypas, Konstantinos; Wangberg, Silje C. (2014):

An internet- and mobile-based tailored intervention to enhance maintenance of physical activity after cardiac rehabilitation: short-term results of a randomized controlled trial.

In: *J Med Internet Res* 16 (3), S. e77. DOI: 10.2196/jmir.3132.

Abstract:

BACKGROUND: An increase in physical activity for secondary prevention of cardiovascular disease and cardiac rehabilitation has multiple therapeutic benefits, including decreased mortality. Internet- and mobile-based interventions for physical activity have shown promising results in helping users increase or maintain their level of physical activity in general and specifically in secondary prevention of cardiovascular diseases and cardiac rehabilitation. One component related to the efficacy of these interventions is tailoring of the content to the individual. OBJECTIVE: Our trial assessed the effect of a longitudinally tailored Internet- and mobile-based intervention for physical activity as an extension of a face-to-face cardiac rehabilitation stay. We hypothesized that users of the tailored intervention would maintain their physical activity level better than users of the nontailored version. METHODS: The study population included adult participants of a cardiac rehabilitation program in Norway with home Internet access and a mobile phone. The participants were randomized in monthly clusters to a tailored or nontailored (control) intervention group. All participants had access to a website with information regarding cardiac rehabilitation, an online discussion forum, and an online activity calendar. Those using the tailored intervention received tailored

content based on models of health behavior via the website and mobile fully automated text messages. The main outcome was self-reported level of physical activity, which was obtained using an online international physical activity questionnaire at baseline, at discharge, and at 1 month and 3 months after discharge from the cardiac rehabilitation program. RESULTS: Included in the study were 69 participants. One month after discharge, the tailored intervention group (n=10) had a higher median level of overall physical activity (median 2737.5, IQR 4200.2) than the control group (n=14, median 1650.0, IQR 2443.5), but the difference was not significant (Kolmogorov-Smirnov Z=0.823, P=.38, r=.17). At 3 months after discharge, the tailored intervention group (n=7) had a significantly higher median level of overall physical activity (median 5613.0, IQR 2828.0) than the control group (n=12, median 1356.0, IQR 2937.0; Kolmogorov-Smirnov Z=1.397, P=.02, r=.33). The median adherence was 45.0 (95% CI 0.0-169.8) days for the tailored group and 111.0 (95% CI 45.1-176.9) days for the control group; however, the difference was not significant (P=.39). There were no statistically significant differences between the 2 groups in stage of change, self-efficacy, social support, perceived tailoring, anxiety, or depression. CONCLUSIONS: Because of the small sample size and the high attrition rate at the follow-up visits, we cannot make conclusions regarding the efficacy of our approach, but the results indicate that the tailored version of the intervention may have contributed to the long-term higher physical activity maintained after cardiac rehabilitation by participants receiving the tailored intervention compared with those receiving the nontailored intervention. TRIAL REGISTRATION: ClinicalTrials.gov: NCT01223170; http://clinicaltrials.gov/show/NCT01223170 (Archived by WebCite at http://www.webcitation.org/6Nch4ldcL).

Appel, Hoa B.; Huang, Bu; Cole, Allison; James, Rosalina; Ai, Amy L. (2014):

Starting the Conversation - A Childhood Obesity Knowledge Project Using an App.

In: *Br J Med Med Res* 4 (7), S. 1526–1538.

Abstract:

PURPOSE: Starting the Conversation was a pilot project to test an intervention for childhood obesity, a major public health epidemic, using a free smartphone application (app). The primary aim was to assess students' knowledge of nutritional indicators, physical exercise and use of screen time before and after the intervention. METHODS: The study was conducted in 2011-2012. The sample, recruited from seven high schools in Snohomish County, Washington, was 65.3% minority participants. Of the 118 participants in the sample (n=118), 79 handwrote their responses (n=78) and 36 responded via the app (n=39). We compared the frequency and types of physical exercise, frequency of screen time, and nutritional variables of high school students. Participants used the cell phone app or a handwritten log to record their daily entries for 20 days. RESULTS: Both males (n=43) and females (n=75) grades 9-12 used the app or handwritten entries. Participants who used the app ate less fast food and exercised more, as compared with those who recorded their entries by hand. Screen time usage decreased over the course of the study, based on a comparison of the post-survey level and the pre-survey level. Knowledge of recommended daily consumption of vegetables increased post-test in the app group and knowledge of water consumption increased significantly in both groups. There was no significant difference in BMI pre and post-test. CONCLUSIONS: Patterns of nutritional intake, physical exercise and knowledge of these issues varied pre and post-test. It is critical to further examine factors associated with lack of physical activity and food intake patterns of youth using social media to further address the childhood obesity epidemic. Future research should focus on specific ethnic subgroups and an intervention at the school level aimed at the students with BMI >/= 95th percentile.

Arif, Muhammad; Bilal, Mohsin; Kattan, Ahmed; Ahamed, S. Iqbal (2014):

Better physical activity classification using smartphone acceleration sensor.

In: *J Med Syst* 38 (9), S. 95. DOI: 10.1007/s10916-014-0095-0.

Abstract:

Obesity is becoming one of the serious problems for the health of worldwide population. Social interactions on mobile phones and computers via internet through social e-networks are one of the major causes of lack of physical activities. For the health specialist, it is important to track the record of physical activities of the obese or overweight patients to supervise weight loss control. In this study, acceleration sensor present in the smartphone is used to monitor the physical activity of the user. Physical activities including Walking, Jogging, Sitting, Standing, Walking upstairs and Walking downstairs are classified. Time domain features are extracted from the acceleration data recorded by smartphone during different physical activities. Time and space complexity of the whole framework is done by optimal feature subset selection and pruning of instances. Classification results of six physical activities are reported in this paper. Using simple time domain features, 99 % classification accuracy is achieved. Furthermore, attributes subset selection is used to remove the redundant features and to minimize the time complexity of the algorithm. A subset of 30 features produced more than 98 % classification accuracy for the six physical activities.

Arioz, Dagistan Tolga; Saglam, Hayrettin; Demirel, Reha; Koken, Gulengul; Cosar, Emine; Sahin, Figen Kir et al. (2008):

Arterial stiffness and dipper/nondipper blood pressure status in women with preeclampsia.

In: *Adv Ther* 25 (9), S. 925–934.

Abstract:

Introduction

The aim of this study was to investigate the clinical relevance of dipper status in women with preeclampsia by comparing arterial stiffness index (SI) values, and dipper and nondipper status.

Methods

A total of 60 pregnant women in their third trimester were enrolled in the study. SI values were measured using a digital photoplethysmographic method (Pulse Trace System, Micro Medical Ltd., Gillingham, Kent, UK). Twenty-four-hour ambulatory blood pressure was measured by a SpaceLabs 90217 oscillometric device (SpaceLabs Inc., Redmond, WA, USA). Systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), and pulse pressure (PP) were recorded. Those preeclamptic women whose mean nighttime blood pressure measurements were at least 10% lower compared with mean daytime measurements were classified as dipper status, and those with a decrease of less than 10% were classified as nondipper status.

Results

Seventeen women were preeclamptic with a dipper status, 13 women had nondipper status preeclampsia, and 30 women were normotensive. SI values were significantly higher in preeclamptic women compared with normotensive women (8.8±1.2 m/s vs. 5.9±0.8 m/s, P<0.001), but SI values of preeclamptic women with dipper status and preeclamptic women with nondipper status did not differ significantly from each other (P=0.485).

Conclusion

There was no significant difference in SI values between the dipper and nondipper preeclamptic groups. These results indicate that dipper and nondipper measurements may not be suitable for clinical follow-up of preeclamptic women.

Keywords

arterial stiffness dipper photoplethysmography preeclampsia

Armaganijan, Luciana; Staico, Rodolfo; Moraes, Aline; Abizaid, Alexandre; Moreira, Dalmo; Amodeo, Celso et al. (2014):

Renal Denervation Using an Irrigated Catheter in Patients with Resistant Hypertension: A Promising Strategy?

In: *Arq. Bras. Cardiol.* 0, S. 0. DOI: 10.5935/abc.20140034.

Abstract:

Background: Systemic hypertension is an important public health problem and a significant cause of cardiovascular mortality. Its high prevalence and the low rates of blood pressure control have resulted in the search for alternative therapeutic strategies. Percutaneous renal sympathetic denervation emerged as a perspective in the treatment of patients with resistant hypertension. Objective: To evaluate the feasibility and safety of renal denervation using an irrigated catheter. Methods: Ten patients with resistant hypertension underwent the procedure. The primary endpoint was safety, as assessed by periprocedural adverse events, renal function and renal vascular abnormalities at 6 months. The secondary endpoints were changes in blood pressure levels (office and ambulatory monitoring) and in the number of antihypertensive drugs at 6 months. Results: The mean age was 47.3 (+/- 12) years, and 90% of patients were women. In the first case, renal artery dissection occurred as a result of trauma due to the long sheath; no further cases were observed after technical adjustments, thus showing an effect of the learning curve. No cases of thrombosis/renal infarction or death were reported. Elevation of serum creatinine levels was not observed during follow-up. At 6 months, one case of significant renal artery stenosis with no clinical consequences was diagnosed. Renal denervation reduced office blood pressure levels by 14.6/6.6 mmHg, on average (p = 0.4 both for systolic and diastolic blood pressure). Blood pressure levels on ambulatory monitoring decreased by 28/17.6 mmHg (p = 0.02 and p = 0.07 for systolic and diastolic blood pressure, respectively). A mean reduction of 2.1 antihypertensive drugs was observed. Conclusion: Renal denervation is feasible and safe in the treatment of resistant systemic arterial hypertension. Larger studies are required to confirm our findings.

Armeli, Stephen; Dehart, Tracy; Tennen, Howard; Todd, Michael; Affleck, Glenn (2007):

Daily interpersonal stress and the stressor-vulnerability model of alcohol use.

In: *Journal of Social and Clinical Psychology* 26 (8), S. 896–921.

Abstract:

We used an experience sampling design to examine the within–person, within–day associations among interpersonal stress, negative affect, and alcohol use, and how these associations varied as a function of alcohol–outcome expectancies (AOEs), avoidance coping style, sex, and neuroticism. Ninety–eight community adult drinkers who wanted to reduce their alcohol consumption (49 women) reported for 21 days on their interpersonal stress and affect (three times per day), and alcohol use (as it occurred) using hand–held computers. Several individual difference factors interacted with daytime interpersonal stress and afternoon negative affect in predicting nighttime alcohol use, with individuals high in careless unconcern AOEs or low in impairment AOEs demonstrating stronger positive associations between daytime stress and negative affect and nighttime drinking. Daytime drinking and individual difference factors also interacted in predicting nighttime interpersonal stress, with individuals high in careless unconcern AOEs or those low in impairment AOEs or avoidance coping style demonstrating the strongest positive associations between daytime drinking and nighttime stress. The interactive effects in predicting drinking outcomes were generally limited to days on which some interpersonal stress occurred.

Armeli, Stephen; Feinn, Richard; Tennen, Howard; Kranzler, Henry R. (2006):

The effects of naltrexone on alcohol consumption and affect reactivity to daily interpersonal events among heavy drinkers.

In: *Experimental and Clinical Psychopharmacology* 14 (2), S. 199–208. DOI: 10.1037/1064-1297.14.2.199.

Abstract:

The authors examined whether the associations among daily positive and negative interpersonal events, alcohol consumption, and affect varied as a function of naltrexone or placebo administered in a targeted (in anticipation of or in response to high-risk drinking situations) or daily fashion. Heavy drinkers (N = 149) received 4 sessions of brief coping skills counseling in addition to 8 weeks of naltrexone treatment. They recorded for 8 weeks in structured nightly diaries their interpersonal interactions, affect, and alcohol consumption. The authors predicted that participants receiving naltrexone, compared with those taking placebo, would drink less in response to interpersonal encounters and that naltrexone administration would attenuate the link between positive interpersonal events and positive affective states. Results indicated that both positive and negative interpersonal interactions were associated with an increased probability of engaging in any drinking and that positive daily social celebratory events were associated with an increased probability of engaging in heavy drinking. Participants taking naltrexone in a targeted fashion showed the strongest positive association between the number of positive social celebratory events and drinking. Although this finding was inconsistent with the overall reduction in drinking that has been generally reported for those treated with naltrexone, positive social celebratory events occurred on only a minority of days. Participants taking naltrexone, compared with those taking placebo, showed weaker associations between positive social celebratory events and positive and negative affective states. Findings are discussed in terms of naltrexone's dampening effects on the rewarding properties of alcohol use and certain positively valenced stimuli.

Armey, Michael F. (2012):

Ecological momentary assessment and intervention in nonsuicidal self-injury: A novel approach to treatment.

In: *Journal of Cognitive Psychotherapy* 26 (4), S. 299–317. DOI: 10.1037/t04534-000;

Abstract:

This study provides an introduction to ecological momentary assessment (EMA) methods and the potential use of ecological momentary intervention (EMI) for nonsuicidal self-injury (NSSI). The novel use of EMA and EMI are discussed within the context of the emotion regulation function of NSSI, the ability of these approaches to complement established treatments (i.e., cognitive behavior therapy & dialectical behavior therapy), and the specific areas in which an EMI treatment approach can augment traditional treatment. Based on established EMA findings in general and specific applications of EMA to the NSSI, a model EMI for NSSI is proposed (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Armey, Michael F.; Crowther, Janis H.; Miller, Ivan W. (2011):

Changes in Ecological Momentary Assessment reported affect associated with episodes of nonsuicidal self-injury.

In: *Behav Ther* 42 (4), S. 579–588. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-25130-003&site=ehost-live;michaelarmey@gmail.com.

Abstract:

Although emotion regulation deficits have been frequently implicated in the incidence of nonsuicidal self-injurious behavior (NSSI), no research to date has examined in vivo change of affect associated with real-world NSSI behavior. The present study employed Ecological Momentary Assessment (EMA) to assess change in affect associated with episodes of experienced NSSI in a sample of 36 college students with a self-reported history of NSSI. Results indicated that individuals who reported NSSI behavior over the course of the study experienced increases in negative affect prior to an episode of NSSI that peaked during the episode and faded gradually in the hours following the episode, with affect change roughly approximating a quadratic curve. These changes in affect were detected only at times in which individuals engaged in NSSI and were absent for individuals who did not report NSSI over the course of the study. Moreover, changes in negative affect associated with NSSI were, on average, detectable hours prior to the NSSI event. These findings suggest that episodes of NSSI may be predicted through a careful examination of affect change long before actual NSSI behavior occurs. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Arnold, Suzanne V.; Kosiborod, Mikhail; Li, Yan; Jones, Philip G.; Yue, Patrick; Belardinelli, Luiz; Spertus, John A. (2014):

Comparison of the Seattle Angina Questionnaire With Daily Angina Diary in the TERISA Clinical Trial.

In: *Circ Cardiovasc Qual Outcomes. DOI:* 10.1161/CIRCOUTCOMES.113.000752.

Abstract:

BACKGROUND: As new techniques emerge to quantify patients' health status, new opportunities are created to validate patient-reported outcome questionnaires. The Seattle Angina Questionnaire (SAQ), a widely used coronary artery disease-specific health status tool, has not been validated against daily records of angina frequency and sublingual nitroglycerin (SL NTG) use. Additional evidence supporting the validity of the SAQ could justify its broader use as an outcome for clinical studies designed to evaluate treatments that may improve patients' symptoms, function, and quality of life. METHODS AND RESULTS: We used data from 917 patients with type 2 diabetes mellitus, coronary artery disease, and stable angina from the multinational Type 2 Diabetes Evaluation of Ranolazine in Subjects With Chronic Stable Angina (TERISA) trial. The number of angina episodes and SL NTG used were recorded and transmitted daily using an electronic diary. In cross-sectional analyses, there was a strong relationship between the 2 SAQ angina frequency questions (ie, frequency of angina and SL NTG use) and the corresponding diary responses, with correlation coefficients of -0.64 for angina frequency (95% confidence interval,-0.68 to -0.60) and -0.69 for SL NTG use (95% confidence interval, -0.73 to -0.66). Longitudinally, changes in SAQ angina frequency scores from day 1 to week 8 also correlated with changes in angina frequency (-0.42; 95% confidence interval, -0.48 to -0.30) and SL NTG use by diary (-0.38; 95% confidence interval, -0.43 to -0.32) over the corresponding time period. Correlations were similar when stratified by age, sex, or geography. CONCLUSIONS: In a multinational cohort of patients with stable angina, the SAQ angina frequency domain was significantly correlated, both cross sectionally and longitudinally, with daily diary entries of angina frequency and SL NTG use. These data further support the validity of the SAQ angina frequency domain across a broad spectrum of patients with stable angina. CLINICAL TRIAL REGISTRATION: URL: http://www.clinicaltrials.gov. Unique identifier: NCT01425359.

Arnold, Suzanne V.; McGuire, Darren K.; Spertus, John A.; Li, Yan; Yue, Patrick; Ben-Yehuda, Ori et al. (2014):

Effectiveness of ranolazine in patients with type 2 diabetes mellitus and chronic stable angina according to baseline hemoglobin A1c.

In: *Am Heart J* 168 (4), S. 457-465.e2. DOI: 10.1016/j.ahj.2014.06.020.

Abstract:

BACKGROUND: Ranolazine reduces the frequency of angina and use of sublingual nitroglycerin (SL NTG) in stable angina patients with type 2 diabetes (T2DM). Because pre-clinical data suggest that myocardial late sodium current (INaL), the target of ranolazine, is increased by hyperglycemia, we investigated whether the efficacy of ranolazine was influenced by glycemic control. METHODS: TERISA was a multinational, randomized, double-blind trial of ranolazine vs. placebo in patients with T2DM and

stable angina. Anginal episodes and SL NTG use were recorded daily in an electronic diary. Health status was evaluated at baseline and 8weeks post-randomization using the Seattle Angina Questionnaire (SAQ). The interaction between baseline HbA1c and treatment effect was tested across endpoints using analysis of covariance models, with HbA1c as a continuous variable with restricted cubic splines. RESULTS: The study included 913 patients, with mean age 63.6years, 39% women, mean T2DM duration 7.4years, and mean HbA1c of 7.3%. Heterogeneity of efficacy by HbA1c was observed for the primary endpoint of angina frequency (Pinteraction = .027), the key secondary endpoint of SL NTG use (Pinteraction = .030), SAQ angina frequency (Pinteraction = .001), and SAQ treatment satisfaction (Pinteraction = .025) with greater efficacy of ranolazine in those with higher HbA1c values, increasing continuously from HbA1c levels >6.5%. CONCLUSION: Among patients with T2DM and stable angina, the therapeutic benefits of ranolazine were greater in those with higher HbA1c values. These data suggest that ranolazine is particularly beneficial in patients with stable angina who have suboptimally controlled T2DM.

Arora, Vineet (2006):

The Effects of On-Duty Napping on Intern Sleep Time and Fatigue.

In: *Ann Intern Med* 144 (11), S. 792. DOI: 10.7326/0003-4819-144-11-200606060-00005.

Abstract:

Background:

Naps during extended work shifts are effective in reducing fatigue in other industries, but the use of a nap as a countermeasure to prevent fatigue in residents is uncertain.

Objective:

To assess the effects of a call-night nap on resident sleep and fatigue.

Design:

1-year, within-participant, paired trial with crossover at midmonth.

Setting:

Academic teaching hospital. Participants: 38 of 40 internal medicine interns.

Measurements:

Sleep was measured by using wristwatch actigra-phy. By using the experience sampling method on a personal digital assistant, random alerts prompted interns to rate fatigue on the 7-point Stanford Sleepiness Scale (7 is most tired). Hospital paging logs and structured interviews provided information on use of cov- erage.

Intervention:

For 2 weeks of every month, interns were assigned to the nap schedule, which provided coverage to on-duty interns from midnight to 7:00 a.m. so that they could finish their work and take a nap. The other 2 weeks of the month constituted a standard schedule.

Results:

Interns received 41 more minutes of sleep while on call with the nap schedule (185 minutes vs. 144 minutes; P 0.001). When interns with the nap schedule used coverage, they received 68 more minutes of sleep (210 minutes vs. 142 minutes; P0.001). Despite these small increases in sleep, interns reported less overall fatigue while on the nap schedule than while on the stan- dard schedule (1.74 vs. 2.26; P10.017). Postcall fatigue with the nap schedule was lower by nearly 1 point (2.23 vs 3.16; P2 0.036), which is almost equivalent to the difference between on- call and postcall fatigue with the standard schedule (2.06 vs. 3.16). However, use of coverage by interns on the nap schedule was impaired by their desire to care for their patients and concerns about discontinuity of care.

Limitations: This was a single-institution study that did not have the power to examine outcomes related to intern or patient well-being.

Conclusions: Coverage to allow a nap during an extended duty-hour shift can increase sleep and decrease fatigue for residents

Arora, Sanjay (2014):

Text message program improves outcomes, decreases ED utilization among ED patients with poorly controlled diabetes.

In: *ED Manag* 26 (2), S. 20–23.

Abstract:

Diabetic patients who lack access to primary care tend to frequent the ED, often with complications from their disease that could have been prevented with proper management and education. To get around the problem of access, researchers tested an automated program that continuously delivered educational messaging via text to a group of patients who presented to the ED with poorly controlled diabetes. After six months, researchers noted improvements in Hb A1c levels, self-reported medication adherence, and ED utilization when compared with a control group. And the impact was particularly noteworthy among Latinos, according to the researchers. The text messaging program, dubbed TExT-Med, was developed by four physicians and two diabetes educators. The messages were delivered daily, and contained educational as well motivational content derived from the National Diabetes Education Program.There were also medication reminders, healthy living challenges, and trivia questions about diabetes. At six months, Hb A1c levels decreased by 1.05% in the intervention group, compared to 0.60% in the control group, and self-reported medication adherence improved from 4.5 to 5.4 (as measured on an 8 point scale) in the intervention group versus a decrease of 0.1 in the control group. During the six-month study period, 35.9% of patients in the intervention group presented to the ED for care, as compared to 51.6% of patients in the control group.

Arora, Vineet M.; Georgitis, Emily; Siddique, Juned; Vekhter, Ben; Woodruff, James N.; Humphrey, Holly J.; Meltzer, David O. (2008):

Association of workload of on-call medical interns with on-call sleep duration, shift duration, and participation in educational activities.

In: *JAMA* 300 (10), S. 1146–1153.

Abstract:

CONTEXT:

Further restrictions in resident duty hours are being considered, and it is important to understand the association between workload, sleep loss, shift duration, and the educational time of on-call medical interns.

OBJECTIVE:

To assess whether increased on-call intern workload, as measured by the number of new admissions on-call and the number of previously admitted patients remaining on the service, was associated with reductions in on-call sleep, increased total shift duration, and lower likelihood of participation in educational activities.

DESIGN, SETTING, AND PARTICIPANTS:

Prospective cohort study of medical interns at a single US academic medical center from July 1, 2003, through June 24, 2005. Of the 81 interns, 56 participated (69%), for a total of 165 general medicine inpatient months resulting in 1100 call nights.

MAIN OUTCOME MEASURES:

On-call sleep duration, estimated by wrist watch actigraphy; total shift duration, measured from paging logs; and participation in educational activities (didactic lectures or bedside teaching), measured by experience sampling method via a personal digital assistant.

RESULTS:

Mean (SD) sleep duration on-call was 2.8 (1.5) hours and mean (SD) shift duration was 29.9 (1.7) hours. Interns reported spending 11% of their time in educational activities. Early in the academic year (July to October), each new on-call admission was associated with less sleep (-10.5 minutes [95% confidence interval {CI}, -16.8 to -4.2 minutes]; P < .001) and a longer shift duration (13.2 minutes [95% CI, 3.2-23.3 minutes]; P = .01). A higher number of previously admitted patients remaining on the service was associated with a lower odds of participation in educational activities (odds ratio, 0.82 [95% CI, 0.70-0.96]; P = .01]. Call nights during the week and early in the academic year were associated with the most sleep loss and longest shift durations.

CONCLUSION:

In this study population, increased on-call workload was associated with more sleep loss, longer shift duration, and a lower likelihood of participation in educational activities.

Arundell, Lauren; Ridgers, Nicola D.; Veitch, Jenny; Salmon, Jo; Hinkley, Trina; Timperio, Anna (2013):

5-year changes in afterschool physical activity and sedentary behavior.

In: *Am J Prev Med* 44 (6), S. 605–611. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-17361-009%26site%3dehost-live;nicky.ridgers@deakin.edu.au.

Abstract:

Background: The afterschool period holds promise for the promotion of physical activity, yet little is known about the importance of this period as children age. Purpose: To examine changes in physical activity of children aged 5–6 years and 10–12 years and their sedentary time in the afterschool period over 3 and 5 years, and to determine the contribution of this period to daily physical activity and sedentary behavior over time. Methods: Data from two longitudinal studies conducted in Melbourne, Australia, were used. Accelerometer data were provided for 2053 children at baseline (Children Living in Active Neighbourhoods Study [CLAN]: 2001; Health, Eating and Play Study [HEAPS]: 2002/2003); 756 at 3-year follow-up (time point 2 [T2]); and 622 at 5-year follow-up (T3). Light (LPA), moderate (MPA) and vigorous (VPA) physical activity were determined using age-adjusted cut-points. Sedentary time was defined as ≤ 100 counts/minute. Multilevel analyses, conducted in April 2012, assessed change in physical activity and sedentary time and the contributions of the afterschool period to overall levels. Results: Afterschool MPA and VPA decreased among both cohorts, particularly in the younger cohort, who performed less than half of their baseline levels at T3 (MPA: T1 = 24 minutes; T3 = 11 minutes; VPA: T1 = 12 minutes; T3 = 4 minutes). LPA also declined in the older cohort. Afterschool sedentary time increased among the younger (T1 = 42 minutes; T3 = 64 minutes) and older cohorts (T1 = 57 minutes; T3 = 84 minutes). The contribution of the afterschool period to overall MPA and VPA increased in the older cohort from 23% to 33% over 5 years. In the younger cohort, the contribution of the afterschool period to daily MPA and VPA decreased by 3% over 5 years. Conclusions: The importance of the afterschool period for children's physical activity increases with age, particularly as children enter adolescence. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Arvidsson, D.; Eriksson, U.; Lonn, S. L.; Sundquist, K. (2012):

Neighborhood Walkability, Income, and Hour-by-Hour Physical Activity Patterns.

In: *Med.Sci.Sports Exerc.* (0195-9131 (Linking)). DOI: 10.1249/MSS.0b013e31827a1d05.

Abstract:

PURPOSE: To investigate both the mean daily physical activity and the hour by hour physical activity pattern across the day using accelerometry, and how they are associated with neighborhood walkability and individual income. METHODS: Moderate physical activity (MPA) was assessed by accelerometry in 2,252 adults in the City of Stockholm, Sweden. Neighborhood walkability (residential density, street connectivity, land use mix) was objectively assessed within 1,000m network buffers around the participants' residence and individual income was self-reported. RESULTS: Living in a high walkability neighborhood was associated with more mean daily MPA compared with living in a low walkability neighborhood on weekdays and weekend days. Hour by hour analyses showed that this association appeared mainly in the afternoon/early evening during weekdays, while it appeared across the middle of the day during weekend days. Individual income was associated with mean daily MPA on weekend days. On weekdays, the hour by hour analyses showed that high income was associated with more MPA around noon and in late afternoon/early evening, while low income was associated with more MPA at the hours before noon and in the early afternoon. During the weekend, high income was more consistently associated with higher MPA. CONCLUSIONS: Hour by hour accelerometry physical activity patterns provides a more comprehensive picture of the associations between neighborhood walkability and individual income and physical activity and the variability of these associations across the day

Arzbaecher, Robert; Hampton, David R.; Burke, Martin C.; Garrett, Michael C. (2010):

Subcutaneous electrocardiogram monitors and their field of view.

In: *J Electrocardiol* 43 (6), S. 601–605.

Abstract:

Continuous electrocardiogram (ECG) monitoring of cardiac patients on a long-term, even permanent, basis has become possible. Postsurgical cases, those with significant risk factors, or patients with chronic conditions are candidates for these procedures to assess evolving risk factors and detect life-threatening events. A small sensing device can be implanted subcutaneously to assess the ECG, transmitting status and alerts to local caregivers or a remote monitoring service. We and others have shown that a differential electrode pair with only 2- to 3-cm spacing can produce QRS amplitudes greater than 1 mV, sufficient to accurately identify asystole, tachyarrhythmias, and ST-segment changes. Medtronic's REVEAL and St Jude Medical's CONFIRM are implantable look recorders (ILRs) with a single pair of subcutaneous electrodes mounted on the surface of the case (6 × 2 × 0.7 cm). They store representative rhythm strips when the heart rate exceeds preset limits or when the patient presses a button on the accompanying actuator. These records may be transferred for physician review during a subsequent office visit. Transoma's SLEUTH is a similar ILR, except that one of the electrodes is at the end of a 6-cm lead tunneled under the skin and the wider separation may result in a larger ECG amplitude. Instead of storing the records, SLEUTH transmits them through the skin to a home base unit, which sends them via telephone to a monitoring service. Angel Medical's ALERT system also has a tunneled lead, but one that is introduced pervenously into the right ventricle hoping to detect ST changes in addition to rhythm abnormalities. Advanced multivector ILR devices with integrated event alerting are rapidly approaching commercialization. AJ Medical Devices' CARDIOALARM (4 × 4 × 0.6 cm) has 4 electrodes at the corners of the square package, arranged as 2

orthogonal recording pairs that can produce a robust signal that is relatively immune to signal fluctuations caused by changes in the direction of cardiac activation and patient's body position. This permits accurate identification of dramatic changes in the ECG pattern, such as those occurring in ventricular fibrillation and polymorphic tachycardia. Because of this feature, CARDIOALARM can detect cardiac arrest, and its external receiver can alert bystanders to begin cardiopulmonary resuscitation and can automatically summon Emergency Medical Services. In the future, addition of other sensors, integration of data streams via body surface wireless networks, and real-time interpretive algorithms will allow enhanced monitoring systems to more generally assess evolving risks, the impacts of therapeutic interventions, and patient compliance with rehabilitative programs. When coupled to remote medical monitoring services, these devices have the potential to dramatically impact patient outcomes by lessening the diagnostic dependence on symptom recognition and decreasing event response times. Significant cost savings may also be realized through more efficient use of specialist resources, reduction in the number of office visits to physicians, and long-term improvements in patient health. Structural and behavior barriers to adoption need to be addressed for these methods to reach their full potential, addressing patient privacy concerns, adequate reimbursement, and integration into standard care protocols.

Asaka, Yoko; Takada, Satoshi (2011):

Comparing sleep measures of infants derived from parental reports in sleep diaries and acceleration sensors.

In: *Acta Paediatr* 100 (8), S. 1158–1163. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-14007-035&site=ehost-live;asaka@konan-wu.ac.jp.

Abstract:

Aim: Comparing sleep measures of infants derived from two data collection methods, acceleration sensors and sleep diaries, and identify the clinical application for each data collection method. Methods: The participants were 52 pairs of infants and mothers. Infant sleep measures were obtained through the actigraphs (Micro-mini RC, Ambulatory Monitoring Inc., Ardsley, NY, USA) and sleep diaries for over a period of 7 days. Results: The results showed that the concordance in sleep measures derived from two methods showed decreases in the following order: sleep offset time [r = 0.91 (p = 0.00)], sleep onset time r = 0.89 (p = 0.00), nocturnal sleep duration [r = 0.75 (p = 0.00)], the number of night wakings [r = 0.46 (p < 0.01)] and WASO [r = 0.34 (p < 0.05)]. It was revealed that the accuracy of sleep diary records was affected by the sleeping place and varied throughout the study period. Conclusion: It was confirmed that the sleep measures indicating sleep schedule reported from the sleep diaries had high concordances compared with the data from the actigraphs. Using the sleep diary was recommended to understand behaviours when focusing on infant's daily rhythms. In terms of accuracy and stability of recording throughout the study period, understanding sleep quality and independence of sleeping places, the choice of actigraph was recommended. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Asferg, C. L.; Andersen, U. B.; Linneberg, A.; Goetze, J. P.; Jeppesen, J. L. (2014):

Copeptin, a surrogate marker for arginine vasopressin secretion, is associated with higher glucose and insulin concentrations but not higher blood pressure in obese men.

In: *Diabet Med. DOI:* 10.1111/dme.12411.

Abstract:

AIM: To explore the putative associations of plasma copeptin, the C-terminal portion of provasopressin and a surrogate marker for arginine vasopressin secretion, with obesity-related health problems, such as hyperlipidaemia, hyperinsulinaemia, hyperglycaemia, high blood pressure and an android fat distribution. METHODS: In 103 obese men (mean age +/- standard deviation: 49.4 +/- 10.2 years) and 27 normal weight control men (mean age: 51.5 +/- 8.4 years), taking no medication, we measured 24-h ambulatory blood pressure, fasting blood concentrations of copeptin, lipids, glucose and insulin, and determined body composition by dual energy X-ray absorptiometry scanning. RESULTS: The obese men had higher [median (interquartile range)] plasma copeptin concentrations [6.6 (4.6-9.5) vs. 4.9 (3.5-6.8) pmol/l, P = 0.040] compared with the normal weight men. In the obese men, plasma copeptin was not related to 24-h systolic blood pressure (r = 0.11, P = 0.29), 24-h diastolic blood pressure (r = 0.11, P = 0.28), BMI (r = 0.09, P = 0.37), total body fatness percentage (r = 0.10, P = 0.33), android fat mass percentage (r = 0.04, P = 0.66) or serum triglyceride concentrations (r = 0.04; P = 0.68). In contrast, plasma copeptin was associated with higher serum insulin concentrations (r = 0.26, P = 0.0085) and insulin resistance as assessed by the homeostasis assessment model (r = 0.28, P = 0.0051). CONCLUSIONS: Plasma copeptin, a surrogate marker for arginine vasopressin secretion, is higher in obese men compared with normal weight men, and is associated with abnormalities in glucose and insulin metabolism, but not with higher blood pressure or an android fat distribution in obese men.

Asferg, Camilla L.; Andersen, Ulrik B.; Linneberg, Allan; Moller, Daniel V.; Hedley, Paula L.; Christiansen, Michael; Jeppesen, Jorgen L. (2014):

Obese Hypertensive Men Have Plasma Concentrations of C-Reactive Protein Similar to That of Obese Normotensive Men.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpu029.

Abstract:

BACKGROUND: Low-grade chronic inflammation is a characteristic feature of obesity, the most important lifestyle risk factor for hypertension. Elevated plasma concentrations of the inflammatory biomarker C-reactive protein (CRP) are associated with an increased risk of hypertension, but elevated plasma CRP concentrations are also closely associated with obesity. It is uncertain whether CRP is directly involved in the pathogenesis of hypertension or is only a marker of other pathogenic processes closely related to obesity. METHODS: We studied 103 obese men (body mass index (BMI) >/=30.0kg/m2); 63 of these men had 24-hour ambulatory blood pressure (ABP) >/=130/80mm Hg and comprised the obese hypertensive (OHT) group. The 40 remaining obese men had 24-hour ABP <130/80mm Hg and comprised the obese normotensive (ONT) group. Our control group comprised 27 lean normotensive (LNT) men. All participants were medication-free. We measured plasma CRP concentrations with a high-sensitivity assay and determined body composition by dual energy x-ray absorptiometry scanning. RESULTS: There were no differences in anthropometric measures (BMI, waist circumference, or total fat mass percentage) between OHT and ONT groups (P >/= 0.08). The obese groups had higher CRP concentrations than the LNT group (OHT: median = 2.30, interquartile range (IQR) = 1.10-4.10mg/L; ONT: median = 2.55, IQR = 1.25-4.80mg/L; LNT: median = 0.60, IQR = 0.30-1.00mg/L; P < 0.001), but there was no difference in CRP concentrations between OHT and ONT groups (P = 1.00). In the obese men, CRP was not correlated with either 24-hour systolic (r = 0.04; P = 0.71) or 24-hour diastolic ABP (r = -0.03; P = 0.78). CONCLUSIONS: Obese hypertensive men, matched for anthropometric measurements, have plasma CRP concentrations similar to those of obese normotensive men.

Ash, Garrett I.; Walker, Timothy J.; Olson, Kayla M.; Stratton, Jeffrey H.; Gomez, Ana L.; Kraemer, William J. et al. (2013):

Reproducibility of ambulatory blood pressure changes from the initial values on two different days.

In: *Clinics (Sao Paulo)* 68 (12), S. 1509–1515. DOI: 10.6061/clinics/2013(12)06.

Abstract:

OBJECTIVE: We tested the reproducibility of changes in the ambulatory blood pressure (BP) from the initial values, an indicator of BP reactivity and cardiovascular health outcomes, in young, healthy adults. METHOD: The subjects wore an ambulatory BP monitor attached by the same investigator at the same time of day until the next morning on two different days (day 1 and day 2) separated by a week. We compared the ambulatory BP change from the initial values at hourly intervals over 24 waking and sleeping hours on days 1 and 2 using linear regression and repeated measures analysis of covariance. RESULTS: The subjects comprised 88 men and 57 women (mean age+/-SE 22.4+/-0.3 years) with normal BP (118.3+/-0.9/69.7+/-0.6 mmHg). For the total sample, the correlation between the ambulatory BP change on day 1 vs. day 2 over 24, waking, and sleeping hours ranged from 0.37-0.61; among women, the correlation was 0.38-0.71, and among men, it was 0.24-0.52. Among women, the ambulatory systolic/diastolic BP change was greater by 3.1+/-1.0/2.4+/-0.8 mmHg over 24 hours and by 3.0+/-1.1/2.4+/-0.8 mmHg over waking hours on day 1 than on day 2. The diastolic ambulatory BP change during sleeping hours was greater by 2.2+/-0.9 mmHg on day 1 than on day 2, but the systolic ambulatory BP change during sleeping hours on days 1 and 2 did not differ. Among men, the ambulatory BP change on days 1 and 2 did not differ. CONCLUSION: Our primary findings were that the ambulatory BP change from the initial values was moderately reproducible; however, it was more reproducible in men than in women. These results suggest that women, but not men, may experience an alerting reaction to initially wearing the ambulatory BP monitor.

Atienza, Audie A.; King, Abby C.; Oliveira, Brian M.; Ahn, David K.; Gardner, Christopher D. (2008):

Using hand-held computer technologies to improve dietary intake.

In: *Am J Prev Med* 34 (6), S. 514–518.

Abstract:

Background

Portable hand-held information technology offers much promise not only in assessing dietary intake in the real world, but also in providing dietary feedback to individuals. However, stringent research designs have not been employed to examine whether it

can be effective in modifying dietary behaviors. The purpose of this pilot study was to evaluate the efficacy of a hand-held computer (i.e., personal digital assistant [PDA]) for increasing vegetable and whole-grain intake over 8 weeks in mid-life and older adults, using a randomized study design.

Methods

Twenty-seven healthy adults aged ≥50 were randomized and completed the 8-week study. Intervention participants received an instructional session and a PDA programmed to monitor their vegetable and whole-grain intake levels twice per day and to provide daily individualized feedback, goal-setting, and support. Controls received standard, age-appropriate, written nutritional education materials. Dietary intake was assessed via the Block Food Frequency Questionnaire at baseline and 8 weeks.

Results

Relative to controls, intervention participants reported significantly greater increases in vegetable servings (1.5–2.5 servings/day; p=0.02), as well as a trend toward greater intake of dietary fiber from grains (3.7–4.5 servings/day; p=0.10).

Conclusions

This study's findings provide preliminary evidence that using portable hand-held technology to provide daily individualized feedback on dietary behavior in the real world can increase the dietary intake of healthy food groups.

Atkin, A. J.; Gorely, T.; Clemes, S. A.; Yates, T.; Edwardson, C.; Brage, S. et al. (2012):

Methods of Measurement in epidemiology: sedentary Behaviour.

In: *Int.J Epidemiol.* 41 (5), S. 1460–1471. DOI: 10.1093/ije/dys118.

Abstract:

BACKGROUND: Research examining sedentary behaviour as a potentially independent risk factor for chronic disease morbidity and mortality has expanded rapidly in recent years. METHODS: We present a narrative overview of the sedentary behaviour measurement literature. Subjective and objective methods of measuring sedentary behaviour suitable for use in population-based research with children and adults are examined. The validity and reliability of each method is considered, gaps in the literature specific to each method identified and potential future directions discussed. RESULTS: To date, subjective approaches to sedentary behaviour measurement, e.g. questionnaires, have focused predominantly on TV viewing or other screen-based behaviours. Typically, such measures demonstrate moderate reliability but slight to moderate validity. Accelerometry is increasingly being used for sedentary behaviour assessments; this approach overcomes some of the limitations of subjective methods, but detection of specific postures and postural changes by this method is somewhat limited. Instruments developed specifically for the assessment of body posture have demonstrated good reliability and validity in the limited research conducted to date. Miniaturization of monitoring devices, interoperability between measurement and communication technologies and advanced analytical approaches are potential avenues for future developments in this field. CONCLUSIONS: High-quality measurement is essential in all elements of sedentary behaviour epidemiology, from determining associations with health outcomes to the development and evaluation of behaviour change interventions. Sedentary behaviour measurement remains relatively under-developed, although new instruments, both objective and subjective, show considerable promise and warrant further testing

Atkin, Andrew J.; Sharp, Stephen J.; Corder, Kirsten; van Sluijs, Esther M F (2014):

Prevalence and Correlates of Screen time in Youth: An International Perspective.

In: *Am J Prev Med. DOI:* 10.1016/j.amepre.2014.07.043.

Abstract:

BACKGROUND: Screen time (including TV viewing/computer use) may be adversely associated with metabolic and mental health in children. PURPOSE: To describe the prevalence and sociodemographic correlates of screen time in an international sample of children aged 4-17 years. METHODS: Data from the International Children's Accelerometry Database were collected between 1997-2009 and analyzed in 2013. Participants were 11,434 children (48.9% boys; mean [SD] age at first assessment, 11.7 [3.2] years). Exposures were sex, age, weight status, maternal education, and ethnicity. The outcome was self- or proxy-reported screen time <2 or >2 hours/day. Analyses were conducted initially at study level and then combined using random-effects meta-analysis. RESULTS: Within each contributing study, at least two thirds of participants exceeded 2 hours/day of screen time. In meta-analytic models, overweight or obese children were more likely to exceed 2 hours/day of screen time than those who were non-overweight (OR=1.58, 95% CI=1.33,1.88). Girls (vs boys: 0.65; 0.54, 0.78) and participants with more highly educated mothers (vs <university level: 0.53; 0.42, 0.68) were less likely to exceed 2 hours/day of screen time. Associations of age and ethnicity with screen time were inconsistent at study level and non-significant in pooled analyses. CONCLUSIONS: Screen time in excess of public health guidelines was highly prevalent, particularly among boys, those who were overweight or obese, and

those with mothers of lower educational attainment. The population-attributable risk associated with this exposure is potentially high; further efforts to understand the determinants of within- and between-country variation in these behaviors and inform the development of effective behavior change intervention programs is warranted.

Attu, S. D.; Rhebergen, D.; Comijs, H. C.; Parker, G.; Stek, M. L. (2012):

Psychomotor symptoms in depressed elderly patients: assessment of the construct validity of the Dutch CORE by accelerometry.

In: *J.Affect.Disord.* 137 (1-3), S. 146–150. DOI: 10.1016/j.jad.2011.12.035.

Abstract:

BACKGROUND: Psychomotor symptoms are putative distinguishing features of melancholia that may guide treatment decisions. Hence, there is a need for valid instruments to assess psychomotor symptoms. The objective of this study is to examine the construct validity of the CORE, an observational instrument designed to quantify psychomotor symptoms in depression. METHODS: Associations between CORE scores and levels of motor activity measured by accelerometry were examined in a sample of 25 elderly depressed in-patients, for various time intervals, during 24h of follow-up. RESULTS: Total CORE scores (as well as CORE retardation and agitation sub-scale scores) were negatively correlated with activity scores, with depression severity increasing the correlational strength substantively. For total CORE scores and retardation sub-scale scores, the highest associations were quantified across morning intervals. LIMITATIONS: Given the nature of the study mild levels of depression were overrepresented, monitoring of motor activity lasted only 24h and non-motor activity items in the CORE were not measured. CONCLUSION: Associations between CORE total scores and retardation sub-scale scores support the validity of the CORE as well as quantifying associations between severity of psychomotor disturbance and clinical depression severity. Study results also support the application of accelerometry tools in quantifying components of clinical depression

Audrain-McGovern, Janet; Wileyto, E. Paul; Ashare, Rebecca; Cuevas, Jocelyn; Strasser, Andrew A. (2014):

Reward and affective regulation in depression-prone smokers.

In: *Biological Psychiatry* 76 (9), S. 689–697. DOI: 10.1037/t03774-000;

Abstract:

Background: There is a disproportionately high smoking prevalence among individuals who are prone to depression. While depression has been conceptualized as a disorder of dysregulated positive affect and disrupted reward processing, little research has been conducted to determine the role of smoking in these processes among depression-prone smokers. Methods: Depression-prone smokers (DP+; n = 34) and smokers not depression-prone (DP−; n = 49) underwent two laboratory sessions, one while smoking abstinent and one while smoking ad libitum, to assess the relative reinforcing value of smoking and reward sensitivity. Using experience sampling methods, participants completed self-report measures of subjective reward, positive affect, and negative affect across 3 days while smoking as usual and 3 days while smoking abstinent. Results: DP+ were two times more likely to work for cigarette puffs versus money in a progressive ratio, choice task (odds ratio 2.05; 95% confidence interval 1.04 to 4.06, p = .039) compared with DP−. Reward sensitivity as measured by the signal detection task did not yield any significant findings. Mixed models regressions revealed a three-way interaction (depression group, smoking phase, and time) for subjective reward, negative affect, and positive affect. For all three of these outcomes, the slopes for DP− and DP+ differed significantly from each other (ps < .05) and the effect of smoking (versus abstinence) over time was greater for DP+ than DP− smokers (ps < .05). Conclusions: These findings indicate that the effects of smoking on reward and positive affect regulation are specific to DP+ smokers and highlight novel targets for smoking cessation treatment in this population. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Avet, John; Pichot, Vincent; Barthelemy, Jean-Claude; Laurent, Bernard; Garcin, Arnauld; Roche, Frederic; Celle, Sebastien (2014):

Leukoaraiosis and ambulatory blood pressure load in a healthy elderly cohort study: the PROOF study.

In: *Int J Cardiol* 172 (1), S. 59–63. DOI: 10.1016/j.ijcard.2013.11.052.

Abstract:

BACKGROUND: Old age and hypertension are consistently reported to be the main risk factors of leukoaraiosis. The association between white matter lesions (WMLs) and other cardiovascular risk factors (CVRF) remains controversial. We evaluated the

association between CVRF and WMLs in a cohort study and determined the blood pressure variables that could predict WML severity. METHODS: 830 subjects (65+/-1 years of age, 60% women) from the PROOF study, with a reliable ABPM and brain MRI, were included. The exclusion criteria included prior myocardial infarction, stroke, heart failure, atrial fibrillation, type 1 diabetes mellitus, and pacing. White matter changes on MRI were defined as hyperintensities >5mm on FLAIR images. We used the total degree of WML (range: 0-30) by adding the region-specific scores of both hemispheres. RESULTS: Linear regression analyses demonstrated a significant relationship between total leukoaraiosis score and 24h systolic blood pressure (SBP), 24h diastolic BP, daytime SBP and DBP and nighttime SBP. No significant relationship was found between leukoaraiosis score and clinical SBP, clinical DBP, or nocturnal DIP. There was also no significant relationship between leukoaraiosis and other recognized cardiovascular risk factors. Based on a ROC curve analysis, we identified the optimal threshold separating high-risk WML patients for a mean 24h SBP above 123 mmHg (p<0.05). CONCLUSIONS: Even moderate increases in 24h SBP promote arteriolar fragility of the cerebral white matter in a population aged 65. The prognostic implications of such abnormalities in asymptomatic and moderate cardiovascular risk populations remain to be evaluated.

Axelsson, Johan; Reinprecht, Faina; Siennicki-Lantz, Arkadiusz; Elmståhl, Sölve (2008):

Low ambulatory blood pressure is associated with lower cognitive function in healthy elderly men.

In: *Blood Press Monit* 13 (5), S. 269–275. DOI: 10.1097/MBP.0b013e32830d4be6.

Abstract:

INTRODUCTION\r\nLow blood pressure (BP) has been found to be associated with cerebrovascular damage in the elderly. Studies of the relation of ambulatory BP to cognitive function in elderly persons aged 80 years or above is lacking, however.\r\nMETHODS\r\nNinety-seven 81-year-old men from the population study 'Men born in 1914' underwent ambulatory BP monitoring and were given a cognitive test battery, 79 subjects completing all six tests. Low ambulatory systolic blood pressure (SBP) was defined as <130 mmHg and low ambulatory diastolic blood pressure (DBP) as <80 mmHg (corresponding in terms of office BP to approximately <140 and <90 mmHg, respectively). Odds ratios (OR) for lower cognitive function were calculated using a forward stepwise logistic regression model, controlling for confounding factors.\r\nRESULTS\r\nSubjects with ambulatory SBP <130 mmHg had higher OR values for daytime (OR 2.6; P=0.037), nighttime (OR 3.6; P=0.032) and 24h (OR 2.6; P=0.038) BP measurements. A lower cognitive function was associated with lower nighttime SBP and DBP levels and lower 24-h mean SBP compared to subjects with higher cognitive function. OR values connected to low nocturnal SBP, had a tendency to be particularly high among subjects on anti-hypertensive drugs (OR 9.1; P=0.067, n.s.).\r\nCONCLUSION\r\nAmbulatory SBP levels <130 mmHg and lower nighttime SBP and DBP were associated with lower cognitive function in healthy elderly men. Further investigation is needed to ascertain the effects of the presently recommended treatment goal of <140 mmHg for office SBP also on elderly over 80 years of age.

Ayabe, Makoto; Aoki, Junichiro; Kumahara, Hideaki; Tanaka, Hiroaki (2012):

Age-related differences in daily physical activity divided by bout duration: Preliminary findings in female convenience samples.

In: *Journal of Sports Sciences* 30 (7), S. 709–713. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-08444-011&site=ehost-live;ayabemakoto@mac.com.

Abstract:

The purpose of the present investigation was to clarify the relationship between age and bout duration of physical activity (PA) under free-living conditions in female adults. Forty-three females wore an accelerometer (Lifecorder) for seven consecutive days in order to determine the time spent in PA at light intensity (LPA), at moderate intensity (MPA), and at vigorous intensity (VPA). The PA was divided according to the bout duration, such as PA lasting longer than 16 s, 32 s, 60 s, 3 min, >5 min, and >10 min (PA16s, PA32s, PA1m, PA3m, PA5m, PA10m). The time for LPA32s, LPA1m, MPA16s, VPA16s, and the total time for MPA and VPA were significantly associated with age (P < 0.05). There were no significant associations between age and PA lasting >60 s, regardless of intensity category. The results of the present pilot study suggest that the age-associated differences in PA occur mainly in PA lasting 1 min or shorter duration. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Ayabe, M.; Kumahara, H.; Morimura, K.; Tanaka, H. (2013):

Epoch length and the physical activity bout analysis: an accelerometry research issue.

In: *BMC Res Notes* 6 (1756-0500 (Linking)), S. 20. DOI: 10.1186/1756-0500-6-20.

Abstract:

BACKGROUND: The purpose of the present investigation was to compare the bouts of daily physical activity (PA) determined by three different accelerometer epoch lengths under free-living conditions. METHODS: One hundred thirty-four adults (50 +/- 7 years) wore an accelerometer (Lifecorder) for 7 consecutive days under free-living conditions in order to determine the time spent in physical activity of light intensity (LPA), moderate intensity (MPA), vigorous intensity (VPA), moderate to vigorous intensity (MVPA), and the total physical activity (TPA; sum of LPA, MPA and VPA). Additionally, all PA was divided according to the bout durations (sporadic, > 3 min, > 5 min, and > 10 min). These indices of PA were analyzed using three different epoch lengths (4 sec, 20 sec and 60 sec) derived from the accelerometer. RESULTS: The LPA significantly increased in association with increases in the epoch length (48.7 +/- 15.9 to 178.7 +/- 62.6 min/day, $p < 0.05$). The amount of sporadic VPA determined by the shortest epoch length (2.9 +/- 5.2 min/day) was significantly longer than the two remaining epoch lengths (1.1 +/- 2.4 to 0.9 +/- 2.5 min/day, $p < 0.05$). The times of the MVPA bouts lasting longer than 3 minutes determined using the 4-second epoch length (2.6 +/- 5.4 to 7.7 +/- 10.0 min/day) were significantly shorter than those determined using the other two settings (6.5 +/- 10.5 to 13.8 +/- 13.8 min/day, $p < 0.05$). The frequencies of the MVPA bouts lasting longer than 10 minutes determined using the 4-second epoch length (0.2 +/- 0.3 bouts/day) were significantly lower than those determined using the other two settings (0.3 +/- 0.4 bouts/day, $p < 0.05$). CONCLUSION: The epoch length setting of the accelerometer affects the estimation of the PA bouts under free-living conditions in middle-aged to older adults

Ayabe, Makoto; Kumahara, Hideaki; Morimura, Kazuhiro; Tanaka, Hiroaki (2014):

Interruption in physical activity bout analysis: an accelerometry research issue.

In: *BMC Res Notes* 7, S. 284. DOI: 10.1186/1756-0500-7-284.

Abstract:

BACKGROUND: The purpose of the present investigation was to clarify the impact of the treatment of interruptions on the durations and the frequency of the physical activity (PA) bouts under free-living conditions. METHODS: One hundred and forty adults (50 +/- 7 years) wore an accelerometer (Lifecorder) for seven consecutive days under free-living conditions. According to the minutes by minutes metabolic equivalents (METs) value, the PA was divided into one of three intensity categories: light intensity PA (LPA, < 3 METs), moderate intensity PA (MPA, 3 to 6 METs), vigorous intensity PA (VPA, > 6 METs), and the sum of the MPA and VPA was defined as moderate to vigorous intensity PA (MVPA, > 3 METs). Thereafter, based on the time series data, we defined MVPA bouts as PA that was maintained at no less than 3 METs completely for 10 minutes or longer with or without allowing for a one-minute or a two-minute break (<3METs). RESULTS: The frequency and duration of the continuous MVPA bouts lasting longer than 10-min were significantly lower and shorter compared with that in the non-continuous MVPA bouts allowing a one- or two-minute interruption (4.11 +/- 1.65, 6.58 +/- 2.72 and 8.97 +/- 3.55 bouts/day, 71.62 +/- 33.66, 119.03 +/- 49.35 and 169.75 +/- 65.87 min/day, $P < 0.05$). The number of days with a total time of MVPA bouts of 30-min was significantly lower in the continuous MVPA bouts compared with that in the non-continuous MVPA bouts allowing a 1-min or 2-min interruption (5.36 +/- 1.65, 6.39 +/- 1.07 and 6.65 +/- 0.85 days/week). CONCLUSION: The treatment of interruptions for the setting of the accelerometer affects the estimation of the MVPA bouts under free-living conditions in middle-aged to older adults. The best analysis process with regard to the accelerometer quantifying the break to reflect the real behavioral pattern and the physiological stress in such subjects remains unclear.

Ayazi, Shahin; Leers, Jessica M.; Oezcelik, Arzu; Abate, Emmanuele; Peyre, Christian G.; Hagen, Jeffrey A. et al. (2009):

Measurement of gastric pH in ambulatory esophageal pH monitoring.

In: *Surgical endoscopy* 23 (9), S. 1968–1973.

Abstract:

Background

Ambulatory esophageal pH monitoring is the method used most widely to quantify gastroesophageal reflux. The degree of gastroesophageal reflux may potentially be underestimated if the resting gastric pH is high. Normal subjects and symptomatic patients undergoing 24-h pH monitoring were studied to determine whether a relationship exists between resting gastric pH and the degree of esophageal acid exposure.

Methods

Normal volunteers (n = 54) and symptomatic patients without prior gastric surgery and off medication (n = 1,582) were studied. Gastric pH was measured by advancing the pH catheter into the stomach before positioning the electrode in the esophagus. The normal range of gastric pH was defined from the normal subjects, and the patients then were classified as having either normal gastric pH or hypochlorhydria. Esophageal acid exposure was compared between the two groups.

Results

The normal range for gastric pH was 0.3–2.9. The median age of the 1,582 patients was 51 years, and their median gastric pH was 1.7. Abnormal esophageal acid exposure was found in 797 patients (50.3%). Hypochlorhydria (resting gastric pH >2.9) was detected in 176 patients (11%). There was an inverse relationship between gastric pH and esophageal acid exposure (r = −0.13). For the patients with positive 24-h pH test results, the major effect of gastric pH was that the hypochlorhydric patients tended to have more reflux in the supine position than those with normal gastric pH.

Conclusion

There is an inverse, dose-dependent relationship between gastric pH and esophageal acid exposure. Negative 24-h esophageal pH test results for a patient with hypochlorhydria may prompt a search for nonacid reflux as the explanation for the patient's symptoms.

Ayubi, S. U.; Parmanto, B. (2012):

PersonA: Persuasive social network for physical Activity.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 2153–2157. DOI: 10.1109/EMBC.2012.6346387.

Abstract:

Advances in physical activity (PA) monitoring devices provide ample opportunities for innovations in the way the information produced by these devices is used to encourage people to have more active lifestyles. One such innovation is expanding the current use of the information from self-management to social support. We developed a Persuasive social network for physical Activity (PersonA) that combines automatic input of physical activity data, a smartphone, and a social networking system (SNS). This paper describes the motivation for and overarching design of the PersonA and its functional and non-functional features. PersonA is designed to intelligently and automatically receive raw PA data from the sensors in the smartphone, calculate the data into meaningful PA information, store the information on a secure server, and show the information to the users as persuasive and real-time feedbacks or publish the information to the SNS to generate social support. The implementation of self-monitoring, social support, and persuasive concepts using currently available technologies has the potential for promoting healthy lifestyle, greater community participation, and higher quality of life. We also expect that PersonA will enable health professionals to collect in situ data related to physical activity. The platform is currently being used and tested to improve PA level of three groups of users in Pittsburgh, PA, USA

Ayyavoo, A.; Derraik, J. G.; Hofman, P. L.; Mathai, S.; Biggs, J.; Stone, P. et al. (2013):

Pre-pubertal children born post-term have reduced insulin sensitivity and other markers of the metabolic syndrome.

In: *PLoS One* 8 (7), S. e67966. DOI: 10.1371/journal.pone.0067966.

Abstract:

BACKGROUND: There are no data on the metabolic consequences of post-term birth (>/=42 weeks gestation). We hypothesized that post-term birth would adversely affect insulin sensitivity, as well as other metabolic parameters and body composition in childhood. METHODS: 77 healthy pre-pubertal children, born appropriate-for-gestational-age were studied in Auckland, New Zealand: 36 born post-term (18 boys) and 41 (27 boys) born at term (38-40 weeks gestation). Primary outcome was insulin sensitivity measured using intravenous glucose tolerance tests and Bergman's minimal model. Other assessments included fasting hormone concentrations and lipid profiles, body composition from whole-body dual-energy X-ray absorptiometry, 24-hour ambulatory blood pressure monitoring, and inflammatory markers. RESULTS: Insulin sensitivity was 34% lower in post-term than in term children (7.7 vs. 11.6 x10(-)(4).min(-)(1).(mU/l); p<0.0001). There was a compensatory increase in acute insulin response among post-term children (418 vs 304 mU/l; p=0.037), who also displayed lower glucose effectiveness than those born at term (2.25 vs 3.11 x10(-)(2).min(-)(1); p=0.047). Post-term children not only had more body fat (p=0.014) and less fat-free mass (p=0.014), but also had increased central adiposity with more truncal fat (p=0.017) and greater android to gynoid fat ratio (p=0.007) compared to term controls. Further, post-term children displayed other markers of the metabolic syndrome: lower normal nocturnal systolic blood pressure dipping (p=0.027), lower adiponectin concentrations (p=0.005), as well as higher leptin (p=0.008) and uric acid (p=0.033) concentrations. Post-term boys (but not girls) also displayed a less favourable lipid profile, with higher total cholesterol (p=0.018) and LDL-C (p=0.006) concentrations, and total cholesterol to HDL-C ratio (p=0.048). CONCLUSIONS: Post-term children have reduced insulin sensitivity and display a number of early markers of the metabolic

syndrome. These findings could have important implications for the management of prolonged pregnancies. Future studies need to examine potential impacts later in life, as well as possible underlying mechanisms

Ayyavoo, Ahila; Derraik, Jose G. B.; Hofman, Paul L.; Biggs, Janene; Cutfield, Wayne S. (2014):

Metabolic, cardiovascular and anthropometric differences between prepubertal girls and boys.

In: *Clin Endocrinol (Oxf). DOI:* 10.1111/cen.12436.

Abstract:

OBJECTIVE: We aimed to assess possible differences in insulin sensitivity and other metabolic, anthropometric and cardiovascular parameters between boys and girls prior to puberty. METHODS: We studied 85 healthy prepubertal children (33 girls and 52 boys) aged 8.7 +/- 1.9 years (range 4.0-11.9 years), born 38-40 weeks gestation, and of birth weight appropriate-for-gestational-age. Insulin sensitivity was measured using frequently sampled intravenous glucose tests and Bergman's minimal model. Other clinical assessments included anthropometric measures, fasting lipid and hormonal profiles, body composition from whole-body dual-energy X-ray absorptiometry and 24-h ambulatory blood pressure monitoring. RESULTS: Prepubertal girls and boys were of similar parent-adjusted height SDS (P = 0.26), but girls had considerably more body fat (P < 0.0001), less fat-free mass (P = 0.0002) and greater abdominal adiposity (P < 0.0001). These differences in body composition were independent of adrenal androgens. Insulin sensitivity was 18% lower in girls (11.0 vs 13.4 x 10-4 /min (mU/l); P = 0.028), but this difference disappeared with adjustment for adiposity and DHEAS concentrations. There were, however, some apparent sex differences in cardiovascular parameters, with girls displaying increased heart rate and reduced blood pressure dipping. Girls also had higher triglyceride concentrations (+23%; P = 0.036). CONCLUSION: There are a number of anthropometric, metabolic and cardiovascular differences between sexes prior to the appearance of external signs of puberty. Although differences in insulin sensitivity were eliminated when adiposity and DHEAS concentrations were accounted for, there were independent differences in body composition and cardiovascular parameters. Thus, gender, adrenarche and adiposity should be accounted for in studies examining metabolic and cardiovascular outcomes prior to puberty.

Azar, K. M.; Lesser, L. I.; Laing, B. Y.; Stephens, J.; Aurora, M. S.; Burke, L. E.; Palaniappan, L. P. (2013):

Mobile applications for weight management: theory-based content analysis.

In: *Am.J.Prev.Med.* 45 (5), S. 583–589. DOI: 10.1016/j.amepre.2013.07.005.

Abstract:

BACKGROUND: The use of smartphone applications (apps) to assist with weight management is increasingly prevalent, but the quality of these apps is not well characterized. PURPOSE: The goal of the study was to evaluate diet/nutrition and anthropometric tracking apps based on incorporation of features consistent with theories of behavior change. METHODS: A comparative, descriptive assessment was conducted of the top-rated free apps in the Health and Fitness category available in the iTunes App Store. Health and Fitness apps (N=200) were evaluated using predetermined inclusion/exclusion criteria and categorized based on commonality in functionality, features, and developer description. Four researchers then evaluated the two most popular apps in each category using two instruments: one based on traditional behavioral theory (score range: 0-100) and the other on the Fogg Behavioral Model (score range: 0-6). Data collection and analysis occurred in November 2012. RESULTS: Eligible apps (n=23) were divided into five categories: (1) diet tracking; (2) healthy cooking; (3) weight/anthropometric tracking; (4) grocery decision making; and (5) restaurant decision making. The mean behavioral theory score was 8.1 (SD=4.2); the mean persuasive technology score was 1.9 (SD=1.7). The top-rated app on both scales was Lose It! by Fitnow Inc. CONCLUSIONS: All apps received low overall scores for inclusion of behavioral theory-based strategies

Azevedo, Ana Rita Pereira; de Sousa, Hugo Manuel Lopes; Monteiro, Joaquim Antonio Faria; Lima, Aurea Rosa Nunes Pereira (2014):

Future perspectives of Smartphone applications for rheumatic diseases self-management.

In: *Rheumatol Int. DOI:* 10.1007/s00296-014-3117-9.

Abstract:

Rheumatic diseases (RD) self-management interventions are designed to improve health-related quality of life, health care utilization, and perceived self-efficacy. Despite these demonstrated good results, there are several issues that hinder or render less appealing these interventions. One economically and socially viable solution is exploiting the potential of Smartphone technology. This potential comes from Smartphones pervasive presence in actual society, combined with the advantages of being personal, intuitive, and computationally powerful, with capability to support applications and assist its user throughout different activities of daily living and environments persistently. With their global acceptance increasing quickly, there is a great opportunity for mobile health in using Smartphone applications for RD self-management. Besides the potential of such applications, research on the development and evaluation of such applications is in the early stages. Therefore, it is important to foresee its future applicability in order to meet the needs of the twenty-first century.

Aziz, Omer; Lo, Benny; Pansiot, Julien; Atallah, Louis; Yang, Guang-Zhong; Darzi, Ara (2008):

From computers to ubiquitous computing by 2010: health care.

In: *Philosophical Transactions of the Royal Society of London A: Mathematical, Physical and Engineering Sciences* 366 (1881), S. 3805–3811.

Abstract:

Over the past decade, miniaturization and cost reduction in semiconductors have led to computers smaller in size than a pinhead with powerful processing abilities that are affordable enough to be disposable. Similar advances in wireless communication, sensor design and energy storage have meant that the concept of a truly pervasive 'wireless sensor network', used to monitor environments and objects within them, has become a reality. The need for a wireless sensor network designed specifically for human body monitoring has led to the development of wireless 'body sensor network' (BSN) platforms composed of tiny integrated microsensors with on-board processing and wireless data transfer capability. The ubiquitous computing abilities of BSNs offer the prospect of continuous monitoring of human health in any environment, be it home, hospital, outdoors or the workplace. This pervasive technology comes at a time when Western world health care costs have sharply risen, reflected by increasing expenditure on health care as a proportion of gross domestic product over the last 20 years. Drivers of this rise include an ageing post 'baby boom' population, higher incidence of chronic disease and the need for earlier diagnosis. This paper outlines the role of pervasive health care technologies in providing more efficient health care.

Badr, Hoda; Basen-Engquist, Karen; Taylor, Cindy L. Carmack; Moor, Carl (2006):

Mood states associated with transitory physical symptoms among breast and ovarian cancer survivors.

In: *Journal of Behavioral Medicine* 29 (5), S. 461–475.

Abstract:

This study used electronic diaries to examine patterns of mood and physical symptoms within and across days in two independent samples of cancer patients. Twenty-three breast cancer survivors (post-treatment) and 33 ovarian cancer survivors (on chemotherapy) recorded mood and physical symptoms 4 times daily for 7 consecutive days. A series of repeated-measures multilevel models using SAS Proc Mixed were calculated to estimate the degree to which physical symptoms (e.g., pain, fatigue, and nausea) were associated with participants' moods. Across days, mood vectors with a pleasantness component (i.e., happy-sad and calm-anxious) and mood vectors with an arousal component (i.e., active-passive and peppy-tired) were significantly associated with physical symptom severity. Specifically, breast cancer survivors with greater fatigue and pain reported more negative moods ($\eta^2 \leq 0.33$). Ovarian cancer survivors with greater fatigue ($\eta^2 \leq 0.35$), pain ($\eta^2 \leq 0.04$), and nausea ($\eta^2 \leq 0.04$) also reported more negative moods. Diurnal analyses showed that happy-sad ($\eta^2 \leq 0.16$), active-passive ($\eta^2 \leq 0.27$), and peppy-tired moods ($\eta^2 \leq 0.33$) were significantly negatively associated with fatigue at each of the four daily assessment times in both samples. Although correlational, our findings are consistent with previous studies suggesting that variations in both pleasant and aroused mood covary with changes in real-time physical symptom reports.

Badr, H.; Pasipanodya, E. C.; Laurenceau, J. P. (2012):

An Electronic Diary Study of the Effects of Patient Avoidance and Partner Social Constraints on Patient Momentary Affect in Metastatic Breast Cancer.

In: *Ann.Behav.Med.* (0883-6612 (Linking)). DOI: 10.1007/s12160-012-9436-8.

Abstract:

BACKGROUND: Metastatic breast cancer patients experience significance distress. Although talking with close others about cancer-related concerns may help to alleviate distress, patients often avoid such discussions, and their partners can engage in social constraints that may limit subsequent patient disclosures and exacerbate distress. PURPOSE: We examined how partner constraints unfold, how they influence patient affect, and whether they exacerbate patient avoidance of cancer-related disclosures. METHODS: Fifty-four patients and 48 of their partners completed electronic diary assessments for 14 days. RESULTS: Partners' social constraints carried over from one day to the next, but patients' avoidance of discussing cancer-related concerns did not. When partners engaged in more social constraints one day, patients reported greater negative affect the following day ($p < 0.05$). CONCLUSION: Findings suggest a temporal link between partner constraints and patient momentary affect. Helping partners to become aware of their constraining behaviors and teaching them skills to overcome this may facilitate patient adjustment to metastatic breast cancer

Badr, Hoda; Pasipanodya, Elizabeth C.; Laurenceau, Jean Philippe (2013):

An electronic diary study of the effects of patient avoidance and partner social constraints on patient momentary affect in metastatic breast cancer.

In: *Annals of Behavioral Medicine* 45 (2), S. 192–202. DOI: 10.1037/t06319-000;

Abstract:

Background: Metastatic breast cancer patients experience significance distress. Although talking with close others about cancer-related concerns may help to alleviate distress, patients often avoid such discussions, and their partners can engage in social constraints that may limit subsequent patient disclosures and exacerbate distress. Purpose: We examined how partner constraints unfold, how they influence patient affect, and whether they exacerbate patient avoidance of cancer-related disclosures. Methods: Fifty-four patients and 48 of their partners completed electronic diary assessments for 14 days. Results: Partners' social constraints carried over from one day to the next, but patients' avoidance of discussing cancer-related concerns did not. When partners engaged in more social constraints one day, patients reported greater negative affect the following day ($p < 0.05$). Conclusion: Findings suggest a temporal link between partner constraints and patient momentary affect. Helping partners to become aware of their constraining behaviors and teaching them skills to overcome this may facilitate patient adjustment to metastatic breast cancer. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Baek, Dongyoub; Cho, Sungmin; Yun, Kyungwon; Youn, Keehong; Bang, Hyunwoo (2014):

Time-lapse microscopy using smartphone with augmented reality markers.

In: *Microsc Res Tech* 77 (4), S. 243–249. DOI: 10.1002/jemt.22335.

Abstract:

A prototype system that replaces the conventional time-lapse imaging in microscopic inspection for use with smartphones is presented. Existing time-lapse imaging requires a video data feed between a microscope and a computer that varies depending on the type of image grabber. Even with proper hardware setups, a series of tedious and repetitive tasks is still required to relocate to the region-of-interest (ROI) of the specimens. In order to simplify the system and improve the efficiency of time-lapse imaging tasks, a smartphone-based platform utilizing microscopic augmented reality (mu-AR) markers is proposed. To evaluate the feasibility and efficiency of the proposed system, a user test was designed and performed, measuring the elapse time for a trial of the task starting from the execution of the application software to the completion of restoring and imaging of an ROI saved in advance. The results of the user test showed that the average elapse time was 65.3 +/- 15.2 s with 6.86 +/- 3.61 mum of position error and 0.08 +/- 0.40 degrees of angle error. This indicates that the time-lapse imaging task was accomplished rapidly with a high level of accuracy. Thus, simplification of both the system and the task was achieved via our proposed system. Microsc. Res. Tech. 77:243-249, 2014. (c) 2014 Wiley Periodicals, Inc.

Baerg, Sally; Cairney, John; Hay, John; Rempel, Lynn; Mahlberg, Nadilein; Faught, Brent E. (2011):

Evaluating physical activity using accelerometry in children at risk of developmental coordination disorder in the presence of attention deficit hyperactivity disorder.

In: *Res Dev Disabil* 32 (4), S. 1343–1350. DOI: 10.1016/j.ridd.2011.02.009.

Abstract:

Physical activity (PA) is compromised in children and adolescents with developmental coordination disorder (DCD). Approximately half of all children with DCD suffer from attention-deficit hyperactive disorder (ADHD); a cohort often considered more physically active than typically developing youth. Accelerometry is an effective method of assessing physical activity patterns; although estimates of PA in children with DCD using this quantifiable method have not been attempted. We hypothesize that children with co-morbid DCD/ADHD will be more physically active than children with DCD and healthy peers. Therefore, the purpose of this study was to contrast physical activity (step count and activity energy expenditure using accelerometry [AEE]) between children with DCD, co-morbid DCD and ADHD (DCD/ADHD), and healthy controls. A sample of 110 children with DCD (N=32), DCD/ADHD (N=30) and controls (N=48) age 12-13 years agreed to participate. Co-morbid DCD/ADHD was present in nearly half of the children with DCD (48.4%). Analysis of covariance demonstrated a positive interaction for females step count ($F[1,92]=4.92$, $p=0.009$). A significant group difference for step count ($F[1,92]=4.43$, $p=.04$) was identified in females. Post hoc comparison tests identified significantly lower step count between males with DCD and controls ($p=.004$) and males with DCD/ADHD and controls ($p=0.003$). Conversely, females with DCD/ADHD had significantly more step counts than their controls ($p=.01$). Hyperactivity in females with DCD/ADHD appears to contribute to more physical activity, whereas DCD may contribute to decreased activity in males with DCD and DCD/ADHD. Hyperactivity expressed among girls with DCD/ADHD appears to override the hypoactive behavior associated with females with DCD. Conversely, the expression of hyperactivity among boys with DCD/ADHD does not translate as hypothesized. The contrasting expression of physical activity (i.e., step count and AEE) evaluated using accelerometry in boys and girls with DCD, co-morbid DCD/ADHD and healthy peers are intriguing and constitute further investigation in a larger investigation.

Baggett, Chris D.; Stevens, June; McMurray, Robert G.; Evenson, Kelly R.; Murray, David M.; Catellier, Diane J.; He, Ka (2008):

Tracking of physical activity and inactivity in middle school girls.

In: *Med Sci Sports Exerc* 40 (11), S. 1916.

Abstract:

PURPOSE:

The purpose of this study was to describe and compare the levels of tracking of physical activity and inactivity as assessed by self-report and accelerometry in middle school girls during a 2-yr period.

METHODS:

Participants (n = 951) were from the Trial of Activity for Adolescent Girls (TAAG). The TAAG intervention had minimal effect on physical activity; therefore, both intervention and control participants were included. Inactivity and physical activity were measured by accelerometry (MTI ActiGraph) and self-report (3-d physical activity recall).

RESULTS:

Weighted kappa statistics ranged from 0.14 to 0.17 across inactivity, moderate-to-vigorous physical activity (MVPA), and vigorous physical activity (VPA) for self-report, from 0.13 to 0.20 for 3-d accelerometry, and from 0.22 to 0.29 for a 6-d accelerometry. Intraclass correlations ranged from 0.17 to 0.22 for self-report, 0.06 to 0.23 for 3-d accelerometry, and 0.16 to 0.33 for a 6-d accelerometry. In general, the estimates from the 6-d accelerometry tended to be higher than those from self-report, whereas few differences were observed between 3-d accelerometry and self-report. Odds ratios (OR) for being in the highest quintile at eighth grade for those in the highest quintile at sixth grade compared with those in any other quintile at sixth grade were 3.26 (95% confidence interval = 2.28-4.67), 3.64 (2.55-5.20), and 3.45 (2.42-4.93) for the 6-d accelerometry-measured inactivity, MVPA, and VPA. Corresponding OR from self-report were 2.44 (1.66-3.58) for inactivity, 2.63 (1.83-3.79) for MVPA, and 2.23 (1.54-3.23) for VPA.

CONCLUSION:

Tracking of inactivity and physical activity in middle school girls was fair to moderate. Our results suggest that physical activity and inactivity habits are dynamic for most girls during early adolescence. Population-based efforts should be made in this age group to promote physical activity and offer alternatives to inactivity for all girls.

Baggett, Chris D.; Stevens, June; Catellier, Diane J.; Evenson, Kelly R.; McMurray, Robert G.; He, Ka; Treuth, Margarita S. (2010):

Compensation or displacement of physical activity in middle-school girls: the Trial of Activity for Adolescent Girls.

In: *International Journal of Obesity* 34 (7), S. 1193–1199.

Abstract:

OBJECTIVE:

The 'activitystat' hypothesis suggests that increases in moderate-to-vigorous physical activity (MVPA) are accompanied by a compensatory reduction in light physical activity (LPA) and/or an increase in inactivity to maintain a consistent total physical activity level (TPA). The purpose of this study was to identify the evidence of compensation in middle-school girls.

SUBJECTS:

Participants were 6916, 8th grade girls from the Trial of Activity for Adolescent Girls (TAAG).

DESIGN:

Inactivity and physical activity were measured over 6- consecutive days using accelerometry (MTI Actigraph). A within-girl, repeated measures design was used to assess associations between physical activity and inactivity using general linear mixed models.

RESULTS:

Within a given day, for every one MET-minute more of inactivity, there was 3.18 MET-minutes (95% confidence interval (CI): -3.19, -3.17) less of TPA (activity >2 METS) on the same day. Daily inactivity was also negatively associated with TPA on the following day. Each additional minute of MVPA was associated with 1.85 min less of inactivity on the same day (95% CI: -1.89, -1.82). Daily MVPA was also negatively associated with inactivity the following day.

CONCLUSION:

Our results, based on 6 days of observational data, were not consistent with the 'activitystat' hypothesis, and instead indicated that physical activity displaced inactivity, at least in the short term. Longer intervention trials are needed, nevertheless our findings support the use of interventions to increase physical activity over discrete periods of time in middle-school girls.

Baguet, Jean Philippe; Minville, Caroline; Tamisier, Renaud; Roche, Frederic; Barone-Rochette, Gilles; Ormezzano, Olivier et al. (2011):

Increased aortic root size is associated with nocturnal hypoxia and diastolic blood pressure in obstructive sleep apnea.

In: *Sleep: Journal of Sleep and Sleep Disorders Research* 34 (11), S. 1605–1607. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-13702-021&site=ehost-live;JPBaguet@chu-grenoble.fr.

Abstract:

Study Objectives: Obstructive sleep apnea (OSA) is known as a major cardiovascular risk factor, and high prevalence of OSA has been reported in patients with thoracic aortic dissection. The aim of our study was to assess the relationship between OSA, its vascular consequences, and aortic root size. Design/Patients: 156 newly diagnosed apneic patients free of cardiovascular disease and medication were included. Patients underwent cardiac ultrasound for measuring aortic root diameter, polysomnography, office and 24-h ambulatory blood pressure (BP) measurements, baroreflex sensitivity (BRS), and arterial stiffness evaluation by carotid-to-femoral pulse wave velocity (PWV). Measurements and Results: In univariate analysis, greater aortic root size was associated with older age (P = 0.03) and severity of OSA as expressed by mean nocturnal oxygen saturation (SpO_2) (P = 0.015). Moreover, greater aortic root size was associated with higher diastolic BP, measured both clinically (P = 0.0005) or by 24-h ambulatory BP monitoring (P = 0.02), and PWV (P = 0.03). Mean nocturnal SpO_2 was correlated with BRS (P = 0.0008), thus potentially influencing BP values and arterial stiffness. In multivariate stepwise regression analysis, diastolic BP was the only significant factor for aortic root size (P = 0.0003). Conclusions: In OSA patients, nocturnal hypoxemia decreased BRS and increased diastolic BP, which was the main factor influencing aortic root size. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Bai, J.; He, B.; Shou, H.; Zipunnikov, V.; Glass, T. A.; Crainiceanu, C. M. (2013):

Normalization and extraction of interpretable metrics from raw accelerometry data.

In: *Biostatistics* (1465-4644 (Linking)). DOI: 10.1093/biostatistics/kxt029.

Abstract:

We introduce an explicit set of metrics for human activity based on high-density acceleration recordings from a hip-worn tri-axial accelerometer. These metrics are based on two concepts: (i) Time Active, a measure of the length of time when activity is distinguishable from rest and (ii) AI, a measure of the relative amplitude of activity relative to rest. All measurements are

normalized (have the same interpretation across subjects and days), easy to explain and implement, and reproducible across platforms and software implementations. Metrics were validated by visual inspection of results and quantitative in-lab replication studies, and by an association study with health outcomes

Baig, Mirza Mansoor; Gholamhosseini, Hamid; Connolly, Martin J. (2014):

Mobile healthcare applications: system design review, critical issues and challenges.

In: *Australas Phys Eng Sci Med. DOI:* 10.1007/s13246-014-0315-4.

Abstract:

Mobile phones are becoming increasingly important in monitoring and delivery of healthcare interventions. They are often considered as pocket computers, due to their advanced computing features, enhanced preferences and diverse capabilities. Their sophisticated sensors and complex software applications make the mobile healthcare (m-health) based applications more feasible and innovative. In a number of scenarios user-friendliness, convenience and effectiveness of these systems have been acknowledged by both patients as well as healthcare providers. M-health technology employs advanced concepts and techniques from multidisciplinary fields of electrical engineering, computer science, biomedical engineering and medicine which benefit the innovations of these fields towards healthcare systems. This paper deals with two important aspects of current mobile phone based sensor applications in healthcare. Firstly, critical review of advanced applications such as; vital sign monitoring, blood glucose monitoring and in-built camera based smartphone sensor applications. Secondly, investigating challenges and critical issues related to the use of smartphones in healthcare including; reliability, efficiency, mobile phone platform variability, cost effectiveness, energy usage, user interface, quality of medical data, and security and privacy. It was found that the mobile based applications have been widely developed in recent years with fast growing deployment by healthcare professionals and patients. However, despite the advantages of smartphones in patient monitoring, education, and management there are some critical issues and challenges related to security and privacy of data, acceptability, reliability and cost that need to be addressed.

Bailes, Freya (2007):

The prevalence and nature of imagined music in the everyday lives of music students.

In: *Psychology of Music*.

Abstract:

The study of spontaneous and everyday cognitions is an area of rapidly growing interest. One of the most ubiquitous forms of spontaneous cognition is involuntary musical imagery (INMI), the involuntarily retrieved and repetitive mental replay of music. The present study introduced a novel method for capturing temporal features of INMI within a naturalistic setting. This method allowed for the investigation of two questions of interest to INMI researchers in a more objective way than previously possible, concerning (1) the precision of memory representations within INMI and (2) the interactions between INMI and concurrent affective state. Over the course of 4 days, INMI tempo was measured by asking participants to tap to the beat of their INMI with a wrist-worn accelerometer. Participants documented additional details regarding their INMI in a diary. Overall, the tempo of music within INMI was recalled from long-term memory in a highly veridical form, although with a regression to the mean for recalled tempo that parallels previous findings on voluntary musical imagery. A significant positive relationship was found between INMI tempo and subjective arousal, suggesting that INMI interacts with concurrent mood in a similar manner to perceived music. The results suggest several parallels between INMI and voluntary imagery, music perceptual processes, and other types of involuntary memories.

Bailey, D. P.; Fairclough, S. J.; Savory, L. A.; Denton, S. J.; Pang, D.; Deane, C. S.; Kerr, C. J. (2012):

Accelerometry-assessed sedentary behaviour and physical activity levels during the segmented school day in 10-14-year-old children: the HAPPY study.

In: *Eur.J Pediatr.* (0340-6199 (Linking)). DOI: 10.1007/s00431-012-1827-0.

Abstract:

The school day offers several different time periods that provide varying opportunities for sedentary time (SED) and engagement in physical activity (PA), yet little is known about the PA and sedentary behaviour patterns of boys and girls during these times. The volume, intensity and temporal distributions of SED and PA undertaken by 135 schoolchildren aged 10-14 years, during different segments of the school day: (a) school transport, (b) morning recess, (c) lunch break, (d) class time and (e) after school,

were explored using triaxial accelerometry. PA was categorised into SED, light PA (LPA), moderate PA (MPA) and vigorous PA (VPA). Girls engaged in significantly more SED and LPA than boys during recess and lunch break ($p < 0.05$), while boys engaged in significantly higher levels of VPA during recess ($p < 0.001$) and MPA and VPA during lunch break ($p < 0.001$). PA engagement was similar between sexes during other segments of the day. Conclusion: PA patterns appear more beneficial for health in boys during less structured school-based time periods and interventions may therefore target opportunities for girls to be physically active during these times to overcome this observed sex deficit

Bailey, Ryan R.; Klaesner, Joseph W.; Lang, Catherine E. (2014):

An accelerometry-based methodology for assessment of real-world bilateral upper extremity activity.

In: *PLoS One* 9 (7), S. e103135. DOI: 10.1371/journal.pone.0103135.

Abstract:

BACKGROUND: The use of both upper extremities (UE) is necessary for the completion of many everyday tasks. Few clinical assessments measure the abilities of the UEs to work together; rather, they assess unilateral function and compare it between affected and unaffected UEs. Furthermore, clinical assessments are unable to measure function that occurs in the real-world, outside the clinic. This study examines the validity of an innovative approach to assess real-world bilateral UE activity using accelerometry. METHODS: Seventy-four neurologically intact adults completed ten tasks (donning/doffing shoes, grooming, stacking boxes, cutting playdough, folding towels, writing, unilateral sorting, bilateral sorting, unilateral typing, and bilateral typing) while wearing accelerometers on both wrists. Two variables, the Bilateral Magnitude and Magnitude Ratio, were derived from accelerometry data to distinguish between high- and low-intensity tasks, and between bilateral and unilateral tasks. Estimated energy expenditure and time spent in simultaneous UE activity for each task were also calculated. RESULTS: The Bilateral Magnitude distinguished between high- and low-intensity tasks, and the Magnitude Ratio distinguished between unilateral and bilateral UE tasks. The Bilateral Magnitude was strongly correlated with estimated energy expenditure ($rho = 0.74$, $p<0.02$), and the Magnitude Ratio was strongly correlated with time spent in simultaneous UE activity ($rho = 0.93$, $p<0.01$) across tasks. CONCLUSIONS: These results demonstrate face validity and construct validity of this methodology to quantify bilateral UE activity during the performance of everyday tasks performed in a laboratory setting, and can now be used to assess bilateral UE activity in real-world environments.

Bailey, Ryan R.; Lang, Catherine E. (2013):

Upper-limb activity in adults: referent values using accelerometry.

In: *J Rehabil Res Dev* 50 (9), S. 1213–1222. DOI: 10.1682/JRRD.2012.12.0222.

Abstract:

The goal of physical rehabilitation following upper-limb (UL) impairment is functional restoration of the UL for use in daily activities. Because capacity for UL function may not translate into real-world activity, it is important that assessment of real-world UL activity be used in conjunction with clinical measures of capacity. Accelerometry can be used to quantify duration of UL activity outside of the clinic. The purpose of this study was to characterize hours of UL activity and potential modifying factors of UL activity (sedentary activity, cognitive impairment, depressive symptomatology, additive effects of comorbidities, cohabitation status, and age). Seventy-four community-dwelling adults wore accelerometers on bilateral wrists for 25 h and provided information on modifying factors. Mean time of dominant UL activity was 9.1 +/- 1.9 h, and the ratio of activity between the nondominant and dominant ULs was 0.95 +/- 0.06 h. Decreased hours of dominant UL activity was associated with increased time spent in sedentary activity. No other factors were associated with hours of dominant UL activity. These data can be used to help clinicians establish outcome goals for patients given preimpairment level of sedentary activity and to track progress during rehabilitation of the ULs.

Baird, B.; Smallwood, J.; Fishman, D. J.; Mrazek, M. D.; Schooler, J. W. (2013):

Unnoticed intrusions: Dissociations of meta-consciousness in thought suppression.

In: *Conscious.Cogn* 22 (3), S. 1003–1012. DOI: 10.1016/j.concog.2013.06.009.

Abstract:

The current research investigates the interaction between thought suppression and individuals' explicit awareness of their thoughts. Participants in three experiments attempted to suppress thoughts of a prior romantic relationship and their success at

doing so was measured using a combination of self-catching and experience-sampling. In addition to thoughts that individuals spontaneously noticed, individuals were frequently caught engaging in thoughts of their previous partner at experience-sampling probes. Furthermore, probe-caught thoughts were: (i) associated with stronger decoupling of attention from the environment, (ii) more likely to occur under cognitive load, (iii) more frequent for individuals with a desire to reconcile, and (iv) associated with individual differences in the tendency to suppress thoughts. Together, these data suggest that individuals can lack meta-awareness that they have begun to think about a topic they are attempting to suppress, providing novel insight into the cognitive processes that are involved in attempting to control undesired mental states

Baird, Benjamin; Smallwood, Jonathan; Lutz, Antoine; Schooler, Jonathan W. (2014):

The Decoupled Mind: Mind-wandering Disrupts Cortical Phase-locking to Perceptual Events.

In: *J Cogn Neurosci. DOI:* 10.1162/jocn_a_00656.

Abstract:

The mind flows in a "stream of consciousness," which often neglects immediate sensory input in favor of focusing on intrinsic, self-generated thoughts or images. Although considerable research has documented the disruptive influences of task-unrelated thought for perceptual processing and task performance, the brain dynamics associated with these phenomena are not well understood. Here we investigate the possibility, suggested by several convergent lines of research, that task-unrelated thought is associated with a reduction in the trial-to-trial phase consistency of the oscillatory neural signal in response to perceptual input. Using an experience sampling paradigm coupled with continuous high-density electroencephalography, we observed that task-unrelated thought was associated with a reduction of the P1 ERP, replicating prior observations that mind-wandering is accompanied by a reduction of the brain-evoked response to sensory input. Time-frequency analysis of the oscillatory neural response revealed a decrease in theta-band cortical phase-locking, which peaked over parietal scalp regions. Furthermore, we observed that task-unrelated thought impacted the oscillatory mode of the brain during the initiation of a task-relevant action, such that more cortical processing was required to meet task demands. Together, these findings document that the attenuation of perceptual processing that occurs during task-unrelated thought is associated with a reduction in the temporal fidelity with which the brain responds to a stimulus and suggest that increased neural processing may be required to recouple attention to a task. More generally, these data provide novel confirmatory evidence for the mechanisms through which attentional states facilitate the neural processing of sensory input.

Bak, Maarten; Drukker, Marjan; van Os, Jim; Delespaul, Philippe; Myin-Germeys, Inez (2012):

Daily life moment-to-moment variation in coping in people with a diagnosis of schizophrenia: State within trait psychosis.

In: *Psychosis: Psychological, Social and Integrative Approaches* 4 (2), S. 115–125. DOI: 10.1037/t01554-000;

Abstract:

Introduction: Coping is a dynamic concept, associated with variability in stress and the individual's response. It was hypothesized that coping responses vary from moment to moment in daily life in individuals diagnosed with schizophrenia. Methods: Patients diagnosed with schizophrenia (n = 25) were studied using the Experience Sampling Method to assess ongoing coping. Three subcategories of coping, social (interaction with environment), activity (behaviour to relief stress) and abuse (use of substances to deal with stress) were combined in a single coping variable expressed both dichotomously (present or not, representing frequency) and dimensionally (representing intensity). Results: The frequency of coping did not vary over the day with exception of abuse coping variance: 0.48; 95% CI 0.02-10.5). In contrast, the intensity of coping did vary during the day, except for abuse coping (coping combined variance = 0.05, 95% CI 0.01-0.20; social coping variance = 0.13, 95% CI 0.04–0.39; and activity coping variance = 0.10, 95% CI 0.02–0.51). Conclusion: In patients with schizophrenia, coping is stable from moment to moment, indicating a trait mechanism. However, coping varies in intensity, which refers to state properties of coping. Validity problems may arise if studies do not consider the partial variability of coping. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Baker, Sarah R. (2006):

Towards an idiothetic understanding of the role of social problem solving in daily event, mood and health experiences: a prospective daily diary approach.

In: *British Journal of Health Psychology* 11 (Pt 3), S. 513–531. DOI: 10.1348/135910705X57647.

Abstract:

OBJECTIVES\r\nUtilising D'Zurilla's (1986, 1990) transactional social problem solving model as the theoretical framework, the present study sought to examine the dynamics of the social problem solving process in relation to intraindividual experiences of events, mood, and physical health in daily life.\r\nDESIGN\r\nThe study incorporated both idiographic and nomothetic strategies, combining a daily diary approach within a prospective design. As such, each individual's experience of events, mood, and health were assessed on a daily basis, and the prospective relations between social problem solving and these day-to-day experiences examined.\r\nMETHODS\r\nParticipants' (university students) completed a measure of social problem solving at baseline followed, approximately 5 weeks later, by daily self-reports of mood (positive & negative), events (hassles & uplifts), and physical health (health status & URI symptoms) for a period of 14 days. The data were analysed using multilevel hierarchical modelling.\r\nRESULTS\r\nDays on which individuals had greater than their average hassles were associated with higher negative and lower positive mood (i.e. domain specific & cross-over effects), whilst greater uplifts were linked to positive mood only. With regard to health, individuals reported worse status and more URI symptoms on days with greater than their average negative (hassles, negative mood) but not positive influences (uplifts, positive mood). Both social problem solving orientations and skills dimensions were associated prospectively with daily health outcomes, and these relationships were not moderated by day-to-day experiences of mood or events.\r\nCONCLUSIONS\r\nThe data clarify the importance of social problem solving to within-person daily event, mood, and health experiences. The implications of these findings for contemporary transactional social problem solving models are discussed.

Bakker, Arnold B.; Daniels, Kevin (2013):

A day in the life of a happy worker.

Hg. v. Arnold B. Bakker und Kevin Daniels. New York, NY US: Psychology Press (Current issues in work and organizational psychology). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-02788-000%26site%3dehost-live.

Abstract:

(from the cover) This edited collection brings together some of the leading researchers in the study of the daily experience of work and well-being. The book covers both theoretical and methodological issues involved in studying workers' well-being as it evolves on an everyday basis. Interest in the topic of daily fluctuations in worker well-being has grown rapidly over the past ten years. This is partly because of advances in research methods and statistical interests, but also because researchers have found that the psychological processes that influence well-being play out from moment to moment, and from day to day. Topics covered in this book include: (1) the theoretical basis of studying work as a series of daily episodes; (2) assessment of different components of daily well-being; (3) factors involved in the regulation of well-being at work; (4) qualitative and quantitative diary experience sampling and event reconstruction methods; and (5) latent growth curve modeling of diary data. The final chapter of the book includes a preview of how daily methods may evolve in the future. Intended as a guide for researchers with good knowledge of field research methods, the book will be particularly useful to researchers of work-related phenomena that seek to expand their knowledge of dynamic methods in field contexts, and those that want to start using these methods. It will also be of interest to students of work psychology and organizational behavior, and related disciplines. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (cover)

Bakker, J. M.; Lieverse, R.; Menne-Lothmann, C.; Viechtbauer, W.; Pishva, E.; Kenis, G. et al. (2014):

Therapygenetics in mindfulness-based cognitive therapy: do genes have an impact on therapy-induced change in real-life positive affective experiences?

In: *Transl Psychiatry* 4, S. e384. DOI: 10.1038/tp.2014.23.

Abstract:

Positive affect (PA) has an important role in resilience against depression and has been shown to increase with mindfulness-based cognitive therapy (MBCT). To elucidate the underlying mechanisms of change in PA as well as develop insights that may benefit personalized medicine, the current study examined the contribution of genetic variation to individual differences in change in PA in response to MBCT. Individuals (n=126) with residual depressive symptoms were randomized to either an MBCT

group or treatment as usual. PA was assessed using experience sampling methodology (ESM). Single-nucleotide polymorphisms (SNPs) in genes known to be involved in reward functioning were selected. SNPs in the genes for brain-derived neurotrophic factor (BDNF), the muscarinic acetylcholine receptor M2 (CHRM2), the dopamine receptor D4 (DRD4) and the mu1 opioid receptor (OPRM1) significantly moderated the impact of treatment condition over time on PA. Genetic variation in the genes for CHRM2 and OPRM1 specifically had an impact on the level of PA following MBCT. The current study shows that variation in response to MBCT may be contingent on genetic factors associated with the regulation of PA. These findings contribute to our understanding of the processes moderating response to treatment and prediction of treatment outcome.

Bakker, Arnold B.; Xanthopoulou, Despoina (2009):

The crossover of daily work engagement: test of an actor-partner interdependence model.

In: *J Appl Psychol* 94 (6), S. 1562–1571. DOI: 10.1037/a0017525.

Abstract:

This study of 62 dyads of employees (N = 124) examined the crossover of work engagement-a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. We hypothesized that work engagement crosses over from an employee (the actor) to his or her colleague (the partner) on a daily basis. The frequency of daily communication was expected to moderate the crossover of daily work engagement, which in turn would relate to colleagues' daily performance. Participants first filled in a general questionnaire and then completed a diary study over 5 consecutive workdays. The hypotheses were tested with multilevel analyses, using an actor-partner interdependence model. Results confirmed the crossover of daily work engagement, but only on days when employees within a dyad interacted more frequently than usual. Moreover, we found that actor's work engagement (particularly vigor), when frequently communicated, had a positive indirect relationship with partner's performance through partner's work engagement. Finally, results showed that actor's vigor was negatively related to partner's performance when communication was low. However, this negative effect was counteracted when mediated by the vigor of the partner.

Balkau, Beverley; Mhamdi, Leila; Oppert, Jean-Michel; Nolan, John; Golay, Alain; Porcellati, Francesca et al. (2008):

Physical activity and insulin sensitivity the RISC study.

In: *Diabetes* 57 (10), S. 2613–2618.

Abstract:

OBJECTIVE— Physical activity is a modifiable risk factor for type 2 diabetes, partly through its action on insulin sensitivity. We report the relation between insulin sensitivity and physical activity measured by accelerometry.

RESEARCH DESIGN AND METHODS— This is a cross-sectional study of 346 men and 455 women, aged 30–60 years, without cardiovascular disease and not treated by drugs for diabetes, hypertension, dyslipidemia, or obesity. Participants were recruited in 18 clinical centers from 13 European countries. Insulin sensitivity was measured by hyperinsulinemic-euglycemic clamp. Physical activity was recorded by accelerometry for a median of 6 days. We studied the relationship of insulin sensitivity with total activity (in counts per minute), percent of time spent sedentary, percent of time in light activity, and activity intensity (whether the participant recorded some vigorous or some moderate activity).

RESULTS— In both men and women, total activity was associated with insulin sensitivity ($P < 0.0001$). Time spent sedentary, in light activity, and activity intensity was also associated with insulin sensitivity ($P < 0.0004/0.01$, $0.002/0.03$, and $0.02/0.004$, respectively, for men/women) but lost significance once adjusted for total activity. Adjustment for confounders such as adiposity attenuated the relationship with total activity; there were no interactions with confounders. Even in the 25% most sedentary individuals, total activity was significantly associated with better insulin sensitivity ($P < 0.0001$).

CONCLUSIONS— Accumulated daily physical activity is a major determinant of insulin sensitivity. Time spent sedentary, time spent in light-activity, and bouts of moderate or vigorous activity did not impact insulin sensitivity independently of total activity.

Ball, Kylie; Cleland, Verity J.; Timperio, Anna F.; Salmon, Jo; Crawford, David A. (2009):

Socioeconomic position and children's physical activity and sedentary behaviors: longitudinal findings from the CLAN study.

In: *J Phys Act Health* 6 (3), S. 289–298.

Abstract:

Background: This study aimed to examine cross-sectional and longitudinal associations between socioeconomic position (SEP) and physical activity and sedentary behaviors amongst children and adolescents.

Methods: Maternal education was reported by parents of 184 5-6 year-old and 358 10-12 year-old children in 2001. In 2001 and 2004, physical activity was assessed by accelerometry. Older children self-reported and parents of younger children proxy-reported physical activity and television (TV) viewing behaviors. Linear regression was used to predict physical activity and sedentary behaviors, and changes in these behaviors, from maternal education.

Results: Among all children, accelerometer-determined and self/parent-reported moderate and vigorous physical activity declined over three years. Girls of higher SEP demonstrated greater decreases in TV viewing behaviours than those of low SEP. In general, no prospective associations were evident between SEP and objectively-assessed physical activity. A small number of prospective associations were noted between SEP and self-reported physical activity, but these were generally weak and inconsistent in direction.

Conclusions: This study did not find strong evidence that maternal education was cross-sectionally or longitudinally predictive of children's physical activity or sedentary behaviors. Given the well-documented inverse relationship of SEP with physical activity levels in adult samples, findings suggest that such disparities may emerge after adolescence.

Ball, Trever J.; Joy, Elizabeth A.; Goh, Tan L.; Hannon, James C.; Gren, Lisa H.; Shaw, Janet M. (2014):

Validity of two brief primary care physical activity questionnaires with accelerometry in clinic staff.

In: *Prim Health Care Res Dev*, S. 1–9. DOI: 10.1017/S1463423613000479.

Abstract:

Background: To date, no physical activity (PA) questionnaires intended for primary care have been compared against a criterion measure of PA and current (2008) aerobic PA recommendations of the American College of Sports Medicine/American Heart Association (ACSM/AHA). Aim: This study evaluated preliminary evidence for criterion validity of two brief (<1 min) PA questionnaires with accelerometry, and their ability to identify if individuals meet ACSM/AHA PA recommendations. Methods: 45 health clinic staff wore an accelerometer for seven consecutive days and afterwards completed two brief PA questionnaires, the Physical Activity Vital Sign (PAVS), and the Speedy Nutrition and Physical Activity Assessment (SNAP). Agreement and descriptive statistics were calculated between the PAVS or SNAP and accelerometry in order to measure each questionnaire's ability to quantify the number of days participants achieved 30 min of moderate-vigorous PA (MVPA) performed in bouts of 10 continuous minutes. Participants with <5 days of 30 bout-min of MVPA were considered insufficiently active according to PA recommendations. Findings: There was a significant positive correlation between number of days with 30 bout-min MVPA and the PAVS (r=0.52, P<0.001), and SNAP (r=0.31, P<0.05). The PAVS had moderate agreement with accelerometry for identifying if individuals met or did not meet PA recommendations (kappa=0.46, P<0.001), whereas SNAP had poor agreement (kappa=0.12, P<0.05). Conclusions: This study provides preliminary evidence of criterion validity of the PAVS and SNAP with accelerometry and agreement identifying if respondents meet current (2008) ACSM/AHA aerobic PA recommendations. The PAVS and SNAP should be evaluated further for repeatability, and in populations varying in PA levels, age, gender, and ethnicity.

Bandini, L. G.; Gleason, J.; Curtin, C.; Lividini, K.; Anderson, S. E.; Cermak, S. A. et al. (2012):

Comparison of physical activity between children with autism spectrum disorders and typically developing children.

In: *Autism* (1362-3613 (Linking)). DOI: 10.1177/1362361312437416.

Abstract:

Regular physical activity is important for promoting health and well-being; however, physical activity behaviors in children with autism spectrum disorders (ASD) have received little attention. We compared physical activity levels among 53 children with ASD and 58 typically developing children aged 3-11 years who participated in the Children's Activity and Meal Patterns Study (CHAMPS). After adjustment for age and sex the amount of time spent daily in moderate and vigorous activity was similar in children with ASD (50.0 minutes/day and typically developing children 57.1 minutes/day). However, parents reported that children with ASD participated in significantly fewer types of physical activities than did typically developing children (6.9 vs. 9.6, p <.0001) and spent less time annually participating in these activities than typically developing children (158 vs. 225 hours per year, p < 0.0001) after adjusting for age and sex. Although both groups of children engaged in similar levels of moderate and vigorous activity as measured by accelerometry, children with ASD engaged in fewer physical activities and for less time

according to parental report, suggesting that some of the activity in children with ASD is not captured by standard questionnaire-based measures

Banegas, José R.; Messerli, Franz H.; Waeber, Bernard; Rodríguez-Artalejo, Fernando; La Sierra, Alex; Segura, Julián et al. (2009):

Discrepancies between office and ambulatory blood pressure: clinical implications.

In: *The American journal of medicine* 122 (12), S. 1136–1141. DOI: 10.1016/j.amjmed.2009.05.020.

Abstract:

BACKGROUND\r\nRecent trials have documented no benefit from small reductions in blood pressure measured in the clinical office. However, ambulatory blood pressure is a better predictor of cardiovascular events than office-based blood pressure. We assessed control of ambulatory blood pressure in treated hypertensive patients at high cardiovascular risk.\r\nMETHODS\r\nWe selected 4729 patients from the Spanish Ambulatory Blood Pressure Monitoring Registry. Patients were aged >/=55 years and presented with at least one of the following co-morbidities: coronary heart disease, stroke, and diabetes with end-organ damage. An average of 2 measures of blood pressure in the office was used for analyses. Also, 24-hour ambulatory blood pressure was recorded at 20-minute intervals with a SpaceLabs 90207 device.\r\nRESULTS\r\nPatients had a mean age of 69.6 (+/-8.2) years, and 60.8% of them were male. Average time from the diagnosis of hypertension to recruitment into the Registry was 10.9 (+/-8.4) years. Mean blood pressure in the office was 152.3/82.3 mm Hg, and mean 24-hour ambulatory blood pressure was 133.3/72.4 mm Hg. About 60% of patients with an office-pressure of 130-139/85-89 mm Hg, 42.4% with office-pressure of 140-159/90-99 mm Hg, and 23.3% with office-pressure > or =160/100 mm Hg were actually normotensive, according to 24-hour ambulatory blood pressure criteria (<130/80 mm Hg).\r\nCONCLUSION\r\nWe suggest that the lack of benefit of antihypertensive therapy in some trials may partly be due to some patients having normal pressure at trial baseline. Ambulatory monitoring of blood pressure may allow for a better assessment of trial eligibility.

Banegas, Jose R.; Ruilope, Luis M.; La Sierra, Alejandro; de la Cruz, Juan J; Gorostidi, Manuel; Segura, Julian et al. (2014):

High prevalence of masked uncontrolled hypertension in people with treated hypertension.

In: *Eur Heart J. DOI:* 10.1093/eurheartj/ehu016.

Abstract:

AIM: There are limited data on the quality of treated blood pressure (BP) control during normal daily life, and in particular, the prevalence of 'masked uncontrolled hypertension' (MUCH) in people with treated and seemingly well-controlled BP is unknown. This is important because masked hypertension in 'treatment naive' patients is associated with a high risk of cardiovascular events. We therefore conducted the first study to define the prevalence and characteristics of MUCH among a large sample of hypertensive patients in routine clinical practice in whom BP was treated and controlled to recommended clinic BP goals. METHODS AND RESULTS: We analysed data from the Spanish Society of Hypertension ambulatory blood pressure monitoring (ABPM) Registry and identified patients with treated and controlled BP according to current international guidelines (clinic BP <140/90 mmHg). Masked uncontrolled hypertension was diagnosed in these patients if despite controlled clinic BP, the mean 24-h ABPM average remained elevated (24-h systolic BP >/=130 mmHg and/or 24-h diastolic BP >/=80 mmHg). From 62 788 patients with treated BP in the Spanish registry, we identified 14 840 with treated and controlled clinic BP, of whom 4608 patients (31.1%) had MUCH according to 24-h ABPM criteria (mean age 59.4 years, 59.7% men). The prevalence of MUCH was significantly higher in males, patients with borderline clinic BP (130-9/80-9 mmHg), and patients at high cardiovascular risk (smokers, diabetes, obesity). Masked uncontrolled hypertension was most often because of poor control of nocturnal BP, with the proportion of patients in whom MUCH was solely attributable to an elevated nocturnal BP almost double that solely attributable to daytime BP elevation (24.3 vs. 12.9%, P < 0.001). CONCLUSION: The prevalence of masked suboptimal BP control in patients with treated and well-controlled clinic BP is high. Clinic BP monitoring alone is thus inadequate to optimize BP control because many patients have an elevated nocturnal BP. These findings suggest that ABPM should become more routine to confirm BP control, especially in higher risk groups and/or those with borderline control of clinic BP.

Banegas, José R.; Segura, Julián; La Sierra, Alejandro; Gorostidi, Manuel; Rodríguez-Artalejo, Fernando; Sobrino, Javier et al. (2008):

Gender differences in office and ambulatory control of hypertension.

In: *The American journal of medicine* 121 (12), S. 1078–1084.

Abstract:

BACKGROUND:

Gender differences in hypertension control have not been explored fully.

METHODS:

We studied 15,212 white men and 13,936 white women with treated hypertension who were drawn from the Spanish Ambulatory Blood Pressure Registry. For each participant, we obtained office blood pressure (BP) (average of 2 readings) and 24-hour ambulatory BP (average of measurements performed every 20 minutes during day and night).

RESULTS:

Only 16.4% of women and 14.7% of men had both office (<140/90 mm Hg) and ambulatory (<130/80 mm Hg) BP controlled (P<.001). Women had a lower frequency of masked hypertension (office BP<140/90 mm Hg and ambulatory BP> or =130/80 mm Hg) than men (5.9% vs 7.9%, P<.001). Women had a higher frequency of isolated office hypertension (office BP> or =140/90 mm Hg and ambulatory BP<130/80 mm Hg) (32.5% vs 24.2%, P<.001). Although office BP control (office BP<140/90 mm Hg, regardless of ambulatory values) was similar in women and men (22.3% vs 22.6%, P=.542), ambulatory BP control (ambulatory BP<130/80 mm Hg, regardless of office values) was higher in women than in men (48.9% vs 38.9%, P<.001). After adjustment for age, number of antihypertensive drugs, hypertension duration, and risk factors, gender differences in BP control remained practically unchanged.

CONCLUSION:

Ambulatory BP control was higher in women than in men. This may be due to the higher frequency of isolated office hypertension in women, and it is not explained by gender differences in other important clinical characteristics.

Bangash, Farhan; Agarwal, Rajiv (2009):

Masked hypertension and white-coat hypertension in chronic kidney disease: a meta-analysis.

In: *Clinical Journal of the American Society of Nephrology* 4 (3), S. 656–664.

Abstract:

BACKGROUND AND OBJECTIVES:

Poor hypertension control observed in patients with chronic kidney disease (CKD) may in part be due to the suboptimal assessment of BP with clinic BP measurements alone. The goal of this meta-analysis was to estimate the prevalence and determinants of white-coat and masked hypertension in the adult CKD population.

DESIGN, SETTING, PARTICIPANTS, & MEASUREMENTS:

Articles reporting prevalence of masked and white-coat hypertension in patients with CKD were obtained from two major databases. We then performed a meta-analysis to derive pooled estimates of prevalence and determinants of these two conditions.

RESULTS:

Among 980 patients with CKD identified in six studies, the overall prevalence of masked hypertension was 8.3% and of white-coat hypertension was 18.3%. More alarming, 40.4% of patients who had CKD and were thought to have normotension (or adequately treated hypertension) in fact had hypertension at home. Also 30.0% of patients who had CKD and were thought to have hypertension had normotension at home. The thresholds for classification of clinic and ambulatory BP as hypertensive strongly influenced the risk for diagnosis of masked hypertension in favor of white-coat hypertension.

CONCLUSIONS:

Because clinic BP measurements alone lead to substantial misclassification in BP, we estimate that the prevalence of poorly controlled hypertension is likely less than currently estimated. Out-of-office BP monitoring may improve the management of hypertension in patients with CKD. Standardized definitions for the diagnosis of masked and white-coat hypertension would facilitate research.

Bania, Theofani (2014):

Measuring Physical Activity in Young People with Cerebral Palsy: Validity and Reliability of the ActivPAL Monitor.

In: *Physiother Res Int. DOI:* 10.1002/pri.1584.

Abstract:

BACKGROUND AND PURPOSE: We determined the criterion validity and the retest reliability of the ActivPAL monitor in young people with diplegic cerebral palsy (CP). METHODS: Activity monitor data were compared with the criterion of video recording for 10 participants. For the retest reliability, activity monitor data were collected from 24 participants on two occasions. Participants had to have diplegic CP and be between 14 and 22 years of age. They also had to be of Gross Motor Function Classification System level II or III. Outcomes were time spent in standing, number of steps (physical activity) and time spent in sitting (sedentary behaviour). RESULTS: For criterion validity, coefficients of determination were all high (r2 >/= 0.96), and limits of group agreement were relatively narrow, but limits of agreement for individuals were narrow only for number of steps (>/=5.5%). Relative reliability was high for number of steps (intraclass correlation coefficient = 0.87) and moderate for time spent in sitting and lying, and time spent in standing (intraclass correlation coefficients = 0.60-0.66). For groups, changes of up to 7% could be due to measurement error with 95% confidence, but for individuals, changes as high as 68% could be due to measurement error. DISCUSSION: The results support the criterion validity and the retest reliability of the ActivPAL to measure physical activity and sedentary behaviour in groups of young people with diplegic CP but not in individuals. Copyright (c) 2014 John Wiley & Sons, Ltd.

Banks, Laura; Wells, Greg D.; McCrindle, Brian W. (2014):

Cardiac energy metabolism is positively associated with skeletal muscle energy metabolism in physically active adolescents and young adults.

In: *Appl Physiol Nutr Metab* 39 (3), S. 363–368. DOI: 10.1139/apnm-2013-0312.

Abstract:

(31)Phosphorus Magnetic Resonance Spectroscopy ((31)P MRS) is a well-validated, noninvasive magnetic resonance imaging technique that has been used to determine cardiac and skeletal muscle energy metabolism in vivo. Few studies have documented cardiac energy metabolism in adolescents and young adult cohorts. This cross-sectional study sought to explore the association among cardiac energy metabolism, skeletal muscle energy metabolism, moderate-to-vigorous physical activity (MVPA), and age in adolescents and young adults. Ten healthy, active participants (40% male) with a mean +/- SD age of 18.6 +/- 4.9 years, body mass index of 21.1 +/- 2.4 kg.m(-2), and median MVPA level of 83 min per weekday (lower quartile: 45 min per weekday; upper quartile: 114 min per weekday) completed the following study assessments: a (31)P MRS scan to determine cardiac and skeletal muscle energy metabolism, cardiopulmonary exercise testing to determine aerobic power, and accelerometry to determine MVPA over 7 days. Resting cardiac energy metabolism, as measured by the ratio of phosphocreatine to adenosine triphosphate (PCr/ATPbeta, mean +/- SD: 2.76 +/- 0.65), was positively associated with skeletal muscle aerobic oxidative function (Estimate (SE): -0.1(0.01), p < 0.001), as measured by PCr recovery half-time following 60 s of exercise (34 +/- 9 s). This association, which was adjusted for peak aerobic power, MVPA, age, and sex, suggests the development of an association between cardiac and skeletal muscle health at any early age. Larger studies are needed to establish normative data for both physically active and sedentary males and females that may be used for comparison in future studies involving clinical cohorts.

Baquero, Giselle A.; Banchs, Javier E.; Ahmed, Shameer; Naccarelli, Gerald V.; Luck, Jerry C. (2015):

Surface 12 lead electrocardiogram recordings using smart phone technology.

In: *J Electrocardiol* 48 (1), S. 1–7. DOI: 10.1016/j.jelectrocard.2014.09.006.

Abstract:

IMPORTANCE: AliveCor ECG is an FDA approved ambulatory cardiac rhythm monitor that records a single channel (lead I) ECG rhythm strip using an iPhone. In the past few years, the use of smartphones and tablets with health related applications has significantly proliferated. OBJECTIVE: In this initial feasibility trial, we attempted to reproduce the 12 lead ECG using the bipolar arrangement of the AliveCor monitor coupled to smart phone technology. METHODS: We used the AliveCor heart monitor coupled with an iPhone cellular phone and the AliveECG application (APP) in 5 individuals. RESULTS: In our 5 individuals, recordings from both a standard 12 lead ECG and the AliveCor generated 12 lead ECG had the same interpretation. CONCLUSIONS: This study demonstrates the feasibility of creating a 12 lead ECG with a smart phone. The validity of the

recordings would seem to suggest that this technology could become an important useful tool for clinical use. This new hand held smart phone 12 lead ECG recorder needs further development and validation.

Baquet, Georges; Ridgers, Nicola D.; Blaes, Aurelie; Aucouturier, Julien; van Praagh, Emmanuel; Berthoin, Serge (2014):

Objectively assessed recess physical activity in girls and boys from high and low socioeconomic backgrounds.

In: *BMC Public Health* 14, S. 192. DOI: 10.1186/1471-2458-14-192.

Abstract:

BACKGROUND: The school environment influences children's opportunities for physical activity participation. The aim of the present study was to assess objectively measured school recess physical activity in children from high and low socioeconomic backgrounds. METHODS: Four hundred and seven children (6-11 years old) from 4 primary schools located in high socioeconomic status (high-SES) and low socioeconomic status (low-SES) areas participated in the study. Children's physical activity was measured using accelerometry during morning and afternoon recess during a 4-day school week. The percentage of time spent in light, moderate, vigorous, very high and in moderate- to very high-intensity physical activity were calculated using age-dependent cut-points. Sedentary time was defined as 100 counts per minute. RESULTS: Boys were significantly ($p < 0.001$) more active than girls. No difference in sedentary time between socioeconomic backgrounds was observed. The low-SES group spent significantly more time in light ($p < 0.001$) and very high ($p < 0.05$) intensity physical activity compared to the high-SES group. High-SES boys and girls spent significantly more time in moderate ($p < 0.001$ and $p < 0.05$, respectively) and vigorous ($p < 0.001$) physical activity than low-SES boys. CONCLUSIONS: Differences were observed in recess physical activity levels according to socioeconomic background and sex. These results indicate that recess interventions should target children in low-SES schools.

Barak, S.; Wu, S. S.; Dai, Y.; Duncan, P. W.; Behrman, A. L. (2013):

Compliance with Accelerometry Measurement of Community Ambulation Poststroke.

In: *Phys.Ther.* (0031-9023 (Linking)). DOI: 10.2522/ptj.20120473.

Abstract:

BACKGROUND: The step activity monitor (SAM) quantifies steps taken in the home and community by patient populations. While the SAM has been used to study individuals post-stroke, compliance with SAM has not been addressed. Participants' compliance in wearing the monitor is critical for obtaining accurate assessments. OBJECTIVE: The purpose of this study was to determine the rate of and predictors for inferred compliance with the SAM post-stroke. DESIGN: Cross-sectional. METHODS: 408 community-dwelling individuals two-months post-stroke with moderate-to-severe gait impairment (gait speed of </= 0.8 m/s). Step activity was assessed for two days with the SAM. Inferred compliance was established in three periods: 6:00AM-12:00PM, 12:01PM-6:00PM, and 6:01PM-12:00AM. Compliance was defined as activity recorded in all three periods. The percentage of participant compliance for the first day, second day, both days, and either day was calculated. Demographic and clinical characteristics of compliers and non-compliers were compared. Independent compliance predictors were identified using stepwise logistic regression. RESULTS: Inferred compliance rate in the first day, second day, both days, and either day was 68, 61, 53, and 76%, respectively. Upper and lower extremity impairment, balance control and endurance were significantly different between compliers and non-compliers. On the other hand, older age, greater balance self-efficacy, and better walking endurance were found to be significant predictors of compliance. LIMITATIONS: Participants consisted of individuals with sub-acute stroke. Therefore, our findings may not be generalized to individuals during the acute and chronic phases of stroke recovery. CONCLUSIONS: Strategies to improve compliance are needed, when collecting data for more than one day, and in samples with younger individuals, and persons with low levels of balance self-efficacy and walking endurance

Barclay, Justin L.; Miller, Brian G.; Dick, Smita; Dennekamp, Martine; Ford, Isobel; Hillis, Graham S. et al. (2009):

A panel study of air pollution in subjects with heart failure: negative results in treated patients.

In: *Occupational and environmental medicine* 66 (5), S. 325–334.

Abstract:

OBJECTIVES:

To investigate preclinical adverse effects of ambient particulate air pollution and nitrogen oxides in patients with heart failure.

METHODS:

A cohort of 132 non-smoking patients living in Aberdeen, Scotland, with stable chronic heart failure were enrolled in a repeated-measures panel study. Patients with atrial fibrillation or pacemakers were excluded. Participants were studied for 3 days every 2 months for up to 1 year with monitoring of pollutant exposure and concurrent measurements of pathophysiological responses. Measurements included daily area concentration of particulate matter with a median aerodynamic diameter of <10 micrometres (PM(10)), particle number concentration (PNC) and nitrogen oxides; daily estimated personal concentration of particulate matter with a median aerodynamic diameter of <2.5 micrometres (PM(2.5)) and PNC exposures; and 3-day cumulative personal nitrogen dioxide (NO(2)). Concurrent meteorological data were recorded. Blood was taken at the end of each 3-day block for assays of markers of endothelial activation, inflammation and coagulation. Cardiac rhythm was monitored by ambulatory Holter monitor during the final 24 h of each block.

RESULTS:

The average 24 h background ambient PM(10) ranged from 7.4 to 68 microg.m(-3) and PNC from 454 to 11 283 particles.cm(-3). No associations were demonstrated between the incidence of arrhythmias, heart rate variability or haematological/biochemical measures and any variations in pollutant exposures at any lags.

CONCLUSION:

Assuming that low-level pollution affects the parameters measured, these findings may suggest a beneficial effect of modern cardioprotective therapy, which may modify responses to external risk factors. Widespread use of such drugs in susceptible populations may in future reduce the adverse effects of air pollution on the heart.

Barker, Erin T.; Williams, Rebecca L.; Galambos, Nancy L. (2006):

Daily spillover to and from binge eating in first-year university females.

In: *Eating disorders* 14 (3), S. 229–242. DOI: 10.1080/10640260600639079.

Abstract:

Coping models of binge eating propose that stress and/or negative affect trigger binge eating, which serves to shift attention to the binge and its consequences. The current study tested these general assumptions using 14-day daily diary data collected from 66 first-year university females. Hierarchical Generalized Linear Modeling results showed that increased stress, negative affect, and weight concerns were associated with an increased likelihood of reporting symptoms of binge eating within days. Elevated weight concerns predicted next-day binge eating and binge eating predicted greater next-day negative affect. Discussion focuses on implications for coping models of binge eating.

Barkley, Jacob E.; Salvy, Sarah Jeanne; Roemmich, James N. (2012):

The effect of simulated ostracism on physical activity behavior in children.

In: *Pediatrics* 129 (3), S. e659-e666. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-09899-005%26site%3dehost-live;jbarkle1@kent.edu.

Abstract:

OBJECTIVES:

To assess the effects of simulated ostracism on children's physical activity behavior, time allocated to sedentary behavior, and liking of physical activity.

METHODS:

Nineteen children (11 boys, 8 girls; age 11.7 ± 1.3 years) completed 2 experimental sessions. During each session, children played a virtual ball-toss computer game (Cyberball). In one session, children played Cyberball and experienced ostracism; in the other session, they were exposed to the inclusion/control condition. The order of conditions was randomized. After playing Cyberball, children were taken to a gymnasium where they had free-choice access to physical and sedentary activities for 30 minutes. Children could participate in the activities, in any pattern they chose, for the entire period. Physical activity during the free-choice period was assessed via accelerometery and sedentary time via observation. Finally, children reported their liking for the activity session via a visual analog scale.

RESULTS:

Children accumulated 22% fewer (P < .01) accelerometer counts and 41% more (P < .04) minutes of sedentary activity in the ostracized condition (8.9(e+4) ± 4.5(e+4) counts, 11.1 ± 9.3 minutes) relative to the included condition (10.8(e+4) ± 4.7(e+4) counts, 7.9 ± 7.9 minutes). Liking (8.8 ± 1.5 cm included, 8.1 ± 1.9 cm ostracized) of the activity sessions was not significantly different (P > .10) between conditions.

CONCLUSIONS:

Simulated ostracism elicits decreased subsequent physical activity participation in children. Ostracism may contribute to children's lack of physical activity.

Barletta, Gina-Marie; Flynn, Joseph; Mitsnefes, Mark; Samuels, Joshua; Friedman, Lisa Aronson; Ng, Derek et al. (2014):

Heart rate and blood pressure variability in children with chronic kidney disease: a report from the CKiD study.

In: *Pediatr Nephrol. DOI:* 10.1007/s00467-013-2737-8.

Abstract:

BACKGROUND: Autonomic nervous system dysfunction and sympathetic nervous system over-activity play important roles in the development of hypertension associated with chronic kidney disease (CKD). In adults, increased blood pressure variability (BPV) appears to be directly related to sympathetic over-activity with increased risk of end-organ damage and cardiovascular events. Decreased heart rate variability (HRV) has been observed in adults with CKD, and is an independent predictor of mortality. METHODS: The purpose of this study was to evaluate BPV and HRV in pediatric patients enrolled in the Chronic Kidney Disease in Children Study. Ambulatory blood pressure monitoring data were available for analysis of 215 person-visits from 144 children that were not receiving antihypertensive medications. RESULTS: BPV and HRV were determined by standard deviation and coefficient of variation for heart rate and systolic and diastolic blood pressure for each patient averaged for wake/sleep periods during 24-h monitoring. Uniformly lower values were displayed during sleep versus wake periods: BPV was 20 % lower during sleep ($p < 0.001$) and HRV was 30 % lower during sleep ($p < 0.001$). A significant increase in systolic BPV was observed in hypertensive children compared to children with normal blood pressure (6.9 %, $p = 0.009$). Increased diastolic BPV was detected among hypertensive children during sleep period compared to children with normal blood pressure (11.5 %, $p = 0.008$). There was a significant decrease in HRV in hypertensive compared to normotensive children (-8.2 %, $p = 0.006$). CONCLUSIONS: These findings are similar to those in adult patients and may underscore childhood origin and natural progression of adverse cardiovascular outcomes in adults with CKD.

Barmettler, Gabi; Brawn, Jennifer; Maleki, Nasim; Scrivani, Steven; Burstein, Rami; Becerra, Lino; Borsook, David (2014):

A new electronic diary tool for mapping and tracking spatial and temporal head pain patterns in migraine.

In: *Cephalalgia. DOI:* 10.1177/0333102414545892.

Abstract:

AIM: We present an electronic tool for collecting data on the patterns of migraine headache onset and progression. METHODS: A digitized map consisting of 44 color-coded segments was defined based on previous reports of migraine pain and the distribution of nerves in the face, head and neck. The map was overlaid on a schematic map of the face, head and neck nerves. Thirty-six patients (N = 36, 28 female/eight male), who met ICDH-II criteria for episodic migraine and had headaches for at least three years, identified all regions where pain typically started and how pain spread and subsequently progressed. RESULTS: Consistent with previous findings, throbbing was the most prevalent quality of migraine pain, always present in 70% of patients surveyed. For the 70% of the patients with throbbing pain, the temple was the onset site of throbbing pain, with no significant difference in the laterality of onset site (58.3% on the right vs. 55.6% on the left hemisphere). The tool was able to capture patterns of pain distribution for throbbing and pressure headache pain and also may be used to assess the change in the pattern of the pain distribution as the disease progresses. DISCUSSION: The pain map survey may be a useful tool for recording and tracking the temporal pattern of migraine onset both for clinical and research purposes. The tool could be used to create maps of pain locations on a large population scale and thus will be a very useful tool in correlating the temporal nature of headache symptoms with potential mechanisms of disease evolution.

Barnes, Deborah E.; Blackwell, Terri; Stone, Katie L.; Goldman, Suzanne E.; Hillier, Teresa; Yaffe, Kristine (2008):

Cognition in older women: the importance of daytime movement.

In: *J Am Geriatr Soc* 56 (9), S. 1658–1664.

Abstract:

OBJECTIVES: To determine whether an objective measure of daytime movement is associated with better cognitive function in women in their 80s.

DESIGN: Cross-sectional.

SETTING: A study of health and aging.

PARTICIPANTS: Two thousand seven hundred thirty-six older women without evidence of dementia.

MEASUREMENTS:

Daytime movement was assessed using actigraphy, which involved wearing a watch-like device that objectively quantified accelerometer motion over a mean of 3.0+/-0.8 days. Cognitive function was measured using the Trail-Making Test, Part B (Trails B) and the Mini-Mental State Examination (MMSE). Cognitive impairment was defined as performing 1.5 standard deviations (SDs) worse than the mean on a given test.

RESULTS:

Participants had a mean age of 83+/-4; 10% were African American. After adjustment for age, race, and education, women in the highest movement quartiles had better mean cognitive test scores (20+/-0.3 seconds faster on Trails B and 0.3+/-0.2 points higher on MMSE, both P<.001) than those in the lowest quartile and were less likely to be cognitively impaired (odds ratio (OR)=0.61, 95% confidence interval (CI)=0.41-0.92 for Trails B; OR=0.68, 95% CI=0.44-1.07 for MMSE). Associations were similar in different subgroups and were independent of self-reported walking, medical comorbidities, physical function, and other health-related behaviors.

CONCLUSION:

Daytime movement as measured objectively using actigraphy was associated with better cognitive function and lower odds of cognitive impairment in women in their 80s. Additional studies are needed to clarify the direction of the association and to explore potential mechanisms.

Barnes, V. A.; Johnson, M. H.; Williams, R. B.; Williams, V. P. (2012):

IMPACT OF WILLIAMS LIFESKILLS TRAINING ON ANGER, ANXIETY AND AMBULATORY BLOOD PRESSURE IN ADOLESCENTS.

In: *Transl.Behav.Med* 2 (4), S. 401–410. DOI: 10.1007/s13142-012-0162-3.

Abstract:

The Williams LifeSkills(R) (WLS) anger and stress management workshop provides training in strategies to cope with stressful situations and build supportive relationships. The purpose of this study was to determine the impact of school-based Williams LifeSkills training on anger, anxiety and blood pressure in adolescents. 159 adolescents (mean age+/-SD=15.7+/-1.4 years) were randomized to WLS (n=86) or control (CTL, n=73) groups. The WLS group engaged in twelve 50-min WLS training sessions conducted by teachers at school. Anger-in and anxiety scores decreased and anger control scores increased in the WLS group across the six-month follow-up period compared to the CTL group (group x visit, ps<0.05). Daytime diastolic BP was lower across the follow-up in the WLS group (p=0.08). DBP was significantly lower across the follow-up period in the WLS group among those with higher SBP at baseline (p=0.04). These findings demonstrate beneficial impact of WLS upon self-reported anger-in, anger-control, anxiety levels and ambulatory DBP in the natural environment in healthy normotensive youth

Barnes, Christopher M.; Wagner, David T.; Ghumman, Sonia (2012):

Borrowing from sleep to pay work and family: Expanding time-based conflict to the broader nonwork domain.

In: *Personnel Psychology* 65 (4), S. 789–819. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-29592-003%26site%3dehost-live;cmbarnes@vt.edu.

Abstract:

We extend cross-domain research by examining sleep, a domain within the larger nonwork domain that competes for time with work and family domains. We draw from scarcity theory and research on slack resources to contend that, because people cannot increase the amount of time they have, they borrow time from sleep in order to spend more time working and with family. Utilizing a Bureau of Labor Statistics survey of 10,741 participants, we find nonlinear and interactive effects of time spent working and time spent with family on sleep time, suggesting that the negative effects of work and family on sleep time are especially strong when demands for work and family are high. In an experience sampling field study of 122 working adults, we similarly find a nonlinear effect of work time on sleep time as well as an interaction between work time and family time in predicting time spent sleeping. Both studies indicate that as slack time resources become increasingly scarce, time spent working and time spent with family have increasingly powerful negative effects on time spent sleeping. Contrary to our expectations, we found no support for gender as a moderator of these effects. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Barnett, Anthony; Cerin, Ester; Cheung, Man-Chin; Chan, Wai-Man (2014):

An In-Depth Pilot Study on Patterns, Destinations, and Purposes of Walking in Hong Kong Older Adults.

In: *J Aging Phys Act. DOI:* 10.1123/japa.2013-0026.

Abstract:

Walking is a suitable activity for older adults and has physical and mental health benefits. To devise interventions that impact on levels of walking it is necessary to first understand the purposes for which people walk and the destinations to which they walk. Using a 7-day diary and accelerometry, this study investigated destinations and purposes of walking in older adult residents of an ultra-dense Asian city. Participants reported an average of 17.1 walking trips per week and total weekly accelerometer/diary determined trip walking time averaged 735 minutes per week, much higher than reported for older adults in non-Asian settings. The most common destinations were within the neighborhood: parks and streets for recreation walking and shops and eating places for transport-related walking. Errands and eating were the most common purposes for transportation trips. The study results can help inform urban design to encourage walking.

Barnett, L. M.; Hinkley, T.; Okely, A. D.; Hesketh, K.; Salmon, J. (2012):

Use of electronic games by young children and fundamental movement skills?

In: *Percept.Mot.Skills* 114 (3), S. 1023–1034. Online verfügbar unter PM:22913038.

Abstract:

This study investigated associations between pre-school children's time spent playing electronic games and their fundamental movement skills. In 2009, 53 children had physical activity (Actigraph accelerometer counts per minute), parent proxy-report of child's time in interactive and non-interactive electronic games (min./week), and movement skill (Test of Gross Motor Development-2) assessed. Hierarchical linear regression, adjusting for age (range = 3-6 years), sex (Step 1), and physical activity (cpm; M=687, SD=175.42; Step 2), examined the relationship between time in (a) non-interactive and (b) interactive electronic games and locomotor and object control skill. More than half (59%, n=31) of the children were female. Adjusted time in interactive game use was associated with object control but not locomotor skill. Adjusted time in non-interactive game use had no association with object control or locomotor skill. Greater time spent playing interactive electronic games is associated with higher object control skill proficiency in these young children. Longitudinal and experimental research is required to determine if playing these games improves object control skills or if children with greater object control skill proficiency prefer and play these games

Barreira, Tiago V.; Harrington, Deirdre M.; Katzmarzyk, Peter T. (2014):

Cardiovascular health metrics and accelerometer-measured physical activity levels: National Health and Nutrition Examination Survey, 2003-2006.

In: *Mayo Clin Proc* 89 (1), S. 81–86. DOI: 10.1016/j.mayocp.2013.10.001.

Abstract:

OBJECTIVE: To determine whether relationships exist between accelerometer-measured moderate-to-vigorous physical activity (MVPA) and other cardiovascular (CV) health metrics in a large sample. PATIENTS AND METHODS: Data from the 2003-2006 National Health and Nutrition Examination Survey (NHANES) collected from January 1, 2003, through December 31, 2006, were used. Overall, 3454 nonpregnant adults 20 years or older who fasted for 6 hours or longer, with valid accelerometer data and with CV health metrics, were included in the study. Blood pressure (BP), body mass index (BMI), smoking status, diet, fasting plasma glucose level, and total cholesterol level were defined as ideal, intermediate, and poor on the basis of American Heart Association criteria. Results were weighted to account for sampling design, oversampling, and nonresponse. RESULTS: Significant increasing linear trends in mean daily MVPA were observed across CV health levels for BMI, BP, and fasting plasma glucose (P<.001). Those with a poor BMI and BP had significantly lower mean daily MVPA than those with intermediate and ideal BMIs and BPs (all P<.001). In addition, individuals with an intermediate fasting plasma glucose level had significantly lower mean daily MVPA than individuals at the ideal levels (P<.001). No significant linear trends were observed for cholesterol, smoking, and diet. A significant linear trend was observed for mean daily MVPA and the overall number of other CV health metrics (P<.001). CONCLUSION: Objectively measured MVPA was related to other CV health metrics in this large sample. These results support the inclusion of physical activity in the overall definition of ideal CV health.

Barreira, Tiago V.; Schuna, John M.; Mire, Emily F.; Katzmarzyk, Peter T.; Chaput, Jean-Philippe; Leduc, Genevieve; Tudor-Locke, Catrine (2014):

Identifying Children's Nocturnal Sleep Using 24-h Waist Accelerometry.

In: *Med Sci Sports Exerc. DOI:* 10.1249/MSS.0000000000000486.

Abstract:

PURPOSE: The purposes of this study were (1) to add layers and features to a previously published fully automated algorithm designed to identify children's nocturnal sleep and to exclude episodes of nighttime non-wear/wakefulness and potentially misclassified day time sleep episodes, and (2) to validate this refined sleep algorithm (RSA) against sleep logs. METHODS: Forty-five fourth-grade school children (51% female) participants were asked to log evening bedtime and morning wake time and wear an Actigraph GT3X+ accelerometer at their waist for 7 consecutive days. Accelerometers were distributed through a single school participating in the Baton Rouge, USA site of the International Study of Childhood Obesity, Lifestyle, and the Environment (ISCOLE). We compared log-based variables of sleep period time (SPT), bedtime, and wake time to corresponding accelerometer-determined variables of total sleep episode time (TSET), sleep onset, and sleep offset estimated with the RSA. In addition, SPT and sleep onset estimated using standard procedures combining sleep logs and accelerometry (Log+Accel) were compared to the RSA-derived values. RESULTS: RSA TSET (540+/-36 min) was significantly different from Log SPT (560+/-24 min), p=0.003, but not different from Log+Accel SPT (549+/-24 min), p=0.15. Significant and moderately high correlations were apparent between RSA-determined variables and those using the other methods (r=0.61 to 0.74). There were no differences between RSA and Log+Accel estimates of sleep onset (p=0.15) or RSA sleep offset and Log wake time (p=0.16). CONCLUSIONS: The RSA is a refinement of our previous algorithm, allowing researchers who use a 24 h waist-worn accelerometry protocol to distinguish children's nocturnal sleep (including night time wake episodes) from day time activities.

Barta, William D.; Kurth, Megan E.; Stein, Michael D.; Tennen, Howard; Kiene, Susan M. (2009):

Craving and self-efficacy in the first five weeks of methadone maintenance therapy: a daily process study.

In: *Journal of Studies on Alcohol and Drugs* 70 (5), S. 735–740.

Abstract:

OBJECTIVE:

Among individuals initiating methadone maintenance therapy for heroin addiction, low craving and high self-efficacy are thought to predict treatment response; however, in the case of craving, findings have been inconsistent. This study will test two hypotheses: (1) craving and self-efficacy both predict treatment response and (2) withdrawal symptoms and sleep quality predict greater craving and greater self-efficacy, respectively.

METHOD:

An exploratory study using electronic diary data and multilevel models examined these hypotheses. A sample of 21 heroin users was recruited during the first 1-2 days of methadone maintenance therapy to take part in a 5-week diary study. Comparisons were made between days before participants reached a 70 mg or greater dose and subsequent days. This is in keeping with research showing that this dosage corresponds to optimal opioid receptor blockade.

RESULTS:

Analysis of 449 diary records nested within 21 participants showed a marked decline in heroin use on days subsequent to the 70 mg methadone dosage plateau. Controlling for methadone dosage plateau, the likelihood of heroin use was lower on days in which participants reported both high self-efficacy and low craving, as compared with other days. Support was found for hypothesized direct associations between craving and withdrawal symptoms and between self-efficacy and sleep quality.

CONCLUSIONS:

Consistent with a previously published theory, the effect of low craving on positive response to methadone maintenance therapy is evident on days distinguished by high self-efficacy. Also, improving patients' sleep quality may enhance the benefits of methadone maintenance therapy.

Barthélémy, Inès; Barrey, Eric; Thibaud, Jean-Laurent; Uriarte, Ane; Voit, Thomas; Blot, Stéphane; Hogrel, Jean-Yves (2009):

Gait analysis using accelerometry in dystrophin-deficient dogs.

In: *Neuromuscular disorders : NMD* 19 (11), S. 788–796. DOI: 10.1016/j.nmd.2009.07.014.

Abstract:

Dogs affected with Golden Retriever Muscular Dystrophy (GRMD) exhibit striking clinical similarities with patients suffering from Duchenne muscular dystrophy (DMD), particularly gait impairments. The purpose of this study was to describe the use and reliability of accelerometry in gait assessment of dogs with muscular dystrophy. Eight healthy and 11 GRMD adult dogs underwent three gait assessment sessions, using accelerometry. Three-axial recordings of accelerations were performed, and gait variables calculated. Total power, force and regularity of accelerations, stride length and speed, normalized by height at withers, stride frequency, and cranio-caudal power were significantly decreased, whereas medio-lateral power was significantly increased in GRMD dogs. Moreover, these variables were repeatable within and between sessions. Accelerometry provides reliable variables which highlight specific gait patterns of GRMD dogs, describing objectively and quantitatively their slow, short-stepped, and swaying gait. As it is easy to set-up, quick to perform and inexpensive, accelerometry represents a useful tool, to assess locomotion during pre-clinical trials.

Bartlett, Susan J.; Barnes, Teresa; McIvor, R. Andrew (2014):

Integrating patients into meaningful real-world research.

In: *Ann Am Thorac Soc* 11 Suppl 2, S. S112-7. DOI: 10.1513/AnnalsATS.201309-327RM.

Abstract:

Research in respiratory, sleep, and critical care medicine has historically been the domain of scientists and clinicians attempting to understand pathophysiological mechanisms and consequences of disease in an effort to develop effective treatments. This traditional approach of placing scientific rigor before the patient's reality is changing. There is growing recognition of the importance of integrating patient perspectives (e.g., preferences, expectations, and expanded definitions of what constitutes "successful" outcomes) into clinical research to achieve meaningful results for a broader group of stakeholders. This evolution is reflected in the growth of patient-centered organizations and patient advocacy groups that seek to meaningfully integrate patients into the process of prioritizing research needs and creating alliances wherein patients and researchers can partner together to accomplish research goals. In tandem, a growing number of real-world trials (i.e., those with broader, more representative patient populations and routine care pathways) now complement findings from traditional randomized controlled trials and offer new opportunities to design studies that better reflect patients' healthcare preferences and experiences. Patients' perspectives are key determinants of treatment adherence and outcomes, as well as the feasibility and likely value of implementing care pathways. The advent of smartphone and push technologies offer new opportunities for the collection of more patient-centered and ecologically valid patient data, thereby adding new dimensions to meaningfully integrate patients into real-world research.

Basen-Engquist, Karen; Carmack, Cindy L.; Li, Yisheng; Brown, Jubilee; Jhingran, Anuja; Hughes, Daniel C. et al. (2013):

Social-Cognitive Theory Predictors of Exercise Behavior in Endometrial Cancer Survivors.

In: *Health Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-05962-001%26site%3dehost-live.

Abstract:

Objective: This study evaluated whether social-cognitive theory (SCT) variables, as measured by questionnaire and ecological momentary assessment (EMA), predicted exercise in endometrial cancer survivors. Method: One hundred posttreatment endometrial cancer survivors received a 6-month home-based exercise intervention. EMAs were conducted by using hand-held computers for 10- to 12-day periods every 2 months. Participants rated morning self-efficacy and positive and negative outcome expectations by using the computer, recorded exercise information in real time and at night, and wore accelerometers. At the midpoint of each assessment period, participants completed SCT questionnaires. Using linear mixed-effects models, the authors tested whether morning SCT variables predicted minutes of exercise that day (Question 1) and whether exercise minutes at time point Tj could be predicted by questionnaire measures of SCT variables from time point Tj-1 (Question 2). Results: Morning self-efficacy significantly predicted that day's exercise minutes ($p < .0001$). Morning positive outcome expectations were also associated with exercise minutes ($p = .0003$), but the relationship was attenuated when self-efficacy was included in the model ($p = .4032$). Morning negative outcome expectations were not associated with exercise minutes. Of the questionnaire measures of SCT variables, only exercise self-efficacy predicted exercise at the next time point ($p = .003$). Conclusions: The consistency of the relationship between self-efficacy and exercise minutes over short (same day) and longer (Tj to Tj-1) time periods provides support for a causal relationship. The strength of the relationship between morning self-efficacy and exercise minutes suggest that real-time interventions that target daily variation in self-efficacy may benefit endometrial cancer survivors' exercise adherence. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Bassett Jr, David R.; Wyatt, Holly R.; Thompson, Helen; Peters, John C.; Hill, James O. (2010):

Pedometer-measured physical activity and health behaviors in United States adults.

In: *Med Sci Sports Exerc* 42 (10), S. 1819.

Abstract:

U.S. adults may have lower levels of ambulatory physical activity compared with adults living in other countries.

PURPOSE:

The purpose of this study was to provide descriptive, epidemiological data on the average number of steps per day estimated to be taken by U.S. adults and to identify predictors of pedometer-measured physical activity on the basis of demographic characteristics and self-reported behavioral characteristics.

METHODS:

The America On the Move study was conducted in 2003. Individuals (N = 2522) aged 13 yr and older consented to fill out a survey, including 1921 adults aged 18 yr and older. Valid pedometer data were collected on 1136 adults with Accusplit AE120 pedometers. Data were weighted to reflect the general U.S. population according to several variables (age, gender, race/ethnicity, education, income, level of physical activity, and number of 5- to 17-yr-old children in the household). Differences in steps per day between subgroups were analyzed using unpaired t-tests when only two subgroups were involved or one-way ANOVA if multiple subgroups were involved.

RESULTS:

Adults reported taking an average of 5117 steps per day. Male gender, younger age, higher education level, single marital status, and lower body mass index were all positively associated with steps per day. Steps per day were positively related to other self-reported measures of physical activity and negatively related to self-reported measures on physical inactivity. Living environment (urban, suburban, or rural) and eating habits were not associated with steps per day.

CONCLUSIONS:

In the current study, men and women living in the United States took fewer steps per day than those living in Switzerland, Australia, and Japan. We conclude that low levels of ambulatory physical activity are contributing to the high prevalence of adult obesity in the United States.

Bassi, M.; Delle, Fave A. (2012):

Optimal experience among teachers: new insights into the work paradox.

In: *J Psychol* 146 (5), S. 533–557. Online verfügbar unter PM:22931008.

Abstract:

Several studies highlighted that individuals perceive work as an opportunity for flow or optimal experience, but not as desirable and pleasant. This finding was defined as the work paradox. The present study addressed this issue among teachers from the perspective of self-determination theory, investigating work-related intrinsic and extrinsic motivation, as well as autonomous

and controlled behavior regulation. In Study 1, 14 teachers were longitudinally monitored with Experience Sampling Method for one work week. In Study 2, 184 teachers were administered Flow Questionnaire and Work Preference Inventory, respectively investigating opportunities for optimal experience, and motivational orientations at work. Results showed that work-related optimal experiences were associated with both autonomous regulation and with controlled regulation. Moreover, teachers reported both intrinsic and extrinsic motivation at work, with a prevailing intrinsic orientation. Findings provide novel insights on the work paradox, and suggestions for teachers' well-being promotion

Bassi, Marta; Fave, Antonella Delle (2012):

Optimal experience among teachers: New insights into the work paradox.

In: *Journal of Psychology: Interdisciplinary and Applied* 146 (5), S. 533–557. DOI: 10.1037/t01422-000;

Abstract:

Several studies highlighted that individuals perceive work as an opportunity for flow or optimal experience, but not as desirable and pleasant. This finding was defined as the work paradox. The present study addressed this issue among teachers from the perspective of self-determination theory, investigating work-related intrinsic and extrinsic motivation, as well as autonomous and controlled behavior regulation. In Study 1, 14 teachers were longitudinally monitored with Experience Sampling Method for one work week. In Study 2, 184 teachers were administered Flow Questionnaire and Work Preference Inventory, respectively investigating opportunities for optimal experience, and motivational orientations at work. Results showed that work-related optimal experiences were associated with both autonomous regulation and with controlled regulation. Moreover, teachers reported both intrinsic and extrinsic motivation at work, with a prevailing intrinsic orientation. Findings provide novel insights on the work paradox, and suggestions for teachers' well-being promotion. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Bassi, Marta; Fave, Antonella Delle (2012):

Optimal experience and self-determination at school: Joining perspectives.

In: *Motivation and Emotion* 36 (4), S. 425–438. DOI: 10.1037/t06606-000;

Abstract:

This study aimed at investigating optimal experience during schoolwork in relation to SDT concepts of autonomy and locus of causality. Data were gathered from 268 high-school students using Experience Sampling Method for 1 week. Three levels of self-determination were identified: high (corresponding to autonomous regulation), moderate (mixed autonomous and controlled regulation), and low (controlled regulation). Consistently with the literature, the relationship between participants' challenges and skills values was used to recognize occasions for optimal experience, and multilevel modeling was applied in data analysis. Findings showed that during schoolwork as optimal activity (high challenges and high skills) students mostly reported low levels of self-determination. However, the quality of their experience was better in situations of high and moderate self-determination. At the theoretical level, findings allow for a more articulated understanding of the characteristics of optimal experience in academic activities. Practical implications are discussed for enhancing well-being and committed learning at school. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Bassi, Marta; Ferrario, Nicoletta; Ba, Gabriella; Delle Fave, Antonella; Vigan, Caterina (2012):

Quality of experience during psychosocial rehabilitation: A real-time investigation with experience sampling method.

In: *Psychiatric Rehabilitation Journal* 35 (6), S. 447–453. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-34112-006%26site%3dehost-live;marta.bassi@unimi.it.

Abstract:

Objective: This study aimed to identify contextual and clinical factors contributing to the quality of experience of people participating in psychosocial rehabilitation activities (RA) and to investigate the association of RA with optimal experience or flow, a state characterized by the perception of high challenges and high skills, deep concentration, positive affect, clear goals, control and autonomous motivation, which contributes to individuals' well-being. Method: Twenty-seven people at an Italian psychiatric rehabilitation center provided real-time information on daily activities and associated experience through experience sampling method. Multilevel models were calculated to assess the factors contributing to participants' quality of experience.

Results: Analyses showed that situation-contingent factors—type of activity and relationship between perceived challenges and skills—predicted participants' quality of experience over and above the clinical factors taken into account in this study: level of global functioning (GAF), rehabilitation duration, and type of setting (residential vs. semiresidential). In addition, RA were prominently associated with optimal experience. Conclusion and Implications for Practice: Results suggest the importance for people involved in rehabilitation programs to engage in challenging tasks, favoring both the onset of positive and complex experiences and skill development. Findings further show the usefulness of real-time assessment methods in monitoring the rehabilitation process. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Bassi, M.; Ferrario, N.; Ba, G.; Delle, Fave A.; Vigano, C. (2012):

Quality of experience during psychosocial rehabilitation: a real-time investigation with experience sampling method.

In: *Psychiatr.Rehabil.J* 35 (6), S. 447–453. DOI: 10.1037/h0094578.

Abstract:

OBJECTIVE: This study aimed to identify contextual and clinical factors contributing to the quality of experience of people participating in psychosocial rehabilitation activities (RA) and to investigate the association of RA with optimal experience or flow, a state characterized by the perception of high challenges and high skills, deep concentration, positive affect, clear goals, control and autonomous motivation, which contributes to individuals' well-being. METHOD: Twenty-seven people at an Italian psychiatric rehabilitation center provided real-time information on daily activities and associated experience through experience sampling method. Multilevel models were calculated to assess the factors contributing to participants' quality of experience. RESULTS: Analyses showed that situation-contingent factors-type of activity and relationship between perceived challenges and skills-predicted participants' quality of experience over and above the clinical factors taken into account in this study: level of global functioning (GAF), rehabilitation duration, and type of setting (residential vs. semi-residential). In addition, RA were prominently associated with optimal experience. CONCLUSION AND IMPLICATIONS FOR PRACTICE: Results suggest the importance for people involved in rehabilitation programs to engage in challenging tasks, favoring both the onset of positive and complex experiences and skill development. Findings further show the usefulness of real-time assessment methods in monitoring the rehabilitation process

Bastawrous, A.; Armstrong, M. J. (2013):

Mobile health use in low- and high-income countries: an overview of the peer-reviewed literature.

In: *J R Soc.Med* 106 (4), S. 130–142. DOI: 10.1177/0141076812472620.

Abstract:

The evolution of mobile phone technology has introduced new possibilities to the field of medicine. Combining technological advances with medical expertise has led to the use of mobile phones in all healthcare areas including diagnostics, telemedicine, research, reference libraries and interventions. This article provides an overview of the peer-reviewed literature, published between 1 August 2006 and 1 August 2011, for the application of mobile/cell phones (from basic text-messaging systems to smartphones) in healthcare in both resource-poor and high-income countries. Smartphone use is paving the way in high-income countries, while basic text-messaging systems of standard mobile phones are proving to be of value in low- and middle-income countries. Ranging from infection outbreak reporting, anti-HIV therapy adherence to gait analysis, resuscitation training and radiological imaging, the current uses and future possibilities of mobile phone technology in healthcare are endless. Multiple mobile phone based applications are available for healthcare workers and healthcare consumers; however, the absolute majority lack an evidence base. Therefore, more rigorous research is required to ensure that healthcare is not flooded with non-evidence based applications and is maximized for patient benefit

Basterfield, Laura; Adamson, Ashley J.; Parkinson, Kathryn N.; Maute, Ulrike; Li, Pei-Xin; Reilly, John J.; Gateshead Millennium Study Core Team (2008):

Surveillance of physical activity in the UK is flawed: validation of the Health Survey for England Physical Activity Questionnaire.

In: *Archives of disease in childhood* 93 (12), S. 1054–1058.

Abstract:

OBJECTIVE:

Public health surveillance of physical activity in children in the UK depends on a parent-reported physical activity questionnaire which has not been validated. We aimed to validate this questionnaire against measurement of physical activity using accelerometry in 6-7-year-old children.

METHODS:

In 130 children aged 6-7 years (64 boys, 66 girls) we estimated habitual moderate-vigorous intensity physical activity (MVPA) using the Health Survey for England parent-report questionnaire for physical activity. For the same time period and the same children, we measured MVPA objectively using 7-day accelerometry with the Actigraph accelerometer.

RESULTS:

The questionnaire over-estimated MVPA significantly (paired t test, $p<0.01$). Mean error (bias) when using the questionnaire was 122 min/day (95% CI 124 to 169). Mean time spent in MVPA was 146 min/day (95% CI 124 to 169) using the questionnaire and 24 min/day (95% CI 22 to 26) using the accelerometer. Rank order correlations between MVPA measured by accelerometer and estimated by the questionnaire were not statistically significant.

CONCLUSIONS:

Public health surveillance of physical activity should not rely on this questionnaire. Levels of habitual physical activity in children are likely to be substantially lower than those reported in UK health surveys

Basterfield, L.; Adamson, A. J.; Parkinson, K. N.; Maute, U.; Li, P. X.; Reilly, J. J. (2008):

Surveillance of physical activity in the UK is flawed: validation of the Health Survey for England Physical Activity Questionnaire.

In: *Archives of disease in childhood* 93 (12), S. 1054–1058. DOI: 10.1136/adc.2007.135905.

Abstract:

OBJECTIVE\r\nPublic health surveillance of physical activity in children in the UK depends on a parent-reported physical activity questionnaire which has not been validated. We aimed to validate this questionnaire against measurement of physical activity using accelerometry in 6-7-year-old children.\r\nMETHODS\r\nIn 130 children aged 6-7 years (64 boys, 66 girls) we estimated habitual moderate-vigorous intensity physical activity (MVPA) using the Health Survey for England parent-report questionnaire for physical activity. For the same time period and the same children, we measured MVPA objectively using 7-day accelerometry with the Actigraph accelerometer.\r\nRESULTS\r\nThe questionnaire over-estimated MVPA significantly (paired t test, $p<0.01$). Mean error (bias) when using the questionnaire was 122 min/day (95% CI 124 to 169). Mean time spent in MVPA was 146 min/day (95% CI 124 to 169) using the questionnaire and 24 min/day (95% CI 22 to 26) using the accelerometer. Rank order correlations between MVPA measured by accelerometer and estimated by the questionnaire were not statistically significant.\r\nCONCLUSIONS\r\nPublic health surveillance of physical activity should not rely on this questionnaire. Levels of habitual physical activity in children are likely to be substantially lower than those reported in UK health surveys.

Basterfield, Laura; Adamson, Ashley J.; Frary, Jessica K.; Parkinson, Kathryn N.; Pearce, Mark S.; Reilly, John J. (2011):

Longitudinal study of physical activity and sedentary behavior in children.

In: *Pediatrics* 127 (1), S. e24-e30. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-14588-002&site=ehost-live;laura.basterfield@ncl.ac.uk.

Abstract:

Objective: Physical activity is thought to decline during childhood, but the extent of the decline is unknown. We made objective measures of 2-year changes in physical activity and sedentary behavior in English children who participated in the Gateshead Millennium Study to explore the nature, timing, and extent of changes in physical activity and sedentary behavior before adolescence. Methods: We conducted a longitudinal study of 405 children (207 girls), aged 7 years, in 2006/2007 and again 24 months later. Physical activity and sedentary behavior were measured with the Actigraph GT1M accelerometer. Data were analyzed in 2010. Changes in total volume of physical activity (accelerometer counts per minute [cpm]), moderate-to-vigorous–intensity physical activity (MVPA), and sedentary behavior were quantified. Factors associated with changes in physical activity and sedentary behavior were tested by using linear regression. Tracking of physical activity and sedentary behavior over the 2-year period was assessed by rank-order correlation. Results: Mean daily volume of physical activity declined by 83 cpm (interquartile range [IQR]: −189 to 31) over 2 years; the percentage of daily time spent in MVPA was low at baseline and declined

by 0.3% (IQR: −1.4 to 0.9). The percentage of daily time in sedentary behavior was high at baseline and increased from 78.0% to 81.1% of the day (change 3.1% [IQR: −0.3 to 6.0]). The decline in MVPA and increase in sedentary behavior were significantly greater in girls and in those with higher BMI z scores at baseline. Physical activity and sedentary behavior showed moderate tracking over the 2-year period. Conclusions: We report here new evidence of low and declining levels of physical activity and MVPA and increasing sedentary behavior before adolescence. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Basterfield, Laura; Pearce, Mark S.; Adamson, Ashley J.; Frary, Jessica K.; Parkinson, Kathryn N.; Wright, Charlotte M.; Reilly, John J. (2012):

Physical activity, sedentary behavior, and adiposity in English children.

In: *Am J Prev Med* 42 (5), S. 445–451. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-10681-005&site=ehost-live;john.j.reilly@strath.ac.uk.

Abstract:

Background: The importance of variation in total volume of physical activity or moderate- to vigorous-intensity physical activity (MVPA) to development of body fatness in childhood is unclear, and it is unclear if physical activity has a greater influence on adiposity in boys than girls. Purpose: To assess relationships between 2-year changes in objectively measured physical activity, sedentary behavior, and adiposity in English children. Methods: Prospective cohort study, set in Northeast England, of a socioeconomically representative sample of 403 children. Measures were change in accelerometer-determined physical activity and sedentary behavior from age 7 to 9 years (data collected 2006/2007 and 2008/2009; analyzed in 2010) and concurrent change in adiposity (fat mass index derived from bioelectric impedance) and change in BMI Z-score. Results: Decline in MVPA was associated with a greater increase in fat mass index in boys but not girls. Declining MVPA was associated with increased BMI Z-score in boys but not girls. Increased sedentary behavior was not associated with increased BMI Z-score in either gender. Conclusions: Avoiding mid–late childhood reductions in MVPA may reduce excessive fat gain, although such strategies may have greater impact on boys than girls. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Bauer, S.; Moessner, M. (2012):

Technology-enhanced monitoring in psychotherapy and e-mental health.

In: *J Ment.Health* (0963-8237 (Linking)). DOI: 10.3109/09638237.2012.667886.

Abstract:

Advances in technology increasingly facilitate data collection in the context of psychosocial and psychotherapeutic care. Such technology-enhanced assessments (e.g. via Internet-based systems and mobile devices) open new perspectives for research into processes related to mental health and well-being. The use of this knowledge for the development and refinement of (online and face-to-face) therapeutic interventions promises to contribute to an optimization of care. The aim of this paper is to provide an overview on how information and communication technologies may be used (a) to improve our understanding of illness development and recovery through longitudinal technology-enhanced assessment of symptoms and behaviors (e.g. outcome monitoring and ecological momentary assessment) and (b) to optimize care for mental disorders by integrating such monitoring assessments in specific interventions (e.g. ecological momentary interventions and supportive monitoring) in face-to-face or e-mental health settings

Baumler, D.; Kirschbaum, C.; Kliegel, M.; Alexander, N.; Stalder, T. (2013):

The cortisol awakening response in toddlers and young children.

In: *Psychoneuroendocrinology* (0306-4530 (Linking)). DOI: 10.1016/j.psyneuen.2013.05.008.

Abstract:

The cortisol awakening response (CAR) is frequently assessed in psychoneuroendocrinological research on adult participants. However, knowledge on the development of the CAR during early life is scarce and characterized by inconsistent findings. We have recently shown that a positive CAR is readily observable in young infants under conditions of strict methodological control. However, it still remains unknown whether a significant CAR is maintained consistently throughout toddler- and childhood. Here, we report data from 150 toddlers and young children aged 12-87 months in whom salivary cortisol levels were assessed 0 and 30min post-awakening over three non-consecutive study days. High quality of data was ensured by the use of objective

measures to verify children's awakening times (wrist actigraphy) and sampling times (electronic monitoring containers). Results revealed the presence of a significant CAR (>1.5nmol/L) in 142 (out of 150) children and on a total of 82% of study days. A marked CAR was consistently observed throughout all examined age groups (mean increase: 8.73nmol/L). In addition, the level of cortisol on awakening was found to increase linearly with children's age (r=.17, p=.04). Overall, the current findings strongly suggest that, contrary to previous propositions, the CAR is maintained consistently throughout toddler- and childhood

Baxter, Suzanne D.; Hitchcock, David B.; Guinn, Caroline H.; Vaadi, Kate K.; Puryear, Megan P.; Royer, Julie A. et al. (2014):

A Validation Study Concerning the Effects of Interview Content, Retention Interval, and Grade on Children's Recall Accuracy for Dietary Intake and/or Physical Activity.

In: *J Acad Nutr Diet. DOI:* 10.1016/j.jand.2014.02.017.

Abstract:

BACKGROUND: Practitioners and researchers are interested in assessing children's dietary intake and physical activity together to maximize resources and minimize subject burden. OBJECTIVE: Our aim was to investigate differences in dietary and/or physical activity recall accuracy by content (diet only; physical activity only; diet and physical activity), retention interval (same-day recalls in the afternoon; previous-day recalls in the morning), and grade (third; fifth). DESIGN: Children (n=144; 66% African American, 13% white, 12% Hispanic, 9% other; 50% girls) from four schools were randomly selected for interviews about one of three contents. Each content group was equally divided by retention interval, each equally divided by grade, each equally divided by sex. Information concerning diet and physical activity at school was validated with school-provided breakfast and lunch observations, and accelerometry, respectively. Dietary accuracy measures were food-item omission and intrusion rates, and kilocalorie correspondence rate and inflation ratio. Physical activity accuracy measures were absolute and arithmetic differences for moderate to vigorous physical activity minutes. STATISTICAL ANALYSES PERFORMED: For each accuracy measure, linear models determined effects of content, retention interval, grade, and their two-way and three-way interactions; ethnicity and sex were control variables. RESULTS: Content was significant within four interactions: intrusion rate (contentxretention-intervalxgrade; P=0.0004), correspondence rate (contentxgrade; P=0.0004), inflation ratio (contentxgrade; P=0.0104), and arithmetic difference (contentxretention-intervalxgrade; P=0.0070). Retention interval was significant for correspondence rate (P=0.0004), inflation ratio (P=0.0014), and three interactions: omission rate (retention-intervalxgrade; P=0.0095), intrusion rate, and arithmetic difference (both already mentioned). Grade was significant for absolute difference (P=0.0233) and five interactions mentioned. Content effects depended on other factors. Grade effects were mixed. Dietary accuracy was better with same-day than previous-day retention interval. CONCLUSIONS: Results do not support integrating dietary intake and physical activity in children's recalls, but do support using shorter rather than longer retention intervals to yield more accurate dietary recalls. Additional validation studies need to clarify age effects and identify evidence-based practices to improve children's accuracy for recalling dietary intake and/or physical activity.

Bayó, Joan; Cos, Francesc Xavier; Roca, Carme; Dalfó, Antoni; Martín-Baranera, Maria Montserrat; Albert, Botey (2006):

Home blood pressure self-monitoring: diagnostic performance in white-coat hypertension.

In: *Blood Press Monit* 11 (2), S. 47–52. DOI: 10.1097/01.mbp.0000200479.19046.94.

Abstract:

OBJECTIVE\r\nTo determine the diagnostic performance of home blood pressure self-monitoring in white-coat hypertension using a 3-day reading program.\r\nMATERIAL AND METHODS\r\nOne hundred and ninety nontreated patients recently diagnosed with mild-moderate hypertension, selected consecutively at four primary healthcare centers in the city of Barcelona, were included. Each patient underwent morning and night home blood pressure self-monitoring with readings in triplicate for three consecutive days, followed by 24-h ambulatory blood pressure monitoring. The normality cut-off point value for home blood pressure self-monitoring and daytime ambulatory blood pressure monitoring was 135/85 mmHg.\r\nRESULTS\r\nSixty-three patients were diagnosed with white-coat hypertension with home blood pressure self-monitoring (34.8%; 95% confidence interval: 27.9-42.2) and 74 with ambulatory blood pressure monitoring (41.6%; 95% confidence interval: 33.7-48.4). No statistically significant differences were observed between home blood pressure self-monitoring values and those of diurnal ambulatory blood pressure monitoring [137.4 (14.3)/82.1 (8.3) mmHg vs. 134.8 (11.3)/81.3 (9.5) mmHg]. Home blood pressure self-monitoring diagnostic performance parameters were sensitivity 50.0% (95% confidence interval: 38.3-61.7), specificity 75.7% (95% confidence interval: 66.3-83.2), positive and negative predictive values 58.7% (95% confidence interval: 45.6-70.8) and 68.6% (95% confidence interval: 59.4-76.7), respectively, and positive and negative probability coefficients 2.05 and 0.66, respectively. Analysis of different normality cut-off points using a receiver operating characteristic curve failed to produce significant improvement in the diagnostic performance of home blood pressure self-monitoring.\r\nCONCLUSIONS\r\nThe

diagnostic accuracy of a 3-day home blood pressure self-monitoring reading program in white-coat hypertension was poor. Ambulatory blood pressure monitoring continues to be the test of choice for this indication.

Beal, Daniel J. (2012):

Industrial/organizational psychology. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 601–619. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-034%26site%3dehost-live.

Abstract:

(from the chapter) Industrial and organizational (I/O) psychology often is thought of as an inherently applied field. A field whose purpose is to study psychological issues within the workplace can and should make contributions to practitioners involved in the design of our work environments and the selection of the individuals who populate that environment. But psychological issues in the workplace reflect a domain broad enough to go beyond the development of practitioner tools. Work makes up a substantial portion of our adult lives, and our experiences at work often are critical to our overall well-being and sense of self. Given this central role of work in one's life, a psychology of work must also explore work experiences irrespective of their potential for practitioners. Indeed, recent calls in the I/O literature have emphasized the study of daily experiences as a primary venue through which work and our behavior at work can be understood (Beal, Weiss, Barros, & MacDermid, 2005; Weiss & Cropanzano, 1996; Weiss & Rupp, 2011). This chapter provides a review of how methods used to examine daily life are used within the discipline of I/O psychology. Various names have been used to describe these methods within I/O psychology, including ecological momentary assessment, experience sampling, ambulatory assessment, and daily diary studies. In this chapter, I refer to these methods collectively as either daily experience research or simply experiential research. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Beal, Daniel J.; Trougakos, John P.; Weiss, Howard M.; Green, Stephen G. (2006):

Episodic processes in emotional labor: perceptions of affective delivery and regulation strategies.

In: *J Appl Psychol* 91 (5), S. 1053.

Abstract:

This study examined emotional labor processes from a within-person, episodic framework. The authors hypothesized that the influence of negative emotions on affective delivery would be lessened by regulation strategies for supervisor perceptions but not self-perceptions. In addition, difficulty maintaining display rules was hypothesized to mediate the relation between negative emotions and self-perceptions of affective delivery. Finally, the influence of surface acting strategies on these processes as well as correlations with individual differences was investigated. Hypotheses were tested using ecological momentary assessment of a sample of cheerleading instructors. Results suggest that surface actors can regulate emotions effectively on an episode-to-episode basis but find the episode more difficult. In addition, surface actors exhibit more general tendencies to devalue themselves and experience fewer positive emotions.

Beaty, R. E.; Burgin, C. J.; Nusbaum, E. C.; Kwapil, T. R.; Hodges, D. A.; Silvia, P. J. (2013):

Music to the inner ears: Exploring individual differences in musical imagery.

In: *Conscious.Cogn* 22 (4), S. 1163–1173. DOI: 10.1016/j.concog.2013.07.006.

Abstract:

In two studies, we explored the frequency and phenomenology of musical imagery. Study 1 used retrospective reports of musical imagery to assess the contribution of individual differences to imagery characteristics. Study 2 used an experience sampling design to assess the phenomenology of musical imagery over the course of one week in a sample of musicians and non-musicians. Both studies found episodes of musical imagery to be common and positive: people rarely wanted such experiences to end and often heard music that was personally meaningful. Several variables predicted musical imagery, including personality, musical preferences, and positive mood. Musicians tended to hear musical imagery more often, but they reported less frequent episodes of deliberately-generated imagery. Taken together, the present research provides new insights

into individual differences in musical imagery, and it supports the emerging view that such experiences are common, positive, and more voluntary than previously recognized

Becker, Amy M.; Goldberg, Jordan H.; Henson, Michael; Ahn, Chul; Tong, Liyue; Baum, Michel; Buchanan, George R. (2014):

Blood pressure abnormalities in children with sickle cell anemia.

In: *Pediatr Blood Cancer* 61 (3), S. 518–522. DOI: 10.1002/pbc.24843.

Abstract:

BACKGROUND: Kidney disease is an important cause of morbidity and mortality in patients with sickle cell anemia (SCA). The factors that affect progression of renal disease are unknown, especially in children and adolescents. Alterations in blood pressure, including hypertension and lack of the normal nocturnal dip in blood pressure, are important determinants of diabetic nephropathy and other renal diseases and may play a role in sickle cell nephropathy. Our primary hypothesis was that children with SCA who have microalbuminuria will demonstrate less nocturnal dipping of blood pressure compared to patients without microalbuminuria. We also investigated other potential factors associated with microalbuminuria. PROCEDURE: This prospective study of 52 adolescents with SCA followed in the Children's Medical Center Dallas Comprehensive Sickle Cell Center characterized 24-hour ambulatory blood pressure profiles and presence of microalbuminuria. Stepwise logistic regression was performed to identify significant independent factors that are associated with microalbuminuria. RESULTS: Thirty-five percent of patients were identified as having previously unrecognized hypertension, and 17% had pre-hypertension (blood pressure greater than the 90th percentile but less than the 95th percentile). Fifty-six percent of patients lacked the normal nocturnal dip in blood pressure. In addition, 21% had microalbuminuria, and their percent nocturnal dip was significantly less than those without microalbuminuria (P = 0.01). CONCLUSIONS: Blood pressure abnormalities are common in adolescents with SCA and are a possible modifiable risk factor in the progression of sickle cell nephropathy.

Becker, S.; Kribben, A.; Meister, S.; Diamantidis, C. J.; Unger, N.; Mitchell, A. (2013):

User profiles of a smartphone application to support drug adherence--experiences from the iNephro project.

In: *PLoS.One.* 8 (10), S. e78547. DOI: 10.1371/journal.pone.0078547.

Abstract:

PURPOSE: One of the key problems in the drug therapy of patients with chronic conditions is drug adherence. In 2010 the initiative iNephro was launched (www.inephro.de). A software to support regular and correct drug intake was developed for a smartphone platform (iOS). The study investigated whether and how smartphone users deployed such an application. METHODS: Together with cooperating partners the mobile application "Medikamentenplan" ("Medication Plan") was developed. Users are able to keep and alter a list of their regular medication. A memory function supports regular intake. The application can be downloaded free of charge from the App Store by Apple. After individual consent of users from December 2010 to April 2012 2042338 actions were recorded and analysed from the downloaded applications. Demographic data were collected from 2279 users with a questionnaire. RESULTS: Overall the application was used by 11688 smartphone users. 29% (3406/11688) used it at least once a week for at least four weeks. 27% (3209/11688) used the application for at least 84 days. 68% (1554/2279) of users surveyed were male, the stated age of all users was between 6-87 years (mean 44). 74% of individuals (1697) declared to be suffering from cardiovascular disease, 13% (292) had a previous history of transplantation, 9% (205) were suffering from cancer, 7% (168) reported an impaired renal function and 7% (161) suffered from diabetes mellitus. 69% (1568) of users were on <6 different medications, 9% (201) on 6 - 10 and 1% (26) on more than 10. CONCLUSION: A new smartphone application, which supports drug adherence, was used regularly by chronically ill users with a wide range of diseases over a longer period of time. The majority of users so far were middle-aged and male

Becker, Janine; Schwartz, Carolyn; Saris-Baglama, Renee N.; Kosinski, Mark; Bjorner, Jakob Bue (2007):

Using Item Response Theory (IRT) for Developing and Evaluating the Pain Impact Questionnaire (PIQ-6™).

In: *Pain Medicine* 8 (s3), S. S129-S144.

Abstract:

Objectives. To describe the development and evaluation of the Pain Impact Questionnaire (PIQ-6TM), a six-item measure of pain severity and impact on health-related quality of life (HRQOL) domains.

Participants. Two general US population samples (N = 829 and N = 7,025) and one chronic pain patient sample (N = 350) were included.

Methods. The PIQ-6TM was developed using conventional and item response theory (IRT) methods in four steps: 1) initial selection and development of items based on results from a previously developed Bodily Pain item bank; 2) final item selection based on new data and investigations of unidimensionality, differential item functioning (DIF), and IRT modeling; 3) development of scoring algorithms, population norms, and cross-calibrations; and 4) psychometric evaluation.

Results. Six items on pain intensity and impact satisfied requirements of unidimensionality and lack of DIF and could be scored using IRT methods. The PIQ-6 showed good internal consistency reliability (coefficient alpha = 0.94) and good construct validity. Convergent validity was supported by strong correlations with pain severity scales (visual analog and numerical rating scales; r = 0.81–0.84); discriminant validity was suggested by correlations with the SF-8™ Health Survey Physical and Mental Component Summary measures (r = −0.77; r = −0.32, respectively), significant mean score differences between chronic pain patients and the general population, and between patients differing in self-reported medical conditions (P < 0.001).

Conclusion. The PIQ-6 is a brief, precise questionnaire available in a paper-and-pencil version and a computerized version that includes scoring and feedback software. It may facilitate large-scale, inexpensive, precise, and norm-based pain assessment and monitoring in a wide variety of settings (e.g., homes, clinics, offices).

Beckham, J. C.; Calhoun, P. S.; Dennis, M. F.; Wilson, S. M.; Dedert, E. A. (2012):

Predictors of Lapse in First Week of Smoking Abstinence in PTSD and Non-PTSD Smokers.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/nts252.

Abstract:

INTRODUCTION: Retrospective research suggests smokers with posttraumatic stress disorder (PTSD) lapse more quickly after their quit date. Ecological momentary assessment (EMA) research is needed to confirm the presence of early smoking lapse in PTSD and form conceptualizations that inform intervention. METHODS: Smokers with (n = 55) and without (n = 52) PTSD completed alarm-prompted EMA of situational and psychiatric variables the week before and after a quit date, and self-initiated EMA following smoking lapses. Blood samples at baseline and on the quit date allowed assessment of dehydroepiandrosterone (DHEA) and dehydroepiandrosterone sulfate (DHEA(S)). RESULTS: PTSD was related to shorter time to lapse (hazard ratio [HR] = 1.677, 95% CI: 1.106-2.544). Increased smoking abstinence self-efficacy was related to longer time to lapse (HR = 0.608, 95% CI: 0.430-0.860). Analyses of participants' real-time reports revealed that smokers with PTSD were more likely to attribute first-time lapses to negative affect (= 5.412, p = .020), and trauma reminders (Fisher's exact p = .003**). Finally, the quit date decrease in DHEA(S) was related to shorter time to lapse (HR = 1.009, 95% CI: 1.000-1.018, p < .05). CONCLUSIONS: Results provide evidence of shorter time to first smoking lapse in PTSD, and add to evidence that early lapse occasions are more strongly related to trauma reminders, negative affect, and cravings in smokers with PTSD

Beckham, Jean C.; Flood, Amanda M.; Dennis, Michelle F.; Calhoun, Patrick S. (2009):

Ambulatory cardiovascular activity and hostility ratings in women with chronic posttraumatic stress disorder.

In: *Biological Psychiatry* 65 (3), S. 268–272.

Abstract:

The objective of the current study is to evaluate the relationship between hostility and ambulatory cardiovascular activity in women with and without posttraumatic stress disorder (PTSD).

Methods

One hundred and one women completed 24 hours of ambulatory monitoring and standardized diagnostic and hostility measures. Generalized estimating equations analysis was used to examine the effects of group and hostility factor scores (hostile beliefs, overt hostility, and covert hostility) on ambulatory heart rate (AHR) and ambulatory systolic (ASBP) and diastolic (ADBP) blood pressure.

Results

After controlling for covariates, there was an interaction between PTSD and both hostile beliefs and overt hostility for AHR. Increases in hostility were associated with greater increases in heart rate among women with PTSD relative to those without PTSD. There was a similar interaction between hostile beliefs and group for ADBP.

Conclusions

Increased AHR and blood pressure have been linked to poor cardiovascular outcomes in nonpsychiatric populations. Individuals with PTSD display increased hostility, a construct that has also been linked to poorer cardiovascular outcomes. Increases in hostile beliefs were associated with a greater increase in ADBP among women with PTSD as compared with control subjects. These data suggest that PTSD might in part moderate the relationship between hostility and cardiovascular outcomes.

Beckmann, Nadin; Wood, Robert E.; Minbashian, Amirali (2010):

It depends how you look at it: On the relationship between neuroticism and conscientiousness at the within-and the between-person levels of analysis.

In: *Journal of Research in Personality* 44 (5), S. 593–601.

Abstract:

Research on personality structure has primarily focused on patterns of covariation between traits, and less emphasis has been put on the organization of relationships between thoughts, feelings and behaviors as they occur within individuals. Over several weeks 115 managers from large Australian companies were assessed multiple times a day employing experience-sampling methodology. Within- and between-person variation in personality responses was analyzed using hierarchical linear modeling and correlation analyses. Findings indicate that analyzing personality as a within-person phenomenon reveals information not well captured by the trait approach. While conscientiousness and neuroticism were negatively correlated at the between-person level, this relationship was reversed at the within-person level. Results are discussed in terms of the distinctness of the within- and between-person structure of personality.

Bedford, Jennifer L.; Linden, Wolfgang; Barr, Susan I. (2011):

Negative eating and body attitudes are associated with increased daytime ambulatory blood pressure in healthy young women.

In: *International Journal of Psychophysiology* 79 (2), S. 147–154.

Abstract:

BACKGROUND AND OBJECTIVE:

Various psychosocial stressors have been associated with increased ambulatory blood pressure (ABP) and cortisol in middle-aged women. Given that many young women report negative eating/body attitudes, we examined whether these attitudes were associated with cortisol and ABP in a cross-sectional study.

METHODS:

120 non-obese, healthy women aged 19-35 completed questionnaires, measurement of 24-h urinary free cortisol (UFC), and 12-h daytime ABP. Main and interactive effects of eating/body attitudes (average Z-score of Eating/body attitude questionnaires split at zero) and current weight loss effort (yes/no) were examined by General Linear Modeling adjusted for covariates.

RESULTS:

Women with negative eating/body attitudes were more likely to report current weight loss attempts (63% versus 21%, $p<0.001$). Eating/body attitudes or weight loss effort did not have main or interactive effects on age, physical activity level, energy intakes, general stress (average Z-score of psychosocial stress questionnaires) or UFC. Body mass index was higher among those currently trying to lose weight but did not differ by eating/body attitudes. Significant main effects of eating/body attitudes were detected on ABP: diastolic ABP (73.2 ± 0.7 versus 70.3 ± 0.8mm Hg, $p=0.011$) and mean arterial pressure (87.3 ± 0.7 versus 84.9 ± 0.8mm Hg, $p=0.032$) were higher among women with negative versus neutral/positive eating/body attitudes. There were no weight loss effort main effects for ABP, or weight loss effort-by-Eating/body attitude interactions.

CONCLUSION:

This exploratory study suggests that more negative eating/body-related attitudes may be modestly associated with higher ABP

Bedford, Jennifer L.; Linden, Wolfgang; Barr, Susan I. (2011):

Negative eating and body attitudes are associated with increased daytime ambulatory blood pressure in healthy young women.

In: *International journal of psychophysiology : official journal of the International Organization of Psychophysiology* 79 (2), S. 147–154. DOI: 10.1016/j.ijpsycho.2010.09.013.

Abstract:

BACKGROUND AND OBJECTIVE\r\nVarious psychosocial stressors have been associated with increased ambulatory blood pressure (ABP) and cortisol in middle-aged women. Given that many young women report negative eating/body attitudes, we examined whether these attitudes were associated with cortisol and ABP in a cross-sectional study.\r\nMETHODS\r\n120 non-obese, healthy women aged 19-35 completed questionnaires, measurement of 24-h urinary free cortisol (UFC), and 12-h daytime ABP. Main and interactive effects of eating/body attitudes (average Z-score of Eating/body attitude questionnaires split at zero) and current weight loss effort (yes/no) were examined by General Linear Modeling adjusted for covariates.\r\nRESULTS\r\nWomen with negative eating/body attitudes were more likely to report current weight loss attempts (63% versus 21%, p<0.001). Eating/body attitudes or weight loss effort did not have main or interactive effects on age, physical activity level, energy intakes, general stress (average Z-score of psychosocial stress questionnaires) or UFC. Body mass index was higher among those currently trying to lose weight but did not differ by eating/body attitudes. Significant main effects of eating/body attitudes were detected on ABP: diastolic ABP (73.2 ± 0.7 versus 70.3 ± 0.8mm Hg, p=0.011) and mean arterial pressure (87.3 ± 0.7 versus 84.9 ± 0.8mm Hg, p=0.032) were higher among women with negative versus neutral/positive eating/body attitudes. There were no weight loss effort main effects for ABP, or weight loss effort-by-Eating/body attitude interactions.\r\nCONCLUSION\r\nThis exploratory study suggests that more negative eating/body-related attitudes may be modestly associated with higher ABP independent of weight loss effort.

Beets, Michael W.; Beighle, Aaron; Bottai, Matteo; Rooney, Laura; Tilley, Fallon (2012):

Pedometer-determined step-count guidelines for afterschool programs.

In: *J Phys Act Health* 9 (1), S. 71–77. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-00272-009&site=ehost-live.

Abstract:

Background: Policies to require afterschool programs (ASPs, 3 PM to 6 PM) to provide children a minimum of 30 minutes of moderate-to-vigorous physical activity (MVPA) exist. With few low-cost, easy-to-use measures of MVPA available to the general public, ASP providers are limited in their ability to track progress toward achieving this policy-goal. Pedometers may fill this gap, yet there are no step-count guidelines for ASPs linked to 30 minutes of MVPA. Methods: Steps and accelerometer estimates of MVPA were collected concurrently over multiple days on 245 children (8.2 years, 48% boys, BMI-percentile 68.2) attending 3 community-based ASPs. Random intercept logit models and receiver operating characteristic (ROC) analyses were used to identify a threshold of steps that corresponded with attaining 30 minutes of MVPA. Results: Children accumulated an average of 2876 steps (standard error [SE] 79) and 16.1 minutes (SE0.5) of MVPA over 111 minutes (SE1.3) during the ASP. A threshold of 4600 steps provided high specificity (0.967) and adequate sensitivity (0.646) for discriminating children who achieved the 30 minutes of MVPA; 93% of the children were correctly classified. The total area under the curve was 0.919. Children accumulating 4600 steps were 25 times more likely to accumulate 30 minutes of MVPA. Conclusions: This step threshold will provide ASP leaders with an objective, low-cost, easy-to-use tool to monitor progress toward policy-related goals. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Beets, Michael W.; Bornstein, Daniel; Dowda, Marsha; Pate, Russell R. (2011):

Compliance with national guidelines for physical activity in U.S. preschoolers: measurement and interpretation.

In: *Pediatrics* 127 (4), S. 658–664. DOI: 10.1542/peds.2010-2021.

Abstract:

OBJECTIVE\r\nThe National Association for Sport and Physical Education (NASPE) guidelines for preschoolers recommend 120 minutes of physical activity daily. Two issues, however, create a situation whereby substantial variation in estimated prevalence rates of (in)active preschoolers are reported. First, NASPE guidelines have been interpreted in multiple ways. Second, objective monitoring via accelerometry is the most widely accepted measure of preschoolers' physical activity, yet multiple cut points provide vastly different estimates of physical activity. This study aimed to estimate the prevalence of preschoolers meeting NASPE guidelines and illustrate the differences among rates, given guideline interpretations, and cut points.\r\nPATIENTS AND

METHODS\r\nThree- to 5-year-old children (n = 397) wore ActiGraph accelerometers for an average of 5.9 days. NASPE guidelines were expressed in 3 ways: 120 minutes daily of light-to-vigorous physical activity; 120 minutes daily of moderate-to-vigorous physical activity; and 60 minutes daily of moderate-to-vigorous physical activity. Estimates of 120 minutes daily of light-to-vigorous physical activity, 120 minutes daily of moderate-to-vigorous physical activity, and 60 minutes daily of moderate-to-vigorous physical activity were calculated on the basis of 4 common accelerometer cut points for preschoolers: Pate, Reilly and Puyau, Sirard, and Freedson.\r\nRESULTS\r\nPrevalence rates varied considerably, with estimates ranging from 13.5% to 99.5%, 0.0% to 95.7%, and 0.5% to 99.5% for 120 minutes daily of light-to-vigorous physical activity, 120 minutes daily of moderate-to-vigorous physical activity, and 60 minutes daily of moderate-to-vigorous physical activity, respectively.\r\nCONCLUSIONS\r\nThe variation in NASPE guidelines, coupled with different accelerometer cut points, results in disparate estimates of (in)active preschoolers. This limits the ability to estimate population prevalence levels of physical activity that can be used to guide public health policy. Development of new guidelines should focus on an explicit delineation of physical activity and attempt to standardize the measurement of preschoolers' physical activity.

Beets, Michael W.; Weaver, Robert G.; Moore, Justin B.; Turner-McGrievy, Gabriel; Pate, Russell R.; Webster, Collin; Beighle, Aaron (2014):

From policy to practice: strategies to meet physical activity standards in YMCA afterschool programs.

In: *Am J Prev Med* 46 (3), S. 281–288. DOI: 10.1016/j.amepre.2013.10.012.

Abstract:

BACKGROUND: In 2011, the U.S. Young Men's Christian Association (YMCA) adopted activity standards recommending that afterschool programs (ASPs) ensure all children engage in a minimum of 30 minutes of moderate to vigorous physical activity (MVPA) daily during the ASP. ASPs decide how to accomplish this standard, for which few effective strategies exist. PURPOSE: To evaluate strategies designed to help ASPs meet the MVPA standard. DESIGN: Single group intervention with pretest and three follow-up measures repeated-cross-sectional design with a subsample cohort. SETTING/PARTICIPANTS: Four large-scale YMCA ASPs, serving approximately 500 children each day. INTERVENTION: Community-based participatory development of strategies focused on modification of program schedules, professional development training, and weekly checklists to evaluate activity opportunities. MAIN OUTCOME MEASURES: Accelerometry-derived MVPA classified as meet or fail-to-meet the 30 minutes' MVPA/day standard collected over a minimum of 4 nonconsecutive days at baseline (fall 2011) and three follow-up assessments (spring 2012, fall 2012, spring 2013). Random intercept logistic regression models evaluated the probability of meeting the standard for boys and girls, separately (analyzed summer 2013). RESULTS: A total of 895 children (aged 5-12 years, 48.4% girls) representing 3654 daily measures were collected across the four assessments. The percentage of girls and boys meeting the MVPA standard at baseline was 13.3% and 28.0%, respectively. By spring 2013, this increased to 29.3% and 49.6%. These changes represented an increase in the odds of meeting the 30 minutes' MVPA/day standard by 1.5 (95% CI=1.1, 2.0) and 2.4 (95% CI=1.2, 4.8) for girls and boys, respectively. CONCLUSIONS: The strategies developed herein represent an effective approach to enhancing current practice within YMCA ASPs to achieve existing MVPA standards. Additional work is necessary to evaluate the scalability of the strategies in a larger sample of ASPs.

Behar, J.; Roebuck, A.; Domingos, J. S.; Gederi, E.; Clifford, G. D. (2013):

A review of current sleep screening applications for smartphones.

In: *Physiol Meas* 34 (7), S. R29-R46. DOI: 10.1088/0967-3334/34/7/R29.

Abstract:

Sleep disorders are a common problem and contribute to a wide range of healthcare issues. The societal and financial costs of sleep disorders are enormous. Sleep-related disorders are often diagnosed with an overnight sleep test called a polysomnogram, or sleep study involving the measurement of brain activity through the electroencephalogram. Other parameters monitored include oxygen saturation, respiratory effort, cardiac activity (through the electrocardiogram), as well as video recording, sound and movement activity. Monitoring can be costly and removes the patients from their normal sleeping environment, preventing repeated unbiased studies. The recent increase in adoption of smartphones, with high quality on-board sensors has led to the proliferation of many sleep screening applications running on the phone. However, with the exception of simple questionnaires, no existing sleep-related application available for smartphones is based on scientific evidence. This paper reviews the existing smartphone applications landscape used in the field of sleep disorders and proposes possible advances to improve screening approaches

Behrens, Timothy K.; Dinger, Mary K. (2011):

Comparisons of accelerometer and pedometer determined steps in free living samples.

In: *J Phys Act Health* 8 (3), S. 390.

Abstract:

BACKGROUND:

The purpose of this study was to compare steps·d-1 between an accelerometer and pedometer in 2 free-living samples.

METHODS:

Data from 2 separate studies were used for this secondary analysis (Sample 1: N = 99, Male: n = 28, 20.9 ± 1.4 yrs, BMI = 27.2 ± 5.0 kg·m-2, Female: n = 71, 20.9 ± 1.7 yrs, BMI = 22.7 ± 3.0 kg·m-2; Sample 2: N = 74, Male: n = 27, 38.0 ± 9.5 yrs, BMI = 25.7 ± 4.5 kg·m-2, Female: n = 47, 38.7 ± 10.1 yrs, BMI = 24.6 ± 4.0 kg·m-2). Both studies used identical procedures and analytical strategies.

RESULTS:

The mean difference in steps·d-1 for the week was 1643.4 steps·d-1 in Study 1 and 2199.4 steps·d-1 in Study 2. There were strong correlations between accelerometer- and pedometer-determined steps·d-1 in Study 1 (r = .85, P < .01) and Study 2 (r = 0.87, P < .01). Bland-Altman plots indicated agreement without bias between steps recorded from the devices in Study 1 (r = -0.14, P < .17) and Study 2 (r = -0.09, P < .40). Correlations examining the difference between accelerometer-pedometer steps·d-1 and MVPA resulted in small, inverse correlations (range: r = -0.03 to -0.28).

CONCLUSIONS:

These results indicate agreement between accelerometer- and pedometer-determined steps·d-1; however, measurement bias may still exist because of known sensitivity thresholds between devices.

Bekman, N. M.; Winward, J. L.; Lau, L. L.; Wagner, C. C.; Brown, S. A. (2013):

The Impact of Adolescent Binge Drinking and Sustained Abstinence on Affective State.

In: *Alcohol Clin.Exp.Res* (0145-6008 (Linking)). DOI: 10.1111/acer.12096.

Abstract:

BACKGROUND: While it is clear that affect is negatively impacted by heavy drinking in adulthood and that it improves with abstinence, little is known about effects of heavy drinking on mood during adolescence. METHODS: This study examined negative mood states among 2 groups of 16- to 18-year-old high school students; youth with a history of recent heavy episodic drinking (HED; n = 39) and comparison youth with limited lifetime drinking experience (CON; n = 26). Affect was assessed at 3 time points during a 4- to 6-week period of monitored abstinence using the Hamilton Rating Scales for Anxiety and Depression; self-reports were obtained with the state portion of the State-Trait Anxiety Inventory, and experience sampling of current affect was assessed via daily text messages sent at randomly determined times in the morning, afternoon, and evening. RESULTS: Youth with a recent history of HED reported more negative affect compared with nondrinking youth during early stages of abstinence (days since last HED at assessment 1: M = 6.46; SD = 5.06); however, differences in affect were not observed after 4 to 6 weeks of abstinence. Sex differences were evident, with HED girls reporting greater depression and anxiety than HED male peers. Although not significant, response patterns indicated that boys may experience faster resolution of negative emotional states than girls with sustained abstinence. CONCLUSIONS: Findings suggest that high-dose drinking is associated with elevated negative affect for adolescents and that negative mood states may take longer to resolve for girls than for boys following heavy drinking episodes. Future research clarifying naturally occurring changes in affective response during early and sustained abstinence is necessary for improving programs designed to promote adolescent decision-making and to reduce risk for relapse

Bel-Serrat, S.; Mouratidou, T.; Huybrechts, I.; Cuenca-Garcia, M.; Manios, Y.; Gomez-Martinez, S. et al. (2014):

The role of dietary fat on the association between dietary amino acids and serum lipid profile in European adolescents participating in the HELENA Study.

In: *Eur J Clin Nutr* 68 (4), S. 464–473. DOI: 10.1038/ejcn.2013.284.

Abstract:

Background/objectives:The objective of this study was to examine the relationship between amino acid (AA) intake and serum lipid profile in European adolescents from eight European cities participating in the cross-sectional (2006-2007) HELENA (Healthy Lifestyle in Europe by Nutrition in Adolescence) study, and to assess whether this association was independent of total

fat intake.Subjects/methods:Diet, skinfold thickness, triglycerides (TG), total cholesterol (TC), high-density lipoprotein cholesterol (HDL-c), TC/HDL-c ratio, low-density lipoprotein cholesterol (LDL-c), apolipoprotein B (Apo B), apolipoprotein A1 (Apo A1) and Apo B/Apo A1 ratio were measured in 454 12.5- to 17.5-year-old adolescents (44% boys). Intake was assessed via two non-consecutive 24-h dietary recalls. Data on maternal education and sedentary behaviors were obtained via questionnaires. Physical activity was objectively measured by accelerometry.Results:Alanine, arginine, asparaginic acid, glycine, histidine, lysine and serine intakes were inversely associated with serum TG concentrations in both boys and girls. Intake of other AA like alanine and/or arginine was also inversely associated with serum TC, LDL-c and Apo B/Apo A1 ratio only in girls. An inverse association was observed between intakes of alanine, isoleucine, leucine, methionine, serine, tryptophan, tyrosine and valine and TC/HDL-c ratio among female adolescents. Similar results were found in males for serine and tryptophan intakes. It is noteworthy, however, that associations were no longer significant in both genders when total fat intake was considered as a confounding factor.Conclusions:In this sample of adolescents, the association between AA intakes and serum lipid profile did not persist when dietary fat was considered. Therefore, dietary interventions and health promotion activities should focus on fat intake to improve lipid profile and potentially prevent cardiovascular disease.

Belton, Sarahjane; O' Brien, Wesley; Meegan, Sarah; Woods, Catherine; Issartel, Johann (2014):

Youth-Physical Activity Towards Health: evidence and background to the development of the Y-PATH physical activity intervention for adolescents.

In: *BMC Public Health* 14, S. 122. DOI: 10.1186/1471-2458-14-122.

Abstract:

BACKGROUND: Despite known benefits of regular physical activity for health and well-being, many studies suggest that levels of physical activity in young people are low, and decline dramatically during adolescence. The purpose of the current research was to gather data on adolescent youth in order to inform the development of a targeted physical activity intervention. METHODS: Cross-sectional data on physical activity levels (using self report and accelerometry), psychological correlates of physical activity, anthropometic characteristics, and the fundamental movement skill proficiency of 256 youth (53% male, 12.40 +/- 0.51 years) were collected. A subsample (n = 59) participated in focus group interviews to explore their perceptions of health and identify barriers and motivators to participation in physical activity. RESULTS: Findings indicate that the majority of youth (67%) were not accumulating the minimum 60 minutes of physical activity recommended daily for health, and that 99.5% did not achieve the fundamental movement skill proficiency expected for their age. Body mass index data showed that 25% of youth were classified as overweight or obese. Self-efficacy and physical activity attitude scores were significantly different ($p < 0.05$) between low, moderate and high active participants. Active and inactive youth reported differences in their perceived understanding of health and their barriers to physical activity participation, with active youth relating nutrition, exercise, energy and sports with the definition of 'being healthy', and inactive youth attributing primarily nutritional concepts to 'being healthy'. CONCLUSIONS: Data show a need for targeting low levels of physical activity in youth through addressing poor health related activity knowledge and low fundamental movement skill proficiency. The Y-PATH intervention was developed in accordance with the present study findings; details of the intervention format are presented.

Bender, J. L.; Yue, R. Y.; To, M. J.; Deacken, L.; Jadad, A. R. (2013):

A Lot of Action, But Not in the Right Direction: Systematic Review and Content Analysis of Smartphone Applications for the Prevention, Detection, and Management of Cancer.

In: *J.Med.Internet.Res.* 15 (12), S. e287. DOI: 10.2196/jmir.2661.

Abstract:

BACKGROUND: Mobile phones have become nearly ubiquitous, offering a promising means to deliver health interventions. However, little is known about smartphone applications (apps) for cancer. OBJECTIVE: The purpose of this study was to characterize the purpose and content of cancer-focused smartphone apps available for use by the general public and the evidence on their utility or effectiveness. METHODS: We conducted a systematic review of the official application stores for the four major smartphone platforms: iPhone, Android, Nokia, and BlackBerry. Apps were included in the review if they were focused on cancer and available for use by the general public. This was complemented by a systematic review of literature from MEDLINE, Embase, and the Cochrane Library to identify evaluations of cancer-related smartphone apps. RESULTS: A total of 295 apps from the smartphone app stores met the inclusion criteria. The majority of apps targeted breast cancer (46.8%, 138/295) or cancer in general (28.5%, 84/295). The reported app purpose was predominantly to raise awareness about cancer (32.2%, 95/295) or to provide educational information about cancer (26.4%, 78/295), followed by apps to support fundraising efforts (12.9%, 38/295), assist in early detection (11.5%, 34/295), promote a charitable organization (10.2%, 30/295), support disease management (3.7%, 11/295), cancer prevention (2.0%, 6/295), or social support (1.0%, 3/295). The majority of the apps did not describe their organizational affiliation (64.1%, 189/295). Apps affiliated with non-profit organizations were more likely to be free

of cost (chi2 1=16.3, P<.001) and have a fundraising or awareness purpose (chi2 2=13.3, P=.001). The review of the health literature yielded 594 articles, none of which reported an evaluation of a cancer-focused smartphone application. CONCLUSIONS: There are hundreds of cancer-focused apps with the potential to enhance efforts to promote behavior change, to monitor a host of symptoms and physiological indicators of disease, and to provide real-time supportive interventions, conveniently and at low cost. However, there is a lack of evidence on their utility, effectiveness, and safety. Future efforts should focus on improving and consolidating the evidence base into a whitelist for public consumption

Bennett, Gary G.; Wolin, Kathleen Y.; Puleo, Elaine; Emmons, Karen M. (2006):

Pedometer-determined physical activity among multiethnic low-income housing residents.

In: *Med Sci Sports Exerc* 38 (4), S. 768–773. DOI: 10.1249/01.mss.0000210200.87328.3f.

Abstract:

PURPOSE\r\nWe sought to characterize pedometer-determined physical activity among a predominantly racial and ethnic minority sample of adults residing in low-income housing.\r\nMETHODS\r\nData were collected from 433 participants at baseline in a randomized colon cancer prevention intervention trial conducted within low-income housing communities. Using random effects models to control for clustering within housing sites, we examined variation in daily steps by several sociodemographic characteristics.\r\nRESULTS\r\nParticipants recorded a mean of 5326 (+/- 3871 SD) daily steps over a 5-d sampling period. Significantly lower levels of pedometer-determined physical activity were found among older-aged participants (P < 0.0001), women (P = 0.02), those who were overweight and obese (P = 0.03), those reporting no weekly exercise (P = 0.04), as well as among nonworking individuals (P < 0.0001). No significant differences were found by education or income. In multivariable analyses, age, gender, body mass index, and employment status remained significantly associated with steps.\r\nCONCLUSIONS\r\nThese findings suggest a high prevalence of physical inactivity among low-income housing residents. These data, derived from a well-characterized sample, provide useful estimates for the investigation of pedometers as measures of total accumulated physical activity among lower-income, racial and ethnic minority populations.

Bentall, Richard P.; Myin-Germeys, Inez; Smith, Angela; Knowles, Rebecca; Jones, Steven H.; Smith, Talya; Tai, Sara J. (2011):

Hypomanic personality, stability of self-esteem and response styles to negative mood.

In: *Clinical Psychology & Psychotherapy* 18 (5), S. 397–410. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-23689-006&site=ehost-live;Richard.Bentall@liverpool.ac.uk.

Abstract:

Objectives: This paper aims to study dysfunctional self-schematic processes, abnormal coping styles, over-responsiveness to reward stimuli (indicative of an over-sensitive behavioural activation system) and stability of self-esteem in relation to subclinical hypomania. Design: Three cross-sectional studies were conducted on selected students on the basis of their scores on the Hypomanic Personality Scale (HPS) (study 1) and on elevated HPS and Dysfunctional Attitude Scale scores (studies 2 and 3). Methods: In studies 1 and 2, participants completed questionnaires and kept a self-esteem diary for 6 days. In study 3, the experience sampling method was used to assess momentary self-esteem, emotion and use of different coping styles over a 6-day period. Results: Study 1 demonstrated that hypomanic traits are associated with high fluctuations in self-esteem. In study 2, high scores on both the HPS and the Dysfunctional Attitude Scale, but not the HPS alone, were associated with bipolar spectrum symptoms. These participants showed more evidence of alcohol and substance abuse, greater self-esteem fluctuation and dysfunctional coping styles (rumination and risk-taking) compared with controls. Changes in self-esteem were related to the use of these strategies. Conclusions: Vulnerability to bipolar disorder is associated with a combination of depression-related and reward-related processes. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Bento, T.; Cortinhas, A.; Leitao, J. C.; Mota, M. P. (2012):

Use of accelerometry to measure physical activity in adults and the elderly.

In: *Rev.Saude Publica* (0034-8910 (Linking)). Online verfügbar unter PM:22450563.

Abstract:

OBJECTIVE: To review the use of accelerometry as an objective measure of physical activity in adults and elderly people. METHODS: A systematic review of studies on the use of accelerometty as an objective measure to assess physical activity in

adults were examined in PubMed Central, Web of Knowledge, EBSCO and Medline databases from March 29 to April 15, 2010. The following keywords were used: "accelerometry," "accelerometer," "physical activity," "PA," "patterns," "levels," "adults," "older adults," and "elderly," either alone or in combination using "AND" or "OR." The reference lists of the articles retrieved were examined to capture any other potentially relevant article. Of 899 studies initially identified, only 18 were fully reviewed, and their outcome measures abstracted and analyzed. RESULTS: Eleven studies were conducted in North America (United States), five in Europe, one in Africa (Cameroon) and one in Australia. Very few enrolled older people, and only one study reported the season or time of year when data was collected. The articles selected had different methods, analyses, and results, which prevented comparison between studies. CONCLUSIONS: There is a need to standardize study methods for data reporting to allow comparisons of results across studies and monitor changes in populations. These data can help design more adequate strategies for monitoring and promotion of physical activity

Ben-Zeev, Dror (2012):

Mobile technologies in the study, assessment, and treatment of schizophrenia.

In: *Schizophrenia Bulletin* 38 (3), S. 384–385. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-15724-006&site=ehost-live;dror.ben-zeev@dartmouth.edu.

Abstract:

The purpose of this special issue is to cultivate discussion about new opportunities for leveraging existing and emerging mobile technologies in the study of psychotic illnesses and to encourage investigators to think creatively about how these novel approaches can improve our understanding of the etiological risk factors, contextual influences, and possible treatments for schizophrenia. As mobile devices infiltrate more and more areas of life of the general population, they will undoubtedly become more prevalent among those with schizophrenia as well. Statistically, many of those who are currently growing up with these technologies in hand will go on to develop serious mental illnesses in the future. Looking forward, now is the opportune time for innovative investigators and clinicians to examine how these emerging technologies can be harnessed as a powerful new platform for research and treatment approaches that can be made available in the years ahead. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Ben-Zeev, Dror; Brenner, Christopher J.; Begale, Mark; Duffecy, Jennifer; Mohr, David C.; Mueser, Kim T. (2014):

Feasibility, Acceptability, and Preliminary Efficacy of a Smartphone Intervention for Schizophrenia.

In: *Schizophr Bull. DOI:* 10.1093/schbul/sbu033.

Abstract:

The FOCUS smartphone intervention was developed to provide automated real-time/real-place illness management support to individuals with schizophrenia. The system was specifically designed to be usable by people with psychotic disorders who may have cognitive impairment, psychotic symptoms, negative symptoms, and/or low reading levels. FOCUS offers users both prescheduled and on-demand resources to facilitate symptom management, mood regulation, medication adherence, social functioning, and improved sleep. In this study, 33 individuals with schizophrenia or schizoaffective disorder used FOCUS over a 1-month period in their own environments. Participants were able to learn how to use the intervention independently, and all but one participant completed the trial successfully and returned the smartphones intact. Completers used the system on 86.5% of days they had the device, an average of 5.2 times a day. Approximately 62% of use of the FOCUS intervention was initiated by the participants, and 38% of use was in response to automated prompts. Baseline levels of cognitive functioning, negative symptoms, persecutory ideation, and reading level were not related to participants' use of the intervention. Approximately 90% of participants rated the intervention as highly acceptable and usable. Paired samples t tests found significant reductions in psychotic symptoms, depression, and general psychopathology, after 1 month of FOCUS use. This study demonstrated the feasibility, acceptability, and preliminary efficacy of the FOCUS intervention for schizophrenia and introduces a new treatment model which has promise for extending the reach of evidence-based care beyond the confines of a physical clinic using widely available technologies.

Ben-Zeev, D.; Frounfelker, R.; Morris, S. B.; Corrigan, P. W. (2012):

Predictors of Self-Stigma in Schizophrenia: New Insights Using Mobile Technologies.

In: *J Dual Diagn* 8 (4), S. 305–314. DOI: 10.1080/15504263.2012.723311.

Abstract:

Self-stigma has significant negative impact on the recovery of individuals with severe mental illness, but its varying course is not well understood. Individual levels of self-stigma may vary over time and fluctuate in response to both external/contextual (i.e., location, activity, social company) and internal (i.e., psychiatric symptoms, mood) factors. The aim of this study was to examine the relationship between self-stigmatizing beliefs and these factors, as they occur in the daily life of individuals with schizophrenia. Mobile technologies were used to longitudinally track momentary levels of self-stigma, psychotic symptoms, negative affect, positive affect, activity, and immediate social and physical environment in twenty-four individuals with schizophrenia, multiple times daily, over a one-week period. Multilevel modeling showed that participants' current activity was associated with changes in self-stigma (chi2= 10.53, p <0.05), but immediate location and social company were not. Time-lagged analyses found that increases in negative affect (beta=0.11, p<0.01) and psychotic symptom severity (beta=0.16, p<0.01) predicted increases in the intensity of self-stigmatizing beliefs. Psychotic symptoms were found to be both an antecedent and a consequence (beta=0.08, p<0.01) of increased self-stigma. Our findings support a framework for understanding self-stigma as an experience that changes based on alterations in internal states and external circumstances. Mobile technologies are an effective methodology to study self-stigma and have potential to be used to deliver clinical interventions

Ben-Zeev, Dror; Kaiser, Susan M.; Brenner, Christopher J.; Begale, Mark; Duffecy, Jennifer; Mohr, David C. (2013):

Development and Usability Testing of FOCUS: A Smartphone System for Self-Management of Schizophrenia.

In: *Psychiatric Rehabilitation Journal*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-32035-001%26site%3dehost-live.

Abstract:

Objective: Mobile Health (mHealth) approaches can support the rehabilitation of individuals with psychiatric conditions. In the current article, we describe the development of a smartphone illness self-management system for people with schizophrenia. Methods: The research was conducted with consumers and practitioners at a community-based rehabilitation agency. Stage 1: 904 individuals with schizophrenia or schizoaffective disorder completed a survey reporting on their current use of mobile devices and interest in mHealth services. Eight practitioners completed a survey examining their attitudes and expectations from an mHealth intervention, and identified needs and potential obstacles. Stage 2: A multidisciplinary team incorporated consumer and practitioner input and employed design principles for the development of e-resources for people with schizophrenia to produce an mHealth intervention. Stage 3: 12 consumers participated in laboratory usability sessions. They performed tasks involved in operating the new system, and provided “think aloud” commentary and post-session usability ratings. Results: 570 (63%) of survey respondents reported owning a mobile device and many expressed interest in receiving mHealth services. Most practitioners believed that consumers could learn to use and would benefit from an mHealth intervention. In response, we developed a smartphone system that targets medication adherence, mood regulation, sleep, social functioning, and coping with symptoms. Usability testing revealed several design vulnerabilities, and the system was adapted to address consumer needs and preferences accordingly. Conclusions and Implications for Practice: Through a comprehensive development process, we produced an mHealth illness self-management intervention that is likely to be used successfully, and is ready for deployment and systemic evaluation in real-world conditions. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Ben-Zeev, D.; McHugo, G. J.; Xie, H.; Dobbins, K.; Young, M. A. (2012):

Comparing retrospective reports to real-time/real-place mobile assessments in individuals with schizophrenia and a nonclinical comparison group.

In: *Schizophr.Bull.* 38 (3), S. 396–404. DOI: 10.1093/schbul/sbr171.

Abstract:

Retrospective reports are often used as the primary source of information for important diagnostic decisions, treatment, and clinical research. Whether such reports accurately represent individuals' past experiences in the context of a serious mental illness such as schizophrenia is unclear. In the current study, 24 individuals with schizophrenia and 26 nonclinical participants used a mobile device to complete multiple real-time/real-place assessments daily, over 7 consecutive days. At the end of the week, participants were also asked to provide a retrospective report summarizing the same period. Comparison of the data captured by the 2 methods showed that participants from both groups retrospectively overestimated the intensity of negative and positive daily experiences. In the clinical group, overestimations for affect were greater than for psychotic symptoms, which were relatively comparable to their retrospective reports. In both samples, retrospective reports were more closely associated with the week's average than the most intense or most recent ratings captured with a mobile device. Multilevel modeling revealed that much of the variability in weekly assessments was not explained by between-person differences and could not be

captured by a single retrospective estimate. Based on the findings of this study, clinicians and researchers should be aware that while retrospective summary reports of the severity of certain symptoms compare relatively well with average momentary ratings, they are limited in their ability to capture variability in one's affective or psychotic experiences over time

Ben-Zeev, Dror; Young, Michael A. (2010):

Accuracy of hospitalized depressed patients' and healthy controls' retrospective symptom reports: an experience sampling study.

In: *The Journal of nervous and mental disease* 198 (4), S. 280–285. DOI: 10.1097/NMD.0b013e3181d6141f.

Abstract:

A growing body of literature suggests that retrospective recall of psychiatric symptoms is often inaccurate and may distort knowledge about the course of illness and impact treatment. The current study examined the accuracy of retrospective recall of a variety of depressive symptoms in hospitalized depressed patients and nonclinical controls. Using the Experience Sampling Method, we compared average momentary symptom reports of 1 week to retrospective summaries of the same period. The depressed group exhibited negative biases in their recall of experienced anhedonia, sadness, confusion, and suicidality, but were relatively accurate in recall of helplessness, detachment, and self-control. Controls exhibited a different pattern; they were relatively accurate in their retrospective recall of confusion, suicidality and sadness, but exhibited positive biases in recall of anhedonia, helplessness, detachment, and self-control. Both groups exhibited comparable negative biases in their recall of experienced tension, difficulty concentrating, guilt, and fear. The findings suggest that for maximum accuracy in the assessment of depressive symptoms, scientists and practitioners should supplement retrospective self-reports with momentary measures, and consider using ambulatory assessment in cognitive behavioral treatments of depression.

Ben-Zeev, Dror; Young, Michael A.; Madsen, Joshua W. (2009):

Retrospective recall of affect in clinically depressed individuals and controls.

In: *Cognition and Emotion* 23 (5), S. 1021–1040.

Abstract:

The current study examined the nature of retrospective recall of affect in depressed participants and nonclinical controls. Utilising the Experience Sampling Method, we compared average momentary affect reports to retrospective summaries of the same period of time. Both groups exhibited exaggerated retrospective summaries of positive affect (PA) and negative affect (NA). Greater bias for PA than NA was found in the controls but not the depressed. Across groups, depressed individuals exhibited more absolute inaccuracy in their recall of NA but not PA. For depressed and nonclinical individuals, retrospective summaries of PA were better predicted by an average of all weekly momentary PA than a combination of the most intense ("peak") PA and most recent ("end") PA experiences. For nonclinical participants, retrospective NA was better predicted by an average of all weekly momentary NA. For depressed individuals, however, no clear advantage to predicting retrospective NA by average weekly NA relative to a combination of peak NA and end NA was found. Based on our findings, clinicians should realise that depressive cognition may not lie in recall that is less positive and more negative than "reality" but in retrospective intensifications of all affect that are, compared to normal, relatively greater for negative than for positive affect.

Ben-Zeev, D.; Young, M. A.; Depp, C. A. (2012):

Real-time predictors of suicidal ideation: Mobile assessment of hospitalized depressed patients.

In: *Psychiatry Res* (0165-1781 (Linking)). DOI: 10.1016/j.psychres.2011.11.025.

Abstract:

Suicidal ideation is a risk factor for suicide attempt and completion. Cross-sectional or retrospective studies cannot capture the dynamic course and possible predictors of suicidal ideation as it occurs in daily life. This study utilizes an experience sampling paradigm to identify real-time predictors of suicidal ideation in inpatients with major depressive disorder. Thirty-one depressed patients admitted to a psychiatric unit were signaled by a mobile device to record suicidal ideation, affect, and other symptoms, multiple times a day over 1-week. Participants completed a total of 1350 questionnaires. Seventy-four percent of the sample reported suicidal ideation during the week. Time-lagged analyses revealed that momentary ratings of Sadness, Tension, and Boredom (as well as suicidal ideation itself) predicted subsequent suicidal thoughts in the following hours. Baseline severity of

depression and past suicide attempts were both correlated with mean ideation severity during the week. A number of predictors identified in prior research (e.g. hopelessness) were unrelated to subsequent suicidal ideation in the current study. Momentary interventions that guide individuals through activities designed to reduce levels of Sadness, Tension, and Boredom in real-time (e.g., thought challenging, relaxation, behavioral activation) may be especially warranted

Berendsen, Brenda A. J.; Hendriks, Marike R. C.; Willems, Paul; Meijer, Kenneth; Schaper, Nicolaas C.; Savelberg, Hans H C M (2014):

A 20 min window is optimal in a non-wear algorithm for tri-axial thigh-worn accelerometry in overweight people.

In: *Physiol Meas* 35 (11), S. 2205–2212. DOI: 10.1088/0967-3334/35/11/2205.

Abstract:

A valid non-wear algorithm for activity monitors is crucial to avoid the misclassification of sedentary time as non-wear time, and vice versa. Characteristics of the algorithm, such as time windows, should be well defined and tested. Furthermore, using tri-axial data might influence the algorithm's performance. This study assessed the optimal time window length in a non-wear algorithm for overweight adults, applied to tri-axial data from sixteen participants. Ten time windows, from 10 up to 120 min, were tested with a diary as a criterion measure. We assessed the bias in non-wear time, sensitivity and specificity. The optimal time window length was based on ten participants; the validation of this time window was carried out with six other participants. The time window of 20 min showed the highest and 120 min showed the lowest mean amount of correctly classified non-wear time, at 94% and 70% respectively. Sensitivity and specificity were considered optimal in the 20 min time window. Validation of this time window demonstrated a sensitivity and specificity of 86% and 83% respectively. A 20 min time window showed the best non-wear estimations. The current study utilized tri-axial raw data and 1 s epoch data which might have facilitated the application of a short time window and thereby decreased the risk of misclassifying non-wear.

Berg, K. C.; Crosby, R. D.; Cao, L.; Peterson, C. B.; Engel, S. G.; Mitchell, J. E.; Wonderlich, S. A. (2012):

Facets of Negative Affect Prior to and Following Binge-Only, Purge-Only, and Binge/Purge Events in Women With Bulimia Nervosa.

In: *J Abnorm.Psychol.* (0021-843X (Linking)). DOI: 10.1037/a0029703.

Abstract:

Ecological momentary assessment (EMA) data suggest that global negative affect (NA) increases prior to and decreases following episodes of binge eating and purging, providing support for the affect regulation model of BN. The current study examined whether facets of NA are differentially related to bulimic behaviors. Women with bulimia nervosa (BN; n = 133) completed a 2-week EMA protocol. Momentary assessments of 4 facets of NA (Fear, Guilt, Hostility, and Sadness) were derived from the PANAS subscales. Trajectories of the NA facets were modeled prior to and following binge-only, purge-only, and binge/purge events. Fear, Guilt, Hostility, and Sadness increased prior to and decreased following binge-only and binge/purge events. The same results were found for purge-only events, with the exception that Hostility did not increase significantly prior to purging. Notably, ratings of Guilt were higher than those of Fear, Hostility, and Sadness at the time of binge-only and binge/purge events. Furthermore, post hoc analyses demonstrate that Guilt increased prior to and decreased following the 3 behavior types, even after controlling for Fear, Hostility, and Sadness. These results provide further support for the affect regulation model of BN and also suggest that guilt may be particularly important to the pathology of BN. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Berg, Kelly C.; Peterson, Carol B.; Crosby, Ross D.; Cao, Li; Crow, Scott J.; Engel, Scott G.; Wonderlich, Stephen A. (2013):

Relationship between daily affect and overeating-only, loss of control eating-only, and binge eating episodes in obese adults.

In: *Psychiatry Res*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-39122-001%26site%3dehost-live.

Abstract:

The two objectives of the current study were: (1) to identify daily patterns of negative affect (NA) in obese individuals; and (2) to determine whether daily affect patterns were related to overeating without loss of control (OE-only), loss of control eating without overeating (LOC-only), and binge eating (BE) episodes. Fifty obese (BMI=40.3-&#65533;08.5) adults (84.0% female) completed a two-week ecological momentary assessment protocol during which they completed assessments of NA and indicated whether their eating episodes were characterized by OE and/or LOC. Latent growth mixture modeling (LGMM) was used to identify daily trajectories of NA. GEE analysis was used to determine whether daily affect trajectories were differentially related to the frequency of OE-only, LOC-only, and BE episodes. The LGMM analyses identified nine unique trajectories of NA. Significantly higher frequencies of OE-only and BE episodes occurred on days characterized by high or increasing levels of NA. There were no significant differences between classes for the frequency of LOC-only episodes. These data suggest that NA may act as an antecedent to OE-only and BE episodes and that targeting “problematic affect days” may reduce the occurrence of OE-only and BE episodes among obese individuals. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Berger, Ann M.; Wielgus, Kimberly; Hertzog, Melody; Fischer, Patricia; Farr, Lynne (2010):

Patterns of circadian activity rhythms and their relationships with fatigue and anxiety/depression in women treated with breast cancer adjuvant chemotherapy.

In: *Support Care Cancer* 18 (1), S. 105–114. DOI: 10.1007/s00520-009-0636-0.

Abstract:

PURPOSE\r\nThe purpose of this study was to examine patterns of circadian activity rhythms and their relationship with fatigue, anxiety/depression, and demographic/medical variables in women receiving breast cancer adjuvant therapy treatments (Tx) at three times within a randomized clinical trial (RCT) designed to improve sleep and modify fatigue.\r\nMETHODS\r\nA RCT enrolled 219 women with stage I-IIIA breast cancer who were randomized 2 days prior to starting chemotherapy to a behavioral therapy sleep intervention or healthy eating control group. All cases with available data (n = 190) were included in a descriptive, correlational, repeated measures analysis. Activity data were collected continuously by wrist actigraphy for 7 days at three times: the start (Tx 1), continuation (Tx 3), and recovery (30 days after last Tx) of chemotherapy. Circadian activity rhythm parameters were generated using Action4 software (Ambulatory Monitoring, Inc.). Measures collected simultaneously included Piper Fatigue Scale, Hospital Anxiety and Depression Scale, and demographic/medical variables.\r\nRESULTS\r\nCircadian activity rhythm parameters at three times in both groups were disrupted compared to healthy adults, but similar to values of cancer patients. Significant changes in mesor, amplitude, peak activity, and 24 h autocorrelation values were found over time in both groups. The intervention group's amplitude and circadian quotient values were significantly more robust. More robust activity rhythms were associated with lower fatigue, depressive symptoms, body mass index, and higher performance status in both groups.\r\nCONCLUSIONS\r\nDisrupted patterns of circadian activity rhythms were prevalent and associated with distressing fatigue and depressive symptoms during chemotherapy and at recovery. The intervention resulted in more robust rhythms.

Bergh, I. H.; Grydeland, M.; Bjelland, M.; Lien, N.; Andersen, L. F.; Klepp, K.-I. et al. (2011):

Personal and social-environmental correlates of objectively measured physical activity in Norwegian pre-adolescent children.

In: *Scandinavian Journal of Medicine & Science in Sports* 21 (6), S. e315-e324. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-27994-057&site=ehost-live;ingunn.holden.bergh@nih.no.

Abstract:

The aim of this study was to examine modifiable biological, psychological, behavioral and social-environmental correlates of physical activity among 1129 Norwegian 11-year-old children within a cross-sectional sample from the HEalth In Adolescents study. Physical activity was assessed by accelerometer, and weight and height were measured objectively. Age- and gender-specific cut-off points proposed by the International Obesity Task Force were used to define body mass index. Social-environmental variables were self-reported by questionnaire. Hierarchical regression (linear mixed models) revealed that normal weight children scored higher on percentage daily moderate-to-vigorous physical activity [% daily moderate to vigorous physical activity (MVPA)] than overweight/obese children (P < 0.001). Self-efficacy (P < 0.01) and perceived social support from friends (P < 0.01) were positively associated with children's % daily MVPA, and a negative association was found for computer/game-use on weekends (P < 0.01). A moderator effect of weight category (normal vs overweight/obese) in the relationship between computer/game-use on weekends and % daily MVPA was detected (P < 0.05), reflecting that higher computer/game-use on weekends was associated with lower % MVPA among the overweight/obese, but not among the normal weight. Modifiable correlates from multiple domains accounted for 14% of the variance in % daily MVPA. Prospective and

intervention studies are needed to examine whether these factors act as mediators for physical activity change in pre-adolescent children. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Bergmann, J. H.; Smith, I. C.; Mayagoitia, R. E. (2012):

Using a body sensor network to measure the effect of fatigue on stair climbing performance.

In: *Physiol Meas* 33 (2), S. 287–296. DOI: 10.1088/0967-3334/33/2/287.

Abstract:

In terms of self-rated health, the most important activities of daily living are those involving mobility. Of these activities stair climbing is regarded as the most strenuous. A loss of stair climbing ability with age is normally associated with a loss of muscle strength and power, while other factors that influence muscle function, such as fatigue, are often not taken into account. So far no research has been published on how long-lasting fatigue affects activities of daily living, despite the fact that it has been repeatedly proven, in laboratory settings, to influence muscle force production over long periods of time. Technological advances in body sensor networks (BSNs) now provide a method to measure performance during complex real-life situations. In this study the use of a BSN was explored to investigate the effects of long-lasting fatigue on stair climbing performance in 20 healthy adults. Stair climbing performance was measured before and after a fatiguing protocol using a BSN. Performance was defined by temporal and spatial parameters. Long-lasting fatigue was successfully induced in all participants using an exercise protocol. The BSN showed that post-exercise fatigue did not influence stair climbing times ($p > 0.2$) and no meaningful changes in joint angles were found. No effect on overall stair climbing performance was found, despite a clear presence of long-lasting fatigue. This study shows that physiological paradigms can be further explored using BSNs. Ecological validity of lab-based measurements can be increased by combining them with BSNs

Berkman, Elliot Todd (2011):

Smoking cessation from the brain to the real world: An fMRI-experience sampling study.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (3-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-99180-174&site=ehost-live.

Abstract:

Three studies investigated the neural, affective, and cognitive processes of real-world goal pursuit in the context of cigarette smoking cessation. Thirty-one smokers (15 female) with the intention to quit completed a three-phase protocol. Before quitting, participants completed a novel neurocognitive task that assessed neural and behavioral markers of goal representation, progress monitoring, and response inhibition, and also provided physiological measures of smoking at baseline. Next, during their cessation attempt, participants completed a twenty-one day experience sampling phase in which they recorded cravings, mood, and smoking behavior, eight times throughout the waking day. Finally, approximately four weeks after their quit date, participants returned to the lab for a re-assessment of self-reported and physiological measures of smoking. All studies reported here are based on data from these phases. Study 1 investigated the neural mechanisms associated with three core components of goal pursuit—goal representation, progress monitoring, and response inhibition—individually and as they interacted with one another and with time. Though these components are frequently studied in isolation, they have never been examined as they co-occur with one another. We replicated previous findings regarding the neural bases of each of the components, and identified for the first time several regions sensitive to the interaction among components including the supramarginal gyrus and the presupplementary motor area/dorsal anterior cingulate cortex. We also found that several additional regions were recruited to support sustained (compared to transient) engagement of goal pursuit including parts of the superior parietal lobe and superior temporal gyrus. Study 2 investigated within-day fluctuations in mood, craving, and smoking in a sample of smokers throughout the first three weeks of a cessation attempt in order to better understand the relationships among these variables across time. Hierarchical linear modeling (HLM) analyses indicated that smoking and cravings declined linearly throughout the first three weeks, though mood remained stable. Further, there was a positive within-day association between negative mood and subsequent smoking which was mediated by craving concurrent with the negative mood. This mediation pattern is consistent with an associative-learning account of the mood-to-smoking link such that, among smokers, negative mood is related to craving which is in turn related to smoking. In the absence of craving, negative mood does not directly relate to smoking. Study 3 investigated whether neural activity during response inhibition within the fMRI scanner related to reductions in smoking four weeks later and to daily experiences during the cessation attempt. In a first, more global analysis, we found that activation in the basal ganglia during the response inhibition task at baseline predicted change across four weeks in total cigarette consumption as measured by exhaled carbon monoxide. In a second, more specific analysis, we found that activation in a priori regions of interest in the right inferior frontal gyrus, presupplementary motor area, and basal ganglia separately related to an attenuated within-day association between cravings at one time point and smoking at the following time point. (PsycINFO Database Record (c) 2011 APA, all rights reserved)

Berkman, Elliot T.; Dickenson, Janna; Falk, Emily B.; Lieberman, Matthew D. (2011):

Using SMS text messaging to assess moderators of smoking reduction: Validating a new tool for ecological measurement of health behaviors.

In: *Health Psychol* 30 (2), S. 186–194. DOI: 10.1037/a0022201.

Abstract:

OBJECTIVE\r\nUnderstanding the psychological processes that contribute to smoking reduction will yield population health benefits. Negative mood may moderate smoking lapse during cessation, but this relationship has been difficult to measure in ongoing daily experience. We used a novel form of ecological momentary assessment to test a self-control model of negative mood and craving leading to smoking lapse.\r\nDESIGN\r\nWe validated short message service (SMS) text as a user-friendly and low-cost option for ecologically measuring real-time health behaviors. We sent text messages to cigarette smokers attempting to quit eight times daily for the first 21 days of cessation (N-obs = 3,811).\r\nMAIN OUTCOME MEASURES\r\nApproximately every two hours, we assessed cigarette count, mood, and cravings, and examined between- and within-day patterns and time-lagged relationships among these variables. Exhaled carbon monoxide was assessed pre- and posttreatment.\r\nRESULTS\r\nNegative mood and craving predicted smoking two hours later, but craving mediated the mood-smoking relationship. Also, this mediation relationship predicted smoking over the next two, but not four, hours.\r\nCONCLUSION\r\nResults clarify conflicting previous findings on the relation between affect and smoking, validate a new low-cost and user-friendly method for collecting fine-grained health behavior assessments, and emphasize the importance of rapid, real-time measurement of smoking moderators.

Berkman, Elliot T.; Falk, Emily B.; Lieberman, Matthew D. (2011):

In the trenches of real-world self-control: neural correlates of breaking the link between craving and smoking.

In: *Psychological Science* 22 (4), S. 498–506. DOI: 10.1177/0956797611400918.

Abstract:

Successful goal pursuit involves repeatedly engaging self-control against temptations or distractions that arise along the way. Laboratory studies have identified the brain systems recruited during isolated instances of self-control, and ecological studies have linked self-control capacity to goal outcomes. However, no study has identified the neural systems of everyday self-control during long-term goal pursuit. The present study integrated neuroimaging and experience-sampling methods to investigate the brain systems of successful self-control among smokers attempting to quit. A sample of 27 cigarette smokers completed a go/no-go task during functional magnetic resonance imaging before they attempted to quit smoking and then reported everyday self-control using experience sampling eight times daily for 3 weeks while they attempted to quit. Increased activation in right inferior frontal gyrus, pre-supplementary motor area, and basal ganglia regions of interest during response inhibition at baseline was associated with an attenuated association between cravings and subsequent smoking. These findings support the ecological validity of neurocognitive tasks as indices of everyday response inhibition.

Berkman, Elliot T.; Giuliani, Nicole R.; Pruitt, Alicia K. (2014):

Comparison of text messaging and paper-and-pencil for ecological momentary assessment of food craving and intake.

In: *Appetite. DOI:* 10.1016/j.appet.2014.06.010.

Abstract:

Electronic devices such as mobile phones are quickly becoming a popular way to gather participant reports of everyday thoughts, feelings, and behaviors, including food cravings and intake. Electronic devices offer a number of advantages over alternative methods such as paper-and-pencil (PNP) assessment including automated prompts, on-the-fly data transmission, and participant familiarity with and ownership of the devices. However, only a handful of studies have systematically compared compliance between electronic and PNP methods of ecological momentary assessment (EMA), and none have examined eating specifically. Existing comparisons generally find greater compliance for electronic devices than PNP, but there is variability in the results across studies that may be accounted for by differences across research domains. Here, we compared the two EMA methods in an unexamined domain - eating - in terms of response rate and response latency, and their sensitivity to individual difference variables such as body mass index (BMI). Forty-four participants were randomly assigned to report on their food craving, food intake, and hunger four times each day for 2 weeks using either a PNP diary (N = 19) or text messaging (TXT; N = 25). Response rates were higher for TXT than PNP (96% vs. 70%) and latencies were faster (29 min vs. 79 min), and response rate

and latency were less influenced by BMI in the TXT condition than in the PNP condition. These results support the feasibility of using text messaging for EMA in the eating domain, and more broadly highlight the ways that research domain-specific considerations (e.g., the importance of response latency in measuring short-lived food craving) interact with assessment modality during EMA.

Bernmark, Eva; Forsman, Mikael; Wiktorin, Christina (2011):

Head movements during two computer work tasks assessed by accelerometry.

In: *Applied ergonomics* 42 (2), S. 309–313. DOI: 10.1016/j.apergo.2010.07.006.

Abstract:

We investigated whether potential differences in head inclinations and accelerations for two highly similar computer work tasks could be detected using (1) a triaxial accelerometer and (2) a simulated uniaxial accelerometer. Ten subjects' head movements were registered with a triaxial accelerometer system for two similar document-management tasks at their work place: a fully electronic document-management task and one also involving paper documents. In situations where head movements were small, a triaxial accelerometer was able to discriminate between the different degrees of static work of the neck in terms of range of head inclinations and accelerations. A difference in head acceleration was also found by using a simulated uniaxial accelerometer. Thus, in terms of head movement and for work similar to this office work, potential dynamic differences in observationally similar work tasks can be investigated by using a triaxial accelerometer. For acceleration alone, a uniaxial accelerometer can also be used.

Bexelius, C.; Sandin, S.; Trolle Lagerros, Y.; Litton, J. E.; Löf, M. (2011):

Estimation of physical activity levels using cell phone questionnaires: A comparison with accelerometry for evaluation of between-subject and within-subject variations.

In: *J Med Internet Res* 13 (3), S. 186–191. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-05747-014&site=ehost-live;marie.lof@ki.se.

Abstract:

BACKGROUND:

Physical activity promotes health and longevity. Further elaboration of the role of physical activity for human health in epidemiological studies on large samples requires accurate methods that are easy to use, cheap, and possible to repeat. The use of telecommunication technologies such as cell phones is highly interesting in this respect. In an earlier report, we showed that physical activity level (PAL) assessed using a cell phone procedure agreed well with corresponding estimates obtained using the doubly labeled water method. However, our earlier study indicated high within-subject variation in relation to between-subject variations in PAL using cell phones, but we could not assess if this was a true variation of PAL or an artifact of the cell phone technique.

OBJECTIVE:

Our objective was to compare within- and between-subject variations in PAL by means of cell phones with corresponding estimates using an accelerometer. In addition, we compared the agreement of daily PAL values obtained using the cell phone questionnaire with corresponding data obtained using an accelerometer.

METHODS:

PAL was measured both with the cell phone questionnaire and with a triaxial accelerometer daily during a 2-week study period in 21 healthy Swedish women (20 to 45 years of age and BMI from 17.7 kg/m^2 to 33.6 kg/m^2). The results were evaluated by fitting linear mixed effect models and descriptive statistics and graphs.

RESULTS:

With the accelerometer, 57% (95% confidence interval [CI] 40%-66%) of the variation was within subjects, while with the cell phone, within-subject variation was 76% (95% CI 59%-83%). The day-to-day variations in PAL observed using the cell phone questions agreed well with the corresponding accelerometer results.

CONCLUSIONS:

Both the cell phone questionnaire and the accelerometer showed high within-subject variations. Furthermore, day-to-day variations in PAL within subjects assessed using the cell phone agreed well with corresponding accelerometer values.

Consequently, our cell phone questionnaire is a promising tool for assessing levels of physical activity. The tool may be useful for large-scale prospective studies.

Bhammar, D. M.; Angadi, S. S.; Gaesser, G. A. (2012):

Effects of Fractionized and Continuous Exercise on 24-h Ambulatory Blood Pressure.

In: *Med.Sci.Sports Exerc.* (0195-9131 (Linking)). DOI: 10.1249/MSS.0b013e3182663117.

Abstract:

PURPOSE: To compare the effects of fractionized aerobic exercise (three 10-min exercise sessions) and continuous exercise (one 30-min exercise session) on 24-hour ambulatory blood pressure (ABP). METHODS: Eleven healthy prehypertensive subjects (28.3 +/- 8.0 (SD) yr) completed three randomly assigned conditions: 1) three 10-min sessions of aerobic exercise (3x10-min), 2) one continuous 30-min session of aerobic exercise (1x30-min), and 3) a non-exercise control trial (Control). The mode of exercise was walking on a motor-driven treadmill at 75% - 79% of maximum heart rate (HRmax) (60% - 65% VO2peak). Twenty-four hour ABP monitoring was monitored with an automated ABP device (Oscar 2). Linear mixed models were used to compare 24-h ABP responses between trials. RESULTS: Mean (+/- SD) 24-h systolic BP was significantly lower during the 3x10-min trial (127 +/- 15 mmHg) compared to Control (130 +/- 15 mmHg) (P < .001). Although both 3x10-min and 1x30-min reduced SBP compared to Control during daytime/evening (1300 h - 2300 h), only the 3x10-min reduced SBP during nighttime (2300 h - 0800 h; 118 +/- 16 mmHg vs. 122 +/- 14 mmHg; P = 0.024) and the following morning (0800 h - 1200 h; 127 +/- 15 mmHg vs. 131 +/- 15 mmHg; P = 0.016). Over 24-h, 26.7% of SBP values during 3x10-min were normal (i.e., <120 mmHg) compared to 18.3% for 1x30-min and 19.4% for control (P < 0.001). CONCLUSIONS: In prehypertensive individuals, fractionized exercise (e.g., three 10-min aerobic exercise sessions spread out evenly throughout the day) reduces 24-h systolic ABP by more than a single 30-min exercise session. Fractionized exercise may be a viable and effective exercise alternative to continuous exercise for cardiovascular risk reduction in this population

Bharathi, Ankalmadagu V.; Kuriyan, Rebecca; Kurpad, Anura V.; Thomas, Tinku; Ebrahim, Shah; Kinra, Sanjay et al. (2010):

Assessment of physical activity using accelerometry, an activity diary, the heart rate method and the Indian migration study questionnaire in south Indian adults.

In: *Public health nutrition* 13 (1), S. 47–53. DOI: 10.1017/S1368980009005850.

Abstract:

OBJECTIVE\r\nTo validate questionnaire-based physical activity level (PAL) against accelerometry and a 24 h physical activity diary (24 h AD) as reference methods (Protocol 2), after validating these reference methods against the heart rate-oxygen consumption (HRVO2) method (Protocol 1).\r\nDESIGN\r\nCross-sectional study.\r\nSETTING\r\nTwo villages in Andhra Pradesh state and Bangalore city, South India.\r\nSUBJECTS\r\nNinety-four participants (fifty males, forty-four females) for Protocol 2; thirteen males for Protocol 1.\r\nRESULTS\r\nIn Protocol 2, mean PAL derived from the questionnaire (1.72 (sd 0.20)) was comparable to that from the 24 h AD (1.78 (sd 0.20)) but significantly higher than the mean PAL derived from accelerometry (1.36 (sd 0.20); P < 0.001). Mean bias of PAL from the questionnaire was larger against the accelerometer (0.36) than against the 24 h AD (-0.06), but with large limits of agreement against both. Correlations of PAL from the questionnaire with that of the accelerometer (r = 0.28; P = 0.01) and the 24 h AD (r = 0.30; P = 0.006) were modest. In Protocol 1, mean PAL from the 24 h AD (1.65 (sd 0.18)) was comparable, while that from the accelerometer (1.51 (sd 0.23)) was significantly lower (P < 0.001), than mean PAL obtained from the HRVO2 method (1.69 (sd 0.21)).\r\nCONCLUSIONS\r\nThe questionnaire showed acceptable validity with the reference methods in a group with a wide range of physical activity levels. The accelerometer underestimated PAL in comparison with the HRVO2 method.

Bhattacharyya, Mimi R.; Molloy, Gerard J.; Steptoe, Andrew (2008):

Depression is associated with flatter cortisol rhythms in patients with coronary artery disease.

In: *Journal of Psychosomatic Research* 65 (2), S. 107–113.

Abstract:

OBJECTIVE:

Depression is associated with coronary heart disease, but the underlying mechanisms are not fully understood. Cortisol is involved in the development of coronary artery disease (CAD), but evidence directly linking depression with cortisol in patients with CAD is limited. This study evaluated cortisol output over the day in patients with suspected CAD in relation to depressive symptoms.

METHODS:

Eighty-eight patients who were being investigated for suspected CAD (defined by clinical symptoms plus positive exercise tests or myocardial perfusion scans) took eight saliva samples over the day and evening. Depressed mood was assessed with the Beck Depression Inventory. Actigraphy was used to define time of waking objectively.

RESULTS:

The cortisol awakening response and cortisol rhythm over the remainder of the day and evening were analyzed separately. Fifty-two (61.9%) patients were later found to have definite CAD on angiography, while the remainder did not. The cortisol slope over the day was flatter in more depressed patients with CAD (P<.001) but was not related to depression in patients without CAD (P=.68). This effect was due to the combination of lower cortisol early in the day and higher cortisol in the evening in more depressed CAD patients, independent of age, gender, medication, and times of waking and sleeping (P=.003). Additionally, cortisol measured on waking and 15 and 30 min after waking was greater in CAD than in non-CAD patients (P=.04), but was not related to depression.

CONCLUSIONS:

The flatter cortisol rhythms of more depressed CAD patients may contribute to the progression of coronary atherosclerosis.

Bhopi, R.; Nagy, D.; Erichsen, D. (2012):

Can a novel smartphone application detect periodic limb movements?

In: *Stud.Health Technol.Inform.* 182 (0926-9630 (Linking)), S. 36–42. Online verfügbar unter PM:23138077.

Abstract:

Background: Periodic limb movements (PLMs) are repetitive, stereotypical and unconscious movements, typically of the legs, that occur in sleep and are associated with several sleep disorders. The gold standard for detecting PLMs is overnight electromyography which, although highly sensitive and specific, is time and labour consuming. The current generation of smart phones is equipped with tri-axial accelerometers that record movement. Aim: To develop a smart phone application that can detect PLMs remotely. Method: A leg movement sensing application (LMSA) was programmed in iOS 5x and incorporated into an iPhone 4S (Apple INC.). A healthy adult male subject underwent simultaneous EMG and LMSA measurements of voluntary stereotypical leg movements. The mean number of leg movements recorded by EMG and by the LMSA was compared. Results: A total of 403 leg movements were scored by EMG of which the LMSA recorded 392 (97%). There was no statistical difference in mean number of leg movements recorded between the two modalities (p = 0.3). Conclusion: These preliminary results indicate that a smart phone application is able to accurately detect leg movements outside of the hospital environment and may be a useful tool for screening and follow up of patients with PLMs

Biddle, Stuart J. H.; Gorely, Trish; Marshall, Simon J. (2009):

Is television viewing a suitable marker of sedentary behavior in young people?

In: *Annals of Behavioral Medicine* 38 (2), S. 147–153. DOI: 10.1007/s12160-009-9136-1.

Abstract:

BACKGROUND\r\nTelevision (TV) viewing is a highly prevalent sedentary behavior in young people and has played a significant role in the assessment of sedentary behaviors. An important question to be addressed is to what extent TV viewing is a suitable indicator, or marker, of overall levels of sedentary behavior in children and adolescents. This has not yet been attempted in youth, but has already been attempted in Australian adults.\r\nPURPOSE\r\nThis study was conducted to test whether TV viewing in UK teenagers is a marker of sedentary behavior more broadly and to see if the results mirror those of Australian adults.\r\nMETHODS\r\nEcological momentary assessment time-use diaries were completed by 561 boys and 923 girls (mean age 14.67 years) in which weekday and weekend out-of-school time behaviors were recorded every 15 min.\r\nRESULTS\r\nTV viewing was negatively associated with other leisure-time sedentary behaviors for both boys and girls for weekdays and weekends. Higher levels of TV viewing were associated with less time in other key sedentary behaviors, such as computer use in boys and motorized transport in girls.\r\nCONCLUSIONS\r\nTV viewing appears not to reflect additional time in other sedentary behaviors in British teenagers, in contrast to data from Australian women. Studies of sedentary behavior should encompass as wide a range of behaviors as possible.

Bieg, Madeleine; Goetz, Thomas; Lipnevich, Anastasiya A. (2014):

What Students Think They Feel Differs from What They Really Feel - Academic Self-Concept Moderates the Discrepancy between Students' Trait and State Emotional Self-Reports.

In: *PLoS One* 9 (3), S. e92563. DOI: 10.1371/journal.pone.0092563.

Abstract:

This study investigated whether there is a discrepancy pertaining to trait and state academic emotions and whether self-concept of ability moderates this discrepancy. A total of 225 secondary school students from two different countries enrolled in grades 8 and 11 (German sample; n = 94) and grade 9 (Swiss sample; n = 131) participated. Students' trait academic emotions of enjoyment, pride, anger, and anxiety in mathematics were assessed with a self-report questionnaire, whereas to assess their state academic emotions experience-sampling method was employed. The results revealed that students' scores on the trait assessment of emotions were generally higher than their scores on the state assessment. Further, as expected, students' academic self-concept in the domain of mathematics was shown to partly explain the discrepancy between scores on trait and state emotions. Our results indicate that there is a belief-driven discrepancy between what students think they feel (trait assessment) and what they really feel (state assessment). Implications with regard to the assessment of self-reported emotions in future studies and practical implications for the school context are discussed.

Bielemann, R. M.; Cascaes, A. M.; Reichert, F. F.; Domingues, M. R.; Gigante, D. P. (2012):

Objectively Measured Physical Activity in Children from a Southern Brazilian City: A Population-Based Study.

In: *J Phys.Act.Health* (1543-3080 (Linking)). Online verfügbar unter PM:23223711.

Abstract:

BACKGROUND: The aim of this study was to assess physical activity (PA) patterns (intensity and prevalence) in children according to demographic, socioeconomic and familiar characteristics. METHODS: In 2010, a cross-sectional study of 239 children aged 4 to 11 was conducted, in Pelotas, Southern Brazil. PA was measured by accelerometry and classified in different intensities. Insufficient physical activity was defined as less than 60 min/day of moderate-to-vigorous PA. Descriptive analyses of accelerometry-related variables were presented. Multivariate Poisson regression models were used to estimate the association between physical insufficient PA and co-variates. RESULTS: For both sexes, around 65% of the registered time was spent in sedentary activities and less than 20 min/day in vigorous activity. Age and economic status were inversely associated to PA in all categories of PA. Moderate and vigorous activities means were higher in boys than in girls. The prevalence of insufficient PA was 34.5% in girls and 19.5% in boys. CONCLUSIONS: We found important differences in physical activity patterns according to sex and economic status, as well as a significant decline in time spent in moderate-to-vigorous PA with increasing age. Understanding the relationship between these sociodemographic factors is important to tackle low levels of PA

Bierbrier, Rachel; Lo, Vivian; Wu, Robert C. (2014):

Evaluation of the accuracy of smartphone medical calculation apps.

In: *J Med Internet Res* 16 (2), S. e32. DOI: 10.2196/jmir.3062.

Abstract:

BACKGROUND: Mobile phones with operating systems and capable of running applications (smartphones) are increasingly being used in clinical settings. Medical calculating applications are popular mhealth apps for smartphones. These include, for example, apps that calculate the severity or likelihood of disease-based clinical scoring systems, such as determining the severity of liver disease, the likelihood of having a pulmonary embolism, and risk stratification in acute coronary syndrome. However, the accuracy of these apps has not been assessed. OBJECTIVE: The objective of this study was to evaluate the accuracy of smartphone-based medical calculation apps. METHODS: A broad search on Google Play, BlackBerry World, and the iTunes App Store was conducted to find medical calculation apps for smartphones. The list of apps was narrowed down based on inclusion and exclusion criteria focusing on functions thought to be relevant by a panel of general internists (number of functions =13). Ten case values were inputted for each function and were compared to manual calculations. For each case, the correct answer was assigned a score of 1. A score for the 10 cases was calculated based on the accuracy of the results for each function on each app. RESULTS: We tested 14 apps and 13 functions for each app if that function was available. We conducted 10 cases for each function for a total of 1240 tests. Most functions tested on the apps were accurate in their results with an overall accuracy of 98.6% (17 errors in 1240 tests). In all, 6 of 14 (43%) apps had 100% accuracy. Although 11 of 13 (85%) functions had perfect

accuracy, there were issues with 2 functions: the Child-Pugh scores and Model for End-Stage Liver Disease (MELD) scores on 8 apps. Approximately half of the errors were clinically significant resulting in a significant change in prognosis (8/17, 47%). CONCLUSIONS: The results suggest that most medical calculating apps provide accurate and reliable results. The free apps that were 100% accurate and contained the most functions desired by internists were CliniCalc, Calculate by QxMD, and Medscape. When using medical calculating apps, the answers will likely be accurate; however, it is important to be careful when calculating MELD scores or Child-Pugh scores on some apps. Despite the few errors found, greater scrutiny is warranted to ensure full accuracy of smartphone medical calculator apps.

Binder, Sabine; Deuschl, Gunther; Volkmann, Jens (2009):

Effect of cabergoline on parkinsonian tremor assessed by long-term actigraphy.

In: *Eur Neurol* 61 (3), S. 149–153. DOI: 10.1159/000186505.

Abstract:

BACKGROUND\r\nTremor is one of the cardinal symptoms in Parkinson's disease, but only few clinical studies have focussed on its therapy as the primary endpoint. One reason is the substantial fluctuation of tremor severity over time, which is difficult to capture and may render momentary clinical assessments unreliable.\r\nMETHODS\r\nWe evaluated the usefulness of a novel wrist-worn actigraph allowing long-term recordings of tremor in a pilot study, in which we assessed the therapeutic effect of cabergoline on tremor in 10 patients with tremor-dominant Parkinson's disease. Clinical data were obtained by using the Unified Parkinson's Disease Rating Scale (UPDRS Part III, item 20) and simultaneously a patient's tremor diary.\r\nRESULTS\r\nWe found a significant reduction in UPDRS motor and tremor scores, in tremor duration and tremor amplitude by actigraphy and diaries. Furthermore, we found significant correlations between actigraphy measurements and patient ratings of tremor intensity and occurrence in diaries.\r\nCONCLUSION\r\nLong-term actigraphy is a reliable method to assess tremor occurrence and severity and may be used to document antitremor effects in clinical studies.

Bindhim, Nasser F.; Hawkey, Alexandra; Trevena, Lyndal (2014):

A Systematic Review of Quality Assessment Methods for Smartphone Health Apps.

In: *Telemed J E Health. DOI:* 10.1089/tmj.2014.0088.

Abstract:

Abstract Introduction: There are large numbers of health-related applications (apps) available in various app stores for many smartphone devices. Consequently, increasing numbers of articles are attempting to evaluate the content and the quality of health-related smartphone apps for specific health conditions. The aim of this article is to describe and summarize the methodologies used to determine the quality of health-related apps targeting health consumers and to propose a set of criteria for evaluating the quality of smartphone health-related apps. Materials and Methods: In 2013, literature searches were performed using Medline and CINAHL, and we included all articles that had the aim of assessing the quality of health-related smartphone apps. The assessment method used in these studies was summarized and scored using a set of quality criteria developed for this study. Results: From 606 articles generated by the search, only 10 met the inclusion criteria. Based on our quality criteria, the mean score was 5.05 out of 8 (range, 2-7). Eighty percent of the studies did not identify the app store country in which the apps were found. Forty percent of the studies did not clearly mention whether they only had assessed the app description or had downloaded the app content for evaluation. Sixty percent of the studies did not provide a list of the apps they had evaluated. Overall, we identified six evaluation methodologies used to assess the quality of health-related apps described in Results. Conclusions: This article provides a summary of currently used methods for assessing the quality of smartphone health-related apps and proposes a set of criteria to enable future studies to consistently review health-related app quality in a standardized manner.

Bindhim, Nasser F.; McGeechan, Kevin; Trevena, Lyndal (2014):

Assessing the effect of an interactive decision-aid smartphone smoking cessation application (app) on quit rates: a double-blind automated randomised control trial protocol.

In: *BMJ Open* 4 (7), S. e005371. DOI: 10.1136/bmjopen-2014-005371.

Abstract:

INTRODUCTION: In a previous study exploring the feasibility of a smoking cessation application (app), we found that about 77% of the respondents from three countries were ready to quit in the next 30 days without significant differences between countries in terms of age, operating system and number of quitting attempts. However, the efficacy of smartphone apps for smoking cessation has not yet been established. This study tests the efficacy of a smartphone smoking cessation decision-aid app compared with an app that contains only smoking cessation information. METHODS AND ANALYSIS: This is an automated double-blind, randomised controlled trial of a smoking cessation app that contains the eligibility requirements and baseline questionnaire and will randomise the participants into one of the two subapps (the intervention and the control). Participants will be recruited directly from the Apple app stores in Australia, Singapore, the UK and the USA. Daily smokers aged 18 and above will be randomised into one of the subapps after completing the baseline questionnaire. Abstinence rates will be measured at 10 days, 1 month, 3 months and 6 months, with the 1-month follow-up abstinence rate as the primary outcome. Logistic regression mixed models will be used to analyse the primary outcome. ETHICS AND DISSEMINATION: This study was approved by the University of Sydney's Human Ethics Committee. The results of the trial will be published in peer-reviewed journals according to the CONSORT statement. TRIAL REGISTRATION NUMBER: Australian New Zealand ClinicalTrial RegistryACTRN12613000833763.

Bindhim, Nasser F.; McGeechan, Kevin; Trevena, Lyndal (2014):

Who Uses Smoking Cessation Apps? A Feasibility Study Across Three Countries via Smartphones.

In: *JMIR Mhealth Uhealth* 2 (1), S. e4. DOI: 10.2196/mhealth.2841.

Abstract:

BACKGROUND: Smartphone use is growing worldwide. While hundreds of smoking cessation apps are currently available in the app stores, there is no information about who uses them. Smartphones also offer potential as a research tool, but this has not previously been explored. OBJECTIVE: This study aims to measure and compare the uptake of a smoking cessation app over one year in Australia, the United Kingdom, and the United States. It also assesses the feasibility of conducting research via an app, describing respondents' characteristics (demographics, smoking status, and other health related app use), and examining differences across countries. METHODS: This is a cross-sectional exploratory study of adults 18 years and older, passively recruited over one year in 2012, who downloaded this study app (Quit Advisor) via the two largest app stores (Apple and Android). RESULTS: The total number of app downloads after one year was 1751, 72.98% (1278/1751) of them were Apple operation system users. Of these 1751 participants, 47.68% (835/1751) were from the United States, 29.18% (511/1751) were from the United Kingdom, and 16.68% (292/1751) were from Australia. There were 602 participants, 36.75% (602/1638) that completed a questionnaire within the app. Of these 602 participants, 58.8% (354/602) were female and the mean age was 32 years. There were no significant differences between countries in terms of age, operation system used, number of quitting attempts, and language spoken at home. However, there were significant differences between countries in terms of gender and stage of change. There were 77.2% (465/602) of the respondents that were ready to quit in the next 30 days and the majority of these had never sought professional help (eg, "Quitline"). More than half had downloaded smoking cessation apps in the past and of these, three-quarters had made quitting attempts (lasted at least 24 hours) using an app before. Respondents who had attempted to quit three times or more in the previous year were more likely to have tried smoking cessation apps (OR 3.3, 95% CI 2.1-5.2). There were 50.2% (302/602) of the respondents that had used other health related apps before. Of these, 89.4% (270/302) were using health related apps at least once a week, but 77.5% (234/302) never checked the credibility of the health app publishers before downloading. CONCLUSIONS: A smartphone app was able to reach smokers across three countries that were not seeking professional help, but were ready to quit within the next 30 days. Respondents were relatively young and almost demographically similar across all three countries. They also frequently used other health related apps, mostly without checking the credibility of their publishers.

Birnbaum, Gurit E.; Reis, Harry T.; Mikulincer, Mario; Gillath, Omri; Orpaz, Ayala (2006):

When sex is more than just sex: attachment orientations, sexual experience, and relationship quality.

In: *Journal of Personality and Social Psychology* 91 (5), S. 929–943. DOI: 10.1037/0022-3514.91.5.929.

Abstract:

The authors explored the contribution of individual differences in attachment orientations to the experience of sexual intercourse and its association with relationship quality. In Study 1, 500 participants completed self-report scales of attachment orientations and sexual experience. The findings indicated that whereas attachment anxiety was associated with an ambivalent construal of sexual experience, attachment avoidance was associated with more aversive sexual feelings and cognitions. In Study

2, 41 couples reported on their attachment orientations and provided daily diary measures of sexual experiences and relationship interactions for a period of 42 days. Results showed that attachment anxiety amplified the effects of positive and negative sexual experiences on relationship interactions. In contrast, attachment avoidance inhibited the positive relational effect of having sex and the detrimental relational effects of negative sexual interactions. The authors discuss the possibility that attachment orientations are associated with different sex-related strategies and goals within romantic relationships.

Bisconti, Toni L.; Bergeman, Cindy S.; Boker, Steven M. (2006):

Social support as a predictor of variability: an examination of the adjustment trajectories of recent widows.

In: *Psychology and Aging* 21 (3), S. 590–599. DOI: 10.1037/0882-7974.21.3.590.

Abstract:

The variability pattern of emotional well-being in recent widows across a 98-day period beginning in the first month post-loss has previously been modeled by dynamical systems and shown to be an oscillating process that damps across time. The goal of the present study was to examine how variables that comprise the social support network predict characteristics of these emotional shifts in 28 recent widows. In the present study, emotional support seeking led to a steeper overall trend, whereas perceived control for social support led to a shallower overall trend. When examining intraindividual variability, instrumental support seeking predicted a slower damping rate. Understanding the individual differences in the variability patterns of recent widows is a necessary step in identifying the etiology of adjustment to widowhood.

Bishop, George D.; Ng, Daniel P. K.; Ngau, Francis; Nurbaya, Siti (2010):

Ethnicity, gender, genotype, and anger as related to nocturnal dipping.

In: *Psychophysiology* 47 (6), S. 1094–1101.

Abstract:

Bishop, Pek, and Ngau (2005) found a significant interaction in Singapore between anger and nocturnal dipping among Indians but not Chinese and Malays. The current study examines the role of 5-HTTLPR genotype in this relationship. Two hundred thirty-one undergraduates participated in up to 4 days of 24-h ambulatory monitoring, completed the State-Trait Anger Expression Inventory, and provided blood samples for genotyping of 5-HTTLPR. Results indicated individuals with two copies of the short allele (SS) showed reduced dipping when they were high in Outward Anger (OA) but increased dipping when they were low in OA. Further, for Indian men only, dipping was reduced for individuals having the SS genotype when they were low on Anger In and increased when they were high on Anger In. These data provide further evidence for the role of 5-HTTLPR in cardiovascular risk as well as ethnic differences in the 5-HTTLPR-phenotype relationship. They also provide further evidence for 5-HTTLPR as a "plasticity gene."

Bishop, George D.; Ngau, Francis; Pek, Jolynn (2008):

Domain-specific assessment of anger expression and ambulatory blood pressure.

In: *Personality and Individual Differences* 44 (8), S. 1726–1737.

Abstract:

Bongard and al'Absi (2003) proposed domain-specific anger expression as an improved method for measuring the expression of anger with stronger links to cardiovascular parameters. We tested this proposal by relating their domain-specific measure to ambulatory blood pressure. One hundred and forty-nine Singapore young adults responded to a modified version of the State-Trait Anger Expression Inventory that measured anger expression at home, school/work and leisure and then underwent 24 h ambulatory blood pressure monitoring. Results indicated significant differences in reported anger expression in the three domains measured and also showed that domain-specific measures of anger expression were more strongly related to ambulatory blood pressure than was the general measure of anger expression. These results provide additional evidence for the importance of measures of anger expression that take account of the specific context in which anger occurs.

Bishop, George D.; Pek, Jolynn; Ngau, Francis (2006):

Blunted cardiovascular responses to daytime activities as related to reduced nocturnal blood pressure decline.

In: *Annals of Behavioral Medicine* 31 (3), S. 248–253. DOI: 10.1207/s15324796abm3103_6.

Abstract:

BACKGROUND: Individuals showing less than a 10% decline in blood pressure at night ("nondippers") are known to be at increased risk for hypertension and other cardiovascular conditions. PURPOSE: This research tested the assertion by Raikkonen et al. (1) that nondippers show blunted cardiovascular responses to activities during daytime hours. METHODS: Ambulatory blood pressure and impedance monitoring was performed with 149 young adults in Singapore. At each daytime blood pressure reading, participants completed a computerized questionnaire indicating location, posture, physical activities, feelings, and social interactions. RESULTS: Significant interactions between dipper status and feeling tired, location, posture, and physical activity provided qualified support for the blunting hypothesis. However, blunting of BP responses was not attributable to blunting of either cardiac output or total peripheral resistance responses. CONCLUSION: Nondippers appear to show blunted daytime responses to certain types of daytime activities. However, these effects are limited and appear to be the result of different mechanisms than those responsible for reduced nighttime blood pressure decline.

Björling, Elin A. (2009):

The momentary relationship between stress and headaches in adolescent girls.

In: *Headache* 49 (8), S. 1186–1197. DOI: 10.1111/j.1526-4610.2009.01406.x.

Abstract:

OBJECTIVE\r\nThe objective of this study was to compare the relationship between repeated momentary reports of stress and headaches in female adolescents with varying degrees of headache frequency.\r\nBACKGROUND\r\nHeadaches are the most common form of pain reported by adolescents affecting more than a third of all adolescents. High levels of stress during adolescence may predispose an adolescent to experience headaches in adulthood. Randomized, momentary data collection of stress and headaches provides the most accurate data regarding the adolescent experience of these variables.\r\nMETHODS\r\nThe research methodology, ecological momentary assessment, is a valid approach to better understand the relationship between stress and headaches in adolescence. Data were obtained by each participant's use of an electronic diary (ED), which captured repeated momentary reports of perceived stress, head pain, and stress-related symptoms in female adolescents with varying degrees of recurrent headache. Seven times per day for the 21-day study period, teen girls responded to ED questions about their current stress levels, head pain, and stress-related symptoms. Based on participants' momentary reports of headaches, Low Headache, Moderate Headache, and Chronic Headache groups were created. General estimating equation models were used to analyze the relationship between momentary variables as well as the lag effect between stress and head pain.\r\nRESULTS\r\nThirty-one participants, aged 14-18 years, completed 2841 randomized ED reports and reported 674 occurrences of headache. The Chronic Headache and Moderate Headache groups reported significantly increased levels of stress, head pain, and headaches. The relationship between momentary stress and head pain was significantly strong both within and across participants. The strength of this relationship increased with increased headache activity. A significant lag effect was found between stress and headaches; however, the effect of depression as a moderator of the stress and headache relationship remains unclear.\r\nCONCLUSION\r\nPerceived stress and head pain was highly correlated in these female adolescents. Given the large population of teens affected by headaches, a plausible next step would be to validate these results in other samples and to determine methods with which to identify teens who may be at risk for a pattern of increasing stress and headaches.

Bjornson, Kristie; Song, Kit; Lisle, Jennifer; Robinson, Sarah; Killien, Elizabeth; Barrett, Terry; Zhou, Chuan (2010):

Measurement of walking activity throughout childhood: influence of leg length.

In: *Pediatric Exercise Science* 22 (4), S. 581.

Abstract:

The aim of this study was to describe walking (stride) activity frequency and intensity in 428 children ages 2-15 years with a single accelerometer-based device. With comparison with published pedometer-determined data, the influence of leg length was examined. Decline in stride frequency and intensity throughout childhood increased with adjustment for leg length. The accelerometer-based device documented higher stride counts than published pedometer-based data with the greatest discrepancy in 4-5 year olds. Recommended walking levels for optimal weight throughout childhood should be examined with knowledge of the device measurement differences and the natural history of walking activity changes with age.

Black, Anne C.; Harel, Ofer; Matthews, Gregory (2012):

Techniques for analyzing intensive longitudinal data with missing values. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 339–356. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-019%26site%3dehost-live.

Abstract:

(from the chapter) Longitudinal studies are unique in their requirement of respondents to provide data repeatedly over time. Such studies may require multiple responses in a day, as may occur with experience sampling (or ecological momentary sampling), or may require participants to respond less frequently over a longer period of time. Particular threats to repeated measures studies, and specifically those involving momentary assessment, are fatigue, forgetfulness, noncompliance, and dropout. The result is unplanned missing data (MD). In this chapter, we discuss the problems and causes of missing data in studies of daily life that involve repeated measures, recommend techniques to prevent or minimize the occurrence of missing data, outline how analysts can determine what assumptions are most appropriate for their data, and review typical and best practices for handling incomplete intensive longitudinal data. We present a motivating example, using a subset of data collected by Conner (2009), in which university students were asked to provide daily diary data about their alcohol use and well-being over a 21-day period. In the example, we impose missing values on two variables and illustrate model parameter estimation with various MD techniques, demonstrating the impact of MD and the utility of informed methods for deriving unbiased and efficient estimates. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Blaes, Aurélie; Baquet, Georges; van Praagh, Emmanuel; Berthoin, Serge (2011):

Physical activity patterns in French youth--from childhood to adolescence--monitored with high-frequency accelerometry.

In: *American journal of human biology : the official journal of the Human Biology Council* 23 (3), S. 353–358. DOI: 10.1002/ajhb.21142.

Abstract:

OBJECTIVES\r\nTo investigate changes in time spent in light (LPA), moderate (MPA), vigorous (VPA), very high physical activity (VHPA) from childhood to adolescence, according to age and sex, when measured with high frequency accelerometry.\r\nMETHODS\r\nThree hundred and sixty-one children, 94 preschoolers (Ps), 156 from primary schools (PS) and 111 from junior high schools (JHS)) were involved in this study. The children's physical activity was assessed with a uniaxial accelerometer over a seven-day period. The epoch duration was set at 5 s and data collected between 7 am and 9 pm. The times spent below and above different PA thresholds, corresponding from LPA (<3 METs) to VHPA (>9 METs), were calculated.\r\nRESULTS\r\nDuring the week, the boys spent significantly more time in MPA to VHPA than the girls ($p < 0.001$). From Ps to PS, LPA remained stable, while VPA and VHPA decreased significantly ($p < 0.05$). From PS to JHS, time spent in LPA, VPA, and VHPA increased significantly ($p < 0.05$). On the contrary, MPA increased significantly ($p < 0.05$) between Ps and PS and decreased significantly ($p < 0.05$) from PS to JHS. From PS to JHS, time spent in LPA increased significantly more during free days than during school days ($p < 0.05$) while VPA and VHPA increased significantly ($p < 0.05$) more during school days than during free days.\r\nCONCLUSIONS\r\nModerate to very high PA decreased from childhood to adolescence. Changes in PA patterns were associated with an increase of LPA and a concomitant decrease of MPA, while changes were more pronounced during free days than during school days.

Bless, J. J.; Westerhausen, R.; Arciuli, J.; Kompus, K.; Gudmundsen, M.; Hugdahl, K. (2013):

"Right on all Occasions?" - On the Feasibility of Laterality Research Using a Smartphone Dichotic Listening Application.

In: *Front Psychol* 4 (1664-1078 (Electronic)), S. 42. DOI: 10.3389/fpsyg.2013.00042.

Abstract:

Most psychological experimentation takes place in laboratories aiming to maximize experimental control; however, this creates artificial environments that are not representative of real-life situations. Since cognitive processes usually take place in noisy environments, they should also be tested in these contexts. The recent advent of smartphone technology provides an ideal medium for such testing. In order to examine the feasibility of mobile devices (MD) in psychological research in general, and laterality research in particular, we developed a MD version of the widely used speech laterality test, the consonant-vowel

dichotic listening (DL) paradigm, for use with iPhones/iPods. First, we evaluated the retest reliability and concurrent validity of the DL paradigm in its MD version in two samples tested in controlled, laboratory settings (Experiment 1). Second, we explored its ecological validity by collecting data from the general population by means of a free release of the MD version (iDichotic) to the iTunes App Store (Experiment 2). The results of Experiment 1 indicated high reliability (r(ICC) = 0.78) and validity (r(ICC) = 0.76-0.82) of the MD version, which consistently showed the expected right ear advantage (REA). When tested in real-life settings (Experiment 2), participants (N = 167) also showed a significant REA. Importantly, the size of the REA was not dependent on whether the participants chose to listen to the syllables in their native language or not. Together, these results establish the current MD version as a valid and reliable method for administering the DL paradigm both in experimentally controlled as well as uncontrolled settings. Furthermore, the present findings support the feasibility of using smartphones in conducting large-scale field experiments

Bloemers, Jos; Gerritsen, Jeroen; Bults, Richard; Koppeschaar, Hans; Everaerd, Walter; Olivier, Berend; Tuiten, Adriaan (2010):

Induction of sexual arousal in women under conditions of institutional and ambulatory laboratory circumstances: a comparative study.

In: *Journal of Sexual Medicine* 7 (3), S. 1160–1176. DOI: 10.1111/j.1743-6109.2009.01660.x.

Abstract:

INTRODUCTION\r\nMeasuring under naturally occurring circumstances increases ecological validity. We developed an ambulatory psychophysiological laboratory that allows experiments to be performed at home.\r\nAIMS\r\nTo compare institutional laboratory task measures with ambulatory laboratory task measures.\r\nMAIN OUTCOME MEASURES\r\nVaginal pulse amplitude (VPA), clitoral blood volume (CBV), subjective report of sexual arousal, preconscious attentional bias for erotic stimuli, subjective reports about feeling at ease, tense, anxious or inhibited.\r\nMETHODS\r\nVPA and CBV were measured in eight women with hypoactive sexual desire disorder (HSDD) and eight healthy controls while exposed to neutral and erotic film clips both in the institute's laboratory and at home. Before and after film clip presentations, subjects performed an emotional Stroop task and completed two questionnaires.\r\nRESULTS\r\nIn healthy controls, genital measures of sexual arousal were significantly increased at home compared with the institutional laboratory, whereas no differences were observed between the institutional laboratory and the at home measurements in women with HSDD. The responses at home were significantly higher in healthy controls compared with women with HSDD. Subjective experience of genital responding increased at home for both groups of women. Concordance between subjective experience and genital sexual arousal was more pronounced in the institutional laboratory setting. Preconscious attentional bias was stronger in the institutional laboratory for both groups of women. Healthy controls felt more at ease and less inhibited at home while subjects with HSDD did not.\r\nCONCLUSIONS\r\nThe use of an ambulatory laboratory is a valuable tool allowing psychophysiological (sex) research under more natural circumstances (e.g., a participant's home). In this study, the increase in ecological validity resulted in a qualitative differentiation between the healthy controls and the women with HSDD in the home setting, which is not apparent in the artificial setting of the institutional laboratory.

Blood, Emily A.; Shrier, Lydia A. (2013):

The temporal relationship between momentary affective states and condom use in depressed adolescents.

In: *Archives of Sexual Behavior*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-00722-001%26site%3dehost-live;emily.blood@childrens.harvard.edu.

Abstract:

Depressed adolescents are more likely to engage in sexual risk behaviors than their non-depressed peers. The objectives of this study were (1) to examine whether affective states predicted subsequent condom use, directly or indirectly through contextual factors and (2) to compare results obtained from structural equation models versus non-linear mixed effects models. This study used ecological momentary assessment to collect data on in-the-moment affective states and sexual behavior from 51 depressed adolescents (7 male, 44 female) aged 15–22-�years. The association between positive and negative affect and condom use during a subsequent sex event was explored using several structural equation models and non-linear mixed effects models. Potential mediation by substance use before sex, partner type, reason for sex, and who wanted sex was examined. Neither positive nor negative affect was directly associated with condom use in any models; however, negative affect was associated with increased likelihood of sex with a non-main partner, which, in turn, was associated with increased condom use. Both structural equation models and non-linear mixed effects models successfully modeled the relationship between affect and condom use in momentary data while correctly accounting for the correlation of multiple observations from the same individual. The benefit of structural equation modeling was the ability to directly model the mediation of this effect by contextual factors. In

this sample of depressed adolescents, negative and positive affect did not appear to be directly predictive of condom use during a subsequent sex event, although may indirectly affect condom use through sex with a non-main partner. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Bock, Freia; Menze, Jochen; Becker, Simone; Litaker, David; Fischer, Joachim; Seidel, Ilka (2010):

Combining accelerometry and HR for assessing preschoolers' physical activity.

In: *Med Sci Sports Exerc* 42 (12), S. 2237–2243. DOI: 10.1249/MSS.0b013e3181e27b5d.

Abstract:

PURPOSE\r\nWith rising obesity and rapidly decreasing levels of physical activity (PA) in young children, accurate PA measurement is needed for early screening and intervention evaluation. Although the combination of accelerometry (ACC) with HR recordings is accurate in assessing PA intensity in older children, its utility in correctly classifying PA in preschoolers is unknown.\r\nMETHODS\r\nThirty-three children (64% were boys) were recruited from four German preschools. Data included direct observation and Actiheart (CamNtech, Cambridge, UK) monitoring during 2.5 T 0.7 h (derivation data) and 1.5 T 0.3 h (validation data). Observers assessed PA using the Children's Activity Rating Scale (CARS). Moderate-to-vigorous PA (MVPA) was defined by a CARS score of 4 or 5, and sedentary behavior (SB) was defined by a CARS score of 1 or 2. Actiheart recordings were linked to CARS level, with means and 95% confidence intervals calculated for ACC and HR at each observed CARS level and for MVPA/SB. Using receiver operating characteristic analysis, gender-specific ACC and HR cutoffs for correctly classifying MVPA and SB were first determined in a derivation data set and then tested in a separate validation data set of observations.\r\nRESULTS\r\nBy combining HR and ACC cutoffs, 91% and 87% of the 15-s intervals observed as MVPA were correctly classified in girls and boys, respectively. Although generally lower, correct classification rates for SB were highest when only ACC cutoffs were applied (69% for girls and 67% for boys) rather than when combined cutoffs were used.\r\nCONCLUSIONS\r\nDevices that combine HR and ACC data yield an accurate classification of MVPA in preschoolers but perform less well for classifying SB. These differences underscore the need to match evaluation methods with the objectives of future PA interventions.

Bogers, R. P.; Bolte, J. F.; Houtveen, J. H.; Lebret, E.; van Strien, R. T.; Schipper, C. M. et al. (2013):

Design of an ecological momentary assessment study of exposure to radiofrequency electromagnetic fields and non-specific physical symptoms.

In: *BMJ Open* 3 (8), S. e002933. DOI: 10.1136/bmjopen-2013-002933.

Abstract:

INTRODUCTION: Idiopathic Environmental Intolerance (IEI) attributed to electromagnetic fields (EMF) refers to self-reported sensitivity mainly characterised by the attribution of non-specific physical symptoms to low-level EMF exposure emitted from sources such as mobile phones. Scientific studies have not provided evidence for the existence of IEI-EMF, but these studies did not resemble the real-life situation or suffered from poor exposure characterisation and biased recall of health symptoms. To improve existing methods for the study of IEI-EMF, an Ecological Momentary Assessment (EMA) study is designed. METHODS AND ANALYSIS: The study is an EMA study in which respondents carry personal exposure metres (exposimeters) that measure radiofrequency (RF) EMF, with frequent assessment of health symptoms and perceived EMF exposure through electronic diary registration during five consecutive days. Participants will be a selection from an epidemiological study who report to be sensitive to RF EMF. The exposimeters measure electric field strength in 12 frequency bands. Diary questions include the occurrence and severity of 10 non-specific physical symptoms, mood states and perceived exposure to (sources of) EMF. The relationship of actual and perceived EMF exposure and mood with non-specific physical symptoms will be analysed using multilevel regression analysis with time-shift models. DISCUSSION: The study has several advantages over previous studies, including assessment of personal EMF exposure and non-specific physical symptoms by an ecological method with a minimised chance of recall bias. The within-person design reduces confounding by time-stable factors (eg, personal characteristics). In the conduct of the study and the analysis and interpretation of its outcomes, some methodological issues including a high participant burden, reactivity, compliance to the study protocol and the potential of chance findings due to multiple statistical testing will be accounted for and limited as much as possible

Bohnert, Amy; Burdette, Kimberly; Dugas, Lara; Travers, Lea; Randall, Edin; Richards, Maryse; Luke, Amy (2013):

Multimethod analyses of discretionary time use and health behaviors among urban low-income African-American adolescents: A pilot study.

In: *Journal of Developmental and Behavioral Pediatrics* 34 (8), S. 589–598. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-36758-009%26site%3dehost-live;kburdette@luc.edu.

Abstract:

Objective: The objective of this pilot study was to examine the relations between discretionary time (DT) social context, health behaviors (dietary intake and physical activity), and body mass index (BMI) in a sample of urban low-income African-American early adolescents. Methods: Multiple methods were used, including accelerometers, 24-hour dietary recalls, anthropometric measurements, and Experience Sampling Method (ESM). Participants included 9 boys (mean = 12.9 years) and 16 girls (mean = 12.9 years). Sixteen participants were at a healthy weight (10 girls and 6 boys), and 9 were overweight or obese (5 girls and 3 boys). Results: Eighth graders had higher BMI z scores, engaged in less healthful eating during DT, and spent less time in vigorous exercise in DT than sixth graders. Participants spent the majority of DT with siblings, which was associated with increased light physical activity as measured by accelerometers. The ESM data suggested that adolescents engaged in increased physical activity and decreased sedentary activity when with peers but increased sedentary activity when with parents. Increased percentage of DT spent with parents was associated with increased daily fat intake. Data also indicate high consumption of unhealthy foods across all DT social contexts and activities. Conclusions: Peers may provide a protective social context with regard to obesity-related health behaviors. Targeting changes in health behaviors during the middle school years may be an effective means of decreasing obesity risk among urban African-American adolescents. Interventions for urban African-American early adolescents may benefit from facilitating physical activity with peers and targeting change in family health behaviors. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Bohnert, Amy M.; Richards, Maryse H.; Kolmodin, Karen E.; Lakin, Brittany L. (2008):

Young urban african american adolescents' experience of discretionary time activities.

In: *Journal of Research on Adolescence* 18 (3), S. 517–539.

Abstract:

This cross-sectional study examined the daily discretionary time experiences of 246 (107 boys, 139 girls) fifth through eighth grade urban African American adolescents using the Experience Sampling Method. Relations between the types of activities (i.e., active structured, active unstructured, passive unstructured) engaged in during discretionary time and self-reported levels of motivated engagement, positive affect, confidence, and perceived alienation were explored. Results indicated that active structured activities occupied a small but important amount of young adolescents' discretionary time. Adolescents experienced the highest mean levels of motivated engagement and confidence, and the lowest mean levels of alienation when involved in these types of activities. Higher levels of positive affect were associated with participation in active as opposed to passive activities. Findings suggest that urban African American young adolescents experience more positive emotional states when they are involved in active, structured activities.

Boivin, Jean-Marc; Boutte, Emilie; Fay, Renaud; Rossignol, Patrick; Zannad, Faiez (2014):

Home Blood Pressure Monitoring: A Few minutes of Rest Before Measurement May Not Be Appropriate.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpu001.

Abstract:

BACKGROUND: Home blood pressure measurement (HBPM) is recommended for the diagnosis and follow-up of hypertensive patients. While measurement protocols emphasize a rest period before taking the measurement, this directive has not been supported by any specific study to date. This analysis aimed to determine whether the respect or nonrespect of rest before HBPM could introduce a difference between daytime ambulatory blood pressure measurement (ABPM) and HBPM; whether this rest is observed "in real life" among educated hypertensive patients. METHODS: In this open, prospective study we compared HBPM, with and without rest, and ABPM among 52 office/clinically controlled hypertensive patients. HBPM was performed during 3 days (French HAS instructions); 24-hour ABPM was performed within 3 days of HBPM. All patients who regularly performed HBPM before the study were asked how they practiced HBPM in real life. RESULTS: There was a differential impact of rest on differences observed in daytime ABPM and HBPM. Systolic HBPM decreased with rest, while diastolic HBPM did not significantly increase. HBPM systolic BP (SBP) without rest was not significantly different from daytime ABPM SBP (P = 0.27).

HBPM SBP without rest was lower than daytime and 24-hour systolic ABPM. Diastolic HBPM after rest was not significantly different from daytime diastolic ABPM (P = 0.09). None of the 38 patients who regularly performed HBPM were compliant with a period of rest before beginning the measurements. CONCLUSIONS: Rest before HBPM induces a bias that underestimates SBP vs. daytime ABPM and perhaps complicates patient adherence to HBPM protocols.

Bolkhovsky, J. B.; Scully, C. G.; Chon, K. H. (2012):

Statistical analysis of heart rate and heart rate variability monitoring through the use of smart phone cameras.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 1610–1613. DOI: 10.1109/EMBC.2012.6346253.

Abstract:

Video recordings of finger tips made using a smartphone camera contain a pulsatile component caused by the cardiac pulse equivalent to that present in a photoplethysmographic signal. By performing peak detection on the pulsatile signal it is possible to extract a continuous heart rate signal. We performed direct comparisons between 5-lead electrocardiogram based heart rate variability measurements and those obtained from an iPhone 4s and Motorola Droid derived pulsatile signal to determine the accuracy of heart rate variability measurements obtained from the smart phones. Monitoring was performed in the supine and tilt positions for independent iPhone 4s (2 min recordings, n=9) and Droid (5 min recordings, n=13) experiments, and the following heart rate and heart rate variability parameters were estimated: heart rate, low frequency power, high frequency power, ratio of low to high frequency power, standard deviation of the RR intervals, and root mean square of successive RR-differences. Results demonstrate that accurate heart rate variability parameters can be obtained from smart phone based measurements

Bolszak, Sylvain; Casartelli, Nicola C.; Impellizzeri, Franco M.; Maffiuletti, Nicola A. (2014):

Validity and reproducibility of the Physical Activity Scale for the Elderly (PASE) questionnaire for the measurement of the physical activity level in patients after total knee arthroplasty.

In: *BMC Musculoskelet Disord* 15, S. 46. DOI: 10.1186/1471-2474-15-46.

Abstract:

BACKGROUND: The need for valid and reproducible questionnaires to routinely assess the physical activity level of patients after total knee arthroplasty (TKA) is of particular concern in clinical settings. Aims of this study were to evaluate the validity and reproducibility of the physical activity scale for the elderly (PASE) questionnaire in TKA patients, with a particular view on gender differences. METHODS: A total of 50 elderly patients (25 women and 25 men aged 70 +/- 6 years) following primary unilateral TKA were recruited. The reproducibility was evaluated by administering the PASE questionnaire during two occasions separated by 7 days. The construct (criterion) validity was investigated by comparing the physical activity level reported by patients in the PASE questionnaire to that measured by accelerometry. Reproducibility was evaluated using intraclass correlation coefficients (ICC3,1) for reliability and standard error of measurement (SEM) and smallest detectable change (SDC) for agreement, while validity was investigated with Pearson correlation coefficients. RESULTS: Reliability of the PASE total score was acceptable for men (ICC = 0.77) but not for women (ICC = 0.58). Its agreement was low for both men and women, as witnessed by high SEM (32% and 35%, respectively) and SDC (89% and 97%, respectively). Construct validity of the PASE total score was low in both men (r = 0.45) and women (r = 0.06). CONCLUSIONS: The PASE questionnaire has several validity and reproducibility shortcomings, therefore its use is not recommended for the assessment of physical activity level in patients after TKA, particularly in women.

Bond, Dale S.; Jakicic, John M.; Unick, Jessica L.; Vithiananthan, Sivamainthan; Pohl, Dieter; Roye, G. Dean et al. (2010):

Pre-to Postoperative Physical Activity Changes in Bariatric Surgery Patients: Self Report vs. Objective Measures.

In: *Obesity* 18 (12), S. 2395–2397.

Abstract:

Bariatric surgery patients report significant pre- to postoperative increases in physical activity (PA). However, it is unclear whether objective measures would corroborate these changes. The present study compared self-reported and accelerometer-based estimates of changes in moderate-to-vigorous intensity PA (MVPA) from pre- (pre-op) to 6 months postsurgery (post-op). Twenty bariatric surgery (65% laparoscopic-adjustable gastric banding, 35% gastric bypass) patients (46.2 ± 9.8 years, 88% female, pre-op BMI = 50.8 ± 9.7 kg/m2) wore RT3 accelerometers as an objective measure of MVPA and completed the Paffenbarger Physical Activity Questionnaire (PPAQ) as a subjective measure before and 6 months after bariatric surgery. Time (min/week) spent in MVPA was calculated for the PPAQ and RT3 (≥1-min and ≥10-min bouts) at pre-op and post-op. Self-reported MVPA increased fivefold from pre-op to post-op (44.6 ± 80.8 to 212.3 ± 212.4 min/week; P < 0.005). By contrast, the RT3 showed nonsignificant decreases in MVPA for both ≥1-min (186.0 ± 169.0 to 151.2 ± 118.3 min/week) and ≥10-min (41.3 ± 109.3 to 39.8 ± 71.3 min/week) bouts. At pre-op, the percentage of participants who accumulated ≥150-min/week of MVPA in bouts ≥10-min according to the PPAQ and RT3 was identical (10%). However, at post-op, 55% of participants reported compliance with the recommendation compared to 5% based on RT3 measurement (P = 0.002). Objectively-measured changes in MVPA from pre-op to 6 months post-op appear to be much smaller than self-reported changes. Further research involving larger samples is needed to confirm these findings and to determine whether self-report and objective PA measures are differentially associated with surgical weight loss outcomes.

Bond, Dale S.; Thomas, J. Graham; Ryder, Beth A.; Vithiananthan, Sivamainthan; Pohl, Dieter; Wing, Rena R. (2013):

Ecological momentary assessment of the relationship between intention and physical activity behavior in bariatric surgery patients.

In: *International Journal of Behavioral Medicine* 20 (1), S. 82–87. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-06261-012%26site%3dehost-live;dbond@lifespan.org.

Abstract:

Background: Performing habitual physical activity (PA) is challenging for many bariatric surgery patients. Purpose: We used electronic ecological momentary assessment to naturalistically examine whether insufficient PA among bariatric surgery patients was due to infrequent PA intentions or inadequate follow through on PA intentions. Method: Twenty-one patients 6-months post-bariatric surgery were recruited from multiple clinics in Providence, Rhode Island, USA. Participants used a palmtop computer upon waking for 6 days to indicate whether they intended to be active, and if so, the amount of PA they intended to perform in bouts ≥10 min. Each evening, participants reported PA minutes and barriers encountered that day. Results: All 21 participants reported intending to be active on at least 1 day but only 9 (42%) intended to be active on ≥70% of days. Twelve (57%) participants performed PA on each of the days they intended, but none achieved the amount of PA they intended on all of these days. Overall, participants had PA intentions on 81 of 123 days (66%); these were partially implemented (≥10 PA minutes) on 49 days, but fully implemented on only 15 days. Participants spent 34 min in PA, or 20 fewer minutes than intended. “Lack of time” was the only frequently cited barrier, particularly on days that PA was neither intended nor performed. Conclusion: Few patients intended to be active on a near daily basis and all patients had difficulty in implementing their intentions. Interventions that target planning strategies may help facilitate PA intentions and limit discrepancy between intended and actual PA. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Bond, Dale S.; Thomas, J. Graham; Raynor, Hollie A.; Moon, Jon; Sieling, Jared; Trautvetter, Jennifer et al. (2014):

B-MOBILE - A Smartphone-Based Intervention to Reduce Sedentary Time in Overweight/Obese Individuals: A Within-Subjects Experimental Trial.

In: *PLoS One* 9 (6), S. e100821. DOI: 10.1371/journal.pone.0100821.

Abstract:

PURPOSE: Excessive sedentary time (SED) has been linked to obesity and other adverse health outcomes. However, few sedentary-reducing interventions exist and none have utilized smartphones to automate behavioral strategies to decrease SED. We tested a smartphone-based intervention to monitor and decrease SED in overweight/obese individuals, and compared 3 approaches to prompting physical activity (PA) breaks and delivering feedback on SED. DESIGN AND METHODS: Participants [N = 30; Age = 47.5(13.5) years; 83% female; Body Mass Index (BMI) = 36.2(7.5) kg/m2] wore the SenseWear Mini Armband (SWA) to objectively measure SED for 7 days at baseline. Participants were then presented with 3 smartphone-based PA break conditions in counterbalanced order: (1) 3-min break after 30 SED min; (2) 6-min break after 60 SED min; and (3) 12-min break after 120 SED min. Participants followed each condition for 7 days and wore the SWA throughout. RESULTS: All PA break conditions yielded significant decreases in SED and increases in light (LPA) and moderate-to-vigorous PA (MVPA) (p<0.005). Average % SED at baseline (72.2%) decreased by 5.9%, 5.6%, and 3.3% [i.e. by mean (95% CI) -47.2(-66.3, -28.2), -44.5(-65.2, -

23.8), and -26.2(-40.7, -11.6) min/d] in the 3-, 6-, and 12-min conditions, respectively. Conversely, % LPA increased from 22.8% to 26.7%, 26.7%, and 24.7% [i.e. by 31.0(15.8, 46.2), 31.0(13.6, 48.4), and 15.3(3.9, 26.8) min/d], and % MVPA increased from 5.0% to 7.0%, 6.7%, and 6.3% (i.e. by 16.2(8.5, 24.0), 13.5(6.3, 20.6), and 10.8(4.2, 17.5) min/d] in the 3-, 6-, and 12-min conditions, respectively. Planned pairwise comparisons revealed the 3-min condition was superior to the 12-min condition in decreasing SED and increasing LPA ($p<0.05$). CONCLUSION: The smartphone-based intervention significantly reduced SED. Prompting frequent short activity breaks may be the most effective way to decrease SED and increase PA in overweight/obese individuals. Future investigations should determine whether these SED reductions can be maintained long-term. TRIAL REGISTRATION: ClinicalTrials.gov NCT01688804.

Bonmati-Carrion, M. A.; Middleton, B.; Revell, V.; Skene, D. J.; Rol, M. A.; Madrid, J. A. (2013):

Circadian phase asessment by ambulatory monitoring in humans: Correlation with dim light melatonin onset.

In: *Chronobiol.Int.* (0742-0528 (Linking)). DOI: 10.3109/07420528.2013.820740.

Abstract:

The increased prevalence of circadian disruptions due to abnormal coupling between internal and external time makes the detection of circadian phase in humans by ambulatory recordings a compelling need. Here, we propose an accurate practical procedure to estimate circadian phase with the least possible burden for the subject, that is, without the restraints of a constant routine protocol or laboratory techniques such as melatonin quantification, both of which are standard procedures. In this validation study, subjects (N = 13) wore ambulatory monitoring devices, kept daily sleep diaries and went about their daily routine for 10 days. The devices measured skin temperature at wrist level (WT), motor activity and body position on the arm, and light exposure by means of a sensor placed on the chest. Dim light melatonin onset (DLMO) was used to compare and evaluate the accuracy of the ambulatory variables in assessing circadian phase. An evening increase in WT: WTOnset (WTOn) and "WT increase onset" (WTiO) was found to anticipate the evening increase in melatonin, while decreases in motor activity (Activity Offset or AcOff), body position (Position Offset (POff)), integrative TAP (a combination of WT, activity and body position) (TAPOffset or TAPOff) and an increase in declared sleep propensity were phase delayed with respect to DLMO. The phase markers obtained from subjective sleep (R = 0.811), WT (R = 0.756) and the composite variable TAP (R = 0.720) were highly and significantly correlated with DLMO. The findings strongly support a new method to calculate circadian phase based on WT (WTiO) that accurately predicts and shows a temporal association with DLMO. WTiO is especially recommended due to its simplicity and applicability to clinical use under conditions where knowing endogenous circadian phase is important, such as in cancer chronotherapy and light therapy

Bonomi, A. G.; Plasqui, G.; Goris, A. H. C.; Westerterp, K. R. (2012):

Aspects of activity behavior as a determinant of the physical activity level.

In: *Scandinavian Journal of Medicine & Science in Sports* 22 (1), S. 139–145. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-01552-019&site=ehost-live;a.bonomi@HB.unimaas.nl.

Abstract:

This study investigated which aspects of the individuals' activity behavior determine the physical activity level (PAL). Habitual physical activity of 20 Dutch adults (age: 26-60 years, body mass index: 24.5 ± 2.7 kg/m(2)) was measured using a tri-axial accelerometer. Accelerometer output was used to identify the engagement in different types of daily activities with a classification tree algorithm. Activity behavior was described by the daily duration of sleeping, sedentary behavior (lying, sitting, and standing), walking, running, bicycling, and generic standing activities. Simultaneously, the total energy expenditure (TEE) was measured using doubly labeled water. PAL was calculated as TEE divided by sleeping metabolic rate. PAL was significantly associated ($P<0.05$) with sedentary time ($R=-0.72$), and the duration of walking ($R=0.49$), bicycling ($R=0.77$), and active standing ($R=0.62$). A negative association was observed between sedentary time and the duration of active standing ($R=-0.87$; $P<0.001$). A multiple-linear regression analysis showed that 75% of the variance in PAL could be predicted by the duration of bicycling (Partial R(2) =59%; $P<0.01$), walking (Partial R(2) =9%; $P<0.05$) and being sedentary (Partial R(2) =7%; $P<0.05$). In conclusion, there is objective evidence that sedentary time and activities related to transportation and commuting, such as walking and bicycling, contribute significantly to the average PAL.

Boon, R. M.; Hamlin, M. J.; Steel, G. D.; Ross, J. J. (2010):

Validation of the New Zealand Physical Activity Questionnaire (NZPAQ-LF) and the International Physical Activity Questionnaire (IPAQ-LF) with accelerometry.

In: *British Journal of Sports Medicine* 44 (10), S. 741–746. DOI: 10.1136/bjsm.2008.052167.

Abstract:

BACKGROUND\r\nValidation of instruments used to measure physical activity patterns is essential when attempting to assess the effectiveness of physical activity interventions.\r\nOBJECTIVES\r\nTo assess the validity of two self-report physical activity questionnaires on a representative sample of New Zealand adults.\r\nMETHODS\r\n70 adults aged 18-65 years from around Christchurch, New Zealand were required to wear an ActiGraph GT1M accelerometer during all waking hours for 7 consecutive days. Immediately following the 7 day accelerometer period participants were required to complete the long forms of both the New Zealand Physical Activity Questionnaire (NZPAQ-LF) and the International Physical Activity Questionnaire (IPAQ-LF).\r\nRESULTS\r\nBoth the NZPAQ-LF and the IPAQ-LF questionnaires showed small to moderate correlations with ActiGraph data for time spent in moderate-intensity physical activity (r=0.19-0.30) and total physical activity (sum of moderate and vigorous-intensity physical activity, r=0.30-0.32). In comparison with the ActiGraph data, both self-report questionnaires tended to overestimate activity levels by approximately 165%. Total physical activity levels gathered from both questionnaires were strongly correlated with each other (r=0.79) and showed good levels of agreement in the Bland-Altman plots.\r\nCONCLUSIONS\r\nThe long forms of the NZPAQ and IPAQ were found to have acceptable validity when detecting participants' ability to meet activity guidelines based on exercise duration, but a significant amount of overestimation was evident. This presents a need for both instruments to be further developed and tested in order to increase validity.

Booth, J. N.; Leary, S. D.; Joinson, C.; Ness, A. R.; Tomporowski, P. D.; Boyle, J. M.; Reilly, J. J. (2014):

Associations between objectively measured physical activity and academic attainment in adolescents from a UK cohort.

In: *Br.J.Sports Med.* 48 (3), S. 265–270. DOI: 10.1136/bjsports-2013-092334.

Abstract:

BACKGROUND: To test for cross-sectional (at age 11) and longitudinal associations between objectively measured free-living physical activity (PA) and academic attainment in adolescents.Method Data from 4755 participants (45% male) with valid measurement of PA (total volume and intensity) by accelerometry at age 11 from the Avon Longitudinal Study of Parents and Children (ALSPAC) was examined. Data linkage was performed with nationally administered school assessments in English, Maths and Science at ages 11, 13 and 16. RESULTS: In unadjusted models, total volume of PA predicted decreased academic attainment. After controlling for total volume of PA, percentage of time spent in moderate-vigorous intensity PA (MVPA) predicted increased performance in English assessments in both sexes, taking into account confounding variables. In Maths at 16 years, percentage of time in MVPA predicted increased performance for males (standardised beta=0.11, 95% CI 0.00 to 0.22) and females (beta=0.08, 95% CI 0.00 to 0.16). For females the percentage of time spent in MVPA at 11 years predicted increased Science scores at 11 and 16 years (beta=0.14 (95% CI 0.03 to 0.25) and 0.14 (0.07 to 0.21), respectively). The correction for regression dilution approximately doubled the standardised beta coefficients. CONCLUSIONS: Findings suggest a long-term positive impact of MVPA on academic attainment in adolescence

Borgogna, Nicholas; Lockhart, Ginger; Grenard, Jerry L.; Barrett, Tyson; Shiffman, Saul; Reynolds, Kim D. (2014):

Ecological Momentary Assessment of Urban Adolescents' Technology Use and Cravings for Unhealthy Snacks and Drinks: Differences by Ethnicity and Sex.

In: *J Acad Nutr Diet. DOI:* 10.1016/j.jand.2014.10.015.

Abstract:

BACKGROUND: Adolescents' technology use is generally associated with food cravings, but it is not clear whether specific types of technology elicit particular types of cravings or whether personal characteristics play a role in these associations. OBJECTIVE: We examined whether momentary associations between four technology types (ie, television, video games, computer messaging, and phone messaging) and cravings for unhealthy snack foods and sweetened drinks were moderated by youths' sex, ethnicity, body mass index, and age. METHODS: Urban adolescents (N=158) aged 14 to 17 years provided momentary information about their technology use and food cravings during the course of 1 week and completed survey reports of their personal characteristics. We used multilevel modeling to determine momentary associations and interactions. RESULTS: Non-Hispanic adolescents showed stronger associations between television exposure and cravings for sweet snacks, salty snacks, and

sweetened drinks. Being Hispanic was associated with stronger associations between phone messaging and cravings for sweet snacks, salty snacks, and sweetened drinks. Males showed stronger associations between video game use and salty snack cravings. CONCLUSIONS: As the public health field continues to monitor the effects of technology use on adolescents' eating and overall health, it will be important to determine the extent to which these groups are differentially affected by different forms of technology.

Borriello, Gaetano (2008):

Invisible computing: automatically using the many bits of data we create.

In: *Philosophical Transactions of the Royal Society of London A: Mathematical, Physical and Engineering Sciences* 366 (1881), S. 3669–3683. DOI: 10.1098/rsta.2008.0128.

Abstract:

As we go about our work and our daily lives, we leave a trail of bits behind. Every electronic device we interact with can keep a record of our actions. Even the devices themselves can keep track of their location and radio interactions, even without user involvement. The challenge of invisible computing is to make this wealth of data useful. This paper presents two examples of what has come to be known as 'invisible computing', namely, devices recording, distilling and rendering these many bits of data without unduly taxing human users. The first example is focused on a work environment. Labscape automates the record keeping required of experimenters in a cell biology laboratory. The second example looks at more ad hoc interactions. RFID Ecosystem is a collection of radio-frequency identification (RFID) readers and databases that collect the sightings of passive RFID tags, attached to people and objects, as they move throughout a large building. It provides services such as people and object finding as well as diary keeping.

Borschmann, Karen; Pang, Marco Y. C.; Iuliano, Sandra; Churilov, Leonid; Brodtmann, Amy; Ekinci, Elif I.; Bernhardt, Julie (2013):

Changes to volumetric bone mineral density and bone strength after stroke: A prospective study.

In: *Int J Stroke. DOI:* 10.1111/ijs.12228.

Abstract:

RATIONALE AND AIM: Stroke survivors experience accelerated bone loss and increased fracture risk, particularly in paretic weight bearing limbs. Understanding how these changes unfold and their relationship to stroke severity and physical activity could help in the development of targeted interventions to prevent or reduce the severity of these outcomes. The primary aim of this study is to investigate the time course and magnitude of changes in volumetric bone mineral density within the first year after stroke, and to examine relationships with physical activity and motor recovery. DESIGN: This is a prospective, observational study of 43 nondiabetic, nonambulant adults with first ever hemispheric stroke. PRIMARY OUTCOME: The primary outcome was the difference in six-month change of total volumetric bone mineral density between paretic and nonparetic distal tibiae, measured at 7% of bone length site using high-resolution peripheral quantitative computed tomography. SECONDARY OUTCOMES: The secondary outcomes are cortical and trabecular volumetric bone mineral density, cortical thickness, and total and cross-sectional areas of distal tibiae and radii of paretic and nonparetic limbs. Also included are total body and regional bone mineral density derived using dual-energy X-ray absorptiometry, physical activity measured using accelerometry, and motor recovery (Chedoke McMaster Stroke Assessment). DISCUSSION: Measuring the timing and magnitude of changes to volumetric bone mineral density and bone structure from immediately after stroke, and relationships between these changes with physical activity and motor recovery will provide the basis for targeted interventions to reduce fracture risk in stroke survivors.

Bortkiewicz, Alicja; Gadzicka, Elzbieta; Stroszejn-Mrowca, Grazyna; Szyjkowska, Agata; Szymczak, Wieslaw; Koszada-Wlodarczyk, Wieslawa; Szadkowska-Stanczyk, Irena (2014):

Cardiovascular changes in workers exposed to fine particulate dust.

In: *Int J Occup Med Environ Health* 27 (1), S. 78–92. DOI: 10.2478/s13382-014-0234-3.

Abstract:

OBJECTIVES: Epidemiological studies provide evidence that airborne particulate matter may contribute to the increased incidence and mortality rates due to pulmonary and cardiovascular diseases. Only some of them address the problem of occupational exposure to particulate air pollution. The aim of our study was to assess cardiovascular reaction and autonomic

regulation in workers exposed to fine particles. MATERIALS AND METHODS: All workers had medical examination, resting ECG with heart rate variability analysis (HRV), 24-h ECG, and ambulatory blood pressure monitoring (ABPM) performed. The subjects were 20 male workers (mean age: 32.14.0 year) of a ceramic ware factory exposed to the dust and 20 workers who were not exposed (mean age: 39.4+/-7.8 year). The period of employment under exposure amounted to 5.6+/-2.1 year. Dust exposure was measured using individual dosimeters. RESULTS: The geometric mean total dust concentration was 44+/-1.5 mg/m(3) and the FPD (fine particulate dust) concentration amounted to 11.5+/-1.6 mg/m(3). No abnormalities were noted in the resting ECG in both groups, in 24-h ECG 2 subjects, both from exposed and control groups, had ventricular heart rhythm and repolarization disturbances. Blood pressure in ABPM, both systolic as well as diastolic, was normal and did not differ between the groups. Resting heart rate in the exposed group was significantly lower (p = 0.038) than in the control group. In the exposed group STD R-R from short-term records was significantly higher (p = 0.01). Fast Fourier Transform (FFT) analysis showed that the low frequency power spectrum (LF) did not differ in the exposed and the control group, while high frequency (HF) was significantly higher in the exposed group. LF/HF ratio was significantly lower in the exposed in comparison with the control group. CONCLUSIONS: Although we did not reveal significant abnormalities in ECG as well as in ABPM in the exposed group, it seems that neurovegetative disturbances (parasympathetic predominance) may serve as an early indicator of fine particulate dust effect on cardiovascular system.

Bort-Roig, Judit; Gilson, Nicholas D.; Puig-Ribera, Anna; Contreras, Ruth S.; Trost, Stewart G. (2014):

Measuring and Influencing Physical Activity with Smartphone Technology: A Systematic Review.

In: *Sports Med. DOI:* 10.1007/s40279-014-0142-5.

Abstract:

BACKGROUND: Rapid developments in technology have encouraged the use of smartphones in physical activity research, although little is known regarding their effectiveness as measurement and intervention tools. OBJECTIVE: This study systematically reviewed evidence on smartphones and their viability for measuring and influencing physical activity. DATA SOURCES: Research articles were identified in September 2013 by literature searches in Web of Knowledge, PubMed, PsycINFO, EBSCO, and ScienceDirect. STUDY SELECTION: The search was restricted using the terms (physical activity OR exercise OR fitness) AND (smartphone* OR mobile phone* OR cell phone*) AND (measurement OR intervention). Reviewed articles were required to be published in international academic peer-reviewed journals, or in full text from international scientific conferences, and focused on measuring physical activity through smartphone processing data and influencing people to be more active through smartphone applications. STUDY APPRAISAL AND SYNTHESIS METHODS: Two reviewers independently performed the selection of articles and examined titles and abstracts to exclude those out of scope. Data on study characteristics, technologies used to objectively measure physical activity, strategies applied to influence activity; and the main study findings were extracted and reported. RESULTS: A total of 26 articles (with the first published in 2007) met inclusion criteria. All studies were conducted in highly economically advantaged countries; 12 articles focused on special populations (e.g. obese patients). Studies measured physical activity using native mobile features, and/or an external device linked to an application. Measurement accuracy ranged from 52 to 100 % (n = 10 studies). A total of 17 articles implemented and evaluated an intervention. Smartphone strategies to influence physical activity tended to be ad hoc, rather than theory-based approaches; physical activity profiles, goal setting, real-time feedback, social support networking, and online expert consultation were identified as the most useful strategies to encourage physical activity change. Only five studies assessed physical activity intervention effects; all used step counts as the outcome measure. Four studies (three pre-post and one comparative) reported physical activity increases (12-42 participants, 800-1,104 steps/day, 2 weeks-6 months), and one case-control study reported physical activity maintenance (n = 200 participants; >10,000 steps/day) over 3 months. LIMITATIONS: Smartphone use is a relatively new field of study in physical activity research, and consequently the evidence base is emerging. CONCLUSIONS: Few studies identified in this review considered the validity of phone-based assessment of physical activity. Those that did report on measurement properties found average-to-excellent levels of accuracy for different behaviors. The range of novel and engaging intervention strategies used by smartphones, and user perceptions on their usefulness and viability, highlights the potential such technology has for physical activity promotion. However, intervention effects reported in the extant literature are modest at best, and future studies need to utilize randomized controlled trial research designs, larger sample sizes, and longer study periods to better explore the physical activity measurement and intervention capabilities of smartphones.

Borujeny, G. T.; Yazdi, M.; Keshavarz-Haddad, A.; Borujeny, A. R. (2013):

Detection of epileptic seizure using wireless sensor networks.

In: *J.Med.Signals Sens.* 3 (2), S. 63–68. Online verfügbar unter PM:24098859.

Abstract:

The monitoring of epileptic seizures is mainly done by means of electroencephalogram (EEG) monitoring. Although this method is accurate, it is not comfortable for the patient as the EEG-electrodes have to be attached to the scalp which hampers the patient's movement. This makes long-term home monitoring not feasible. In this paper, the aim is to propose a seizure detection system based on accelerometry for the detection of epileptic seizure. The used sensors are wireless, which can improve quality of life for the patients. In this system, three 2D accelerometer sensors are positioned on the right arm, left arm, and left thigh of an epileptic patient. Datasets from three patients suffering from severe epilepsy are used in this paper for the development of an automatic detection algorithm. This monitoring system is based on Wireless Sensor Networks and can determine the location of the patient when a seizure is detected and then send an alarm to hospital staff or the patient's relatives. Our wireless sensor nodes are MICAz Motes developed by Crossbow Technology. The proposed system can be used for patients living in a clinical environment or at their home, where they do only their daily routines. The analysis of the recorded data is done by an Artificial Neural Network and K Nearest-Neighbor to recognize seizure movements from normal movements. The results show that K Nearest Neighbor performs better than Artificial Neural Network for detecting these seizures. The results also show that if at least 50% of the signal consists of seizure samples, we can detect the seizure accurately. In addition, there is no need for training the algorithm for each new patient

Boschen, Mark J.; Casey, Leanne M. (2008):

The use of mobile telephones as adjuncts to cognitive behavioral psychotherapy.

In: *Professional Psychology: Research and Practice* 39 (5), S. 546.

Abstract:

BACKGROUND:

As healthcare services become progressively more stretched, there is increasing discussion of ways in which technological adjuncts may be used to deliver more cost-efficient services. Before widespread implementation, however, the use of these adjuncts requires proper scrutiny of their effects on psychological practice.

AIMS:

This research examined the effectiveness of SMS reminders on client appointment attendance and dropout in a psychological treatment setting. It was predicted that the reminders would result in increased initial appointment attendance, increased total appointment attendance, and decreased client dropout.

METHOD:

A randomized controlled trial investigated the impact of SMS appointment reminders (two levels: present or absent) on client attendance (three levels: attended, rescheduled, or did not attend) and dropout (two levels: completed treatment or terminate early). Participants (N = 140) at an outpatient psychology clinic were randomly allocated to either receive an SMS appointment reminder one day before their scheduled appointment, or to receive no reminder.

RESULTS:

No significant differences were found between the SMS and no SMS conditions in relation to appointment attendance. There were more client dropouts in the SMS compared to the no SMS condition.

CONCLUSIONS:

The SMS appointment reminders were not effective at increasing appointment attendance. The current research suggests that there is more to client non-attendance in psychological settings than the simple forgetting of appointments. Technological adjuncts may be useful in increasing the cost-efficiency of current services; however, this research highlights the importance of understanding the effects of technology before widespread implementation.

Bossenbroek, Linda; Kosse, Nienke; Hacken, Nick; Gordijn, Marijke; van der Hoeven, Johannes; Greef, Mathieu (2010):

Validation of the DynaPort MiniMod during sleep: a pilot study.

In: *Perceptual and motor skills* 111 (3), S. 936–946.

Abstract:

To measure activity during sleep, polysomnography and actigraphy are often used. The DynaPort MiniMod measures movement intensity and body position day and night. The goal was to examine the validity of the DynaPort MiniMod in assessing physical activity and body posture during sleep. In Study A, 10 healthy participants slept with the DynaPort MiniMod and the Actiwatch for one night. In Study B, 8 participants suspected of having Obstructive Sleep Apnoea Syndrome slept for one night with the

DynaPort MiniMod and underwent complete polysomnography as part of the typical care protocol. In Study A, there was a significant moderate correlation (r = .70) between the movement scores of the Actiwatch and the DynaPort MiniMod. In Study B, a high intraclass correlation (r = .84) between body posture scores of the DynaPort MiniMod and the polysomnography position sensor was observed. The DynaPort MiniMod is a valid measurement device for physical activity during sleep.

Bouchard; Trudeau, F. (2008):

Estimation of energy expenditure in a work environment: comparison of accelerometry and oxygen consumption/heart rate regression.

In: *Ergonomics* 51 (5), S. 663–670.

Abstract:

The aim of this study was to compare estimation of energy expenditure (EE) in working environments, either from accelerometry or from an individual oxygen consumption/heart rate (VO(2)/HR) regression curve. The study participants were 46 volunteer workers aged 27+/-6 years old. A significant correlation between EE predicted by the VO(2)/HR curve and the accelerometer was observed (r=0.78, p <0.01). However, more disparities were observed between the two methods when the mean job intensity was not within 16% and 23% higher than resting HR. The accelerometer overestimated by a mean of 34.4% the prediction by VO(2)/HR regression if the intensity of the task was lower than a total of 1000 kcal/shift and underestimated the prediction by a mean of -24.9% if EE estimation of the work shift was higher than a total of 1500 kcal/shift. Despite a high correlation between both methods in the whole group, EE evaluated by accelerometry does not correspond to EE predicted by the VO(2)/HR regression curves when evaluated individually.

Bouhanick, B.; Bongard, V.; Amar, J.; Bousquel, S.; Chamontin, B. (2008):

Prognostic value of nocturnal blood pressure and reverse-dipping status on the occurrence of cardiovascular events in hypertensive diabetic patients.

In: *Diabetes & metabolism* 34 (6), S. 560–567.

Abstract:

AIM:

To assess whether reverse-dipping status is associated with cardiovascular (CV) events such as CV death, myocardial infarction (MI) or stroke in diabetic patients with hypertension.

METHODS:

A total of 97 diabetic patients underwent their first ambulatory blood pressure monitoring (ABPM 1). "Reverse dippers" were defined as patients with a nighttime systolic and/or diastolic blood pressure (BP) greater than daytime systolic and/or diastolic BP. Other patients were called "others". A second ABPM (ABPM 2) was done after a median delay of 2.6 years. Patients were then followed for a further 2.9-year median period (total median follow-up: 5.5 years).

RESULTS:

After ABPM 1, CV events occurred in 53% of the reverse dippers (n=15) and in 29% of the others (n=82). Kaplan-Meier curves showed significant differences between the two groups (P=0.003). Mean nighttime systolic BP on ABPM 1 was 148+/-23 mmHg and 142+/-19 mmHg in patients who did and did not experience a CV event, respectively. With Cox analysis adjusted for confounders, a 10 mmHg increase in nighttime systolic BP was associated with a 35% increase in the risk of a CV event (hazard ratio [HR]: 1.35, P=0.003). The HR for a CV event in reverse- versus nonreverse-dipping status was 2.79 (P=0.023). After ABPM 2, the relationship between the reverse-dipping status and occurrence of CV events was no longer evident (P=0.678). Nighttime systolic BP remained predictive of CV events (P=0.001).

CONCLUSION:

These findings suggest that nighttime systolic BP per se appeared to be a stronger predictor of an excess risk of CV events compared with reverse-dipping status.

Bourne, Simon; Cohet, Catherine; Kim, Viktoriya; Barton, Anna; Tuck, Andy; Aris, Emmanuel et al. (2014):

Acute Exacerbation and Respiratory InfectionS in COPD (AERIS): protocol for a prospective, observational cohort study.

In: *BMJ Open* 4 (3), S. e004546. DOI: 10.1136/bmjopen-2013-004546.

Abstract:

INTRODUCTION: The aetiology of acute exacerbations of chronic obstructive pulmonary disease (COPD) remains incompletely understood and strategies for treatment and prevention have not altered significantly for many years. Improved understanding of the role of respiratory pathogens in acute exacerbations of COPD (AECOPD) is required and the use of molecular microbiological techniques may lead to insights into host-pathogen interactions and the development of more targeted therapeutic approaches. METHODS AND ANALYSES: Acute Exacerbation and Respiratory InfectionS in COPD (AERIS) is a longitudinal epidemiological study to assess how changes in the COPD airway microbiome contribute to the incidence and severity of AECOPD. Patients with COPD aged 40-85 are followed monthly for 2 years, and reviewed within 72 h of onset of symptoms of AECOPD. Exacerbations are detected using daily electronic diary cards. Blood, sputum, nasopharyngeal and urine samples are collected at prespecified timepoints. Molecular diagnostic and typing techniques are used to describe the dynamics of airway infection during AECOPD and stable disease, and associations with clinical outcome. This study aims to refine the case definition of AECOPD to reflect the possible microbiological aetiology. AERIS will assess the impact of AECOPD on health-related quality of life and healthcare resource utilisation, and the possible interactions between nutritional status, infection and immune responses. ETHICS AND DISSEMINATION: AERIS is conducted in accordance with the Declaration of Helsinki and Good Clinical Practice, and has been approved by the institutional ethics and review board. All participants must provide written informed consent. The results obtained will be disseminated at international medical conferences and in peer-reviewed publications. DISCUSSION: Few other studies have addressed the complexity of the microbiological and systemic components of COPD or employed real-time electronic tracking of symptoms to identify AECOPD and potential aetiological triggers. RESULTS: Results of AERIS will increase our understanding of the contribution of pathogens to AECOPD, potentially leading to new targeted therapeutic and preventative interventions. TRIAL REGISTRATION NUMBER: ClinicalTrials.gov NCT01360398.

Bowen, K. S.; Birmingham, W.; Uchino, B. N.; Carlisle, M.; Smith, T. W.; Light, K. C. (2012):

Specific dimensions of perceived support and ambulatory blood pressure: Which support functions appear most beneficial and for whom?

In: *Int.J Psychophysiol.* (0167-8760 (Linking)). DOI: 10.1016/j.ijpsycho.2012.03.004.

Abstract:

Perceived support has been related to lower cardiovascular morbidity and mortality. However, little is known about the specific functional components of support responsible for such links. We tested if emotional, informational, tangible, and belonging support predicted ambulatory blood pressure (ABP) and interpersonal interactions (e.g., responsiveness), and if such links were moderated by gender. In this study, 94 married couples underwent 12h of ABP monitoring during daily life which included a night at home with their spouse. They completed a short-form of the interpersonal support evaluation list that provides information on total (global) support, as well as specific dimensions of support. Results revealed that global support scores did not predict ABP during daily life. However, separating out distinct support components revealed that emotional support was a significant predictor of lower ambulatory systolic and diastolic blood pressure, primarily for women. Finally, emotional support predicted greater partner responsiveness and self-disclosure, along with less perceived partner negativity although these results were not moderated by gender. These data are discussed in terms of the importance of considering specific support components and the contextual processes that might influence such links

Bowen, Kimberly S.; Uchino, Bert N.; Birmingham, Wendy; Carlisle, McKenzie; Smith, Timothy W.; Light, Kathleen C. (2014):

The stress-buffering effects of functional social support on ambulatory blood pressure.

In: *Health Psychol* 33 (11), S. 1440–1443. DOI: 10.1037/t06207-000;

Abstract:

Objective: Social support is a reliable predictor of cardiovascular health. According to the buffering hypothesis, stress is 1 mechanism by which support is able to affect physiological processes. However, most of the experimental evidence for the hypothesis comes from laboratory studies. Ambulatory blood pressure (ABP) protocols examine participants in their natural environment, where they are more likely to encounter personally relevant real-world stressors. Furthermore, prior work shows that examining support by its specific functional components reveals additional independent links to health. Methods: The current study aimed to examine the stress-buffering effects of functional social support on ABP. One hundred eighty-eight

participants completed a 1-day ABP assessment along with measures of functional social support and both global perceived stress and momentary stress at time of reading. Results: Results indicated main effects for both stress measures. Global support, emotional, tangible, and informational support only moderated the effects of momentary stress, but not global stress, in predicting ABP. Informational support was the most consistent stress-buffering predictor of ABP, predicting both ambulatory systolic and diastolic blood pressure. Conclusions: The predicted values in ABP for informational support achieved health-relevant differences, emphasizing the value of examining functional support beyond global support alone. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Boyle, Justin; Bidargaddi, Niranjan; Sarela, Antti; Karunanithi, Mohan (2009):

Automatic detection of respiration rate from ambulatory single-lead ECG.

In: *IEEE transactions on information technology in biomedicine : a publication of the IEEE Engineering in Medicine and Biology Society* 13 (6), S. 890–896. DOI: 10.1109/TITB.2009.2031239.

Abstract:

Ambulatory electrocardiography is increasingly being used in clinical practice to detect abnormal electrical behavior of the heart during ordinary daily activities. The utility of this monitoring can be improved by deriving respiration, which previously has been based on overnight apnea studies where patients are stationary, or the use of multilead ECG systems for stress testing. We compared six respiratory measures derived from a single-lead portable ECG monitor with simultaneously measured respiration air flow obtained from an ambulatory nasal cannula respiratory monitor. Ten controlled 1-h recordings were performed covering activities of daily living (lying, sitting, standing, walking, jogging, running, and stair climbing) and six overnight studies. The best method was an average of a 0.2-0.8 Hz bandpass filter and RR technique based on lengthening and shortening of the RR interval. Mean error rates with the reference gold standard were +/-4 breaths per minute (bpm) (all activities), +/-2 bpm (lying and sitting), and +/-1 breath per minute (overnight studies). Statistically similar results were obtained using heart rate information alone (RR technique) compared to the best technique derived from the full ECG waveform that simplifies data collection procedures. The study shows that respiration can be derived under dynamic activities from a single-lead ECG without significant differences from traditional methods.

Bracht, T.; Federspiel, A.; Schnell, S.; Horn, H.; Hofle, O.; Wiest, R. et al. (2012):

Cortico-cortical white matter motor pathway microstructure is related to psychomotor retardation in major depressive disorder.

In: *PLoS One* 7 (12), S. e52238. DOI: 10.1371/journal.pone.0052238.

Abstract:

Alterations of brain structure and function have been associated with psychomotor retardation in major depressive disorder (MDD). However, the association of motor behaviour and white matter integrity of motor pathways in MDD is unclear. The aim of the present study was to first investigate structural connectivity of white matter motor pathways in MDD. Second, we explore the relation of objectively measured motor activity and white matter integrity of motor pathways in MDD. Therefore, 21 patients with MDD and 21 healthy controls matched for age, gender, education and body mass index underwent diffusion tensor imaging and 24 hour actigraphy (measure of the activity level) the same day. Applying a probabilistic fibre tracking approach we extracted connection pathways between the dorsolateral prefrontal cortex (dlPFC), the rostral anterior cingulate cortex (rACC), the pre-supplementary motor area (pre-SMA), the SMA-proper, the primary motor cortex (M1), the caudate nucleus, the putamen, the pallidum and the thalamus. Patients had lower activity levels and demonstrated increased mean diffusivity (MD) in pathways linking left pre-SMA and SMA-proper, and right SMA-proper and M1. Exploratory analyses point to a positive association of activity level and mean-fractional anisotropy in the right rACC-pre-SMA connection in MDD. Only MDD patients with low activity levels had a negative linear association of activity level and mean-MD in the left dlPFC-pre-SMA connection. Our results point to structural alterations of cortico-cortical white matter motor pathways in MDD. Altered white matter organisation of rACC-pre-SMA and dlPFC-pre-SMA pathways may contribute to movement initiation in MDD

Bracht, T.; Heidemeyer, K.; Koschorke, P.; Horn, H.; Razavi, N.; Wopfner, A. et al. (2012):

Comparison of objectively measured motor behavior with ratings of the motor behavior domain of the Bern Psychopathology Scale (BPS) in schizophrenia.

In: *Psychiatry Res* (0165-1781 (Linking)). DOI: 10.1016/j.psychres.2011.12.038.

Abstract:

Motor symptoms in schizophrenia are frequent and relevant to diagnosis and antipsychotic therapy. To date motor symptoms are difficult to assess and their pathobiology is a widely unresolved issue. The Bern Psychopathology Scale for the assessment of system-specific psychotic symptoms (BPS) was designed to identify homogenous patient groups by focusing on three domains: language, affectivity and motor behavior. The present study aimed to validate the motor behavior domain of the BPS using wrist actigraphy. In total, 106 patients were rated with the BPS and underwent 24h continuous actigraphy recording. The ratings of the global severity of the motor behavior domain (GSM) as well as the quantitative and the subjective items of the motor behavior domain of the BPS were significantly associated with actigraphic variables. In contrast, the qualitative items of the motor domain failed to show an association with actigraphy. Likewise, scores of the language and the affectivity domains were not related to actigraphic measures. In conclusion, we provided substantial external validity for global, quantitative and subjective ratings of the BPS motor behavior domain. Thus, the BPS is suitable to assess the dimension of quantitative motor behavior in the schizophrenia spectrum

Bracht, T.; Schnell, S.; Federspiel, A.; Razavi, N.; Horn, H.; Strik, W. et al. (2013):

Altered cortico-basal ganglia motor pathways reflect reduced volitional motor activity in schizophrenia.

In: *Schizophr.Res* 143 (2-3), S. 269–276. DOI: 10.1016/j.schres.2012.12.004.

Abstract:

Little is known about the neurobiology of hypokinesia in schizophrenia. Therefore, the aim of this study was to investigate alterations of white matter motor pathways in schizophrenia and to relate our findings to objectively measured motor activity. We examined 21 schizophrenia patients and 21 healthy controls using diffusion tensor imaging and actigraphy. We applied a probabilistic fibre tracking approach to investigate pathways connecting the dorsolateral prefrontal cortex (dlPFC), the rostral anterior cingulate cortex (rACC), the pre-supplementary motor area (pre-SMA), the supplementary motor area proper (SMA-proper), the primary motor cortex (M1), the caudate nucleus, the striatum, the pallidum and the thalamus. Schizophrenia patients had lower activity levels than controls. In schizophrenia we found higher probability indices forming part of a bundle of interest (PIBI) in pathways connecting rACC, pre-SMA and SMA-proper as well as in pathways connecting M1 and pre-SMA with caudate nucleus, putamen, pallidum and thalamus and a reduced spatial extension of motor pathways in schizophrenia. There was a positive correlation between PIBI and activity level in the right pre-SMA-pallidum and the left M1-thalamus connection in healthy controls, and in the left pre-SMA-SMA-proper pathway in schizophrenia. Our results point to reduced volitional motor activity and altered motor pathway organisation in schizophrenia. The identified associations between the amount of movement and structural connectivity of motor pathways suggest dysfunction of cortico-basal ganglia pathways in the pathophysiology of hypokinesia in schizophrenia. Schizophrenia patients may use cortical pathways involving the supplementary motor area to compensate for basal ganglia dysfunction

Bradley, R. H.; McRitchie, S.; Houts, R. M.; Nader, P.; O'Brien, M. (2011):

Parenting and the decline of physical activity from age 9 to 15.

In: *Int J Behav Nutr Phys Act* 8. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-32527-001%26site%3dehost-live;robert.bradley@asu.edu.

Abstract:

Background: There is a rapid decline in moderate-to-vigorous physical activity (MVPA) during middle childhood and adolescence. Information on the environmental factors implicated in this decline is limited. This study focuses on family factors associated with the rate of decline in objectively measured physical activity during middle childhood and adolescence. Methods: Longitudinal analysis of 801 participants from 10 US sites in the NICHD Study of Early Child Care and Youth Development whose data included accelerometer-determined levels of moderate-to-vigorous physical activity (MVPA) between ages 9 and 15 years, as well as family process, BMI and demographic information. The sample included an even split of boys (49%) and girls (51%), was predominantly white (77%), and contained about 26% low income and 19% single parent families. The outcome measure was mean MVPA. It was based on 4 to 7 days of monitored physical activity. Results: Boys with lower parental monitoring scores and more days of parental encouragement had significantly more minutes of MVPA at age 9 years. The effect of parental monitoring, however, was moderated by early puberty. High parental monitoring was associated with decreased activity levels for boys experiencing later puberty and increased activity for boy experiencing early puberty. Minutes of MVPA for boys living in the Midwest decreased at significantly faster rates than boys living in any other region; and boys in the South declined faster than boys in the West. Girls in the Midwest and South declined faster than girls in the West and Northeast. Among girls, more days of parental exercise and transportation to activities were associated with more MVPA per day at age 9. However, more

parental transportation to activities and less monitoring was associated with faster linear declines in daughters' MVPA between the ages of 9 and 15 years. For girls who experienced puberty early, parental encouragement was associated with more MVPA. Conclusions: Parenting processes, such as monitoring and encouragement, as well as the parents' own level of physical activity, showed significant, but small, gender-specific associations with MVPA levels at age nine and the linear rate of decline in MVPA between ages 9 and 15. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Brage, Søren; Ekelund, Ulf; Brage, Niels; Hennings, Mark A.; Froberg, Karsten; Franks, Paul W.; Wareham, Nicholas J. (2007):

Hierarchy of individual calibration levels for heart rate and accelerometry to measure physical activity.

In: *Journal of Applied Physiology* 103 (2), S. 682–692.

Abstract:

Combining accelerometry with heart rate (HR) monitoring may improve precision of physical activity measurement. Considerable variation exists in the relationships between physical activity intensity (PAI) and HR and accelerometry, which may be reduced by individual calibration. However, individual calibration limits feasibility of these techniques in population studies, and less burdensome, yet valid, methods of calibration are required. We aimed to evaluate the precision of different individual calibration procedures against a reference calibration procedure: a ramped treadmill walking-running test with continuous measurement of PAI by indirect calorimetry in 26 women and 25 men [mean (SD): 35 (9) yr, 1.69 (0.10) m, 70 (14) kg]. Acceleration (along the longitudinal axis of the trunk) and HR were measured simultaneously. Alternative calibration procedures included treadmill testing without calorimetry, submaximal step and walk tests with and without calorimetry, and nonexercise calibration using sleeping HR and gender. Reference accelerometry and HR models explained >95% of the between-individual variance in PAI ($P < 0.001$). This fraction dropped to 73 and 81%, respectively, for accelerometry and HR models calibrated with treadmill tests without calorimetry. Step-test calibration captured 62-64% (accelerometry) and 68% (HR) of the variance between individuals. Corresponding values were 63-76% and 59-61% for walk-test calibration. There was only little benefit of including calorimetry during step and walk calibration for HR models. Nonexercise calibration procedures explained 54% (accelerometry) and 30% (HR) of the between-individual variance. In conclusion, a substantial proportion of the between-individual variance in relationships between PAI, accelerometry, and HR is captured with simple calibration procedures, feasible for use in epidemiological studies.

Bramlage, Peter; Zemmrich, Claudia; Gansz, Andrea; Sturm, Claus-Dieter; Fimmers, Rolf; Nadal, Jennifer et al. (2014):

Daytime systolic ambulatory blood pressure with a two-step switch from candesartan to olmesartan monotherapy and the fixed-dose combination of olmesartan/amlodipine in patients with uncontrolled essential hypertension (SEVICONTROL-2).

In: *J Clin Hypertens (Greenwich)* 16 (1), S. 41–46. DOI: 10.1111/jch.12227.

Abstract:

The objective of this study was to investigate the efficacy of the fixed-dose combination olmesartan/amlodipine 40/10 mg in patients with moderate essential hypertension not controlled on candesartan 32 mg. This was a prospective, single-arm, phase IV study. The primary endpoint was the change in mean daytime systolic blood pressure (BP). A total of 77 of 89 screened patients started candesartan 32 mg, 62 olmesartan 40 mg, and 57 olmesartan 40 mg/amlodipine 10 mg. Mean daytime systolic BP was reduced by 9.8+/-15.2 mm Hg ($P<.001$) vs candesartan monotherapy. Office BP reduction was 9.2+/-18.8/5.0+/-8.9 mm Hg ($P<0.001$). Treatment goals (<140/90 mm Hg for office and <135/85 mm Hg for ambulatory BP) were achieved in 58.2% and 78.4% of patients, respectively. There was one drug-related adverse event (edema) and no serious adverse events. Patients of Caucasian ethnicity with moderate essential hypertension uncontrolled on candesartan experienced a further drop in BP using olmesartan and amlodipine.

Brandes, M.; van Hees, V. T.; Hannover, V.; Brage, S. (2012):

Estimating Energy Expenditure from Raw Accelerometry in Three Types of Locomotion.

In: *Med.Sci.Sports Exerc.* (0195-9131 (Linking)). DOI: 10.1249/MSS.0b013e318260402b.

Abstract:

PURPOSE: Accuracy of estimating activity-related energy expenditure (AEE) from raw body acceleration may improve by using prediction equations that are specific for the type of activity. The current study aims to improve published equations by deriving an equation for over-ground walking and to evaluate whether over-ground cycling and stair walking require specific prediction equations. METHODS: Participants (91M/95F, 8-81years) were equipped with a tri-axial accelerometer (DynaPort MiniMod) on their lower back. Total energy expenditure (TEE) was measured using a mobile oxygen analyzer (MetaMax 3b). Resting energy expenditure (REE) was measured over 30 min, following which a physical activity course was completed involving walking on level ground at slow (8 min), normal (8 min) and fast speed (3 min), stair-walking (3 min), and cycling (8 min). AEE was calculated as

Brans, K.; Van,Mechelen,I; Rime, B.; Verduyn, P. (2013):

The relation between social sharing and the duration of emotional experience.

In: *Cogn Emot* (0269-9931 (Linking)). DOI: 10.1080/02699931.2012.762758.

Abstract:

People often socially share their emotions to regulate them. Two-mode theory of social sharing states that cognitive sharing will contribute to emotional recovery, whereas socio-affective sharing will only temporarily alleviate emotional distress. Previous studies supporting this theory, measured emotional recovery in terms of residual emotional intensity. Until now, another important time-dynamic aspect of emotions, emotion duration, has been largely ignored. In two experience sampling studies we addressed this gap. In Study 1, participants reported on the duration of anger, fear, and sadness episodes; additionally time-varying information on the occurrence and mode of sharing was collected. This study revealed that sharing led to a shortening in emotion duration, in particular when it was socio-affective in nature. In Study 2 we investigated whether this result could be interpreted in terms of our measure of duration primarily reflecting emotional relief rather than recovery. In this study, the same method as in Study 1 was used; additionally, residual emotional intensity was measured three days after emotion onset. Study 2 largely replicated the findings from Study 1. Furthermore, duration appeared to be empirically distinct from residual intensity. Finally, no relation between sharing and residual intensity was found, even when considering the sharing mode

Bray, Rebecca Scott (2013):

Paradoxical justice: the case of Ian Tomlinson.

In: *J Law Med* 21 (2), S. 447–472.

Abstract:

On 1 April 2009, 47-year-old London newspaper vendor Ian Tomlinson collapsed and died during the G20 protests in central London. The initial autopsy found death consistent with "natural causes". However, that finding was disputed after the public release of mobile phone video footage showing a police officer striking and pushing Tomlinson to the ground. The release of this footage changed the course of events in the case: further post-mortem examinations found blunt force trauma to Tomlinson's body; the Independent Police Complaints Commission launched a criminal investigation; and a coronial inquest opened that was presided over by public order policing expert Judge Peter Thornton QC. On 3 May 2011, a coronial jury delivered a verdict of "unlawful killing", finding police actions against Tomlinson "excessive and unreasonable". The Crown Prosecution Service then revised its decision not to prosecute the officer filmed striking and pushing Tomlinson, and on 19 July 2012 the officer was acquitted of manslaughter. This case highlights a number of key issues discussed in this article, including the symbolic and practical importance of open inquests in allaying suspicion and rumour; the ordeal of death investigation proceedings as obstacles to justice; and the seeming contra-indications for justice thrown up by divergent legal outcomes. In high-profile matters such as the Tomlinson case, these issues are further underscored by the "new publicity" around inquests in a multi-media digital age.

Bregvadze TR, Tseluĭko VI, Mishchuk NE. (2013):

Influence of treatment with olmesartan on ambulatory blood pressure monitoring parameters in patients with arterial hypertension.

In: *Georgian Med News* (225), S. 60–67.

Abstract:

Hypertension is the most common disease of the cardiovascular system. Active treatment of hypertension with adequate control of blood pressure (BP) can prevent complications, improve life quality and increase life expectancy. One of the interesting new antihypertensive agents, from the group of angiotensin receptor blockers is olmesartan. The obvious advantages of ambulatory blood pressure monitoring to traditional one-time measurements of BP make this method perspective for quality control of anti-hypertensive therapy. The aim of this study was to evaluate the influence of treatment with olmesartan on ambulatory blood pressure monitoring parameters in patients with hypertension. 38 out-patients with hypertension at the age of 25-84 years (mean 55,3+/-10,6) were studied. Patients received olmesartan 20 mg daily as monotherapy (20 patients (52,6%)) or in combination with other antihypertensive agents (18 patients (47,4%)). Treatment continued for 6 months. The complex examination included: measurement of office brachial BP, electrocardiography, echocardiography and ambulatory blood pressure monitoring (ABPM). As a result of treatment, office BP and diurnal BP, according to ABPM, significantly decreased; the favorable circadian BP profile dynamics were found: significantly less frequently observed lack of reduction in BP during night (daily index - non-dipper) - 18% vs. 64% (p <0,001), while the number of individuals with normal daily index (dipper) increased significantly - 76% vs. 28% (p <0,001). Also there was determined the significant reduction in daytime and nighttime systolic BP variability - by 1.5 mmHg and 2.1 mmHg, respectively, with the normalization of these parameters at the end of the observation period. The presented results allow conclude, that treatment of hypertensive patients with olmesartan provides significant decline not only in office BP, but also in diurnal BP, normalizes BP of active and passive periods, also - daily index and reduces BP variability.

Breland, J. Y.; Yeh, V. M.; Yu, J. (2013):

Adherence to evidence-based guidelines among diabetes self-management apps.

In: *Transl.Behav.Med* 3 (3), S. 277–286. DOI: 10.1007/s13142-013-0205-4.

Abstract:

Smartphone apps can provide real-time, interactive self-management aid to individuals with diabetes. It is currently unclear whether existing diabetes self-management apps follow evidence-based guidelines. The purpose of this study was to evaluate the extent to which existing diabetes self-management apps address the seven self-management behaviors recommended by the American Association of Diabetes Educators (the AADE7). The term "diabetes" identified relevant self-management apps via the Apple App Store search engine in March 2012. Ratings were based on app descriptions and downloads. Chi-square analyses assessed differences in apps based on developer type. Apps promoted a median of two AADE7 skills. Overall reliability between description and download ratings was good (kappa = .66). Reliability of individual skills was variable (kappa = .25 to .91). Most diabetes apps do not conform to evidence-based recommendations, and future app reviews would benefit from testing app performance. Future apps may also benefit from theory-based designs

Bresin, Konrad; Fetterman, Adam K.; Robinson, Michael D. (2011):

Motor control accuracy: A consequential probe of individual differences in emotion regulation.

In: *Emotion*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-24213-001&site=ehost-live.

Abstract:

Two studies (total N = 147) sought to model emotion-regulation processes in cognitive-motoric terms. Hostile or nonhostile thoughts were primed and, immediately following, individuals held a joystick as accurately as possible on a presented visual target. Study 1 revealed that the activation of hostile thoughts impaired motor control at low levels of agreeableness but facilitated motor control at high levels of agreeableness, consistent with emotion-regulation views of this trait. Study 2 did not assess the trait of agreeableness but rather sought to determine whether better motor control following activated hostile thoughts would predict lesser reactivity to stressors in an experience-sampling protocol. It did, and relevant results are reported for daily anger, negative affect, and positive affect. In addition, and consistent with the agreeableness findings of Study 1, better motor control that follows hostile thoughts predicted greater empathy on high-stress days. Motor control probes of the present type thus appear consequential in understanding emotion-regulation processes and successes in emotion regulation. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Brguljan-Hitij, Jana; Thijs, Lutgarde; Li, Yan; Hansen, Tine W.; Boggia, Jose; Liu, Yan-Ping et al. (2014):

Risk Stratification by Ambulatory Blood Pressure Monitoring Across JNC Classes of Conventional Blood Pressure.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpu002.

Abstract:

BACKGROUND: Guidelines propose classification of conventional blood pressure (CBP) into normotension (<120/<80mm Hg), prehypertension (120-139/80-89mm Hg), and hypertension (>/=140/>/=90mm Hg). METHODS: To assess the potential differential contribution of ambulatory blood pressure (ABP) in predicting risk across CBP strata, we analyzed outcomes in 7,826 untreated people recruited from 11 populations. RESULTS: During an 11.3-year period, 809 participants died (276 cardiovascular deaths) and 639, 383, and 225 experienced a cardiovascular, cardiac, or cerebrovascular event. Compared with normotension (n = 2,639), prehypertension (n = 3,076) carried higher risk (P </= 0.015) of cardiovascular (+41%) and cerebrovascular (+92%) endpoints; compared with hypertension (n = 2,111) prehypertension entailed lower risk (P </= 0.005) of total mortality (-14%) and cardiovascular mortality (-29%) and of cardiovascular (-34%), cardiac (-33%), or cerebrovascular (-47%) events. Multivariable-adjusted hazard ratios (HRs) for stroke associated with 24-hour and daytime diastolic ABP (+5mm Hg) were higher (P </= 0.045) in normotension than in prehypertension and hypertension (1.98 vs.1.19 vs.1.28 and 1.73 vs.1.09 vs. 1.24, respectively) with similar trends (0.03 </= P </= 0.11) for systolic ABP (+10mm Hg). However, HRs for fatal endpoints and cardiac events associated with ABP did not differ significantly (P >/= 0.13) across CBP categories. Of normotensive and prehypertensive participants, 7.5% and 29.3% had masked hypertension (daytime ABP >/=135/>/=85mm Hg). Compared with true normotension (P </= 0.01), HRs for stroke were 3.02 in normotension and 2.97 in prehypertension associated with masked hypertension with no difference between the latter two conditions (P = 0.93). CONCLUSION: ABP refines risk stratification in normotension and prehypertension mainly by enabling the diagnosis of masked hypertension.

Bricker, Jonathan B.; Mull, Kristin E.; Kientz, Julie A.; Vilardaga, Roger; Mercer, Laina D.; Akioka, Katrina J.; Heffner, Jaimee L. (2014):

Randomized, controlled pilot trial of a smartphone app for smoking cessation using acceptance and commitment therapy.

In: *Drug Alcohol Depend* 143, S. 87–94. DOI: 10.1016/j.drugalcdep.2014.07.006.

Abstract:

BACKGROUND: There is a dual need for (1) innovative theory-based smartphone applications for smoking cessation and (2) controlled trials to evaluate their efficacy. Accordingly, this study tested the feasibility, acceptability, preliminary efficacy, and mechanism of behavioral change of an innovative smartphone-delivered acceptance and commitment therapy (ACT) application for smoking cessation vs. an application following US Clinical Practice Guidelines. METHOD: Adult participants were recruited nationally into the double-blind randomized controlled pilot trial (n=196) that compared smartphone-delivered ACT for smoking cessation application (SmartQuit) with the National Cancer Institute's application for smoking cessation (QuitGuide). RESULTS: We recruited 196 participants in two months. SmartQuit participants opened their application an average of 37.2 times, as compared to 15.2 times for QuitGuide participants (p<0001). The overall quit rates were 13% in SmartQuit vs. 8% in QuitGuide (OR=2.7; 95% CI=0.8-10.3). Consistent with ACT's theory of change, among those scoring low (below the median) on acceptance of cravings at baseline (n=88), the quit rates were 15% in SmartQuit vs. 8% in QuitGuide (OR=2.9; 95% CI=0.6-20.7). CONCLUSIONS: ACT is feasible to deliver by smartphone application and shows higher engagement and promising quit rates compared to an application that follows US Clinical Practice Guidelines. As results were limited by the pilot design (e.g., small sample), a full-scale efficacy trial is now needed.

Bringmann, L. F.; Vissers, N.; Wichers, M.; Geschwind, N.; Kuppens, P.; Peeters, F. et al. (2013):

A network approach to psychopathology: new insights into clinical longitudinal data.

In: *PLoS One* 8 (4), S. e60188. DOI: 10.1371/journal.pone.0060188.

Abstract:

In the network approach to psychopathology, disorders are conceptualized as networks of mutually interacting symptoms (e.g., depressed mood) and transdiagnostic factors (e.g., rumination). This suggests that it is necessary to study how symptoms dynamically interact over time in a network architecture. In the present paper, we show how such an architecture can be constructed on the basis of time-series data obtained through Experience Sampling Methodology (ESM). The proposed methodology determines the parameters for the interaction between nodes in the network by estimating a multilevel vector autoregression (VAR) model on the data. The methodology allows combining between-subject and within-subject information in

a multilevel framework. The resulting network architecture can subsequently be analyzed through network analysis techniques. In the present study, we apply the method to a set of items that assess mood-related factors. We show that the analysis generates a plausible and replicable network architecture, the structure of which is related to variables such as neuroticism; that is, for subjects who score high on neuroticism, worrying plays a more central role in the network. Implications and extensions of the methodology are discussed

Bringsén, Asa; Ejlertsson, Göran; Andersson, Ingemar H. (2011):

Flow situations during everyday practice in a medical hospital ward. Results from a study based on experience sampling method.

In: *BMC nursing* 10, S. 3. DOI: 10.1186/1472-6955-10-3.

Abstract:

BACKGROUND\r\nNursing is a constant balance between strain and stimulation and work and health research with a positive reference point has been recommended. A health-promoting circumstance for subjective experience is flow, which is a psychological state, when individuals concurrently experience happiness, motivation and cognitive efficiency. Flow situations can be identified through individuals' estimates of perceived challenge and skills. There is, to the best of our knowledge, no published study of flow among health care staff. The aim of this study was to identify flow-situations and study work-related activities and individual factors associated with flow situations, during everyday practice at a medical emergency ward in Sweden, in order to increase the knowledge on salutogenic health-promoting factors.\r\nMETHODS\r\nThe respondents consisted of 17 assistant nurses and 14 registered nurses, who randomly and repeatedly answered a small questionnaire, through an experience sampling method, during everyday nursing practice. The study resulted in 497 observations. Flow situations were defined as an exact match between a high challenge and skill estimation and logistic regression models were used to study different variables association to flow situations.\r\nRESULTS\r\nThe health care staff spent most of its working time in individual nursing care and administrative and communicative duties. The assistant nurses were more often occupied in individual nursing care, while the registered nurses were more involved in medical care and administrative and communicative duties. The study resulted in 11.5% observations of flow situations but the relative number of flow situations varied between none to 55% among the participants. Flow situations were positively related to medical care activities and individual cognitive resources. Taking a break was also positively associated with flow situations among the assistant nurses.\r\nCONCLUSIONS\r\nThe result showed opportunities for work-related interventions, with an adherent increase in flow situations, opportunity for experience of flow and work-related health among the nursing staff in general and among the assistant nurses in particular.

Brodbeck, J.; Bachmann, M. S.; Znoj, H. (2013):

Distinct coping strategies differentially predict urge levels and lapses in a smoking cessation attempt.

In: *Addict.Behav.* 38 (6), S. 2224–2229. DOI: 10.1016/j.addbeh.2013.02.001.

Abstract:

This study analysed mechanisms through which stress-coping and temptation-coping strategies were associated with lapses. Furthermore, we explored whether distinct coping strategies differentially predicted reduced lapse risk, lower urge levels, or a weaker association between urge levels and lapses during the first week of an unassisted smoking cessation attempt. Participants were recruited via the internet and mass media in Switzerland. Ecological momentary assessment (EMA) with mobile devices was used to assess urge levels and lapses. Online questionnaires were used to measure smoking behaviours and coping variables at baseline, as well as smoking behaviour at the three-month follow-up. The sample consisted of 243 individuals, aged 20 to 40, who reported 4199 observations. Findings of multilevel regression analyses show that coping was mainly associated with a reduced lapse risk and not with lower urge levels or a weaker association between urge levels and lapses. 'Calming down' and 'commitment to change' predicted a lower lapse risk and also a weaker relation between urge levels and lapses. 'Stimulus control' predicted a lower lapse risk and lower urge levels. Conversely, 'task-orientation' and 'risk assessment' were related to higher lapse risk and 'risk assessment' also to higher urge levels. Disengagement coping i.e. 'eating or shopping', 'distraction', and 'mobilising social support' did not affect lapse risk. Promising coping strategies during the initial stage of smoking cessation attempt are targeted directly at reducing the lapse risk and are characterised by engagement with the stressor or one's reactions towards the stressor and a focus on positive consequences instead of health risks

Brodbeck, Jeannette; Bachmann, Monica S.; Brown, Anna; Znoj, Hans Joerg (2014):

Effects of depressive symptoms on antecedents of lapses during a smoking cessation attempt: An ecological momentary assessment study.

In: *Addiction*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-21711-001%26site%3dehost-live.

Abstract:

Abstract Aims To investigate pathways through which momentary negative affect and depressive symptoms affect risk of lapse during smoking cessation attempts. Design Ecological momentary assessment was carried out during 2 weeks after an unassisted smoking cessation attempt. A 3-month follow-up measured smoking frequency. Setting Data were collected via mobile devices in German-speaking Switzerland. Participants A total of 242 individuals (age 20–40, 67% men) reported 7112 observations. Measurements Online surveys assessed baseline depressive symptoms and nicotine dependence. Real-time data on negative affect, physical withdrawal symptoms, urge to smoke, abstinence-related self-efficacy and lapses. Findings A two-level structural equation model suggested that on the situational level, negative affect increased the urge to smoke and decreased self-efficacy (β = 0.20; β = −0.12, respectively), but had no direct effect on lapse risk. A higher urge to smoke (β = 0.09) and lower self-efficacy (β = −0.11) were confirmed as situational antecedents of lapses. Depressive symptoms at baseline were a strong predictor of a person's average negative affect (β = 0.35, all P < 0.001). However, the baseline characteristics influenced smoking frequency 3 months later only indirectly, through influences of average states on the number of lapses during the quit attempt. Conclusions Controlling for nicotine dependence, higher depressive symptoms at baseline were associated strongly with a worse longer-term outcome. Negative affect experienced during the quit attempt was the only pathway through which the baseline depressive symptoms were associated with a reduced self-efficacy and increased urges to smoke, all leading to the increased probability of lapses. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Broderick, J. M.; Ryan, J.; O'Donnell, D. M.; Hussey, J. (2014):

A guide to assessing physical activity using accelerometry in cancer patients.

In: *Support Care Cancer* 22 (4), S. 1121–1130. DOI: 10.1007/s00520-013-2102-2.

Abstract:

Increased physical activity (PA) has been associated with a decreased risk for the occurrence and recurrence of many cancers. PA is an important outcome measure in rehabilitation interventions within cancer and may be used as a proxy measure of recovery or deterioration in health status following treatment and in the palliative care setting. PA is a complex multi-dimensional construct which is challenging to measure accurately. Factors such as technical precision and feasibility influence the choice of PA measurement tool. Laboratory-based methods are precise and mainly used for validation purposes, but their clinical applicability is limited. Self-report methods such as questionnaires are widely used due to their simplicity and reasonable cost; however, accuracy can be questionable. Objective methods such as pedometers measure step count but do not measure intensity, frequency or duration of activity. Accelerometers can measure PA behaviour at both ends of the movement spectrum from sedentary to vigorous levels of activity and can also provide objective data about the frequency, intensity, type and duration of PA. Balancing precision with ease of use, accelerometry may be the best measure of PA in cancer-based studies, but only a small number of studies have incorporated this measurement. This review will provide a background to PA and an overview of accelerometer measurement as well as technical and practical considerations, so this useful tool could be more widely incorporated into clinical trial research within cancer.

Broderick, J. E.; Schneider, S.; Junghaenel, D. U.; Schwartz, J. E.; Stone, A. A. (2013):

Validity and reliability of patient-reported outcomes measurement information system (PROMIS) instruments in osteoarthritis.

In: *Arthritis Care Res (Hoboken.)* (2151-464X (Linking)). DOI: 10.1002/acr.22025.

Abstract:

OBJECTIVE.: Evaluation of known group validity, ecological validity, and test-retest reliability of four domain instruments from the Patient Reported Outcomes Measurement System (PROMIS) in osteoarthritis (OA) patients. METHODS.: Recruitment of an osteoarthritis sample and a comparison general population (GP) through an Internet survey panel. Pain intensity, pain interference, physical functioning, and fatigue were assessed for 4 consecutive weeks with PROMIS short forms on a daily basis and compared with same-domain Computer Adaptive Test (CAT) instruments that use a 7-day recall. Known group validity (comparison of OA and GP), ecological validity (comparison of aggregated daily measures with CATs), and test-retest reliability

were evaluated. RESULTS.: The recruited samples matched (age, sex, race, ethnicity) the demographic characteristics of the U.S. sample for arthritis and the 2009 Census for the GP. Compliance with repeated measurements was excellent: > 95%. Known group validity for CATs was demonstrated with large effect sizes (pain intensity: 1.42, pain interference: 1.25, and fatigue: .85). Ecological validity was also established through high correlations between aggregated daily measures and weekly CATs (>/= .86). Test-retest validity (7-day) was very good (>/= .80). CONCLUSION.: PROMIS CAT instruments demonstrated known group and ecological validity in a comparison of osteoarthritis patients with a general population sample. Adequate test-retest reliability was also observed. These data provide encouraging initial data on the utility of these PROMIS instruments for clinical and research outcomes in osteoarthritis patients. (c) 2013 by the American College of Rheumatology

Broderick, Joan E.; Schwartz, Joseph E.; Vikingstad, Gregory; Pribbernow, Michelle; Grossman, Steven; Stone, Arthur A. (2008):

The accuracy of pain and fatigue items across different reporting periods.

In: *Pain* 139 (1), S. 146–157.

Abstract:

The length of the reporting period specified for items assessing pain and fatigue varies among instruments. How the length of recall impacts the accuracy of symptom reporting is largely unknown. This study investigated the accuracy of ratings for reporting periods ranging from 1 day to 28 days for several items from widely used pain and fatigue measures (SF36v2, Brief Pain Inventory, McGill Pain Questionnaire, Brief Fatigue Inventory). Patients from a community rheumatology practice (N=83) completed momentary pain and fatigue items on average of 5.4 times per day for a month using an electronic diary. Averaged momentary ratings formed the basis for comparison with recall ratings interspersed throughout the month referencing 1-day, 3-day, 7-day, and 28-day periods. As found in previous research, recall ratings were consistently inflated relative to averaged momentary ratings. Across most items, 1-day recall corresponded well to the averaged momentary assessments for the day. Several, but not all, items demonstrated substantial correlations across the different reporting periods. An additional 7 day-by-day recall task suggested that patients have increasing difficulty actually remembering symptom levels beyond the past several days. These data were collected while patients were receiving usual care and may not generalize to conditions where new interventions are being introduced and outcomes evaluated. Reporting periods can influence the accuracy of retrospective symptom reports and should be a consideration in study design.

Brondolo, Elizabeth; Grantham, Kamau Imarogbe; Karlin, William; Taravella, Joseph; Mencía-Ripley, Aida; Schwartz, Joseph E. et al. (2009):

Trait hostility and ambulatory blood pressure among traffic enforcement agents: the effects of stressful social interactions.

In: *Journal of Occupational Health Psychology* 14 (2), S. 110–121. DOI: 10.1037/a0014768.

Abstract:

This study investigated the hypothesis that trait hostility is associated with heightened cardiovascular reactivity to potentially stressful social interactions but not to nonsocial activities in the workplace. Participants were 73 (39 women) New York City traffic enforcement agents (TEAs) who patrol the streets and issue summonses for vehicular and parking violations. During their patrols, TEAs face potentially stressful interactions when they encounter motorists and pedestrians who may be angry about receiving summonses. Mood and ambulatory blood pressure were initially measured when TEAs were recently hired and attending classes at the training academy (Time 1), and were subsequently assessed again once the TEAs began independently patrolling the city streets (Time 2). Random effects regression models yielded a significant interaction of hostility and work activity on ambulatory systolic blood pressure at Time 2. For those high in hostility, but not for those low in hostility, systolic blood pressure levels were higher while interacting with members of the public than during nonsocial work activities. The findings support the notion that situational factors affect the association of hostility to cardiovascular reactivity, and that interpersonal stressors in the workplace elicit cardiovascular activation among those high in hostility.

Brondolo, Elizabeth; Libby, Daniel J.; Denton, Ellen-Ge; Thompson, Shola; Beatty, Danielle L.; Schwartz, Joseph et al. (2008):

Racism and ambulatory blood pressure in a community sample.

In: *Psychosomatic Medicine* 70 (1), S. 49–56.

Abstract:

OBJECTIVE:

Racism has been identified as a psychosocial stressor that may contribute to disparities in the prevalence of cardiovascular disease. The goal of the present article was to investigate the relationship of perceived racism to ambulatory blood pressure (ABP) in a sample of American-born Blacks and Latinos.

METHODS:

Participants included English-speaking Black or Latino(a) adults between the ages of 24 and 65. They completed daily mood diaries and measures of perceived racism, socioeconomic status, and hostility. Participants were outfitted with ABP monitors; 357 provided data on waking hours only, and 245 provided data on both waking and nocturnal ABP.

RESULTS:

Perceived racism was positively associated with nocturnal ABP even when controlling for personality factors and socioeconomic status.

CONCLUSIONS:

The results suggest that racism may influence cardiovascular disease risk through its effects on nocturnal BP recovery.

Brooke, M. J.; Thompson, B. M. (2013):

Food and Drug Administration regulation of diabetes-related mHealth technologies.

In: *J Diabetes Sci Technol* 7 (2), S. 296–301. Online verfügbar unter PM:23566984.

Abstract:

mHealth smartphone applications (apps) offer great promise for managing people with diabetes, as well as those with prediabetes. But to realize that potential, industry needs to get clarity from the U.S. Food and Drug Administration (FDA) regarding the scope of its regulatory oversight. Certain smartphone apps, when properly understood, simply help people live healthier lives, assisting with dietary choices, monitoring exercise, and recording other factors important to overall health. The manufacturers of such apps, in an effort to promote their products but also to educate customers, might wish to explain how using the app can help reduce the risk of developing diabetes. Right now, though, the mere mention of the disease "diabetes" would cause the app to be regulated by the FDA. Such regulation, we submit, discourages the kind of education and motivational messages that our country needs to stem the tide of this disease. Further, should the app simply receive data from a blood glucose meter and graph that data for easier comprehension by the patient, the app would become a class II medical device that requires FDA clearance. Again, we submit that such simple software functionality should not be so discouraged. In this article, we identify the issues that we believe need to be clarified by the FDA in order to unleash the potential of mHealth technology in the diabetes space

Brown, B. M.; Peiffer, J. J.; Sohrabi, H. R.; Mondal, A.; Gupta, V. B.; Rainey-Smith, S. R. et al. (2012):

Intense physical activity is associated with cognitive performance in the elderly.

In: *Transl.Psychiatry* 2 (2158-3188 (Linking)), S. e191. DOI: 10.1038/tp.2012.118.

Abstract:

Numerous studies have reported positive impacts of physical activity on cognitive function. However, the majority of these studies have utilised physical activity questionnaires or surveys, thus results may have been influenced by reporting biases. Through the objective measurement of routine levels of physical activity via actigraphy, we report a significant association between intensity, but not volume, of physical activity and cognitive functioning. A cohort of 217 participants (aged 60-89 years) wore an actigraphy unit for 7 consecutive days and underwent comprehensive neuropsychological assessment. The cohort was stratified into tertiles based on physical activity intensity. Compared with individuals in the lowest tertile of physical activity intensity, those in the highest tertile scored 9%, 9%, 6% and 21% higher on the digit span, digit symbol, Rey Complex Figure Test (RCFT) copy and Rey Figure Test 30-min recall test, respectively. Statistically, participants in the highest tertile of physical activity intensity performed significantly better on the following cognitive tasks: digit symbol, RCFT copy and verbal fluency test (all $P<0.05$). The results indicate that intensity rather than quantity of physical activity may be more important in the association between physical activity and cognitive function

Brown, Daniel E.; Sievert, Lynnette Leidy; Morrison, Lynn A.; Reza, Angela M.; Mills, Phoebe S. (2009):

Do Japanese American women really have fewer hot flashes than European Americans? The Hilo Women's Health Study.

In: *Menopause (New York, N.Y.)* 16 (5), S. 870–876. DOI: 10.1097/gme.0b013e31819d88da.

Abstract:

OBJECTIVE\r\nMany studies have found a significantly lower frequency of reported hot flashes (HFs) in Japanese and Japanese American (JA) populations, leading to speculation about possible dietary, genetic, or cultural differences. These studies have relied on subjective reports of HFs. Accordingly, the purpose of this study was to compare both reported and objective HFs measured by sternal and nuchal skin conductance among JA and European American (EA) women.\r\nMETHODS\r\nTwo surveys of HF frequencies were carried out among women of either EA or JA ethnicity; aged 45 to 55 years; living in Hilo, Hawaii; and not using exogenous hormones. The first was a postal questionnaire (n = 325); the second was carried out during a clinical study of HFs (n = 134). Women in the second group underwent 24-hour ambulatory and 3-hour laboratory monitoring for objective HFs measured through skin conductance at sternal and nuchal sites. Subjective HFs were recorded on the monitor or in a diary.\r\nRESULTS\r\nJAs were significantly less likely to report having had HFs in the previous 2 weeks compared with EAs (postal sample: JAs, 30.9%; EAs, 43.9%; chi(2) = 6.9, P < 0.01; monitored sample: JAs, 26.1%; EAs, 46.6%; chi(2) = 5.3, P < 0.05). JAs were also significantly less likely to report experiencing other symptoms (15 of 30 in the postal sample; 6 of 30 in the monitored sample) than EAs. However, JAs did not significantly differ in likelihood of reporting subjective HFs during the 24-hour ambulatory period (JAs, 51.1%; EAs, 55.8%; chi(2) = 0.3, NS), nor in percentage of individuals displaying one or more objective HFs as measured by the skin conductance monitor (JAs, 77.8%; EAs, 72.1%; chi(2) = 0.5, NS). JAs also did not have a significantly fewer number of objective HFs (t = 0.2, NS) nor of subjective HFs (t = 0.8, NS) during the monitoring period, and these results were unchanged when analyses controlled for menopause status and body mass index.\r\nCONCLUSIONS\r\nThe common finding of fewer reported HFs in people of Japanese ancestry may be a consequence of reporting bias: JAs report fewer symptoms of many conditions compared with people from other ethnic groups. This is probably due to cultural conceptions of what is appropriate to report.

Brown, Barbara B.; Wilson, Laura; Tribby, Calvin P.; Werner, Carol M.; Wolf, Jean; Miller, Harvey J.; Smith, Ken R. (2014):

Adding maps (GPS) to accelerometry data to improve study participants' recall of physical activity: a methodological advance in physical activity research.

In: *Br J Sports Med* 48 (13), S. 1054–1058. DOI: 10.1136/bjsports-2014-093530.

Abstract:

OBJECTIVE: Obtaining the 'when, where and why' of healthy bouts of moderate-to-vigorous physical activity (MVPA) provides insights into natural PA. DESIGN: In Salt Lake City, Utah, adults wore accelerometer and Global Positioning System (GPS) loggers for a week in a cross-sectional study to establish baseline travel and activity patterns near a planned Complete Street intervention involving a new rail line, new sidewalks and a bike path. RESULTS: At the end of the week, research assistants met with the 918 participants who had at least three 10 h days of good accelerometer readings. Accelerometer and GPS data were uploaded and integrated within a custom application, and participants were provided with maps and time information for past MVPA bouts of >/=3 min to help them recall bout details. Participants said that 'getting someplace' was, on average, a more important motivation for their bouts than leisure or exercise. A series of recall tests showed that participants recalled most bouts they were asked about, regardless of the duration of the bout, suggesting that participant perceptions of their shorter lifestyle bouts can be studied with this methodology. Visual prompting with a map depicting where each bout took place yielded more accurate recall than prompting with time cues alone. CONCLUSIONS: These techniques provide a novel way to understand participant memories of the context and subjective assessments associated with healthy bouts of PA. Prompts with time-stamped maps that illustrate places of MVPA offer an effective method to improve understanding of activity and its supportive sociophysical contexts.

Brown, Harriet R.; Zeidman, Peter; Smittenaar, Peter; Adams, Rick A.; McNab, Fiona; Rutledge, Robb B.; Dolan, Raymond J. (2014):

Crowdsourcing for cognitive science--the utility of smartphones.

In: *PLoS One* 9 (7), S. e100662. DOI: 10.1371/journal.pone.0100662.

Abstract:

By 2015, there will be an estimated two billion smartphone users worldwide. This technology presents exciting opportunities for cognitive science as a medium for rapid, large-scale experimentation and data collection. At present, cost and logistics limit most study populations to small samples, restricting the experimental questions that can be addressed. In this study we

investigated whether the mass collection of experimental data using smartphone technology is valid, given the variability of data collection outside of a laboratory setting. We presented four classic experimental paradigms as short games, available as a free app and over the first month 20,800 users submitted data. We found that the large sample size vastly outweighed the noise inherent in collecting data outside a controlled laboratory setting, and show that for all four games canonical results were reproduced. For the first time, we provide experimental validation for the use of smartphones for data collection in cognitive science, which can lead to the collection of richer data sets and a significant cost reduction as well as provide an opportunity for efficient phenotypic screening of large populations.

Bruce, Jared M.; Hancock, Laura M.; Lynch, Sharon G. (2010):

Objective adherence monitoring in multiple sclerosis: initial validation and association with self-report.

In: *Multiple sclerosis (Houndmills, Basingstoke, England)* 16 (1), S. 112–120. DOI: 10.1177/1352458509351897.

Abstract:

Poor adherence to medication is commonplace and contributes to poor health outcomes among numerous patient populations. Studies that have examined treatment adherence in multiple sclerosis focus exclusively on retrospective self-reports and/or imprecise measures of treatment discontinuation. To help address these methodological limitations, the present longitudinal study compared adherence outcomes for patients with multiple sclerosis using retrospective self-reports, adherence diaries, and a novel electronic monitoring device. Sixty-seven patients with relapsing-remitting multiple sclerosis were followed for a period of eight weeks during which they used a medication diary and a sharps container that captured electronically the time and date of each needle disposal. The patients also reported at the outset and conclusion of the study how frequently they missed doses. All measures of adherence were highly correlated. Patients reported better adherence than was indicated by medication diaries and electronic monitoring of needle disposals. Nearly one-fifth of the sample exhibited poor adherence, missing more than 20% of their prescribed medication. The results support the validity of electronic monitoring of needle disposal as an effective means of measuring adherence to disease modifying therapies in multiple sclerosis. In contrast, studies employing only self-report may underestimate poor adherence. Larger scale studies that employ prospective objective methods are necessary to gain a better understanding of adherence patterns in multiple sclerosis.

Bruehl, S.; Liu, X.; Burns, J. W.; Chont, M.; Jamison, R. N. (2012):

Associations between daily chronic pain intensity, daily anger expression, and trait anger expressiveness: An ecological momentary assessment study.

In: *Pain* (0304-3959 (Linking)). DOI: 10.1016/j.pain.2012.08.001.

Abstract:

Links between elevated trait anger expressiveness (anger-out) and greater chronic pain intensity are well documented, but pain-related effects of expressive behaviors actually used to regulate anger when it is experienced have been little explored. This study used ecological momentary assessment methods to explore prospective associations between daily behavioral anger expression and daily chronic pain intensity. Forty-eight chronic low back pain (LBP) patients and 36 healthy controls completed electronic diary ratings of momentary pain and behavioral anger expression in response to random prompts 4 times daily for 7days. Across groups, greater trait anger-out was associated with greater daily behavioral anger expression ($P<0.001$). LBP participants showed higher levels of daily anger expression than controls ($P<0.001$). Generalized estimating equation analyses in the LBP group revealed a lagged main effect of greater behavioral anger expression on increased chronic pain intensity in the subsequent assessment period ($P<0.05$). Examination of a traitxsituation model for anger-out revealed prospective associations between elevated chronic pain intensity and later increases in behavioral anger expression that were restricted largely to individuals low in trait anger-out ($P<0.001$). Traitxsituation interactions for trait anger suppression (anger-in) indicated similar influences of pain intensity on subsequent behavioral anger expression occurring among low anger-in persons ($P<0.001$). Overlap with trait and state negative affect did not account for study findings. This study for the first time documents lagged within-day influences of behavioral anger expression on subsequent chronic pain intensity. Trait anger regulation style may moderate associations between behavioral anger expression and chronic pain intensity

Bruin, Eling D.; Hartmann, Antonia; Uebelhart, Daniel; Murer, Kurt; Zijlstra, Wiebren (2008):

Wearable systems for monitoring mobility-related activities in older people: a systematic review.

In: *Clinical Rehabilitation* 22 (10-11), S. 878–895.

Abstract:

OBJECTIVE:

The use of wearable motion-sensing technology offers important advantages over conventional methods for obtaining measures of physical activity and/or physical functioning in aged individuals. This review aims to identify the actual state of applying wearable systems for monitoring mobility-related activity in older populations. In this review we focus on technologies and applications, research designs, feasibility and adherence aspects, and clinical relevance of wearable motion-sensing technology.

DATA SOURCES:

PubMed (MEDLINE since 1990), Ovid (BIOSIS, CINAHL), and Cochrane (Central) and reference lists of all relevant articles were searched.

REVIEW METHODS:

Two authors independently reviewed randomized and non-randomized trials on people above 65 years systematically. Quality of selected articles was scored and study results were summarised and discussed.

RESULTS:

Two hundred and twenty-seven abstracts were considered. After application of inclusion criteria and full text reading, 42 articles were taken into account in a full text review. Twenty of these papers evaluated walking with step counters, other papers used varying accelerometry approaches for obtaining overall activity measures (n = 16), or for monitoring changes in body postures and activity patterns (n = 17). Seven studies explicitly mentioned feasibility and/or adherence aspects. Eight studies presented outcome evaluations of interventions. Eight articles were representing descriptive research designs, three articles were using mixed descriptive and exploratory research designs, 23 articles used exploratory research-type designs, and eight articles used experimental research designs.

CONCLUSION:

Although feasible methods for monitoring human mobility are available, evidence-based clinical applications of these methods in older populations are in need of further development.

Bruining, Nico; Caiani, Enrico; Chronaki, Catherine; Guzik, Przemyslaw; van der Velde, Enno (2014):

Acquisition and analysis of cardiovascular signals on smartphones: potential, pitfalls and perspectives: by the Task Force of the e-Cardiology Working Group of European Society of Cardiology.

In: *Eur J Prev Cardiol* 21 (2 Suppl), S. 4–13. DOI: 10.1177/2047487314552604.

Abstract:

Smartphones, mobile applications ('apps'), social media, analytics, and the cloud are profoundly changing the practice of medicine and the way health decisions are made. With the constant progress of technology, the measurement of vital signals becomes easier, cheaper, and practically a standard approach in clinical practice. The interest in measuring vital signals goes beyond medical professionals to the general public, patients, informal caregivers, and healthy individuals, who frequently lack any formal medical training. On smartphone platforms such as iOS and Android, a proliferation of health or medical 'apps' acquire and analyse a variety of vital signs through embedded sensors, interconnected devices or peripherals utilising on occasion analytics and social media. Smartphone vendors compete with traditional medical device manufacturers in the grey area between health care, wellness, and fitness, as US and EU regulatory bodies are setting and revising rules for these new technologies. On the other hand, in the absence of robust validation results, clinicians are hesitant to trust measurements by apps or recommend specific apps to their patients, partly also due to lack of a cost reimbursement policy. This review focuses on the acquisition and analysis on smartphones of three important vital signs in the cardiovascular and respiratory field as well as in rehabilitation i.e. heart or pulse rate, blood pressure, and blood oxygenation. The potential, pitfalls, and perspectives on mobile devices and smartphone apps for health management by patients and healthy individuals are discussed.

Bryant, Lauren; Coffey, Anna; Povinelli, Daniel J.; Pruett, John R. J. (2013):

Theory of mind experience sampling in typical adults.

In: *Conscious Cogn* 22 (3), S. 697–707. DOI: 10.1037/t15170-000;

Abstract:

We explored the frequency with which typical adults make Theory of Mind (ToM) attributions, and under what circumstances these attributions occur. We used an experience sampling method to query 30 typical adults about their everyday thoughts. Participants carried a Personal Data Assistant (PDA) that prompted them to categorize their thoughts as Action, Mental State, or Miscellaneous at approximately 30 pseudo-random times during a continuous 10-h period. Additionally, participants noted the direction of their thought (self versus other) and degree of socializing (with people versus alone) at the time of inquiry. We were interested in the relative frequency of ToM (mental state attributions) and how prominent they were in immediate social exchanges. Analyses of multiple choice answers suggest that typical adults: (1) spend more time thinking about actions than mental states and miscellaneous things, (2) exhibit a higher degree of own- versus other-directed thought when alone, and (3) make mental state attributions more frequently when not interacting (offline) than while interacting with others (online). A significant 3-way interaction between thought type, direction of thought, and socializing emerged because action but not mental state thoughts about others occurred more frequently when participants were interacting with people versus when alone; whereas there was an increase in the frequency of both action and mental state attributions about the self when participants were alone as opposed to socializing. A secondary analysis of coded free text responses supports findings 1–3. The results of this study help to create a more naturalistic picture of ToM use in everyday life and the method shows promise for future study of typical and atypical thought processes. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Buchman, A. S.; Boyle, P. A.; Yu, L.; Shah, R. C.; Wilson, R. S.; Bennett, D. A. (2012):

Total daily physical activity and the risk of AD and cognitive decline in older adults.

In: *Neurology* 78 (17), S. 1323–1329. DOI: 10.1212/WNL.0b013e3182535d35.

Abstract:

OBJECTIVE: Studies examining the link between objective measures of total daily physical activity and incident Alzheimer disease (AD) are lacking. We tested the hypothesis that an objective measure of total daily physical activity predicts incident AD and cognitive decline. METHODS: Total daily exercise and nonexercise physical activity was measured continuously for up to 10 days with actigraphy (Actical(R); Philips Healthcare, Bend, OR) from 716 older individuals without dementia participating in the Rush Memory and Aging Project, a prospective, observational cohort study. All participants underwent structured annual clinical examination including a battery of 19 cognitive tests. RESULTS: During an average follow-up of about 4 years, 71 subjects developed clinical AD. In a Cox proportional hazards model adjusting for age, sex, and education, total daily physical activity was associated with incident AD (hazard ratio = 0.477; 95% confidence interval 0.273-0.832). The association remained after adjusting for self-report physical, social, and cognitive activities, as well as current level of motor function, depressive symptoms, chronic health conditions, and APOE allele status. In a linear mixed-effect model, the level of total daily physical activity was associated with the rate of global cognitive decline (estimate 0.033, SE 0.012, p = 0.007). CONCLUSIONS: A higher level of total daily physical activity is associated with a reduced risk of AD

Buchman, Aron S.; Wilson, Robert S.; Bennett, David A. (2008):

Total daily activity is associated with cognition in older persons.

In: *The American Journal of Geriatric Psychiatry* 16 (8), S. 697–701.

Abstract:

OBJECTIVES:

The authors tested the hypothesis that total daily physical activity is related to the level of cognition in older persons.

DESIGN:

Cross-sectional study.

SETTING:

Retirement communities across the Chicago metropolitan area.

PARTICIPANTS:

Five hundred twenty-one older persons without dementia.

MEASUREMENTS:

Participants underwent structured evaluation of cognition and objective measures of total daily physical activity were collected using actigraphy.

RESULTS:

In a linear regression model adjusted for age, sex, and education, total daily activity was associated with a global measure of cognition. By contrast, self-report physical activity was not associated with cognition. Further analyses showed that total daily activity was related to all five cognitive subscales.

CONCLUSIONS:

Objective measures of total daily physical activity were associated with a broad range of cognitive abilities in older persons. These findings support the link between physical activity and cognition in the elderly.

Buck, Rhiannon; Morley, Stephen (2006):

A daily process design study of attentional pain control strategies in the self-management of cancer pain.

In: *Eur J Pain* 10 (5), S. 385–398. DOI: 10.1016/j.ejpain.2005.04.001.

Abstract:

This study investigated the use of attentional control strategies in the self-management of pain using daily process design methodology. Twenty six cancer patients with pain completed diaries 3 times daily for 10 days. Diaries incorporated measures of pain intensity, affect, coping, coping efficacy, and the novelty and predictability of pain, and participants completed a cross-sectional measure of catastrophizing. At the across-person level, focusing on pain was associated with increased negative affect, and the use of pain focusing strategies was positively correlated with experiencing pain that was novel in its location or quality. Distractions that were interesting, important and pleasant were positively correlated with positive affect, perceptions of control over pain and ability to decrease pain. Over-prediction of pain was positively correlated with catastrophizing, and negatively correlated with perceptions of control over and ability to decrease pain. The within-person analysis (ARIMA modelling) showed that catastrophizing moderated the effects of pain focusing strategies, novel pain and over-predictions of pain. Meta-analysis of the ARIMA models revealed that the within-person effects of using attentional strategies did not generalize across the sample. These findings indicated that the effects of distraction strategies are influenced by their motivational-affective significance rather than the frequency with which they are used, and provided further evidence that the threat value of pain influences the way in which people cope with their pain. Theoretical and clinical implications are discussed.

Buckner, Julia D.; Zvolensky, Michael J.; Smits, Jasper A. J.; Norton, Peter J.; Crosby, Ross D.; Wonderlich, Stephen A.; Schmidt, Norman B. (2011):

Anxiety sensitivity and marijuana use: an analysis from ecological momentary assessment.

In: *Depression and anxiety* 28 (5), S. 420–426. DOI: 10.1002/da.20816.

Abstract:

BACKGROUND\r\nThe cognitive factor of Anxiety Sensitivity (AS; the fear of anxiety and related bodily sensations) is theorized to play a role in cannabis use and its disorders. Lower-order facets of AS (physical concerns, mental incapacitation concerns, and social concerns) may be differentially related to cannabis use behavior. However, little is known about the impact of AS facets on the immediate antecedents of cannabis use.\r\nMETHODS\r\nThis study used ecological momentary assessment (EMA) to prospectively examine the relations between specific facets of AS, cannabis craving, state anxiety, and cannabis use in the natural environment using real-world data about ad lib cannabis use episodes. Participants were 49 current cannabis users (38.8% female).\r\nRESULTS\r\nAS-mental incapacitation fears were related to significantly greater severity of cannabis-related problems at baseline. During the EMA period, AS-mental incapacitation and AS-social concerns significantly interacted with cannabis craving to prospectively predict subsequent cannabis use. Specifically, individuals with higher craving and either higher AS-mental incapacitation or AS-social concerns were the most likely to subsequently use cannabis. In contrast to prediction, no AS facet significantly moderated the relationship between state anxiety and cannabis use.\r\nCONCLUSIONS\r\nThese findings suggest facets of AS (mental incapacitation and social fears) interact with cannabis craving to predict cannabis use. Findings also suggest differential relations between facets of AS and cannabis-related behaviors.

Buffart, Laurien M.; van den Berg-Emons, Rita J; Burdorf, Alex; Janssen, Wim G.; Stam, Henk J.; Roebroeck, Marij E. (2008):

Cardiovascular disease risk factors and the relationships with physical activity, aerobic fitness, and body fat in adolescents and young adults with myelomeningocele.

In: *Arch Phys Med Rehabil* 89 (11), S. 2167–2173.

Abstract:

OBJECTIVES:

To describe cardiovascular disease (CVD) risk factors in adolescents and young adults with myelomeningocele (MMC) and to explore relationships with physical activity, aerobic fitness, and body fat.

DESIGN:

Cross-sectional study.

SETTING:

Outpatient clinic.

PARTICIPANTS:

Adolescents and young adults (N=31) with MMC (58% men) age 16 through 30 years; 13 were ambulatory and 18 were nonambulatory.

INTERVENTIONS:

Not applicable.

MAIN OUTCOME MEASURES:

We studied biologic and lifestyle-related CVD risk factors, including lipid and lipoprotein profiles, blood pressure, aerobic fitness (Vo(2)peak), body fat, daily physical activity, and smoking behavior. We considered subjects at increased CVD risk when 2 or more of the following risk factors clustered: systolic blood pressure, total serum cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), and cigarette smoking. Relationships were studied using regression analyses.

RESULTS:

Levels of TC, low-density lipoprotein cholesterol, and triglycerides were elevated in 29%, 38%, and 3% of the participants, respectively. HDL-C was reduced in 19%. Hypertension was found in 20%, and 19% were current cigarette smokers. Based on the clustering of risk factors, 42% of the participants were at increased CVD risk: 15% of ambulatory participants and 61% of nonambulatory participants (P=.03). Adjusted for sex and ambulatory status, participants with higher aerobic fitness tended to be more likely to have no CVD risk (odds ratio=13.0; P=.07). CVD risk was not associated to physical activity and body fat.

CONCLUSIONS:

A large proportion of the study sample was at CVD risk, indicated by clustering of risk factors. Improving aerobic fitness in young adults with MMC may contribute in reducing CVD risk; this needs to be confirmed in future studies.

Bukara-Radujkovic, G.; Zdravkovic, D.; Lakic, S. (2011):

Short-term use of continuous glucose monitoring system adds to glycemic control in young type 1 diabetes mellitus patients in the long run: a clinical trial.

In: *Vojnosanit.Pregl.* 68 (8), S. 650–654. Online verfügbar unter PM:21991787.

Abstract:

BACKGROUND/AIM: Balancing strict glycemic control with setting realistic goals for each individual child and family can optimize growth, ensure normal pubertal development and emotional maturation, and control long term complications in children with type 1 diabetes (T1DM). The aim of this study was to evaluate the efficacy of short-term continuous glucose monitoring system (CGMS) application in improvement of glycemic control in pediatric type 1 diabetes mellitus (T1DM) patients. METHODS. A total of 80 pediatric T1DM patients were randomly assigned into the experimental and the control group. The experimental group wore CGMS sensor for 72 hours at the beginning of the study. Self-monitored blood glucose (SMBG) levels and hemoglobin A1c (HbA1c) levels were obtained for both groups at baseline, and at 3 and 6 months. RESULTS. There was a significant improvement in HbA1c ($p < 0.001$), in both the experimental and the control group, without a significant difference between the groups. Nevertheless, after 6 months the improvement of mean glycemia was noticed only in the experimental group. This finding was accompanied with a decrease in the number of hyperglycemic events and no increase in the number of hypoglycemic events in the experimental group. CONCLUSIONS: The results suggest that the CGMS can be considered as a

valuable tool in treating pediatric T1DM patients, however further research is needed to more accurately estimate to what extent, if any, it outperforms intensive self-monitoring of blood glucose

Buller, D. B.; Borland, R.; Bettinghaus, E. P.; Shane, J. H.; Zimmerman, D. E. (2013):

Randomized Trial of a Smartphone Mobile Application Compared to Text Messaging to Support Smoking Cessation.

In: *Telemed.J.E.Health* (1530-5627 (Linking)). DOI: 10.1089/tmj.2013.0169.

Abstract:

Abstract Background: Text messaging has successfully supported smoking cessation. This study compares a mobile application with text messaging to support smoking cessation. Materials and Methods: Young adult smokers 18-30 years old (n=102) participated in a randomized pretest-posttest trial. Smokers received a smartphone application (REQ-Mobile) with short messages and interactive tools or a text messaging system (onQ), managed by an expert system. Self-reported usability of REQ-Mobile and quitting behavior (quit attempts, point-prevalence, 30-day point-prevalence, and continued abstinence) were assessed in posttests. Results: Overall, 60% of smokers used mobile services (REQ-Mobile, 61%, mean of 128.5 messages received; onQ, 59%, mean of 107.8 messages), and 75% evaluated REQ-Mobile as user-friendly. A majority of smokers reported being abstinent at posttest (6 weeks, 53% of completers; 12 weeks, 66% of completers [44% of all cases]). Also, 37% (25%of all cases) reported 30-day point-prevalence abstinence, and 32% (22% of all cases) reported continuous abstinence at 12 weeks. OnQ produced more abstinence ($p<0.05$) than REQ-Mobile. Use of both services predicted increased 30-day abstinence at 12 weeks (used, 47%; not used, 20%; $p=0.03$). Conclusions: REQ-Mobile was feasible for delivering cessation support but appeared to not move smokers to quit as quickly as text messaging. Text messaging may work better because it is simple, well known, and delivered to a primary inbox. These advantages may disappear as smokers become more experienced with new handsets. Mobile phones may be promising delivery platforms for cessation services using either smartphone applications or text messaging

Bullimore, Mark A.; Reuter, Kathleen S.; Jones, Lisa A.; Mitchell, G. Lynn; Zoz, Jessica; Rah, Marjorie J. (2006):

The study of progression of adult nearsightedness (SPAN): design and baseline characteristics.

In: *Optometry and vision science: official publication of the American Academy of Optometry* 83 (8), S. 594.

Abstract:

PURPOSE:

The Study of Progression of Adult Nearsightedness (SPAN) is a 5-year observational study to determine the risk factors associated with adult myopia progression. Candidate risk factors include: a high proportion of time spent performing near tasks, performing near tasks at a close distance, high accommodative convergence/accommodation (AC/A) ratio, and high accommodative lag.

METHODS:

Subjects between 25 and 35 years of age, with at least -0.50 D spherical equivalent of myopia (cycloplegic autorefraction), were recruited from the faculty and staff of The Ohio State University. Progression is defined as an increase in myopia of at least -0.75 D spherical equivalent as determined by cycloplegic autorefraction. Annual testing includes visual acuity, noncycloplegic autorefraction and autokeratometry, phoria, accommodative lag, response AC/A ratio, cycloplegic autorefraction, videophakometry, ultrasound, and partial coherence interferometry (IOLMaster). Participants' near activities were assessed using the experience sampling method (ESM). Subjects carried a pager for two 1-week periods and were paged randomly throughout the day. Each time they were paged, they dialed into an automated telephone survey and reported their visual activity at that time. From these responses, the proportion of time spent performing near work was estimated.

RESULTS:

Three-hundred ninety-six subjects were enrolled in SPAN. The mean (+/- standard deviation) age at baseline was 30.7 +/- 3.5 years, 66% were female, 80% were white, 11% were black, and 8% were Asian/Pacific Islander. The mean level of myopia (spherical equivalent) was -3.54 +/- 1.77 D, the mean axial length by IOLMaster was 24.6 +/- 1.1 mm, and subjects were 1.7 +/- 4.0 Delta exophoric. Refractive error was associated with the number of myopic parents ($F = 3.83$, $p = 0.023$), and the number of myopic parents was associated with the age of myopia onset ($chi2 = 13.78$, $p = 0.001$). In a multivariate analysis, onset of myopia (early vs. late) still had a significant effect on degree of myopia ($F = 115.1$, $p < 0.001$), but the number of myopic parents was no longer significant ($F = 0.65$, $p = 0.52$). For the ESM, the most frequently reported visual task was computer use (mean, 18.9%; range, 0-60.0%) and, overall, subjects reported near work activity 34.1% of the time (range, 0-67.3%).

CONCLUSIONS:

The design of SPAN and the baseline characteristics of the cohort have been described. Parental history of myopia is related to the degree of myopia at baseline, but this effect is mediated by the age of onset of myopia.

Buman, Matthew P.; Hekler, Eric B.; Haskell, William L.; Pruitt, Leslie; Conway, Terry L.; Cain, Kelli L. et al. (2010):

Objective light-intensity physical activity associations with rated health in older adults.

In: *Am J Epidemiol* 172 (10), S. 1155–1165.

Abstract:

The extent to which light-intensity physical activity contributes to health in older adults is not well known. The authors examined associations between physical activity across the intensity spectrum (sedentary to vigorous) and health and well-being variables in older adults. Two 7-day assessments of accelerometry from 2005 to 2007 were collected 6 months apart in the observational Senior Neighborhood Quality of Life Study of adults aged >65 years in Baltimore, Maryland, and Seattle, Washington. Self-reported health and psychosocial variables (e.g., lower-extremity function, body weight, rated stress) were also collected. Physical activity based on existing accelerometer thresholds for moderate/vigorous, high-light, low-light, and sedentary categories were examined as correlates of physical health and psychosocial well-being in mixed-effects regression models. Participants (N = 862) were 75.4 (standard deviation, 6.8) years of age, 56% female, 71% white, and 58% overweight/obese. After adjustment for study covariates and time spent in moderate/vigorous physical activity and sedentary behavior, low-light and high-light physical activity were positively related to physical health (all P < 0.0001) and well-being (all P < 0.001). Additionally, replacing 30 minutes/day of sedentary time with equal amounts of low-light or high-light physical activity was associated with better physical health (all P < 0.0001). Objectively measured light-intensity physical activity is associated with physical health and well-being variables in older adults.

Bump Buddy and Baby Buddy smartphone apps trialled

(2013). In: *Nurs.Child Young.People.* 25 (6), S. 5. Online verfügbar unter PM:23988096.

Abstract:

TWO FREE mobile phone apps to help young women prepare for parenthood are being tested with the backing of the RCN, Royal College of Paediatrics and Child Health, and the Royal College of Midwives

Burbank, Allison J.; Lewis, Shannon D.; Hewes, Matthew; Schellhase, Dennis E.; Rettiganti, Mallikarjuna; Hall-Barrow, Julie et al. (2015):

Mobile-based asthma action plans for adolescents.

In: *J Asthma*, S. 1–4. DOI: 10.3109/02770903.2014.995307.

Abstract:

Abstract Purpose: To examine feasibility and utilization of a mobile asthma action plan (AAP) among adolescents. Methods: Adolescents (aged 12-17 years) with persistent asthma had their personalized AAP downloaded to a smartphone application. Teens were prompted by the mobile application to record either daily symptoms or peak flow measurements and to record medications. Once data were entered, the application provided immediate feedback based on the teen's AAP instructions. Asthma Control Test (ACT(R)) and child asthma self-efficacy scores were examined pre- and post-intervention. Results: Adolescents utilized the mobile AAP a median 4.3 days/week. Participant satisfaction was high with 93% stating that they were better able to control asthma by utilizing the mobile AAP. For participants with uncontrolled asthma at baseline, median (interquartile range) ACT scores improved significantly from 16 (5) to 18 (8) [p = 0.03]. Median asthma attack prevention self-efficacy scores improved from 34 (3.5) to 36 (5.3) [p = 0.04]. Conclusions: Results suggest that personalized mobile-based AAPs are a feasible method to communicate AAP instructions to teens.

Burd, Carlye; Mitchell, James E.; Crosby, Ross D.; Engel, Scott G.; Wonderlich, Stephen A.; Lystad, Chad et al. (2009):

An assessment of daily food intake in participants with anorexia nervosa in the natural environment.

In: *Int J Eat Disord* 42 (4), S. 371–374. DOI: 10.1002/eat.20628.

Abstract:

OBJECTIVE\r\nTo examine the caloric intake in women with anorexia nervosa (AN) and how it varies by day as a function of the presence or absence of binge eating and/or purging behaviors.\r\nMETHOD\r\nFemale participants with AN (n = 84, mean age = 24.4, range 18-51) were recruited from three different sites. Data on food intake were obtained through the use of 24-h dietary recall using the Nutritional Data Systems for Research, and data on binge eating and purging behaviors were collected on palmtop computers using an ecological momentary assessment paradigm. Daily macronutrient intake was compared on days during which binge eating and/or purging behaviors did or did not occur.\r\nRESULTS\r\nOn days during which binge eating and purging behaviors both occurred, participants reported significantly greater kilocalorie intake when compared with days when neither behavior occurred, or when only binge eating or purging occurred. Binge eating episodes were only modest in size on days when purging did not occur. Energy intake overall was higher than expected.\r\nDISCUSSION\r\nIntake on days where binge eating occurred varied dramatically based on whether or not purging occurred. Whether markedly increased binge eating intake was causally related to purging is unclear. Nonetheless eating episodes were at times quite large and equivalent to those reported by participants with bulimia nervosa in other research.

Burford, Tanisha I.; Low, Carissa A.; Matthews, Karen A. (2013):

Night/day ratios of ambulatory blood pressure among healthy adolescents: Roles of race, socioeconomic status, and psychosocial factors.

In: *Annals of Behavioral Medicine* 46 (2), S. 217–226. DOI: 10.1037/t01038-000;

Abstract:

Background: Elevated nighttime blood pressure (BP) predicts hypertension and its complications in adulthood. Purpose: This study aimed to assess the independent effects of race and family income on night/day BP among adolescents and to examine whether negative emotions, low positive resources, and unpleasant interactions during the day are also related. Methods: Healthy African American and Caucasian high school students (N=239) wore an ambulatory BP monitor for 48 h, recorded quality of ongoing interpersonal interactions, and completed questionnaires. Results: African Americans and those with lower family income had higher night/day BP ratios. African Americans reporting greater negative emotions, lower positive resources, and more unpleasant interactions had higher night/day BP ratios. Conclusions: Racial differences in night BP emerge by adolescence, independent of family income. African Americans, especially those high in negative emotions and low in positive resources, may be at higher relative risk for hypertension later in life in part due to elevated night BP. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Burford, T. I.; Low, C. A.; Matthews, K. A. (2013):

Night/Day Ratios of Ambulatory Blood Pressure Among Healthy Adolescents: Roles of Race, Socioeconomic Status, and Psychosocial Factors.

In: *Ann.Behav.Med* (0883-6612 (Linking)). DOI: 10.1007/s12160-013-9487-5.

Abstract:

BACKGROUND: Elevated nighttime blood pressure (BP) predicts hypertension and its complications in adulthood. PURPOSE: This study aimed to assess the independent effects of race and family income on night/day BP among adolescents and to examine whether negative emotions, low positive resources, and unpleasant interactions during the day are also related. METHODS: Healthy African American and Caucasian high school students (N = 239) wore an ambulatory BP monitor for 48 h, recorded quality of ongoing interpersonal interactions, and completed questionnaires. RESULTS: African Americans and those with lower family income had higher night/day BP ratios. African Americans reporting greater negative emotions, lower positive resources, and more unpleasant interactions had higher night/day BP ratios. CONCLUSIONS: Racial differences in night BP emerge by adolescence, independent of family income. African Americans, especially those high in negative emotions and low in positive resources, may be at higher relative risk for hypertension later in life in part due to elevated night BP

Burgess, Helen J.; Molina, Thomas A. (2014):

Home lighting before usual bedtime impacts circadian timing: a field study.

In: *Photochem Photobiol* 90 (3), S. 723–726.

Abstract:

Laboratory studies suggest that evening light before bedtime can suppress melatonin. Here, we measured the range of evening light intensity people can generate with their household lights, and for the first time determined if varying home light before usual bedtime can shift circadian phase. This was a 3-week study with two counterbalanced conditions separated by a 5-day break. In a dim week, eight healthy subjects minimized their home light exposure from 4 h before habitual bedtime until a self-selected bedtime. In a bright week, the subjects maximized their home lighting for the same time. The dim light melatonin onset (DLMO) was assessed after each week. On average subjects maximized their lights to approximately 65 lux and minimized their lights to approximately 3 lux. Wrist actigraphy indicated that subjects went to bed slightly later when lights were maximized (average 14 min later, P = 0.05), but wake time did not change. Every subject had a later DLMO after the week of maximum versus minimum light exposure (average 1:03 h later, P < 0.001). These results demonstrate that the light intensity people can generate at home in the few hours before habitual bedtime can alter circadian timing. People should reduce their evening light exposure to lessen circadian misalignment.

Burgin, Chris J.; Silvia, Paul J.; Eddington, Kari M.; Kwapil, Thomas R. (2013):

Palm or cell? Comparing personal digital assistants and cell phones for experience sampling research.

In: *Social Science Computer Review* 31 (2), S. 244–251. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-07289-009%26site%3dehost-live;t;kmedding@uncg.edu;p;cjburgin@uncg.edu.

Abstract:

Personal digital assistants (PDA), particularly Palm Pilots, are popular data collection devices in experience sampling research. The declining availability of such devices, however, has prompted researchers to explore alternative technologies for signaling participants and collecting responses. The present research considers interactive voice response (IVR) methods, which can deliver questions and collect data using common cell phones. Participants completed an experience sampling study using either a PDA (n = 428) or a cell phone under three different conditions (IVR condition n = 98; IVR Callback condition n = 93; IVR Callback Comeback condition n = 94). We found that response rates were higher when people used PDAs (69%) than when they used their cell phones (IVR condition = 51%), but response rates increased when people could call back within a few minutes of missing a signal (IVR Callback condition = 58%) and had a face-to-face meeting with a researcher midweek (IVR Callback Comeback = 64%). The daily life ratings were similar across the conditions. The findings are encouraging for researchers interested in using IVR cell phone methods for ecological momentary assessment, but more work is needed to develop procedures or incentives that increase response rates. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Burke, Lora E.; Styn, Mindi A.; Glanz, Karen; Ewing, Linda J.; Elci, Okan U.; Conroy, Margaret B. et al. (2009):

SMART trial: A randomized clinical trial of self-monitoring in behavioral weight management-design and baseline findings.

In: *Contemporary clinical trials* 30 (6), S. 540–551. DOI: 10.1016/j.cct.2009.07.003.

Abstract:

BACKGROUND\r\nThe primary form of treatment for obesity today is behavioral therapy. Self-monitoring diet and physical activity plays an important role in interventions targeting behavior and weight change. The SMART weight loss trial examined the impact of replacing the standard paper record used for self-monitoring with a personal digital assistant (PDA). This paper describes the design, methods, intervention, and baseline sample characteristics of the SMART trial.\r\nMETHODS\r\nThe SMART trial used a 3-group design to determine the effects of different modes of self-monitoring on short- and long-term weight loss and on adherence to self-monitoring in a 24-month intervention. Participants were randomized to one of three conditions (1) use of a standard paper record (PR); (2) use of a PDA with dietary and physical activity software (PDA); or (3), use of a PDA with the same software plus a customized feedback program (PDA + FB).\r\nRESULTS\r\nWe screened 704 individuals and randomized 210. There were statistically but not clinically significant differences among the three cohorts in age, education, HDL cholesterol, blood glucose and systolic blood pressure. At 24 months, retention rate for the first of three cohorts was 90%.\r\nCONCLUSIONS\r\nTo the best of our knowledge, the SMART trial is the first large study to compare different methods of self-monitoring in a behavioral weight loss intervention and to compare the use of PDAs to conventional paper records. This study has the potential to reveal significant details about self-monitoring patterns and whether technology can improve adherence to this vital intervention component.

Burner, Elizabeth R.; Menchine, Michael D.; Kubicek, Katrina; Robles, Marisela; Arora, Sanjay (2014):

Perceptions of successful cues to action and opportunities to augment behavioral triggers in diabetes self-management: qualitative analysis of a mobile intervention for low-income Latinos with diabetes.

In: *J Med Internet Res* 16 (1), S. e25. DOI: 10.2196/jmir.2881.

Abstract:

BACKGROUND: The increasing prevalence of diabetes and the associated cost of managing this complicated disease have a significant impact on public health outcomes and health expenditures, especially among resource-poor Latino patients. Mobile health (mHealth) may be the solution to reaching this group and improving their health. OBJECTIVE: In this qualitative study, we examined nuances of motivation, intention, and triggers to action effected by TExT-MED (Trial to Examine Text Messaging for Emergency Department patient with Diabetes), an mHealth intervention tailored to low-income, urban Latinos with diabetes. TExT-MED is a fully-automated, text message-based program designed to increase knowledge, self-efficacy, and subsequent disease management and glycemic control. METHODS: We conducted 5 focus group interviews with 24 people who participated in TExT-MED. We employed a modified grounded theory analytic approach-an iterative process of coding and immersion in the data used to recognize the patterns and links between concepts voiced by the participants. We coded data to identify themes of participant experiences, motivations, and responses to the program. We organized themes into a theory of TExT-MED's action. RESULTS: Participants enjoyed their experience with TExT-MED and believed it improved their diabetes management. Through analysis of the transcripts, we identified that the strengths of the program were messages that cued specific behaviors such as medication reminders and challenge messages. Our analysis also revealed that increasing personalization of message delivery and content could augment these cues. CONCLUSIONS: This in-depth qualitative analysis of TExT-MED shows that low-income Latino patients will accept text messages as a behavioral intervention. This mHealth intervention acts as a behavioral trigger rather than an education platform. Personalization is an opportunity to enhance these cues to action and further research should be conducted on the ideal forms of personalization.

Burns, J. W.; Peterson, K. M.; Smith, D. A.; Keefe, F. J.; Porter, L. S.; Schuster, E.; Kinner, E. (2013):

Temporal associations between spouse criticism/hostility and pain among patients with chronic pain: A within-couple daily diary study.

In: *Pain* (0304-3959 (Linking)). DOI: 10.1016/j.pain.2013.07.053.

Abstract:

Chronic musculoskeletal pain can strain marriages, perhaps even to the point of engendering spouse criticism and hostility directed toward patients. Such negative spouse responses may have detrimental effects on patient well-being. While results of cross-sectional studies support this notion, we extended these efforts by introducing expressed emotion (EE) and interpersonal theoretical perspectives, and by using electronic diary methods to capture both patient and spouse reports in a prospective design. Patients with chronic low back pain (CLBP) and their spouses (N=105 couples) reported on perceived spouse behavior and patient pain 5 times/day for 14days using Personal Data Assistants (PDAs). Concurrent and lagged within-couple associations between patient's perceptions of spouse criticism/hostility and patient self-reported pain and spouses' observations of patient pain behaviors revealed that (1) patient perceived spouse criticism and hostility were correlated significantly with pain intensity, and spouse observed patient pain behavior was related significantly with patient perceived hostility at the same time point; (2) patient perceived spouse hostility significantly predicted patient pain intensity 3hours later, and spouse observed pain behaviors significantly predicted patient perceived spouse hostility 3hours later. Results support both EE and interpersonal models, and imply that a comprehensive model would combine these conceptualizations to fully illustrate how spouse criticism/hostility and patient pain interact to produce a negative spiral. Given that marital interactions are amenable to clinical intervention, improved insight into how spouse behavior and patient pain are tightly linked will encourage productive translational efforts to target this neglected area

Burrow, A. L.; Hill, P. L. (2013):

Derailed by Diversity? Purpose Buffers the Relationship Between Ethnic Composition on Trains and Passenger Negative Mood.

In: *Pers.Soc.Psychol.Bull* (0146-1672 (Linking)). DOI: 10.1177/0146167213499377.

Abstract:

Many individuals feel socially isolated and distressed in ethnically diverse settings. Purpose in life may buffer this form of distress by fostering one's sense of having a meaningful direction, which may also be of significance to others. In two experience-sampling studies with ethnically diverse participants, we examined associations between the ethnic composition of urban trains and passenger distress, and tested purpose as a moderator of these relationships. Study 1 showed that participants of all ethnic backgrounds reported greater negative mood when the percentage of ethnic out-group members aboard their train increased. However, individual differences in purpose significantly attenuated this effect. Study 2 replicated and extended these findings experimentally by showing that relative to a control condition, briefly writing about purpose prior to boarding trains also diminished the impact of ethnic composition on negative mood. The discussion addresses strategies for promoting positive adjustment in our increasingly diverse society

Burt, S. Alexandra; Donnellan, M. Brent (2010):

Evidence that the subtypes of antisocial behavior questionnaire (STAB) predicts momentary reports of acting-out behaviors.

In: *Personality and Individual Differences* 48 (8), S. 917–920.

Abstract:

There is growing recognition that substantively important distinctions exist across physically aggressive, rule-breaking, and socially aggressive forms of antisocial behavior. Even so, one limitation to accumulating additional scientific insights into the correlates and origins of these three varieties of antisocial behavior has been the lack of an efficient self-report assessment in the public domain. The Subtypes of the Antisocial Behavior Questionnaire (STAB) was developed to address this need. Although there is already a good deal of psychometric support for the STAB, prior research has yet to examine its “ecological” validity. In other words, it remains unclear whether the STAB scales would predict the frequency of acting-out behaviors in daily life. The current study sought to examine this question via an electronic diary study, in which participants reported on their momentary behaviors on multiple occasions in their natural environments. Analyses revealed that each STAB scale uniquely predicted only the momentary acting-out behaviors characteristic of that scale. Such findings provide further support for the STAB as a promising self-report measure of physically aggressive, rule-breaking, and socially aggressive forms of antisocial behavior.

Burton, Christopher; Weller, David; Sharpe, Michael (2009):

Functional somatic symptoms and psychological states: an electronic diary study.

In: *Psychosomatic Medicine* 71 (1), S. 77–83. DOI: 10.1097/PSY.0b013e31818f2acb.

Abstract:

OBJECTIVE\r\nTo investigate the links between functional physical symptoms and psychological states in a sample of patients with persistent medically unexplained symptoms. Despite the epidemiological evidence for links between physical symptoms and mental processes, prior diary studies have shown inconsistent associations and generally been limited to single symptom and psychological variable pairs.\r\nMETHODS\r\nTwenty-six patients with at least three functional physical symptoms completed twice daily self-report measures of symptoms, fatigue, anxiety, stress, mood, and symptom concern using electronic diaries over 12 weeks. Associations between physical symptoms and psychological variables were measured by linear mixed effects models at the levels of diary entry and individual.\r\nRESULTS\r\nDespite high baseline questionnaire scores for depression and anxiety, diary ratings of anxiety and stress were relatively low. Fixed effects regression coefficients varied between symptoms and psychological variables; for instance, the fixed effects regression coefficient (95% Confidence Intervals) for fatigue as the outcome variable was 0.39 (0.31-0.47) with low mood and 0.05 (-0.01-0.10) with stress as the predictor. Random effects coefficients showed less variation between individuals for fatigue and musculoskeletal pain than for other symptoms.\r\nCONCLUSION\r\nSelf-reported mood and symptom concern were more strongly associated with functional physical symptoms than anxiety or stress. We suggest that one reason patients with functional somatic symptoms reject psychosomatic explanations is because they do not experience sufficient correlation between symptoms and psychological states.

Bush, Nigel E.; Dobscha, Steven K.; Crumpton, Rosa; Denneson, Lauren M.; Hoffman, Julia E.; Crain, Aysha et al. (2014):

A Virtual Hope Box Smartphone App as an Accessory to Therapy: Proof-of-Concept in a Clinical Sample of Veterans.

In: *Suicide Life Threat Behav. DOI:* 10.1111/sltb.12103.

Abstract:

A "Hope Box" is a therapeutic tool employed by clinicians with patients who are having difficulty coping with negative thoughts and stress, including patients who may be at risk of suicide or nonsuicidal self-harm. We conducted a proof-of-concept test of a "Virtual" Hope Box (VHB)-a smartphone app that delivers patient-tailored coping tools. Compared with a conventional hope box integrated into VA behavioral health treatment, high-risk patients and their clinicians used the VHB more regularly and found the VHB beneficial, useful, easy to set up, and said they were likely to use the VHB in the future and recommend the VHB to peers.

Businelle, Michael S.; Lam, Cho Y.; Kendzor, Darla E.; Cofta-Woerpel, Ludmila; McClure, Jennifer B.; Cinciripini, Paul M.; Wetter, David W. (2013):

Alcohol consumption and urges to smoke among women during a smoking cessation attempt.

In: *Experimental and Clinical Psychopharmacology* 21 (1), S. 29–37. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-03347-002%26site%3dehost-live;michael.businelle@utsouthwestern.edu.

Abstract:

Laboratory and ad libitum smoking studies have indicated that alcohol consumption increases the frequency and intensity of smoking urges. However, few studies have examined the relation between smoking urges and alcohol use in natural settings during a quit attempt. The purpose of this study was to examine the relationships between smoking urge and alcohol use in women who reported drinking on at least one occasion during the first 7 days of a smoking quit attempt (N = 134). Participants were asked to use a palmtop computer to complete assessments that recorded smoking urges and recent alcohol use. Multilevel analyses examined the relation between smoking urge parameters and alcohol use. Smoking urges were higher during assessments where alcohol had been recently consumed compared to assessments where no alcohol had been consumed. Interestingly, the first urge rating of the day was higher and urges were more volatile on days where alcohol would eventually be consumed as compared to days where no alcohol was consumed. A closer examination of urge parameters on drinking days indicated that smoking urge trajectory was significantly flatter and urge volatility was significantly higher following alcohol consumption. However, smoking urge trajectory also flattened later in the day on nondrinking days. The findings suggest that there may be reciprocal relations between smoking urge and alcohol use (e.g., higher initial urges and more volatile urges may increase the likelihood of alcohol use, and alcohol use may impact within-day smoking urge parameters), and these relations could potentially impact smoking cessation and relapse. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Businelle, Michael S.; Ma, Ping; Kendzor, Darla E.; Reitzel, Lorraine R.; Chen, Minxing; Lam, Cho Y. et al. (2014):

Predicting quit attempts among homeless smokers seeking cessation treatment: An ecological momentary assessment study.

In: *Nicotine & Tobacco Research* 16 (10), S. 1371–1378. DOI: 10.1037/t32635-000;

Abstract:

Introduction: Homeless adults are more likely to smoke tobacco and are less likely to successfully quit smoking than smokers in the general population, despite comparable numbers of cessation attempts and desire to quit. To date, studies that have examined smoking cessation in homeless samples have used traditional lab/clinic-based assessment methodologies. Real-time assessment of key variables may provide new insights into the process of quitting among homeless smokers. Methods: The purpose of the current study was to identify predictors of a quit attempt using real-time assessment methodology during the 6 days prior to a scheduled quit attempt among homeless adults seeking care at a shelter-based smoking cessation clinic. Parameters for multiple variables (i.e., motivation for quitting, smoking expectancies, quit self-efficacy, smoking urges, negative affect, positive affect, restlessness, hostility, and stress) were calculated and were used as predictors of biochemically verified quit date abstinence (i.e., ≥13 hr abstinent) using logistic regression analyses. Results: Participants (n = 57) were predominantly male (59.6%), non-White (68.4%), and smoked an average of 18 cigarettes per day. A total of 1,132 ecological momentary

assessments (83% completion rate) were collected at random times (i.e., up to 4 assessments/day) during the 6 days prior to a scheduled quit attempt. Results indicated that declining (negative slope) negative affect, restlessness, and stress predicted quit date abstinence. Additionally, increasing positive coping expectancies across the prequit week predicted quit date abstinence. Conclusions: Study findings highlight multiple variables that may be targeted during the precessation period to increase smoking cessation attempts in this difficult to treat population of smokers. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Businelle, Michael S.; Ma, Ping; Kendzor, Darla E.; Reitzel, Lorraine R.; Chen, Minxing; Lam, Cho Y. et al. (2014):

Predicting Quit Attempts Among Homeless Smokers Seeking Cessation Treatment: An Ecological Momentary Assessment Study.

In: *Nicotine Tob Res. DOI:* 10.1093/ntr/ntu088.

Abstract:

INTRODUCTION: Homeless adults are more likely to smoke tobacco and less likely to successfully quit smoking than smokers in the general population, despite comparable numbers of cessation attempts and desire to quit. To date, studies that have examined smoking cessation in homeless samples have used traditional lab/clinic-based assessment methodologies. Real-time assessment of key variables may provide new insights into the process of quitting among homeless smokers. METHODS: The purpose of the current study was to identify predictors of a quit attempt using real-time assessment methodology during the 6 days prior to a scheduled quit attempt in homeless adults seeking care at a shelter-based smoking cessation clinic. Parameters for multiple variables (i.e., motivation for quitting, smoking expectancies, quit self-efficacy, smoking urges, negative affect, positive affect, restlessness, hostility, and stress) were calculated and used as predictors of biochemically verified quit date abstinence (i.e., >/=13hr abstinent) using logistic regression analyses. RESULTS: Participants (n = 57) were predominantly male (59.6%), non-White (68.4%), and smoked an average of 18 cigarettes per day. A total of 1,132 ecological momentary assessments (83% completion rate) were collected at random times (i.e., up to 4 assessments/day) during the 6 days prior to a scheduled quit attempt. Results indicated that declining (negative slope) negative affect, restlessness, and stress predicted quit date abstinence. In addition, increasing positive coping expectancies across the prequit week predicted quit date abstinence. CONCLUSIONS: Study findings highlight multiple variables that may be targeted during the precessation period to increase smoking cessation attempts in this difficult to treat population of smokers.

Bussing, Regina; Reid, Adam M.; McNamara, Joseph P. H.; Meyer, Johanna M.; Guzick, Andrew G.; Mason, Dana M. et al. (2014):

A pilot study of actigraphy as an objective measure of SSRI activation symptoms: Results from a randomized placebo controlled psychopharmacological treatment study.

In: *Psychiatry Res. DOI:* 10.1016/j.psychres.2014.11.070.

Abstract:

Selective serotonin reuptake inhibitors (SSRIs) are an efficacious and effective treatment for pediatric obsessive-compulsive disorder (OCD) but have received scrutiny due to a potential side effect constellation called activation syndrome. While recent research introduced a subjective measure of activation syndrome, objective measures have not been tested. This pilot study, using data from a larger randomized-controlled trial, investigated the potential of actigraphy to provide an objective measure of activation symptoms in 44 youths with OCD beginning an SSRI medication regimen. Data were collected over the first four weeks of a multi-site, parallel, double-blind, randomized, placebo controlled psychopharmacological treatment study and statistical modeling was utilized to test how activation syndrome severity predicts daily and nightly activity levels. Results indicated that youths with higher activation symptoms had lower daytime activity levels when treatment averages were analyzed; in contrast youths who experienced onset of activation symptoms one week were more likely to have higher day-time and night-time activity ratings that week. Results support actigraphy as a potential objective measure of activation symptoms. Subsequent studies are needed to confirm these findings and test clinical applications for use by clinicians to monitor activation syndrome during SSRI treatment. National Institutes of Health (5UO1 MH078594-01); NCT00382291.

Bussmann, Johannes B. J.; Ebner-Priemer, Ulrich W. (2012):

Ambulatory assessment of movement behavior: Methodology, measurement, and application. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 235–250. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-013%26site%3dehost-live.

Abstract:

(from the chapter) Behavior is central to psychology in almost any definition of the field. A specific sub-domain of behavior is movement behavior, the overt performance of postures, movements, and activities in daily life, and its covert physiological consequences. Although overt behavior is a core aspect of psychology, assessment strategies have tended to focus on emotional, cognitive, or physiological responses. However, there is converging evidence that movement behavior is a unique and relevant domain of interest that cannot accurately be assessed by self-reports, questionnaires, or other instruments. The methodology of ambulatory assessment of movement behavior has benefited from a number of major developments over the last 15 years: New movement sensors and advanced computer algorithms allow precise, long-term, and user-friendly assessment of movement behavior, such as the amount of physical activity, momentary posture, basic types of motion, as well as movement pathologies in everyday life. Movement behavior thus includes not only quantitative aspects such as the amount and intensity of postures, movements, and activities but also qualitative aspects related to "how people move," such as smoothness of movement, speed, and movement patterns. With this overview, we aim to introduce recent developments in ambulatory activity monitoring to a broad readership in psychology. We (1) report on some conceptual issues around the assessment of movement behavior; (2) provide a summary of techniques and instruments used to assess activity, postures, and movement; (3) discuss methodological aspects of measurement; and (4) demonstrate recent applications of ambulatory assessment of physical activity, posture, and movement within a wide range of psychological topics. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Bussmann, Johannes B. J.; Ebner-Priemer, Ulrich W.; Fahrenberg, Jochen (2009):

Ambulatory activity monitoring: progress in measurement of activity, posture, and specific motion patterns in daily life.

In: *European Psychologist* 14 (2), S. 142–152.

Abstract:

Behavior is central to psychology in almost any definition. Although observable activity is a core aspect of behavior, assessment strategies have tended to focus on emotional, cognitive, or physiological responses. When physical activity is assessed, it is done so mostly with questionnaires. Converging evidence of only a moderate association between self-reports of physical activity and objectively measured physical activity does raise questions about the validity of these self-reports. Ambulatory activity monitoring, defined as the measurement strategy to assess physical activity, posture, and movement patterns continuously in everyday life, has made major advances over the last decade and has considerable potential for further application in the assessment of observable activity, a core aspect of behavior. With new piezoresistive sensors and advanced computer algorithms, the objective measurement of physical activity, posture, and movement is much more easily achieved and measurement precision has improved tremendously. With this overview, we introduce to the reader some recent developments in ambulatory activity monitoring. We will elucidate the discrepancies between objective and subjective reports of activity, outline recent methodological developments, and offer the reader a framework for developing insight into the state of the art in ambulatory activity-monitoring technology, discuss methodological aspects of time-based design and psychometric properties, and demonstrate recent applications. Although not yet main stream, ambulatory activity monitoring – especially in combination with the simultaneous assessment of emotions, mood, or physiological variables – provides a comprehensive methodology for psychology because of its suitability for explaining behavior in context.

Bussmann, J. B.; Van Den Berg-Emons Rj (2013):

To total amount of activity... and beyond: perspectives on measuring physical behavior.

In: *Front Psychol* 4 (1664-1078 (Electronic)), S. 463. DOI: 10.3389/fpsyg.2013.00463.

Abstract:

The aim of this paper is to describe and discuss some perspectives on definitions, constructs, and outcome parameters of physical behavior. The paper focuses on the following constructs: Physical activity and active lifestyle vs. sedentary behavior and sedentary lifestyle; Amount of physical activity vs. amount of walking; Detailed body posture and movement data vs. overall physical activity data; Behavioral context of activities; Quantity vs. quality; Physical behavior vs. physiological response. Subsequently, the following outcome parameters provided by data reduction procedures are discussed: Distribution of length of bouts; Variability in bout length; Time window; Intensity and intensity threshold. The overview indicates that physical behavior is a multi-dimensional construct, and it stresses the importance and relevance of constructs and parameters other than total amount of physical activity. It is concluded that the challenge for the future will be to determine which parameters are most relevant, valid and responsive. This is a matter for physical behavior researchers to consider, that is critical to multi-disciplinary collaboration

Butler, Andrew C.; Hokanson, Jack E.; Flynn, Heather A. (1994):

A comparison of self-esteem lability and low trait self-esteem as vulnerability factors for depression.

In: *Journal of Personality and Social Psychology* 66 (1), S. 166.

Abstract:

Self-esteem lability (SEL), defined as daily event-related variability in state self-esteem, and low trait self-esteem (TSE) were assessed among 205 male and female undergraduates who were currently depressed, previously depressed (PD), and never depressed (ND). SEL scores were derived for the effect of positive, negative, and combined events on state self-esteem over 30 days. Consistent with psychodynamic and cognitive theories, SEL was found to be a better index of depression proneness than TSE. PD Ss showed higher lability on all SEL scores than ND controls but did not differ from controls on TSE. Ss were reassessed 5 mo later, and new cases showed higher premorbid SEL than ND controls but did not differ from controls on premorbid TSE. SEL at Time 1 was found to increase risk for depression at Time 2 among Ss reporting high life stress at Time 2. Theoretical and methodological implications are discussed. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Butler, Jorie M.; Whalen, Carol K.; Jamner, Larry D. (2009):

Bummed out now, feeling sick later: weekday versus weekend negative affect and physical symptom reports in high school freshmen.

In: *The Journal of adolescent health : official publication of the Society for Adolescent Medicine* 44 (5), S. 452–457. DOI: 10.1016/j.jadohealth.2008.09.005.

Abstract:

PURPOSE\r\nThis study examined adolescent negative affect (NA) in daily life on school days and weekend days during the spring and associations with physical symptoms during the following summer.\r\nMETHODS\r\nUsing experience sampling methodology (ESM), participants provided electronic diary (eDiary) reports of NA on weekdays (Thursday and Friday) and weekend days during their 9th grade year. In telephone interviews during the winter and summer months they reported physical symptoms. Multiple regression analyses were conducted to examine associations between weekday NA, weekend NA, and their interaction and four constellations of physical symptoms reported in summer (pain, respiratory, gastrointestinal, and immune symptoms).\r\nRESULTS\r\nFindings indicated that weekend NA was associated with later reports of pain, respiratory, and immune symptoms. For gastrointestinal symptoms only adolescents who reported low NA on both weekend and school days reported fewer gastric symptoms than other adolescents.\r\nCONCLUSIONS\r\nMapping the predictors and correlates of weekend NA may be important not only for understanding teenage mood patterns but also for enhancing the interpretation of physical symptom reporting by adolescents.

Butte, Nancy F.; Puyau, Maurice R.; Adolph, Anne L.; Vohra, Firoz A.; Zakeri, Issa (2007):

Physical activity in nonoverweight and overweight Hispanic children and adolescents.

In: *Med Sci Sports Exerc* 39 (8), S. 1257–1266.

Abstract:

BACKGROUND: Despite the high prevalence of childhood obesity among U.S. Hispanic children and adolescents, quantitative, objective data on their patterns and levels of physical activity are scarce. OBJECTIVES: 1) To describe qualitatively the types of physical activities in which nonoverweight and overweight Hispanic children and adolescents participate; 2) to use accelerometry to quantitatively describe the duration, intensity, and frequency of physical activity; 3) to examine the influence of age, gender, and BMI status on physical activity levels; and 4) to determine the relationships between physical activity and adiposity, fitness, and risk for the metabolic syndrome.

METHODS: Cross-sectional assessment of physical activity using accelerometers was made for three continuous days in 897 nonoverweight and overweight Hispanic children, ages 4-19 yr. Ancillary measurements included blood pressure, anthropometry, body composition by dual-energy x-ray absorptiometry, fitness by VO2peak test, and metabolic risk factors, using standard clinical and biochemical methods.

RESULTS: Types and levels of physical activity were influenced by age, gender, and body mass index (BMI) status. Total physical activity counts declined markedly with increasing age (P = 0.001) and were consistently higher in boys than in girls (P = 0.001). Total activity counts were lower (P = 0.002) and sedentary activity counts were higher in overweight than in nonoverweight children (P = 0.001). Sleep duration (min.d(-1)) was slightly lower in overweight compared with nonoverweight children, ages 4-8 yr (P = 0.03). Physical activity levels were significantly associated with percent FM, VO2peak, fasting serum insulin, and waist circumference, although the strength of the associations were generally low.

CONCLUSION: Efforts should be made to shift the time in sedentary activity to light activity, and to increase the time spent in moderate to vigorous activity in U.S. Hispanic children and adolescents, with special attention given to the overweight, girls, and adolescents.

Butte, Nancy F.; Wong, William W.; Adolph, Anne L.; Puyau, Maurice R.; Vohra, Firoz A.; Zakeri, Issa F. (2010):

Validation of cross-sectional time series and multivariate adaptive regression splines models for the prediction of energy expenditure in children and adolescents using doubly labeled water.

In: *The Journal of nutrition* 140 (8), S. 1516–1523.

Abstract:

Accurate, nonintrusive, and inexpensive techniques are needed to measure energy expenditure (EE) in free-living populations. Our primary aim in this study was to validate cross-sectional time series (CSTS) and multivariate adaptive regression splines (MARS) models based on observable participant characteristics, heart rate (HR), and accelerometer counts (AC) for prediction of minute-by-minute EE, and hence 24-h total EE (TEE), against a 7-d doubly labeled water (DLW) method in children and adolescents. Our secondary aim was to demonstrate the utility of CSTS and MARS to predict awake EE, sleep EE, and activity EE (AEE) from 7-d HR and AC records, because these shorter periods are not verifiable by DLW, which provides an estimate of the individual's mean TEE over a 7-d interval. CSTS and MARS models were validated in 60 normal-weight and overweight participants (ages 5-18 y). The Actiheart monitor was used to simultaneously measure HR and AC. For prediction of TEE, mean absolute errors were 10.7 +/- 307 kcal/d and 18.7 +/- 252 kcal/d for CSTS and MARS models, respectively, relative to DLW. Corresponding root mean square error values were 305 and 251 kcal/d for CSTS and MARS models, respectively. Bland-Altman plots indicated that the predicted values were in good agreement with the DLW-derived TEE values. Validation of CSTS and MARS models based on participant characteristics, HR monitoring, and accelerometry for the prediction of minute-by-minute EE, and hence 24-h TEE, against the DLW method indicated no systematic bias and acceptable limits of agreement for pediatric groups and individuals under free-living conditions.

Buysse, Daniel J.; Thompson, Wesley; Scott, John; Franzen, Peter L.; Germain, Anne; Hall, Martica et al. (2007):

Daytime symptoms in primary insomnia: a prospective analysis using ecological momentary assessment.

In: *Sleep Medicine* 8 (3), S. 198–208.

Abstract:

OBJECTIVES:

To prospectively characterize and compare daytime symptoms in primary insomnia (PI) and good sleeper control (GSC) subjects using ecological momentary assessment; to examine relationships between daytime symptom factors, retrospective psychological and sleep reports, and concurrent sleep diary reports.

METHODS:

Subjects included 47 PI and 18 GSC. Retrospective self-reports of daytime and sleep symptoms were collected. Daytime symptoms and sleep diary information were then collected for 1 week on hand-held computers. The Daytime Insomnia Symptom Scale (DISS) consisted of 19 visual analog scales completed four times per day. Factors for the DISS were derived using functional principal components analysis. Nonparametric tests were used to contrast DISS, retrospective symptom ratings, and sleep diary results in PI and GSC subjects, and to examine relationships among them.

RESULTS:

Four principal components were identified for the DISS: Alert Cognition, Negative Mood, Positive Mood, and Sleepiness/Fatigue. PI scored significantly worse than GSC on all four factors ($p<0.0003$ for each). Among PI subjects DISS scales and retrospective psychological symptoms were related to each other in plausible ways. DISS factors were also related to self-report measures of sleep, whereas retrospective psychological symptom measures were not.

CONCLUSIONS:

Daytime symptom factors of alertness, positive and negative mood, and sleepiness/fatigue, collected with ecological momentary assessment, showed impairment in PI versus GSC. DISS factors showed stronger relationships to retrospective sleep symptoms and concurrent sleep diary reports than retrospective psychological symptoms. The diurnal pattern of symptoms may inform studies of the pathophysiology and treatment outcome of insomnia.

Bylsma, Lauren M.; Rottenberg, Jonathan (2011):

Uncovering the Dynamics of Emotion Regulation and Dysfunction in Daily Life with Ecological Momentary Assessment. In: Ivan Nyklíček, Ad Vingerhoets und Marcel Zeelenberg (Hg.): Emotion Regulation and Well-Being.

New York, NY: Springer New York, S. 225–244.

Abstract:

The Ecological Momentary Assessment (EMA) method permits researchers to overcome some of the limitations of typical self-report methods and enable study of the dynamics of experiences and behaviors as they occur over time and across settings in daily life. Since Myin-Germeys and colleagues (Psychological Medicine:1533–1547, 2009) recently published an excellent general overview of EMA applications in psychopathology research, this chapter focuses specifically on EMA applications for understandingemotion in psychopathology. We briefly survey EMA methods developed over the past 30 years. Next, we explain the utility of using EMA to study emotional functioning, highlighting selected areas in emotion research where the potential of EMA modalities for clinical description, assessment, and clinical interventions are beginning to be realized. Our discussion of applications draws upon our own work with mood and anxiety disorders. Finally, we discuss the promise of EMA for improving the assessment and treatment of emotional disorders, as well as highlighting several priority areas for future investigation.

Bylsma, Lauren M.; Taylor-Clift, April; Rottenberg, Jonathan (2011):

Emotional reactivity to daily events in major and minor depression.

In: *Journal of Abnormal Psychology* 120 (1), S. 155–167. DOI: 10.1037/a0021662.

Abstract:

Although emotional dysfunction is an important aspect of major depressive disorder (MDD), it has rarely been studied in daily life. Peeters, Nicolson, Berkhof, Delespaul, and deVries (2003) observed a surprising mood-brightening effect when individuals with MDD reported greater reactivity to positive events. To better understand this phenomenon, we conducted a multimethod assessment of emotional reactivity to daily life events, obtaining detailed reports of appraisals and event characteristics using the experience-sampling method and the Day Reconstruction Method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) in 35 individuals currently experiencing a major depressive episode, 26 in a minor depressive (mD) episode, and 38 never-depressed healthy controls. Relative to healthy controls, both mood-disordered groups reported greater daily negative affect and lower positive affect and reported events as less pleasant, more unpleasant, and more stressful. Importantly, MDD and mD individuals reported greater reductions in negative affect following positive events, an effect that converged across assessment methods and was not explained by differences in prevailing affect, event appraisals, or medications. Implications of this curious mood-brightening effect are discussed.

Byrd, James B.; Brook, Robert D. (2014):

Arm position during ambulatory blood pressure monitoring: a review of the evidence and clinical guidelines.

In: *J Clin Hypertens (Greenwich)* 16 (3), S. 225–230. DOI: 10.1111/jch.12255.

Abstract:

Ambulatory blood pressure monitoring (ABPM) offers advantages over clinic blood pressure measurement. Supporting the arm at the level of the right atrium has long been standard in clinic blood pressure measurement. In contrast, there is no consensus regarding arm position in the guidelines addressing ABPM. Research studies have used a variety of arm positions during ABPM. Discussed in this review are the merits of ABPM and a review of the several arm positions recommended in ABPM guidelines, suggested by cuff manufacturers, and used in research studies. To address this lack of standardization, a rationale for a clinically reasonable arm position during ABPM is offered. Specifically, the authors recommend advising the patient to keep the arm still and relaxed straight down at the side of the body when the cuff is going to inflate, when safe to do so.

Byrd-Williams, Courtney E.; Belcher, Britni R.; Spruijt-Metz, Donna; Davis, Jaimie N.; Ventura, Emily E.; Kelly, Louise et al. (2010):

Increased physical activity and reduced adiposity in overweight Hispanic adolescents.

In: *Med Sci Sports Exerc* 42 (3), S. 478–484. DOI: 10.1249/MSS.0b013e3181b9c45b.

Abstract:

PURPOSE\r\nThe objectives of this study were to examine 1) whether changes in total physical activity (PA; counts per minute, cpm) and time spent in moderate to vigorous PA (MVPA) are associated with changes in adiposity and 2) whether energy intake influences the relationship between changes in PA and changes in adiposity in overweight Hispanic adolescents.\r\nMETHODS\r\nAnalysis included 38 overweight (body mass index, >85th percentile) Hispanic adolescents with complete pretest and posttest data on relevant variables after participating in a 16-wk intervention. The intervention treatment did not influence PA, so the sample was combined and the randomization group was adjusted for in the analysis. Body composition by dual-energy x-ray absorptiometry, 7-d PA by accelerometry, and dietary intake by 3-d diet records were assessed before and after intervention.\r\nRESULTS\r\nWithin individuals, the mean increase of PA (n = 19) and mean decrease of PA (n = 19) was approximately 105 cpm. A 100-cpm increase in total PA was associated with a decrease of 1.3 kg of fat mass and 0.8% body fat after adjusting for pretest adiposity, PA, age, sex, and treatment (P < 0.05). Controlling for energy intake modestly strengthened the relationships between total PA and fat mass and percent body fat. Changes in MVPA were not related to changes in adiposity after controlling for total PA (P > 0.05).\r\nCONCLUSIONS\r\nIncreasing total PA by 28% (100 cpm) was associated with a decrease of 1.4 kg of fat mass and 1% body fat for 16 wk in overweight Hispanic adolescents independent of intervention group assignment. Increases in total PA, compared with MVPA, may be sufficient to improve body composition in overweight Hispanic adolescents.

Byun, W.; Blair, S. N.; Pate, R. R. (2013):

Objectively measured sedentary behavior in preschool children: comparison between Montessori and traditional preschools.

In: *Int.J Behav.Nutr.Phys.Act.* 10 (1479-5868 (Linking)), S. 2. DOI: 10.1186/1479-5868-10-2.

Abstract:

BACKGROUND: This study aimed to compare the levels of objectively-measured sedentary behavior in children attending Montessori preschools with those attending traditional preschools. METHODS: The participants in this study were preschool children aged 4 years old who were enrolled in Montessori and traditional preschools. The preschool children wore ActiGraph accelerometers. Accelerometers were initialized using 15-second intervals and sedentary behavior was defined as <200 counts/15-second. The accelerometry data were summarized into the average minutes per hour spent in sedentary behavior during the in-school, the after-school, and the total-day period. Mixed linear regression models were used to determine differences in the average time spent in sedentary behavior between children attending traditional and Montessori preschools, after adjusting for selected potential correlates of preschoolers' sedentary behavior. RESULTS: Children attending Montessori preschools spent less time in sedentary behavior than those attending traditional preschools during the in-school (44.4. min/hr vs. 47.1 min/hr, P = 0.03), after-school (42.8. min/hr vs. 44.7 min/hr, P = 0.04), and total-day (43.7 min/hr vs. 45.5 min/hr, P = 0. 009) periods. School type (Montessori or traditional), preschool setting (private or public), socio-demographic factors (age, gender, and socioeconomic status) were found to be significant predictors of preschoolers' sedentary behavior. CONCLUSIONS: Levels of objectively-measured sedentary behavior were significantly lower among children attending Montessori preschools compared to children attending traditional preschools. Future research should examine the specific characteristics of Montessori

preschools that predict the lower levels of sedentary behavior among children attending these preschools compared to children attending traditional preschools

Byun, W.; Dowda, M.; Pate, R. R. (2011):

Correlates of objectively measured sedentary behavior in US preschool children.

In: *Pediatrics* 128 (5), S. 937–945. DOI: 10.1542/peds.2011-0748.

Abstract:

OBJECTIVE: To identify correlates of objectively measured sedentary behavior in a diverse sample of preschool children. METHODS: A total of 331 children (51% male, 51% black) from a wide range of ethnic and socioeconomic backgrounds in greater Columbia, South Carolina, were recruited for this study. Sedentary behavior (minutes/hour) was measured by using ActiGraph accelerometers (<37.5 counts per 15 seconds) over a 2-week period. All potential correlates except for anthropometric data of children were measured by a parent survey. Correlation and regression analyses were conducted to examine associations between 29 potential correlates across multiple domains (demographic, biological, psychosocial, behavioral, and physical environmental) and sedentary behavior measured by accelerometry in preschool children. RESULTS: Girls spent more time in sedentary behavior than boys (33.2 vs 32.4 minutes/hour; P = .05). Six and 8 potential correlates were found to be significant in univariate analyses for boys and girls, respectively. In the gender-specific final model, for boys, a child's weekday TV/video games and physical activity equipment in the home were significant correlates of sedentary behavior (R(2) = 0.091). For girls, BMI z score and child's athletic coordination were significantly associated with sedentary behavior (R(2) = 0.069). CONCLUSION: Several factors were identified as correlates of objectively measured sedentary behavior in American preschool children. However, there were no common correlates that influenced sedentary behavior for both boys and girls. Future interventions for reducing sedentary behavior could target correlates identified in this study

Byun, W.; Liu, J.; Pate, R. R. (2013):

Association between objectively measured sedentary behavior and body mass index in preschool children.

In: *Int.J Obes.(Lond)* (0307-0565 (Linking)). DOI: 10.1038/ijo.2012.222.

Abstract:

Objective:To determine the association between accelerometry-derived sedentary behavior and body mass index (BMI) z-score in preschool children, and to determine whether the association changed when applying three different accelerometry cutpoints for sedentary behavior.Design and subjects:Cross-sectional design. Data came from two completed studies: Children's Activity and Movement in Preschool Study (CHAMPS) and the Environmental Determinants of Physical Activity in Preschool Children (EDPAPC) study. Children of ages 3-5 years with complete data on sedentary behavior, BMI z-score, physical activity and other covariates were included in the analyses (N=263 in CHAMPS and N=155 in EDPAPC). Accelerometry data were summarized as time spent in sedentary behavior (min h(-1)) using three different cutpoints developed specifically for preschool children (<37.5, <200 and <373 counts per 15 s). Linear mixed regression models were used to determine the association between time spent in sedentary behavior and BMI z-score; age, gender, race, parental education, preschools and moderate-to-vigorous physical activity (MVPA) were included as covariates.Results:In both CHAMPS and EDPAPC studies, no independent association between time spent in sedentary behavior and BMI z-score was observed after adjusting for MVPA. The observed null association between sedentary behavior and BMI z-score was maintained even with different sedentary behavior cutpoints.Conclusions:Regardless of cutpoints used, accelerometry-derived sedentary behavior was not independently associated with BMI z-score in two independent samples of preschool children. Longitudinal studies addressing this research question are needed.International Journal of Obesity advance online publication, 15 January 2013; doi:10.1038/ijo.2012.222

Cagnacci, A.; Ferrari, S.; Napolitano, A.; Piacenti, I.; Arangino, S.; Volpe, A. (2012):

Combined oral contraceptive containing drospirenone does not modify 24-h ambulatory blood pressure but increases heart rate in healthy young women: prospective study.

In: *Contraception* (0010-7824 (Linking)). DOI: 10.1016/j.contraception.2012.12.002.

Abstract:

BACKGROUND: Hypertension is a primary cardiovascular risk factor. Oral contraceptives (OCs) may increase blood pressure and cardiovascular events. We evaluated whether an OC containing ethynylestradiol (EE) in association with the spironolactone-derived progestin drospirenone (DRSP) influences 24-h ambulatory blood pressure of normotensive women. STUDY DESIGN: Twenty-four-hour blood pressure was measured every 30 min by an ambulatory blood pressure device in 18 normotensive healthy women prior to and after 6 months of use of an OC containing 30 mcg EE and 3 mg DRSP. RESULTS: OC induced no modification in 24-h, nighttime and daytime blood pressure. Heart rate increased about 4 beats/min in the 24-h ($p<.05$) and daytime ($p<.02$) measurements. CONCLUSIONS: In normotensive women, an OC containing 30 mcg EE plus 3 mg DRSP does not modify blood pressure, and significantly increases 24-h and daytime heart rate. These data suggest a neutral effect on hypertension-associated cardiovascular risk and point out an unreported effect on heart rate of which cause and effect require further evaluation

Cakici, Musa; Dogan, Adnan; Oylumlu, Muhammed; Uckardes, Fatih; Davutoglu, Vedat (2014):

Impaired circadian rhythm of blood pressure in normotensive patients with rheumatic mitral valve stenosis.

In: *Blood Press Monit* 19 (2), S. 76–80. DOI: 10.1097/MBP.0000000000000025.

Abstract:

BACKGROUND: The aim of the present cross-sectional study was to evaluate either non-dipper-type or dipper-type circadian rhythm of blood pressure (BP) in normotensive rheumatic mitral stenosis (MS) patients. METHODS AND RESULTS: Eighty-eight normotensive rheumatic mitral valve disease (RMVD) patients and 41 normal participants were enrolled in the study. All participants underwent ambulatory blood pressure monitoring. Nocturnal BP dipping was calculated as follows: (awake BP-asleep BP)x100/awake BP. Patients with a nocturnal reduction in average daytime systolic BP and diastolic BP of less than 10% were classified as nondippers. Patients with RMVD were divided into two groups with respect to the top and bottom 1.5 cm of the mitral valve area (MVA). There was a highly significant relationship between the two groups with control in the frequency of a nondipping status (chi=22.721; d.f.=2; $P<0.001$). Afterwards, the Mann-Whitney U-test was used to compare the two groups and the control group. There was no difference in the frequency of nondipping between patients with an MVA of greater than 1.5 cm and the control group ($P>0.05$). However, the nondipping level was higher in patients with an MVA of less than 1.5 cm than in the control group and in patients with RMVD with an MVA of greater than 1.5 cm ($P<0.001$ and <0.001, respectively). CONCLUSION: The circadian BP rhythm is impaired and the incidence of nondipping BP is higher in patients with MS than in normal patients. Moreover, we believe that autonomic nervous system dysfunction in patients with MS may be detected efficiently using ambulatory blood pressure monitoring.

Camburn, Eric M.; Spillane, James P.; Sebastian, James (2010):

Assessing the utility of a daily log for measuring principal leadership practice.

In: *Educational Administration Quarterly*, S. 0013161X10377345.

Abstract:

Purpose: This study examines the feasibility and utility of a daily log for measuring principal leadership practice. Setting and Sample: The study was conducted in an urban district with approximately 50 principals. Approach: The log was assessed against two criteria: (a) Is it feasible to induce strong cooperation and high response rates among principals with a daily instrument? and (b) Can daily logs accurately measure important aspects of principal leadership? The first criterion was assessed through a discussion of data collection procedures and results. The second criterion was assessed through mixed-method analyses comparing daily logs, observations, and an experience-sampling instrument. Results: The authors found that substantial participant contact time and strategic follow-up achieved strong cooperation and yielded high response rates. The accuracy of the log was confirmed through comparisons with an experience-sampling instrument and direct observations. The results also contribute to a broader understanding of how principals allocate their time across leadership domains. Like earlier structured observation studies, the authors found that principals spend more time on management, personnel issues, and student affairs and less time on instructional leadership than advocated by leadership scholars and professional standards. Implications for Research and Practice: Daily logs appear to be a viable means of measuring important aspects of principal practice and overcoming measurement errors associated with one-time surveys that are common in leadership research. Strategies used to maintain high participation rates are discussed in detail, and an example of a district's adaptation of the daily log methodology is provided.

Campana, Kristie L.; Hammoud, Sammira (2013):

Incivility from patients and their families: can organisational justice protect nurses from burnout?

In: *J Nurs Manag. DOI:* 10.1111/jonm.12201.

Abstract:

AIM: To determine whether interpersonal and informational justice influence the association between daily experiences of incivility and burnout among nurses. BACKGROUND: Research has suggested that incivility is a concern for managers. Nurses regularly experience incivility, particularly from their patients and patients' families. Incivility, in turn, can increase symptoms of burnout. METHOD: Seventy-five nurses provided data on interpersonal and informational justice within their organisation. During five working days, nurses completed a twice-daily survey assessing incivility and burnout. Hierarchical linear modelling analyses examined the main effects and interaction effects of the three variables on burnout. RESULT: Incivility was positively associated with burnout. In addition, interpersonal justice strengthened the incivility-burnout relationship. Informational justice did not significantly affect the incivility-burnout relationship. CONCLUSION: Incivility is associated with more burnout. The work environment also influences burnout; when organisations provide informational justice, nurses experience less burnout. In organisations where interpersonal justice is high, nurses are more likely to experience burnout. IMPLICATIONS FOR NURSING MANAGEMENT: Nursing managers can help employees by ensuring that management's decisions are transparent. In addition, managers should be aware that in organisations with higher interpersonal justice, nurses might be more likely to experience symptoms of burnout as a result of incivility from patients and their families.

Campbell, Patrick; Ghuman, Nimrta; Wakefield, Dorothy; Wolfson, Leslie; White, William B. (2010):

Long-term reproducibility of ambulatory blood pressure is superior to office blood pressure in the very elderly.

In: *J Hum Hypertens* 24 (11), S. 749–754.

Abstract:

Although it is known that reproducibility of ambulatory blood pressure (BP) is superior to office BP in middle-aged subjects, little is known in older age groups. Hence, we compared the long-term reproducibility of ambulatory and office BP readings in subjects over the age of 75 years. A cohort of 72 subjects 75-90 years of age (mean, 82 years at baseline) had repeat office and ambulatory BPs 2 years apart under similar conditions. On the same day, patients underwent office BP measurements by a semi-automated device and then by ambulatory BP monitoring. Awake and sleep periods were divided according to a diary kept by each patient. The agreement between studies was assessed using the standard deviation of the differences (SDD) and Bland-Altman plots. There were minimal mean changes in office, 24-h, and awake and sleep mean BP values between baseline and 2 years later. The SDDs between visits were lower for 24-h BP compared with the office BP (11.7/5.9 mm Hg versus 17.8/9.0 mm Hg, P<0.01). The SDD for 24-h BP was also lower than the SDDs for the awake and sleep BP (P<0.05). Nocturnal BPs defined by absolute values were more reproducible than categories of dippers and non-dippers. These data demonstrate that long-term reproducibility of 24-h BP is superior to office measurements for very elderly subjects. In a clinical trial involving this age group, far fewer subjects would be required if 24-h BP was the primary efficacy endpoint rather than the office BP.

Campbell, Tavis S.; Lavoie, Kim L.; Bacon, Simon L.; Scharf, Deborah; Aboussafy, David; Ditto, Blaine (2006):

Asthma self-efficacy, high frequency heart rate variability, and airflow obstruction during negative affect in daily life.

In: *International journal of psychophysiology : official journal of the International Organization of Psychophysiology* 62 (1), S. 109–114. DOI: 10.1016/j.ijpsycho.2006.02.005.

Abstract:

BACKGROUND\r\nEmotional stress has been considered an important asthma trigger for years, though the mechanisms by which stress may exacerbate asthma remain poorly understood. The stress-asthma morbidity association could occur through cognitive-behavioral pathways, such as decreased asthma self-efficacy and disorganized self-care, or through the more direct physiological effects of stress on autonomic (parasympathetic) nervous system activity. No study has examined how these two mechanisms may interact to contribute to greater airflow obstruction during emotional stress in daily life. This study investigated associations between peak expiratory flow rate (PEFR) and high frequency heart rate variability (HFHRV) during periods of negative affect and physical activity in daily life in patients with higher versus lower asthma self-efficacy scores.\r\nMETHODS\r\nFifty-three patients with mild to moderate asthma completed the Asthma Self-Efficacy Scale (ASES) and

underwent a 15 h ambulatory assessment of daytime HFHRV and PEFR, while completing self-report diaries of their physical activities and affect.\r\nRESULTS\r\nIn patients with lower asthma self-efficacy scores, increased levels of negative affect during daily life were associated with higher levels of HFHRV and decreased PEFR relative to patients with higher asthma self-efficacy scores. Increased levels of physical activity were associated with decreased levels of HFHRV irrespective of asthma self-efficacy scores.\r\nCONCLUSIONS\r\nFindings suggest that lower asthma self-efficacy may be associated with increased parasympathetic activity and airflow obstruction during periods of negative affect during daily life.

Cano, Miguel ángel; Lam, Cho Y.; Chen, Minxing; Adams, Claire E.; Correa-Fernández, Virmarie; Stewart, Diana W. et al. (2014):

Positive smoking outcome expectancies mediate the association between negative affect and smoking urge among women during a quit attempt.

In: *Experimental and Clinical Psychopharmacology* 22 (4), S. 332–340. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-16295-001%26site%3dehost-live.

Abstract:

Ecological momentary assessment was used to examine associations between negative affect, positive smoking outcome expectancies, and smoking urge during the first 7 days of a smoking quit attempt. Participants were 302 female smokers who enrolled in an individually tailored smoking cessation treatment study. Multilevel mediation analysis was used to examine the temporal relationship among the following: (a) the effects of negative affect and positive smoking outcome expectancies at 1 assessment point (e.g., time j) on smoking urge at the subsequent time point (e.g., time j + 1) in Model 1; and, (b) the effects of negative affect and smoking urge at time j on positive smoking outcome expectancies at time j + 1 in Model 2. The results from Model 1 showed a statistically significant effect of negative affect at time j on smoking urge at time j + 1, and this effect was mediated by positive smoking outcome expectancies at time j, both within- and between-participants. In Model 2, the within-participant indirect effect of negative affect at time j on positive smoking outcome expectancies at time j + 1 through smoking urge at time j was nonsignificant. However, a statistically significant indirect between-participants effect was found in Model 2. The findings support the hypothesis that urge and positive smoking outcome expectancies increase as a function of negative affect, and suggest a stronger effect of expectancies on urge as opposed to the effect of urge on expectancies. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Cantudo-Cuenca, M. R.; Robustillo-Cortes, M. A.; Cantudo-Cuenca, M. D.; Morillo-Verdugo, R. (2014):

A better regulation is required in viral hepatitis smartphone applications.

In: *Farm Hosp* 38 (n02), S. 112–117.

Abstract:

Aim. To describe the characteristics and content of the available viral hepatitis mobile applications, as well as assess the level of participation of medical professionals in their development. Methods. A descriptive observational study was carried out in September 2013. We searched smartphone apps specifically relating to the viral hepatitis for using a keyword search with the following terms; <<hepatitis>>, <<hepatology>>, <<hbv>> and <<hcv>> in the Google Play Store (Android) and the Apple App Store (iOS). Data recorded included: name, platform, category, cost, user star rating, number of downloads, date the app was updated by the developer and target audience. We analysed the content of the applications, and these were then categorised based on the viral hepatitis type into three groups. We conducted an analysis in which we specifically examined the authorship in order to assess the prevalence of health professional participation in their development. Results. A total of 33 apps were included (from 232 that were identified), among which there were 10 duplicates. Most of these apps were uploaded under the medical category. Three had ratings less than 3.9 stars (out of 5). Only 6 apps had exceeded 1000 downloads. A total of 12 apps were aimed at health professionals, while 4 focused on patients (7 for both of them). The participation of health professionals in the development of apps was 56.6%. Conclusions. Viral hepatitis apps are available for both professionals and patients; however, much of the information contained within them is often not validated. They should be certificated.

OPublisher: Abstract available from the publisher.

Cao, Tingting; Thompson, Jonathan E. (2014):

Remote sensing of atmospheric optical depth using a smartphone sun photometer.

In: *PLoS One* 9 (1), S. e84119. DOI: 10.1371/journal.pone.0084119.

Abstract:

In recent years, smart phones have been explored for making a variety of mobile measurements. Smart phones feature many advanced sensors such as cameras, GPS capability, and accelerometers within a handheld device that is portable, inexpensive, and consistently located with an end user. In this work, a smartphone was used as a sun photometer for the remote sensing of atmospheric optical depth. The top-of-the-atmosphere (TOA) irradiance was estimated through the construction of Langley plots on days when the sky was cloudless and clear. Changes in optical depth were monitored on a different day when clouds intermittently blocked the sun. The device demonstrated a measurement precision of 1.2% relative standard deviation for replicate photograph measurements (38 trials, 134 datum). However, when the accuracy of the method was assessed through using optical filters of known transmittance, a more substantial uncertainty was apparent in the data. Roughly 95% of replicate smart phone measured transmittances are expected to lie within +/-11.6% of the true transmittance value. This uncertainty in transmission corresponds to an optical depth of approx. +/-0.12-0.13 suggesting the smartphone sun photometer would be useful only in polluted areas that experience significant optical depths. The device can be used as a tool in the classroom to present how aerosols and gases effect atmospheric transmission. If improvements in measurement precision can be achieved, future work may allow monitoring networks to be developed in which citizen scientists submit acquired data from a variety of locations.

Carl, Daniel E.; Ghosh, Siddharta; Cheng, Jianfeng; Gehr, Todd W. B.; Stravitz, R. Todd; Sanyal, Arun (2013):

Post-paracentesis circulatory derangements are related to monocyte activation.

In: *Liver Int. DOI:* 10.1111/liv.12450.

Abstract:

BACKGROUND & AIMS: Post-paracentesis circulatory dysfunction is associated with development of hepatorenal syndrome and increased mortality. The impact of large volume paracentesis (LVP) on the 24-h blood pressure (BP) profile is unknown, and the relationship to Na+ -retentive and pro-inflammatory cytokines also remains unknown. The aims of this study were to (i) define the effects of LVP with albumin administration on 24-h BP profiles, and (ii) relate changes in BP over time to changes in Na+ -retentive hormones, clinical factors and inflammatory cytokines. METHODS: Ten patients undergoing LVP had 24-h ambulatory BP monitoring performed pre- and post-paracentesis. Markers of the innate immune system, bacterial translocation and Na+ -retentive hormones were drawn pre- and post-LVP. RESULTS: Mean arterial pressure (MAP) dropped in nine of the 10 patients in the 24 h following a paracentesis compared to 24 h preceding the procedure (mean drop of 5.5 mmHg, $P < 0.005$). A mixed effects model was used to define time-covariate interactions in predicting changes in BP profile. Monocyte chemotactic protein-1 (MCP1) was associated with Deltasystolic BP (beta = -0.011, $P < 0.05$), Deltadiastolic BP (beta = -0.012, $P < 0.05$) and DeltaMAP (beta = -0.012, $P < 0.05$). Plasma renin activity was also significantly associated with Deltasystolic BP (beta = -0.21, $P < 0.05$). Renal function was also significantly reduced following LVP. CONCLUSIONS: Systolic, diastolic and MAP decreased over 24 h after LVP compared to the 24 h pre-LVP. This drop is related to increases in MCP-1 after LVP. Increased MCP-1, a marker of monocyte activation, was strongly related to changes in BP.

Carlstedt, Roland A. (2012):

Case 9-Psychophysiological assessment and biofeedback during official baseball games: Procedures, methodologies, findings and critical issues in applied sport psychology. In: W.Alex Edmonds und Gershon Tenenbaum (Hg.): Case studies in applied psychophysiology: Neurofeedback and biofeedback treatments for advances in human performance:

Wiley-Blackwell, S. 160–200. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-03157-011%26site%3dehost-live.

Abstract:

(from the chapter) This chapter presents a validated multifaceted assessment and intervention protocol (Carlstedt Protocol; CP) that has been used on hundreds of athletes over the last 15 years. It is conceptually based on an integrative individual-differences model of peak performance that is supported by strong construct validity and an extensive evolving database of psychophysiological and performance relationships and findings across numerous sports. The CP stresses ecological validity, real-time psychophysiological monitoring, biofeedback-based multimodal intervention and importantly, extensive efficacy testing. The protocol involves a step-by-step hierarchical evidence-based approach that is predicated on the comprehensive assessment of athlete mind-body-motor response tendencies in pre-intervention and intervention phases prior to, during and after practice and official competition (real games/matches). The goal of the protocol is to establish statistical relationships

between interventions and objective macro and micro outcome measures of a specific sport, the benchmark for determining whether a mental training method works and to what extent. It was designed to bring accountability to the assessment and intervention process in the fields of sport psychology and biofeedback. Readers will be exposed to specific components of the CP that were applied to starting players on an elite youth baseball team. Group data and findings will be presented along with contrasting case studies that demonstrate wide variability in terms of outcome or intervention efficacy, considerations that are crucial to higher evidentiary athlete assessment and mental training will be featured. It should be noted that this is the first study on record in which athletes' psychophysiological responses were monitored and measured during official league games over the course of an entire season. Pre-intervention assessment and intervention phases (biofeedback) were carried out prior to every at-bat (over 1200 data points/repeated measures; about 100-150 at-bats per player). Complete datasets of psychometric, behavioral, psychophysiological (heart rate variability) and critical moment performance statistics (predictor and macro-micro criterion measures) were generated for analysis and athlete (client) feedback purposes. In addition to discussing group and case study findings, particular attention will be paid to critical issues in applied sport psychology/sport psychophysiology and biofeedback. A goal of this chapter is not only to present data and findings on athletes who have experienced the CP but also advocate for the integration of procedures and methodologies that are vital to evidence-based applied sport psychology, the credibility of the field of sport psychology/biofeedback and its practitioners. Consequently, points of critique and rationale for doing specific things within the protocol will be discussed throughout the chapter. As I progress through specific procedures of the CP player data will be inserted along with comments regarding their relevance. Certain procedures, methods and response outtakes (e.g. heart rate variability reports) will also be shown and discussed. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Carmona, G. A.; Lacraz, A.; Assal, M. (2007):

[Walking activity in prosthesis-bearing lower-limb amputees].

In: *Revue de chirurgie orthopedique et reparatrice de l'appareil moteur* 93 (2), S. 109–115.

Abstract:

PURPOSE OF THE STUDY:

A large body of literature has been devoted to gait analysis in amputees. Most studies have been conducted in the laboratory setting where numerous variables are analyzed: gait efficiency, energy cost, walking velocity. At the present time however, data are lacking on the real-life use of walking prostheses. Little is known about how long patients wear their prosthesis or how difficult it is for them to walk during different periods of the day. Currently, such information depends on the quality of the interview and the patient-physician relationship. A precise assessment of walking activity in amputees and use of prostheses would be a valuable source of information for therapists and would provide complimentary information to that collected from laboratory gait analysis. The purpose of this study was to study walking activity in home-dwelling prosthesis-bearing lower-limb amputees and to determine variables affecting walking performance. To our knowledge, this is the first published study on this topic.

MATERIAL AND METHODS:

The series included home-dwelling prosthesis-wearing lower-limb amputees (Syme amputation or more proximal) who were able to get up and go without assistance. A StepWatch3 recorder was implanted on the prosthesis for 15 consecutive days. Variables recorded were number of steps, total walking time, and walking velocity. Variables which might affect walking in prosthesis-wearing amputees were also recorded: body mass index, use of a walking aid, level and reason for amputation, age at amputation and at recording, time between amputation and recording.

RESULTS:

From June 2004 to May 2005, 43 patients wore the StepWatch3 for the scheduled 15 days during their daily activities. Mean age at amputation was 42 years (range 13-78 years) and at recording 52 years (range 25-85 years). Considered separately, gait parameters showed that all of the patients wore their prosthesis daily and that the best walking performance was significantly observed among below-knee amputees who did not use a walking aid and who underwent amputation for a non-vascular cause. Multivariate analysis revealed that above-knee amputees lost 93 minutes of walking time per day (21% loss), and that amputees who used a walking aid lost 58 minutes per day (13% loss). Daily walking time declined 2.5 minutes per year of age. Body mass index was not correlated with total daily walking time but had a direct significant effect on walking velocity.

Carpenter, Matthew J.; Saladin, Michael E.; Desantis, Stacia; Gray, Kevin M.; Larowe, Steven D.; Upadhyaya, Himanshu P. (2009):

Laboratory-based, cue-elicited craving and cue reactivity as predictors of naturally occurring smoking behavior.

In: *Addict Behav* 34 (6-7), S. 536–541. DOI: 10.1016/j.addbeh.2009.03.022.

Abstract:

Cigarette craving, one hallmark sign of nicotine dependence, is often measured in laboratory settings using cue reactivity methods. How lab measures of cue reactivity relate to real world smoking behavior is unclear, particularly among non-treatment seeking smokers. Within a larger study of hormonal effects on cue reactivity (N=78), we examined the predictive relationship of cue reactivity to smoking, each measured in several ways. Results indicated that cue-evoked craving in response to stressful imagery, and to a lesser extent, in vivo smoking cues, significantly predicted smoking behavior during the week following testing. However, this predictive relationship was absent upon controlling for reactivity to neutral cues. Nicotine dependence may moderate the relationship between cue reactivity and actual smoking, such that this predictive relationship is less robust among highly dependent smokers than among smokers low in nicotine dependence. The question of whether cue-elicited craving predicts smoking among smokers not in treatment is best answered with a qualified yes, depending on how craving is manipulated and measured. Our findings highlight important methodological and theoretical considerations for cue reactivity research.

Carrera, Olaia; Adan, Roger A. H.; Gutierrez, Emilio; Danner, Unna N.; Hoek, Hans W.; van Elburg, Annemarie A.; Kas, Martien J. H. (2012):

Hyperactivity in Anorexia Nervosa: Warming up not just burning-off calories.

In: *PLoS One* 7 (7). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-20940-001&site=ehost-live;m.j.h.kas@umcutrecht.nl.

Abstract:

Excessive physical activity is a common feature in Anorexia Nervosa (AN) that interferes with the recovery process. Animal models have demonstrated that ambient temperature modulates physical activity in semi-starved animals. The aim of the present study was to assess the effect of ambient temperature on physical activity in AN patients in the acute phase of the illness. Thirty-seven patients with AN wore an accelerometer to measure physical activity within the first week of contacting a specialized eating disorder center. Standardized measures of anxiety, depression and eating disorder psychopathology were assessed. Corresponding daily values for ambient temperature were obtained from local meteorological stations. Ambient temperature was negatively correlated with physical activity (p = −.405) and was the only variable that accounted for a significant portion of the variance in physical activity (p = .034). Consistent with recent research with an analogous animal model of the disorder, our findings suggest that ambient temperature is a critical factor contributing to the expression of excessive physical activity levels in AN. Keeping patients warm may prove to be a beneficial treatment option for this symptom. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Carter, T.; O'Neill, S.; Johns, N.; Brady, R. R. (2013):

Contemporary Vascular Smartphone Medical Applications.

In: *Ann.Vasc.Surg.* (0890-5096 (Linking)). DOI: 10.1016/j.avsg.2012.10.013.

Abstract:

BACKGROUND: Use of smartphones and medical mHealth applications (apps) within the clinical environment provides a potential means for delivering elements of vascular care. This article reviews the contemporary availability of apps specifically themed to major vascular diseases and the opportunities and concerns regarding their integration into practice. METHODS: Smartphone apps relating to major vascular diseases were identified from the app stores for the 6 most popular smartphone platforms, including iPhone, Android, Blackberry, Nokia, Windows, and Samsung. Search terms included peripheral artery (arterial) disease, varicose veins, aortic aneurysm, carotid artery disease, amputation, ulcers, hyperhydrosis, thoracic outlet syndrome, vascular malformation, and lymphatic disorders. RESULTS: Forty-nine vascular-themed apps were identified. Sixteen (33%) were free of charge. Fifteen apps (31%) had customer satisfaction ratings, but only 3 (6%) had greater than 100. Only 13 apps (27%) had documented medical professional involvement in their design or content. CONCLUSIONS: The integration of apps into the delivery of care has the potential to benefit vascular health care workers and patients. However, high-quality apps designed by clinicians with vascular expertise are currently lacking and represent an area of concern in the mHealth market. Improvement in the quality and reliability of these apps will require the development of robust regulation

Casamassima, Filippo; Ferrari, Alberto; Milosevic, Bojan; Ginis, Pieter; Farella, Elisabetta; Rocchi, Laura (2014):

A wearable system for gait training in subjects with Parkinson's disease.

In: *Sensors (Basel)* 14 (4), S. 6229–6246. DOI: 10.3390/s140406229.

Abstract:

In this paper, a system for gait training and rehabilitation for Parkinson's disease (PD) patients in a daily life setting is presented. It is based on a wearable architecture aimed at the provision of real-time auditory feedback. Recent studies have, in fact, shown that PD patients can receive benefit from a motor therapy based on auditory cueing and feedback, as happens in traditional rehabilitation contexts with verbal instructions given by clinical operators. To this extent, a system based on a wireless body sensor network and a smartphone has been developed. The system enables real-time extraction of gait spatio-temporal features and their comparison with a patient's reference walking parameters captured in the lab under clinical operator supervision. Feedback is returned to the user in form of vocal messages, encouraging the user to keep her/his walking behavior or to correct it. This paper describes the overall concept, the proposed usage scenario and the parameters estimated for the gait analysis. It also presents, in detail, the hardware-software architecture of the system and the evaluation of system reliability by testing it on a few subjects.

Casaseca-De-La-Higuera, P.; Martin-Martinez, D.; Alberola-Lopez, S.; Andres-De-Llano, J. M.; Lopez-Villalobos, J. A.; Ramon-Garmendia, Leiza J.; Alberola-Lopez, C. (2012):

Automatic diagnosis of ADHD based on multichannel nonlinear analysis of actimetry registries.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 4204–4207. DOI: 10.1109/EMBC.2012.6346894.

Abstract:

Attention-Deficit Hyperactivity Disorder (ADHD) is the most common mental health problem in childhood and adolescence. It is commonly diagnosed by means of subjective methods which tend to overestimate the severity of the pathology. A number of objective methods also exist, but they are either expensive or time-consuming. Some recent proposals based on nonlinear processing of activity registries have deserved special attention. Since they rely on actigraphy measurements, they are both inexpensive and non-invasive. Among these methods, those shown to have higher reliability are based on single-channel complexity assessment of the activity patterns. This way, potentially useful information related to the interaction between the different channels is discarded. In this paper we propose a new methodology for ADHD diagnosis based on joint complexity assessment of multichannel activity registries. Results on real data show that the proposed method constitute a useful diagnostic aid tool reaching 87:10% sensitivity and 84.38% specificity. The combination of ADHD indicators extracted with the proposed method with single-channel complexity-based indices previously proposed lead to sensitivity and specifity values above 90%

Casey, Monica; Hayes, Patrick S.; Glynn, Fergus; Olaighin, Gearoid; Heaney, David; Murphy, Andrew W.; Glynn, Liam G. (2014):

Patients' experiences of using a smartphone application to increase physical activity: the SMART MOVE qualitative study in primary care.

In: *Br J Gen Pract* 64 (625), S. e500-8. DOI: 10.3399/bjgp14X680989.

Abstract:

BACKGROUND: Regular physical activity is known to help prevent and treat numerous non-communicable diseases. Smartphone applications (apps) have been shown to increase physical activity in primary care but little is known regarding the views of patients using such technology or how such technology may change behaviour. AIM: To explore patients' views and experiences of using smartphones to promote physical activity in primary care. DESIGN AND SETTING: This qualitative study was embedded within the SMART MOVE randomised controlled trial, which used an app (Accupedo-Pro Pedometer) to promote physical activity in three primary care centres in the west of Ireland. METHOD: Taped and transcribed semi-structured interviews with a purposeful sample of 12 participants formed the basis of the investigation. Framework analysis was used to analyse the data. RESULTS: Four themes emerged from the analysis: transforming relationships with exercise; persuasive technology tools; usability; and the cascade effect. The app appeared to facilitate a sequential and synergistic process of positive change, which occurred in the relationship between the participants and their exercise behaviour; the study has termed this the 'Know-Check-Move' effect. Usability challenges included increased battery consumption and adjusting to carrying the smartphone on their person. There was also evidence of a cascade effect involving the families and communities of participants. CONCLUSION: Notwithstanding technological challenges, an app has the potential to positively transform, in a unique way, participants' relationships with exercise. Such interventions can also have an associated cascade effect within their wider families and communities.

Catalino, Lahnna I.; Furr, R. Michael; Bellis, Freida A. (2012):

A multilevel analysis of the self-presentation theory of social anxiety: Contextualized, dispositional, and interactive perspectives.

In: *Journal of Research in Personality*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-12161-001&site=ehost-live.

Abstract:

According to self-presentation theory, social anxiety is determined by impression motivation and impression efficacy. However, researchers have not evaluated the theory's applicability from contextual and dispositional perspectives in an integrated manner, nor have they examined a fundamental interactive facet of the theory. In three studies, we examined these issues using hypothetical situations and experience sampling methodology. Results demonstrated the theory's applicability at the contextual and dispositional level, providing insight into people's general tendencies to experience social anxiety and their momentary experiences of social anxiety. Results also revealed the predicted interaction between impression motivation and impression efficacy - high impression efficacy weakens the association between impression motivation and social anxiety. These studies expand understanding of the personological and situational factors that drive social anxiety. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Causland, Finnian R. Mc; Sacks, Frank M.; Forman, John P. (2014):

Marital status, dipping and nocturnal blood pressure: results from the Dietary Approaches to Stop Hypertension trial.

In: *J Hypertens* 32 (4), S. 756–761. DOI: 10.1097/HJH.0000000000000107.

Abstract:

OBJECTIVE: Blood pressure normally declines during the night ('dipping'); a blunted nocturnal decline is an important cardiovascular risk factor. Marriage may be associated with lower ambulatory blood pressure, although this may be confounded by socio-economic and dietary factors. We examined the association of marital status with nocturnal dipping and night-time SBP amongst individuals on a controlled diet. METHODS: We analysed 325 individuals enrolled in the Dietary Approaches to Stop Hypertension trial who had available 24-h SBP data and who ingested a control diet. Logistic and linear regression models were fit to estimate the association of marital status with nocturnal dipping and mean night-time SBP. RESULTS: Of the 325 individuals, 52.9% were men, the average age was 45.1 years and 48.9% reported being married. Compared with nonmarried individuals, those who were married had greater adjusted odds of dipping [odds ratio (OR) 2.26; 95% confidence interval (CI) 1.26-4.03; P = 0.01]. In adjusted models, being married was associated with lower night-time SBP (-2.4 mmHg; 95% CI -3.8 to -0.9 mmHg; P = 0.002), with the suggestion of a greater association in married men compared with married women (-3.1 vs. -1.7 mmHg); there was less difference for married nonblacks compared with married blacks (-2.7 and -2.4 mmHg, respectively). CONCLUSION: Being married is independently associated with a greater likelihood of nocturnal dipping and with lower night-time SBP among individuals participating in a controlled dietary intervention; the association was particularly strong in married men. Marital status is a variable that may be considered in future analyses of ambulatory blood pressure.

Cavanagh, Peter R.; Gopalakrishnan, Raghavan; Rice, Andrea J.; Genc, Kerim O.; Maender, Christian C.; Nystrom, Peter G. et al. (2009):

An ambulatory biomechanical data collection system for use in space: design and validation.

In: *Aviation, space, and environmental medicine* 80 (10), S. 870–881.

Abstract:

INTRODUCTION:

Loss in bone mineral density and muscle strength in astronauts following long-duration spaceflight have been well documented, but the altered force and movement environments in microgravity which may contribute to these changes have not been well characterized. This paper describes the instrumentation, software, and data collection procedures developed for the "Foot" experiment that was conducted on the International Space Station (ISS) to provide insight into the biomechanics of daily activity in a microgravity environment.

METHODS:

The instrumentation used for data collection included the Ambulatory Data Acquisition System (ADAS), ADAS electromyography (EMG) modules, the Joint Excursion System, and the Total Force-Foot Ground interface system, which were all integrated into a specially designed Lower Extremity Monitoring Suit. There were 14 total channels of data that were collected at sampling rates between 8 Hz and 1024 Hz, including 7 channels of EMG, 4 channels of joint angle data, 2 channels of in-shoe ground reaction force, and a marker channel for event recording. Data were typically collected for between 6.5 and 11.8 h of activity during 4 d on Earth and 4-7 d in flight.

RESULTS:

Exemplar data sets collected preflight on astronauts in 1 g to validate the instrumentation are presented.

DISCUSSION:

We conclude that the system provides valid and useful biomechanical information on long-term activity. The analysis of data collected on-orbit using the system described here will be presented in a series of future papers characterizing the biomechanics of astronaut activity during complete working days on the Earth and on the ISS.

Cazzulino, Francesca; Burke, Rita V.; Muller, Valerie; Arbogast, Helen; Upperman, Jeffrey S. (2014):

Cell phones and young drivers: a systematic review regarding the association between psychological factors and prevention.

In: *Traffic Inj Prev* 15 (3), S. 234–242. DOI: 10.1080/15389588.2013.822075.

Abstract:

OBJECTIVE: Cell phone use among young drivers has become increasingly common in recent years. Young people are the most likely to accept the use of new technology and least likely to understand the risks associated with cell phone use while driving (CPWD; defined here as talking on the phone only) and texting while driving (TextWD). Due to inexperience, young drivers are the most at risk when using cell phones while driving and therefore should be the target of the majority of prevention strategies. The intent of this review is to determine factors that influence young drivers to engage in CPWD and TextWD and suggest a basis for prevention campaigns and strategies that can effectively prevent current and future generations from using cell phones while driving. METHODS: We conducted a search for original articles in PubMed, the Cochrane Library, and Web of Science. All abstracts were reviewed and for those that met the inclusion criteria, full articles were obtained and assessed. RESULTS: Four hundred and twelve articles were identified in the search and, of those, 37 full-text articles were obtained. A total of 29 articles about the frequency of CPWD and the psychological effects influencing young driver's tendency to engage in CPWD were included. There was a high frequency of both CPWD and TextWD despite a high perceived risk of both behaviors. This discrepancy was explained by a high perceived controllability, the effect of social norms, call importance, and lack of effective law enforcement. The intervention strategies reviewed were also found to be ineffective over the long term. CONCLUSIONS: The systematic review reveals that young drivers are an at-risk group for distracted driving. We propose preventative strategies based on identifying factors that influence drivers to engage in CPWD and TextWD as well as by reviewing strategies found in the reviewed articles. Further research is necessary to determine the effectiveness of these proposed strategies.

Ceja, Lucia; Navarro, Jose (2012):

'Suddenly I get into the zone': Examining discontinuities and nonlinear changes in flow experiences at work.

In: *Human Relations* 65 (9), S. 1101–1127. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-24007-004%26site%3dehost-live;j.navarro@ub.edu;lceja@iese.edu.

Abstract:

Work-related flow is defined as a sudden and enjoyable merging of action and awareness that represents a peak experience in the daily lives of workers. Employees' perceptions of challenge and skill and their subjective experiences in terms of enjoyment, interest and absorption were measured using the experience sampling method, yielding a total of 6981 observations from a sample of 60 employees. Linear and nonlinear approaches were applied in order to model both continuous and sudden changes. According to the R-&#65533;, AICc and BIC indexes, the nonlinear dynamical systems model (i.e. cusp catastrophe model) fit the data better than the linear and logistic regression models. Likewise, the cusp catastrophe model appears to be especially powerful for modelling those cases of high levels of flow. Overall, flow represents a nonequilibrium condition that combines continuous and abrupt changes across time. Research and intervention efforts concerned with this process should focus on the variable of challenge, which, according to our study, appears to play a key role in the abrupt changes observed in work-related flow. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Celis-Morales, C. A.; Perez-Bravo, F.; Ibanez, L.; Salas, C.; Bailey, M. E.; Gill, J. M. (2012):

Objective vs. self-reported physical activity and sedentary time: effects of measurement method on relationships with risk biomarkers.

In: *PLoS One* 7 (5), S. e36345. DOI: 10.1371/journal.pone.0036345.

Abstract:

PURPOSE: Imprecise measurement of physical activity variables might attenuate estimates of the beneficial effects of activity on health-related outcomes. We aimed to compare the cardiometabolic risk factor dose-response relationships for physical activity and sedentary behaviour between accelerometer- and questionnaire-based activity measures. METHODS: Physical activity and sedentary behaviour were assessed in 317 adults by 7-day accelerometry and International Physical Activity Questionnaire (IPAQ). Fasting blood was taken to determine insulin, glucose, triglyceride and total, LDL and HDL cholesterol concentrations and homeostasis model-estimated insulin resistance (HOMA(IR)). Waist circumference, BMI, body fat percentage and blood pressure were also measured. RESULTS: For both accelerometer-derived sedentary time (<100 counts.min(-1)) and IPAQ-reported sitting time significant positive (negative for HDL cholesterol) relationships were observed with all measured risk factors--i.e. increased sedentary behaviour was associated with increased risk (all p </= 0.01). However, for HOMA(IR) and insulin the regression coefficients were >50% lower for the IPAQ-reported compared to the accelerometer-derived measure (p<0.0001 for both interactions). The relationships for moderate-to-vigorous physical activity (MVPA) and risk factors were less strong than those observed for sedentary behaviours, but significant negative relationships were observed for both accelerometer and IPAQ MVPA measures with glucose, and insulin and HOMA(IR) values (all p<0.05). For accelerometer-derived MVPA only, additional negative relationships were seen with triglyceride, total cholesterol and LDL cholesterol concentrations, BMI, waist circumference and percentage body fat, and a positive relationship was evident with HDL cholesterol (p = 0.0002). Regression coefficients for HOMA(IR), insulin and triglyceride were 43-50% lower for the IPAQ-reported compared to the accelerometer-derived MVPA measure (all p</=0.01). CONCLUSION: Using the IPAQ to determine sitting time and MVPA reveals some, but not all, relationships between these activity measures and metabolic and vascular disease risk factors. Using this self-report method to quantify activity can therefore underestimate the strength of some relationships with risk factors

Cerin, Ester; Barnett, Anthony (2006):

A processual analysis of basic emotions and sources of concerns as they are lived before and after a competition.

In: *Psychology of Sport and Exercise* 7 (3), S. 287–307.

Abstract:

Objectives

To examine the natural flow of (a) pre- and post-competition temporal patterns of intensity, frequency and daily mean level (a composite measure of frequency and intensity) of basic emotions and (b) frequency of reports of competition-related and competition-extraneous concerns across time.

Method

The Experience Sampling Method (ESM) was used, which permits the monitoring of the spontaneous flow of daily affective and cognitive experiences in the athletes' habitual environment. Thirty-nine male elite martial artists were assessed on 12 basic emotions and concerns at five random times a day across 1 week before and 3 days after a competition. On the competition day, the participants were assessed 1 h before and immediately after the contest.

Results

Different patterns of change were observed for intensity and frequency of emotions and frequency of competition-related and competition-extraneous concerns. Frequency of fear was the most reactive affective component to competition vicinity. Increased frequency of some outcome-contingent negative emotions persisted for three days post-competition. The presence of negative emotions was the lowest in the post-competition days.

Conclusions

This study confirms that, for a better understanding of the process of competitive stress, monitoring of both intensity and frequency of a wide range of emotions is needed. This research area may also benefit from analysing possible psychological spill-over between sport, competition and other life domains.

Cerin, E.; Barnett, A.; Sit, C. H.; Cheung, M. C.; Lee, L. C.; Ho, S. Y.; Chan, W. M. (2011):

Measuring walking within and outside the neighborhood in Chinese elders: reliability and validity.

In: *BMC.Public Health* 11 (1471-2458 (Linking)), S. 851. DOI: 10.1186/1471-2458-11-851.

Abstract:

ABSTRACT: BACKGROUND: Walking is a preferred, prevalent and recommended activity for aging populations and is influenced by the neighborhood built environment. To study this influence it is necessary to differentiate whether walking occurs within or outside of the neighborhood. The Neighborhood Physical Activity Questionnaire (NPAQ) collects information on setting-specific physical activity, including walking, inside and outside one's neighborhood. While the NPAQ has shown to be a reliable measure in adults, its reliability in older adults is unknown. Additionally its validity and the influence of type of neighborhood on reliability and validity have yet to be explored. METHODS: The NPAQ walking component was adapted for Chinese speaking elders (NWQ-CS). Ninety-six Chinese elders, stratified by social economic status and neighborhood walkability, wore an accelerometer and completed a log of walks for 7 days. Following the collection of valid data the NWQ-CS was interviewer-administered. Fourteen to 20 days (average of 17 days) later the NWQ-CS was re-administered. Test-retest reliability and validity of the NWQ-CS were assessed. RESULTS: Reliability and validity estimates did not differ with type of neighborhood. NWQ-CS measures of walking showed moderate to excellent reliability. Reliability was generally higher for estimates of weekly frequency than minutes of walking. Total weekly minutes of walking were moderately related to all accelerometry measures. Moderate-to-strong associations were found between the NWQ-CS and log-of-walks variables. The NWQ-CS yielded statistically significantly lower mean values of total walking, weekly minutes of walking for transportation and weekly frequency of walking for transportation outside the neighborhood than the log-of-walks. CONCLUSIONS: The NWQ-CS showed measurement invariance across types of neighborhoods. It is a valid measure of walking for recreation and frequency of walking for transport. However, it may systematically underestimate the duration of walking for transport in samples that engage in high levels of this type of walking

Chaix, Basile; Kestens, Yan; Duncan, Scott; Merrien, Claire; Thierry, Benoit; Pannier, Bruno et al. (2014):

Active transportation and public transportation use to achieve physical activity recommendations? A combined GPS, accelerometer, and mobility survey study.

In: *Int J Behav Nutr Phys Act* 11 (1), S. 124. DOI: 10.1186/s12966-014-0124-x.

Abstract:

BackgroundAccurate information is lacking on the extent of transportation as a source of physical activity, on the physical activity gains from public transportation use, and on the extent to which population shifts in the use of transportation modes could increase the percentage of people reaching official physical activity recommendations.MethodsIn 2012 inverted question mark2013, 234 participants of the RECORD GPS Study (French Paris region, median age inverted question mark= inverted question mark58) wore a portable GPS receiver and an accelerometer for 7 consecutive days and completed a 7-day GPS-based mobility survey (participation rate inverted question mark= inverted question mark57.1%). Information on transportation modes and accelerometry data aggregated at the trip level [number of steps taken, energy expended, moderate to vigorous physical activity (MVPA), and sedentary time] were available for 7,644 trips. Associations between transportation modes and accelerometer-derived physical activity were estimated at the trip level with multilevel linear models.ResultsParticipants spent a median of 1h58min per day in transportation (8.2% of total time). Thirty-eight per-cent of steps taken, 31% of energy expended, and 33% of MVPA over 7 days were attributable to transportation. Walking and biking trips but also public transportation trips with all four transit modes examined were associated with greater steps, MVPA, and energy expenditure when compared to trips by personal motorized vehicle. Two simulated scenarios, implying a shift of approximately 14% and 33% of all motorized trips to public transportation or walking, were associated with a predicted 6 point and 13 point increase in the percentage of participants achieving the current physical activity recommendation.ConclusionsCollecting data with GPS receivers, accelerometers, and a GPS-based electronic mobility survey of activities and transportation modes allowed us to investigate relationships between transportation modes and physical activity at the trip level. Our findings suggest that an increase in active transportation participation and public transportation use may have substantial impacts on the percentage of people achieving physical activity recommendations.

Chaix, Basile; M+&#65533;Line, Julie; Duncan, Scott; Merrien, Claire; Karusisi, No+&#65533;Lla; Perchoux, Camille et al. (2013):

GPS tracking in neighborhood and health studies: A step forward for environmental exposure assessment, a step backward for causal inference?

In: *Health & Place* 21, S. 46–51. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-13026-007%26site%3dehost-live;yan.kestens@umontreal.ca;labadi@u707.jussieu.fr;lewin@u707.jussieu.fr;camille.perchoux@umontreal.ca;karusisi@u707.jussieu.fr;merrien@u707.jussieu.fr;scott.duncan@aut.ac.nz;julie.meline@inserm.fr;chaix@u707.jussieu.fr.

Abstract:

Recent studies have relied on GPS tracking to assess exposure to environmental characteristics over daily life schedules. Combining GPS and GIS allows for advances in environmental exposure assessment. However, biases related to selective daily mobility preclude assessment of environmental effects, to the extent that these studies may represent a step backward in terms of assessment of causal effects. A solution may be to integrate the Public health/Nutrition approach and the Transportation approach to GPS studies, so as to combine a GPS and accelerometer data collection with an electronic mobility survey. Correcting exposure measures and improving study designs with this approach may permit mitigating biases related to selective daily mobility. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Chakroun, Nadia; Johnson, Elizabeth I.; Swendsen, Joel (2010):

Mood and personality-based models of substance use.

In: *Psychology of Addictive Behaviors* 24 (1), S. 129–136. DOI: 10.1037/a0018184.

Abstract:

Mood and personality-based vulnerabilities have been extensively examined in patients with substance use disorders, but their relevance as models of etiology remains to be fully investigated. The present investigation examined mood and personality-based models of substance use in a nonclinical sample of young adults. Two-hundred and twelve individuals were assessed for personality and clinical characteristics and participated in computerized ambulatory monitoring of mood states and substance use over a 1-week period. Personality factors were strong predictors of substance use frequency over the previous 30 days, as well as of substance use in daily life using ambulatory monitoring. A linear increase was also observed in the intensity of novelty seeking and antisocial personality traits as a function of the social deviance of substances used. However, mood disorder history was related only to the use of illicit drugs other than cannabis, and fluctuations in mood states did not prospectively predict daily use of substances in a manner consistent with self-medication. Moreover, there was little evidence that personality characteristics moderated relations between mood states and substance use in daily life. The relevance of results for mood and personality models of substance use etiology is discussed.

Champagne, C. M.; Han, H.; Bajpeyi, S.; Rood, J.; Johnson, W. D.; Lammi-Keefe, C. J. et al. (2013):

Day-to-Day Variation in Food Intake and Energy Expenditure in Healthy Women: The Dietitian II Study.

In: *J Acad Nutr.Diet.* (2212-2672 (Electronic)). DOI: 10.1016/j.jand.2013.07.001.

Abstract:

Because day-to-day food intake varies, we tested the hypothesis that ad libitum food intake and energy expenditure show corrective responses over periods of 1 to 10 days in healthy young women. Food intake and accelerometry measurements were collected daily for 17 days in 15 young women. Total daily energy expenditure (TDEE) using doubly labeled water was also measured. The daily deviations in macronutrient and energy intake and energy expenditure from the average values were compared with the deviations observed over succeeding intervals to estimate the corrective responses. The intraindividual coefficients of variation for energy intake averaged +/-25%, ranging from 16% to 34%. TDEE had a coefficient of variation of 8.3%, and accelerometry had a coefficient of variation of 8.4% (range=4.6% to 16.4%). Energy expenditure by accelerometry (2,087+/-191 kcal/day) was not significantly different from TDEE (2,128+/-177 kcal/day), but reported daily energy intake was 20.4% lower (1,693+/-276 kcal/day). There were significant corrective responses in energy from fat and total energy intake. This occurred from Days 3 to 6, with a peak at Day 5 that disappeared when data were randomized within each subject. Human beings show corrective responses to deviations from average energy and macronutrient intakes with a lag time of 3 to 6 days, but not 1 to 2 days. These corrective responses are likely to play a role in bringing about weight stability

Chan, Marie; Campo, Eric; Estève, Daniel; Fourniols, Jean-Yves (2009):

Smart homes - current features and future perspectives.

In: *Maturitas* 64 (2), S. 90–97. DOI: 10.1016/j.maturitas.2009.07.014.

Abstract:

In an ageing world, maintaining good health and independence for as long as possible is essential. Instead of hospitalization or institutionalization, the elderly and disabled can be assisted in their own environment 24h a day with numerous 'smart' devices. The concept of the smart home is a promising and cost-effective way of improving home care for the elderly and the disabled in a non-obtrusive way, allowing greater independence, maintaining good health and preventing social isolation. Smart homes are equipped with sensors, actuators, and/or biomedical monitors. The devices operate in a network connected to a remote centre for data collection and processing. The remote centre diagnoses the ongoing situation and initiates assistance procedures as required. The technology can be extended to wearable and in vivo implantable devices to monitor people 24h a day both inside and outside the house. This review describes a selection of projects in developed countries on smart homes examining the various technologies available. Advantages and disadvantages, as well as the impact on modern society, are discussed. Finally, future perspectives on smart homes as part of a home-based health care network are presented.

Chandler, Megan M. (2013):

The antecedents and consequences of core affect variability at work.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 74 (2-B(E)). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-99161-127%26site%3dehost-live.

Abstract:

The purpose of the present study was to investigate the antecedents and consequences of intra-individual variability in affect at work. In particular, the current study sought to investigate how aspects of the job, social characteristics, and individual differences relate to the variability in affective experience over time using experience sampling methodology. The current study also sought to investigate how affect variability relates to well-being and performance outcomes. The present study operationalized within-person affect variability using three calculations employed by Kuppens, van Mechelen, Nezlek, Dossche, and Timmermans (2007), and attempted to improve upon these operationalizations by testing key assumptions of the calculations used in Kuppens et al. (2007) and making modifications to the calculations as necessary. The current study found that various aspects of one's work environment (i.e., role ambiguity, affect in others) and individual differences (i.e., BIS/BAS; Action-State Preoccupation) were related to the variability in one's affective experience at work. Additionally, the present study found that the variability of one's affective experiences, and more specifically Spin, were significantly related to important work outcomes such as task performance, emotional exhaustion, and job satisfaction. Thus, the present study contributed to the literature on workplace affect by (a) advancing the operationalization of within-person affect variability, (b) examining this variability in a work context, and (c) testing the links of both individual difference and work context variables with this within-person variability. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Chang, Ta-Yuan; Lai, Yu-An; Hsieh, Hsiu-Hui; Lai, Jim-Shoung; Liu, Chiu-Shong (2009):

Effects of environmental noise exposure on ambulatory blood pressure in young adults.

In: *Environ Res* 109 (7), S. 900–905. DOI: 10.1016/j.envres.2009.05.008.

Abstract:

Epidemiological studies have demonstrated that environmental noise exposure is associated with hypertension in middle-aged and older populations, but the relationship in the young subpopulation and between the genders is still unclear. This panel study investigated effects of environmental noise exposure on 24-h ambulatory blood pressure in 60 adults aged 18-32 years. Individual noise exposure and personal blood pressure were measured simultaneously for 30 males and 30 females. Linear mixed-effects regression models were applied to estimate effects. Total subjects (56.6+/-16.5A-weighted decibels (dBA)) had transient elevations of 1.15 (95% CI=0.86-1.43)mmHg SBP and 1.16 (0.93-1.38)mmHg DBP at daytime, as well as 0.74 (0.21-1.26)mmHg SBP and 0.77 (0.34-1.20)mmHg DBP at nighttime, significantly associated with a 5-dBA increase in noise exposure. Such effects on SBP and DBP still persisted at the 30- and 60-min time-lagged noise exposure. Per 5-dBA increase in 24-h average noise exposure was significantly associated with sustained increments of 1.15 (0.76-1.54)mmHg SBP and 1.27 (0.96-1.58)mmHg DBP in males (57.4+/-16.0dBA), as well as the higher levels of 1.65 (1.36-1.94)mmHg SBP and 1.51 (1.27-1.75)mmHg DBP in females (55.9+/-17.0dBA). We found that environmental noise exposure may have elevated effects on adults' blood pressure. Young females are more susceptible to noise exposure than males.

Chang, Kang Ming; Liu, Shin Hong (2011):

Wireless portable electrocardiogram and a tri-axis accelerometer implementation and application on sleep activity monitoring.

In: *Telemedicine and e-Health* 17 (3), S. 177–184. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-12456-005&site=ehost-live;changkm@asia.edu.tw.

Abstract:

Night-to-night variability of sleep activity requires more home-based portable sleep monitoring instead of clinical polysomnography examination in the laboratory. In this article, a wireless sleep activity monitoring system is described. The system is light and small for the user. Sleep postures, such as supine or left/right side, were observed by a signal from a tri-axis accelerometer. An overnight electrocardiogram was also recorded with a single lead. Using an MSP430 as microcontroller, both physiological signals were transmitted by a Bluetooth chip. A Labview-based interface demonstrated the recorded signal and sleep posture. Three nights of sleep recordings were used to examine night-to-night variability. The proposed system can record overnight heart rate. Results show that sleep posture and posture change can be precisely detected via tri-axis accelerometer information. There is no significant difference within subject data sets, but there are statistically significant differences among subjects, both for heart rate and for sleep posture distribution. The wireless transmission range is also sufficient for home-based users. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Chang, Ta-Yuan; Liu, Chiu-Shong; Hwang, Bing-Fang; Hsieh, Hsiu-Hui; Bao, Bo-Ying; Chen, Chiou-Jong et al. (2014):

Acute effects of noise exposure on 24-h ambulatory blood pressure in hypertensive adults.

In: *J Hypertens. DOI:* 10.1097/HJH.0000000000000418.

Abstract:

OBJECTIVE:: Noise exposure is associated with elevated blood pressure, but the effects on susceptible workers have not been reported. This repeated-measure study investigated the effects of noise exposure on 24-h ambulatory blood pressure among hypertensive, pre-hypertensive, and normotensive adults. METHODS:: We enrolled 113 volunteers in an occupational cohort in 2009. Individual noise exposure and personal blood pressure were measured simultaneously over 24 h on working and non-working days. Linear mixed-effects regressions were used to estimate the effects on SBP and DBP by controlling for potential confounders. RESULTS:: Each A-weighted decibel (dBA) increase in a 30-min time-lagged exposure was associated with transient elevations of work-time SBP [0.30 (95% confidence interval: 0.06, 0.54) mmHg] on working days as well as sleep-time SBP [0.39 (0.12, 0.66) mmHg] and DBP [0.33 (0.14, 0.51) mmHg] on non-working days among 19 hypertensive adults. In contrast, 46 normotensive workers had transient increases in work-time SBP [0.16 (0.03, 0.29) mmHg] and DBP [0.25 (0.15, 0.34) mmHg] on working days as well as sleep-time SBP [0.17 (0.06, 0.29) mmHg] and DBP [0.21 (0.14, 0.29) mmHg] on non-working days caused by a 1-dBA increase in the current exposure. All groups had sustained increases in 24-h average ambulatory SBP and DBP induced by noise exposure on 2 days, but the hypertensive workers had the most pronounced increase in SBP. CONCLUSION:: Hypertensive adults are more susceptible to noise exposure with a greater effect on ambulatory SBP. These results suggest a need for more protection for this subpopulation.

Chantler, Ingrid; Mitchell, Duncan; Fuller, Andrea (2009):

Actigraphy quantifies reduced voluntary physical activity in women with primary dysmenorrhea.

In: *J Pain* 10 (1), S. 38–46.

Abstract:

We assessed whether an activity data logger was able to detect and measure the reduced physical activity reported by women with moderate to severe primary dysmenorrhea. Twelve young women with a history of primary dysmenorrhea and 12 young women without a history of dysmenorrhea wore an activity data logger on their hip for 3 days when menstruating and for 3 matched days of the week when not menstruating. A visual analog scale was use to assess intensity of pain. When menstruating, the women with a history of primary dysmenorrhea, compared with when they were not menstruating, were significantly less active by about 40% on their day of worst pain (P < .001), day of intermediate pain (P < .001), and day of least pain (P < .001). There was no significant difference in the voluntary physical activity of the group on the 3 menstrual days. The women without a history of dysmenorrhea experienced mild menstrual pain but no significant decrease in physical activity (P = .82). We show that

data loggers are able to detect and quantify the decrease in physical activity reported by the women with a history of moderate to severe dysmenorrhea and that menstrual pain but not menstruation itself was associated with decreased voluntary physical activity.

PERSPECTIVE:

We have shown that a miniature activity data logger, when worn on the hip of women with a history of dysmenorrhea, detected a 40% decrease in physical activity when the women were experiencing moderate to severe primary dysmenorrhea. Actigraphy is a useful tool for measuring pain-related debilitation and its management.

Chaput, J.-P.; Lambert, M.; Mathieu, M.-E.; Tremblay, M. S.; O' Loughlin, J.; Tremblay, A. (2012):

Physical activity vs. sedentary time: Independent associations with adiposity in children.

In: *Pediatric Obesity* 7 (3), S. 251–258. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-12138-008&site=ehost-live;jpchaput@cheo.on.ca.

Abstract:

OBJECTIVE:

To investigate the independent associations between objectively measured levels of movement intensity (i.e., time spent sedentary and at light, moderate and vigorous intensities) and indicators of adiposity in a cohort of Canadian children.

METHODS:

A cross-sectional study was conducted in 550 Caucasian children aged 8-10 years with at least one obese biological parent. Physical activity and sedentary time (accelerometer over 7 d) and indicators of adiposity (% body fat measured by dual-energy X-ray absorptiometry and waist-to-height ratio) were objectively measured. We examined the associations between levels of movement intensity and adiposity in multi-level linear regression models adjusted for age, sex, sleep duration, energy intake, sexual maturation, parental socioeconomic status and parental body mass index.

RESULTS:

Objectively measured sedentary time was not associated with adiposity indicators in this cohort (unadjusted and adjusted models). However, moderate-to-vigorous physical activity (MVPA) was inversely associated with % body fat (adj. $\beta = -0.047$; $P = 0.02$) and waist-to-height ratio (adj. $\beta = -0.071$; $P < 0.001$), independent of sedentary time and other covariates. Additionally, we observed that children who did not accumulate ≥60 min d(-1) of MVPA were more likely to be overweight or obese compared to those who met the recommendation (odds ratio [OR] 2.22, 95% confidence interval [CI] 1.45-3.38). In contrast, there was no difference in the likelihood of being categorized as overweight or obese between those who met the recommendation of ≤2 h d(-1) of screen time and those who did not meet this recommendation (OR 1.27, 95% CI 0.75-2.01).

CONCLUSION:

The present study suggests that MVPA is independently associated with adiposity indices in this sample of children while sedentary time is not. Future studies should examine the best approach to increase MVPA in children and youth.

Charani, Esmita; Castro-Sanchez, Enrique; Moore, Luke S. P.; Holmes, Alison (2014):

Do smartphone applications in healthcare require a governance and legal framework? It depends on the application!

In: *BMC Med* 12, S. 29. DOI: 10.1186/1741-7015-12-29.

Abstract:

The fast pace of technological improvement and the rapid development and adoption of healthcare applications present crucial challenges for clinicians, users and policy makers. Some of the most pressing dilemmas include the need to ensure the safety of applications and establish their cost-effectiveness while engaging patients and users to optimize their integration into health decision-making. Healthcare organizations need to consider the risk of fragmenting clinical practice within the organization as a result of too many apps being developed or used, as well as mechanisms for app integration into the wider electronic health records through development of governance framework for their use. The impact of app use on the interactions between clinicians and patients needs to be explored, together with the skills required for both groups to benefit from the use of apps. Although healthcare and academic institutions should support the improvements offered by technological advances, they must strive to do so within robust governance frameworks, after sound evaluation of clinical outcomes and examination of potential unintended consequences.

Chastin, Sebastien F. M.; Dall, Philippa M.; Tigbe, William W.; Grant, Margaret P.; Ryan, Cormac G.; Rafferty, Danny; Granat, Malcolm H. (2009):

Compliance with physical activity guidelines in a group of UK-based postal workers using an objective monitoring technique.

In: *European journal of applied physiology* 106 (6), S. 893–899. DOI: 10.1007/s00421-009-1090-x.

Abstract:

Compliance with physical activity (PA) recommendations was assessed using objective PA monitoring of ambulatory activity, in two healthy groups of individuals with active and sedentary occupations. The study showed generally low compliance with the guidelines (53% with 10,000 steps a day; 10% with 30 min of moderate activity a day; and 1% with 30 min of moderate activity a day in bouts of at least 10 min (ACSM)). Adherence to guidelines decreased as more rigorous conditions were applied to the PA data. Use of an objective monitor revealed that health enhancing bouts of activity were performed in periods of approximately 1-min duration, which may be due to unavoidable environmental interruptions. These bouts of activity are much shorter than those advocated in the ACSM guidelines, raising questions regarding how actual behaviour, based on objective monitoring, can be reconciled with guidelines based on self-reported PA.

Chastin, S. F. M.; Mandrichenko, O.; Helbostadt, J. L.; Skelton, D. A. (2014):

Associations between objectively-measured sedentary behaviour and physical activity with bone mineral density in adults and older adults, the NHANES study.

In: *Bone* 64, S. 254–262. DOI: 10.1016/j.bone.2014.04.009.

Abstract:

BACKGROUND: Lack of physical activity (PA) is an important modifiable risk factor for bone mineral density (BMD). Time spent in sedentary behaviour (SB), or time spent in non-exercising seated and reclining postures, has recently emerged as a new public health risk, independent of the amount of time someone spends being active. As national surveys report that adults spend on average 8h per day being sedentary, rising to 10h a day in older age, it has been hypothesised that a repeated exposure to sitting in modern daily life, whether it is for travelling, working or leisure, might have a deleterious effect on bone health in a way that mirrors the results of studies into the effect of lengthy periods of bed-rest. The aim of this study was to investigate for the first time a) how time spent in SB is associated with bone mineral density (BMD), b) whether this association changes depending on the amount of time spent engaging in different intensity levels of PA, and c) if the pattern of accumulation of SB and long uninterrupted periods of SB are associated with BMD. METHODS: The 2005/2006 National Health and Nutrition Examination Survey (NHANES), is a cross-sectional study of a representative sample of the US population that is conducted biannually by the National Centers for Disease Control. PA and SB were assessed objectively over 7days using an Actigraph accelerometer and BMD was measured via dual-energy X-ray absorptiometry. In this study, data are presented on four regions of the femur (femoral neck, trochanter, inter trochanter and total femur) and total spine (L1-L4). The associations between BMD, SB and PA levels were examined using multiple linear regressions stratified by gender. In addition, the association between the pattern of accumulation of SB (quantified as frequency and duration of SB) and BMD was also investigated. All models were adjusted for known risk factors associated with BMD. In total, data for 2117 individuals, aged 23-90+years (males N=1158), were available to analyse SB and femur BMD and 1942 individuals (males N=1053) for analysis of SB and spine BMD. RESULTS: There was no evidence of an association between SB time and hip or spinal BMD in men. For men, time spent doing moderate to vigorous activity (MVPA) and vigorous activity (VIG) was associated with higher total femur and the other hip sub-region BMD. The regression coefficient was BMVPA=0.306 (95% CI: 0.021-0.591)g/cm(2) for each 10minute increment in daily MVPA. For VIG, the regression coefficient is BVIG=0.320 (95% CI: 0.058-0.583) but this cannot be interpreted linearly as time spent in vigorous activity was square root transformed. In women, SB was negatively associated with total femur BMD and all sub-regions but not MVPA nor VIG. The regression coefficient for total femur BMD was BSB=-0.159 (95% CI: -0.241-0.076)g/cm(2) for each 10minute increment spent being sedentary each day. In addition, the duration of SB bouts was deleteriously associated with BMD for the total femur and of other hip sub-regions, but the number of bouts of SB did not have a significant effect. These associations were found to be independent of the amount of MVPA and VIG that women engage in. No associations were found between SB or PA and spinal BMD for either men or women. CONCLUSIONS: These results provide the first evidence that repeated exposure to sitting (SB), measured objectively in daily life, is deleteriously associated with BMD of the total femur and of all hip sub-regions in women, independent of the amount of time women engage in moderate and vigorous activity. This suggests that SB might be a risk factor for bone health in women independent of whether they engage in physical activity. In addition, the duration of SB bouts, rather than their frequency, appears to be deleteriously associated with BMD of the total femur and of all hip sub-regions. Future research should investigate the effect on bone health of interventions which set out to reduce SB and the duration of SB bouts in comparison, and as adjunct, to the promotion of PA. For men, SB is not significantly associated with BMD of the femur or spine and the results appear to confirm that moderate and vigorous activity has a protective effect.

Chastin, Sebastien Fm; Mandrichenko, Oleksii; Skelton, Dawn A. (2014):

The frequency of osteogenic activities and the pattern of intermittence between periods of physical activity and sedentary behaviour affects bone mineral content: the cross-sectional NHANES study.

In: *BMC Public Health* 14, S. 4. DOI: 10.1186/1471-2458-14-4.

Abstract:

BACKGROUND: Sedentary behaviours, defined as non exercising seated activities, have been shown to have deleterious effects on health. It has been hypothesised that too much sitting time can have a detrimental effect on bone health in youth. The aim of this study is to test this hypothesis by exploring the association between objectively measured volume and patterns of time spent in sedentary behaviours, time spent in specific screen-based sedentary pursuits and bone mineral content (BMC) accrual in youth. METHODS: NHANES 2005-2006 cycle data includes BMC of the femoral and spinal region via dual-energy X-ray absorptiometry (DEXA), assessment of physical activity and sedentary behaviour patterns through accelerometry, self reported time spent in screen based pursuits (watching TV and using a computer), and frequency of vigorous playtime and strengthening activities. Multiple regression analysis, stratified by gender was performed on N = 671 males and N = 677 females aged from 8 to 22 years. RESULTS: Time spent in screen-based sedentary behaviours is negatively associated with femoral BMC (males and females) and spinal BMC (females only) after correction for time spent in moderate and vigorous activity. Regression coefficients indicate that an additional hour per day of screen-based sitting corresponds to a difference of -0.77 g femoral BMC in females [95% CI: -1.31 to -0.22] and of -0.45 g femoral BMC in males [95% CI: -0.83 to -0.06]. This association is attenuated when self-reported engagement in regular (average 5 times per week) strengthening exercise (for males) and vigorous playing (for both males and females) is taken into account. Total sitting time and non screen-based sitting do not appear to have a negative association with BMC, whereas screen based sedentary time does. Patterns of intermittence between periods of sitting and moderate to vigorous activity appears to be positively associated with bone health when activity is clustered in time and inter-spaced with long continuous bouts of sitting. CONCLUSIONS: Some specific sedentary pursuits (screen-based) are negatively associated with bone health in youth. This association is specific to gender and anatomical area. This relationship between screen-based time and bone health is independent of the total amount of physical activity measured objectively, but not independent of self-reported frequency of strengthening and vigorous play activities. The data clearly suggests that the frequency, rather than the volume, of osteogenic activities is important in counteracting the effect of sedentary behaviour on bone health. The pattern of intermittence between sedentary periods and activity also plays a role in bone accrual, with clustered short bouts of activity interspaced with long periods of sedentary behaviours appearing to be more beneficial than activities more evenly spread in time.

Cheatham, Scott W.; Kolber, Morey J.; Ernst, Michael P. (2014):

The Concurrent Validity of Resting Pulse Rate Measurements: A Comparison of Two Smartphone Applications, Polar H7 Belt Monitor, and Pulse Oximeter with Bluetooth(R).

In: *J Sport Rehabil. DOI:* 10.1123/jsr.2013-0145.

Abstract:

CONTEXT: Pulse rate is commonly measured manually or with commercial wrist or belt monitors. More recently, pulse rate monitoring has become convenient with the use of mobile technology that allows monitoring through the smartphone camera. This optical technology offers many benefits, albeit the clinimetric properties have not been extensively studied. DESIGN: Observational study of reliability Setting: University kinesiology laboratory. PARTICIPANTS: Thirty healthy, recreationally active adults. INTERVENTION: Concurrent measurement of pulse rate using two smartphone applications (Fingertip, Face-scan,) with the Polar(R) H7 belt and pulse oximeter. MAIN OUTCOME MEASURE: Average resting pulse rate for 5 minutes in three positions (supine, sitting, and prone). RESULTS: Concurrent validity in supine and standing was good between the two applications and the Polar H7 (intraclass correlation coefficient: ICC-0.80-0.98) and pulse oximeter (ICC-0.82-0.98). For sitting, the validity was good between the fingertip application, Polar H7 (ICC-0.97) and pulse oximeter (ICC-0.97). The face-scan application had moderate validity with the Polar H7 (ICC-0.74) and pulse oximeter (ICC-0.69). The minimal detectable change (MDC90) between the fingertip application and Polar H7 ranged from 1.38-4.36 beats per minute (BPM) and 0.69-2.97 BPM for the pulse oximeter with all three positions. The MDC90 between the face-scan application and Polar H7 ranged from 11.88-12.83 BPM and 0.59-17.72 BPM for the pulse oximeter. The 95% limits of agreement (LOA) suggests that the fingertip application may vary between 2.40-3.59 BPM with the Polar H7 and 3.40-3.42 BPM with the pulse oximeter. The face-scan application may vary between 3.46-3.52 BPM with the Polar H7 and 2.54-3.46 BPM with the pulse oximeter. CONCLUSION: Pulse rate measurements may be effective using a finger-tip application, belt monitor, and pulse oximeter. The fingertip scanner showed superior results compared to the face-scanner which only demonstrated modest validity when compared to the Polar H7 and pulse oximeter.

Chen, Zhe; Brown, Emery N.; Barbieri, Riccardo (2009):

Assessment of autonomic control and respiratory sinus arrhythmia using point process models of human heart beat dynamics.

In: *Biomedical Engineering, IEEE Transactions on* 56 (7), S. 1791–1802.

Abstract:

BACKGROUND:

Accelerometers measure intensity, frequency, and duration of physical activity. However, the scarcity of reports on data reduction makes comparing accelerometer results across studies difficult.

METHODS:

Participants were asked to wear a triaxial accelerometer (RT3) for ?10 hours for at least 4 days, including one weekend day. We summarize our data-cleaning procedures and assess the impact of defining a usable day of measurements as at least 6, 8, or 10 hours of wear time, and of standardizing data to a 12-hour day.

RESULTS:

Eighty-two percent of participants met wear time requirements; 93% met requirements when we defined a day as 8-or-more hours of wear time. Normalization of data to a 12-hour day had little impact on estimates of daily moderate-to-vigorous physical activity (MVPA; 16.9 vs. 17.1 minutes); restricting MVPA to activities occurring in bouts of 10 minutes or longer had greater impact (16.9 vs. 6.3 minutes per day).

CONCLUSION:

Our account of accelerometry quality-control and data-cleaning procedures documents the small impact of variations in daily wear time requirements on MVPA estimates, and the larger impact of evaluating total MVPA vs. MVPA occurring in extended bouts. This paper should allow other researchers to duplicate or revise our methods as needed.

Chen, Zhe; Brown, Emery N.; Barbieri, Riccardo (2009):

Assessment of autonomic control and respiratory sinus arrhythmia using point process models of human heart beat dynamics.

In: *IEEE transactions on bio-medical engineering* 56 (7), S. 1791–1802. DOI: 10.1109/TBME.2009.2016349.

Abstract:

Tracking the autonomic control and respiratory sinus arrhythmia (RSA) from electrocardiogram and respiratory measurements is an important problem in cardiovascular control. We propose a point process adaptive filter algorithm based on an inverse Gaussian model to track heart beat intervals that incorporates respiratory measurements as a covariate and provides an analytic form for computing a dynamic estimate of RSA gain. We use Kolmogorov-Smirnov tests and autocorrelation function analyses to assess model goodness-of-fit. We illustrate the properties of the new dynamic estimate of RSA in the analysis of simulated heart beat data and actual heart beat data recorded from subjects in a four-state postural study of heart beat dynamics: control, sympathetic blockade, parasympathetic blockade, and combined sympathetic and parasympathetic blockade. In addition to giving an accurate description of the heart beat data, our adaptive filter algorithm confirms established findings pointing at a vagally mediated RSA and provides a new dynamic RSA estimate that can be used to track cardiovascular control between and within a broad range of postural, pharmacological, and age conditions. Our paradigm suggests a possible framework for designing a device for ambulatory monitoring and assessment of autonomic control in both laboratory research and clinical practice.

Chen, Yu-Wei; Bundy, Anita; Cordier, Reinie; Einfeld, Stewart (2014):

Feasibility and usability of experience sampling methodology for capturing everyday experiences of individuals with autism spectrum disorders.

In: *Disabil Health J* 7 (3), S. 361–366. DOI: 10.1016/j.dhjo.2014.04.004.

Abstract:

BACKGROUND: Understanding experiences from the perspective of adults with autism spectrum disorders (ASD), in the myriad of circumstances in which they find themselves every day, is crucial for developing client-centered interventions. However, capturing these experiences can be difficult. OBJECTIVE: To investigate the feasibility and usability of experience sampling

method (ESM), an ecological momentary assessment, for studying individuals with ASD. METHODS: Four participants (2 males) with Asperger's syndrome or high functioning autism aged 16-32 years carried an iPod touch or iPhone with a pre-installed ESM survey exploring the situation and their perceived internal experiences. Participants were asked to respond to the survey 7 times daily, at random times generated by the device, for 7 days. RESULTS: A high signal response rate (mean = 71%) and a short average time required for survey completion (mean = 1 min 42 s) supported feasibility of the ESM for use in research with individuals with ASD. Participants reported that the questions were straightforward and that survey completion interfered very little with everyday activities, supporting acceptability of the method. Results of a split-week analysis revealed consistency of experiences; correlations among experiences that are linked logically provided evidence of the internal logic of data gathered using the ESM. Through graphic analysis, we illustrated the usability of ESM for capturing the influence of everyday contexts on internal experiences/perceptions. CONCLUSIONS: The ESM holds promise for examining the impact of social context on the everyday experiences of individuals with ASD.

Chen, Szu-Ying; Chan, Chang-Chuan; Lin, Yu-Lun; Hwang, Jing-Shiang; Su, Ta-Chen (2014):

Fine particulate matter results in hemodynamic changes in subjects with blunted nocturnal blood pressure dipping.

In: *Environ Res* 131C, S. 1–5. DOI: 10.1016/j.envres.2014.01.009.

Abstract:

Particulate matter with aerodynamic diameter of <2.5mum (PM2.5) is associated with blood pressure and hemodynamic changes. Blunted nocturnal blood pressure dipping is a major risk factor for cardiovascular events; limited information is available on whether PM2.5 exposure-related hemodynamic changes vary with day-night blood pressure circadian rhythms. In this study, we enrolled 161 subjects and monitored the changes in ambulatory blood pressure and hemodynamics for 24h. The day-night blood pressure and cardiovascular metrics were calculated according to the sleep-wake cycles logged in the subjects diary. The effects of PM2.5 exposure on blood pressure and hemodynamic changes were analyzed using generalized linear mixed-effect model. After adjusting for potential confounders, a 10-mug/m3 increase in PM2.5 was associated with 1.0mmHg [95% confidence interval (CI): 0.2-1.8mmHg] narrowing in the pulse pressure, 3.1% (95% CI: 1.4-4.8%) decrease in the maximum rate of left ventricular pressure rise, and 3.6% (95% CI: 1.6-5.7%) increase in systemic vascular resistance among 79 subjects with nocturnal blood pressure dip of <10%. In contrast, PM2.5 was not associated with any changes in cardiovascular metrics among 82 subjects with nocturnal blood pressure dip of >/=10%. Our findings demonstrate that short-term exposure to PM2.5 contributes to pulse pressure narrowing along with cardiac and vasomotor dysfunctions in subjects with nocturnal blood pressure dip of <10%.

Chen, Y. W.; Cordier, R.; Brown, N. (2013):

A preliminary study on the reliability and validity of using experience sampling method in children with autism spectrum disorders.

In: *Dev.Neurorehabil.* (1751-8423 (Linking)). DOI: 10.3109/17518423.2013.855274.

Abstract:

Abstract Objective: This study investigated the feasibility of using experience sampling method (ESM) to study everyday experiences in children with autism spectrum disorders. Methods: Six boys, aged 8-12 years, with high-functioning autism or Asperger syndrome carried an iPod touch with a pre-installed ESM survey about what they were doing, where, with whom and the quality of their experiences and associated emotions. They were randomly signalled seven times daily for seven consecutive days to respond to the survey. Results: The average signal response rates (56.8%) was acceptable and the mean time of survey completion (1 minute 53 seconds) was within acceptable range. Split-week analysis supported the consistency of experiences reporting while correlations among theoretically linked quality of experiences and emotions showed the internal logic of participants' responses; thus supporting internal reliability and validity, respectively. Conclusion: The study demonstrated the feasibility and usefulness of using ESM in exploring participants' everyday life experiences

Chen, Chuhe; Jerome, Gerald J.; Laferriere, Daniel; Young, Deborah Rohm; Vollmer, William M. (2009):

Procedures used to standardize data collected by RT3 triaxial accelerometers in a large-scale weight-loss trial.

In: *J Phys Act Health* 6 (3), S. 354.

Abstract:

BACKGROUND:

Accelerometers measure intensity, frequency, and duration of physical activity. However, the scarcity of reports on data reduction makes comparing accelerometer results across studies difficult.

METHODS:

Participants were asked to wear a triaxial accelerometer (RT3) for ?10 hours for at least 4 days, including one weekend day. We summarize our data-cleaning procedures and assess the impact of defining a usable day of measurements as at least 6, 8, or 10 hours of wear time, and of standardizing data to a 12-hour day.

RESULTS:

Eighty-two percent of participants met wear time requirements; 93% met requirements when we defined a day as 8-or-more hours of wear time. Normalization of data to a 12-hour day had little impact on estimates of daily moderate-to-vigorous physical activity (MVPA; 16.9 vs. 17.1 minutes); restricting MVPA to activities occurring in bouts of 10 minutes or longer had greater impact (16.9 vs. 6.3 minutes per day).

CONCLUSION:

Our account of accelerometry quality-control and data-cleaning procedures documents the small impact of variations in daily wear time requirements on MVPA estimates, and the larger impact of evaluating total MVPA vs. MVPA occurring in extended bouts. This paper should allow other researchers to duplicate or revise our methods as needed.

Chen, Bor-Rong; Patel, Shyamal; Buckley, Thomas; Rednic, Ramona; McClure, Douglas J.; Shih, Ludy et al. (2011):

A web-based system for home monitoring of patients with Parkinson's disease using wearable sensors.

In: *Biomedical Engineering, IEEE Transactions on* 58 (3), S. 831–836.

Abstract:

This letter introduces MercuryLive, a platform to enable home monitoring of patients with Parkinson's disease (PD) using wearable sensors. MercuryLive contains three tiers: a resource-aware data collection engine that relies upon wearable sensors, web services for live streaming and storage of sensor data, and a web-based graphical user interface client with video conferencing capability. Besides, the platform has the capability of analyzing sensor (i.e., accelerometer) data to reliably estimate clinical scores capturing the severity of tremor, bradykinesia, and dyskinesia. Testing results showed an average data latency of less than 400 ms and video latency of about 200 ms with video frame rate of about 13 frames/s when 800 kb/s of bandwidth were available and we used a 40% video compression, and data feature upload requiring 1 min of extra time following a 10 min interactive session. These results indicate that the proposed platform is suitable to monitor patients with PD to facilitate the titration of medications in the late stages of the disease.

Cheng, Nicholas M.; Chakrabarti, Rahul; Kam, Jonathan K. (2014):

iPhone Applications for Eye Care Professionals: A Review of Current Capabilities and Concerns.

In: *Telemed J E Health* 20 (4), S. 385–387. DOI: 10.1089/tmj.2013.0173.

Abstract:

Abstract Purpose: To quantitatively review and categorize the eye care-related iPhone((R)) (Apple((R)), Cupertino, CA) applications ("apps") currently available, evaluate qualified professional involvement in app development, and suggest future needs in this emerging area of mobile health. Materials and Methods: The Apple iTunes((R)) store was searched for iPhone eye care-themed apps using the general terms "ophthalmology," "ophthalmologist," "optometry," "optometrist," "eye care," and "ocular," in addition to terms based on the Centers for Disease Control and Prevention's common eye conditions. Data collected from each app included publication date, target audience, category of app, estimated number of downloads, average user rating, and documented involvement of qualified professionals. Results: In total, 182 apps were identified. The majority of apps lacked community user ratings and had 3,000 or fewer downloads (84% and 69%, respectively). Consistent with other medical specialties, only 37% of apps had documented qualified professional involvement in their development. When stratified by intended audience, 52% and 44% of apps designed for ophthalmologists and optometrists, respectively, had professional input, compared with 31% for non-eye care clinicians and 21% for the general public. Conclusions: Smartphone apps are likely to become of increasingly greater relevance to the modern eye care professional with tremendous versatility in daily practice.

However, despite the rapid emergence of eye care apps, a low level of qualified professional involvement in app development and a lack of peer review after publishing remain. There is a clear need for evidence-based principles and standards of app development to be adopted in this emerging area.

Cheng, Mei; Cheng, Shu-Ling; Zhang, Qing; Jiang, He; Cong, Ji-Yan; Zang, Xiao-Ying; Zhao, Yue (2014):

The effect of continuous nursing intervention guided by chronotherapeutics on ambulatory blood pressure of older hypertensive patients in the community.

In: *J Clin Nurs. DOI:* 10.1111/jocn.12502.

Abstract:

AIMS AND OBJECTIVES: To explore the effect of continuous nursing intervention guided by chronotherapeutics so as to provide the easy, noninvasive, effective and acceptable intervention for older hypertensive patients in the community. BACKGROUND: Many researchers studied the effect of administration at different times on blood pressure control and circadian rhythm. However, the individual administrative time was set ambiguously in previous studies. DESIGN: A semi-experimental study. METHODS: In the study, 90 eligible patients were recruited and separated into three groups randomly, which were the control group, intervention group A (behaviour and chronotherapy intervention) and intervention group B (behaviour intervention). At 6 and 12 months after the study, the intervention groups were measured 24-hour ambulatory blood pressure monitoring. RESULTS: There were significant differences in ambulatory blood pressure monitoring parameters of the two intervention groups at different measurement times, and there were interaction between measurement time and different groups. The number of patients with dipper increased and reverse dipper decreased in group A as the intervention applied. There were statistical differences between two groups. The number of patients with morning surge in group A decreased more, and there were statistical differences between two groups at six months after the intervention. CONCLUSIONS: The behaviour and chronotherapy intervention based on the patients' ambulatory blood pressure monitoring can control casual blood pressure much better and last longer, which can also improve patients' indexes of ambulatory blood pressure monitoring better than behaviour intervention only. The behaviour and chronotherapy intervention can increase patients' nocturnal blood pressure drop, increase the number of patients with dipper and decrease reverse dipper, and improve blood pressure surge in the morning. RELEVANCE TO CLINICAL PRACTICE: Nurses can use continuous nursing intervention guided by chronotherapeutics to help improve hypertension of older patients better in the community.

Cheung, V. H.; Gray, L.; Karunanithi, M. (2011):

Review of accelerometry for determining daily activity among elderly patients.

In: *Arch.Phys.Med.Rehabil.* 92 (6), S. 998–1014. DOI: 10.1016/j.apmr.2010.12.040.

Abstract:

OBJECTIVES: To review studies that used accelerometers to classify human movements and to appraise their potential to determine the activities of older patients in hospital settings. DATA SOURCES: MEDLINE, CINAHL, and Web of Science electronic databases. A search constraint of articles published in English language between January 1980 and March 2010 was applied. STUDY SELECTION: All studies that validated the use of accelerometers to classify human postural movements and mobility were included. Studies included participants from any age group. All types of accelerometers were included. Outcome measures criteria explored within the studies were comparisons of derived classifications of postural movements and mobility against those made by using observations. Based on these criteria, 54 studies were selected for detailed review from 526 initially identified studies. DATA EXTRACTION: Data were extracted by the first author and included characteristics of study participants, accelerometers used, body positions of device attachment, study setting, duration, methods, results, and limitations of the validation studies. DATA SYNTHESIS: The accelerometer-based monitoring technique was investigated predominantly on a small sample of healthy adult participants in a laboratory setting. Most studies applied multiple accelerometers on the sternum, wrists, thighs, and shanks of participants. Most studies collected validation data while participants performed a predefined standardized activity protocol. CONCLUSIONS: Accelerometer devices have the potential to monitor human movements continuously to determine postural movements and mobility for the assessment of functional ability. Future studies should focus on long-term monitoring of free daily activity of a large sample of mobility-impaired or older hospitalized patients, who are at risk for functional decline. Use of a single waist-mounted triaxial accelerometer would be the most practical and useful option

Chih, M. Y.; Patton, T.; McTavish, F. M.; Isham, A. J.; Judkins-Fisher, C. L.; Atwood, A. K.; Gustafson, D. H. (2013):

Predictive modeling of addiction lapses in a mobile health application.

In: *J Subst.Abuse Treat.* (0740-5472 (Linking)). DOI: 10.1016/j.jsat.2013.08.004.

Abstract:

The chronically relapsing nature of alcoholism leads to substantial personal, family, and societal costs. Addiction-comprehensive health enhancement support system (A-CHESS) is a smartphone application that aims to reduce relapse. To offer targeted support to patients who are at risk of lapses within the coming week, a Bayesian network model to predict such events was constructed using responses on 2,934 weekly surveys (called the Weekly Check-in) from 152 alcohol-dependent individuals who recently completed residential treatment. The Weekly Check-in is a self-monitoring service, provided in A-CHESS, to track patients' recovery progress. The model showed good predictability, with the area under receiver operating characteristic curve of 0.829 in the 10-fold cross-validation and 0.912 in the external validation. The sensitivity/specificity table assists the tradeoff decisions necessary to apply the model in practice. This study moves us closer to the goal of providing lapse prediction so that patients might receive more targeted and timely support

Chillón, Palma; Ortega, Francisco B.; Ruiz, Jonatan R.; Veidebaum, Toomas; Oja, Leila; Mäestu, Jarek; Sjöström, Michael (2010):

Active commuting to school in children and adolescents: an opportunity to increase physical activity and fitness.

In: *Scandinavian journal of public health* 38 (8), S. 873–879.

Abstract:

AIMS:

The purpose was to describe the patterns of commuting to school in young people and to examine its associations with physical activity (PA) and cardiorespiratory fitness.

METHODS:

The sample comprised 2271 Estonian and Swedish children and adolescents (1218 females) aged 9-10 years and 15-16 years. Data were collected in 1998/99. Mode of commuting to and from school was assessed by questionnaire. Time spent (min/day) in PA and average PA (counts/min) was measured by accelerometry. Cardiorespiratory fitness was assessed by means of a maximal cycle ergometer test.

RESULTS:

Sixty-one percent of the participants reported active commuting to school (ACS). Estonian youth showed lower levels of ACS than Swedish (odds ratio, 0.64; 95% confidence interval, 0.53-0.76) and girls reported lower levels than boys (0.74; 0.62-0.88). ACS boys showed higher PA levels than non-ACS boys for moderate, vigorous, MVPA, and average PA levels (all $p \leq 0.01$). Participants who cycled to school had higher cardiorespiratory fitness than walkers or passive travellers ($p < 0.001$).

CONCLUSIONS:

Nearly two-thirds of the participants actively commuted to school. ACS may provide an opportunity to increase levels of daily PA, especially in boys, and cardiorespiratory fitness, especially if cycling. Public health strategies should develop and test ACS patterns to get more evidence and promote bike-friendly environments.

Cho, Jaehee; Park, Dongjin; Lee, H. Erin (2014):

Cognitive factors of using health apps: systematic analysis of relationships among health consciousness, health information orientation, eHealth literacy, and health app use efficacy.

In: *J Med Internet Res* 16 (5), S. e125. DOI: 10.2196/jmir.3283.

Abstract:

BACKGROUND: Interest in smartphone health apps has been increasing recently. However, we have little understanding of the cognitive and motivational factors that influence the extent of health-app use. OBJECTIVE: This study aimed to examine the effects of four cognitive factors-health consciousness, health information orientation, eHealth literacy, and health-app use efficacy-on the extent of health-app use. It also explored the influence of two different use patterns-information and information-behavior use of health apps-with regard to the relationships among the main study variables. METHODS: We

collected and analyzed 765 surveys in South Korea. According to the results, there was a negligible gender difference: males (50.6%, 387/765) and females (49.4%, 378/765). All participants were adults whose ages ranged from 19 to 59. In order to test the proposed hypotheses, we used a path analysis as a specific form of structural equation modeling. RESULTS: Through a path analysis, we discovered that individuals' health consciousness had a direct effect on their use of health apps. However, unlike the initial expectations, the effects of health information orientation and eHealth literacy on health-app use were mediated by health-app use efficacy. CONCLUSIONS: The results from the path analysis addressed a significant direct effect of health consciousness as well as strong mediating effects of health-app use efficacy. These findings contribute to widening our comprehension of the new, digital dimensions of health management, particularly those revolving around mobile technology.

Choi, Leena; Chen, Kong Y.; Acra, Sari A.; Buchowski, MacIej S. (2010):

Distributed lag and spline modeling for predicting energy expenditure from accelerometry in youth.

In: *Journal of applied physiology (Bethesda, Md. : 1985)* 108 (2), S. 314–327. DOI: 10.1152/japplphysiol.00374.2009.

Abstract:

Movement sensing using accelerometers is commonly used for the measurement of physical activity (PA) and estimating energy expenditure (EE) under free-living conditions. The major limitation of this approach is lack of accuracy and precision in estimating EE, especially in low-intensity activities. Thus the objective of this study was to investigate benefits of a distributed lag spline (DLS) modeling approach for the prediction of total daily EE (TEE) and EE in sedentary (1.0-1.5 metabolic equivalents; MET), light (1.5-3.0 MET), and moderate/vigorous (> or = 3.0 MET) intensity activities in 10- to 17-year-old youth (n = 76). We also explored feasibility of the DLS modeling approach to predict physical activity EE (PAEE) and METs. Movement was measured by Actigraph accelerometers placed on the hip, wrist, and ankle. With whole-room indirect calorimeter as the reference standard, prediction models (Hip, Wrist, Ankle, Hip+Wrist, Hip+Wrist+Ankle) for TEE, PAEE, and MET were developed and validated using the fivefold cross-validation method. The TEE predictions by these DLS models were not significantly different from the room calorimeter measurements (all P > 0.05). The Hip+Wrist+Ankle predicted TEE better than other models and reduced prediction errors in moderate/vigorous PA for TEE, MET, and PAEE (all P < 0.001). The Hip+Wrist reduced prediction errors for the PAEE and MET at sedentary PA (P = 0.020 and 0.021) compared with the Hip. Models that included Wrist correctly classified time spent at light PA better than other models. The means and standard deviations of the prediction errors for the Hip+Wrist+Ankle and Hip were 0.4 +/- 144.0 and 1.5 +/- 164.7 kcal for the TEE, 0.0 +/- 84.2 and 1.3 +/- 104.7 kcal for the PAEE, and -1.1 +/- 97.6 and -0.1 +/- 108.6 MET min for the MET models. We conclude that the DLS approach for accelerometer data improves detailed EE prediction in youth.

Choi, Jounghwa; Noh, Ghee-Young; Park, Dong-Jin (2014):

Smoking cessation apps for smartphones: content analysis with the self-determination theory.

In: *J Med Internet Res* 16 (2), S. e44. DOI: 10.2196/jmir.3061.

Abstract:

BACKGROUND: Smartphones are increasingly receiving attention from public health scholars and practitioners as a means to assist individuals' health management. A number of smartphone apps for smoking cessation are also available; however, little effort has been made to evaluate the content and functions of these apps employing a theoretical framework. OBJECTIVE: The present study aims to analyze and evaluate the contents of smoking cessation apps available in South Korea employing the self-determination theory (SDT) as a theoretical framework for analysis. This study analyzes the extent to which smoking cessation apps have features that satisfy the basic needs identified in the SDT, which stimulate autonomous motivation. The type of motivational goal content manifested in the apps and how the goal content was framed are also explored. By assessing the features of smoking cessation apps based on the SDT, this study aims to offer direction for improvement for these apps. METHODS: Out of 309 apps identified from the iTunes store and Google Play (excluding 27 duplications), 175 apps were randomly drawn and analyzed. The coding scheme was drafted by the authors based on the SDT and gain/loss framing theory and was further finely tuned through the process of coder training and by establishing intercoder reliability. Once the intercoder reliability was established, the coders divided up the rest of the sample and coded them independently. RESULTS: The analysis revealed that most apps (94.3%, 165/175) had at least one feature that tapped at least 1 of the 3 basic needs. Only 18 of 175 apps (10.3%) addressed all 3 basic needs. For goal content, money (53.7%, 94/175) showed the highest frequency, followed by health (32.0%, 56/175), time (7.4%, 13/175), and appearance (1.1%, 2/175), suggesting that extrinsic goals are more dominantly presented in smoking cessation apps. For the framing of goal content, gain framing appeared more frequently (41.7%, 73/175). CONCLUSIONS: The results suggest that these smoking cessation apps may not sufficiently stimulate autonomous motivation; a small number of apps addressed all 3 basic needs suggested by the SDT (ie, autonomy, competence, and relatedness). The apps

also tended to present extrinsic goal content (primarily in terms of money) over intrinsic ones (ie, health) by primarily adopting gain framing. Implications of these findings for public health practitioners and consumers are discussed.

Choi, Jong Min; Sohn, Junil; Ku, Yunseo; Kim, Dongwook; Lee, Junghak (2013):

Phoneme-based self hearing assessment on a smartphone.

In: *IEEE J Biomed Health Inform* 17 (3), S. 526–529.

Abstract:

Phonemes provide an interesting alternative to pure tones in hearing tests.We propose a new smartphone-based method for self-hearing assessment using the four Korean phonemes which are similar to the English phonemes /a/, /i/, /sh/, and /s/. We conducted tests on 15 subjects diagnosed with mild to severe hearing loss and estimated their conventional pure-tone hearing thresholds from their phoneme hearing thresholds using regression analysis. The phoneme-based self-hearing assessment was found to be sufficiently reliable in estimating the hearing thresholds of hearing impaired subjects. The difference between the hearing thresholds obtained through conventional pure-tone audiometry and those obtained using our method was 5.6 dB HL on average. The proposed hearing assessment was able to significantly reduce the mean test time compared to conventional pure-tone audiometry.

Choi, L.; Ward, S. C.; Schnelle, J. F.; Buchowski, M. S. (2012):

Assessment of Wear/Nonwear Time Classification Algorithms for Triaxial Accelerometer.

In: *Med.Sci.Sports Exerc.* (0195-9131 (Linking)). DOI: 10.1249/MSS.0b013e318258cb36.

Abstract:

PURPOSE: To assess performance of existing wear/nonwear time classification algorithms for accelerometry data collected in the free-living environment using a wrist-worn triaxial accelerometer and a waist-worn uniaxial accelerometer in older adults. METHODS: Twenty-nine adults aged 76 to 96 years wore wrist accelerometers for approximately 24-h per day and waist accelerometers during waking for approximately 7 days of free-living. Wear and nonwear times were classified by existing algorithms (Alg[Actilife], Alg[Troiano] and Alg[Choi]) and compared with wear and nonwear times identified by data plots and diary records. Using bias and probability of correct classification, performance of the algorithms, two time-windows (60- and 90-min), andvector magnitude (VM) vs. vertical axis (V) counts from a triaxial accelerometer, were compared. RESULTS: Automated algorithms (Alg[Choi] and Alg[Troiano]) classified wear/nonwear time intervals more accurately from VM than V counts. The use of 90-min time window improved wear/nonwear classification accuracy when compared with the 60-min window. The Alg[Choi] and Alg[Troiano] performed better than the manufacturer-provided algorithm (Alg[Actilife]), and Alg[Choi] performed better than Alg[Troiano] for wear/nonwear time classification using data collected by both accelerometers. CONCLUSIONS: Triaxial wrist-worn accelerometer can be used for an accurate wear/nonwear time classification in free-living older adults. The use of 90-min window and VM counts improves performance of commonly used algorithms for wear/nonwear classification for both uniaxial and triaxial accelerometers

Christensen, Arne; Osterberg, Lars G.; Hansen, Ebba Holme (2009):

Electronic monitoring of patient adherence to oral antihypertensive medical treatment: a systematic review.

In: *J Hypertens* 27 (8), S. 1540–1551. DOI: 10.1097/HJH.0b013e32832d50ef.

Abstract:

Poor patient adherence is often the reason for suboptimal blood pressure control. Electronic monitoring is one method of assessing adherence. The aim was to systematically review the literature on electronic monitoring of patient adherence to self-administered oral antihypertensive medications. We searched the Pubmed, Embase, Cinahl and Psychinfo databases and websites of suppliers of electronic monitoring devices. The quality of the studies was assessed according to the quality criteria proposed by Haynes et al. Sixty-two articles were included; three met the criteria proposed by Haynes et al. and nine reported the use of electronic adherence monitoring for feedback interventions. Adherence rates were generally high, whereas average study quality was low with a recent tendency towards improved quality. One study detected investigator fraud based on electronic monitoring data. Use of electronic monitoring of patient adherence according to the quality criteria proposed by Haynes et al. has been rather limited during the past two decades. Electronic monitoring has mainly been used as a

measurement tool, but it seems to have the potential to significantly improve blood pressure control as well and should be used more widely.

Chuang, Kai Jen; Coull, Brent A.; Zanobetti, Antonella; Suh, Helen; Schwartz, Joel; Stone, Peter H. et al. (2008):

Particulate air pollution as a risk factor for ST-segment depression in patients with coronary artery disease.

In: *Circulation* 118 (13), S. 1314–1320.

Abstract:

BACKGROUND:

The association of particulate matter (PM) with cardiovascular morbidity and mortality is well documented. PM-induced ischemia is considered a potential mechanism linking PM to adverse cardiovascular outcomes.

METHODS AND RESULTS:

In a repeated-measures study including 5979 observations on 48 patients 43 to 75 years of age, we investigated associations of ambient pollution with ST-segment level changes averaged over half-hour periods measured in the modified V(5) position by 24-hour Holter ECG monitoring. Each patient was observed up to 4 times within 1 year after a percutaneous intervention for myocardial infarction, acute coronary syndrome without infarction, or stable coronary artery disease without acute coronary syndrome. Elevation in fine particles (PM(2.5)) and black carbon levels predicted depression of half-hour-averaged ST-segment levels. An interquartile increase in the previous 24-hour mean black carbon level was associated with a 1.50-fold increased risk of ST-segment depression > or =0.1 mm (95% CI, 1.19 to 1.89) and a -0.031-mm (95% CI, -0.042 to -0.019) decrease in half-hour-averaged ST-segment level (continuous outcome). Effects were greatest within the first month after hospitalization and for patients with myocardial infarction during hospitalization or with diabetes.

CONCLUSIONS:

ST-segment depression is associated with increased exposure to PM(2.5) and black carbon in cardiac patients. The risk of pollution-associated ST-segment depression may be greatest in those with myocardial injury in the first month after the cardiac event.

Chung, L. M.; Law, Q. P.; Fong, S. S.; Chung, J. W. (2014):

Teledietetics improves weight reduction by modifying eating behavior: a randomized controlled trial.

In: *Telemed.J.E.Health* 20 (1), S. 55–62. DOI: 10.1089/tmj.2013.0104.

Abstract:

Abstract Background: Weight reduction without behavioral modification is not sustainable. However, with a technology application such as teledietetics, the recording process could be a cognitive cue for individuals to change their eating behavior. This study tested obese participants to determine whether teledietetics shows better results in weight reduction. Study Design and Methods: We conducted a double-blinded randomized controlled trial. The participants in the food diary (FD) and electronic diary (ED) groups recorded their dietary intakes in logbooks and on an electronic diary system, respectively. The participants in the control group (CG) did nothing. Subjects were adults 20-60 years of age with a body mass index (BMI) of >/=25 kg/m(2). The ED and FD groups were the intervention groups and were compared with the CG group. The participants' body weights, BMIs, fat percentages, waist-to-hip ratios (WHRs), and mean arterial pressures (MAPs) were measured before the study, at Week 6, and at Week 12. Demographic data were collected using self-administered questionnaires. A chi-squared test and descriptive statistics were used to describe the demographic and biomeasurement data. Repeated-measures analysis of variance was used to evaluate the effectiveness of the three groups over time. Results: Significant decreases in body weight (F1.705,86.950=20.508, p<0.001) and BMI (F1.657, 84.486=21.256, p<0.001) and insignificant decreases in fat percentage (F2,94=0.547, p=0.581), WHR (F1.785,91.052=2.888, p=0.067), and MAP (F2,94=7.542, p=0.0001) were observed among the three measurement times. Conclusions: Electronic dietary records were better than food diaries in terms of fat percentage reduction in our trials, indicating that teledietetics increases healthy-eating awareness

Cichelero, Fabio Tremea; Martinez, Denis; Fuchs, Sandra Costa; Gus, Miguel; Moreira, Leila Beltrami; Fuchs, Flavio Danni (2014):

The effect of antihypertensive agents on sleep apnea: protocol for a randomized controlled trial.

In: *Trials* 15, S. 1. DOI: 10.1186/1745-6215-15-1.

Abstract:

BACKGROUND: Obstructive sleep apnea (OSA) and hypertension are well-known cardiovascular risk factors. Their control could reduce the burden of heart disease across populations. Several drugs are used to control hypertension, but the only consistently effective treatment of OSA is continuous positive airway pressure. The identification of a drug capable of improving OSA and hypertension simultaneously would provide a novel approach in the treatment of both diseases. METHODS/DESIGN: This is a randomized double-blind clinical trial, comparing the use of chlorthalidone with amiloride versus amlodipine as a first drug option in patients older than 40 years of age with stage I hypertension (140 to 159/90 to 99 mmHg) and moderate OSA (15 to 30 apneas/hour of sleep). The primary outcomes are the variation of the number of apneas per hour and blood pressure measured by ambulatory blood pressure monitoring. The secondary outcomes are adverse events, somnolence scale (Epworth), ventilatory parameters and C reactive protein levels. The follow-up will last 8 weeks. There will be 29 participants per group. The project has been approved by the ethics committee of our institution. DISCUSSION: The role of fluid retention in OSA has been known for several decades. The use of diuretics are well established in treating hypertension but have never been appropriately tested for sleep apnea. As well as testing the efficacy of these drugs, this study will help to understand the mechanisms that link hypertension and sleep apnea and their treatment. TRIAL REGISTRATION: ClinicalTrials.gov: NCT01896661.

Ciolac, Emmanuel G.; Guimarães, Guilherme V.; D´ávila, Veridiana M.; Bortolotto, Luiz A.; Doria, Egídio L.; Bocchi, Edimar A. (2008):

Acute aerobic exercise reduces 24-h ambulatory blood pressure levels in long-term-treated hypertensive patients.

In: *Clinics (Sao Paulo)* 63 (6), S. 753–758. DOI: 10.1590/S1807-59322008000600008.

Abstract:

BACKGROUND:

Even with anti-hypertensive therapy, it is difficult to maintain optimal systemic blood pressure values in hypertensive patients. Exercise may reduce blood pressure in untreated hypertensive, but its effect when combined with long-term anti-hypertensive therapy remains unclear. Our purpose was to evaluate the acute effects of a single session of aerobic exercise on the blood pressure of long-term-treated hypertensive patients.

METHODS:

Fifty treated hypertensive patients (18/32 male/female; 46.5+/-8.2 years; Body mass index: 27.8+/-4.7 kg/m(2)) were monitored for 24 h with respect to ambulatory (A) blood pressure after an aerobic exercise session (post-exercise) and a control period (control) in random order. Aerobic exercise consisted of 40 minutes on a cycle-ergometer, with the mean exercise intensity at 60% of the patient's reserve heart rate.

RESULTS:

Post-exercise ambulatory blood pressure was reduced for 24 h systolic (126+/-8.6 vs. 123.1+/-8.7 mmHg, p=0.004) and diastolic blood pressure (81.9+/-8 vs. 79.8+/-8.5 mmHg, p=0.004), daytime diastolic blood pressure (85.5+/-8.5 vs. 83.9+/-8.8 mmHg, p=0.04), and nighttime S (116.8+/-9.9 vs. 112.5+/-9.2 mmHg, p<0.001) and diastolic blood pressure (73.5+/-8.8 vs. 70.1+/-8.4 mmHg, p<0.001). Post-exercise daytime systolic blood pressure also tended to be reduced (129.8+/-9.3 vs. 127.8+/-9.4 mmHg, p=0.06). These post-exercise decreases in ambulatory blood pressure increased the percentage of patients displaying normal 24h systolic blood pressure (58% vs. 76%, p=0.007), daytime systolic blood pressure (68% vs. 82%, p=0.02), and nighttime diastolic blood pressure (56% vs. 72%, p=0.02). Nighttime systolic blood pressure also tended to increase (58% vs. 80%, p=0.058).

CONCLUSION:

A single bout of aerobic exercise reduced 24h ambulatory blood pressure levels in long-term-treated hypertensive patients and increased the percentage of patients reaching normal ambulatory blood pressure values. These effects suggest that aerobic exercise may have a potential role in blood pressure management of long-term-treated hypertensive.

Ciolac, Emmanuel G.; Guimarães, Guilherme V.; Bortolotto, Luiz A.; Doria, Egidio L.; Bocchi, Edimar A. (2009):

Acute effects of continuous and interval aerobic exercise on 24-h ambulatory blood pressure in long-term treated hypertensive patients.

In: *Int J Cardiol* 133 (3), S. 381–387.

Abstract:

BACKGROUND:

Despite antihypertensive therapy, it is difficult to maintain optimal systemic blood pressure (BP) values in hypertensive patients (HPT). Exercise may reduce BP in untreated HPT. However, evidence regarding its effect in long-term antihypertensive therapy is lacking. Our purpose was to evaluate the acute effects of 40-minute continuous (CE) or interval exercise (IE) using cycle ergometers on BP in long-term treated HPT.

METHODS:

Fifty-two treated HPT were randomized to CE (n=26) or IE (n=26) protocols. CE was performed at 60% of reserve heart rate (HR). IE alternated consecutively 2 min at 50% reserve HR with 1 min at 80%. Two 24-h ambulatory BP monitoring were made after exercise (postexercise) or a nonexercise control period (control) in random order.

RESULTS:

CE reduced mean 24-h systolic (S) BP (2.6+/-6.6 mm Hg, p=0.05) and diastolic (D) BP (2.3+/-4.6, p=0.01), and nighttime SBP (4.8+/-6.4, p<0.001) and DBP (4.6+/-5.2 mm Hg, p=0.001). IE reduced 24-h SBP (2.8+/-6.5, p=0.03) and nighttime SBP (3.4+/-7.2, p=0.02), and tended to reduce nighttime DBP (p=0.06). Greater reductions occurred in higher BP levels. Percentage of normal ambulatory BP values increased after CE (24-h: 42% to 54%; daytime: 42% to 61%; nighttime: 61% to 69%) and IE (24-h: 31% to 46%; daytime: 54% to 61%; nighttime: 46% to 69%).

CONCLUSION:

CE and IE reduced ambulatory BP in treated HPT, increasing the number of patients reaching normal ambulatory BP values. These effects suggest that continuous and interval aerobic exercise may have a role in BP management in treated HPT.

Cippa, M. A.; Baumann, C. R.; Siccoli, M. M.; Bassetti, C. L.; Poryazova, R.; Werth, E. (2013):

Actigraphic assessment of periodic leg movements in patients with restless legs syndrome.

In: *J Sleep Res* (0962-1105 (Linking)). DOI: 10.1111/jsr.12053.

Abstract:

The diagnosis of restless legs syndrome (RLS) relies upon diagnostic criteria which are based on history only, and dopaminergic treatment is not normally the first choice of treatment for all patients. It would be worthwhile to identify patients non-responsive to dopaminergic treatment beforehand, because they may suffer from a restless legs-like syndrome and may require alternative treatment. We included retrospectively 24 adult patients fulfilling the four essential criteria for restless legs and 12 age-matched healthy controls. They were investigated by ambulatory actigraphy from both legs over three nights, and patients started treatment with dopamine agonists after this diagnostic work-up. We examined 12 responders to dopaminergic treatment and 12 non-responders and studied the association between response to dopaminergic treatment and the periodic limb movement index (PLMI) as assessed with actigraphy. Demographic characteristics, excessive daytime sleepiness and fatigue at baseline were similar in all three groups. Baseline RLS severity was similar between responders and non-responders [International Restless Legs Severity Scale (IRLS): 25 +/- 9 and 24 +/- 8]. Group comparisons of PLMI before treatment initiation showed significant differences between the three groups. Post-hoc pairwise comparisons revealed that healthy controls had significantly lower PLMI (4.9 +/- 4.5) than responders (29.3 +/- 22.7) and non-responders (13.3 +/- 11.2). Similarly, the PLMI in responders was lower than in non-responders. PLMI day-to-day variability did not differ between responders and non-responders and there was no correlation between treatment effect, as assessed by the decrease of the IRLS and baseline PLMI. Our retrospective study indicates that actigraphy to assess periodic limb movements may contribute to a better diagnosis of dopamine-responsive restless legs syndrome

Claessens, Brigitte J. C.; van Eerde, Wendelien; Rutte, Christel G.; Roe, Robert A. (2010):

Things to do today...: A daily diary study on task completion at work.

In: *Applied Psychology* 59 (2), S. 273–295.

Abstract:

Relatively little is known about how goals in complex jobs are translated into action and how they are completed in real life settings. This study addressed the question to what extent planned work may actually be completed on a daily basis. The completion of daily work goals was studied in a sample of 878 tasks identified by 29 R&D engineers with the help of a daily diary. Multilevel analysis was used to analyse the joint effect of task attributes, perceived job characteristics, and personality attributes on the completion of planned work goals. At the level of task attributes, we found that priority, urgency, and lower importance were related to task completion, and at the individual level, conscientiousness, emotional stability, and time management training. Task completion was not related to task attractiveness, workload, job autonomy, planning, or perceived control of time.

Clarkson, Gail P.; Hodgkinson, Gerard P. (2007):

What can occupational stress diaries achieve that questionnaires can't?

In: *Personnel Review* 36 (5), S. 684–700.

Abstract:

Purpose – The paper aims to demonstrate the efficacy of the qualitative occupational stress diary as a means by which to attain additional depth of insight into the way people experience stress, to foster individual reflection and self-assessment, and as an aid to the development of context sensitive interventions. Design/methodology/approach – Using a free response format, a critical incident diary was completed by 15 clerical workers, employed in a higher education organisation, over five consecutive working days. Findings – The factors constituting causes and consequences of occupational stress were cognitively framed differently from one day to the next and it is unlikely that these insights would have been attained had we employed a series of preformed quantitative response scales. The diary facilitated self-reflection and was reported to have cathartic qualities. Research implications/limitations – There is a need for context specific, tailored intervention measures. Accumulation of corroborating descriptions of how people respond to specific stressors will contribute to the development of such measures. The work reported now needs to be extended to larger groups and over longer periods to identify the most frequently used coping strategies, and which are most efficacious in a given situation. Practical implications – The qualitative occupational stress diary is a simple but powerful self-reflective tool, which may lead to therapeutic outcomes. Originality/value – A growing number of researchers are critical of the practical influence of quantitative measures of occupational stress and coping. The study illustrates how the qualitative occupational stress diary might usefully complement traditional methods for research and intervention purposes.

Clays, E.; De, Bacquer D.; Van, Herck K.; De, Backer G.; Kittel, F.; Holtermann, A. (2012):

Occupational and leisure time physical activity in contrasting relation to ambulatory blood pressure.

In: *BMC Public Health* 12 (1), S. 1002. DOI: 10.1186/1471-2458-12-1002.

Abstract:

ABSTRACT: BACKGROUND: While moderate and vigorous leisure time physical activities are well documented to decrease the risk for cardiovascular disease, several studies have demonstrated an increased risk for cardiovascular disease in workers with high occupational activity. Research on the underlying causes to the contrasting effects of occupational and leisure time physical activity on cardiovascular health is lacking. The aim of this study was to examine the relation of objective and self-report measures of occupational and leisure time physical activity with 24-h ambulatory systolic blood pressure (BP). METHODS: Results for self-reported physical activity are based on observations in 182 workers (60% male, mean age 51 years), while valid objective physical activity data were available in 151 participants. The usual level of physical activity was assessed by 5 items from the Job Content Questionnaire (high physical effort, lifting heavy loads, rapid physical activity, awkward body positions and awkward positions of head or arms at work) and one item asking about the general level of physical activity during non-working time. On a regular working day, participants wore an ambulatory BP monitor and an accelerometer physical activity monitor during 24 h. Associations were examined by means of Analysis of Covariance. RESULTS: Workers with an overall high level of self-reported occupational physical activity as well as those who reported to often lift heavy loads at work had a higher mean systolic BP at work, at home and during sleep. However, no associations were observed between objectively measured occupational physical activity and BP. In contrast, those with objectively measured high proportion of moderate and vigorous leisure time physical activity had a significantly lower mean systolic BP during daytime, while no differences were observed according to self-reported level of leisure time physical activity. CONCLUSIONS: These findings suggest that workers reporting static occupational physical activities, unlike general physically demanding tasks characterized by dynamic movements of large muscle groups, are related to a higher daily systolic BP, while high objective levels of moderate and vigorous leisure time physical activity are related to lower

daytime systolic BP. Ambulatory systolic BP may be a physiological explanatory factor for the contrasting effects of occupational and leisure time physical activity

Clays, Els; Leynen, Francoise; Bacquer, Dirk; Kornitzer, Marcel; Kittel, France; Karasek, Robert; Backer, Guy (2007):

High job strain and ambulatory blood pressure in middle-aged men and women from the Belgian job stress study.

In: *Journal of Occupational and Environmental Medicine* 49 (4), S. 360–367.

Abstract:

OBJECTIVE:

The aim of this study was to assess whether job strain is associated with 24-hour ambulatory blood pressure measurements within a subsample of the Belgian Job Stress Project (BELSTRESS) population.

METHODS:

A group of 89 middle-aged male and female workers perceiving high job strain and an equally large group of workers perceiving no high job strain wore an ambulatory blood pressure monitor for 24 hours on a regular working day.

RESULTS:

Mean ambulatory blood pressure at work, at home, and while asleep was significantly higher in workers with job strain as compared with others. The associations between job strain and ambulatory blood pressure were independent from the covariates.

CONCLUSIONS:

Within this study, high job strain was an important independent risk factor for higher ambulatory blood pressure at work, at home, and during sleep in a group of men and women.

Clayton, Anita H. (2012):

eDiary and Female Sexual Distress Scale in evaluating distress in hypoactive sexual desire disorder (HSDD).

In: *Journal of Sexual Medicine* 9 (7). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-17967-036&site=ehost-live.

Abstract:

Assessment of sexual distress is an integral component in the diagnosis of female sexual dysfunction, and is measured as a patient-reported outcome. Three prospective, non-treatment, 4-week validation studies, two North American (N = 220; N = 255) and one European (N = 253), evaluated sexually related distress in women aged 18–65 years with generalized, acquired hypoactive sexual desire disorder (HSDD), other types of female sexual dysfunction (FSD), and no FSD, as determined with a standard diagnostic interview by an expert clinician. Instruments evaluated include the 12-item Female Sexual Distress Scale (FSDS), the 13-item FSDS Revised (FSDS-R), and a single question about sexually related distress measured using a daily electronic diary (eDiary). The completion rate was >98% in all three studies, and 94% of the women recorded data at a >75% compliance rate. All three measures demonstrated significantly greater distress in women with HSDD when compared with women with no FSD. Levels of distress in women with other forms of FSD were comparable to the women with HSDD. In addition, a floor effect in improvement is also limiting. The short study period (4 weeks) is the primary limitation of this study. Discriminant validity was demonstrated in that all three measures confirmed more distress in women with HSDD vs. women with no FSD. Weekly and monthly measures showed a higher frequency of distress and less variability than daily measures. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Cleland, Verity; Crawford, David; Baur, Louise A.; Hume, Clare; Timperio, Anna; Salmon, Jo (2008):

A prospective examination of children's time spent outdoors, objectively measured physical activity and overweight.

In: *International Journal of Obesity* 32 (11), S. 1685–1693.

Abstract:

OBJECTIVE:

This study aimed to determine whether time spent outdoors was associated with objectively measured physical activity, body mass index (BMI) z-score and overweight in elementary-school aged children, cross-sectionally and prospectively over 3 years.

METHODS:

Three-year cohort study with data collected during 2001 and 2004. Nineteen randomly selected state elementary schools across Melbourne, Australia. One hundred and eighty eight 5-6-year-old and 360 10-12-year-old children. Baseline parent reports of children's time spent outdoors during warmer and cooler months, on weekdays and weekends. At baseline and follow-up, children's moderate and vigorous physical activity (MVPA) was objectively assessed by accelerometry, and BMI z-score and overweight was calculated from measured height and weight.

RESULTS:

Cross-sectionally, each additional hour outdoors on weekdays and weekend days during the cooler months was associated with an extra 27 min week(-1) MVPA among older girls, and with an extra 20 min week(-1) MVPA among older boys. Longitudinally, more time outdoors on weekends predicted higher MVPA on weekends among older girls and boys (5 min week(-1)). The prevalence of overweight among older children at follow-up was 27-41% lower among those spending more time outdoors at baseline.

CONCLUSION:

Encouraging 10-12-year-old children to spend more time outdoors may be an effective strategy for increasing physical activity and preventing increases in overweight and obesity. Intervention research investigating the effect of increasing time outdoors on children's physical activity and overweight is warranted.

Clements, C. M.; Buller, M. J.; Welles, A. P.; Tharion, W. J. (2012):

Real time gait pattern classification from chest worn accelerometry during a loaded road march.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 364–367. DOI: 10.1109/EMBC.2012.6345944.

Abstract:

Accelerometers, whether in smart phones or wearable physiological monitoring systems are becoming widely used to identify movement and activities of free living individuals. Although there has been much work in applying computationally intensive methods to this problem, this paper focuses on developing a real-time gait analysis approach that is intuitive, requires no individual calibration, can be extended to complex gait analysis, and can readily be adopted by ambulatory physiological monitors for use in real time. Chest-mounted tri-axial accelerometry data were collected from sixty-one male U.S. Army Ranger candidates engaged in an 8 or 12 mile loaded (35 Kg packs) timed road march. The pace of the road march was such that volunteers needed to both walk and run. To provide intuitive features we examined the periodic patterns generated from 4s periods of movement from the vertical and longitudinal accelerometer axes. Applying the "eigenfaces" face recognition approach we used Principal Components Analysis to find a single basis vector from 10% of the data (n=6) that could distinguish patterns of walk and run with a classification rate of 95% and 90% (n=55) respectively. Because these movement features are based on a gridded frequency count, the method is applicable for use by body-worn microprocessors

Cleveland, H. Harrington; Harris, Kitty S. (2010):

The role of coping in moderating within-day associations between negative triggers and substance use cravings: A daily diary investigation.

In: *Addict Behav* 35 (1), S. 60–63.

Abstract:

To address the lack of research examining within-person processes associated with the maintenance of abstinence from substance use, this study examines both associations between negative affect and social experiences and same-day levels of substance use cravings among college students in 'Twelve-Step' substance abuse recovery and the role of coping strategies in moderating these within-day associations. The sample consisted of 1222 end-of-day reports made by 55 recovering college students, 39 males and 16 females. Findings include that daily cravings were predicted by same-day negative affect and each of four negative social experiences. Moreover, each of these within-day associations was moderated by individuals' levels of avoidance coping. In contrast, problem-solving coping only moderated the associations between negative affect and cravings.

These findings document a within-day mechanism through which coping strategies, especially avoidance coping, may influence daily variation in cravings and in turn affect abstinence.

Cliff, D. P.; Okely, A. D.; Burrows, T. L.; Jones, R. A.; Morgan, P. J.; Collins, C. E.; Baur, L. A. (2013):

Objectively measured sedentary behavior, physical activity, and plasma lipids in overweight and obese children.

In: *Obesity (Silver.Spring)* 21 (2), S. 382–385. DOI: 10.1002/oby.20005.

Abstract:

OBJECTIVE: This study examines the associations between objectively measured sedentary behavior, light physical activity (LPA), and moderate-to-vigorous physical activity (MVPA), and plasma lipids in overweight and obese children. DESIGN AND METHODS: Cross-sectional analyses were conducted among 126 children aged 5.5-9.9 years. Sedentary behavior, LPA, and MVPA were assessed using accelerometry. Fasting blood samples were analyzed for plasma lipids (high-density lipoprotein cholesterol [HDL-C], low-density lipoprotein cholesterol [LDL-C], total cholesterol [TC], and triglycerides [TG]). RESULTS: MVPA was not related to plasma lipids (P > 0.05). Independent of age, sex, energy intake, and waist circumference z-score, sedentary behavior and LPA were associated with HDL-C (beta = -0.23, 95% CI -0.42 to -0.04, P = 0.020; beta = 0.20, 95% CI 0.14 to 0.39, P = 0.036, respectively). The strength of the associations remained after additionally adjusting for MVPA (sedentary behavior: beta = -0.22, 95% CI -0.44 to 0.006, P = 0.056; LPA: beta = 0.19, 95% CI -0.005 to 0.38, P = 0.056, respectively). CONCLUSION: Substituting at least LPA for sedentary time may contribute to the development of healthy HDL-C levels among overweight and obese children, independent of their adiposity. Comprehensive prevention and treatment strategies to improve plasma HDL-C among overweight and obese children should target reductions in total sedentary time and promote the benefits of LPA, in addition to promoting healthy levels of adiposity, healthy dietary behaviors, and MVPA

Cocker, K.; Cardon, G.; Bourdeaudhuij, I. (2006):

Validity of the inexpensive Stepping Meter in counting steps in free living conditions: a pilot study.

In: *British Journal of Sports Medicine* 40 (8), S. 714–716. DOI: 10.1136/bjsm.2005.025296.

Abstract:

OBJECTIVES\r\nTo evaluate if inexpensive Stepping Meters are valid in counting steps in adults in free living conditions.\r\nMETHODS\r\nFor six days, 35 healthy volunteers wore a criterion Yamax Digiwalker and five Stepping Meters every day until all 973 pedometers had been tested. Steps were recorded daily, and the differences between counts from the Digiwalker and the Stepping Meter were expressed as a percentage of the valid value of the Digiwalker step counts. The criterion used to determine if a Stepping Meter was valid was a maximum deviation of 10% from the Digiwalker step counts.\r\nRESULTS\r\nA total of 252 (25.9%) Stepping Meters met the criterion, whereas 74.1% made an overestimation or underestimation of more than 10%. In more than one third (36.6%) of the invalid Stepping Meters, the deviation was greater than 50%. Most (64.8%) of the invalid pedometers overestimated the actual steps taken.\r\nCONCLUSIONS\r\nInexpensive Stepping Meters cannot be used in community interventions as they will give participants the wrong message.

Cohall, Damian H.; Scantlebury-Manning, Thea; James, Stephen; Hall, Kiana; Ferrario, Carlos M. (2014):

Renin-angiotensin-aldosterone system gender differences in an Afro-Caribbean population.

In: *J Renin Angiotensin Aldosterone Syst. DOI:* 10.1177/1470320314523659.

Abstract:

Hypothesis / introduction:Prior studies have denoted gender differences in the expression and therapeutic benefits of hypertension treatment and clinical outcomes. This study documents for the first time gender differences in the expression of blood and urine angiotensin peptides in normotensive Afro-Caribbean Barbadians (25 males; 26 females). MATERIALS AND METHODS: Participants provided clinical anthropometric measurements, 24h ambulatory blood pressure and urine collections, and a blood sample for measurements of angiotensin peptides. RESULTS: Plasma renin activity ranged between 0.00 and 3.00 ng/ml/h. Plasma and urinary Ang II were comparable in both genders, while urinary Ang-(1-7) was greater in females ($p<0.05$). Urinary Ang-(1-7) and office systolic blood pressure correlated significantly in females only ($p<0.01$), while plasma Ang-(1-7) and

Ang II correlated significantly in both genders (p>0.05). CONCLUSIONS: A shift in the balance between Ang II and Ang-(1-7) and their respective pressor and depressor axes might be markers of the cardio-renal protective mechanisms that may be present in females of Afro-Caribbean descent.

Cohen, D. L.; Bowler, A.; Fisher, S. A.; Norris, A.; Newberg, A.; Rao, H. et al. (2013):

Lifestyle Modification in Blood Pressure Study II (LIMBS): Study protocol of a randomized controlled trial assessing the efficacy of a 24week structured yoga program versus lifestyle modification on blood pressure reduction.

In: *Contemp.Clin.Trials* 36 (1), S. 32–40. DOI: 10.1016/j.cct.2013.05.010.

Abstract:

Hypertension is a major public health issue affecting 68million adults in the United States. Lifestyle modifications including complementary therapies such as the movement based mind body practice of yoga have become increasingly popular in the United States and have been considered as a potential alternative to medication in blood pressure reduction. We completed a pilot study in 2009 which showed meaningful decreases in 24-hour ambulatory blood pressure readings after a 12week period of yoga participation. Based on data from our pilot study we are now completing The Lifestyle Modification and Blood Pressure Study (LIMBS II) which is a phase 2 randomized controlled trial designed to determine the effects of yoga therapy and enhanced lifestyle modification on lowering blood pressure in pre-hypertensive and stage 1 hypertensive subjects. Using 24-hour ambulatory blood pressure monitoring, LIMBS II aims to compare the effects on blood pressure reduction in subjects randomized for 24weeks to one of the three following groups: yoga therapy versus blood pressure education program (sodium restriction and walking program) versus a combination program that involves components of both groups. LIMBS II will also examine the impact that changes in blood pressure have on cerebral blood flow. If successful, the LIMBS study will determine if yoga therapy combined with enhanced lifestyle modification will result in clinically meaningful decreases in blood pressure and thus can be implemented as an alternative to drug therapy for patients with prehypertension and stage 1 hypertension

Cohen, Lawrence H.; Gunthert, Kathleen C.; Butler, Andrew C.; Parrish, Brendt P.; Wenze, Susan J.; Beck, Judith S. (2008):

Negative affective spillover from daily events predicts early response to cognitive therapy for depression.

In: *Journal of Consulting and Clinical Psychology* 76 (6), S. 955.

Abstract:

This study evaluated the predictive role of depressed outpatients' (N = 62) affective reactivity to daily stressors in their rates of improvement in cognitive therapy (CT). For 1 week before treatment, patients completed nightly electronic diaries that assessed daily stressors and negative affect (NA). The authors used multilevel modeling to compute each patient's within-day relationship between daily stressors and daily NA (within-day reactivity), as well as the relationship between daily stressors and next-day NA (next-day reactivity; affective spillover). In growth model analyses, the authors evaluated the predictive role of patients' NA reactivity in their early (Sessions 1-4) and late (Sessions 5-12) response to CT. Within-day NA reactivity did not predict early or late response to CT. However, next-day reactivity predicted early response to CT, such that patients who had greater NA spillover in response to negative events had a slower rate of symptom change during the first 4 sessions. Affective spillover did not influence later response to CT. The findings suggest that depressed patients who have difficulty bouncing back the next day from their NA reactions to a relative increase in daily negative events will respond less quickly to the early sessions of CT.

Cohn, Amy M.; Hunter-Reel, Dorian; Hagman, Brett T.; Mitchell, Jessica (2011):

Promoting behavior change from alcohol use through mobile technology: The future of ecological momentary assessment.

In: *Alcoholism: Clinical and Experimental Research* 35 (12), S. 2209–2215. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-27300-013&site=ehost-live;amycohn@usf.edu.

Abstract:

BACKGROUND:

Interactive and mobile technologies (i.e., smartphones such as Blackberries, iPhones, and palm-top computers) show promise as an efficacious and cost-effective means of communicating health-behavior risks, improving public health outcomes, and accelerating behavior change. The present study was conducted as a "needs assessment" to examine the current available mobile smartphone applications (e.g., apps) that utilize principles of ecological momentary assessment (EMA)-daily self-monitoring or near real-time self-assessment of alcohol-use behavior-to promote positive behavior change, alcohol harm reduction, psycho-education about alcohol use, or abstinence from alcohol.

METHODS:

Data were collected and analyzed from iTunes for Apple iPhone(©) . An inventory assessed the number of available apps that directly addressed alcohol use and consumption, alcohol treatment, or recovery, and whether these apps incorporated empirically based components of alcohol treatment.

RESULTS:

Findings showed that few apps addressed alcohol-use behavior change or recovery. Aside from tracking drinking consumption, a minority utilized empirically based components of alcohol treatment. Some apps claimed they could serve as an intervention; however, no empirical evidence was provided.

CONCLUSIONS:

More studies are needed to examine the efficacy of mobile technology in alcohol intervention studies. The large gap between availability of mobile apps and their use in alcohol treatment programs indicates several important future directions for research.

Coifman, K. G.; Berenson, K. R.; Rafaeli, E.; Downey, G. (2012):

From Negative to Positive and Back Again: Polarized Affective and Relational Experience in Borderline Personality Disorder.

In: *J Abnorm.Psychol.* (0021-843X (Linking)). DOI: 10.1037/a0028502.

Abstract:

A core feature of borderline personality disorder (BPD) is the tendency to evaluate one's experience with extreme polarity (i.e., feeling all good or all bad; Beck, Freeman, & Davis, 2004; Kernberg, 1975; Linehan, 1993). In this investigation, we examined the polarity of within-person reports of experience in individuals with BPD and healthy adults over the course of a 21-day, experience-sampling diary. We applied multilevel modeling techniques (Rafaeli, Rogers, & Ravelle, 2007) to capture the within-person covariance of momentary reports of negative and positive features of experience, either affective or relational. Our data indicated significantly greater polarity in reports of affective and relational experiences in BPD that increased during heightened interpersonal stress. We also examined the association of affective and relational polarity to reports of impulsive behaviors (e.g., self-injury, substance use, etc.) and found evidence that increased polarity in reports of affective (in low-stress contexts) and relational experiences (in high-stress contexts) predicted increased rate of reports of impulsive behaviors. Together, these data present strong evidence for the role of polarized experiences in BPD, and have implications for the treatment of individuals with this disorder. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Coleman, Karen J.; Rosenberg, Dori E.; Conway, Terry L.; Sallis, James F.; Saelens, Brian E.; Frank, Lawrence D.; Cain, Kelli (2008):

Physical activity, weight status, and neighborhood characteristics of dog walkers.

In: *Prev Med* 47 (3), S. 309–312.

Abstract:

OBJECTIVE:

This study examined how demographics, physical activity, weight status, and neighborhood characteristics varied among households with and without dogs.

METHOD:

Participants aged 20 to 65 years (n=2199, 52% male, 75% white, mean age=45) were recruited from 32 neighborhoods in the Seattle, WA and Baltimore, MD regions during 2002-2005. Dog ownership, dog walking, education, height, weight, and family income were self-reported. Minutes of moderate to vigorous physical activity (MVPA) were measured objectively by 7-day accelerometry.

RESULTS:

Dog walking was associated with a higher proportion of participants who met national recommendations for MVPA (53%) when compared to those who had but did not walk their dog (33%) and to non-dog owners (46%). There were significantly fewer obese dog walkers (17%) when compared to both owners who did not walk their dogs (28%) and non-owners (22%). Dog owners who walked their dogs were more likely to live in high-walkable neighborhoods when compared to dog owners who did not walk their dogs.

CONCLUSION:

Dog walking may promote physical activity and contribute to weight control. Dog walking appears to be a mechanism by which residents of high-walkable neighborhoods obtain their physical activity.

Colley, Rachel C.; Garriguet, Didier; Janssen, Ian; Craig, Cora L.; Clarke, Janine; Tremblay, Mark S. (2011):

Physical activity of Canadian adults: accelerometer results from the 2007 to 2009 Canadian Health Measures Survey.

In: *Health Rep* 22 (1), S. 7–14.

Abstract:

BACKGROUND: Rising obesity rates and declining fitness levels have increased interest in understanding what underlies these trends. This article presents the first directly measured data on physical activity and sedentary behaviour on a nationally representative sample of Canadians aged 20 to 79 years. DATA AND METHODS: Data are from the 2007 to 2009 Canadian Health Measures Survey (CHMS). Physical activity was measured using accelerometry. Data are presented as time spent in sedentary, light, moderate and vigorous intensity movement as well as steps accumulated per day. RESULTS: An estimated 15% of Canadian adults accumulate 150 minutes of moderate-to-vigorous physical activity (MVPA) per week; 5% accumulate 150 minutes per week as at least 30 minutes of MVPA on 5 or more days a week. Men are more active than women and MVPA declines with increasing age and adiposity. Canadian adults are sedentary for approximately 9.5 hours per day (69% of waking hours). Men accumulate an average of 9,500 steps per day and women, 8,400 steps per day. The 10,000-steps-per-day target is achieved by 35% of adults. INTERPRETATION: Before the CHMS, objective measures of physical activity and sedentary behaviour were not available for a representative sample of Canadians. The findings indicate that 85% of adults are not active enough to meet Canada's new physical activity recommendation.

Colley, Rachel C.; Harvey, Alysha; Grattan, Kimberly P.; Adamo, Kristi B. (2014):

Impact of accelerometer epoch length on physical activity and sedentary behaviour outcomes for preschool-aged children.

In: *Health Rep* 25 (1), S. 3–9.

Abstract:

BACKGROUND: The Canadian Health Measures Survey uses accelerometry to collect physical activity and sedentary behaviour data. Between cycles 2 and 3, a transition was made from 60-second to 15-second epochs in accelerometry data for children aged 3 to 5. This study examines the impact of epoch length on physical activity and sedentary behaviour outcomes. DATA AND METHODS: Twenty-nine children aged 3 to 5 wore two accelerometers at the same time, one initialized to collect data in 60-second epochs, and the other, in 15-second epochs. Comparisons between epoch settings were made for several physical activity variables. RESULTS: Compared with the 60-second epoch setting, the 15-second setting captured more moderate-to-vigorous physical activity (MVPA) and sedentary time, but fewer steps and less light and total physical activity. The correlation between epoch settings was high for all variables except steps. INTERPRETATION: The epoch length used in accelerometer data collection affects physical activity and sedentary behaviour data for preschool-aged children.

Colley, R. C.; Wong, S. L.; Garriguet, D.; Janssen, I.; Gorber, S. C.; Tremblay, M. S. (2012):

Physical activity, sedentary behaviour and sleep in Canadian children: parent-report versus direct measures and relative associations with health risk.

In: *Health Rep* 23 (2), S. 45–52. Online verfügbar unter PM:22866540.

Abstract:

BACKGROUND: The accurate measurement of time devoted to physical activity, sedentary pursuits and sleep is difficult and varies considerably between surveys. This has implications for population surveillance and understanding how these variables relate to health. METHODS: This sample of children (n = 878) was from the 2007 to 2009 Canadian Health Measures Survey. Moderate- to-vigorous physical activity (MVPA), sedentary behaviour and sleep duration were assessed using both a questionnaire and an accelerometer. This article compared parent-reported and directly measured physical activity, sedentary behaviour and sleep, and examined their associations, alone or in combination, with selected health markers in children aged 6 to 11. RESULTS: According to parent reports, the children in this study had an average of 105 minutes of MVPA, 2.5 hours of screen time and 9.7 hours of sleep per day; accelerometers recorded 63 minutes of MVPA, 7.6 hours of sedentary time and 10.1 hours of sleep per day. MVPA, measured by parent-report or accelerometry, was significantly associated with body mass index. In a regression model, directly measured MVPA and sleep were significantly associated with body mass index, and directly measured MVPA was significantly associated with waist circumference. Parent-reported screen time approached a significant association with body mass index. INTERPRETATION: Time estimates and associations with health markers varied between parent-reported and directly measured physical activity, sedentary behaviour and sleep in children. These differences are important to understand before the two measurement techniques can be used interchangeably in research and health surveillance

Collings, P. J.; Brage, S.; Ridgway, C. L.; Harvey, N. C.; Godfrey, K. M.; Inskip, H. M. et al. (2013):

Physical activity intensity, sedentary time, and body composition in preschoolers.

In: *Am J Clin.Nutr.* 97 (5), S. 1020–1028. DOI: 10.3945/ajcn.112.045088.

Abstract:

BACKGROUND: Detailed associations between physical activity (PA) subcomponents, sedentary time, and body composition in preschoolers remain unclear. OBJECTIVE: We examined the magnitude of associations between objectively measured PA subcomponents and sedentary time with body composition in 4-y-old children. DESIGN: We conducted a cross-sectional study in 398 preschool children recruited from the Southampton Women's Survey. PA was measured by using accelerometry, and body composition was measured by using dual-energy X-ray absorptiometry. Associations between light physical activity, moderate physical activity (MPA), vigorous physical activity (VPA), and moderate-to-vigorous physical activity (MVPA) intensity; sedentary time; and body composition were analyzed by using repeated-measures linear regression with adjustment for age, sex, birth weight, maternal education, maternal BMI, smoking during pregnancy, and sleep duration. Sedentary time and PA were also mutually adjusted for one another to determine whether they were independently related to adiposity. RESULTS: VPA was the only intensity of PA to exhibit strong inverse associations with both total adiposity [P < 0.001 for percentage of body fat and fat mass index (FMI)] and abdominal adiposity (P = 0.002 for trunk FMI). MVPA was inversely associated with total adiposity (P = 0.018 for percentage of body fat; P = 0.022 for FMI) but only because of the contribution of VPA, because MPA was unrelated to fatness (P >/= 0.077). No associations were shown between the time spent sedentary and body composition (P >/= 0.11). CONCLUSIONS: In preschoolers, the time spent in VPA is strongly and independently associated with lower adiposity. In contrast, the time spent sedentary and in low-to-moderate-intensity PA was unrelated to adiposity. These results indicate that efforts to challenge pediatric obesity may benefit from prioritizing VPA

Collins, R. Lorraine; Vincent, Paula C.; Yu, Jihnhee; Liu, Liu; Epstein, Leonard H. (2014):

A Behavioral Economic Approach to Assessing Demand for Marijuana.

In: *Exp Clin Psychopharmacol. DOI:* 10.1037/a0035318.

Abstract:

In the United States, marijuana is the most commonly used illicit drug. Its prevalence is growing, particularly among young adults. Behavioral economic indices of the relative reinforcing efficacy (RRE) of substances have been used to examine the appeal of licit (e.g., alcohol) and illicit (e.g., heroin) drugs. The present study is the first to use an experimental, simulated purchasing task to examine the RRE of marijuana. Young-adult (M age = 21.64 years) recreational marijuana users (N = 59) completed a computerized marijuana purchasing task designed to generate demand curves and the related RRE indices (e.g., intensity of demand-purchases at lowest price; Omax-max. spent on marijuana; Pmax-price at which marijuana expenditure is max). Participants "purchased" high-grade marijuana across 16 escalating prices that ranged from $0/free to $160/joint. They also provided 2 weeks of real-time, ecological momentary assessment reports on their marijuana use. The purchasing task generated multiple RRE indices. Consistent with research on other substances, the demand for marijuana was inelastic at lower prices but became elastic at higher prices, suggesting that increases in the price of marijuana could lessen its use. In regression analyses, the intensity of demand, Omax, and Pmax, and elasticity each accounted for significant variance in real-time marijuana use. These results provide support for the validity of a simulated marijuana purchasing task to examine marijuana's reinforcing efficacy. This study highlights the value of applying a behavioral economic framework to young-adult marijuana use and has

implications for prevention, treatment, and policies to regulate marijuana use. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Collip, D.; Habets, P.; Marcelis, M.; Gronenschild, E.; Lataster, T.; Lardinois, M. et al. (2012):

Hippocampal volume as marker of daily life stress sensitivity in psychosis.

In: *Psychol.Med.* (0033-2917 (Linking)), S. 1–11. DOI: 10.1017/S003329171200219X.

Abstract:

BACKGROUND: Reduced hippocampal size and increased stress sensitivity are associated with psychotic disorder and familial risk for psychosis. However, to what degree the hippocampus is implicated in daily life stress reactivity has not yet been examined. The current study investigated (i) whether familial risk (the contrast between controls, patients and siblings of patients) moderated the relationship between hippocampal volume (HV) and emotional daily stress reactivity and (ii) whether familial risk (the contrast between controls and siblings of patients) moderated the relationship between HV and cortisol daily stress reactivity. Method T1-weighted magnetic resonance imaging (MRI) scans were acquired from 20 patients with schizophrenia, 37 healthy siblings with familial risk for schizophrenia and 32 controls. Freesurfer 5.0.0 was used to measure HV. The experience sampling method (ESM), a structured momentary assessment technique, was used to assess emotional stress reactivity, that is the effect of momentary stress on momentary negative affect (NA). In addition, in the control and sibling groups, cortisol stress reactivity was assessed using momentary cortisol levels extracted from saliva. RESULTS: Multilevel linear regression analyses revealed a significant three-way interaction between group, HV and momentary stress in both the model of NA and the model of cortisol. Increased emotional stress reactivity was associated with smaller left HV in patients and larger total HV in controls. In line with the results in patients, siblings with small HV demonstrated increased emotional and cortisol stress reactivity compared to those with large HV. CONCLUSIONS: HV may index risk and possibly disease-related mechanisms underlying daily life stress reactivity in psychotic disorder

Collip, D.; Oorschot, M.; Thewissen, V.; van Os, J.; Bentall, R.; Myin-Germeys, I. (2011):

Social world interactions: how company connects to paranoia.

In: *Psychological Medicine* 41 (05), S. 911–921.

Abstract:

BACKGROUND:

Experimental studies have indicated that social contact, even when it is neutral, triggers paranoid thinking in people who score high on clinical or subclinical paranoia. We investigated whether contextual variables are predictive of momentary increases in the intensity of paranoid thinking in a sample of participants ranging across a psychometric paranoia continuum.

METHOD:

The sample (n=154) consisted of 30 currently paranoid patients, 34 currently non-paranoid patients, 15 remitted psychotic patients, 38 high-schizotypy participants, and 37 control subjects. Based on their total score on Fenigstein's Paranoia Scale (PS), three groups with different degrees of paranoia were defined. The Experience Sampling Method (ESM), a structured diary technique, was used to assess momentary social context, perceived social threat and paranoia in daily life.

RESULTS:

There were differences in the effect of social company on momentary levels of paranoia and perceived social threat across the range of trait paranoia. The low and medium paranoia groups reported higher levels of perceived social threat when they were with less-familiar compared to familiar individuals. The medium paranoia group reported more paranoia in less-familiar company. The high paranoia group reported no difference in the perception of social threat or momentary paranoia between familiar and unfamiliar contacts.

CONCLUSIONS:

Paranoid thinking is context dependent in individuals with medium or at-risk levels of trait paranoia. Perceived social threat seems to be context dependent in the low paranoia group. However, at high levels of trait paranoia, momentary paranoia and momentary perceived social threat become autonomous and independent of social reality.

Collip, Dina; van Winkel, Ruud; Peerbooms, Odette; Lataster, Tineke; Thewissen, Viviane; Lardinois, Marielle et al. (2011):

COMT Val158Met–stress interaction in psychosis: Role of background psychosis risk.

In: *CNS Neuroscience & Therapeutics* 17 (6), S. 612–619. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-27773-006&site=ehost-live;i.germeys@sp.unimaas.nl.

Abstract:

BACKGROUND:

The interplay between the catechol-O-methyltransferase (COMT) Val158Met polymorphism and environmental stress may have etiological relevance for psychosis, but differential effects have been reported in healthy control and patient groups, suggesting that COMT Val158Met interactions with stress may be conditional on background genetic risk for psychotic disorder.

METHODS:

Patients with a nonaffective psychotic disorder (n = 86) and control participants (n = 109) were studied with the experience sampling method (a structured diary technique) in order to assess stress, negative affect and momentary psychotic symptoms in the flow of daily life.

RESULTS:

Multilevel analyses revealed significant three-way interactions between group status (patient or control), COMT genotype and stress in the model of negative affect ($\chi(2)(2) = 13.26$, $P < 0.01$) as well as in the model of momentary psychotic symptoms ($\chi(2)(2) = 6.92$, $P < 0.05$). Exploration of the three-way interaction revealed that in patients, COMT genotype moderated the association between stress and negative affect ($\chi(2)(4) = 11.50$, $P < 0.005$), as well as the association between stress and momentary psychosis ($\chi(2)(4) = 12.79$, $P < 0.005$). Met/Met genotype patients showed significantly increased psychotic and affective reactivity to stress in comparison to the Val/Met and Val/Val genotypes. In contrast, healthy controls did not display large or significant COMT Val158Met X stress interactions.

CONCLUSIONS:

Important differences exist in the effect of COMT Val158Met on stress reactivity, which may depend on background risk for psychotic disorder. Differential sensitivity to environmental stress occasioned by COMT Val158Met may be contingent on higher order interactions with genetic variation underlying psychotic disorder.

Collip, Dina; Wigman, Johanna T. W.; Myin-Germeys, Inez; Jacobs, Nele; Derom, Catherine; Thiery, Evert et al. (2013):

From epidemiology to daily life: Linking daily life stress reactivity to persistence of psychotic experiences in a longitudinal general population study.

In: *PLoS One* 8 (4). DOI: 10.1037/t21411-000;

Abstract:

Subclinical psychotic experiences at the level of the general population are common, forming an extended psychosis phenotype with clinical psychosis. Persistence of subclinical experiences is associated with transition to later mental disorder. Increased daily life stress reactivity is considered an endophenotype for psychotic disorders. We examined, in a longitudinal framework, whether baseline momentary assessment markers of stress reactivity would predict persistence of subclinical psychotic experiences over time. In a general population sample of female twins (N = 566), the Experience Sampling Method (ESM; repetitive random sampling of momentary emotions, psychotic experiences and context) was used to assess (emotional and psychotic) daily life stress reactivity. Persistence of subclinical psychotic experiences was based on the Community Assessment of Psychic Experiences (CAPE), assessed three times over 14 months post-baseline. It was investigated whether baseline daily life emotional and psychotic stress reactivity predicted persistence of psychotic experiences over time. Higher levels of emotional stress reactivity (a decrease in positive and an increase in negative affect in response to stress), and increased psychotic reactivity to daily stress was found in individuals with persistent psychotic experiences over time compared to individuals with transient psychotic experiences. The results suggest that markers of daily life stress reactivity may predict "macro-level" persistence of normally transient expression of psychotic liability over time. Linking daily life markers of altered reactivity in terms of emotions and psychotic experiences to longitudinal persistence of psychotic experiences, associated with increased risk of transition to overt mental disorder, may contribute to earlier and more accurate diagnosis of risk. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Collip, D.; Wigman, J. T.; Myin-Germeys, I.; Jacobs, N.; Derom, C.; Thiery, E. et al. (2013):

From epidemiology to daily life: linking daily life stress reactivity to persistence of psychotic experiences in a longitudinal general population study.

In: *PLoS One* 8 (4), S. e62688. DOI: 10.1371/journal.pone.0062688.

Abstract:

Subclinical psychotic experiences at the level of the general population are common, forming an extended psychosis phenotype with clinical psychosis. Persistence of subclinical experiences is associated with transition to later mental disorder. Increased daily life stress reactivity is considered an endophenotype for psychotic disorders. We examined, in a longitudinal framework, whether baseline momentary assessment markers of stress reactivity would predict persistence of subclinical psychotic experiences over time. In a general population sample of female twins (N = 566), the Experience Sampling Method (ESM; repetitive random sampling of momentary emotions, psychotic experiences and context) was used to assess (emotional and psychotic) daily life stress reactivity. Persistence of subclinical psychotic experiences was based on the Community Assessment of Psychic Experiences (CAPE), assessed three times over 14 months post-baseline. It was investigated whether baseline daily life emotional and psychotic stress reactivity predicted persistence of psychotic experiences over time. Higher levels of emotional stress reactivity (a decrease in positive and an increase in negative affect in response to stress), and increased psychotic reactivity to daily stress was found in individuals with persistent psychotic experiences over time compared to individuals with transient psychotic experiences. The results suggest that markers of daily life stress reactivity may predict "macro-level" persistence of normally transient expression of psychotic liability over time. Linking daily life markers of altered reactivity in terms of emotions and psychotic experiences to longitudinal persistence of psychotic experiences, associated with increased risk of transition to overt mental disorder, may contribute to earlier and more accurate diagnosis of risk

Collip, D.; Wigman, J. T.; Van, Os J.; Oorschot, M.; Jacobs, N.; Derom, C. et al. (2013):

Positive emotions from social company in women with persisting subclinical psychosis: lessons from daily life.

In: *Acta Psychiatr.Scand.* (0001-690X (Linking)). DOI: 10.1111/acps.12151.

Abstract:

OBJECTIVE: Altered social reward functioning is associated with psychosis irrespective of stage and severity. Examining the role of social reward functioning prospectively in relation to psychotic experiences before these become persistent and potentially disabling can aid in elucidating social mechanisms that induce shifts toward more severe psychotic states, without the confounding effects of clinical disorder. METHOD: In a longitudinal general population sample (N = 566), the experience sampling method (repetitive random sampling of momentary emotions and social context) was used to assess daily life social functioning at baseline. Persistence of subclinical psychotic experiences was based on the Community Assessment of Psychic Experiences assessed three times over 14 months. Analyses examined to what degree i) social context and ii) appreciation thereof differentiated between those who did and did not develop persistent psychotic experiences. RESULTS: Although individuals with persistent psychotic experiences did not differ in overall level of positive effect, the amount of time spent alone or the level of social satisfaction compared to individuals without persistent psychotic experiences, they were more sensitive to the rewarding effects of social company. CONCLUSION: Alterations in social reward experience may form one of the mechanisms that precede the development of the extended psychosis phenotype over time

Collop, Nancy A. (2008):

Portable monitoring for the diagnosis of obstructive sleep apnea.

In: *Current opinion in pulmonary medicine* 14 (6), S. 525–529.

Abstract:

Purpose of review: The demand for expedient diagnosis of suspected obstructive sleep apnea (OSA) has increased due to improved awareness of sleep disorders. Polysomnography (PSG) is the current preferred diagnostic modality but is relatively inconvenient, expensive and inefficient. Portable monitoring has been developed and is widely used in countries outside the United States as an alternative approach. A portable monitor records fewer physiologic variables but is typically unattended and can be performed in the home.

Recent findings: Numerous portable monitor studies have been performed over the past two to three decades. The US government and medical societies have extensively reviewed this literature several times in an attempt to determine if portable monitoring should be more broadly used for diagnosing OSA. In March 2008, the US Centers for Medicare and Medicaid

Services released a statement allowing the use of portable monitoring to diagnose OSA and prescribe continuous positive airway pressure. This has potentially opened the door for more widespread use of these devices. This review will focus on the literature that has examined portable monitoring as a diagnostic tool for OSA.

Summary: It is anticipated that portable monitoring as a diagnostic modality for OSA will be used more frequently in the United States following the Centers for Medicare and Medicaid Services ruling. Physicians and others considering the use of portable monitors should thoroughly understand the advantages and limitations of this technology.

Colussi, Gianluca; Catena, Cristiana; Dialti, Valeria; Pezzutto, Francesca; Mos, Lucio; Sechi, Leonardo A. (2014):

Fish meal supplementation and ambulatory blood pressure in patients with hypertension: relevance of baseline membrane fatty acid composition.

In: *Am J Hypertens* 27 (3), S. 471–481. DOI: 10.1093/ajh/hpt231.

Abstract:

BACKGROUND: Studies on fish oil effects on ambulatory blood pressure (ABP) are inconclusive. We evaluated fish effects on fatty acid composition of red blood cell (RBC) membrane and ABP values and tested the hypothesis that the starting membrane fatty acid composition affects the ability to incorporate additional polyunsaturated fatty acids (PUFA) and decrease blood pressure. METHODS: In 55 hypertensive patients, we measured RBC membrane fatty acid by gas chromatography and performed ABP monitoring. Patients received nutritional counseling and 3 weekly meals of trout rich in PUFA. In 42 patients, RBC membrane fatty acid and ABP were reassessed after 6 months. RESULTS: At baseline, the PUFA/saturated fatty acid (SFA) ratio of RBC membrane (PUFA/SFA) was inversely related to 24-hour, daytime, and nighttime systolic and pulse pressure, a relationship that was independent of covariables. At follow-up, the PUFA/SFA ratio increased in 20 (48%) of 42 patients. Patients with increased PUFA/SFA ratio at follow-up had lower baseline PUFA/SFA ratio than patients without such increase. Fish meal supplementation decreased 24-hour systolic and diastolic pressure only in patients who had increased PUFA/SFA ratio, a change that was more prominent during the nighttime. The change in PUFA/SFA was inversely and independently related to the change in 24-hour systolic and pulse pressure, and a logistic regression analysis indicated low baseline PUFA/SFA ratio as the only independent predictor of PUFA/SFA increase and blood pressure decrease. CONCLUSIONS: The ability of fish meals to increase membrane PUFA content and decrease blood pressure in hypertensive patients depends upon the starting membrane fatty acid composition.

Colvin, Peter J.; Mermelstein, Robin J. (2010):

Adolescents' smoking outcome expectancies and acute emotional responses following smoking.

In: *Nicotine & Tobacco Research* 12 (12), S. 1203–1210.

Abstract:

INTRODUCTION:

Magnitude of mood change following smoking may be an important reinforcing effect in smoking escalation in adolescent smokers. This study used ecological momentary assessments (EMA) of adolescent smokers' reports of mood during smoking events to examine (a) whether global reports of negative affect (NA) expectancies were associated with in-the-moment magnitude of negative and positive mood change following smoking, (b) the possibility of a reciprocal feedback loop between global NA expectancies and acute mood change following smoking, and (c) whether this relationship generalizes to other expectancies and mood change.

METHODS:

Participants were 234 9(th) and 10(th) graders (54% female) who recorded at least one smoking event during 7 days of EMA data collection.

RESULTS:

Global reports of NA expectancies were significantly associated with the in-the-moment magnitude of changes in mood following smoking. Specifically, higher NA expectancies were associated with greater decreases in negative and greater increases in positive mood. Additionally, mood change following smoking predicted changes in NA expectancies but only for adolescents who continued to smoke 6 months later. The reciprocal feedback loop between expectancies and mood change was only present in adolescent smokers who continued to smoke over time. Findings indicated that this relationship is specific to NA expectancies and negative and positive mood change.

CONCLUSIONS:

These results highlight the importance of considering NA expectancies and mood changes following smoking in adolescent smokers. Assessing expectancies about NA relief may provide an opportunity for identifying and intervening on adolescents who may be most at risk for continuing to smoke.

Comte, M.; Hobin, E.; Majumdar, S. R.; Plotnikoff, R. C.; Ball, G. D.; McGavock, J. (2013):

Patterns of weekday and weekend physical activity in youth in 2 Canadian provinces.

In: *Appl.Physiol Nutr.Metab* 38 (2), S. 115–119. DOI: 10.1139/apnm-2012-0100.

Abstract:

Few Canadian children are meeting physical activity (PA) guidelines for optimal growth and health. There is little information describing the patterns of PA among Canadian youth, so it is difficult to determine where the deficits occur. The purpose of this study was to identify subgroups of youth and windows of time characterized by low PA and high sedentary behaviour. We conducted a cross-sectional study of 626 youth (aged 10-15 years) in 2 Canadian provinces. The primary exposure variables included geographic setting (rural vs. urban), sex, and days of the week (weekend days vs. weekdays). The primary outcome measures were minutes of light PA, moderate to vigorous physical activity (MVPA), and sedentary behavior, assessed with accelerometry. Compared with weekdays, MVPA was approximately 30% lower on weekend days (55.8 +/- 23.0 min vs. 38.7 +/- 26.7 min; p < 0.001), whereas light PA was approximately 15% higher. Significantly more youth achieved an average of >60 min of MVPA on weekdays than on weekend days (46% vs. 22%; p < 0.001). Sex-specific differences in MVPA were more pronounced on weekdays than on weekend days (approximately 13 vs approximately 8 min per day; p < 0.01). Youth in rural settings achieved approximately 9 fewer minutes of MVPA daily than youth in urban settings (p < 0.001). In youth 10 to 15 years of age, daily MVPA is lower and light PA is higher on weekend days than on weekdays. Girls and students living in rural areas were particularly vulnerable to low levels of MVPA

Conen, David; Bamberg, Fabian (2008):

Noninvasive 24-h ambulatory blood pressure and cardiovascular disease: a systematic review and meta-analysis.

In: *J Hypertens* 26 (7), S. 1290–1299.

Abstract:

OBJECTIVE:

We systematically assessed the evidence regarding the association between noninvasive 24-h systolic blood pressure and incident cardiovascular events.

METHODS:

We searched PubMed, EMBASE, and the Cochrane Library through April 2007. Studies that prospectively followed at least 100 individuals for at least 1 year, and that reported at least one effect estimate of interest were included. Two independent investigators abstracted information on study design, subject characteristics, blood pressure measurements, outcome assessment, effect estimates, and adjustment for potential confounders.

RESULTS:

We identified 20 eligible articles based on 15 independent cohort studies. The association between 24-h systolic blood pressure and a combined cardiovascular endpoint was assessed in nine cohort studies, including 9299 participants who were followed up to 11.1 years and had 881 outcome events. The summary hazard ratio (95% confidence interval) per 10-mmHg increase of 24-h systolic blood pressure was 1.27 (1.18-1.38) (P < 0.001). Further adjustment for office blood pressure in four studies with 4975 participants and 499 outcome events provided a similar summary estimate [hazard ratio (95% confidence interval) per 10-mmHg increase of 24-systolic blood pressure 1.21 (1.10-1.33) (P < 0.001)]. Office blood pressure was usually assessed on a single occasion. We found no significant variability according to age, sex, population origin, baseline office blood pressure, follow-up time, diabetes, or study quality. There was a consistent association between 24-h systolic blood pressure and stroke, cardiovascular mortality, total mortality, and cardiac events with hazard ratio (95% confidence interval) per 10 mmHg increase of 24-h systolic blood pressure of 1.33 (1.22-1.44), 1.19 (1.13-1.26), 1.12 (1.07-1.17), and 1.17 (1.09-1.25), respectively.

CONCLUSION:

24-h systolic blood pressure is a strong predictor of cardiovascular events, providing prognostic information independent of conventional office blood pressure.

Conley, K. M.; Lehman, B. J. (2012):

Test anxiety and cardiovascular responses to daily academic stressors.

In: *Stress Health* 28 (1), S. 41–50. DOI: 10.1002/smi.1399.

Abstract:

Routine academic events may cause stress and produce temporary elevations in blood pressure. Students who experience test anxiety may be especially prone to cardiovascular activation in response to academic stress. This study drew on self-reported stress and ambulatory blood pressure measurements provided by 99 undergraduate participants (30% men, mean age=21 years) who participated over 4 days. Posture, activity level, recent consumption and the previous same-day reading were considered as covariates in a series of hierarchical linear models. Results indicate elevations in systolic blood pressure at times of acute academic stressors; neither diastolic blood pressure nor heart rate was linked with academic stress. In addition, those participants higher in test anxiety exhibited especially pronounced elevations in systolic blood pressure during times of acute academic stress. This research suggests that everyday academic stressors are linked with temporary increases in blood pressure and that test anxiety may contribute to these elevations. Test anxiety has implications for future academic and job success, and cardiovascular responses to everyday stress may contribute to health problems later in life

Connelly, Mark; Miller, Todd; Gerry, Gerry; Bickel, Jennifer (2010):

Electronic momentary assessment of weather changes as a trigger of headaches in children.

In: *Headache* 50 (5), S. 779–789. DOI: 10.1111/j.1526-4610.2009.01586.x.

Abstract:

BACKGROUND\r\nVariables that are thought to precipitate migraine or tension-type headache episodes in children hitherto have only been studied using retrospective reports. As such, there is little empirical evidence to support the actual predictive association between presumed headache triggers and actual headache occurrence in children.\r\nOBJECTIVE\r\nThe present study sought to determine if fluctuations in weather, a commonly reported headache trigger in children, predict increased likelihood of headache occurrence when evaluated using rigorous prospective methodology (\"electronic momentary assessment\").\r\nMETHODS\r\nTwenty-five children (21 girls, 4 boys) between the ages of 8-17 years attending a new patient neurology clinic appointment and having a diagnosis of chronic migraine, chronic tension-type, or episodic migraine headache (with or without aura) participated in the study. Children completed baseline measures on headache characteristics, presumed headache triggers, and mood and subsequently were trained in the use of electronic diaries to record information on headaches. Children then completed thrice daily diaries on handheld computers for a 2-week time period (42 assessments per child) while data on weather variables (temperature, dew point temperature, barometric pressure, humidity, precipitation, and sunlight) in the child's geographic location were recorded each time a diary was completed. Data were analyzed using multilevel models.\r\nRESULTS\r\nOf the weather variables, relative humidity and presence of precipitation were significantly predictive of new headache onset, with nearly a 3-fold increase in probability of headache occurrence during times of precipitation or elevated humidity in the child's area, b = 0.38, t(821) = 2.10, P = .04, and b = 0.02, t(821) = 2.81, P = .01, respectively. These associations remained after accounting for fluctuations in mood, and associations were not significantly stronger in children who at baseline thought that weather was a headache trigger for them. Changes in temperature, dew point temperature, barometric pressure, and sunlight were not significantly predictive of new headache episode occurrence in this sample.\r\nCONCLUSIONS\r\nResults of the present study lend some support to the belief commonly held by children with recurrent headaches that weather changes may contribute to headache onset. Although electronic momentary assessment methodology was found to be feasible in this population and to have the potential to identify specific headache triggers for children, it remains to be determined how best (or even whether) to incorporate this information into treatment recommendations.

Connelly, Kay; Ur Rehman Laghari, Khalil; Mokhtari, Mounir; Falk, Tiago H. (2014):

Approaches to Understanding the Impact of Technologies for Aging in Place: A Mini-Review.

In: *Gerontology. DOI:* 10.1159/000355644.

Abstract:

Background: There are many approaches to evaluating aging-in-place technologies. While there are standard measures for outcomes such as health and caregiver burden, which lend themselves to statistical analysis, researchers have a harder time identifying why a particular information and communication technology (ICT) intervention worked (or not). Objective: The

purpose of this paper is to review a variety of methods that can help answer these deeper questions of when people will utilize an ICT for aging in place, how they use it, and most importantly why. This review is sensitive to the special context of aging in place, which necessitates an evaluation that can explore the nuances of the experiences of older adults and their caregivers with the technology in order to fully understand the potential impact of ICTs to support aging in place. Methods: The authors searched both health (PubMed) and technology (ACM Digital Library) venues, reviewing 115 relevant papers that had an emphasis on understanding the use of aging-in-place technologies. This mini-review highlights a number of popular methods used in both the health and technology fields, including qualitative methods (e.g. interviews, focus groups, contextual observations, diaries, and cultural probes) and quantitative methods (e.g. surveys, the experience sampling method, and technology logs). Results: This review highlights that a single evaluation method often is not adequate for understanding why people adopt ICTs for aging in place. The review ends with two examples of multifaceted evaluations attempting to get at these deeper issues. Conclusion: There is no proscriptive formula for evaluating the intricate nuances of technology acceptance and use in the aging-in-place context. Researchers should carefully examine a wide range of evaluation techniques to select those that will provide the richest insights for their particular project. (c) 2014 S. Karger AG, Basel.

Conner, T. S.; Barrett, L. F. (2012):

Trends in ambulatory self-report: the role of momentary experience in psychosomatic medicine.

In: *Psychosom.Med.* 74 (4), S. 327–337. DOI: 10.1097/PSY.0b013e3182546f18.

Abstract:

In this article, we review the differences between momentary, retrospective, and trait self-report techniques and discuss the unique role that ambulatory reports of momentary experience play in psychosomatic medicine. After a brief historical review of self-report techniques, we discuss the latest perspective that links ambulatory self-reports to a qualitatively different conscious self-the "experiencing self"--which is functionally and neuroanatomically different from the "remembering" and "believing" selves measured through retrospective and trait questionnaires. The experiencing self functions to navigate current environments and is relatively more tied to the salience network and corporeal information from the body that regulates autonomic processes. As evidence, we review research showing that experiences measured through ambulatory assessment have stronger associations with cardiovascular reactivity, cortisol response, immune system function, and threat/reward biomarkers compared with memories or beliefs. By contrast, memories and beliefs play important roles in decision making and long-term planning, but they are less tied to bodily processes and more tied to default/long-term memory networks, which minimizes their sensitivity for certain research questions. We conclude with specific recommendations for using self-report questionnaires in psychosomatic medicine and suggest that intensive ambulatory assessment of experiences may provide greater sensitivity for connecting psychological with biologic processes

Conner, Tamlin S.; Brookie, Kate L.; Richardson, Aimee C.; Polak, Maria A. (2014):

On carrots and curiosity: Eating fruit and vegetables is associated with greater flourishing in daily life.

In: *Br J Health Psychol. DOI:* 10.1111/bjhp.12113.

Abstract:

OBJECTIVES: Our aim was to determine whether eating fruit and vegetables (FV) is associated with other markers of well-being beyond happiness and life satisfaction. Towards this aim, we tested whether FV consumption is associated with greater eudaemonic well-being - a state of flourishing characterized by feelings of engagement, meaning, and purpose in life. We also tested associations with two eudaemonic behaviours - curiosity and creativity. DESIGN: Daily diary study across 13 days (micro-longitudinal, correlational design). METHODS: A sample of 405 young adults (67% women; mean age 19.9 [SD 1.6] years) completed an Internet daily diary for 13 consecutive days. Each day, participants reported on their consumption of fruit, vegetables, sweets, and chips, as well as their eudaemonic well-being, curiosity, creativity, positive affect (PA), and negative affect. Between-person associations were analysed on aggregated data. Within-person associations were analysed using multilevel models controlling for weekday and weekend patterns. RESULTS: Fruit and vegetables consumption predicted greater eudaemonic well-being, curiosity, and creativity at the between- and within-person levels. Young adults who ate more FV reported higher average eudaemonic well-being, more intense feelings of curiosity, and greater creativity compared with young adults who ate less FV. On days when young adults ate more FV, they reported greater eudaemonic well-being, curiosity, and creativity compared with days when they ate less FV. FV consumption also predicted higher PA, which mostly did not account for the associations between FV and the other well-being variables. Few unhealthy foods (sweets, chips) were related to well-being except that consumption of sweets was associated with greater curiosity and PA at the within-person level. Lagged data analyses showed no carry-over effects of FV consumption onto next-day well-being (or vice versa). CONCLUSIONS: Although these

patterns are strictly correlational, this study provides the first evidence that FV consumption may be related to a broader range of well-being states that signal human flourishing in early adulthood. Statement of contribution What is already known on this subject? There is growing evidence that a diet rich in fruits and vegetables (FV) is related to greater happiness, life satisfaction, and positive affect. These associations are not entirely explained by demographic or health variables including socio-economic status, exercise, smoking, and body mass index (BMI). Recent experimental and daily diary research suggests that FV consumption may be a causal factor in promoting states of positive well-being. Research has examined the links between FV consumption and hedonic well-being - whether people feel good (vs. bad) and satisfied-but has not addressed links between FV consumption and eudaemonic well-being- whether people feel engaged and experience their lives as meaningful and purposeful. What does this study add? It provides the first evidence that eating FV is related to greater eudaemonic well-being in a naturalistic setting. Eating FV was also related to greater self-reported curiosity and creativity. FV consumption may underlie a broad range of experiences that signal flourishing. Future randomised controlled trials of FV should include measures of eudaemonic well-being as outcome variables.

Conrad, Ansgar; Wilhelm, Frank H.; Roth, Walton T.; Spiegel, David; Taylor, C. Barr (2008):

Circadian affective, cardiopulmonary, and cortisol variability in depressed and nondepressed individuals at risk for cardiovascular disease.

In: *Journal of Psychiatric Research* 42 (9), S. 769–777.

Abstract:

Depression is a risk factor for cardiovascular disease (CVD) perhaps mediated by hypothalamic-pituitary-adrenal (HPA) axis or vagal dysregulation. We investigated circadian mood variation and HPA-axis and autonomic function in older (55 years) depressed and nondepressed volunteers at risk for CVD by assessing diurnal positive and negative affect (PA, NA), cortisol, and cardiopulmonary variables in 46 moderately depressed and 19 nondepressed volunteers with elevated CVD risk. Participants sat quietly for 5-min periods (10:00, 12:00, 14:00, 17:00, 19:00, and 21:00), and then completed an electronic diary assessing PA and NA. Traditional and respiration-controlled heart rate variability (HRV) variables were computed for these periods as an index of vagal activity. Salivary cortisols were collected at waking, waking+30min, 12:00, 17:00, and 21:00h. Cortisol peaked in the early morning after waking, and gradually declined over the day, but did not differ between groups. PA was lower and NA was higher in the depressed group throughout the day. HRV did not differ between groups. Negative emotions were inversely related to respiratory sinus arrhythmia in nondepressed participants. We conclude that moderately depressed patients do not show abnormal HPA-axis function. Diurnal PA and NA distinguish depressed from nondepressed individuals at risk for CVD, while measures of vagal regulation, even when controlled for physical activity and respiratory confounds, do not. Diurnal mood variations of older individuals at risk for CVD differ from those reported for other groups and daily fluctuations in NA are not related to cardiac autonomic control in depressed individuals.

Conroy, David E.; Maher, Jaclyn P.; Elavsky, Steriani; Hyde, Amanda L.; Doerksen, Shawna E. (2013):

Sedentary Behavior as a Daily Process Regulated by Habits and Intentions.

In: *Health Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-07737-001%26site%3dehost-live.

Abstract:

Objective: Sedentary behavior is a health risk but little is known about the motivational processes that regulate daily sedentary behavior. This study was designed to test a dual-process model of daily sedentary behavior, with an emphasis on the role of intentions and habits in regulating daily sedentary behavior. Method: College students (N = 128) self-reported on their habit strength for sitting and completed a 14-day ecological momentary assessment study that combined daily diaries for reporting motivation and behavior with ambulatory monitoring of sedentary behavior using accelerometers. Results: Less than half of the variance in daily sedentary behavior was attributable to between-person differences. People with stronger sedentary habits reported more sedentary behavior on average. People whose intentions for limiting sedentary behavior were stronger, on average, exhibited less self-reported sedentary behavior (and marginally less monitored sedentary behavior). Daily deviations in those intentions were negatively associated with changes in daily sedentary behavior (i.e., stronger than usual intentions to limit sedentary behavior were associated with reduced sedentary behavior). Sedentary behavior also varied within people as a function of concurrent physical activity, the day of week, and the day in the sequence of the monitoring period. Conclusions: Sedentary behavior was regulated by both automatic and controlled motivational processes. Interventions should target both of these motivational processes to facilitate and maintain behavior change. Links between sedentary behavior and daily deviations in intentions also indicate the need for ongoing efforts to support controlled motivational processes on a daily basis. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Conroy, David E.; Ram, Nilam; Pincus, Aaron L.; Coffman, Donna L.; Lorek, Amy E.; Rebar, Amanda L.; Roche, Michael J. (2014):

Daily Physical Activity and Alcohol Use Across the Adult Lifespan.

In: *Health Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-37740-001%26site%3dehost-live.

Abstract:

Objective: In contrast to proposals that physical activity (PA) can be a substitute for alcohol use, people who engage in greater overall PA generally consume more alcohol on average than less-active peers. Acknowledging that both PA and alcohol use vary considerably from day-to-day, this study evaluated whether established associations reflect daily behavioral coupling within-person, are an artifact of procedures that aggregate behavior over time, or both. Methods: A life span sample of 150 adults (aged 19–89 years) completed three 21-day measurement bursts of a daily diary study. At the end of each day, they reported on their PA and alcohol consumption. Data were analyzed in a negative binomial multilevel regression. Results: As expected, both behaviors exhibited limited between-person variation. After controlling for age, gender, and seasonal and social calendar influences, daily deviations in PA were significantly associated with daily total alcohol use. Once the within-person process linking PA and alcohol use was controlled, usual PA and total alcohol use were not associated. Conclusions: The established between-person association linking PA and alcohol use reflects the aggregation of a daily process that unfolds within-people over time. Further work is needed to identify mediators of this daily association and to evaluate causality, as well as to investigate these relations in high-risk samples. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Cook, I.; Alberts, M.; Lambert, E. V. (2012):

Influence of cut-points on patterns of accelerometry-measured free-living physical activity in rural and urban black South african women.

In: *J.Phys.Act.Health* 9 (2), S. 300–310. Online verfügbar unter PM:22368229.

Abstract:

BACKGROUND: We describe the effect of 2 different accelerometer cut-points on physical activity (PA) patterns in rural and urban black South African women. METHODS: Hip-mounted uni-axial accelerometers were worn for 6 to 7 days by rural (n = 272) and urban (n = 16) participants. Twenty-hour (4 AM to 12 AM) PA counts (cts) and volumes (min.day-1) were extracted: sedentary (SED, <100 cts.min-1), light (100-759 cts.min-1), moderate-1 (MOD1, 760-1951 cts.min-1), moderate-2 to vigorous (MOD2VG, >/=1952 cts.min-1), and bouts >/=10 min for >/=760 cts.min-1 (MOD1VGbt) and >/=1952 cts.min-1 (MOD2VGbt). RESULTS: Valid data were obtained from 263 rural women and 16 urban women. Total counts and average counts were higher (+80,399 cts.day-1, +98 cts.min-1.day-1) (P < .01), SED lower (-61 min.day-1, P = .0042), MOD1 higher (+65 min.day-1, P < .0001), and MOD1VGbt higher (+19 min.day-1, P = .0179) in rural women compared with urban women. Estimated adherence (>/=30 min.day-1 for 5 days.wk-1) was 1.4-fold higher in rural women than urban women for MOD-1VGbt, but 3.3-fold higher in urban women than rural women for MOD2VGbt. CONCLUSIONS: Rural women accumulate greater amounts of PA than urban women within a particular count band. Depending on which moderate PA cut-point was used to estimate PA public health adherence, rural women could be classified as less physically active than urban women

Cook, Jonathan E.; Arrow, Holly; Malle, Bertram F. (2011):

The effect of feeling stereotyped on social power and inhibition.

In: *Pers Soc Psychol Bull* 37 (2), S. 165–180. DOI: 10.1177/0146167210390389.

Abstract:

An experience sampling study examined the degree to which feeling stereotyped predicts feelings of low power and inhibition among stigmatized and nonstigmatized individuals. For 7 days, participants with a concealable (gay and lesbian), a visible (African American), or no identifiable stigma recorded feelings of being stereotyped, of powerlessness, and of inhibition immediately following social interactions. For members of all three groups, feeling stereotyped was associated with more inhibition, and this relation was partially mediated by feeling low in power. Although stigmatized participants reported feeling stereotyped more often than nonstigmatized participants, they reacted less strongly to the experience, consistent with the presence of buffering mechanisms developed by those living with stigma. African Americans appeared to buffer the impact of feeling stereotyped more effectively than gay and lesbian participants, an effect that was partly attributable to African Americans' higher identity centrality.

Cook, Jonathan E.; Calcagno, Justine E.; Arrow, Holly; Malle, Bertram F. (2012):

Friendship trumps ethnicity (but not sexual orientation): Comfort and discomfort in inter-group interactions.

In: *British Journal of Social Psychology* 51 (2), S. 273–289. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-15870-006&site=ehost-live;jecook@columbia.edu.

Abstract:

An experience sampling study tested the degree to which interactions with out-group members evoked negative affect and behavioural inhibition after controlling for level of friendship between partners. When friendship level was statistically controlled, neither White nor Black participants reported feeling more discomfort interacting with ethnic out-group members compared to ethnic in-group members. When partners differed in sexual orientation, friendship level had a less palliating effect. Controlling for friendship, both gay and straight men—but not women—felt more behaviourally inhibited when interacting with someone who differed in sexual orientation, and heterosexual participants of both genders continued to report more negative affect with gay and lesbian interaction partners. However, gay and lesbian participants reported similar levels of negative affect interacting with in-group (homosexual) and out-group (heterosexual) members after friendship level was controlled. Results suggest that much of the discomfort observed in inter-ethnic interactions may be attributable to lower levels of friendship with out-group partners. The discomfort generated by differences in sexual orientation, however, remains a more stubborn barrier to comfortable intergroup interactions. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Cook, D. J.; Thompson, J. E.; Prinsen, S. K.; Dearani, J. A.; Deschamps, C. (2013):

Functional recovery in the elderly after major surgery: assessment of mobility recovery using wireless technology.

In: *Ann.Thorac.Surg.* 96 (3), S. 1057–1061. DOI: 10.1016/j.athoracsur.2013.05.092.

Abstract:

PURPOSE: Hospitalization and surgery in older patients often leads to a loss of strength, mobility, and functional capacity. We tested the hypothesis that wireless accelerometry could be used to measure mobility during hospital recovery after cardiac surgery. DESCRIPTION: We used an off-the-shelf fitness monitor to measure daily mobility in patients after surgery. Data were transmitted wirelessly, aggregated, and configured onto a provider-viewable dashboard. EVALUATION: Wireless monitoring of mobility after major surgery was easy and practical. There was a significant relationship between the number of steps taken in the early recovery period, length of stay, and dismissal disposition. CONCLUSIONS: Wireless monitoring of mobility after major surgery creates an opportunity for early identification and intervention in individual patients and could serve as a tool to evaluate and improve the process of care and to affect postdischarge outcomes

Cooper, Ashley R.; Page, Angie S.; Wheeler, Benedict W.; Hillsdon, Melvyn; Griew, Pippa; Jago, Russell (2010):

Patterns of GPS measured time outdoors after school and objective physical activity in English children: The PEACH project.

In: *Int J Behav Nutr Phys Act* 7. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31883-001%26site%3dehost-live;ashley.cooper@bris.ac.uk.

Abstract:

BACKGROUND:

Observational studies have shown a positive association between time outdoors and physical activity in children. Time outdoors may be a feasible intervention target to increase the physical activity of youth, but methods are required to accurately measure time spent outdoors in a range of locations and over a sustained period. The Global Positioning System (GPS) provides precise location data and can be used to identify when an individual is outdoors. The aim of this study was to investigate whether GPS data recorded outdoors were associated with objectively measured physical activity.

METHODS:

Participants were 1010 children (11.0 +/- 0.4 years) recruited from 23 urban primary schools in South West England, measured between September 2006 and July 2008. Physical activity was measured by accelerometry (Actigraph GT1M) and children wore a GPS receiver (Garmin Foretrex 201) after school on four weekdays to record time outdoors. Accelerometer and GPS data were

recorded at 10 second epochs and were combined to describe patterns of physical activity when both a GPS and accelerometer record were present (outdoors) and when there was accelerometer data only (indoors). ANOVA was used to investigate gender and seasonal differences in the patterns of outdoor and indoor physical activity, and linear regression was used to examine the cross-sectional associations between GPS-measured time outdoors and physical activity.

RESULTS:

GPS-measured time outdoors was a significant independent predictor of children's physical activity after adjustment for potential confounding factors. Physical activity was more than 2.5 fold higher outdoors than indoors (1345.8 +/- 907.3 vs 508.9 +/- 282.9 counts per minute; F = 783.2, p < .001). Overall, children recorded 41.7 +/- 46.1 minutes outdoors between 3.30 pm and 8.30 pm, with more time spent outdoors in the summer months (p < .001). There was no gender difference in time spent outdoors. Physical activity outdoors was higher in the summer than the winter (p < .001), whilst there was no seasonal variation in physical activity indoors.

CONCLUSIONS:

Duration of GPS recording is positively associated with objectively measured physical activity and is sensitive to seasonal differences. Minute by minute patterning of GPS and physical activity data is feasible and may be a useful tool to investigate environmental influences on children's physical activity and to identify opportunities for intervention.

Corder, Kirsten; Brage, Søren; Ekelund, Ulf (2007):

Accelerometers and pedometers: methodology and clinical application.

In: *Current Opinion in Clinical Nutrition & Metabolic Care* 10 (5), S. 597–603.

Abstract:

PURPOSE OF REVIEW:

The relationship between physical activity and health varies considerably, partly due to the difficulty of assessing physical activity accurately. This review examines recent literature on the validation of movement sensors to assess habitual physical activity. Recommendations are given for the use of movement sensors during free-living conditions and methods of data analysis and interpretation are discussed.

RECENT FINDINGS:

Recent progress in physical-activity research includes detailed comparative studies of different monitor brands. The move away from using linear-regression equations and the use of novel data-analysis strategies is increasing the accuracy with which energy expenditure can be estimated from accelerometry. New technologies, including the combination of accelerometry with the measurement of physiological parameters, have great potential for the increased accuracy of physical-activity assessment.

SUMMARY:

Accelerometry is able to adequately assess physical activity and its association with health outcomes but currently methods have limited accuracy for the estimation of free-living energy expenditure. Pedometers provide an inexpensive overall measure of physical activity but are unable to assess intensity, frequency and duration of activity or to estimate energy expenditure. Interpretation of monitor output is best kept as close to the measurement domain as possible.

Corder, Kirsten; Brage, Søren; Mattocks, Calum; Ness, Andy; Riddoch, Chris; Wareham, Nicholas J.; Ekelund, Ulf (2007):

Comparison of two methods to assess PAEE during six activities in children.

In: *Med Sci Sports Exerc* 39 (12), S. 2180–2188.

Abstract:

PURPOSE:

The purpose of this study was to compare the accuracy of physical activity energy expenditure (PAEE)-prediction models using accelerometry alone (ACC) and accelerometry combined with heart rate monitoring (HR+ACC) to estimate PAEE during six common activities in children (lying, sitting, slow and brisk walking, hop-scotch, running). Three PAEE-prediction models derived using the current data, and five previously published prediction models were cross-validated to estimate PAEE in this sample.

METHODS:

PAEE was assessed using ACC, HR+ACC, and indirect calorimetry during six activities in 145 children (12.4 +/- 0.2 yr). One ACC and two HR+ACC PAEE-prediction models were derived using linear regression on data from the current study. These three new

models were cross-validated using a jackknife approach, and a modified Bland-Altman method was used to assess the validity of all eight models.

RESULTS:

PAEE predictions using the one ACC and two HR+ACC models derived in the current study correlated strongly with measured values (RMSE = 97.3-118.0 J.min.kg). All five previously published models agreed well overall (RMSE = 115.6-245.3 J.min.kg), but systematic error was present for most of these, to a greater extent for ACC.

CONCLUSIONS:

ACC and HR+ACC can both be used to predict overall PAEE during these six activities in children; however, systematic error was present in all predictions. Although both ACC and HR+ACC provide accurate predictions of overall PAEE, according to the activities in this study, PAEE-prediction models using HR+ACC may be more accurate and widely applicable than those based on accelerometry alone.

Corder, Kirsten; Crespo, Noe C.; van Sluijs, Esther M. F.; Lopez, Nanette V.; Elder, John P. (2012):

Parent awareness of young children's physical activity.

In: *Prev Med* 55 (3), S. 201–205. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-24714-010%26site%3dehost-live;klc29@medschl.cam.ac.uk.

Abstract:

Objective: Parents who overestimate their child's physical activity (PA) level may not encourage their children to increase their PA. We assessed parental awareness of child PA, and investigated potential correlates of overestimation. Method: Child PA (accelerometer) and parent-classified child PA ['active'≥60 min/day vs. 'inactive' b60 min/ day moderate and vigorous PA (MVPA)] were measured over 7 days [n=329, 44% male, 39% Latino;mean (SD) 9.1 (0.7)years] in an obesity prevention study in San Diego (Project MOVE). Agreement between date-matched objective MVPA and parent-classified child PA was assessed; % days parental overestimation was the outcome variable. Associations between parental overestimation and potential correlates were investigated using three-level mixed-effects linear regression. Results: Children met the PA guidelines on 43% of days. Parents overestimated their children's PA on 75% of days when children were inactive. Most parents (80%) overestimated their child's PA on ≥1 measurement day. Parental support for child PA (transport, encouragement and participation with child) ($p<0.01$) was positively associated with higher overestimation. Parents of girls showed more overestimation than parents of boys ($p=0.04$). Conclusion: Most parents incorrectly classified their child as active when their child was inactive. Strategies addressing parental overestimation may be important in PA promotion. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Corder, Kirsten; Ekelund, Ulf; Steele, Rebekah M.; Wareham, Nicholas J.; Brage, Søren (2008):

Assessment of physical activity in youth.

In: *Journal of Applied Physiology* 105 (3), S. 977–987.

Abstract:

Despite much progress with physical activity assessment, the limitations concerning the accurate measurement of physical activity are often amplified in young people due to the cognitive, physiological, and biomechanical changes that occur during natural growth as well as a more intermittent pattern of habitual physical activity in youth compared with adults. This mini-review describes and compares methods to assess habitual physical activity in youth and discusses main issues regarding the use and interpretation of data collected with these techniques. Self-report instruments and movement sensing are currently the most frequently used methods for the assessment of physical activity in epidemiological research; others include heart rate monitoring and multisensor systems. Habitual energy expenditure can be estimated from these input measures with varying degree of uncertainty. Nonlinear modeling techniques, using accelerometry perhaps in combination with physiological parameters like heart rate or temperature, have the greatest potential for increasing the prediction accuracy of habitual physical activity energy expenditure. Although multisensor systems may be more accurate, this must be balanced against feasibility, a balance that shifts with technological and scientific advances and should be considered at the beginning of every new study.

Corder, Kirsten; van Sluijs, Esther Mf; Wright, Antony; Whincup, Peter; Wareham, Nicholas J.; Ekelund, Ulf (2009):

Is it possible to assess free-living physical activity and energy expenditure in young people by self-report?

In: *Am J Clin Nutr* 89 (3), S. 862–870.

Abstract:

BACKGROUND:

It is unclear whether it is possible to accurately estimate physical activity energy expenditure (PAEE) by self-report in youth.

OBJECTIVE:

We assessed the validity and reliability of 4 self-reports to assess PAEE and time spent at moderate and vigorous intensity physical activity (MVPA) over the previous week in British young people between 4 and 17 y of age.

DESIGN:

PAEE and MVPA were derived from the Children's Physical Activity Questionnaire, Youth Physical Activity Questionnaire, and Swedish Adolescent Physical Activity Questionnaire; a lifestyle score indicative of habitual activity was derived from the Child Heart and Health Study in England Questionnaire. These data were compared with criterion methods, PAEE, and MVPA derived from simultaneous measurements by doubly labeled water and accelerometry in 3 age groups: 4-5 y (n = 27), 12-13 y (n = 25), and 16-17 y (n = 24). Validity was assessed by using Spearman correlations and the Bland-Altman method, and reliability was assessed by using intraclass correlation coefficients.

RESULTS:

The strength of association between questionnaire and criterion methods varied (r = 0.09 to r = 0.46). Some questionnaires were able to accurately assess group-level PAEE and MVPA for some age groups, but the error was large for individual-level estimates throughout. Reliability of the Youth Physical Activity Questionnaire and Child Heart and Health Study in England Questionnaire was good (intraclass correlation coefficient: 0.64-0.92).

CONCLUSIONS:

Absolute PAEE and MVPA estimated from these self-reports were not valid on an individual level in young people, although some questionnaires appeared to rank individuals accurately. Age (the outcome of interest) and whether individual or group-level estimates are necessary will influence the best choice of self-report method when assessing physical activity in youth.

Corder, K.; van Sluijs, E M F; Steele, R. M.; Stephen, A. M.; Dunn, V.; Bamber, D. et al. (2011):

Breakfast consumption and physical activity in British adolescents.

In: *British Journal of Nutrition* 105 (2), S. 316–321. DOI: 10.1017/S0007114510003272.

Abstract:

Studies show an inverse relationship between breakfast frequency and weight gain. This may reflect poor eating habits generally and associated low physical activity (PA) or direct impacts of breakfast on mechanisms leading to lethargy and reduced PA. The relationship between breakfast frequency and PA is inconclusive. We aimed to determine whether breakfast frequency is associated with PA levels in British adolescents independent of body composition and socio-economic status (SES). Habitual breakfast frequency (self-report questionnaire) was assessed in 877 adolescents (43% male, age 14·5 (SD 0·5) years old). PA was measured over 5 d (accelerometry, average counts/ min; cpm). Associations between daily PA and breakfast frequency were assessed using linear regression adjusted for body fat percentage and SES. Effect modification by sex and associations with PA during the morning (06.00-12.00 hours) were explored. For boys, there were no significant associations between breakfast frequency and PA. For girls, less frequent breakfast consumption was significantly associated with lower PA (cpm) during the morning (occasional v. frequent b - 6·1 (95% CI - 11·1, -1·1), P = 0·017) when adjusted for body fat percentage and SES. There were no associations between PA and breakfast consumption over the whole day; however, for girls, less frequent breakfast consumption may be associated with lower PA levels during the morning, suggesting that breakfast consumption should perhaps be taken into consideration when aiming to promote PA in adolescent girls.

Cordier, Reinie; Brown, Nicole; Chen, Yu-Wei; Wilkes-Gillan, Sarah; Falkmer, Torbjorn (2014):

Piloting the use of experience sampling method to investigate the everyday social experiences of children with Asperger syndrome/high functioning autism.

In: *Dev Neurorehabil*, S. 1–8. DOI: 10.3109/17518423.2014.915244.

Abstract:

Abstract Objective: This pilot study explored the nature and quality of social experiences of children with Asperger Syndrome/High Functioning Autism (AS/HFA) through experience sampling method (ESM) while participating in everyday activities. Methods: ESM was used to identify the contexts and content of daily life experiences. Six children with AS/HFA (aged 8-12) wore an iPod Touch on seven consecutive days, while being signalled to complete a short survey. Results: Participants were in the company of others 88.3% of their waking time, spent 69.0% of their time with family and 3.8% with friends, but only conversed with others 26.8% of the time. Participants had more positive experiences and emotions when they were with friends compared with other company. Participating in leisure activities was associated with enjoyment, interest in the occasion, and having positive emotions. Conclusions: ESM was found to be helpful in identifying the nature and quality of social experiences of children with AS/HFA from their perspective.

Corral-Penafiel, J.; Pepin, J. L.; Barbe, F. (2013):

Ambulatory monitoring in the diagnosis and management of obstructive sleep apnoea syndrome.

In: *Eur.Respir.Rev.* 22 (129), S. 312–324. DOI: 10.1183/09059180.00004213.

Abstract:

Obstructive sleep apnoea (OSA) is a highly prevalent disorder associated with complications such as arterial hypertension, cardiovascular diseases and traffic accidents. The resources allocated for OSA are insufficient and OSA is a significant public health problem. Portable recording devices have been developed for the detection of OSA syndrome and have proved capable of providing an equivalent diagnosis to in-laboratory polysomnography (PSG), at least in patients with a high pre-test probability of OSA syndrome. PSG becomes important in patients who have symptoms and certain comorbidities such as chronic obstructive pulmonary disease or stroke, as well as in patients with a clinical history suggesting a different sleep disorder. Continuous positive airway pressure is the most effective treatment in OSA. Ambulatory monitoring of the therapeutic modalities has been evaluated to enhance the care process and reduce costs compared to the conventional approach, without sacrificing efficiency. This review evaluates the role of portable monitoring devices in the diagnostic process of OSA and the search for alternative strategies based on ambulatory management protocols

Cortez, Nathan G.; Cohen, I. Glenn; Kesselheim, Aaron S. (2014):

FDA regulation of mobile health technologies.

In: *N Engl J Med* 371 (4), S. 372–379. DOI: 10.1056/NEJMhle1403384.

Abstract:

Mobile health ("mHealth") technologies that employ portable devices such as smartphones and tablets for medical purposes are rapidly transforming the medical profession. Yet adapting existing regulatory processes to ensure the safety and efficacy of this new set of products has proved challenging for the U.S. Food and Drug Administration (FDA). In this Article, we highlight issues encountered by the agency in applying its authority and its established approval and monitoring processes to this new genre of medical devices. After reviewing legislative proposals and recommendations by the FDA as to the appropriate scope of agency oversight of mHealth products, we present policy recommendations for updating the FDA's authority. We conclude that preserving the FDA's premarket and postmarket authority and providing the agency with additional funding and expertise provide a more promising solution than strictly limiting FDA's authority, which could impede the agency's ability to adapt to future innovation by tying it to existing products.

Keywords: mobile health, FDA, liability, congress, premarket, postmarket

Cortinovis, Ilaria; Luraschi, Eugenia; Intini, Sara; Sessa, Marco; Fave, Antonella Delle (2011):

The daily experience of people with achondroplasia.

In: *Applied Psychology: Health and Well-Being* 3 (2), S. 207–227. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-12591-005%26site%3dehost-live;ilaria.cor@email.it.

Abstract:

This study aimed at investigating the daily experience of adults with achondroplasia. From the perspective of positive psychology, the experience reported in work, family, and relationships was analysed to detect resources and opportunities for social integration and personal growth. Participants were ten women and eight men, members of AISAC–the Italian Association for the Knowledge and Study of Achondroplasia. Following a mixed method approach, quantitative data gathered through the Experience Sampling Method provided information on daily activities and their associated experience, while qualitative data obtained through the Flow Questionnaire and Life Theme Questionnaire enabled us to explore optimal experience and associated activities, participants' present challenges and future goals. Results highlighted the role of work as a key resource to achieving well-being. Interactions with parents and siblings provided support and relaxation, while building one's own family emerged as a major future goal. Participants associated socialising with highly positive experiences of involvement and creativity; however, they reported spending a large percentage of time alone. Findings suggested that challenging and qualified work opportunities are crucial in promoting the personal growth and social integration of persons with achondroplasia. Promoting socialisation and removing social and communication barriers should be major issues for policy makers, health professionals, and associations. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Courvoisier, Delphine S.; Eid, Michael; Lischetzke, Tanja; Schreiber, Walter H. (2010):

Psychometric properties of a computerized mobile phone method for assessing mood in daily life.

In: *Emotion* 10 (1), S. 115–124. DOI: 10.1037/a0017813.

Abstract:

Ecological momentary assessment is a method that is now largely used to study behavior and mood in the settings in which they naturally occur. It maximizes ecological validity and avoids the limitations of retrospective self-reports. Studies on the psychometric properties of scales administered via mobile phone ecological momentary assessment are lacking. Therefore, we collected data on a 4-item mood scale measuring well being on six occasions per day for 7 days (N = 307) and examined compliance rate across time, within day, and within week. Using specific latent state-trait structural equation models, we analyzed the degree to which interindividual mood differences on an occasion of measurement were because of (a) measurement error, (b) stable differences in mood level, and (c) occasion-specific differences. Results show good compliance (mean compliance: 74.9% of calls answered). Moreover, the scale showed good reliability (M = .82). Mood was mostly stable, especially the first 3 days of the week. It depended weakly albeit significantly on the previous assessment (autoregressive coefficient). In conclusion, computerized mobile phone assessment is an appropriate, easy-to-use, and promising method to measure mood.

Courvoisier, D. S.; Eid, M.; Lischetzke, T. (2012):

Compliance to a cell phone-based ecological momentary assessment study: The effect of time and personality characteristics.

In: *Psychol.Assess.* (1040-3590 (Linking)). DOI: 10.1037/a0026733.

Abstract:

Ecological momentary assessment (EMA) is a method that is now widely used to study behavior and mood in the settings in which they naturally occur. It maximizes ecological validity and avoids the limitations of retrospective self-reports. Compliance patterns across time have not been studied. Consistent compliance patterns could lead to data not missing at random and bias the results of subsequent analyses. In order to use modern statistical approaches for handling missing data, it is important to include variables predicting missing values into the statistical analysis. Therefore, these predictors have to be known and measured. The authors collected data on 3 four-item mood scales measuring well-being, wakefulness, and nervousness on 6 occasions per day for 7 days (N = 305) and examined compliance rate across time, within day, and within week. Results show good global compliance (mean compliance: 74.9% of calls answered). Compliance varied more within day than within week. Within day, it was lower for the first call of the day between 9 p.m. and 11 p.m. and higher for the call between 5 p.m. and 7 p.m. Within week, calls were equally answered across days of the week, but, as the study progressed, there was a slight drop in

compliance with a progressive decrease that was stronger for the first 2 calls. Compliance on the person level did not depend on personality or on satisfaction with life. Practical consequences of the results for conducting ambulatory assessment studies are discussed, and some recommendations are given. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Cousins, Jennifer C.; Whalen, Diana J.; Dahl, Ronald E.; Forbes, Erika E.; Olino, Thomas M.; Ryan, Neal D.; Silk, Jennifer S. (2011):

The bidirectional association between daytime affect and nighttime sleep in youth with anxiety and depression.

In: *Journal of Pediatric Psychology* 36 (9), S. 969–979. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-24878-003&site=ehost-live;cousinsjc2@upmc.edu.

Abstract:

Objective: This study examines relationships between affect and sleep in youth with affective disorders using ecological momentary assessment (EMA). Methods: Participants included 94 youth, ages 8–16 (M = 11.73, 53% female) years with an anxiety disorder only (n = 23), primary major depressive disorder (with and without a secondary anxiety diagnoses; n = 42), and healthy controls (n = 29). A cell phone EMA protocol assessed affect and actigraphy measured sleep. Results: The patterns of bidirectional relationships between affect and sleep differed across diagnostic groups. Higher daytime positive affect and positive to negative affect ratios were associated with more time in bed during the subsequent night for youth with primary depression and less time in bed for youth with anxiety only. More time asleep was associated with more positive affect for both diagnostic groups the following day. Conclusions: This relationship may be important to consider in the treatment of youth affective disorders. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Coza, Aurel; Nigg, Benno M.; Fliri, Ladina (2010):

Quantification of soft-tissue vibrations in running: Accelerometry versus high-speed motion capture.

In: *Journal of applied biomechanics* 26, S. 367–372.

Abstract:

Soft-tissue vibrations can be used to quantify selected properties of human tissue and their response to impact. Vibrations are typically quantified using high-speed motion capture or accelerometry. The aim of this study was to compare the amplitude and frequency of soft-tissue vibrations during running when quantified by highspeed motion capture and accelerometry simultaneously. This study showed: (a) The estimated measurement errors for amplitude and frequency were of the same order of magnitude for both techniques. (b) There were no significant differences in the mean peak frequencies and peak amplitudes measured by the two methods. (c) The video method showed an inability to capture high frequency information. This study has shown that a tradeoff has to be made between the accuracy in amplitude and frequency when these methods are employed to quantify soft tissue vibrations in running.

Cranford, James A.; Shrout, Patrick E.; Iida, Masumi; Rafaeli, Eshkol; Yip, Tiffany; Bolger, Niall (2006):

A procedure for evaluating sensitivity to within-person change: can mood measures in diary studies detect change reliably?

In: *Pers Soc Psychol Bull* 32 (7), S. 917–929. DOI: 10.1177/0146167206287721.

Abstract:

The recent growth in diary and experience sampling research has increased research attention on how people change over time in natural settings. Often however, the measures in these studies were originally developed for studying between-person differences, and their sensitivity to within-person changes is usually unknown. Using a Generalizability Theory framework, the authors illustrate a procedure for developing reliable measures of change using a version of the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1992) shortened for diary studies. Analyzing two data sets, one composed of 35 daily reports from 68 persons experiencing a stressful examination and another composed of daily reports from 164 persons over a typical 28-day period, we demonstrate that three-item measures of anxious mood, depressed mood, anger, fatigue, and vigor have appropriate reliability to detect within-person change processes.

Cranford, James A.; Tennen, Howard; Zucker, Robert A. (2010):

Feasibility of using interactive voice response to monitor daily drinking, moods, and relationship processes on a daily basis in alcoholic couples.

In: *Alcohol Clin Exp Res* 34 (3), S. 499–508. DOI: 10.1111/j.1530-0277.2009.01115.x.

Abstract:

BACKGROUND\r\nDaily process research on alcohol involvement has used paper-and-pencil and electronic data collection methods, but no studies have yet tested the feasibility of using Interactive Voice Response (IVR) technology to monitor drinking, affective, and social interactional processes among alcoholic (ALC) couples. This study tested the feasibility of using IVR with n = 54 ALC couples.\r\nMETHODS\r\nParticipants were n = 54 couples (probands who met criteria for a past 1-year alcohol use disorder and their partners) recruited from a substance abuse treatment center and the local community. Probands and their partners reported on their daily drinking, marital interactions, and moods once a day for 14 consecutive days using an IVR system. Probands and partners were on average 43.4 and 43.0 years old, respectively.\r\nRESULTS\r\nParticipants completed a total of 1,418 out of a possible 1,512 diary days for an overall compliance rate of 93.8%. ALC probands completed an average of 13.3 (1.0) diary reports, and partners completed an average of 13.2 (1.0) diary reports. On average, daily IVR calls lasted 7.8 (3.0) minutes for ALC probands and 7.6 (3.0) minutes for partners. Compliance was significantly lower on weekend days (Fridays and Saturdays) compared to other weekdays for probands and spouses. Although today's intoxication predicted tomorrow's noncompliance for probands but not spouses, the strongest predictor of proband's compliance was their spouse's compliance. Daily anxiety and marital conflict were associated with daily IVR nonresponse, which triggered automated reminder calls.\r\nCONCLUSIONS\r\nFindings supported that IVR is a useful method for collecting daily drinking, mood, and relationship process data from alcoholic couples. Probands' compliance is strongly associated with their partners' compliance, and automated IVR calls may facilitate compliance on high anxiety, high conflict days.

Cranwell, J.; Benford, S.; Houghton, R. J.; Golembewksi, M.; Fischer, J. E.; Hagger, M. S. (2013):

Increasing Self-Regulatory Energy Using an Internet-Based Training Application Delivered by Smartphone Technology.

In: *Cyberpsychol.Behav.Soc.Netw.* (2152-2723 (Electronic)). DOI: 10.1089/cyber.2013.0105.

Abstract:

Abstract Self-control resources can be defined in terms of "energy." Repeated attempts to override desires and impulses can result in a state of reduced self-control energy termed "ego depletion" leading to a reduced capacity to regulate future self-control behaviors effectively. Regular practice or "training" on self-control tasks may improve an individual's capacity to overcome ego depletion effectively. The current research tested the effectiveness of training using a novel Internet-based smartphone application to improve self-control and reduce ego depletion. In two experiments, participants were randomly assigned to either an experimental group, which received a daily program of self-control training using a modified Stroop-task Internet-based application delivered via smartphone to participants over a 4-week period, or a no-training control group. Participants assigned to the experimental group performed significantly better on post-training laboratory self-control tasks relative to participants in the control group. Findings support the hypothesized training effect on self-control and highlight the effectiveness of a novel Internet-based application delivered by smartphone as a practical means to administer and monitor a self-control training program. The smartphone training application has considerable advantages over other means to train self-control adopted in previous studies in that it has increased ecological validity and enables effective monitoring of compliance with the training program

Cranwell, Jo; Golightly, David; Fischer, Joel E.; Sharples, Sarah; O'Malley, Claire (2012):

Using mobile applications that combine self-report micro surveys to enhance GPS tracking data.

In: *The International Journal of Educational and Psychological Assessment* 11 (1), S. 55–74. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-28409-005%26site%3dehost-live;Claire.Omalley@nottingham.ac.uk;sarah.sharples@nottingham.ac.uk;jef@cs.nott.ac.uk;epzdg@exmail.nottingham.ac.uk;psxjc3@nottigham.ac.uk.

Abstract:

Investigating highly contextual behaviours, such as travel choices or health activities, can benefit from automated data capture using GPS, but also require self-report of actions and intentions. We present a case study of how event-based micro-surveys can be combined with GPS to understand car sharing behaviour. An opportunity sample of 24 participants took part in a seven-day study. At the start of each journey, participants used a smartphone-based application to provide basic self-report information about their journeys and their amenability to sharing. The application then tracked their journey giving a GPS trace for distance, time and duration. The combined micro-survey and GPS approach gave useful data relating whether journeys were shared, whether they could be shared, and some of the characteristics of those journeys. This supported exploratory analysis and hypothesis testing. However, usability of the application was a major consideration in the acceptability of the study, particularly with regards to the design of open questions. Also, the time sensitive nature of contextual behaviour means there is a trade-off between the depth of data captured by micro-survey, and survey completion. Overall, while we find there is empirical value in the combination of micro-survey and GPS, application usability, and appropriate design to reflect the behaviour under study are major factors in the success of this approach. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Creary, Susan E.; Gladwin, Mark T.; Byrne, Melissa; Hildesheim, Mariana; Krishnamurti, Lakshmanan (2014):

A pilot study of electronic directly observed therapy to improve hydroxyurea adherence in pediatric patients with sickle-cell disease.

In: *Pediatr Blood Cancer. DOI:* 10.1002/pbc.24931.

Abstract:

BACKGROUND: Poor hydroxyurea (HU) adherence limits effective HU use in patients with sickle cell disease (SCD). Electronic directly observed therapy (DOT) may limit costs and achieve high HU adherence in children with SCD. This study aimed to determine if electronic DOT was feasible, acceptable, and could achieve >/=90% HU adherence. PROCEDURE: Children with SCD were recruited for this single institution, 6-month pilot study if they had been prescribed HU for >/=6 months and had daily access to a smartphone or computer. Participants submitted HU administration videos daily and received electronic reminder alerts, personalized feedback, and incentives to encourage adherence as part of electronic DOT. Primary outcomes were feasibility, participant satisfaction with electronic DOT, and HU adherence. Secondary outcomes included mean corpuscular volume (MCV), hemoglobin F percentage (HbF), and overall participant satisfaction with HU therapy. RESULTS: Of 15 enrolled participants, 14 completed the study. Satisfaction surveys showed electronic DOT reminded participants to take HU and could be completed in fewer than 5 minutes daily. Participants' median medication possession ratio at study entry improved from 0.75 (0.59-0.82) to 0.91 (0.85-1.00) (P = 0.02) at the end of the study. Overall median observed HU adherence with electronic DOT was 93.3%. Median MCV and HbF increased from 96.0 to107.2 (P = 0.009) and 10.5 to 11.4 (P = 0.03), respectively. CONCLUSIONS: This study demonstrates electronic DOT is feasible, acceptable, and can achieve high HU adherence. Further study is needed to confirm that electronic DOT can improve HU adherence and impact clinical outcomes in children with SCD. Pediatr Blood Cancer (c) 2014 Wiley Periodicals, Inc.

Crespo, C.; Aboy, M.; Fernandez, J. R.; Mojon, A. (2012):

Automatic identification of activity-rest periods based on actigraphy.

In: *Med.Biol.Eng Comput.* 50 (4), S. 329–340. DOI: 10.1007/s11517-012-0875-y.

Abstract:

We describe a novel algorithm for identification of activity/rest periods based on actigraphy signals designed to be used for a proper estimation of ambulatory blood pressure monitoring parameters. Automatic and accurate determination of activity/rest periods is critical in cardiovascular risk assessment applications including the evaluation of dipper versus non-dipper status. The algorithm is based on adaptive rank-order filters, rank-order decision logic, and morphological processing. The algorithm was validated on a database of 104 subjects including actigraphy signals for both the dominant and non-dominant hands (i.e., 208 actigraphy recordings). The algorithm achieved a mean performance above 94.0%, with an average number of 0.02 invalid transitions per 48 h

Crespo, Noe C.; Sallis, James F.; Conway, Terry L.; Saelens, Brian E.; Frank, Lawrence D. (2011):

Worksite physical activity policies and environments in relation to employee physical activity.

In: *Am J Health Promot* 25 (4), S. 264–271. DOI: 10.4278/ajhp.081112-QUAN-280.

Abstract:

PURPOSE\r\nExamine associations between worksite physical activity promotion strategies and employees' physical activity and sedentary behaviors.\r\nDESIGN\r\nCross-sectional.\r\nSETTING\r\nSeattle-King County, Washington and Baltimore, Maryland-Washington, D.C. regions.\r\nSUBJECTS\r\nAdults working outside the home (n = 1313). Mean age was 45 ± 10 years, 75.8% of participants were non-Hispanic white, 56% were male, and 51% had income ≥$70,000/year.\r\nMEASURES\r\nParticipants reported demographic characteristics and presence/absence of nine physical activity promotion environment and policy strategies in their work environment (e.g., showers, lockers, physical activity programs). A worksite physical activity promotion index was a tally of strategies. Total sedentary and moderate-to-vigorous physical activity (MVPA) min/d were objectively assessed via 7-day accelerometry. Total job-related physical activity minutes and recreational physical activity minutes were self-reported with the International Physical Activity Questionnaire.\r\nANALYSIS\r\nMixed-effects models and generalized estimating equations evaluated the association of the worksite promotion index with physical activity and sedentary behavior, adjusting for demographics.\r\nRESULTS\r\nA higher worksite promotion index was significantly associated with higher total sedentary behavior (β = 3.97), MVPA (β = 1.04), recreational physical activity (β = 1.1 and odds ratio = 1.39; away from work and at work, respectively) and negatively with job-related physical activity (β = .90).\r\nCONCLUSIONS\r\nMultiple worksite physical activity promotion strategies based on environmental supports and policies may increase recreational physical activity and should be evaluated in controlled trials. These findings are particularly important given the increasingly sedentary nature of employment.

Crisco, Joseph J.; Fiore, Russell; Beckwith, Jonathan G.; Chu, Jeffrey J.; Brolinson, Per Gunnar; Duma, Stefan et al. (2010):

Frequency and location of head impact exposures in individual collegiate football players.

In: *Journal of athletic training* 45 (6), S. 549.

Abstract:

CONTEXT:

Measuring head impact exposure is a critical step toward understanding the mechanism and prevention of sport-related mild traumatic brain (concussion) injury, as well as the possible effects of repeated subconcussive impacts.

OBJECTIVE:

To quantify the frequency and location of head impacts that individual players received in 1 season among 3 collegiate teams, between practice and game sessions, and among player positions.

DESIGN:

Cohort study.

SETTING:

Collegiate football field.

PATIENTS OR OTHER PARTICIPANTS:

One hundred eighty-eight players from 3 National Collegiate Athletic Association football teams.

INTERVENTION(S):

Participants wore football helmets instrumented with an accelerometer-based system during the 2007 fall season.

MAIN OUTCOME MEASURE(S):

The number of head impacts greater than 10 g and location of the impacts on the player's helmet were recorded and analyzed for trends and interactions among teams (A, B, or C), session types, and player positions using Kaplan-Meier survival curves.

RESULTS:

The total number of impacts players received was nonnormally distributed and varied by team, session type, and player position. The maximum number of head impacts for a single player on each team was 1022 (team A), 1412 (team B), and 1444 (team C). The median number of head impacts on each team was 4.8 (team A), 7.5 (team B), and 6.6 (team C) impacts per practice and 12.1 (team A), 14.6 (team B), and 16.3 (team C) impacts per game. Linemen and linebackers had the largest number of impacts

per practice and per game. Offensive linemen had a higher percentage of impacts to the front than to the back of the helmet, whereas quarterbacks had a higher percentage to the back than to the front of the helmet.

CONCLUSIONS:

The frequency of head impacts and the location on the helmet where the impacts occur are functions of player position and session type. These data provide a basis for quantifying specific head impact exposure for studies related to understanding the biomechanics and clinical aspects of concussion injury, as well as the possible effects of repeated subconcussive impacts in football.

Crooke, A. H.; Reid, S. C.; Kauer, S. D.; McKenzie, D. P.; Hearps, S. J.; Khor, A. S.; Forbes, A. B. (2013):

Temporal mood changes associated with different levels of adolescent drinking: Using mobile phones and experience sampling methods to explore motivations for adolescent alcohol use.

In: *Drug Alcohol Rev* (0959-5236 (Linking)). DOI: 10.1111/dar.12034.

Abstract:

INTRODUCTION AND AIMS: Alcohol use during adolescence is associated with the onset of alcohol use disorders, mental health disorders, substance abuse as well as socially and physically damaging behaviours, the effects of which last well into adulthood. Nevertheless, alcohol use remains prevalent in this population. Understanding motivations behind adolescent alcohol consumption may help in developing more appropriate and effective interventions. This study aims to increase this understanding by exploring the temporal relationship between mood and different levels of alcohol intake in a sample of young people. DESIGN AND METHODS: Forty-one secondary school students used a purpose-designed mobile phone application to monitor their daily mood and alcohol use for 20 random days within a 31 day period. Generalised estimating equations were used to examine the relationship between differing levels of alcohol consumption (light, intermediate and heavy) and positive and negative mood three days before and after drinking episodes. RESULTS: While there was no relationship between light and heavy drinking and positive mood, there was an increase in positive mood before and after the drinking event for those that drank intermediate amounts. No statistically significant relationships were found between negative mood and any of the three drinking categories. DISCUSSION AND CONCLUSION: Adolescents who drank in intermediate amounts on a single drinking occasion experienced an increase in positive mood over the three days leading up to and three days following a drinking event. These findings contribute to an understanding of the motivations that underpin adolescent alcohol use, which may help inform future interventions

Crosby, Ross D.; Wonderlich, Stephen A.; Engel, Scott G.; Simonich, Heather; Smyth, Joshua; Mitchell, James E. (2009):

Daily mood patterns and bulimic behaviors in the natural environment.

In: *Behav Res Ther* 47 (3), S. 181–188.

Abstract:

OBJECTIVE:

Negative affect has been purported to play an important role in the etiology and maintenance of bulimic behaviors. The objective of this study was to identify daily mood patterns in the natural environment exhibited by individuals with bulimia nervosa and to examine the relationship between these patterns and bulimic behaviors.

METHOD:

One hundred thirty-three women aged 18-55 meeting DSM-IV criteria for bulimia nervosa were recruited through clinical referrals and community advertisements. Ecological momentary assessment was used to collect multiple ratings of negative affect, binge eating and purging each day for a two-week period using palmtop computers. Latent growth mixture modeling was used to identify daily mood patterns.

RESULTS:

Nine distinct daily mood patterns were identified. The highest rates of binge eating and purging episodes occurred on days characterized by stable high negative affect or increasing negative affect over the course of the day.

CONCLUSIONS:

These findings support the conclusion that negative mood states are intimately tied to bulimic behaviors and may in fact precipitate such behavior.

Cuddy, John S.; Ham, Julie A.; Harger, Stephanie G.; Slivka, Dustin R.; Ruby, Brent C. (2008):

Effects of an electrolyte additive on hydration and drinking behavior during wildfire suppression.

In: *Wilderness Environ Med* 19 (3), S. 172–180.

Abstract:

OBJECTIVE:

The purpose of this study was to compare the effects of a water + electrolyte solution versus plain water on changes in drinking behaviors, hydration status, and body temperatures during wildfire suppression.

METHODS:

Eight participants consumed plain water, and eight participants consumed water plus an electrolyte additive during 15 hours of wildfire suppression. Participants wore a specially outfitted backpack hydration system equipped with a digital flow meter system affixed inline to measure drinking characteristics (drinking frequency and volume). Body weight and urine-specific gravity were collected pre- and postshift. Ambient, core, and skin temperatures were measured continuously using a wireless system. Work output was monitored using accelerometry.

RESULTS:

There were no differences between groups for body weight, drinking frequency, temperature data, activity, or urine-specific gravity (1.019 +/- 0.007 to 1.023 +/- 0.010 vs. 1.019 +/- 0.005 to 1.024 +/- 0.009 for water and water + electrolyte groups pre- and postshift, respectively; P < .05). There was a main effect for time for body weight, demonstrating an overall decrease (78.1 +/- 13.3 and 77.3 +/- 13.3 kg pre- and postshift, respectively; P < .05) across the work shift. The water group consumed more total fluid (main effect for treatment) than the water + electrolyte group (504 +/- 472 vs. 285 +/- 279 mL.h(-1) for the water and water + electrolyte groups, respectively; P < .05).

CONCLUSION:

The addition of an electrolyte mixture to plain water decreased the overall fluid consumption of the water + electrolyte group by 220 mL.h(-1) (3.3 L.d(-1)). Supplementing water with electrolytes can reduce the amount of fluid necessary to consume and transport during extended activity. This can minimize carrying excessive weight, possibly reducing fatigue during extended exercise.

Cuddy, J. S.; Reinert, A. R.; Hailes, W. S.; Slivka, D. R.; Ruby, B. C. (2013):

Accelerometry and salivary cortisol response during Air Force Special Tactics Officer selection.

In: *Extrem.Physiol Med.* 2 (1), S. 28. DOI: 10.1186/2046-7648-2-28.

Abstract:

BACKGROUND: Special Tactics Officer (STO) selection is conducted to select officers to enter the combat controller training pipeline. The aims were to determine physical activity patterns, estimate energy expenditure, and identify whether return and/or unsuccessful candidates demonstrated differences in cortisol responses compared to non-selected and/or first-time attendees. METHODS: Participants completed the STO selection, consisting of 5 days of physical and mental challenges. Participants were equipped with ActiCals(R), and saliva samples were collected throughout the STO selection. RESULTS: Average activity counts were 684 +/- 200 countsmin-1, with no group differences. Estimated energy expenditure was 4,105 +/- 451 kcalday-1. Cortisol was elevated following extended physical training but returned to baseline during rest. Return candidates had significantly lower cortisol responses compared to first-timers, 0.43 +/- 0.06 mugdl-1 versus 0.76 +/- 0.18 mugdl-1, respectively, p < 0.05. CONCLUSIONS: An individual's salivary cortisol response to the stresses incurred during the STO selection has the potential to be incorporated into the entire picture of a candidate's performance and ability to handle stress

Cullum, Jerry; O'Grady, Megan; Armeli, Stephen; Tennen, Howard (2012):

The role of context-specific norms and group size in alcohol consumption and compliance drinking during natural drinking events.

In: *Basic and Applied Social Psychology* 34 (4), S. 304–312. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-20494-002&site=ehost-live;tennen@nso1.uchc.edu.

Abstract:

We examined how group size and context-specific drinking norms corresponded to alcohol consumption and compliance with drinking offers using experience sampling methods. For 30 days, 397 college students reported daily on their alcohol consumption and social-context during natural social drinking events. Larger groups corresponded with greater alcohol consumption, but only when context-specific norms were high. Furthermore, larger groups increased compliance with drinking offers when norms were high but decreased compliance with drinking offers when norms were low. Thus, subtle features of the social-context may influence not only overall consumption behavior but also compliance with more overt forms of social influence. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Cunningham, L.; Mason, S.; Nugent, C.; Moore, G.; Finlay, D.; Craig, D. (2011):

Home-based monitoring and assessment of Parkinson's disease.

In: *IEEE transactions on information technology in biomedicine : a publication of the IEEE Engineering in Medicine and Biology Society* 15 (1), S. 47–53. DOI: 10.1109/TITB.2010.2091142.

Abstract:

As a clinically complex neurodegenerative disease, Parkinson's disease (PD) requires regular assessment and close monitoring. In our current study, we have developed a home-based tool designed to monitor and assess peripheral motor symptoms. An evaluation of the tool was carried out over a period of ten weeks on ten people with idiopathic PD. Participants were asked to use the tool twice daily over four days, once when their medication was working at its best (\"on\" state) and once when it had worn off (\"off\" state). Results showed the ability of the data collected to distinguish the \"on\" and \"off\" state and also demonstrated statistically significant differences in timed assessments. It is anticipated that this tool could be used in the home environment as an early alert to a change in clinical condition or to monitor the effects of changes in prescribed medications used to manage PD.

Cuspidi, Cesare; Facchetti, Rita; Bombelli, Michele; Sala, Carla; Grassi, Guido; Mancia, Giuseppe (2014):

Accuracy and prognostic significance of electrocardiographic markers of left ventricular hypertrophy in a general population: findings from the Pressioni Arteriose Monitorate E Loro Associazioni population.

In: *J Hypertens* 32 (4), S. 921–928. DOI: 10.1097/HJH.0000000000000085.

Abstract:

AIM: : We assessed the value of three electrocardiographic (ECG) voltage criteria in detecting left ventricular hypertrophy (LVH) and in predicting cardiovascular events and all-cause mortality in the Pressioni Arteriose Monitorate E Loro Associazioni (PAMELA) population. METHODS: At entry, 1549 individuals (age 50 +/- 13 years, 50.5% men) underwent diagnostic tests including laboratory investigations, 24-h ambulatory blood pressure monitoring, and standard ECG and echocardiography. RESULTS: The sensitivity of ECG criteria for LVH was lowest for Sokolow-Lyon voltage (1.5 and 0.78%), intermediate for Cornell voltage (20.5 and 19.0%), and highest for RaVL wave amplitude (26.0 and 36.2%), independently of whether left ventricular mass was indexed to body surface area or height, respectively. After adjustment for age, sex, night-time SBP, low-density lipoprotein and high-density lipoprotein cholesterol, serum glucose, BMI, smoking, and previous cardiovascular events, only Cornell voltage index [hazard ratio for a 0.1 mV increase: 1.050, 95% confidence interval (CI): 1.017-1.083, P < 0.003] predicted an increased risk of cardiovascular events as well as all-cause mortality. Furthermore, when the categorical relationship between ECG-graphic LVH and cardiovascular outcomes was investigated in multiple models, only LVH identified by the Cornell voltage index remained an independent predictor of cardiovascular events (hazard ratio = 2.466, CI 1.459-4.168, P = 0.0008) and all-cause deaths (hazard ratio = 2.984, CI 1.380-6.449, P = 0.005). CONCLUSION: Despite the limited sensitivity of ECG voltage criteria in detecting LVH, our results show that Cornell voltage index may improve cardiovascular risk stratification in a general population independently of several confounding factors.

Cuspidi, Cesare; Facchetti, Rita; Bombelli, Michele; Sala, Carla; Grassi, Guido; Mancia, Giuseppe (2014):

Differential Value of Left Ventricular Mass Index and Wall Thickness in Predicting Cardiovascular Prognosis: Data From the PAMELA Population.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpu019.

Abstract:

BACKGROUND: Data on the prognostic value of echocardiographic left ventricular (LV) hypertrophy (LVH) as defined by LV wall thickness rather than LV mass estimate are scarce and not univocal. Thus, we investigated the value of LV mass index, wall thickness, and relative wall thickness (RWT) in predicting cardiovascular events in the PAMELA population. METHODS: At entry 1,716 subjects underwent diagnostic tests, including laboratory investigations, 24-hour ambulatory blood pressure (BP) monitoring, and echocardiography. For the purpose of this analysis, all subjects were divided into quintiles of LV mass, LV mass/body surface area (BSA), LV mass/height2.7, interventricular septum (IVS), posterior wall (PW) thickness, IVS+PW thickness, and RWT. RESULTS: Over a follow-up of 148 months, 139 nonfatal or fatal cardiovascular events were documented. After adjustment for age, sex, BP, fasting blood glucose, total cholesterol, and use of antihypertensive drugs, only the subjects stratified in the highest quintiles of LV mass indexed to body surface area (BSA) or height2.7 exhibited a greater likelihood of incident cardiovascular disease (relative risk (RR) = 2.72, 95% confidence interval (CI) = 1.05-7.00, P = 0.03; RR = 4.83, 95% CI = 1.45-16.13, P = 0.01, respectively) as compared with the first quintile (reference group). The same was not true for the highest quintiles of IVS, PW thickness, IVS+PW thickness, and RWT. Similar findings were found when echocardiographic parameters were expressed as continuous variables. CONCLUSIONS: This study indicates that LV wall thickness, different from LV mass index, does not provide a reliable estimate of cardiovascular risk associated with LVH in a general population. From these data it is recommended that echocardiographic laboratories should provide a systematic estimate of LV mass index, which is a strong, independent predictor of incident cardiovascular disease.

Cuspidi, Cesare; Meani, Stefano; Lonati, Laura; Fusi, Veronica; Valerio, Cristiana; Sala, Carla et al. (2006):

Short-term reproducibility of a non-dipping pattern in type 2 diabetic hypertensive patients.

In: *J Hypertens* 24 (4), S. 647–653.

Abstract:

BACKGROUND:

Little information is available on the reproducibility of nocturnal variations in blood pressure in type 2 diabetic hypertensive patients.

OBJECTIVE:

We aimed to compare the intrasubject short-term reproducibility of a nocturnal non-dipping pattern and the prevalence of cardiac and extracardiac signs of target organ damage, in a group of type 2 diabetic hypertensive patients and in an age/gender-matched group of non-diabetic hypertensive subjects.

METHODS:

Thirty-six treated hypertensive patients with long-lasting type 2 diabetes (> 10 years duration) consecutively attending our hospital out-patient hypertension clinic (group I; mean age, 65 +/- 9 years), and 61 untreated non-diabetic subjects with grade 1 and grade 2 uncomplicated essential hypertension, matched for age and gender, and chosen from patients attending an outpatient clinic (group II; mean age, 65 +/- 5 years), were considered for this analysis. All patients underwent blood sampling for routine blood chemistry, 24-h urine collection for microalbuminuria, two 24-h periods of ambulatory blood pressure monitoring (ABPM) within a 4-week period, echocardiography, and carotid ultrasonography. A dipping pattern was defined as a greater than 10% reduction in the average systolic and diastolic blood pressure at night compared with average daytime values.

RESULTS:

A reproducible nocturnal dipping and non-dipping profile was found in 11 (30.6%) and 21 (58.3%) diabetic patients, respectively; while only in four (11.1%) patients was a variable dipping profile observed. Of the 23 patients with a non-dipping pattern during the first ABPM period, 21 (91.3%) also had this type of pattern during the second ABPM recording. In group II (non-diabetic hypertensive patients), 30 patients (49.2%, P < 0.05) had a dipping pattern, 13 patients (21.3%, P < 0.01) had a non-dipping profile pattern and 18 patients (29.5%, P < 0.01) had a variable dipping pattern. Of the 20 patients with a non-dipping pattern during the first ABPM period, 13 (65.0%) confirmed this type of pattern during the second ABPM recording. Finally, the prevalence of left ventricular hypertrophy (77.7 versus 41.4%, P < 0.01), carotid plaques (80.5 versus 38.3%, P < 0.01), carotid intima-media thickening (54.3 versus 44.0%, P < 0.05) and microalbuminuria (11.1 versus 2.0%, P < 0.01) was significantly higher in group I than in group II. According to a logistic regression analysis, diabetes, left ventricular hypertrophy and carotid plaques were the main independent predictors of the non-dipping (pattern in the overall population.

CONCLUSIONS:

These findings indicate that intrasubject variability of non-dipper pattern is lower in diabetic than in non-diabetic hypertensive patients, that classification of diabetic hypertensive patients as dipper or non-dipper on the basis of a single ABP recording is more reliable than in non-diabetic patients, and that the more frequent and reproducible non-dipping (pattern in diabetic patients is associated with a more prominent cardiac and extracardiac target organ damage.

Cuspidi, Cesare; Meani, Stefano; Valerio, Cristiana; Negri, Francesca; Sala, Carla; Maisaidi, Meilikemu et al. (2008):

Body mass index, nocturnal fall in blood pressure and organ damage in untreated essential hypertensive patients.

In: *Blood Press Monit* 13 (6), S. 318–324.

Abstract:

AIM:

We sought to investigate the relationship between body mass index (BMI) and parameters derived from 48-h ambulatory blood pressure monitoring (ABPM) as well as organ damage in human hypertension.

METHODS:

A total of 658 consecutive outpatients with grade 1 and 2 hypertension, never treated with antihypertensive medications underwent the following procedures: (i) routine examination, (ii) 24-h urine collection for microalbuminuria, (iii) ABPM over two 24-h periods within 4 weeks, (iv) echocardiography and (v) carotid ultrasonography. Each patient was classified as lean (BMI<25 kg/m2) or overweight/obese (> or =25 kg/m2) and according to the consistency of the dipping or nondipping status in the first and second ABPM period, as dipper (DD), nondipper and variable dipper.

RESULTS:

Mean 48-h, daytime and nighttime systolic BP or diastolic BP were superimposable in the lean (n=314) and overweight (n=344) group. Overweight patients had a reduced nocturnal BP drop compared with their lean counterparts; the prevalence of DD pattern, indeed, was 15% lower in the overweight group as a whole, with a 17% difference in men and 13% in women. The prevalence of left ventricular hypertrophy was higher in overweight than in lean patients (31.8 vs. 15.9% in men and 48.7 vs. 15.6% in women, P<0.01); this more pronounced cardiac involvement was associated with structural carotid alterations.

CONCLUSION:

This study, the first to investigate the relationship between BMI and nocturnal BP patterns as assessed by two ABPM sessions, shows that overweight hypertensive patients are more likely to have a reduced nocturnal fall in BP and a greater cardiac and extracardiac organ damage as compared with their lean counterparts despite a similar overall BP load.

da Silva, Vinicius Z M; Lima, Alexandra C.; Vargas, Fillippe T.; Cahalin, Lawrence P.; Arena, Ross; Cipriano, Gerson (2013):

Association between physical activity measurements and key parameters of cardiopulmonary exercise testing in patients with heart failure.

In: *Journal of cardiac failure* 19 (9), S. 635–640. DOI: 10.1016/j.cardfail.2013.08.002.

Abstract:

BACKGROUND\r\nA hallmark characteristic of heart failure (HF) is reduced physical activity (PA) patterns. The relationship between key cardiopulmonary exercise testing (CPX) variables and PA patterns has not been investigated. Therefore, we evaluated PA patterns in patients with ischemic HF and its relationship to peak oxygen consumption (VO2), the minute ventilation/carbon dioxide production (VE/VCO2) slope, and the oxygen uptake efficiency slope (OUES).\r\nMETHODS AND RESULTS\r\nSixteen patients with HF wore an accelerometer for six days to measure total steps/day as well as percentage of time at light, moderate, and vigorous PA. Symptom-limited CPX was performed on a treadmill using a ramping protocol. Total steps correlated with VO2 (r = 0.64 P < .05), the VE/VCO2 slope (r = -0.72; P < .05), and the OUES (0.63; P < .05). The percentage of time at light-intensity PA correlated with the VE/VCO2 slope (r = 0.58; P < .05) and the OUES (r = -0.51; P < .05). The percentage of time at vigorous-intensity PA correlated with peak VO2 (r = 0.55; P < .05) and the VE/VCO2 slope (r = -0.52; P < .05).\r\nCONCLUSIONS\r\nPA assessed by accelerometer is significantly associated with key CPX variables in patients with HF.

Dadich, Ann (2014):

Citizen social science: a methodology to facilitate and evaluate workplace learning in continuing interprofessional education.

In: *J Interprof Care. DOI:* 10.3109/13561820.2013.874982.

Abstract:

Abstract Workplace learning in continuing interprofessional education (CIPE) can be difficult to facilitate and evaluate, which can create a number of challenges for this type of learning. This article presents an innovative method to foster and investigate

workplace learning in CIPE - citizen social science. Citizen social science involves clinicians as co-researchers in the systematic examination of social phenomena. When facilitated by an open-source online social networking platform, clinicians can participate via computer, smartphone, or tablet in ways that suit their needs and preferences. Furthermore, as co-researchers they can help to reveal the dynamic interplay that facilitates workplace learning in CIPE. Although yet to be tested, citizen social science offers four potential benefits: it recognises and accommodates the complexity of workplace learning in CIPE; it has the capacity to both foster and evaluate the phenomena; it can be used in situ, capturing and having direct relevance to the complexity of the workplace; and by advancing both theoretical and methodological debates on CIPE, it may reveal opportunities to improve and sustain workplace learning. By describing an example situated in the youth health sector, this article demonstrates how these benefits might be realised.

Dae Cha, Yong; Yoon, Gilwon (2009):

Ubiquitous health monitoring system for multiple users using a ZigBee and WLAN dual-network.

In: *Telemedicine and e-Health* 15 (9), S. 891–897.

Abstract:

A ubiquitous health monitoring system for multiple users was developed based on a ZigBee and wireless local area network (WLAN) dual-network. A compact biosignal monitoring unit (BMU) for measuring electrocardiogram (ECG), photoplethysmogram (PPG), and temperature was also developed. A single 8-bit microcontroller operated the BMU including most of digital filtering and wireless communication. The BMU with its case was reduced to 55 x 35 x 15 mm and 33 g. In routine use, vital signs of 6 bytes/sec (heart rate, temperature, pulse transit time) per each user were transmitted through a ZigBee module even though all the real-time data were recorded in a secure digital memory of the BMU. In an emergency or when need arises, a channel of a particular user was switched to another ZigBee module, called the emergency module, that sent all ECG and PPG waveforms in real time. Each emergency ZigBee module handled up to a few users. Data from multiple users were wirelessly received by the ZigBee receiver modules in a controller called ZigBee-WLAN gateway, where the ZigBee modules were connected to a WLAN module. This WLAN module sent all data wirelessly to a monitoring center. Operating the dual modes of ZigBee/WLAN utilized an advantage of ZigBee by handling multiple users with minimum power consumption, and overcame the ZigBee limitation of low data rate. This dual-network system for LAN is economically competitive and reliable.

Dagoo, Jesper; Asplund, Robert Persson; Bsenko, Helene Andersson; Hjerling, Sofia; Holmberg, Anna; Westh, Susanne et al. (2014):

Cognitive behavior therapy versus interpersonal psychotherapy for social anxiety disorder delivered via smartphone and computer: a randomized controlled trial.

In: *J Anxiety Disord* 28 (4), S. 410–417. DOI: 10.1016/j.janxdis.2014.02.003.

Abstract:

In this study, a previously evaluated guided Internet-based cognitive behavior therapy for social anxiety disorder (SAD) was adapted for mobile phone administration (mCBT). The treatment was compared with a guided self-help treatment based on interpersonal psychotherapy (mIPT). The treatment platform could be accessed through smartphones, tablet computers, and standard computers. A total of 52 participants were diagnosed with SAD and randomized to either mCBT (n=27) or mIPT (n=25). Measures were collected at pre-treatment, during the treatment, post-treatment and 3-month follow-up. On the primary outcome measure, the Liebowitz Social Anxiety Scale - self-rated, both groups showed statistically significant improvements. However, mCBT performed significantly better than mIPT (between group Cohen's d=0.64 in favor of mCBT). A larger proportion of the mCBT group was classified as responders at post-treatment (55.6% versus 8.0% in the mIPT group). We conclude that CBT for SAD can be delivered using modern information technology. IPT delivered as a guided self-help treatment may be less effective in this format.

Dalton, A.; Patel, S.; Chowdhury, A. R.; Welsh, M.; Pang, T.; Schachter, S. et al. (2012):

Development of a body sensor network to detect motor patterns of epileptic seizures.

In: *IEEE Trans.Biomed.Eng* 59 (11), S. 3204–3211. DOI: 10.1109/TBME.2012.2204990.

Abstract:

The objective of this study was the development of a remote monitoring system to monitor and detect simple motor seizures. Using accelerometer-based kinematic sensors, data were gathered from subjects undergoing medication titration at the Beth Israel Deaconess Medical Center. Over the course of the study, subjects repeatedly performed a predefined set of instrumental activities of daily living (iADLs). During the monitoring sessions, EEG and video data were also recorded and provided the gold standard for seizure detection. To distinguish seizure events from iADLs, we developed a template matching algorithm. Considering the unique signature of seizure events and the inherent temporal variability of seizure types across subjects, we incorporated a customized mass-spring template into the dynamic time warping algorithm. We then ported this algorithm onto a commercially available internet tablet and developed our body sensor network on the Mercury platform. We designed several policies on this platform to compare the tradeoffs between feature calculation, raw data transmission, and battery lifetime. From a dataset of 21 seizures, the sensitivity for our template matching algorithm was found to be 0.91 and specificity of 0.84. We achieved a battery lifetime of 10.5 h on the Mercury platform

Daly, Michael; Delaney, Liam; Doran, Peter P.; Harmon, Colm; MacLachlan, Malcolm (2010):

Naturalistic monitoring of the affect-heart rate relationship: a day reconstruction study.

In: *Health Psychol* 29 (2), S. 186–195. DOI: 10.1037/a0017626.

Abstract:

OBJECTIVE\r\nProspective studies have linked negative affect with hypertension, cardiovascular disease, and mortality. This study aims to identify if cardiovascular activity in day-to-day settings is related to affect levels as assessed using the Day Reconstruction Method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004).\r\nDESIGN\r\n186 people underwent baseline physiological testing and were monitored naturalistically for an entire day. Multilevel models were the principal analyses used.\r\nMAIN OUTCOME MEASURES\r\nWe utilized an online day reconstruction survey to produce a continuous account of affect, social interactions, and activity patterns during waking hours. Ambulatory heart rate (HR) was assessed during the same period. Personality, health behavior, consumption, self-reported activity, and baseline physiological characteristics were assessed to isolate the relationships between affect and HR.\r\nRESULTS\r\nNegative affect predicted an elevated ambulatory HR and tiredness predicted a lower HR. Associations between negative affectivity and increased cardiovascular reactivity were maintained after taking account of baseline physiological factors, health behavior, and personality.\r\nCONCLUSION\r\nNegative affect in everyday life is a reliable predictor of HR. Combining day reconstruction with psychophysiological and environmental monitoring is a minimally invasive method with promising interdisciplinary relevance.

Daniel, Karen D.; Kim, Grace Y.; Vassiliou, Christophoros C.; Galindo, Marilyn; Guimaraes, Alexander R.; Weissleder, Ralph et al. (2009):

Implantable diagnostic device for cancer monitoring.

In: *Biosensors and Bioelectronics* 24 (11), S. 3252–3257.

Abstract:

Biopsies provide required information to diagnose cancer but, because of their invasiveness, they are difficult to use for managing cancer therapy. The ability to repeatedly sample the local environment for tumor biomarker, chemotherapeutic agent, and tumor metabolite concentrations could improve early detection of metastasis and personalized therapy. Here we describe an implantable diagnostic device that senses the local in vivo environment. This device, which could be left behind during biopsy, uses a semi-permeable membrane to contain nanoparticle magnetic relaxation switches. A cell line secreting a model cancer biomarker produced ectopic tumors in mice. The transverse relaxation time (T2) of devices in tumor-bearing mice was 20 ± 10% lower than devices in control mice after 1 day by magnetic resonance imaging ($p < 0.01$). Short term applications for this device are numerous, including verification of successful tumor resection. This may represent the first continuous monitoring device for soluble cancer biomarkers in vivo.

Daniele Giansanti (2006):

Does centripetal acceleration affect trunk flexion monitoring by means of accelerometers?

In: *Physiol Meas* 27 (10), S. 999. Online verfügbar unter http://stacks.iop.org/0967-3334/27/i=10/a=006.

Abstract:

Micro electro-mechanical and NANO technologies are sensibly reducing circuit and geometrical errors in accelerometer sensors. These sensors are often used as portable inclinometer sensors for trunk flexion monitoring in clinical applications. In this case, the rotating trunk generates centripetal acceleration, an error source that technological efforts cannot eliminate. This study analysed the effect of this source for typical human monitoring conditions by simulations and clinical validation using a wearable device with rate gyroscopes and accelerometers (Giansanti and Maccioni 2005 Physiol. Meas. [/0967-3334/26/5/010] 26 689–705). Results showed that this error source did not affect long-term monitoring applications (Mathie et al [/0967-3334/25/2/r01] 2004 Physiol. Meas. 25 R1–R20) but in the short-term monitoring caused a mean angular error equal to 0.96° for the most critical single-task application represented by the sit-to-stand.

Daniels, Kevin (2013):

Job characteristics and problem-solving. In: Arnold B. Bakker und Kevin Daniels: A day in the life of a happy worker.

Hg. v. Arnold B. Bakker und Kevin Daniels. New York, NY US: Psychology Press (Current issues in work and organizational psychology), S. 58–71. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-02788-005%26site%3dehost-live.

Abstract:

(from the chapter) Many theories of job design treat job characteristics as stable, independent of the person performing the job, and as an "objective" determinant of workplace health, well-being, and performance. Drawing on the job crafting and coping literatures, in this chapter, I portray job characteristics as dynamic phenomena which are enacted by people for specific purposes. I show how this approach to job design can be used to help understand how some job characteristics can protect and enhance daily levels of well-being, learning, creativity, innovation, and cognitive performance through facilitating the generation and implementation of solutions to workplace problem-solving demands. Next, I will review how traditional approaches to job design have furthered our understanding of what makes for good and productive work. I will also review some of the unstated assumptions of this approach that are inherent to the methodologies used in this stream of literature. Following from this, I will examine some of the major principles from the emerging literature on job crafting. Together with some of the literature on coping, I will show how the literature on job design can be extended to examine how workers shape their work over the short-term for specific purposes. These purposes include solving problems at work. I will then outline how experience-sampling and diary methods can add to our understanding of job design and its consequences because they allow researchers to look at job design in a new way. Before concluding the chapter with implications for job design theories, I will review research that indicates the importance of examining how workers shape their work over the short-term for specific purposes. This research indicates implications for well-being and different facets of work performance, such as learning, creativity, innovation, and cognitive performance. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (chapter)

Daniels, Kevin; Beesley, Nick; Wimalasiri, Varuni; Cheyne, Alistair (2013):

Problem solving and well-being: Exploring the instrumental role of job control and social support.

In: *Journal of Management* 39 (4), S. 1016–1043. DOI: 10.1037/t00791-000;

Abstract:

Enacting social support and job control can enable effective problem solving and protect well-being. The authors operationalized social support used for problem solving as “discussing problems with others to solve problems” (DIS-SP) and job control used to solve problems as “changing aspects of work activities to solve problems” (CHA-SP). Analyses of experience sampling data (N = 191) revealed that DIS-SP was inversely associated with subsequent negative affect and that there were curvilinear relationships between CHA-SP and subsequent levels of negative affect, fatigue, and cognitive failure, such that only high levels of CHA-SP were associated with lower levels of negative affect, fatigue, and cognitive failure. Fatigue was inversely

associated with subsequent levels of DIS-SP and CHA-SP. Contrary to expectations, there was a positive association between cognitive failure and subsequent CHA-SP. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Daniels, Kevin; Glover, Jane; Mellor, Nadine (2014):

An experience sampling study of expressing affect, daily affective well-being, relationship quality, and perceived performance.

In: *Journal of Occupational and Organizational Psychology* 87 (4), S. 781–805. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-27147-001%26site%3dehost-live.

Abstract:

Few studies have directly examined the processes through which workers use job resources, such as job control and social support, to regulate affect. We focused on affective expression, which is a specific form of affect regulation. We investigated the extent to which workers used both job control and social support to express affect. Thirty-nine call centre workers provided data up to four times a day over five consecutive working days (number of observations = 272). Executing job control to allow workers to express affect was related to using social support to express affect. Workers' understanding of their personal goals mediated relationships between using social support to express affect and four outcomes (negative affect, positive affect, perceived performance, and quality of workplace relationships). Perceived empathy mediated relationships between using social support to express affect and three outcomes (negative affect, positive affect, and quality of workplace relationships). The findings indicated that (1) one job resource can be used to facilitate using another job resource for affect regulation and (2) different job resources may play different roles in conferring benefits from affective expression. Practitioner points· Jobs cannot be treated as static entities with fixed characteristics. Rather workers will use resources embedded in job design for specific purposes. · Job redesign interventions intended to enhance affective well-being need to take account of the social and cognitive processes that mediate the relationship between work and affective well-being. · Job redesign interventions need to integrate information about dynamic processes in which use of one job resource can enable use of another job resource. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Daniels, Kevin; Wimalasiri, Varuni; Beesley, Nick; Cheyne, Alistair (2012):

Affective well-being and within-day beliefs about job demands' influence on work performance: An experience sampling study.

In: *Journal of Occupational and Organizational Psychology* 85 (4), S. 666–674. DOI: 10.1037/t18072-000;

Abstract:

Affective well-being is influenced by individuals' momentary beliefs concerning events' impact on goals. We examined within-day beliefs concerning problem-solving demands' adverse impact on an important work goal (work performance). Participants (N = 68) provided data up to four times per day for one working week. Hourly beliefs about problem-solving demands' adverse impact on performance were associated with end-of-hour anxious affect and inversely associated with end-of-hour motivated pleasant affect. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Dansie, Elizabeth J.; Turk, Dennis C.; Martin, Kathryn R.; van Domelen, Dane R.; Patel, Kushang V. (2014):

Association of Chronic Widespread Pain with Objectively Measured Physical Activity in Adults: Findings from the National Health and Nutrition Examination Survey.

In: *J Pain. DOI:* 10.1016/j.jpain.2014.01.489.

Abstract:

Chronic widespread pain (CWP) is a common and potentially debilitating disorder. Patterns of physical activity (PA) in adults with CWP have primarily been investigated using subjective, self-report measures. The current study sought to characterize PA among community-dwelling individuals with CWP, chronic regional pain (CRP), or no chronic pain (NCP) using objective measurements obtained via accelerometry in the 2003-2004 National Health and Nutrition Examination Survey (NHANES). Data from 3,952 participants ages 20 and older were analyzed to assess relationships between pain status and objective measurements of PA. Prevalence of CWP was 3.3% and 5.4% for men and women, respectively. In men and women, the average activity counts per minute (CPM) and time spent in moderate-to-vigorous PA were significantly lower for the CWP group than

for the NCP group. Interestingly, time spent in sedentary, light, and lifestyle activities were not associated with pain status. Statistical interaction tests indicated that the effects of chronic pain on CPM were stronger in men than in women. Despite recommendations for increased moderate-to-vigorous PA as a pain management strategy for CWP, results from this nationally representative study indicate that adults with CWP participate in less moderate-to-vigorous PA than individuals without chronic pain. PERSPECTIVE: Using objective measurement of physical activity in a nationally representative sample, this study demonstrates adults with chronic widespread pain participate in reduced daily and moderate-to-vigorous physical activity in comparison to people with no chronic pain. Findings indicate that clinicians should emphasize the importance of increasing PA in patients with CWP.

Darcan, Sukran; Goksen, Damla; Mir, Sevgi; Serdaroglu, Erkin; Buyukinan, Muammer; Coker, Mahmut et al. (2006):

Alterations of blood pressure in type 1 diabetic children and adolescents.

In: *Pediatr Nephrol* 21 (5), S. 672–676.

Abstract:

The aim of this study was to assess the association between metabolic control, microalbuminuria, and diabetic nephropathy with ambulatory blood pressure monitoring (ABPM) in normotensive individuals with type 1 diabetes mellitus (DM). ABPM was undertaken in 68 normotensive type 1 diabetic patients with a mean age of 14.4±4.2 years. Microalbuminuria was diagnosed on the basis of a urinary albumin excretion rate grater than 20 µg/min in two of the three 24-h urine collections. Hypertension (HT) frequency was greater in the microalbuminuric patients than normoalbuminuric patients (54 vs 17.54%, p=0.05) with ABPM. Microalbuminuric patients had a higher diastolic pressure burden than normoalbuminuric patients. There were no differences in systolic and diastolic dips between the two groups. Diastolic pressure loads in all periods showed a significant correlation with duration of diabetes, mean HbA1c from the onset of diabetes, and level of microalbuminuria. Nocturnal dipping was reduced in 41.2% of the patients. In the normoalbuminuric group 41.1% and in the microalbuminuric group 63.6% were nondippers. Our data demonstrate higher 24-h and daytime diastolic blood pressure load and loss of nocturnal dip in type 1 diabetic adolescents and children. High diastolic blood pressure burden in diabetic patients could represent a risk for nephropathy.

Dasgupta, Kaberi; Joseph, Lawrence; Pilote, Louise; Strachan, Ian; Sigal, Ron J.; Chan, Cathy (2010):

Daily steps are low year-round and dip lower in fall/winter: findings from a longitudinal diabetes cohort.

In: *Cardiovasc Diabetol* 9 (1), S. 81.

Abstract:

BACKGROUND:

Higher walking levels lead to lower mortality in type 2 diabetes, but inclement weather may reduce walking. In this patient population, we conducted a longitudinal cohort study to objectively quantify seasonal variations both in walking and in two vascular risk factors associated with activity levels, hemoglobin A1C and blood pressure.

METHODS:

Between June 2006 and July 2009, volunteer type 2 diabetes patients in Montreal, Quebec, Canada underwent two weeks of pedometer measurement up to four times over a one year follow-up period (i.e. once/season). Pedometer viewing windows were concealed (snap-on cover and tamper proof seal). A1C, blood pressure, and anthropometric parameters were also assessed. Given similarities in measures for spring/summer and fall/winter, and because not all participants completed four assessments, spring and summer values were collapsed as were fall and winter values. Mean within-individual differences (95% confidence intervals) were computed for daily steps, A1C, and systolic and diastolic blood pressure, by subtracting spring/summer values from fall/winter values.

RESULTS:

Among 201 participants, 166 (82.6%) underwent at least one fall/winter and one spring/summer evaluation. Approximately half were women, the mean age was 62.4 years (SD 10.8), and the mean BMI was 30.1 kg/m2 (SD 5.7). Step counts averaged at a sedentary level in fall/winter (mean 4,901 steps/day, SD 2,464) and at a low active level in spring/summer (mean 5,659 steps/day, SD 2,611). There was a -758 (95% CI: -1,037 to -479) mean fall/winter to spring/summer within-individual difference. There were no significant differences in A1C or in anthropometric parameters. Systolic blood pressure was higher in fall/winter (mean 137 mm Hg, SD 16) than spring/summer (133 mm Hg, SD 14) with a mean difference of 4.0 mm Hg (95% CI: 2.3 to 5.7).

CONCLUSIONS:

Daily step counts in type 2 diabetes patients are low, dipping lower during fall/winter. In this medication-treated cohort, A1C was stable year-round but a fall/winter systolic blood pressure increase was detected. Our findings signal a need to develop strategies to help patients increase step counts year-round and prevent both reductions in step counts and increases in blood pressure during the fall and winter.

Dassau, Eyal; Bequette, B. Wayne; Buckingham, Bruce A.; Doyle, Francis J. (2008):

Detection of a Meal Using Continuous Glucose Monitoring Implications for an artificial β-cell.

In: *Diabetes Care* 31 (2), S. 295–300.

Abstract:

OBJECTIVE:

The purpose of this study was to introduce a novel meal detection algorithm (MDA) to be used as part of an artificial beta-cell that uses a continuous glucose monitor (CGM).

RESEARCH DESIGN AND METHODS:

We developed our MDA on a dataset of 26 meal events using records from 19 children aged 1-6 years who used the MiniMed CGMS Gold. We then applied this algorithm to CGM records from a DirecNet pilot study of the FreeStyle Navigator continuous glucose sensor. During a research center admission, breakfast insulin was withheld for 1 h, and discrete glucose levels were obtained every 10 min after the meal.

RESULTS:

Based on the Navigator readings, the MDA detected a meal at a mean time of 30 min from the onset of eating, at which time the mean serum glucose was 21 mg/dl above baseline (range 2-36 mg/dl), and >90% of meals were detected before the glucose had risen 40 mg/dl from baseline.

CONCLUSIONS:

The MDA will enable automated insulin dosing in response to meals, facilitating the development of an artificial pancreas.

David, James P. (1999):

Coping Efforts in Daily Life: Role of Big Five Traits and Problem Appraisals.

In: *J Personality* 67 (2), S. 265–294. DOI: 10.1111/1467-6494.00056.

Abstract:

The role of problem appraisal and Big Five traits in coping with bothersome daily events was investigated. Community-residing men completed diaries regarding stressful events and coping for eight consecutive days. Results of multi-level analyses indicated that lower perceived control over events was associated with greater reliance on distraction, catharsis, acceptance, seeking emotional social support, but less use of direct action. Stressor severity was positively associated with catharsis and religion, but negatively associated with acceptance. Neuroticism, Extraversion, Openness to experience, and Conscientiousness predicted coping strategy use. In addition, broad personality dimensions moderated relations between appraisals (perceived uncontrolability and severity) and coping strategy use. Although previous research implicated perceived control in coping, the present study suggests that both appraisals of stressor severity and individual differences in personality are also important determinants of coping strategy use at the daily level.

Davis, Jaimie N.; Tung, Amy; Chak, Salva S.; Ventura, Emily E.; Byrd-Williams, Courtney E.; Alexander, Katharine E. et al. (2009):

Aerobic and strength training reduces adiposity in overweight Latina adolescents.

In: *Med Sci Sports Exerc* 41 (7), S. 1494–1503. DOI: 10.1249/MSS.0b013e31819b6aea.

Abstract:

PURPOSE\r\nTo date, no study has examined the synergistic effects of a nutrition and combination of aerobic and strength training (CAST) on both adiposity and metabolic parameters in overweight Latina adolescent females. The goal was to assess if a 16-wk nutrition plus CAST pilot study had stronger effects on reducing adiposity and on improving glucose/insulin indices

compared with control (C), nutrition only (N), and a nutrition plus strength training (N + ST) groups.\r\nMETHODS\r\nIn a 16-wk randomized trial, 41 overweight Latina girls (15.2 +/- 1.1 yr) were randomly assigned to C (n = 7), N (n = 10), N + ST (n = 9), or N + CAST (n = 15). All intervention groups received modified carbohydrate nutrition classes (once a week), whereas the N + ST also received strength training (twice a week) and the N + CAST received a combination of strength and aerobic training (twice a week). The following were measured before and after intervention: strength by one repetition maximum, physical activity by the 7-d accelerometry and the 3-d physical activity recall, dietary intake by 3-d records, body composition by dual-energy x-ray absorptiometry (DEXA), glucose/insulin indices by oral glucose tolerance test, and intravenous glucose tolerance test with minimal modeling. Across intervention group, effects were tested using ANCOVA with post hoc pairwise comparisons.\r\nRESULTS\r\nThere were significant overall intervention effects for all adiposity measures (weight, body mass index [BMI], BMI z-scores, and DEXA total body fat), with a decrease of 3% in the N + CAST group compared with a 3% increase in the N + ST group (P < or = 0.05). There was also an intervention effect for fasting glucose with the N group increasing by 3% and the N + CAST group decreasing by 4% (P < or = 0.05).\r\nCONCLUSION\r\nThe CAST was more effective than nutrition alone or nutrition plus strength training for reducing multiple adiposity outcomes and fasting glucose in overweight Latina girls. However, further research investigating and identifying intervention approaches that improve both adiposity and insulin indices, particularly in high-risk populations, are warranted.

Davison, Kirsten Krahnstoever; Deane, Glenn D. (2010):

The consequence of encouraging girls to be active for weight loss.

In: *Soc Sci Med* 70 (4), S. 518–525. DOI: 10.1016/j.socscimed.2009.10.061.

Abstract:

The purpose of the study, conducted in Pennsylvania, USA, was to assess the prospective effect of parental encouragement of physical activity (PA) for weight loss on adolescent girls' concern about weight, Body Mass Index (BMI) and objectively-measured PA. Non-Hispanic White girls (N = 177) and their parents were assessed when girls were 9, 11, 13 and 15 years old. At each age, girls' concern about their weight, pubertal development, BMI, and dietary intake were measured along with mothers' and fathers' encouragement of PA for weight loss, modeling of PA, and logistic support for PA. At ages 13 and 15 years, girls' PA was assessed using accelerometry. At age 11, girls' PA was measured using a combination of self-report measures and a standardized assessment of cardiovascular fitness. Parents of obese girls reported the highest encouragement of PA for weight loss; however, girls from all weight categories were exposed to encouragement of PA for weight loss and showed similar age-related increases in parental encouragement. Encouragement of PA for weight loss was prospectively associated with higher concern about weight and higher BMI, independent of pre-existing levels of these constructs and covariates. Encouragement of PA for weight loss was not associated with girls' objectively-measured PA. Parental encouragement of PA for weight loss was therefore not an effective strategy in this sample. Findings are consistent with research on parental child feeding practices, where parental control has been linked with unintended negative dietary and psychosocial outcomes among children.

Davison, R. Richard; van Someren, Ken A.; Jones, Andrew M. (2009):

Physiological monitoring of the Olympic athlete.

In: *Journal of Sports Sciences* 27 (13), S. 1433–1442. DOI: 10.1080/02640410903045337.

Abstract:

As the winning margin in Olympic competition is so small, there is a continuous quest for improvements in the preparation of athletes at this standard. Therefore, even the smallest physiological improvements that result from modifications in training strategy, preparation regime or ergogenic aids are potentially useful. Unfortunately, there is a lack of research data on elite competitors, which limits our interpretation of current literature to the elite sporting environment. This places extra responsibility on the physiologist to carefully consider the most appropriate physiological variables to monitor, the best protocols to assess those variables, and the accurate interpretation of the test results. In this paper, we address the key issues of ecological validity, measurement error, and interpretation for the most commonly monitored physiological variables. Where appropriate, we also indicate areas that would benefit from further research.

Dayer, L.; Heldenbrand, S.; Anderson, P.; Gubbins, P. O.; Martin, B. C. (2013):

Smartphone medication adherence apps: potential benefits to patients and providers.

In: *J Am Pharm.Assoc.(2003.)* 53 (2), S. 172–181. DOI: 10.1331/JAPhA.2013.12202.

Abstract:

OBJECTIVES: To provide an overview of medication adherence, discuss the potential for smartphone medication adherence applications (adherence apps) to improve medication nonadherence, evaluate features of adherence apps across operating systems (OSs), and identify future opportunities and barriers facing adherence apps. PRACTICE DESCRIPTION: Medication nonadherence is a common, complex, and costly problem that contributes to poor treatment outcomes and consumes health care resources. Nonadherence is difficult to measure precisely, and interventions to mitigate it have been largely unsuccessful. PRACTICE INNOVATION: Using smartphone adherence apps represents a novel approach to improving adherence. This readily available technology offers many features that can be designed to help patients and health care providers improve medication-taking behavior. MAIN OUTCOME MEASURES: Currently available apps were identified from the three main smartphone OSs (Apple, Android, and Blackberry). In addition, desirable features for adherence apps were identified and ranked by perceived importance to user desirability using a three-point rating system: 1, modest; 2, moderate; or 3, high. The 10 highest-rated apps were installed and subjected to user testing to assess app attributes using a standard medication regimen. RESULTS 160 adherence apps were identified and ranked. These apps were most prevalent for the Android OS. Adherence apps with advanced functionality were more prevalent on the Apple iPhone OS. Among all apps, MyMedSchedule, MyMeds, and RxmindMe rated the highest because of their basic medication reminder features coupled with their enhanced levels of functionality. CONCLUSION: Despite being untested, medication apps represent a possible strategy that pharmacists can recommend to nonadherent patients and incorporate into their practice

De, Groot S.; Nieuwenhuizen, M. G. (2013):

Validity and reliability of measuring activities, movement intensity and energy expenditure with the DynaPort MoveMonitor.

In: *Med Eng Phys* (1350-4533 (Linking)). DOI: 10.1016/j.medengphy.2013.04.004.

Abstract:

The purpose of this study was to evaluate the validity and reliability of assessing activities, movement intensity (MI) and energy expenditure (EE) measured by accelerometry. 28 Able-bodied participants performed standardized tasks while an accelerometer was worn and oxygen uptake was measured. After uploading the accelerometer data to the manufacturer's website, a report was received that gave minute-by-minute MI and EE of the performed activities. Validity was assessed by comparing reported activities and EE with the actual performed activities and calculated EE from the oxygen uptake, and by testing whether MI differed between walking velocities and cycling resistances. Reliability was assessed by performing the protocol twice. Except for standing (classified predominantly (82%) as sitting), most activities were categorized mainly correctly (93-100%). A difference in MI was detected between walking speeds but not between cycling resistances. EE was overestimated for walking (ICC=0.54) and underestimated for cycling (ICC=0.03). Reliability of MI was high (ICC=0.91) but reliability for the relative time spent in activities or the step count was weak to moderate. In conclusion, most activities were categorized correctly, MI seemed to be valid and reliable but reliability is low for relative time spent in activities and EE cannot be estimated well

De, Nazelle A.; Seto, E.; Donaire-Gonzalez, D.; Mendez, M.; Matamala, J.; Nieuwenhuijsen, M. J.; Jerrett, M. (2013):

Improving estimates of air pollution exposure through ubiquitous sensing technologies.

In: *Environ.Pollut.* 176 (0269-7491 (Linking)), S. 92–99. DOI: 10.1016/j.envpol.2012.12.032.

Abstract:

Traditional methods of exposure assessment in epidemiological studies often fail to integrate important information on activity patterns, which may lead to bias, loss of statistical power, or both in health effects estimates. Novel sensing technologies integrated with mobile phones offer potential to reduce exposure measurement error. We sought to demonstrate the usability and relevance of the CalFit smartphone technology to track person-level time, geographic location, and physical activity patterns for improved air pollution exposure assessment. We deployed CalFit-equipped smartphones in a free-living population of 36 subjects in Barcelona, Spain. Information obtained on physical activity and geographic location was linked to space-time air pollution mapping. We found that information from CalFit could substantially alter exposure estimates. For instance, on average travel activities accounted for 6% of people's time and 24% of their daily inhaled NO. Due to the large number of mobile phone users, this technology potentially provides an unobtrusive means of enhancing epidemiologic exposure data at low cost

Debrot, A.; Schoebi, D.; Perrez, M.; Horn, A. B. (2013):

Touch as an interpersonal emotion regulation process in couples' daily lives: the mediating role of psychological intimacy.

In: *Pers.Soc.Psychol.Bull* 39 (10), S. 1373–1385. DOI: 10.1177/0146167213497592.

Abstract:

Interpersonal touch seems to promote physical health through its effects on stress-sensitive parameters. However, less is known about the psychological effects of touch. The present study investigates associations between touch and romantic partners' affective state in daily life. We hypothesized that this association is established by promoting the recipient's experience of intimacy. Both partners of 102 dating couples completed an electronic diary 4 times a day during 1 week. Multilevel analyses revealed that touch was associated with enhanced affect in the partner. This association was mediated by the partner's psychological intimacy. Touch was also associated with intimacy and positive affect in the actor. Finally, participants who were touched more often during the diary study week reported better psychological well-being 6 months later. This study provides evidence that intimate partners benefit from touch on a psychological level, conveying a sense of strengthened bonds between them that enhances affect and well-being

Debusscher, Jonas; Hofmans, Joeri; Fruyt, Filip (2014):

The Curvilinear Relationship between State Neuroticism and Momentary Task Performance.

In: *PLoS One* 9 (9), S. e106989. DOI: 10.1371/journal.pone.0106989.

Abstract:

A daily diary and two experience sampling studies were carried out to investigate curvilinearity of the within-person relationship between state neuroticism and task performance, as well as the moderating effects of within-person variation in momentary job demands (i.e., work pressure and task complexity). In one, results showed that under high work pressure, the state neuroticism-task performance relationship was best described by an exponentially decreasing curve, whereas an inverted U-shaped curve was found for tasks low in work pressure, while in another study, a similar trend was visible for task complexity. In the final study, the state neuroticism-momentary task performance relationship was a linear one, and this relationship was moderated by momentary task complexity. Together, results from all three studies showed that it is important to take into account the moderating effects of momentary job demands because within-person variation in job demands affects the way in which state neuroticism relates to momentary levels of task performance. Specifically, we found that experiencing low levels of state neuroticism may be most beneficial in high demanding tasks, whereas more moderate levels of state neuroticism are optimal under low momentary job demands.

Decelis, Andrew; Jago, Russell; Fox, Kenneth R. (2014):

Objectively assessed physical activity and weight status in Maltese 11-12 year-olds.

In: *Eur J Sport Sci* 14 Suppl 1, S. S257-66. DOI: 10.1080/17461391.2012.691113.

Abstract:

The objectives of the study were to identify levels of physical activity and sedentary time and assess how they differ by weight status in Maltese boys and girls. Participants were 234 Maltese children aged 11-12 years, of which 187 (80%) provided complete data. Physical activity was assessed using accelerometry and weight status determined through gender-specific age-adjusted Body mass index (BMI). Self-reported mode of transport to school, TV and computer time, gaming and mobile phone use were assessed by questionnaire. Total physical activity was generally very low and significantly lower for girls than boys at all times on weekdays and on weekends till 7 pm. Overweight and obesity prevalence was 27% and 18.6%, respectively. Differences in overall physical activity were observed between non-overweight, and overweight and obese boys (p=0.003). Differences in moderate to vigorous intensity physical activity (MVPA) in boys were significant across all weight categories (p=0.001) and in girls (p=0.020) between the overweight (27.6 min), the non-overweight (26.4 min) and the obese (18.9 min). For weekdays, mean physical activity differences (p=0.013) were observed between non-overweight (515.5 cpm) and obese boys (416.4 cpm). Differences in MVPA were found (p=0.038) between non-overweight (4.4 min) and obese boys in the 6 am-3 pm period. Differences were also found between overweight (13.2 min) and obese girls (8.1 min) (p=0.024) in that period. On weekends, mean physical activity differences were found between non-overweight and overweight boys from 8 am-7 pm but not for girls. Physical activity levels in this sample were very low when compared to recommended levels, while the prevalence of overweight and obesity and sedentary time were high. Girls are significantly less active than boys throughout the week. Activity level differences and patterning across the day and week were related to weight status with obese children showing markedly less activity. These

results suggest that we need to provide more opportunities for overweight and obese children to be active throughout the week, with a particular emphasis on physical activity during school hours.

Dechering, Dirk G.; van der Steen, Marijke S; Adiyaman, Ahmet; Thijs, Lutgarde; Deinum, Jaap; Li, Yan et al. (2008):

Reproducibility of the ambulatory arterial stiffness index in hypertensive patients.

In: *J Hypertens* 26 (10), S. 1993–2000. DOI: 10.1097/HJH.0b013e328309ee4c.

Abstract:

BACKGROUND\r\nWe studied the repeatability of the ambulatory arterial stiffness index (AASI), which can be computed from 24-h blood pressure (BP) recordings as unity minus the regression slope of diastolic on systolic BP.\r\nMETHODS\r\nOne hundred and fifty-two hypertensive outpatients recruited in Nijmegen (mean age = 46.2 years; 76.3% with systolic and diastolic hypertension) and 145 patients enrolled in the Systolic Hypertension in Europe (Syst-Eur) trial (71.0 years) underwent 24-h BP monitoring at a median interval of 8 and 31 days, respectively. We used the repeatability coefficient, which is twice the SD of the within-participant differences between repeat recordings, and expressed it as a percentage of four times the SD of the mean of the paired measurements.\r\nRESULTS\r\nMean AASI (crude or derived by time-weighted or robust regression) and 24-h pulse pressure (PP) were similar on repeat recordings in both cohorts. In Nijmegen patients, repeatability coefficients of AASI and PP were approximately 50%. In Syst-Eur trial patients, repeatability coefficient was approximately 60% for AASI and approximately 40% for PP. For comparison, repeatability coefficients for 24-h systolic and diastolic BP were approximately 30%. Differences in AASI between paired recordings were correlated with differences in the goodness of fit (r2) of the AASI regression line as well as with differences in the night-to-day BP ratio. However, in sensitivity analyses stratified for type of hypertension, r2, or dipping status, repeatability coefficients for AASI did not widely depart from 50 to 60% range.\r\nCONCLUSION\r\nEstimates of mean AASI were not different between repeat recordings, and repeatability coefficients were within the 50-60% range.

Dedert, E. A.; Dennis, P. A.; Swinkels, C. M.; Calhoun, P. S.; Dennis, M. F.; Beckham, J. C. (2013):

Ecological Momentary Assessment of Posttraumatic Stress Disorder Symptoms During a Smoking Quit Attempt.

In: *Nicotine.Tob.Res.* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt167.

Abstract:

INTRODUCTION: Smokers with posttraumatic stress disorder (PTSD) tend to lapse more quickly following a quit attempt, which might be explained by changes in PTSD symptoms during a quit attempt. The present study examines changes in PTSD symptoms, negative affect, and craving before and during a quit attempt. METHODS: Participants in this study were 52 smokers with PTSD who completed random-alarm ecological momentary assessments of PTSD symptoms, negative affect, cigarette craving, and smoking behavior throughout a prequit phase of ad-hoc smoking, a phase of abstinence from smoking, and a postlapse phase. RESULTS: Relative to the prequit phase, the abstinent phase was marked by decreases in PTSD reexperiencing, avoidance, and numbing clusters (ps </= .01). The odds of PTSD symptom or negative affect variability from one reading in the ecological momentary assessment (EMA)to the next reading was decreased in PTSD reexperiencing, avoidance, and numbing clusters (ps </= .02). Smoking cravings were also mildly decreased in the abstinent and postlapse phases (ps < .01), although some cravings in both phases were rated at the maximum intensity. Increased craving was predicted by the previous EMA reading of PTSD symptoms. CONCLUSIONS: Results suggested that smoking abstinence is not associated with exacerbation of PTSD symptoms, but PTSD symptoms during abstinence were related to craving levels during the quit attempt

Dehart, Tracy; Pelham, Brett W. (2007):

Fluctuations in state implicit self-esteem in response to daily negative events.

In: *Journal of Experimental Social Psychology* 43 (1), S. 157–165.

Abstract:

A repeated assessment study examined changes in state implicit self-esteem after negative events. Multilevel analyses revealed that trait explicit self-esteem and self-concept clarity moderated the within-person association between daily negative events and state implicit self-esteem. People with low trait explicit self-esteem or low self-concept clarity experienced decreases in state implicit self-esteem when they experienced negative life events. In contrast, for people with high trait explicit self-esteem or high self-concept clarity, state implicit self-esteem remained stable after negative events. In addition, changes in state implicit self-

esteem remained significant after controlling for state explicit self-esteem and daily negative affect. This study is the first to study changes in implicit self-esteem in the context of daily life events.

Deja, G.; Borowiec, M.; Fendler, W.; Pietrzak, I.; Szadkowska, A.; MacHnica, L. et al. (2014):

Non-dipping and arterial hypertension depend on clinical factors rather than on genetic variability of ACE and RGS2 genes in patients with type 1 diabetes.

In: *Acta Diabetol. DOI:* 10.1007/s00592-014-0568-0.

Abstract:

The aim of our study was to characterize the association of clinical and genetic risk factors such as: ACE genotype (rs17997552, rs1800764, rs4459609) and RGS2 (rs2746071) with the development of hypertension (HT) and non-dipping phenomenon in patients with type 1 diabetes mellitus (T1DM). A total of 238 adolescents and young adults with T1DM-103 females and 135 males, aged 8-30 years (mean 17.35 +/- 5.2) with diabetes duration 1-26 years (mean 7.72 +/- 6.2), with mean HbA1c (IFCC) 58 +/- 15 mmol/mmol-were subjected to 24-h ambulatory blood pressure measurements (ABPM). The results of the ABPM were analyzed in association with the polymorphisms of ACE and RGS2 genes and clinical data of patients. HT was recognized in 65 (27 %) and non-dipping in 111 (46.63 %) patients. In the multivariate analysis of factors predisposing to HT, the variables that remained significant were the following: male sex (OR 1.62; 95 % CI 1.171-2.250), non-dipping (OR 1.40; 95 % CI 1.03-1.90) and total cholesterol level (OR 1.01; 95 % CI 1.005-1.021). The only factor influencing non-dipping was the duration of diabetes-OR 1.09 (95 % CI 1.04-1.14). The patients displaying non-dipping have a twice increased risk of development of HT (OR 2.17; 95 % CI 1.21-3.89). There was no association between disturbances of blood pressure (BP) and genotypes of ACE: rs17997552, rs1800764, rs4459609 and RGS2: rs2746071. Clinical rather than genetic risk factors seem to be connected with BP disturbances in young patients with T1DM. Although we have identified representative groups of HT versus non-HT and dipping versus non-dipping subjects, the effect of genetic predisposition to the development of higher BP is too weak to be statistically significant.

Dejnabadi, Hooman; Jolles, Brigitte M.; Casanova, Emilio; Fua, Pascal; Aminian, Kamiar (2006):

Estimation and visualization of sagittal kinematics of lower limbs orientation using body-fixed sensors.

In: *Biomedical Engineering, IEEE Transactions on* 53 (7), S. 1385–1393.

Abstract:

A new method of estimating lower limbs orientations using a combination of accelerometers and gyroscopes is presented. The model is based on estimating the accelerations of ankle and knee joints by placing virtual sensors at the centers of rotation. The proposed technique considers human locomotion and biomechanical constraints, and provides a solution to fusing the data of gyroscopes and accelerometers that yields stable and drift-free estimates of segment orientation. The method was validated by measuring lower limb motions of eight subjects, walking at three different speeds, and comparing the results with a reference motion measurement system. The results are very close to those of the reference system presenting very small errors (Shank: rms = 1.0, Thigh: rms = 1.6 degrees) and excellent correlation coefficients (Shank: r = 0.999, Thigh: r = 0.998). Technically, the proposed ambulatory system is portable, easily mountable, and can be used for long-term monitoring without hindrance to natural activities. Finally, a gait analysis tool was designed to visualize the motion data as synthetic skeletons performing the same actions as the subjects.

Del Rosario, Michael B.; Wang, Kejia; Wang, Jingjing; Liu, Ying; Brodie, Matthew; Delbaere, Kim et al. (2014):

A comparison of activity classification in younger and older cohorts using a smartphone.

In: *Physiol Meas* 35 (11), S. 2269–2286. DOI: 10.1088/0967-3334/35/11/2269.

Abstract:

Automatic recognition of human activity is useful as a means of estimating energy expenditure and has potential for use in fall detection and prediction. The emergence of the smartphone as a ubiquitous device presents an opportunity to utilize its embedded sensors, computational power and data connectivity as a platform for continuous health monitoring. In the study described herein, 37 older people (83.9 +/- 3.4 years) performed a series of activities of daily living (ADLs) while a smartphone (containing a triaxial accelerometer, triaxial gyroscope and barometric pressure sensor) was placed in the front pocket of their trousers. These results are compared to a similar trial conducted previously in which 20 young people (21.9 +/- 1.65 years) were

asked to perform the same ADLs using the same smartphone (again in the front pocket of their trousers).In each trial, the participants were asked to perform several activities (standing, sitting, lying, walking on level ground, up and down staircases, and riding an elevator up and down) in a free-living environment. During each acquisition session, the internal sensor signals were recorded and subsequently used to develop activity classifiers based on a decision tree algorithm that classified ADL in epochs of ~1.25 s. When training and testing with the younger cohort, using a leave-one-out cross validation procedure, a total classification sensitivity of 80.9% +/- 9.57% ([Formula: see text] = 0.75 +/- 0.12) was obtained. Retraining and testing on the older cohort, again using cross validation, gives a comparable total class sensitivity of 82.0% +/- 8.88% ([Formula: see text] =0.74 +/- 0.12).When trained with the younger group and tested on the older group, a total class sensitivity of 69.2% +/- 24.8% (95% confidence interval [69.6%, 70.6%]) and [Formula: see text] = 0.60 +/- 0.27 (95% confidence interval [0.58, 0.59]) was obtained. When trained on the older group and tested on the younger group, a total class sensitivity of 80.5% +/- 6.80% (95% confidence interval [79.0%, 80.6%]) and [Formula: see text] = 0.74 +/- 0.08 (95% confidence interval [0.73, 0.75]) was obtained.An instance of the decision tree classifier developed was implemented on the smartphone as a software application. It was capable of performing real-time activity classification for a period of 17 h on a single battery charge, illustrating that smartphone technology provides a viable platform on which to perform long-term activity monitoring.

Delaney, Angela; Pellizzari, Margaret; Speiser, Phyllis W.; Frank, Graeme R. (2009):

Pitfalls in the measurement of the nocturnal blood pressure dip in adolescents with type 1 diabetes.

In: *Diabetes Care* 32 (1), S. 165–168. DOI: 10.2337/dc08-1319.

Abstract:

OBJECTIVE\r\nThe purpose of this study was to screen adolescents with type 1 diabetes using ambulatory blood pressure monitoring (ABPM) to 1) test the hypothesis that using a preset sleep time results in an overdiagnosis of abnormal nocturnal dipping in systolic blood pressure and 2) assess the reproducibility of an abnormal nocturnal systolic blood pressure dip.\r\nRESEARCH DESIGN AND METHODS\r\nFor aim 1, ABPM from 53 adolescent patients with type 1 diabetes was reviewed. Nocturnal dips in systolic blood pressure calculated by actual sleep time were compared with those from a preset sleep time. For aim 2, blood pressure monitoring from 98 patients using actual reported sleep time was reviewed. Reproducibility of the nocturnal dip in systolic blood pressure was assessed in a subset of \"nondippers.\"\r\nRESULTS\r\nFor aim 1, the actual mean +/- SE decline in nocturnal systolic blood pressure was 11.6 +/- 4.7%, whereas the mean decline in nocturnal systolic blood pressure calculated using the preset sleep time was 8.8 +/- 4.9% (P < 0.0001). For aim 2, 64% of patients had a normal nocturnal decline in systolic blood pressure (14.9 +/- 3.1% mmHg), whereas 36% had an abnormal dip (5.7 +/- 2.8% mmHg). Repeat ABPM performed in 22 of the 35 nondippers revealed that only 36% had abnormal systolic dipping confirmed on the repeat ABPM.\r\nCONCLUSIONS\r\nThe use of actual reported sleep time is required to accurately determine the nocturnal dip in systolic blood pressure. Repeating ABPM in nondippers is essential to confirm this abnormality.

Delfino, Ralph J.; Gillen, Daniel L.; Tjoa, Thomas; Staimer, Norbert; Polidori, Andrea; Arhami, Mohammad et al. (2010):

Electrocardiographic ST-segment depression and exposure to traffic-related aerosols in elderly subjects with coronary artery disease.

In: *Environmental health perspectives* 119 (2).

Abstract:

BACKGROUND:

Air pollutants have not been associated with ambulatory electrocardiographic evidence of ST-segment depression ≥ 1 mm (probable cardiac ischemia). We previously found that markers of primary (combustion-related) organic aerosols and gases were positively associated with circulating biomarkers of inflammation and ambulatory blood pressure in the present cohort panel study of elderly subjects with coronary artery disease.

OBJECTIVES:

We specifically aimed to evaluate whether exposure markers of primary organic aerosols and ultrafine particles were more strongly associated with ST-segment depression of ≥ 1 mm than were secondary organic aerosols or PM2.5 (particulate matter with aerodynamic diameter ≤ 2.5 μm) mass.

METHODS:

We evaluated relations of air pollutants to ambulatory electrocardiographic evidence of cardiac ischemia over 10 days in 38 subjects without ST depression on baseline electrocardiographs. Exposures were measured outdoors in retirement communities in the Los Angeles basin, including daily size-fractionated particle mass and hourly markers of primary and secondary organic

aerosols and gases. Generalized estimating equations were used to estimate odds of hourly ST-segment depression (≥ 1 mm) from hourly air pollution exposures and to estimate relative rates of daily counts of ST-segment depression from daily average exposures, controlling for potential confounders.

RESULTS:

We found significant positive associations of hourly ST-segment depression with markers of combustion-related aerosols and gases averaged 1-hr through 3-4 days, but not secondary (photochemically aged) organic aerosols or ozone. The odds ratio per interquartile increase in 2-day average primary organic carbon (5.2 µg/m3) was 15.4 (95% confidence interval, 3.5-68.2). Daily counts of ST-segment depression were consistently associated with primary combustion markers and 2-day average quasi-ultrafine particles < 0.25 µm.

CONCLUSIONS:

Results suggest that exposure to quasi-ultrafine particles and combustion-related pollutants (predominantly from traffic) increase the risk of myocardial ischemia, coherent with our previous findings for systemic inflammation and blood pressure.

Dellava, Jocilyn E.; Hoffman, Daniel J. (2009):

Validity of resting energy expenditure estimated by an activity monitor compared to indirect calorimetry.

In: *British Journal of Nutrition* 102 (1), S. 155–159. DOI: 10.1017/S0007114508143537.

Abstract:

The use of activity monitors (triaxial accelerometers) to estimate total energy expenditure in kilocalories is dependent on the estimation of resting energy expenditure (REE). However, the REE estimated by activity monitors has not been validated against more precise techniques, such as indirect calorimetry (IC). Therefore, the objective of the present study was to compare REE estimated by the Actical activity monitor (ActMon) to that measured by IC and standard prediction equations of REE. Fifty healthy adults between 18 and 43 years of age were measured for weight and percentage of body fat using a digital scale and bioelectrical impedance. The REE estimated by the ActMon was only 129 kJ/d higher, but not statistically different (P>0.05), than the REE measured with IC. Using multiple linear regression, there was a positive relationship for men, but not for women, between fat mass (kg) and percentage of body fat and the difference in REE estimated by the ActMon compared to IC (P < 0.001). Therefore, in the cohort studied, the use of an activity monitor to estimate REE is valid when compared to IC, but not to a standard prediction equation of REE.

Dellon, E. S.; Irani, A. M.; Hill, M. R.; Hirano, I. (2013):

Development and field testing of a novel patient-reported outcome measure of dysphagia in patients with eosinophilic esophagitis.

In: *Aliment.Pharmacol.Ther.* 38 (6), S. 634–642. DOI: 10.1111/apt.12413.

Abstract:

BACKGROUND: Dysphagia is the hallmark of eosinophilic esophagitis (EoE), but no validated dysphagia instruments in this population exist. AIM: To develop and field test a patient-reported outcome (PRO) for dysphagia in subjects with EoE. METHODS: This was a multi-centre/multi-phase prospective study. The first phase developed a dysphagia questionnaire using qualitative methods. The second phase was a 30-day field trial to test the instrument and assess content validity. Adolescents and adults with EoE, active symptoms of dysphagia and oesophageal eosinophilia (>/=15 eosinophils per high-power field) were enrolled. Solid-food-avoidance days, dysphagia days and actions taken to get relief were recorded. A dysphagia score was calculated and compared to the Straumann Dysphagia Instrument (SDI). RESULTS: Ten adolescents and 10 adults were included in the first phase and the Dysphagia Symptom Questionnaire (DSQ), a three-item daily electronic diary, was developed. In the second phase, 35 subjects finished the field trial (18 adults, 17 adolescents, mean age 24, 54% male, 95% white, 54% currently on topical corticosteroids). The median number of dysphagia days per week was 2 for adolescents vs. 4 for adults (P < 0.001), and 2 for those on topical steroids vs. 4 for those not on topical steroids (P < 0.001). The DSQ score strongly correlated with the number of dysphagia days (R = 0.96; P < 0.001) and the SDI (R = 0.77; P < 0.001). CONCLUSIONS: The DSQ, a three-question patient-reported outcome, was successfully developed and field tested. The DSQ had content validity and the score accurately measured dysphagia frequency and intensity. The Dysphagia Symptom Questionnaire is suitable for use in clinical trials of EoE patients with dysphagia

Demiralp, E.; Thompson, R. J.; Mata, J.; Jaeggi, S. M.; Buschkuehl, M.; Barrett, L. F. et al. (2012):

Feeling blue or turquoise? Emotional differentiation in major depressive disorder.

In: *Psychol.Sci.* 23 (11), S. 1410–1416. DOI: 10.1177/0956797612444903.

Abstract:

Some individuals have very specific and differentiated emotional experiences, such as anger, shame, excitement, and happiness, whereas others have more general affective experiences of pleasure or discomfort that are not as highly differentiated. Considering that individuals with major depressive disorder (MDD) have cognitive deficits for negative information, we predicted that people with MDD would have less differentiated negative emotional experiences than would healthy people. To test this hypothesis, we assessed participants' emotional experiences using a 7-day experience-sampling protocol. Depression was assessed using structured clinical interviews and the Beck Depression Inventory-II. As predicted, individuals with MDD had less differentiated emotional experiences than did healthy participants, but only for negative emotions. These differences were above and beyond the effects of emotional intensity and variability

Dencker, M.; Thorsson, O.; Karlsson, M. K.; Lindén, C.; Wollmer, P.; Andersen, L. B. (2009):

Objectively measured daily physical activity related to cardiac size in young children.

In: *Scandinavian Journal of Medicine & Science in Sports* 19 (5), S. 664–668. DOI: 10.1111/j.1600-0838.2008.00842.x.

Abstract:

Training studies in children have suggested that endurance training can give enlargement of cardiac dimensions. This relationship has not been studied on a population-based level in young children with objective methods. A cross-sectional study was made of 248 children (140 boys and 108 girls), aged 8-11 years, from a population-based cohort. Left ventricular end-diastolic diameter (LVDD) and left atrial end-systolic diameter (LA) were measured with echocardiography and indexed for body surface area (BSA). Physical activity was assessed by accelerometry, and the duration of vigorous physical activity per day (VPA) was calculated. Acceptable accelerometer and echocardiography measurements were obtained in 228 children (boys=127, girls=101). Univariate correlations between VPA and LVDD were indexed for BSA in boys ($r=0.27$, $P<0.05$) and in girls ($r=0.10$, NS). Multiple regression analysis showed that independent factors for LVDD, indexed for BSA for boys, were age and VPA. LA indexed for BSA was not related to physical activity variables in either gender. No clear relationship exists between cardiac size and daily physical activity in children aged 8-11 years. This suggests that significant cardiac remodelling due to volume exposure secondary to a high amount of physical activity begins later in life.

Deng, Xinmei; Sang, Biao; Luan, Ziyan (2013):

Up- and down-regulation of daily emotion: an experience sampling study of Chinese adolescents' regulatory tendency and effects.

In: *Psychol Rep* 113 (2), S. 552–565.

Abstract:

The present study examined Chinese adolescents' emotion regulatory tendency and its effect, using an Experience Sampling Method. Participants comprised 72 Chinese adolescents (M age = 15.2 yr., SD = 1.7; 36 girls). Momentary emotional experience and regulation was assessed up to 5 or 6 times each day for two weeks. Results showed that participants tended to use up-regulation when they experienced positive emotion and habitually regulated their negative emotion by down-regulation. Also, adolescents who utilized down-regulation in a certain sampling moment reported higher positive emotion at the subsequent sampling moment. Moreover, adolescents who utilized down-regulation more frequently reported higher positive emotion at the subsequent sampling moment. Overall, down-regulation seemed to be a more adaptive regulatory strategy than up-regulation in Chinese adolescents' emotional lives.

Denissen, Jaap J. A.; Butalid, Ligaya; Penke, Lars; van Aken, Marcel A G (2008):

The effects of weather on daily mood: a multilevel approach.

In: *Emotion* 8 (5), S. 662–667. DOI: 10.1037/a0013497.

Abstract:

The present study examines the effects of six weather parameters (temperature, wind power, sunlight, precipitation, air pressure, and photoperiod) on mood (positive affect, negative affect, and tiredness). Data were gathered from an online diary study (N = 1,233), linked to weather station data, and analyzed by means of multilevel analysis. Multivariate and univariate analyses enabled distinction between unique and shared effects. The results revealed main effects of temperature, wind power, and sunlight on negative affect. Sunlight had a main effect on tiredness and mediated the effects of precipitation and air pressure on tiredness. In terms of explained variance, however, the average effect of weather on mood was only small, though significant random variation was found across individuals, especially regarding the effect of photoperiod. However, these individual differences in weather sensitivity could not be explained by the Five Factor Model personality traits, gender, or age.

Dennis, Michael L.; Scott, Christy K.; Funk, Rodney R.; Nicholson, Lisa (2014):

A Pilot Study to Examine the Feasibility and Potential Effectiveness of Using Smartphones to Provide Recovery Support for Adolescents.

In: *Subst Abus*, S. 0. DOI: 10.1080/08897077.2014.970323.

Abstract:

ABSTRACT. Background: Smartphone applications can potentially provide recovery monitoring and support in real-time, real-life contexts. Study aims included determining feasibility of: a) Adolescents completing ecological momentary assessments (EMA) and utilizing phone-based ecological momentary interventions (EMI); and b) Using EMA and EMI data to predict substance use in the subsequent week. Methods: Twenty-nine adolescents were recruited at discharge from residential treatment, regardless of their discharge status or length of stay. During the 6-week pilot, youth were prompted to complete an EMA at 6 random times per day and were provided access to a suite of recovery support EMI. Youth completed 87% of the 5,580 EMAs. Based on use in the next 7 days, EMA observations were classified into 3 risk groups: "Current Use" in the past 30 minutes (3% of observations), "Unrecognized Risk" (42%), or "Recognized Risk" (55%). All youth had observations in 2 or more risk groups and 38%, in all three. Youth accessed an EMI on-average 162 times each week. Results: Participants were: 31% female, 48% African American, 21% Caucasian, 7% Hispanic, 24% Mixed/Other, average age 16.6 years. During the 90 days prior to entering treatment, youth reported using alcohol (38%), marijuana (41%), and other drugs (7%). When compared to the "Recognized Risk" group's use in the following week (31%), both the "Unrecognized Risk" (50%, OR = 2.08) and "Current Use" (96%, OR = 50.30) groups reported significantly higher rates of use in the next week. When an EMI was accessed 2 or more times within the hour following an EMA, the rate of using during the next week was significantly lower than when EMIs were not accessed (32% vs. 43%, OR = 0.62). Conclusions: Results demonstrate the feasibility of using smartphones for recovery monitoring and support with adolescents, with potential to reduce use.

Dennison, L.; Morrison, L.; Conway, G.; Yardley, L. (2013):

Opportunities and challenges for smartphone applications in supporting health behavior change: qualitative study.

In: *J Med Internet Res* 15 (4), S. e86. DOI: 10.2196/jmir.2583.

Abstract:

BACKGROUND: There is increasing interest from academics and clinicians in harnessing smartphone applications (apps) as a means of delivering behavioral interventions for health. Despite the growing availability of a range of health-related apps on the market, academic research on the development and evaluation of such apps is in the relatively early stages. A few existing studies have explored the views of various populations on using mobile phones for health-related issues and some studies are beginning to report user feedback on specific apps. However, there remains little in depth research on users' (and potential users') experiences and views on a wide range of features and technologies that apps are, or will soon be, capable of. In particular, research on young adults is lacking, which is an unfortunate omission considering that this group comprises of a good number of mobile technology adoptors. OBJECTIVE: The current study sought to explore young adults' perspectives on apps related to health behavior change. It sought their experiences and views of features that might support health behavior change and issues that contribute to interest in and willingness to use such apps. METHODS: Four focus groups were conducted with 19 students and staff at a University in the United Kingdom. Participants included 13 females and 6 males with a mean age of 23.79 (SD 7.89). The focus group discussions centred on participants' experiences of using smartphone apps to support a healthy lifestyle, and their interest in and feelings about features and capabilities of such apps. The focus groups were recorded, transcribed, and analyzed using inductive thematic analysis. RESULTS: Study findings suggested that young, currently healthy adults have some interest in apps that attempt to support health-related behavior change. Accuracy and legitimacy, security, effort required, and immediate effects on mood emerged as important influences on app usage. The ability to record and track behavior and goals and the ability to acquire advice and information "on the go" were valued. Context-sensing capabilities and

social media features tended to be considered unnecessary and off-putting. CONCLUSIONS: This study provided insight into the opportunities and challenges involved in delivering health-related behavioral interventions through smartphone apps. The findings suggested a number of valued features and characteristics that app developers may wish to consider when creating health behavior apps. Findings also highlighted several major challenges that appeared to need further consideration and research to ensure the development of effective and well-accepted behavior change apps

Depp, Colin A.; Ceglowski, Jenni; Wang, Vicki C.; Yaghouti, Faraz; Mausbach, Brent T.; Thompson, Wesley K.; Granholm, Eric L. (2014):

Augmenting psychoeducation with a mobile intervention for bipolar disorder: A randomized controlled trial.

In: *J Affect Disord* 174C, S. 23–30. DOI: 10.1016/j.jad.2014.10.053.

Abstract:

BACKGROUND: Psychosocial interventions for bipolar disorder are frequently unavailable and resource intensive. Mobile technology may improve access to evidence-based interventions and may increase their efficacy. We evaluated the feasibility, acceptability and efficacy of an augmentative mobile ecological momentary intervention targeting self-management of mood symptoms. METHODS: This was a randomized single-blind controlled trial with 82 consumers diagnosed with bipolar disorder who completed a four-session psychoeducational intervention and were assigned to 10 weeks of either: 1) mobile device delivered interactive intervention linking patient-reported mood states with personalized self-management strategies, or 2) paper-and-pencil mood monitoring. Participants were assessed at baseline, 6 weeks (mid-point), 12 weeks (post-treatment), and 24 weeks (follow up) with clinician-rated depression and mania scales and self-reported functioning. RESULTS: Retention at 12 weeks was 93% and both conditions were associated with high satisfaction. Compared to the paper-and-pencil condition, participants in the augmented mobile intervention condition showed significantly greater reductions in depressive symptoms at 6 and 12 weeks (Cohens d for both were d=0.48). However, these effects were not maintained at 24-weeks follow up. Conditions did not differ significantly in the impact on manic symptoms or functional impairment. LIMITATIONS: This was not a definitive trial and was not powered to detect moderators and mediators. CONCLUSIONS: Automated mobile-phone intervention is feasible, acceptable, and may enhance the impact of brief psychoeducation on depressive symptoms in bipolar disorder. However, sustainment of gains from symptom self-management mobile interventions, once stopped, may be limited.

Depp, Colin A.; Mausbach, Brent; Granholm, Eric; Cardenas, Veronica; Ben-Zeev, Dror; Patterson, Thomas L. et al. (2010):

Mobile interventions for severe mental illness: design and preliminary data from three approaches.

In: *The Journal of nervous and mental disease* 198 (10), S. 715.

Abstract:

Mobile devices can be used to deliver psychosocial interventions, yet there is little prior application in severe mental illness. We provide the rationale, design, and preliminary data from 3 ongoing clinical trials of mobile interventions developed for bipolar disorder or schizophrenia. Project 1 used a personal digital assistant to prompt engagement in personalized self-management behaviors based on real-time data. Project 2 employed experience sampling through text messages to facilitate case management. Project 3 was built on group functional skills training for schizophrenia by incorporating between-session mobile phone contacts with therapists. Preliminary findings were of minimal participant attrition, and no broken devices; yet, several operational and technical barriers needed to be addressed. Adherence was similar to that reported in nonpsychiatric populations, with high participant satisfaction. Therefore, mobile devices seem feasible and acceptable in augmenting psychosocial interventions for severe mental illness, with future research in establishing efficacy, cost effectiveness, and ethical and safety protocols.

Derbyshire, Emma; Dancey, Darren (2013):

Smartphone Medical Applications for Women's Health: What Is the Evidence-Base and Feedback?

In: *Int J Telemed Appl* 2013, S. 782074. DOI: 10.1155/2013/782074.

Abstract:

Background. Smartphone medical applications have a major role to play in women's health with their roles being very broad, ranging from improving health behaviours to undertaking personalised tests. Objective(s). Using Medline, Web of Knowledge, and the PRISMA guidelines 15 randomized controlled trials (RCTs) were identified, with mobile interventions being tested on 1603 females, in relation to key aspects of health. Using a similar systematic approach an iPhone database search identified 47 applications (apps) developed to improve women's health. Findings. Ten RCTs used text messaging or app interventions to support weight loss, with significant improvements being observed in eight studies. For other aspects of women's health RCTs are needed to determine possible health benefits. iPhone store data analysis identified that a substantial number of women's health apps did not have star ratings or feedback comments (68 and 49 per cent, resp.), raising concerns about their validity. Conclusion. Peer-review systems, supporting statements of evidence, or certification standards would be beneficial in maintaining the quality and credibility of future health-focused apps. Patient groups should also ideally be involved in the development and testing of mobile medical apps.

Derks, Daantje; Bakker, Arnold B. (2014):

Smartphone use, work–home interference, and burnout: A diary study on the role of recovery.

In: *Applied Psychology* 63 (3), S. 411–440. DOI: 10.1037/t10797-000.

Abstract:

This diary study examines the impact of daily recovery experiences on daily work–home interference (WHI) and daily burnout symptoms within a group of smartphone users. A total of 69 employees using smartphones on the initiative of their employer completed a diary questionnaire on five successive workdays (N = 293 data points). We hypothesised that particularly for intensive smartphone users it would be important to engage in activities fostering psychological detachment and relaxation in order to reduce the risk of WHI. We predicted that smartphone use would be positively related to WHI. Finally, we predicted that the positive relationship between WHI and state levels of burnout would be stronger for intensive smartphone users. Overall, the results of multi-level analyses supported these hypotheses. The findings emphasise the importance of a clear organisational policy regarding smartphone use during after-work hours. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Derks, Daantje; van Mierlo, Heleen; Schmitz, Elisabeth B. (2014):

A diary study on work-related smartphone use, psychological detachment and exhaustion: examining the role of the perceived segmentation norm.

In: *J Occup Health Psychol* 19 (1), S. 74–84. DOI: 10.1037/a0035076.

Abstract:

In this diary study, we examined the associations between daily work-related smartphone use and daily psychological detachment and daily work-related exhaustion within a group of smartphone owners. In addition, we studied the role of the perceived segmentation norm at the workplace as a moderator of the link between work-related smartphone use and detachment. A total of 70 employees using smartphones on initiative of their employer completed a diary questionnaire on 4 successive workdays (N = 268 data points). We hypothesized that work-related smartphone use is negatively related to psychological detachment and that psychological detachment, in turn, is negatively related to work-related exhaustion. Finally, we expected that especially employees who perceive a high segmentation norm at their workplace have difficulties to psychologically detach from work on days that they use their smartphone more intensively. Overall, the results of multilevel analyses supported these hypotheses. The findings emphasize the importance of a clear organizational policy regarding work-related smartphone use outside of work hours.

Derogatis, L. R.; Komer, L.; Katz, M.; Moreau, M.; Kimura, T.; Garcia, M. et al. (2012):

Treatment of Hypoactive Sexual Desire Disorder in Premenopausal Women: Efficacy of Flibanserin in the VIOLET Study.

In: *J.Sex Med.* 9 (4), S. 1074–1085. DOI: 10.1111/j.1743-6109.2011.02626.x.

Abstract:

Introduction. Hypoactive Sexual Desire Disorder (HSDD) is the most common form of Female Sexual Dysfunction and is characterized by low sexual desire that causes distress. Aim. The aim of this study was to assess the efficacy and safety of flibanserin, a postsynaptic 5-HT(1A) agonist/5-HT(2A) antagonist, in premenopausal women with HSDD. Methods. North American premenopausal women with HSDD were randomized to 24 weeks' treatment with placebo (N = 295), flibanserin 50 mg (N = 295), or flibanserin 100 mg (N = 290), once daily at bedtime. Main Outcome Measures. Coprimary endpoints were change from baseline to study end in number of satisfying sexual events (SSE) and sexual desire score measured daily using an electronic diary (eDiary). Secondary endpoints included change from baseline to study end in Female Sexual Function Index (FSFI) desire domain and total scores, Female Sexual Distress Scale-Revised (FSDS-R) Item 13 and total scores, and Patient's Global Impression of Improvement. Results. Flibanserin 50 mg and 100 mg led to increases in SSE ($P < 0.05$ and $P < 0.01$ vs. placebo, respectively). There was a numerical trend toward improvement in eDiary desire score on flibanserin 100 mg, but statistical significance was not reached ($P = 0.07$ vs. placebo). FSFI desire domain and total scores increased with both flibanserin regimens ($P < 0.05$). FSDS-R total and Item 13 scores decreased with flibanserin 100 mg ($P < 0.001$), indicating reduced sexual distress. More women receiving flibanserin 50 mg and 100 mg considered their HSDD to have improved than women receiving placebo (39.6% and 50.0% vs. 30.3%, respectively) ($P < 0.05$). Conclusion. In premenopausal women with HSDD, flibanserin 50 mg and 100 mg once daily at bedtime were well tolerated and associated with statistically significant improvements in SSE, sexual desire (FSFI desire domain score but not eDiary desire score) and overall sexual function, and reduction of sexual distress, vs. placebo. DeRogatis LR, Komer L, Katz M, Moreau M, Kimura T, Garcia Jr. M, Wunderlich G, and Pyke R on behalf of the VIOLET trial investigators. Treatment of Hypoactive Sexual Desire Disorder in premenopausal women: Efficacy of flibanserin in the VIOLET study. J Sex Med 12;9:1074-1085

Desantis, Amy S.; Adam, Emma K.; Doane, Leah D.; Mineka, Susan; Zinbarg, Richard E.; Craske, Michelle G. (2007):

Racial/ethnic differences in cortisol diurnal rhythms in a community sample of adolescents.

In: *Journal of Adolescent Health* 41 (1), S. 3–13.

Abstract:

PURPOSE:

To identify potential physiological pathways to racial disparities in health outcomes, this study uses cortisol data collected from a community sample of 255 adolescents to examine whether there are racial/ethnic differences in cortisol slopes and levels across the waking day in naturalistic settings.

METHODS:

This study uses salivary cortisol data (sampled five times per day over 3 days) to examine racial/ethnic differences in diurnal cortisol rhythms, while covarying the presence of major depressive disorder and chronic and episodic life stress (assessed by structured interviews), momentary negative emotion (reported in diaries completed with cortisol samples), and socioeconomic status, sleep, and health variables (assessed by questionnaire) previously found to be associated with cortisol levels.

RESULTS:

African-American and Hispanic youth were found to have flatter cortisol slopes across the waking day than their Caucasian counterparts. Differences are due to higher bedtime cortisol levels among Hispanics and to both lower wakeup and higher bedtime levels among African-Americans. Although higher levels of negative emotion were associated with flatter diurnal rhythms, the socioenvironmental factors examined failed to explain the observed racial/ethnic differences in diurnal cortisol rhythms.

CONCLUSIONS:

Significantly flatter diurnal cortisol slopes were found among African American and Hispanic adolescents, a pattern which has been related to negative health consequences. Further research is needed to examine how early these differences emerge and to identify their developmental origins. Although genetic contributions are possible, greater prenatal stress exposure, low birth weight, adverse early childhood experiences, experiences with racism or discrimination, and lifetime history of chronic stress are all reasonable psychosocial hypotheses to pursue.

Desantis, Amy S.; Adam, Emma K.; Mendelsohn, Kathryn A.; Doane, Leah D. (2010):

Concordance between self-reported and objective wakeup times in ambulatory salivary cortisol research.

In: *International Journal of Behavioral Medicine* 17 (1), S. 74–78. DOI: 10.1007/s12529-009-9053-5.

Abstract:

BACKGROUND\r\nHypothalamic-pituitary-adrenal (HPA) axis functioning has implications for physical and mental health. One important indicator of HPA axis functioning, the salivary cortisol awakening response (CAR), is sensitive to whether participants provide their samples at the requested times after waking.\r\nPURPOSE\r\nTo examine the extent to which adolescents report morning wakeup times accurately, test the impact of inaccurate waketime reporting on compliance with a salivary cortisol sampling protocol designed to estimate the CAR, and to examine the implications of non-compliance for CAR estimates.\r\nMETHOD\r\nIn a sample of 91 late adolescents, objective waketimes determined using actigraphy were compared to self-reported waketimes. Associations between accuracy of waketimes and compliance with requested morning cortisol sampling timings (wakeup and 30 min post-awakening) were examined, as were implications of non-compliance for the size of the CAR.\r\nRESULTS\r\nIn terms of accuracy, 72% of self-reported waketimes were within 5 min and 90% were within 15 min of objective waketimes. Individuals who were more than 5 min discrepant in their waketime reporting, however, had a 90% decrease in their likelihood of being compliant-taking both morning cortisol samples within the requested time frames after waking. However, CARs were significantly lower only among individuals whose subjective and objective waketimes differed by more than 15 min.\r\nCONCLUSIONS\r\nSelf-reported waketimes were reasonably accurate when compared to objective estimates of time of waking. When available, however, estimates of compliance are improved by knowledge of objective waketimes, resulting in increased accuracy of CAR estimates.

Devito Dabbs, Annette; Dew, Mary Amanda; Myers, Brad; Begey, Alex; Hawkins, Robert; Ren, Dianxu et al. (2009):

Evaluation of a hand-held, computer-based intervention to promote early self-care behaviors after lung transplant.

In: *Clinical transplantation* 23 (4), S. 537–545. DOI: 10.1111/j.1399-0012.2009.00992.x.

Abstract:

BACKGROUND\r\nLung transplant recipients are expected to perform self-care behaviors to maximize transplant-related health outcomes. Despite high non-adherence rates in performing these self-care behaviors, and the dire clinical consequences of such non-adherence, interventions are lacking. Pocket Personal Assistant for Tracking Health (Pocket PATH) is a hand-held device developed for patients to record health data, review data trends, and report condition changes to the transplant team.\r\nMETHODS\r\nA pilot trial was conducted to compare self-care agency, self-care behaviors, and health-related quality of life (HRQOL) between recipients randomized to use Pocket PATH (n = 15) vs. standard care (n = 15) for the first two months following hospital discharge after lung transplantation.\r\nRESULTS\r\nBaseline characteristics were equivalent across groups. Patients in the Pocket PATH group showed significantly higher ratings of self-care agency, performed self-care behaviors at significantly higher rates, and reported significantly better HRQOL than standard care controls.\r\nCONCLUSION\r\nPocket PATH is more efficacious than standard care in promoting early self-care agency, self-care behaviors, and HRQOL in lung recipients. A large-scale randomized controlled trial is needed to test the impact of Pocket PATH on long-term self-care behaviors.

Dewar, Deborah L.; Plotnikoff, Ronald C.; Morgan, Philip J.; Okely, Anthony D.; Costigan, Sarah A.; Lubans, David R. (2013):

Testing social-cognitive theory to explain physical activity change in adolescent girls from low-income communities.

In: *Res Q Exerc Sport* 84 (4), S. 483–491.

Abstract:

PURPOSE: The aim of this study was to test the hypothesized structural paths in Bandura's social-cognitive theory (SCT) model on adolescent girls' physical activity following a 12-month physical activity and dietary intervention to prevent obesity. METHOD: We conducted a 12-month follow-up study of 235 adolescent girls (M(age) = 13.2 years, SD = 0.4) from 12 secondary schools located in low-income communities. At baseline, participants completed SCT scales related to physical activity (i.e., self-efficacy, intention, parental support, and outcome expectations). At baseline and 12-month follow-up (postintervention), participants wore accelerometers for 7 days. Structural equation modeling was used to determine if Time 1 measures predicted physical activity at 12-month follow-up after adjusting for baseline activity. RESULTS: The model explained 28% and 34% of the variance

in physical activity and intention, respectively. Model fit indexes indicated the data were a good fit to the model; however, only self-efficacy was associated with physical activity at 12 months. There was no support for intention or outcome expectations as proximal determinants of behavior. Self-efficacy was associated with outcome expectations and parental support; however, only outcome expectations predicted intention. CONCLUSIONS: Current findings indicate a large proportion of the variance for physical activity and intention remains unexplained and that the proposed pathways in the SCT model were not fully supported. Future model testing may need to consider augmentation or integration of theoretical models, which may include ecological components if we are to advance our understanding of physical activity behavior in this subgroup of the adolescent population.

Dhingra, Lara K.; Homel, Peter; Grossman, Bella; Chen, Jack; Scharaga, Elyssa; Calamita, Steven et al. (2014):

Ecological momentary assessment of smoking behavior in persistent pain patients.

In: *Clin J Pain* 30 (3), S. 205–213. DOI: 10.1037/t04175-000;

Abstract:

Objectives: Smoking is associated with chronic pain and pain-related functional impairment. Some studies suggest that pain activates smoking urges and others suggest that smoking is analgesic. We evaluated these associations using ecological momentary assessment, a method for real-time measurement of health-related phenomena. Methods: For 1 week, 36 chronic pain patients who smoked a mean of 17.5 (SD = 9.4) cigarettes per day completed multiple daily assessments on a handheld computer. Results: The sample included 67% women and 39% whites; 67% had back pain, with an average (SD) worst pain severity during the past week of 8.6 (1.5) on a 0 to 10 numeric rating scale. Patients completed an average (SD) of 44 (24) random assessments. At each assessment, the patient recorded pain “right now” on a 0 to 10 scale, whether he/she was “about to smoke,” and if he/she had “just smoked in the past 30 minutes,” pain before smoking. After controlling for other significant correlates of pain, patients who were about to smoke had more pain than at other times (M [SD] = 6.5 [2.3] vs. 5.2 [2.4]; P < 0.01), but pain before and after smoking was not different (M [SD] = 6.1 [2.2] vs. 5.9 [2.3]; P = 0.18). Discussion: These findings support the hypothesis that smoking behavior is triggered by pain, but smoking is not analgesic. Future studies should clarify potential explanatory mechanisms for this pain-related trigger and evaluate tailored cessation strategies for pain patients. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Diabetes Research in Children Network Study Group (2007):

Continuous glucose monitoring in children with type 1 diabetes.

In: *J Pediatr* 151 (4), S. 388–393.

Abstract:

OBJECTIVE:

To examine the feasibility of daily use of a continuous glucose monitor, the FreeStyle Navigator Continuous Glucose Monitoring System ("Navigator"), in children with type 1 diabetes (T1D).

STUDY DESIGN:

After a masked Navigator was used for 4 to 7 days to establish a baseline level of glycemic control, 30 insulin pump users with T1D (average age 11.2 years) were asked to use the Navigator daily for 13 weeks.

RESULTS:

Subjects averaged 149 h/wk of Navigator use during the first 4 weeks, which decreased slightly to 134 h/wk during weeks 9 to 13 (P = .006). Mean hemoglobin A1c improved from 7.1% at baseline to 6.8% at 13 weeks (P = .02), and the percentage of glucose values between 71 and 180 mg/dL increased from 52% to 60% (P = .01). Subjects and parents reported high satisfaction with the Navigator on the Continuous Glucose Monitor Satisfaction Scale. Two subjects had severe skin reactions related to sensor mount adhesive.

CONCLUSION:

This study indicates that incorporating real-time continuous glucose monitoring into the daily treatment of children with T1D is feasible. The results provide a compelling rationale for conducting a randomized trial of daily use of a continuous glucose monitor in children with T1D.

Diana, C.; Cristina, B.; Azucena, G. P.; Luis, F.; Ignacio, M. (2012):

Experience-sampling methodology with a mobile device in fibromyalgia.

In: *Int.J Telemed.Appl.* 2012 (1687-6415 (Linking)), S. 162673. DOI: 10.1155/2012/162673.

Abstract:

This work describes the usability studies conducted in the development of an experience-sampling methodology (ESM) system running in a mobile device. The goal of the system is to improve the accuracy and ecology in gathering daily self-report data in individuals suffering a chronic pain condition, fibromyalgia. The usability studies showed that the developed software to conduct ESM with mobile devices (smartphones, cell phones) can be successfully used by individuals with fibromyalgia of different ages and with low level of expertise in the use of information and communication technologies. 100% of users completed the tasks successfully, although some have completely illiterate. Also there seems to be a clear difference in the way of interaction obtained in the two studies carried out

Diener, Ed; Tay, Louis (2013):

Review of the day reconstruction method (drm).

In: *Social Indicators Research*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-07637-001%26site%3dehost-live;ediener@illinois.edu.

Abstract:

The Day Reconstruction Method (DRM) for assessing daily experience and subjective well-being is reviewed. The DRM is a promising method as it assesses feelings within situations and activities, and therefore goes beyond asking who is happy to asking when they are happy. The technique might be less burdensome on respondents than experience-sampling, and might reduce memory biases that are inherent in global recall of feelings. However, evidence for the validity and reliability of the DRM is limited and is not entirely supportive. Research is needed on the psychometrics of the DRM, for example by comparing it to mobile phone assessments and other forms of experience-sampling, as well as to global reports of feelings in situations. Conceptual issues with computing overall subjective well-being by weighting a respondent's activity scores by the time spent in them are discussed. Despite the promises of the DRM, the many unresolved issues with it and the alternative of using on-line electronic experience-sampling techniques suggest that more research is needed before the value of the DRM is established. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Dijkstra, Baukje; Zijlstra, Wiebren; Scherder, Erik; Kamsma, Yvo (2008):

Detection of walking periods and number of steps in older adults and patients with Parkinson's disease: accuracy of a pedometer and an accelerometry-based method.

In: *Age and ageing* 37 (4), S. 436–441.

Abstract:

The aim of this study was to examine if walking periods and number of steps can accurately be detected by a single small body-fixed device in older adults and patients with Parkinson's disease (PD). Results of an accelerometry-based method (DynaPort MicroMod) and a pedometer (Yamax Digi-Walker SW-200) worn on each hip were evaluated against video observation. Twenty older adults and 32 PD patients walked straight-line trajectories at different speeds, of different lengths and while doing secondary tasks in an indoor hallway. Accuracy of the instruments was expressed as absolute percentage error (older adults versus PD patients). Based on the video observation, a total of 236.8 min of gait duration and 24,713 steps were assessed. The DynaPort method predominantly overestimated gait duration (10.7 versus 11.1%) and underestimated the number of steps (7.4 versus 6.9%). Accuracy decreased significantly as walking distance decreased. Number of steps were also mainly underestimated by the pedometers, the left Yamax (6.8 versus 11.1%) being more accurate than the right Yamax (11.1 versus 16.3%). Step counting of both pedometers was significantly less accurate for short trajectories (3 or 5 m) and as walking pace decreased. It is concluded that the Yamax pedometer can be reliably used for this study population when walking at sufficiently high gait speeds (>1.0 m/s). The accelerometry-based method is less speed-dependent and proved to be more appropriate in the PD patients for walking trajectories of 5 m or more.

Dimotakis, Nikolaos; Ilies, Remus (2013):

Experience-sampling and event-sampling research. In: Arnold B. Bakker und Kevin Daniels: A day in the life of a happy worker.

Hg. v. Arnold B. Bakker und Kevin Daniels. New York, NY US: Psychology Press (Current issues in work and organizational psychology), S. 85–99. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-02788-007%26site%3dehost-live.

Abstract:

(from the chapter) In recent years, an emerging focus on studying within-person processes and phenomena has started to complement traditional between-person research streams that explain how and why construct scores co-vary among individuals (Ilies, Schwind, & Heller, 2007; Ilies et al., 2010). Recent innovations and improvements in technological, analytical, and conceptual areas have helped the field expand rapidly, spurring a greatly increased interest in this research approach. One of the most important of these innovations has been the introduction of the Experience-Sampling Method (ESM; Larson & Csikszentmihalyi, 1983). ESM, in broad terms, aims to utilize a multiple measurement schedule over a set period of time in order to explain fluctuations in episodic experiences (e.g. affective states) and the dynamic antecedents and outcomes of these fluctuations. More specifically, ESM approaches include using a random- or fixed-event or signal-contingent schedule in order to measure the dependent and independent variables at multiple points during an individual's day, typically over a period of multiple days. Data from ESM designs are then commonly used as input in within-person or cross-level multivariate, mediational, or moderational multilevel regression models, using statistical techniques such as Hierarchical Linear Modeling (Raudenbush & Bryk, 2002). In order to contribute to this emerging stream of research, this chapter aims to outline and discuss the basic features of ESM and to examine the advantages and disadvantages of implementing these features in ESM research designs. Moreover, we provide illustrative examples of various types of these designs. We also provide suggestions for future research utilizing ESM in various ways to examine within-person research questions. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (chapter)

Dimsdale, Joel E.; Ancoli-Israel, Sonia; Ayalon, Liat; Elsmore, Timothy F.; Gruen, William (2007):

Taking fatigue seriously, II: variability in fatigue levels in cancer patients.

In: *Psychosomatics* 48 (3), S. 247–252.

Abstract:

Fatigue is a common and distressing complaint of cancer patients. It is typically measured with symptom inventories that reflect the patient's experience over the previous days or weeks. This study examined short-term variation in fatigue levels in a heterogeneous group of cancer patients over a 3-day period to examine the feasibility of such repeated assessments and to characterize the extent and pattern of fatigue symptoms in cancer patients. Thirty-four cancer outpatients with diverse malignancies wore a prototype fatigue watch monitor for three consecutive 24-hour periods and provided fatigue ratings every hour while awake for the 3 days. Patients completed an average of 40 self-reports over 72 hours. These reports revealed a diurnal variation in fatigue, with increasing levels in the evening. The reports also revealed considerable differences across individuals and within individuals in terms of fatigue ratings. Multiple ratings of fatigue within short periods of time can be obtained and reveal that fatigue levels are quite variable, even within an individual. Cancer patients experience their fatigue as "moderate to extreme" 33% of the time.

Ding, H.; Karunanithi, M.; Duncan, M.; Ireland, D.; Noakes, M.; Hooker, C. (2013):

A mobile phone enabled health promotion program for middle-aged males.

In: *Conf.Proc.IEEE Eng Med.Biol.Soc.* 2013 (1557-170X (Linking)), S. 1173–1176. DOI: 10.1109/EMBC.2013.6609715.

Abstract:

The prevalence of chronic diseases among middle aged males outweigh their female counterparts in developed countries. To prevent this, delivery of health promotion programs targeting lifestyle modifications of physical activity and nutrition in middle-aged males has been essential, but often difficult. ManUp health promotion program was a recent initiative that uses current advances in information and communication technology (ICT) to reach the middle-aged males. One of the key components of the ICT approach was the development of smartphone application to enable middle-aged men to uptake the program with their own mobile phone. The smart phone application was aimed at providing varied level of challenges towards physical activity and healthy eating behavior, with interactive and motivational feedback SMS messages. The ManUp program was recently

implemented and trialed in a randomized control trial in Gladstone and Rockhampton, Queens. This paper describes the components of the smart phone application integrated within the ManUp health promotion program

Dinger, Mary K.; Behrens, Timothy K. (2006):

Accelerometer-determined physical activity of free-living college students.

In: *Med Sci Sports Exerc* 38 (4), S. 774–779.

Abstract:

PURPOSE:

This study was conducted to provide descriptive data of accelerometer-determined ambulatory physical activity in a sample of free-living college students and to examine college students' ambulatory physical activity patterns.

METHODS:

All participants (245 females, age = 19.9 +/- 1.6 yr, body mass index (BMI) = 22.9 +/- 3.3 kg x m(-2); 209 males, age = 20.2 +/- 2.0 yr, BMI = 25.2 +/- 4.0 kg x m(-2)) wore an accelerometer for seven consecutive days. Accumulated physical activity (ct.d, ct x min(-1) x d(-1), and min x d(-1) spent at different intensities) and minutes per day spent in moderate or vigorous physical activity in sessions of at least 10 min were analyzed to describe the physical activity of the sample and examine physical activity patterns.

RESULTS:

The entire sample accumulated 362,750.1 +/- 112,824.1 ct x d(-1) (males = 383,787.2 +/- 112,001.3 vs females = 344,804.1 +/- 110,619.5 ct x d(-1), P < 0.01) and 46.7 +/- 18.9 min x d(-1) in moderate physical activity (males = 51.7 +/- 19.8 vs females = 42.5 +/- 17.0 min x d(-1), P < 0.01). They were more active on weekdays than weekend days (P < 0.05), and they spent 13.6 +/- 12.7 min x d(-1) (males = 13.2 +/- 12.0 vs females = 13.8 +/- 13.3, P > 0.05) in moderate or vigorous physical activity sessions of at least 10 min.

CONCLUSION:

Participants in this study accumulated a moderate amount of physical activity on most weekdays. Most participants, however, were not meeting the current moderate physical activity recommendation when moderate or vigorous physical activity sessions of at least 10 min were examined.

Direito, Artur; Pfaeffli Dale, Leila; Shields, Emma; Dobson, Rosie; Whittaker, Robyn; Maddison, Ralph (2014):

Do physical activity and dietary smartphone applications incorporate evidence-based behaviour change techniques?

In: *BMC Public Health* 14 (1), S. 646. DOI: 10.1186/1471-2458-14-646.

Abstract:

BACKGROUND: There has been a recent proliferation in the development of smartphone applications (apps) aimed at modifying various health behaviours. While interventions that incorporate behaviour change techniques (BCTs) have been associated with greater effectiveness, it is not clear to what extent smartphone apps incorporate such techniques. The purpose of this study was to investigate the presence of BCTs in physical activity and dietary apps and determine how reliably the taxonomy checklist can be used to identify BCTs in smartphone apps. METHODS: The top-20 paid and top-20 free physical activity and/or dietary behaviour apps from the New Zealand Apple App Store Health & Fitness category were downloaded to an iPhone. Four independent raters user-tested and coded each app for the presence/absence of BCTs using the taxonomy of behaviour change techniques (26 BCTs in total). The number of BCTs included in the 40 apps was calculated. Krippendorff's alpha was used to evaluate interrater reliability for each of the 26 BCTs. RESULTS: Apps included an average of 8.1 (range 2-18) techniques, the number being slightly higher for paid (M = 9.7, range 2-18) than free apps (M = 6.6, range 3-14). The most frequently included BCTs were "provide instruction" (83% of the apps), "set graded tasks" (70%), and "prompt self-monitoring" (60%). Techniques such as "teach to use prompts/cues", "agree on behavioural contract", "relapse prevention" and "time management" were not present in the apps reviewed. Interrater reliability coefficients ranged from 0.1 to 0.9 (Mean 0.6, SD = 0.2). CONCLUSIONS: Presence of BCTs varied by app type and price; however, BCTs associated with increased intervention effectiveness were in general more common in paid apps. The taxonomy checklist can be used by independent raters to reliably identify BCTs in physical activity and dietary behaviour smartphone apps.

Dlesk, A.; Kamensky, G.; Stefanik, M.; Kuzma, M.; Pernicky, M. (2014):

Treatment efficiency of resistant hypertension in cardiologist's office.

In: *Bratisl Lek Listy* 115 (1), S. 25–29.

Abstract:

BACKGROUND: The target values of blood pressure have not been achieved in our population of patients sufficiently. The most difficult is a control of patients with resistant hypertension. We do not have data about efficiency treatment of these patients today. OBJECTIVES: The aim of our study was to assess current treatment status and by antihypertensive treatment modification we tried to reach an adequate blood pressure control. METHODS: Fifty two patients suffering from resistant hypertension 2-3 degree ESC/ESH with high cardiovascular risk have been observed. Reaching of the target blood pressure values was verified by 24-hour ambulatory blood pressure monitoring. RESULTS: The target blood pressure values were achieved in 50 % of patients during 18 months. We noticed a statistically significant difference ($p<0.001$) in a decrease of casual and 24-hour ambulatory blood pressure in the group of controlled hypertensive patients in comparison with a group where blood pressure did not decrease sufficiently. In case of 50 % patients, the target blood pressure values have not been reached in spite of more antihypertensive drugs and a higher dose. CONCLUSION: Adequately and systematically controlled patients were treated less intensively in comparison with an inadequately controlled group. 24-hour blood pressure monitoring analysis confirmed correction of the patological diurnal rhythm mostly in adequate blood pressure controlled group. In this group, we have noticed a statistically significant decrease of blood urea and creatinin levels and albumin/creatinin ratio in urine. Resistant hypertension needs multi-faceted approach with consistent control of all comorbidities in a case of problematic blood pressure control (Tab. 6, Fig. 1, Ref. 21).

Doane, Leah D.; Adam, Emma K. (2010):

Loneliness and cortisol: momentary, day-to-day, and trait associations.

In: *Psychoneuroendocrinology* 35 (3), S. 430–441. DOI: 10.1016/j.psyneuen.2009.08.005.

Abstract:

In attempts to understand the social determinants of health, strong associations have been found between measures of loneliness, physiological stress processes, and physical and mental health outcomes. Feelings of loneliness are hypothesized to have implications for physiological stress processes, including activity of the hypothalamic-pituitary-adrenal (HPA) axis. In a community sample of young adults, multilevel modeling was used to examine whether trait and state feelings of loneliness were related to changes in levels of the stress-sensitive hormone cortisol, and whether the associations between loneliness and cortisol were mediated or moderated by the presence of concurrent depression or high levels of chronic life stress. Results indicated that trait loneliness was associated with a flattening of the diurnal cortisol rhythm. In addition, both daily and momentary state variations in loneliness were related to cortisol. Prior day feelings of loneliness were associated with an increased cortisol awakening response the next morning and momentary experiences of loneliness during the day were associated with momentary increases in cortisol among youth who also had high chronic interpersonal stress. Results were significant after covarying current depression, both chronic and momentary reports of stress, and medical and lifestyle covariates. This study expanded on prior work by investigating and revealing three different time courses of association between loneliness and HPA axis activity in young adults: trait, daily and momentary.

Doane, Leah D.; Zeiders, Katharine H. (2013):

Contextual moderators of momentary cortisol and negative affect in adolescents' daily lives.

In: *Journal of Adolescent Health*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-43456-001%26site%3dehost-live.

Abstract:

PURPOSE: To use an ecological momentary assessment design to examine the links between momentary negative affect and cortisol in a sample of adolescents preparing to transition to college. Guided by a risk and resilience framework, we also explored whether important ecological factors, perceived discrimination and social support, moderated the momentary associations between negative affect and youths' cortisol. METHODS: Adolescents (N = 77) provided salivary samples and diary reports of affect and experiences five times a day over 3 days. They also completed self-report questionnaires on perceived discrimination and social support from family and friends. RESULTS: Within-person increases in momentary negative affect were associated with increases in cortisol. Perceived discrimination and social support from friends moderated this association.

Adolescents who reported average and high levels of perceived discrimination experienced exaggerated cortisol responses to negative affect, whereas adolescents who reported low levels of perceived discrimination did not experience significant reactivity to negative affect. In contrast, adolescents who reported high levels of social support from friends experienced attenuated cortisol responses to negative affect compared with adolescents who reported average or low levels of social support from friends. CONCLUSIONS: This study contributes to our understanding of youths' daily socioemotional experiences and physiological reactivity by identifying how perceived discrimination and social support from friends amplified and attenuated, respectively, the effects of negative affect on cortisol reactivity. Examining these processes within adolescents' naturalistic environments advances our understanding of the moderating role of ecological characteristics in adolescents' everyday lives. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Dobkin, B. H.; Xu, X.; Batalin, M.; Thomas, S.; Kaiser, W. (2011):

Reliability and validity of bilateral ankle accelerometer algorithms for activity recognition and walking speed after stroke.

In: *Stroke* 42 (8), S. 2246–2250. DOI: 10.1161/STROKEAHA.110.611095.

Abstract:

BACKGROUND AND PURPOSE: Outcome measures of mobility for large stroke trials are limited to timed walks for short distances in a laboratory, step counters and ordinal scales of disability and quality of life. Continuous monitoring and outcome measurements of the type and quantity of activity in the community would provide direct data about daily performance, including compliance with exercise and skills practice during routine care and clinical trials. METHODS: Twelve adults with impaired ambulation from hemiparetic stroke and 6 healthy controls wore triaxial accelerometers on their ankles. Walking speed for repeated outdoor walks was determined by machine-learning algorithms and compared to a stopwatch calculation of speed for distances not known to the algorithm. The reliability of recognizing walking, exercise, and cycling by the algorithms was compared to activity logs. RESULTS: A high correlation was found between stopwatch-measured outdoor walking speed and algorithm-calculated speed (Pearson coefficient, 0.98; P=0.001) and for repeated measures of algorithm-derived walking speed (P=0.01). Bouts of walking >5 steps, variations in walking speed, cycling, stair climbing, and leg exercises were correctly identified during a day in the community. Compared to healthy subjects, those with stroke were, as expected, more sedentary and slower, and their gait revealed high paretic-to-unaffected leg swing ratios. CONCLUSIONS: Test-retest reliability and concurrent and construct validity are high for activity pattern-recognition Bayesian algorithms developed from inertial sensors. This ratio scale data can provide real-world monitoring and outcome measurements of lower extremity activities and walking speed for stroke and rehabilitation studies

Dockray, Samantha; Grant, Nina; Stone, Arthur A.; Kahneman, Daniel; Wardle, Jane; Steptoe, Andrew (2010):

A comparison of affect ratings obtained with ecological momentary assessment and the day reconstruction method.

In: *Social Indicators Research* 99 (2), S. 269–283.

Abstract:

Measurement of affective states in everyday life is of fundamental importance in many types of quality of life, health, and psychological research. Ecological momentary assessment (EMA) is the recognized method of choice, but the respondent burden can be high. The day reconstruction method (DRM) was developed by Kahneman and colleagues (Science, 2004, 306, 1776-1780) to assess affect, activities and time use in everyday life. We sought to validate DRM affect ratings by comparison with contemporaneous EMA ratings in a sample of 94 working women monitored over work and leisure days. Six EMA ratings of happiness, tiredness, stress, and anger/frustration were obtained over each 24 h period, and were compared with DRM ratings for the same hour, recorded retrospectively at the end of the day. Similar profiles of affect intensity were recorded with the two techniques. The between-person correlations adjusted for attenuation ranged from 0.58 (stress, working day) to 0.90 (happiness, leisure day). The strength of associations was not related to age, educational attainment, or depressed mood. We conclude that the DRM provides reasonably reliable estimates both of the intensity of affect and variations in affect over the day, so is a valuable instrument for the measurement of everyday experience in health and social research.

Doherty, Sean T.; Lemieux, Christopher J.; Canally, Culum (2014):

Tracking human activity and well-being in natural environments using wearable sensors and experience sampling.

In: *Soc Sci Med* 106, S. 83–92. DOI: 10.1016/j.socscimed.2014.01.048.

Abstract:

A growing range of studies have begun to document the health and well-being benefits associated with contact with nature. Most studies rely on generalized self-reports following engagement in the natural environment. The actual in-situ experience during contact with nature, and the environmental features and factors that evoke health benefits have remained relatively unexplored. Smartphones offer a new opportunity to monitor and interact with human subjects during everyday life using techniques such as Experience Sampling Methods (ESM) that involve repeated self-reports of experiences as they occur in-situ. Additionally, embedded sensors in smartphones such as Global Positioning Systems (GPS) and accelerometers can accurately trace human activities. This paper explores how these techniques can be combined to comprehensively explore the perceived health and well-being impacts of contact with nature. Custom software was developed to passively track GPS and accelerometer data, and actively prompt subjects to complete an ESM survey at regular intervals throughout their visit to a provincial park in Ontario, Canada. The ESM survey includes nine scale questions concerning moods and emotions, followed by a series of open-ended experiential questions that subjects provide recorded audio responses to. Pilot test results are used to illustrate the nature, quantity and quality of data obtained. Participant activities were clearly evident from GPS maps, including especially walking, cycling and sedate activities. From the ESM surveys, participants reported an average of 25 words per question, taking an average of 15 s to record them. Further qualitative analysis revealed that participants were willing to provide considerable insights into their experiences and perceived health impacts. The combination of passive and interactive techniques is sure to make larger studies of this type more affordable and less burdensome in the future, further enhancing the ability to understand how contact with nature enhances health and well-being.

Doherty, S. T.; Oh, P. (2012):

A multi-sensor monitoring system of human physiology and daily activities.

In: *Telemed.J.E.Health* 18 (3), S. 185–192. DOI: 10.1089/tmj.2011.0138.

Abstract:

OBJECTIVE: To present the design and pilot test results of a continuous multi-sensor monitoring system of real-world physiological conditions and daily life (activities, travel, exercise, and food consumption), culminating in a Web-based graphical decision-support interface. MATERIALS AND METHODS: The system includes a set of wearable sensors wirelessly connected to a "smartphone" with a continuously running software application that compresses and transmits the data to a central server. Sensors include a Global Positioning System (GPS) receiver, electrocardiogram (ECG), three-axis accelerometer, and continuous blood glucose monitor. A food/medicine diary and prompted recall activity diary were also used. The pilot test involved 40 type 2 diabetic patients monitored over a 72-h period. RESULTS: All but three subjects were successfully monitored for the full study period. Smartphones proved to be an effective hub for managing multiple streams of data but required attention to data compression and battery consumption issues. ECG, accelerometer, and blood glucose devices performed adequately as long as subjects wore them. GPS tracking for a full day was feasible, although significant efforts are needed to impute missing data. Activity detection algorithms were successful in identifying activities and trip modes but could benefit by incorporating accelerometer data. The prompted recall diary was an effective tool for augmenting algorithm results, although subjects reported some difficulties with it. The food and medicine diary was completed fully, although end times and medicine dosages were occasionally missing. CONCLUSIONS: The unique combination of sensors holds promise for increasing accuracy and reducing burden associated with collecting individual-level activity and physiological data under real-world conditions, but significant data processing issues remain. Such data will provide new opportunities to explore the impacts of human geography and daily lifestyle on health at a fine spatial/temporal scale

Dolan, Eamon; Li, Yan; Thijs, Lutgarde; McCormack, Patricia; Staessen, Jan A.; O'Brien, Eoin; Stanton, Alice (2006):

Ambulatory arterial stiffness index: rationale and methodology.

In: *Blood Press Monit* 11 (2), S. 103–105.

Abstract:

OBJECTIVES:

Increased arterial stiffness is associated with the development of cardiovascular disease and may even predict its development at an early stage. Increased pulse pressure is seen as a marker of increased arterial stiffness and can be readily measured by

ambulatory blood pressure monitoring. We propose another surrogate measure of arterial stiffness derived from ambulatory blood pressure monitoring that may predict cardiovascular mortality over and above pulse pressure, namely, the dynamic relationship between diastolic and systolic blood pressure over 24 h--the ambulatory arterial stiffness index.

METHODS:

Using all blood pressure readings over the 24-h period from 11 291 (5965 women; mean age 54.6 years) patients referred for ambulatory blood pressure monitoring to a blood pressure clinic, diastolic blood pressure was plotted against systolic blood pressure, and the regression slope was calculated; ambulatory arterial stiffness index was defined as one minus this regression slope.

RESULTS:

Both ambulatory arterial stiffness index and pulse pressure were higher in women (0.42 vs. 0.40 and 57.0 vs. 55.3 mmHg, respectively). For the entire group, the correlation between ambulatory arterial stiffness index and pulse pressure was 0.5.

CONCLUSIONS:

Ambulatory arterial stiffness index is a new measure that is readily available from ambulatory blood pressure monitoring and may provide added prognostic information for cardiovascular outcome.

Dolezsar, Cynthia M.; McGrath, Jennifer J.; Herzig, Alyssa J. M.; Miller, Sydney B. (2014):

Perceived racial discrimination and hypertension: a comprehensive systematic review.

In: *Health Psychol* 33 (1), S. 20–34. DOI: 10.1037/a0033718.

Abstract:

OBJECTIVE: Discrimination is posited to underlie racial disparities in hypertension. Extant literature suggests a possible association between racial discrimination and blood pressure, although inconsistent findings have been reported. The aim of this comprehensive systematic review was to quantitatively evaluate the association between perceived racial discrimination with hypertensive status and systolic, diastolic, and ambulatory blood pressure. METHOD: Electronic database search of PubMed and PsycINFO (keywords: blood pressure/hypertension/diastolic/systolic, racism/discrimination/prejudice/unfair treatment) was combined with descendancy and ascendancy approaches. Forty-four articles (N = 32,651) met inclusion criteria. Articles were coded for demographics, hypertensive diagnosis, blood pressure measurement, discrimination measure and constructs, study quality, and effect sizes. RESULTS: Random effects meta-analytic models were tested based on Fisher's Z, the derived common effect size metric. Overall, perceived racial discrimination was associated with hypertensive status, Zhypertension = 0.048, 95% CI [.013, .087], but not with resting blood pressure, Zsystolic = 0.011, 95% CI [-.006, .031], Zdiastolic = .016, 95% CI [-.006, .034]. Moderators that strengthened the relation included sex (male), race (Black), age (older), education (lower), and hypertensive status. Perceived discrimination was most strongly associated with nighttime ambulatory blood pressure, especially among Blacks. CONCLUSIONS: Despite methodological limitations in the existing literature, there was a small, significant association between perceived discrimination and hypertension. Future studies should consider ambulatory nighttime blood pressure, which may more accurately capture daily variation attributable to experienced racial discrimination. Perceived discrimination may partly explain racial health disparities.

Domene, Pablo A.; Easton, Chris (2014):

Combined triaxial accelerometry and heart rate telemetry for the physiological characterization of latin dance in non-professional adults.

In: *J Dance Med Sci* 18 (1), S. 29–36. DOI: 10.12678/1089-313X.18.1.29.

Abstract:

The purpose of this study was to value calibrate, cross-validate, and determine the reliability of a combined triaxial accelerometry and heart rate telemetry technique for characterizing the physiological and physical activity parameters of Latin dance. Twenty-two non-professional adult Latin dancers attended two laboratory-based dance trials each. After familiarization and a standardized warm-up, a multi-stage (3 x 5-minute) incremental (based on song tempo) Afro-Cuban salsa choreography was performed while following a video displayed on a projection screen. Data were collected with a portable indirect calorimeter, a heart rate telemeter, and wrist-, hip-, and ankle-mounted ActiGraph GT3X+ accelerometers. Prediction equations for energy expenditure and step count were value calibrated using forced entry multiple regression and cross-validated using a delete-one jackknife approach with additional Bland-Altman analysis. The average dance intensity reached 6.09 +/- 0.96 kcal/kg/h and demanded 45.9 +/- 11.3% of the heart rate reserve. Predictive ability of the derived models was satisfactory, where R(2) = 0.80; SEE = 0.44 kcal/kg/h and R(2) = 0.74; SEE = 3 step/min for energy expenditure and step count, respectively. Dependent t-tests indicated no differences between predicted and measured values for both energy expenditure (t65 = -0.25, p

= 0.80) and step count (t65 = -0.89, p = 0.38). The 95% limits of agreement for energy expenditure and step count were -0.98 to 0.95 kcal/kg/h and -7 to 7 step/min, respectively. Latin dance to salsa music elicits physiological responses representative of moderate to vigorous physical activity, and a wrist-worn accelerometer with simultaneous heart rate measurement constitutes a valid and reliable technique for the prediction of energy expenditure and step count during Latin dance.

Donaire-Gonzalez, David; Nazelle, Audrey; Seto, Edmund; Mendez, Michelle; Nieuwenhuijsen, Mark J.; Jerrett, Michael (2013):

Comparison of physical activity measures using mobile phone-based CalFit and actigraph.

In: *J Med Internet Res* 15 (6), S. 67–77. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-26855-006%26site%3dehost-live;mnieuwenhuijsen@creal.cat.

Abstract:

Background: Epidemiological studies on physical activity often lack inexpensive, objective, valid, and reproducible tools for measuring physical activity levels of participants. Novel sensing technologies built into smartphones offer the potential to fill this gap. Objective: We sought to validate estimates of physical activity and determine the usability for large population-based studies of the smartphone-based CalFit software. Methods: A sample of 36 participants from Barcelona, Spain, wore a smartphone with CalFit software and an Actigraph GT3X accelerometer for 5 days. The ease of use (usability) and physical activity measures from both devices were compared, including vertical axis counts (VT) and duration and energy expenditure predictions for light, moderate, and vigorous intensity from Freedson's algorithm. Statistical analyses included (1) Kruskal-Wallis rank sum test for usability measures, (2) Spearman correlation and linear regression for VT counts, (3) concordance correlation coefficient (CCC), and (4) Bland-Altman plots for duration and energy expenditure measures. Results: Approximately 64% (23/36) of participants were women. Mean age was 31 years (SD 8) and mean body mass index was 22 kg/m-^{2} (SD 2). In total, 25/36 (69%) participants recorded at least 3 days with at least 10 recorded hours of physical activity using CalFit. The linear association and correlations for VT counts were high (adjusted R-^{2} = 0.85; correlation coefficient .932, 95% CI 0.931-0.933). CCCs showed high agreement for duration and energy expenditure measures (from 0.83 to 0.91). Conclusions: The CalFit system had lower usability than the Actigraph GT3X because the application lacked a means to turn itself on each time the smartphone was powered on. The CalFit system may provide valid estimates to quantify and classify physical activity. CalFit may prove to be more cost-effective and easily deployed for large-scale population health studies than other specialized instruments because cell phones are already carried by many people. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Dong, Hui; Jiang, Xiongjing; Liang, Tuo; Zou, Yubao; Guan, Ting; Peng, Meng et al. (2014):

One-year outcomes of percutaneous renal denervation for the treatment of resistant hypertension: the first Chinese experience.

In: *Chin Med J (Engl)* 127 (6), S. 1003–1007.

Abstract:

BACKGROUND: As a novel device-based approach targeting the renal sympathetic nerves, percutaneous renal denervation (RDN) has been shown to be effective and safe for reducing blood pressure. However, while considerable data on RDN have been obtained from Western populations, there is limited findings from East Asian populations. The purpose of this study was to evaluate one-year outcomes of RDN for the treatment of resistant hypertension in Chinese patients. METHODS: Between February and August 2012, 14 patients (mean age 39+/-8 years, 10 males) with resistant hypertension underwent successful RDN at the Fuwai Hospital. All 14 patients were followed up at 1, 3, 6 and 12 months post-procedure. Blood pressure, use of antihypertensive agents, renal function, and complications were investigated. RESULTS: Baseline values included mean office blood pressure of 164/103+/-14/10 mmHg, mean 3.9+/-0.6 anti-hypertensive agents, and an estimated glomerular filtration rate of (79+/-19) mlxmin(-1)x1.73 m(-2). Office blood pressure after the procedure was reduced by -14/-10, -17/-11, -21/-12, and -24/-14 mmHg at 1, 3, 6, and 12 months respectively, and the reduction of the number of antihypertensive agents at the above corresponding time points was -1.3, -1.5, -1.7 and -1.8 respectively (all P < 0.001). The mean reduction of 24-hour ambulatory blood pressure was similar to the reduction of office blood pressure at the four corresponding time points. Renal function did not significantly change at any time point (all P > 0.05). No clinical complications were observed at 12-month follow-up. CONCLUSION: This study showed that RDN seems to be effective in reducing blood pressure of Chinese patients with resistant hypertension, with minimal adverse events at 12-month follow-up.

Dopp, R. R.; Mooney, A. J.; Armitage, R.; King, C. (2012):

Exercise for adolescents with depressive disorders: a feasibility study.

In: *Depress.Res Treat.* 2012 (2090-1321 (Linking)), S. 257472. DOI: 10.1155/2012/257472.

Abstract:

Objectives. Adolescence is associated with increased depressive symptoms and decreased aerobic exercise, yet the relationship between exercise and clinical depression among adolescents requires further examination. This study assessed the feasibility of a 12-week intervention designed to increase exercise for adolescents with depressive disorders: Will a teenager with depression exercise? Methods. Participants were 13 adolescents with depression reporting low levels of aerobic exercise. They completed a 12-week intervention (15 supervised exercise sessions and 21 independent sessions). Exercise was measured through the aerobic exercise Questionnaire, actigraphy, and heart-rate monitoring. Depression was measured with the Children's Depression Rating Scale, Revised, and Quick Inventory of Depressive Symptomatology, Self-Report. Results. All participants who started the intervention completed the protocol, attending all supervised exercise sessions. Actigraphy verified 81% adherence to the protocol's independent sessions. Analysis of secondary outcomes showed a significant increase in exercise levels and a significant decrease in depression severity. Initially, ten participants were overweight or obese, and three were healthy weight. After 12 weeks of exercise, the number of participants in the healthy-weight category doubled. Conclusions. Adolescents suffering from depression can complete a rigorous protocol requiring structured increases in aerobic exercise. Participants showed significant increases in exercise, and significant decreases in depressive symptoms

Dores, Helder; Sousa Almeida, Manuel; Araujo Goncalves, Pedro; Branco, Patricia; Gaspar, Augusta; Sousa, Henrique et al. (2014):

Renal denervation in patients with resistant hypertension: 6-month results.

In: *Rev Port Cardiol. DOI:* 10.1016/j.repc.2013.09.008.

Abstract:

INTRODUCTION: The increase of activation of sympathetic nervous system has a central role in the pathophysiology of hypertension (HT). Catheter-based renal denervation (RDN) was recently developed for the treatment of resistant HT. AIM: To evaluate the safety and efficacy of RDN in HT reduction at 6-months in patients with resistant HT. METHODS: Prospective registry of patients with essential resistant HT, submitted to RDN between July-2011 and May-2013. The efficacy of RDN was defined as >/=10mmHg reduction in office systolic blood pressure (SBP), 6-months after the intervention. RESULTS: In a resistant HT outpatient clinic, 177 consecutive patients were evaluated, of whom 34 were submitted to RDN (age 62.7+/-7.6 years old; 50,0% male). There were no vascular complications, namely of the access or the renal arteries. Of the 22 patients with complete 6-months follow-up, the response rate was 81.8% (n=18). The mean office SBP reduction was 22mmHg (174+/-23 vs. 152+/-22mmHg; p <0.001) and diastolic 9mmHg (89+/-16 vs. 80+/-11mmHg; p=0.006). The number of antihypertensive drugs (5.5+/-1.0 vs. 4.6+/-1.1; p=0.010) and pharmacological classes (5.4+/-0.7 vs. 4.6+/-1,1; p=0.009) were also significantly reduced. Among the 24h ambulatory blood pressure monitoring and echocardiographic parameters analysed, there were a significantly reduction in the percentage of diastolic load (45+/-29 vs. 27+/-26%; p=0.049) and in the left ventricular mass index (174+/-56 vs. 158+/-60g/m2; p=0.014). CONCLUSION: In this cohort of patients with resistant HT submitted to RDN, this intervention was safe and effective, with a significant blood pressure reduction at 6 months follow-up.

Downs, Andrew; van Hoomissen, Jacqueline; Lafrenz, Andrew; Julka, Deana L. (2014):

Accelerometer-Measured Versus Self-reported Physical Activity in College Students: Implications for Research and Practice.

In: *J Am Coll Health* 62 (3), S. 204–212. DOI: 10.1080/07448481.2013.877018.

Abstract:

Abstract Objective: To determine the level of moderate-vigorous-intensity physical activity (MVPA) assessed via self-report and accelerometer in the college population, and to examine intrapersonal and contextual variables associated with physical activity (PA). Participants: Participants were 77 college students at a university in the northwest sampled between January 2011 and December 2011. Methods: Participants completed a validated self-report measure of PA and measures of athletic identity and benefits and barriers to exercise. Participants' PA levels were assessed for 2 weeks via accelerometry. Results: Participants' estimations of their time spent engaged in MVPA were significantly higher when measured via self-report versus accelerometry. Stronger athletic identity, perceived social benefits and barriers, and time-effort barriers were related to PA levels. Conclusions: Estimation of college students' level of PA may require interpretation of data from different measurement methods, as self-report and accelerometry generate different estimations of PA in college students who may be even less active than previously believed.

Dulin, Patrick L.; Gonzalez, Vivian M.; Campbell, Kendra (2014):

Results of a pilot test of a self-administered smartphone-based treatment system for alcohol use disorders: Usability and early outcomes.

In: *Substance Abuse* 35 (2), S. 168–175. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-21230-014%26site%3dehost-live.

Abstract:

ABSTRACT. Background: This paper provides results from a pilot study focused on assessing early-stage effectiveness and usability of a smartphone-based intervention system that provides a stand-alone, self-administered intervention option, the Location-Based Monitoring and Intervention for Alcohol Use Disorders (LBMI-A). The LBMI-A provided numerous features for intervening with ongoing drinking, craving, connection with supportive others, managing life problems, high-risk location alerting, and activity scheduling. Methods: Twenty-eight participants, ranging in age from 22 to 45, who met criteria for an alcohol use disorder used an LBMI-A–enabled smartphone for 6 weeks. Results: Participants indicated the LBMI-A intervention modules were helpful in highlighting alcohol use patterns. Tools related to managing alcohol craving, monitoring consumption, and identifying triggers to drink were rated by participants as particularly helpful. Participants also demonstrated significant reductions in hazardous alcohol use while using the system (56% of days spent hazardously drinking at baseline vs. 25% while using the LBMI-A) and drinks per day diminished by 52%. Conclusions: Implications for system improvement as well as suggestions for designing ecological momentary assessment and intervention systems for substance use disorders are discussed. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Dulin, Patrick L.; Gonzalez, Vivian M.; Campbell, Kendra (2014):

Results of a pilot test of a self-administered smartphone-based treatment system for alcohol use disorders: usability and early outcomes.

In: *Subst Abus* 35 (2), S. 168–175. DOI: 10.1080/08897077.2013.821437.

Abstract:

BACKGROUND: This paper provides results from a pilot study focused on assessing early-stage effectiveness and usability of a smartphone-based intervention system that provides a stand-alone, self-administered intervention option, the Location-Based Monitoring and Intervention for Alcohol Use Disorders (LBMI-A). The LBMI-A provided numerous features for intervening with ongoing drinking, craving, connection with supportive others, managing life problems, high-risk location alerting, and activity scheduling. METHODS: Twenty-eight participants, ranging in age from 22 to 45, who met criteria for an alcohol use disorder used an LBMI-A-enabled smartphone for 6 weeks. RESULTS: Participants indicated the LBMI-A intervention modules were helpful in highlighting alcohol use patterns. Tools related to managing alcohol craving, monitoring consumption, and identifying triggers to drink were rated by participants as particularly helpful. Participants also demonstrated significant reductions in hazardous alcohol use while using the system (56% of days spent hazardously drinking at baseline vs. 25% while using the LBMI-A) and drinks per day diminished by 52%. CONCLUSIONS: Implications for system improvement as well as suggestions for designing ecological momentary assessment and intervention systems for substance use disorders are discussed.

Duncan, G. E.; Lester, J.; Migotsky, S.; Higgins, L.; Borriello, G. (2013):

Measuring slope to improve energy expenditure estimates during field-based activities.

In: *Appl.Physiol Nutr.Metab* 38 (3), S. 352–356. DOI: 10.1139/apnm-2012-0223.

Abstract:

This technical note describes methods to improve activity energy expenditure estimates by using a multi-sensor board (MSB) to measure slope. Ten adults walked over a 4-km (2.5-mile) course wearing an MSB and mobile calorimeter. Energy expenditure was estimated using accelerometry alone (base) and 4 methods to measure slope. The barometer and global positioning system methods improved accuracy by 11% from the base ($p < 0.05$) to 86% overall. Measuring slope using the MSB improves energy expenditure estimates during field-based activities

Dunton, Genevieve Fridlund; Almanza, Estela; Jerrett, Michael; Wolch, Jennifer; Pentz, Mary Ann (2014):

Neighborhood park use by children: use of accelerometry and global positioning systems.

In: *Am J Prev Med* 46 (2), S. 136–142. DOI: 10.1016/j.amepre.2013.10.009.

Abstract:

BACKGROUND: Although having a greater number of neighborhood parks may be associated with greater overall physical activity in children, information is lacking about the extent to which children actually use parks for physical activity. PURPOSE: This study combined accelerometer, GPS, GIS, and self-report methods to examine neighborhood park availability, perceived proximity, and use for physical activity in children. METHODS: Low- to middle-income children (aged 8-14 years) (n=135) from suburban communities in Southern California wore an Actigraph accelerometer and GlobalSat BT-335 GPS device across 7 days to measure physical activity and park use, respectively. ArcGIS identified parks within a 500-m residential buffer of children's homes. Parents reported perceptions of neighborhood park proximity through the Neighborhood Environment Walkability Survey (NEWS). Data were collected from March 2009 to December 2010, and analyzed in 2013. RESULTS: Fifty-four percent of families lived within 500 m of a park. Of these children, GPS data indicated that 16% used it more than 15 minutes and an additional 11% of children used it between 5 and 15 minutes during the 7-day study period. The odds of extended park use (>15 minutes) increased fourfold when the distance between home and the nearest neighborhood park decreased by 100 m. Additionally, the odds of any park use (>5 minutes) doubled when moving from the 25th to the 75th percentile for park greenness/vegetation density. CONCLUSIONS: Although children's use of neighborhood parks was generally low, it increased substantially when parks were closer to children's homes and had greater vegetation density.

Dunton, Genevieve Fridlund; Dzubur, Eldin; Kawabata, Keito; Yanez, Brenda; Bo, Bin; Intille, Stephen (2014):

Development of a smartphone application to measure physical activity using sensor-assisted self-report.

In: *Front Public Health* 2, S. 12. DOI: 10.3389/fpubh.2014.00012.

Abstract:

Introduction: Despite the known advantages of objective physical activity monitors (e.g., accelerometers), these devices have high rates of non-wear, which leads to missing data. Objective activity monitors are also unable to capture valuable contextual information about behavior. Adolescents recruited into physical activity surveillance and intervention studies will increasingly have smartphones, which are miniature computers with built-in motion sensors. Methods: This paper describes the design and development of a smartphone application ("app") called Mobile Teen that combines objective and self-report assessment strategies through (1) sensor-informed context-sensitive ecological momentary assessment (CS-EMA) and (2) sensor-assisted end-of-day recall. Results: The Mobile Teen app uses the mobile phone's built-in motion sensor to automatically detect likely bouts of phone non-wear, sedentary behavior, and physical activity. The app then uses transitions between these inferred states to trigger CS-EMA self-report surveys measuring the type, purpose, and context of activity in real-time. The end of the day recall component of the Mobile Teen app allows users to interactively review and label their own physical activity data each evening using visual cues from automatically detected major activity transitions from the phone's built-in motion sensors. Major activity transitions are identified by the app, which cues the user to label that "chunk," or period, of time using activity categories. Conclusion: Sensor-driven CS-EMA and end-of-day recall smartphone apps can be used to augment physical activity data collected by objective activity monitors, filling in gaps during non-wear bouts and providing additional real-time data on environmental, social, and emotional correlates of behavior. Smartphone apps such as these have potential for affordable deployment in large-scale epidemiological and intervention studies.

Dunton, Genevieve F.; Huh, Jimi; Leventhal, Adam M.; Riggs, Nathaniel; Hedeker, Donald; Spruijt-Metz, Donna; Pentz, Mary Ann (2014):

Momentary assessment of affect, physical feeling states, and physical activity in children.

In: *Health Psychol* 33 (3), S. 255–263. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-16576-001%26site%3dehost-live.

Abstract:

Objective: Most research on the interplay of affective and physical feelings states with physical activity in children has been conducted under laboratory conditions and fails to capture intraindividual covariation. The current study used Ecological Momentary Assessment (EMA) to bidirectionally examine how affective and physical feeling states are related to objectively

measured physical activity taking place in naturalistic settings during the course of children's everyday lives. Methods: Children (N = 119, ages 9–13 years, 52% male, 32% Hispanic) completed 8 days of EMA monitoring, which measured positive affect (PA), negative affect (NA), feeling tired, and feeling energetic up to 7 times per day. EMA responses were time-matched to accelerometer assessed moderate-to-vigorous physical activity (MVPA) in the 30 min before and after each EMA survey. Results: Higher ratings of feeling energetic and lower ratings of feeling tired were associated with more MVPA in the 30 min after the EMA prompt. More MVPA in the 30 min before the EMA prompt was associated with higher ratings of PA and feeling energetic and lower ratings of NA. Between-subjects analyses indicated that mean hourly leisure-time MVPA was associated with less intraindividual variability in PA and NA. Conclusions: Physical feeling states predict subsequent physical activity levels, which in turn, predict subsequent affective states in children. Active children demonstrated higher positive and negative emotional stability. Although the strength of these associations were of modest magnitude and their clinical relevance is unclear, understanding the antecedents to and consequences of physical activity may have theoretical and practical implications for the maintenance and promotion of physical activity and psychological well-being in children. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Dunton, G. F.; Intille, S. S.; Wolch, J.; Pentz, M. A. (2012):

Investigating the impact of a smart growth community on the contexts of children's physical activity using Ecological Momentary Assessment.

In: *Health Place* 18 (1), S. 76–84. DOI: 10.1016/j.healthplace.2011.07.007.

Abstract:

This quasi-experimental research used Ecological Momentary Assessment with electronic surveys delivered through mobile phones to determine whether children change the type of contexts (i.e., settings) where they engage in physical activity after a recent move to a smart growth (SG) community in the U.S. as compared to children living in conventional low-to-medium density U.S. suburban communities (controls). SG vs. control children engaged in a greater proportion of physical activity bouts with friends, a few blocks from home, and at locations to which they walked. Over six months, the proportion of physical activity bouts reported at home (indoors) and in high traffic locations decreased among SG but not control children. Six-month increases in daily moderate-to-vigorous physical activity did not significantly differ by group. Children might have altered the type of contexts where they engage in physical activity after moving to SG communities, yet more time may be necessary for these changes to impact overall physical activity

Dunton, G. F.; Kawabata, K.; Intille, S.; Wolch, J.; Pentz, M. A. (2012):

Assessing the social and physical contexts of children's leisure-time physical activity: an ecological momentary assessment study.

In: *Am.J.Health Promot.* 26 (3), S. 135–142. DOI: 10.4278/ajhp.100211-QUAN-43.

Abstract:

PURPOSE: To use Ecological Momentary Assessment with mobile phones to describe where and with whom children's leisure-time physical activity occurs. DESIGN: Repeated assessments across 4 days (Friday-Monday) during nonschool time (20 total). SETTING: Chino, California, and surrounding communities. SUBJECTS: Primarily low to middle income children (N =121; aged 9-13 years; x =11.0 years, SD =1.2 years; 52% male, 38% Hispanic/Latino). MEASURES: Electronic surveys measured current activity (e.g., active play/sports/exercise, watching TV/movies), social company (e.g., family, friends, alone), physical location (e.g., home, outdoors, school), and other perceived contextual features (e.g., safety, traffic, vegetation, distance from home). Analysis . Multilevel linear and multinomial logistic regression. RESULTS: Most of children's physical activity occurred outdoors (away from home) (42%), followed by at home (indoors) (30%), front/backyard (at home) (8%), someone else's house (8%), at a gym/recreation center (3%), and other locations (9%). Children's physical activity took place most often with multiple categories of people together (e.g., friends and family) (39%), followed by family members only (32%), alone (15%), and with friends only (13%). Age, weight status, income, and racial/ethnic differences in physical activity contexts were observed. CONCLUSIONS: The most frequently reported contexts for children's leisure time physical activity were outdoors and with family members and friends together

Dunton, Genevieve F.; Liao, Yue; Intille, Stephen; Wolch, Jennifer; Pentz, Mary Ann (2011):

Physical and social contextual influences on children's leisure-time physical activity: an ecological momentary assessment study.

In: *J Phys Act Health* 8 (1), S. S103.

Abstract:

BACKGROUND:

This study used real-time electronic surveys delivered through mobile phones, known as Ecological Momentary Assessment (EMA), to determine whether level and experience of leisure-time physical activity differ across children's physical and social contexts.

METHODS:

Children (N = 121; ages 9 to 13 years; 52% male, 32% Hispanic/Latino) participated in 4 days (Fri.-Mon.) of EMA during nonschool time. Electronic surveys (20 total) assessed primary activity (eg, active play/sports/exercise), physical location (eg, home, outdoors), social context (eg, friends, alone), current mood (positive and negative affect), and enjoyment. Responses were time-matched to the number of steps and minutes of moderate-to-vigorous physical activity (MVPA; measured by accelerometer) in the 30 minutes before each survey.

RESULTS:

Mean steps and MVPA were greater outdoors than at home or at someone else's house (all P < .05). Steps were greater with multiple categories of company (eg, friends and family together) than with family members only or alone (all P < .05). Enjoyment was greater outdoors than at home or someone else's house (all P < .05). Negative affect was greater when alone and with family only than friends only (all P < .05).

CONCLUSION:

Results describing the value of outdoor and social settings could inform context-specific interventions in this age group.

Dunton, G. F.; Liao, Y.; Kawabata, K.; Intille, S. (2012):

Momentary assessment of adults' physical activity and sedentary behavior: feasibility and validity.

In: *Front Psychol* 3 (1664-1078 (Electronic)), S. 260. DOI: 10.3389/fpsyg.2012.00260.

Abstract:

Introduction: Mobile phones are ubiquitous and easy to use, and thus have the capacity to collect real-time data from large numbers of people. Research tested the feasibility and validity of an Ecological Momentary Assessment (EMA) self-report protocol using electronic surveys on mobile phones to assess adults' physical activity and sedentary behaviors. Methods: Adults (N = 110; 73% female, 30% Hispanic, 62% overweight/obese) completed a 4-day signal-contingent EMA protocol (Saturday-Tuesday) with eight surveys randomly spaced throughout each day. EMA items assessed current activity (e.g., Watching TV/Movies, Reading/Computer, Physical Activity/Exercise). EMA responses were time-matched to minutes of moderate-to-vigorous physical activity (MVPA) and sedentary activity (SA) measured by accelerometer immediately before and after each EMA prompt. Results: Unanswered EMA prompts had greater MVPA (+/-15 min) than answered EMA prompts (p = 0.029) for under/normal weight participants, indicating that activity level might influence the likelihood of responding. The 15-min. intervals before versus after the EMA-reported physical activity (n = 296 occasions) did not differ in MVPA (p > 0.05), suggesting that prompting did not disrupt physical activity. SA decreased after EMA-reported sedentary behavior (n = 904 occasions; p < 0.05) for overweight and obese participants. As compared with other activities, EMA-reported physical activity and sedentary behavior had significantly greater MVPA and SA, respectively, in the +/-15 min of the EMA prompt (ps < 0.001), providing evidence for criterion validity. Conclusion: Findings generally support the acceptability and validity of a 4-day signal-contingent EMA protocol using mobile phones to measure physical activity and sedentary behavior in adults. However, some MVPA may be missed among underweight and normal weight individuals

Dzierzewski, Joseph M.; Fung, Constance H.; Jouldjian, Stella; Alessi, Cathy A.; Irwin, Michael R.; Martin, Jennifer L. (2014):

Decrease in daytime sleeping is associated with improvement in cognition after hospital discharge in older adults.

In: *J Am Geriatr Soc* 62 (1), S. 47–53.

Abstract:

OBJECTIVES: To examine the relationship between changes in objectively assessed sleep and global cognitive functioning from inpatient postacute rehabilitation to 6-month follow-up. DESIGN: Secondary analysis of two prospective, longitudinal studies. SETTING: Inpatient rehabilitation units at a Veterans Affairs Medical Center. PARTICIPANTS: Older adults (mean age 73.8 +/- 9.4) undergoing inpatient rehabilitation (n = 192). MEASUREMENTS: All participants completed 7 nights and days of ambulatory sleep monitoring using wrist actigraphy (yielding an estimate of nighttime wakefulness and daytime sleep) and the Mini-Mental State Examination (MMSE) during a postacute inpatient rehabilitation stay and 6 months after discharge. The 5-item Geriatric Depression Scale, Geriatric Pain Measure, and Cumulative Illness Rating Scale for Geriatrics were completed during inpatient rehabilitation. RESULTS: Growth curve modeling (controlling for baseline age, education, sex, body mass index, depression, pain, and comorbidity burden) revealed that individuals whose amount of daytime sleep decreased from inpatient postacute rehabilitation to 6-month follow-up also experienced improvements in MMSE score (beta = -0.01, t(80 = -3.22, P = .002)). Change in nighttime wakefulness was not a significant predictor of change in MMSE score. CONCLUSION: Older adults whose daytime sleeping decreased after hospital discharge also experienced improvements in cognitive functioning at 6 month follow-up. As such, daytime sleep may represent a promising candidate for targeted interventions aimed at promoting cognitive recovery after hospital discharge.

Ebenfeld, Lara; Kleine Stegemann, Stefan; Lehr, Dirk; Ebert, David Daniel; Jazaieri, Hooria; van Ballegooijen, Wouter et al. (2014):

Efficacy of a hybrid online training for panic symptoms and agoraphobia: study protocol for a randomized controlled trial.

In: *Trials* 15, S. 427. DOI: 10.1186/1745-6215-15-427.

Abstract:

BACKGROUND: Recently, internet-based interventions have been proposed as effective treatments for people with panic disorder (PD). However, little is known about the clinical effects of integrating mobile technology into these interventions. Because users carry their smartphones with them throughout the day, we hypothesize that this technology can be used to significantly support individuals with monitoring and overcoming their PD symptoms. The aim of the present study is to evaluate the efficacy and cost-effectiveness of a newly developed hybrid intervention that combines internet/PC with smartphone delivery to treat the symptoms of PD. The intervention is based on cognitive behavioral therapy and consists of six modules over a total of six weeks. METHODS/DESIGN: A two-arm randomized controlled trial (RCT) will be conducted to evaluate the effects of a hybrid online training module for PD. Based on a power calculation (d =0.60; 1-beta of 80%; alpha =0.05), 90 participants with mild to moderate panic symptoms with or without agoraphobia (as assessed by the Panic and Agoraphobia Scale) will be recruited from the general population and randomly assigned to either the intervention group or a six-month waitlist control group. The primary outcome measure will be the severity of panic symptoms. Secondary outcomes will include depression, quality of life, and an observer-based rating of panic severity. Furthermore, data regarding acceptance and the usability of the smartphone app will be assessed. Assessments will take place at baseline as well as eight weeks, three months, and six months after randomization. Moreover, a cost-effectiveness analysis will be performed from a societal perspective. Data will be analyzed on an intention-to-treat basis and per protocol. DISCUSSION: To our knowledge, this RCT is one of the first to examine the efficacy of a hybrid online training for adult PD. This study seeks to contribute to the emerging field of hybrid online training. If the intervention is efficacious, then research on this hybrid online training should be extended. The cost-effectiveness analysis will also indicate whether online training is an economical tool for treating PD among adults. TRIAL REGISTRATION: German Clinical Trial Register: DRKS00005223 (registered on 15 August 2013).

Ebner-Priemer, Ulrich W.; Eid, Michael; Kleindienst, Nikolaus; Stabenow, Simon; Trull, Timothy J. (2009):

Analytic strategies for understanding affective (in)stability and other dynamic processes in psychopathology.

In: *Journal of Abnormal Psychology* 118 (1), S. 195–202. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2009-01738-010&site=ehost-live;ulrich.ebner-priemer@zi-mannheim.de.

Abstract:

The dynamics of psychopathological symptoms as a topic of research has been neglected for some time, likely because of the inability of cross-sectional and retrospective reports to uncover the ebb and flow of symptoms. Data gathered with the experience sampling method (ESM) enable researchers to study symptom variability and instability over time as well as the dynamic interplay between the environment, personal experiences, and psychopathological symptoms. ESM data can illuminate these dynamic processes, if time is both considered and integrated into (a) the research question itself, (b) the assessment or sampling method, and (c) the data analytic strategy. The authors highlight the complexity of assessing affective instability and

unstable interpersonal relationships and explore sampling and analytic methods. Finally, they propose guidelines for future investigations. For the assessment of affective instability, the authors endorse the use of time-contingent recordings and of instability indices that address temporal dependency. For the assessment of unstable interpersonal relationships, they advocate the use of event-contingent recordings and separate analyses within and across dyads. (PsycINFO Database Record (c) 2009 APA, all rights reserved) (from the journal abstract)

Ebner-Priemer, U. W.; Koudela, S.; Mutz, G.; Kanning, M. (2012):

Interactive Multimodal Ambulatory Monitoring to Investigate the Association between Physical Activity and Affect.

In: *Front Psychol* 3 (1664-1078 (Electronic)), S. 596. DOI: 10.3389/fpsyg.2012.00596.

Abstract:

Although there is a wealth of evidence that physical activity has positive effects on psychological health, a large proportion of people are inactive. Data regarding counts, steps, and movement patterns are limited in their ability to explain why people remain inactive. We propose that multimodal ambulatory monitoring, which combines the assessment of physical activity with the assessment of psychological variables, helps to elucidate real world physical activity. Whereas physical activity can be monitored continuously, psychological variables can only be assessed at discrete intervals, such as every hour. Moreover, the assessment of psychological variables must be linked to the activity of interest. For example, if an inactive and overweight person is physically active once a week, psychological variables should be assessed during this episode. Linking the assessment of psychological variables to episodes of an activity of interest can be achieved with interactive monitoring. The primary aim of our interactive multimodal ambulatory monitoring approach was to intentionally increase the number of e-diary assessments during "active" episodes. We developed and tested an interactive monitoring algorithm that continuously monitors physical activity in everyday life. When predefined thresholds are surpassed, the algorithm triggers a signal for participants to answer questions in their electronic diary. Using data from 70 participants wearing an accelerative device for 24 h each, we found that our algorithm quadrupled the frequency of e-diary assessments during the activity episodes of interest compared to random sampling. Multimodal interactive ambulatory monitoring appears to be a promising approach to enhancing our understanding of real world physical activity and movement

Ebner-Priemer, Ulrich W.; Kuo, Janice; Welch, Stacy Shaw; Thielgen, Tanja; Witte, Steffen; Bohus, Martin; Linehan, Marsha M. (2006):

A valence-dependent group-specific recall bias of retrospective self-reports: a study of borderline personality disorder in everyday life.

In: *The Journal of nervous and mental disease* 194 (10), S. 774–779. DOI: 10.1097/01.nmd.0000239900.46595.72.

Abstract:

Recall is an active reconstruction process likely to distort past experiences. This distortion, known as recall bias, seems to manifest itself differently in sick and healthy people. A recall bias has been documented in several disorders, but never investigated in borderline personality disorder (BPD). To determine recall bias in BPD, we assessed momentary and retrospective ratings of specific emotions in 50 patients with BPD and 50 healthy controls (HCs), using the methodology of 24-hour ambulatory monitoring. Our data reveal a group-specific valence-dependent recall bias of retrospective self-report, indicated by a different overall recall pattern in HCs and BPD. BPD patients show an overall negative recall pattern, whereas HCs show a positive recall pattern. A traditional questionnaire approach does not distinguish between symptoms of the disorder and recall bias, although the pathological mechanisms underlying them as well as the appropriate treatment strategies may be different.

Ebner-Priemer, Ulrich W.; Kuo, Janice; Schlotz, Wolff; Kleindienst, Nikolaus; Rosenthal, M. Zachary; Detterer, Leonie et al. (2008):

Distress and affective dysregulation in patients with borderline personality disorder: a psychophysiological ambulatory monitoring study.

In: *The Journal of nervous and mental disease* 196 (4), S. 314–320.

Abstract:

Borderline personality disorder (BPD) is characterized by enduring psychological distress and affective dysregulation. Several models have linked both phenomena, but are lacking empirical support. To investigate the relation between psychological

distress and components of affective dysregulation (especially inability to label emotions, conflictive emotions, and physiological hyperarousal), we repeatedly assessed these components using a 24-hour ambulatory monitoring approach in a group of 50 BPD patients and 50 healthy controls. Hierarchical linear model analyses identified a clear relation between inability to label emotions and distress in the BPD group ($p = 0.0009$) but not across all subjects ($p = 0.6492$). Conflictive emotions were related to psychological distress in both groups ($p < 0.0001$). This relation is, however, most pertinent to the BPD group who experienced conflicting emotions more frequently. Physiological arousal (heart rate) was related to distress in both groups. Our empirical findings emphasize training in labeling emotions and distress tolerance interventions in treatment for BPD.

Ebner-Priemer, Ulrich W.; Trull, Timothy J. (2009):

Ambulatory assessment: an innovative and promising approach for clinical psychology.

In: *European Psychologist* 14 (2), S. 109–119.

Abstract:

Convergent experimental data, autobiographical studies, and investigations on daily life have all demonstrated that gathering information retrospectively is a highly dubious methodology. Retrospection is subject to multiple systematic distortions (i.e., affective valence effect, mood congruent memory effect, duration neglect; peak end rule) as it is based on (often biased) storage and recollection of memories of the original experience or the behavior that are of interest. The method of choice to circumvent these biases is the use of electronic diaries to collect self-reported symptoms, behaviors, or physiological processes in real time. Different terms have been used for this kind of methodology: ambulatory assessment, ecological momentary assessment, experience sampling method, and real-time data capture. Even though the terms differ, they have in common the use of computer-assisted methodology to assess self-reported symptoms, behaviors, or physiological processes, while the participant undergoes normal daily activities. In this review we discuss the main features and advantages of ambulatory assessment regarding clinical psychology and psychiatry: (a) the use of realtime assessment to circumvent biased recollection, (b) assessment in real life to enhance generalizability, (c) repeated assessment to investigate within person processes, (d) multimodal assessment, including psychological, physiological and behavioral data, (e) the opportunity to assess and investigate context-specific relationships, and (f) the possibility of giving feedback in real time. Using prototypic examples from the literature of clinical psychology and psychiatry, we demonstrate that ambulatory assessment can answer specific research questions better than laboratory or questionnaire studies.

Ebner-Priemer, Ulrich W.; Trull, Timothy J. (2009):

Ecological momentary assessment of mood disorders and mood dysregulation.

In: *Psychological Assessment* 21 (4), S. 463.

Abstract:

In this review, we discuss ecological momentary assessment (EMA) studies on mood disorders and mood dysregulation, illustrating 6 major benefits of the EMA approach to clinical assessment: (a) Real-time assessments increase accuracy and minimize retrospective bias; (b) repeated assessments can reveal dynamic processes; (c) multimodal assessments can integrate psychological, physiological, and behavioral data; (d) setting- or context-specific relationships of symptoms or behaviors can be identified; (e) interactive feedback can be provided in real time; and (f) assessments in real-life situations enhance generalizability. In the context of mood disorders and mood dysregulation, we demonstrate that EMA can address specific research questions better than laboratory or questionnaire studies. However, before clinicians and researchers can fully realize these benefits, sets of standardized e-diary questionnaires and time sampling protocols must be developed that are reliable, valid, and sensitive to change.

Ebner-Priemer, Ulrich W.; Welch, Stacy S.; Grossman, Paul; Reisch, Thomas; Linehan, Marsha M.; Bohus, Martin (2007):

Psychophysiological ambulatory assessment of affective dysregulation in borderline personality disorder.

In: *Psychiatry Res* 150 (3), S. 265–275.

Abstract:

Many experts now believe that pervasive problems in affect regulation constitute the central area of dysfunction in borderline personality disorder (BPD). However, data is sparse and inconclusive. We hypothesized that patients with BPD, in contrast to healthy gender and nationality-matched controls, show a higher frequency and intensity of self-reported emotions, altered

physiological indices of emotions, more complex emotions and greater problems in identifying specific emotions. We took a 24-hour psychophysiological ambulatory monitoring approach to investigate affect regulation during everyday life in 50 patients with BPD and in 50 healthy controls. To provide a typical and unmanipulated sample, we included only patients who were currently in treatment and did not alter their medication schedule. BPD patients reported more negative emotions, fewer positive emotions, and a greater intensity of negative emotions. A subgroup of non-medicated BPD patients manifested higher values of additional heart rate. Additional heart rate is that part of a heart rate increase that does not directly result from metabolic activity, and is used as an indicator of emotional reactivity. Borderline participants were more likely to report the concurrent presence of more than one emotion, and those patients who just started treatment in particular had greater problems in identifying specific emotions. Our findings during naturalistic ambulatory assessment support emotional dysregulation in BPD as defined by the biosocial theory of [Linehan, M.M., 1993. Cognitive–Behavioral Treatment of Borderline Personality Disorder. The Guildford Press, New York.] and suggest the potential utility for evaluating treatment outcome.

Edgar, Christopher; McRorie, Margaret; Sneddon, Ian (2012):

Emotional intelligence, personality and the decoding of non-verbal expressions of emotion.

In: *Personality and Individual Differences* 52 (3), S. 295–300. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-29798-010&site=ehost-live;i.sneddon@qub.ac.uk;m.mcrorie@qub.ac.uk;cedgar07@qub.ac.uk.

Abstract:

Previous research has highlighted theoretical and empirical links between measures of both personality and trait emotional intelligence (EI), and the ability to decode facial expressions of emotion. Research has also found that the posed, static characteristics of the photographic stimuli used to explore these links affects the decoding process and differentiates them from the natural expressions they represent. This undermines the ecological validity of established trait-emotion decoding relationships. This study addresses these methodological shortcomings by testing relationships between the reliability of participant ratings of dynamic, spontaneously elicited expressions of emotion with personality and trait EI. Fifty participants completed personality and self-report EI questionnaires, and used a computer-logging program to continuously rate change in emotional intensity expressed in video clips. Each clip was rated twice to obtain an intra-rater reliability score. The results provide limited support for links between both trait EI and personality variables and how reliably we decode natural expressions of emotion. Limitations and future directions are discussed. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Edmonds, W.Alex; Tenenbaum, Gershon (Hg.) (2012):

Case studies in applied psychophysiology: Neurofeedback and biofeedback treatments for advances in human performance:

Wiley-Blackwell.

Edmondson, D.; Shaffer, J. A.; Chaplin, W. F.; Burg, M. M.; Stone, A. A.; Schwartz, J. E. (2013):

Trait anxiety and trait anger measured by ecological momentary assessment and their correspondence with traditional trait questionnaires.

In: *J.Res.Pers.* 47 (6). DOI: 10.1016/j.jrp.2013.08.005.

Abstract:

Ecological momentary assessments (EMA) of anxiety and anger/hostility were obtained every 25-30 minutes over two 24-hour periods, separated by a median of 6 months, from 165 employees at a university in the Northeast. We used a multilevel trait-state-error structural equation model to estimate: (1) the proportion of variance in EMA anxiety and anger/hostility attributable to stable trait-like individual differences; (2) the correspondence between these trait-like components of EMA anxiety and anger/hostility and traditional questionnaire measures of each construct; and (3) the test-retest correlation between two 24-hour averages obtained several months apart. After adjustment for measurement error, more than half the total variance in EMA reports of anxiety and anger/hostility is attributable to stable trait-like individual differences; however, the trait-like component of each construct is only modestly correlated with questionnaire measures of that construct. The 6-month "test-retest" correlations of latent variables representing the true 24-hour EMA average anxiety and average anger are quite high (r >/= 0.83).

This study represents the longest follow-up period over which EMA-based estimates of traits have been examined. The results suggest that although the trait component (individual differences) of EMA momentary ratings of anxiety and anger is larger than the state component, traditional self-report questionnaires of trait anxiety and anger correspond only weakly with EMA-defined traits

Edwards, Andy G.; Hill, James O.; Byrnes, William C.; Browning, Raymond C. (2010):

Accuracy of optimized branched algorithms to assess activity-specific physical activity energy expenditure.

In: *Med Sci Sports Exerc* 42 (4), S. 672–682. DOI: 10.1249/MSS.0b013e3181bd196d.

Abstract:

PURPOSE\r\nTo assess the activity-specific accuracy achievable by branched algorithm (BA) analysis of simulated daily living physical activity energy expenditure (PAEE) within a sedentary population.\r\nMETHODS\r\nSedentary men (n = 8) and women (n = 8) first performed a treadmill calibration protocol, during which HR, accelerometry (ACC), and PAEE were measured in 1-min epochs. From these data, HR-PAEE and ACC-PAEE regressions were constructed and used in each of six analytic models to predict PAEE from ACC and HR data collected during a subsequent simulated daily living protocol. Criterion PAEE was measured during both protocols via indirect calorimetry. The accuracy achieved by each model was assessed by the root mean square of the difference between model-predicted daily living PAEE and the criterion daily living PAEE (expressed here as percent of mean daily living PAEE).\r\nRESULTS\r\nAcross the range of activities, an unconstrained post hoc-optimized BA best predicted criterion PAEE. Estimates using individual calibration were generally more accurate than those using group calibration (14% vs 16% error, respectively). These analyses also performed well within each of the six daily living activities, but systematic errors appeared for several of those activities, which may be explained by an inability of the algorithm to simultaneously accommodate a heterogeneous range of activities. Analyses between mean square error by subject and activity suggest that optimization involving minimization of root mean square for total daily living PAEE is associated with decreased error between subjects but increased error between activities.\r\nCONCLUSIONS\r\nThe performance of post hoc-optimized BA may be limited by heterogeneity in the daily living activities being performed.

Edwards, Lloyd J.; Simpson, Sean L. (2014):

An analysis of 24-h ambulatory blood pressure monitoring data using orthonormal polynomials in the linear mixed model.

In: *Blood Press Monit. DOI:* 10.1097/MBP.0000000000000039.

Abstract:

BACKGROUND: The use of 24-h ambulatory blood pressure monitoring (ABPM) in clinical practice and observational epidemiological studies has grown considerably in the past 25 years. ABPM is a very effective technique for assessing biological, environmental, and drug effects on blood pressure. OBJECTIVES: In order to enhance the effectiveness of ABPM for clinical and observational research studies using analytical and graphical results, developing alternative data analysis approaches using modern statistical techniques are important. METHODS: The linear mixed model for the analysis of longitudinal data is particularly well suited for the estimation of, inference about, and interpretation of both population (mean) and subject-specific trajectories for ABPM data. We propose using a linear mixed model with orthonormal polynomials across time in both the fixed and random effects to analyze ABPM data. RESULTS: We demonstrate the proposed analysis technique using data from the Dietary Approaches to Stop Hypertension (DASH) study, a multicenter, randomized, parallel arm feeding study that tested the effects of dietary patterns on blood pressure. CONCLUSION: The linear mixed model is relatively easy to implement (given the complexity of the technique) using available software, allows for straightforward testing of multiple hypotheses, and the results can be presented to research clinicians using both graphical and tabular displays. Using orthonormal polynomials provides the ability to model the nonlinear trajectories of each subject with the same complexity as the mean model (fixed effects).

Eggermont, Laura H. P.; Scherder, Erik J. A. (2008):

Ambulatory but Sedentary: Impact on Cognition and the Rest–Activity Rhythm in Nursing Home Residents With Dementia.

In: *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 63 (5), S. P279-P287.

Abstract:

Physical activity has been positively associated with cognition and the rest-activity rhythm. In the present study, nursing staff classified ambulatory nursing home residents with moderate dementia either as active (n=42) or as sedentary (n=34). We assessed the rest-activity rhythm by means of actigraphy, and we administered neuropsychological tests to assess cognitive functioning. Compared with the group that was considered sedentary, the group that was considered active had a significantly better rest-activity rhythm, indicating agreement between nursing staff classifications and data gathered by the actigraph. Cognitive function was related neither to active-sedentary classification nor to actigraph measures. Similar ambulatory nursing home residents with dementia may show considerable differences in their level of daily physical activity and in their rest-activity rhythm, but the precise relationship among all variables requires further investigation.

Eguchi, Kazuo; Ishikawa, Joji; Hoshide, Satoshi; Pickering, Thomas G.; Schwartz, Joseph E.; Shimada, Kazuyuki; Kario, Kazuomi (2009):

Night time blood pressure variability is a strong predictor for cardiovascular events in patients with type 2 diabetes.

In: *Am J Hypertens* 22 (1), S. 46–51. DOI: 10.1038/ajh.2008.294.

Abstract:

BACKGROUND\r\nWe aimed this study to test the hypothesis that short-term blood pressure (BP) variability and abnormal patterns of diurnal BP variation, evaluated by ambulatory BP (ABP), predicts risk of incident cardiovascular disease (CVD) in patients with type 2 diabetes (T2DM).\r\nMETHODS\r\nABP monitoring (ABPM) was performed in 300 patients with uncomplicated T2DM without known CVD and without BP medications, who were followed for 54 +/- 20 months. The relationships of different measures of BP variability, the presence of abnormal patterns of diurnal BP variation (nondipper, riser, or morning BP surge) and the standard deviations of awake and asleep ABP were determined. Cox proportional hazards models were used to estimate hazard ratios (HRs) and their 95% confidence intervals (CIs) before and after controlling for various covariates.\r\nRESULTS\r\nThe mean age was 67.8 +/- 9.6 years, 48% were male, 253 (84%) had a diagnosis of hypertension, and the mean of the standard deviations of awake systolic BP/diastolic BP (SBP/DBP) were 18 +/- 6/11 +/- 4 mm Hg, and those of sleep SBP/DBP were 13 +/- 5/9 +/- 3 mm Hg. During follow-up, there were 29 cardiovascular events. In multivariable analyses, the standard deviations of sleep SBP (HR = 1.08; 95% CI, 1.01-1.16, P < 0.05) and sleep DBP (HR = 1.13; 1.04-1.23, P < 0.01) were independently associated with incident CVD. Neither the nondipper and riser patterns nor the morning BP surge were associated with incident CVD events independently of clinic and 24-h BP levels.\r\nCONCLUSIONS\r\nAbnormal diurnal BP variation was not a predictor of CVD in patients with T2DM. Night time BP variability was an independent predictor of future incidence of CVD, suggesting that this measure could reflect pathophysiology of T2DM.

Eguchi, Kazuo; Kuruvilla, Sujith; Ogedegbe, Gbenga; Gerin, William; Schwartz, Joseph E.; Pickering, Thomas G. (2009):

What is the optimal interval between successive home blood pressure readings using an automated oscillometric device?

In: *J Hypertens* 27 (6), S. 1172.

Abstract:

OBJECTIVES:

To clarify whether a shorter interval between three successive home blood pressure (HBP) readings (10 s vs. 1 min) taken twice a day gives a better prediction of the average 24-h BP and better patient compliance.

DESIGN:

We enrolled 56 patients from a hypertension clinic (mean age: 60 +/- 14 years; 54% female patients). The study consisted of three clinic visits, with two 4-week periods of self-monitoring of HBP between them, and a 24-h ambulatory BP monitoring at the second visit. Using a crossover design, with order randomized, the oscillometric HBP device (HEM-5001) could be programmed to take three consecutive readings at either 10-s or 1-min intervals, each of which was done for 4 weeks. Patients were asked to measure three HBP readings in the morning and evening. All the readings were stored in the memory of the monitors.

RESULTS:

The analyses were performed using the second-third HBP readings. The average systolic BP/diastolic BP for the 10-s and 1-min intervals at home were 136.1 +/- 15.8/77.5 +/- 9.5 and 133.2 +/- 15.5/76.9 +/- 9.3 mmHg (P = 0.001/0.19 for the differences in systolic BP and diastolic BP), respectively. The 1-min BP readings were significantly closer to the average of awake ambulatory BP

(131 +/- 14/79 +/- 10 mmHg) than the 10-s interval readings. There was no significant difference in patients' compliance in taking adequate numbers of readings at the different time intervals.

CONCLUSION:

The 1-min interval between HBP readings gave a closer agreement with the daytime average BP than the 10-s interval.

Eguchi, Kazuo; Pickering, Thomas G.; Hoshide, Satoshi; Ishikawa, Joji; Ishikawa, Shizukiyo; Schwartz, Joseph E. et al. (2008):

Ambulatory blood pressure is a better marker than clinic blood pressure in predicting cardiovascular events in patients with/without type 2 diabetes.

In: *Am J Hypertens* 21 (4), S. 443–450.

Abstract:

Background The prognostic significance of ambulatory blood pressure (ABP) has not been established in patients with type 2 diabetes (T2DM).

Methods In order to clarify the impact of ABP on cardiovascular prognosis in patients with or without T2DM, we performed ABP monitoring (ABPM) in 1,268 subjects recruited from nine sites in Japan, who were being evaluated for hypertension. The mean age of the patients was 70.4 ± 9.9 years, and 301 of them had diabetes. The patients were followed up for 50 ± 23 months. We investigated the relation between incidence of cardiovascular diseases (CVDs) and different measures of ABP, including three categories of awake systolic blood pressure (SBP <135, 135–150, and >150 mm Hg), sleep SBP (<120, 120–135, and >135 mm Hg), and dipping trends in nocturnal blood pressure (BP) (dippers, nondippers, and risers). Cox regression models were used in order to control for classic risk factors.

Results Higher awake and sleep SBPs predicted higher incidence of CVD in patients with and without diabetes. In multivariable analyses, elevated SBPs while awake and asleep predicted increased risk of CVD more accurately than clinic BP did, in both groups of patients. The relationships between ABP level and CVD were similar in both groups. In Kaplan–Meier analyses, the incidence of CVD in nondippers was similar to that in dippers, but risers experienced the highest risk of CVD in both groups ($P < 0.01$). The riser pattern was associated with a ∼150% increase in risk of CVD, in both groups.

Conclusions These findings suggest that ABPM is a better predictor of cardiovascular risk than clinic BP, and that this holds true for patients with or without T2DM.

Eguchi, Kazuo; Pickering, Thomas G.; Schwartz, Joseph E.; Hoshide, Satoshi; Ishikawa, Joji; Ishikawa, Shizukiyo et al. (2008):

Short sleep duration as an independent predictor of cardiovascular events in Japanese patients with hypertension.

In: *Archives of internal medicine* 168 (20), S. 2225–2231. DOI: 10.1001/archinte.168.20.2225.

Abstract:

BACKGROUND\r\nIt is not known whether short duration of sleep is a predictor of future cardiovascular events in patients with hypertension.\r\nMETHODS\r\nTo test the hypothesis that short duration of sleep is independently associated with incident cardiovascular diseases (CVD), we performed ambulatory blood pressure (BP) monitoring in 1255 subjects with hypertension (mean [SD] age, 70.4 [9.9] years) and followed them for a mean period of 50 (23) months. Short sleep duration was defined as less than 7.5 hours (20th percentile). Multivariable Cox hazard models predicting CVD events were used to estimate the adjusted hazard ratio and 95% confidence interval (CI) for short sleep duration. A riser pattern was defined when mean nighttime systolic BP exceeded daytime systolic BP. The end point was a cardiovascular event: stroke, fatal or nonfatal myocardial infarction (MI), and sudden cardiac death.\r\nRESULTS\r\nIn multivariable analyses, short duration of sleep (<7.5 hours) was associated with incident CVD (hazard ratio [HR], 1.68; 95% CI, 1.06-2.66; P = .03). A synergistic interaction was observed between short sleep duration and the riser pattern (P = .09). When subjects were classified according to their sleep time and a riser vs nonriser pattern, the group with shorter sleep duration plus the riser pattern had a substantially and significantly higher incidence of CVD than the group with predominant normal sleep duration plus the nonriser pattern (HR, 4.43; 95% CI, 2.09-9.39; P < .001), independent of covariates.\r\nCONCLUSIONS\r\nShort duration of sleep is associated with incident CVD risk and the combination of the riser pattern and short duration of sleep that is most strongly predictive of future CVD, independent of ambulatory BP levels. Physicians should inquire about sleep duration in the risk assessment of patients with hypertension.

Eid, Michael; Courvoisier, Delphine S.; Lischetzke, Tanja (2012):

Structural equation modeling of ambulatory assessment data. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 384–406. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-021%26site%3dehost-live.

Abstract:

(from the chapter) From a methodological point of view, the major aim of ambulatory assessment is the measurement of variability over time. If behavior and feelings did not fluctuate over time, ambulatory assessment would be a waste of money because a single measurement would be sufficient for assessing an individual's behavior or experience. However, not every fluctuation of scores over time indicates that the state of an individual really changes. Fluctuations in scores can just be due to measurement error. Because measurement errors cannot be avoided in the social and behavioral sciences, fluctuations of scores over time are at least partly due to measurement error. The crucial question then is to what degree behavior and feelings are really variable and how error-free states can be measured. Moreover, in order to detect the situational influences on behavior and experiences, the measurement of error-free, occasion-specific variables that can be related to situational characteristics is necessary. Structural equation modeling allows researchers to separate measurement error from true individual scores and is able to distinguish between variability that is due to unsystematic measurement error, and variability that reflects systematic influences of situations and time. Moreover, structural equation modeling offers the possibility to calculate coefficients that indicate the psychometric properties of measures, such as their reliability, stability, and variability. An introduction into structural equation modeling in general is given, for example, by Kline (2010) and Schumacker and Lomax (2010). In this chapter we show how structural equation modeling can be used for ambulatory assessment. We start with models for a single day. We first introduce general models of longitudinal analysis and show how these models can be adapted to the situation of individually varying times of observation. Then we extend this modeling approach to multiple days, focusing on models that are appropriate to analyze interindividual differences. Finally, we show how these models can be used to estimate scores of intraindividual variability. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Eiholzer, Urs; Meinhardt, Udo; Rousson, Valentin; Petrò, Renato; Schlumpf, Michael; Fusch, Gerhard et al. (2008):

Association between short sleeping hours and physical activity in boys playing ice hockey.

In: *J Pediatr* 153 (5), S. 640-5, 645.e1. DOI: 10.1016/j.jpeds.2008.05.015.

Abstract:

OBJECTIVES\r\nTo determine physical activity in healthy boys and how physical activity relates to training and daily awake hours.\r\nSTUDY DESIGN\r\nIn 66 boys (5 to 15 years) affiliated with an ice-hockey club, we measured total daily energy expenditure (TDEE, doubly-labeled water) and basal metabolic rate (ventilated-hood method). Physical activity energy expenditure for the whole day (DAEE), during training, and during spontaneous physical activity was measured by accelerometry and activity protocols. Univariate (UA) and multivariate (MA) correlation analysis was applied.\r\nRESULTS\r\nPhysical activity level, DAEE, and TDEE for prepubertal (2.0 and 2.2 Mcal/d) and pubertal (bone age >or=13 years; 1.8 and 2.8 Mcal/d) boys were matched to literature data from normal boys of equal age. In prepubertal boys DAEE correlated positively with awake hours (r(UA) = 0.55, r(MA) = 0.39, P < .01). In pubertal boys this correlation was not significant, the slopes between the 2 groups being significantly different (P = .025). In prepubertal boys spontaneous physical activity expenditure correlated significantly positively with training activity expenditure (r(UA) = 0.72, r(MA) = 0.52, P < .001).\r\nCONCLUSION\r\nContrary to findings in adults, where short sleepers had lower physical activity and intensive training was negatively compensated reducing spontaneous physical activity, in physically active prepubertal boys, total daily and spontaneous physical activity relate positively to awake hours and training; suggesting child-specific control of physical activity.

Eissa, Mona A. H.; Meininger, Janet C.; Nguyen, Thong Q.; Chan, Wenyaw (2007):

The relationship of ambulatory blood pressure to physical activity in a tri-ethnic population of obese and nonobese adolescents.

In: *Am J Hypertens* 20 (2), S. 140–147.

Abstract:

BACKGROUND:

The association between physical activity (PA) and ambulatory blood pressure (ABP) is documented in adults. This association and factors that may modify it, such as obesity, have not been reported in adolescents. The aims of this study were to determine the association of PA with ABP in 11- to 16-year-old adolescents, and to examine the modifying effects of obesity and other factors.

METHODS:

Data on 24-h ABP and PA were obtained from 374 adolescents using the wrist actigraph. Correlations between average PA for every 5-min interval preceding each BP measurement and ABP were calculated during the awake period. Mixed-effects models were used with ABP variables as separate, dependent variables. In addition to PA scores for 5 min preceding each BP, body mass index (BMI) z-score and other variables were added to the models as covariates and as interaction terms with activity.

RESULTS:

Correlations of PA for 5 min preceding BP measurements were 0.22 and 0.25 for systolic blood pressure (SBP) and diastolic blood pressure (DBP) respectively. In mixed-effects analysis, each 1-unit increase in PA was associated with an increase in SBP of 0.02 mm Hg, in DBP of 0.01 mm Hg, and in HR of 0.02 beat/min ($P < .0001$). The association of BP with PA was significantly less for those with higher BMI z-scores (SBP, $P < .001$, DBP, $P = .027$). The associations of PA with SBP and HR were modified by sexual maturation status of the adolescents.

CONCLUSIONS:

This study found that PA is associated with ABP measurements. These associations are modified by obesity status and other variables. Recognizing these associations may improve the interpretation of ABP measurements.

Ekelund, Ulf; Brage, Soren; Griffin, Simon J.; Wareham, Nicholas J. (2009):

Objectively measured moderate-and vigorous-intensity physical activity but not sedentary time predicts insulin resistance in high-risk individuals.

In: *Diabetes Care* 32 (6), S. 1081–1086.

Abstract:

OBJECTIVE:

Low levels of physical activity appear to be associated with insulin resistance. However, the detailed associations of these complex relationships remain elusive. We examined the prospective associations between self-reported TV viewing time, objectively measured time spent sedentary, at light-intensity activity, and at moderate- and vigorous-intensity physical activity (MVPA) with insulin resistance.

RESEARCH DESIGN AND METHODS:

In 192 individuals (81 men and 111 women) with a family history of type 2 diabetes, we measured physical activity and anthropometric and metabolic variables at baseline and after 1 year of follow-up in the ProActive UK trial. Physical activity was measured objectively by accelerometry. Insulin resistance was expressed as fasting insulin and the homeostasis model assessment score (HOMA-IR).

RESULTS:

Baseline MVPA was a significant predictor of fasting insulin at follow-up (beta = -0.004 [95% CI -0.007 to -0.0001], $P = 0.022$), and the association approached significance for HOMA-IR (beta = -0.003 [-0.007 to 0.000002], $P = 0.052$), independent of time spent sedentary, at light-intensity activity, sex, age, smoking status, waist circumference, and self-reported TV viewing. Time spent sedentary and at light-intensity activity were not significantly associated with insulin resistance. The change in MVPA between baseline and follow-up was inversely related to fasting insulin (beta = -0.003 [-0.007 to -0.0003], $P = 0.032$) and the HOMA-IR score (beta = -0.004 [-0.008 to -0.001], $P = 0.015$) at follow-up, after adjustment for baseline phenotype in addition to the same confounders as above.

CONCLUSIONS:

These results highlight the importance of promoting moderate-intensity activity such as brisk walking for improving insulin sensitivity and possibly other metabolic risk factors to prevent type 2 diabetes.

Ekelund, Ulf; Griffin, Simon J.; Wareham, Nicholas J. (2007):

Physical activity and metabolic risk in individuals with a family history of type 2 diabetes.

In: *Diabetes Care* 30 (2), S. 337–342.

Abstract:

OBJECTIVE—We sought to examine the independent associations between different dimensions of physical activity with intermediary and clustered metabolic risk factors in overweight individuals with an increased risk of type 2 diabetes to inform future preventive action.

RESEARCH DESIGN AND METHODS—We measured total body movement and five other subcomponents of physical activity by accelerometry in 258 adults (aged 30–50 years) with a family history of type 2 diabetes. We estimated aerobic fitness from an incremental treadmill exercise test. We measured body composition by bioimpedance and waist circumference, blood pressure, fasting triglycerides, HDL cholesterol, glucose, and insulin with standard methods. We constructed a standardized continuously distributed variable for clustered risk.

RESULTS—Total body movement (counts · day−1) was significantly and independently associated with three of six risk factors (fasting triglycerides, insulin, and HDL) and with clustered metabolic risk (P = 0.004) after adjustment for age, sex, and obesity. Time spent at moderate- and vigorous-intensity physical activity (MPVA) was independently associated with clustered metabolic risk (P = 0.03). Five- and 10-min bouts of MVPA, time spent sedentary, time spent at light-intensity activity, and aerobic fitness were not significantly related with clustered risk after adjustment for confounding factors.

CONCLUSIONS—Total body movement is associated with intermediary phenotypic risk factors for cardiovascular disease and metabolic disease and with clustered metabolic risk independent of aerobic fitness and obesity. Increasing the total amount of physical activity in sedentary and overweight individuals may have beneficial effects on metabolic risk factors.

Ekelund, U.; Luan, J.; Sherar, L. B.; Esliger, D. W.; Griew, P.; Cooper, A. (2012):

Moderate to vigorous physical activity and sedentary time and cardiometabolic risk factors in children and adolescents.

In: *JAMA* 307 (7), S. 704–712. DOI: 10.1001/jama.2012.156.

Abstract:

CONTEXT: Sparse data exist on the combined associations between physical activity and sedentary time with cardiometabolic risk factors in healthy children. OBJECTIVE: To examine the independent and combined associations between objectively measured time in moderate- to vigorous-intensity physical activity (MVPA) and sedentary time with cardiometabolic risk factors. DESIGN, SETTING, AND PARTICIPANTS: Pooled data from 14 studies between 1998 and 2009 comprising 20 871 children (aged 4-18 years) from the International Children's Accelerometry Database. Time spent in MVPA and sedentary time were measured using accelerometry after reanalyzing raw data. The independent associations between time in MVPA and sedentary time, with outcomes, were examined using meta-analysis. Participants were stratified by tertiles of MVPA and sedentary time. MAIN OUTCOME MEASURES: Waist circumference, systolic blood pressure, fasting triglycerides, high-density lipoprotein cholesterol, and insulin. RESULTS: Times (mean [SD] min/d) accumulated by children in MVPA and being sedentary were 30 (21) and 354 (96), respectively. Time in MVPA was significantly associated with all cardiometabolic outcomes independent of sex, age, monitor wear time, time spent sedentary, and waist circumference (when not the outcome). Sedentary time was not associated with any outcome independent of time in MVPA. In the combined analyses, higher levels of MVPA were associated with better cardiometabolic risk factors across tertiles of sedentary time. The differences in outcomes between higher and lower MVPA were greater with lower sedentary time. Mean differences in waist circumference between the bottom and top tertiles of MVPA were 5.6 cm (95% CI, 4.8-6.4 cm) for high sedentary time and 3.6 cm (95% CI, 2.8-4.3 cm) for low sedentary time. Mean differences in systolic blood pressure for high and low sedentary time were 0.7 mm Hg (95% CI, -0.07 to 1.6) and 2.5 mm Hg (95% CI, 1.7-3.3), and for high-density lipoprotein cholesterol, differences were -2.6 mg/dL (95% CI, -1.4 to -3.9) and -4.5 mg/dL (95% CI, -3.3 to -5.6), respectively. Geometric mean differences for insulin and triglycerides showed similar variation. Those in the top tertile of MVPA accumulated more than 35 minutes per day in this intensity level compared with fewer than 18 minutes per day for those in the bottom tertile. In prospective analyses (N = 6413 at 2.1 years' follow-up), MVPA and sedentary time were not associated with waist circumference at follow-up, but a higher waist circumference at baseline was associated with higher amounts of sedentary time at follow-up. CONCLUSION: Higher MVPA time by children and adolescents was associated with better cardiometabolic risk factors regardless of the amount of sedentary time

El-Gayar, O.; Timsina, P.; Nawar, N.; Eid, W. (2013):

Mobile applications for diabetes self-management: status and potential.

In: *J Diabetes Sci Technol* 7 (1), S. 247–262. Online verfügbar unter PM:23439183.

Abstract:

BACKGROUND: Advancements in smartphone technology coupled with the proliferation of data connectivity has resulted in increased interest and unprecedented growth in mobile applications for diabetes self-management. The objective of this article

is to determine, in a systematic review, whether diabetes applications have been helping patients with type 1 or type 2 diabetes self-manage their condition and to identify issues necessary for large-scale adoption of such interventions. METHODS: The review covers commercial applications available on the Apple App Store (as a representative of commercially available applications) and articles published in relevant databases covering a period from January 1995 to August 2012. The review included all applications supporting any diabetes self-management task where the patient is the primary actor. RESULTS: Available applications support self-management tasks such as physical exercise, insulin dosage or medication, blood glucose testing, and diet. Other support tasks considered include decision support, notification/alert, tagging of input data, and integration with social media. The review points to the potential for mobile applications to have a positive impact on diabetes self-management. Analysis indicates that application usage is associated with improved attitudes favorable to diabetes self-management. Limitations of the applications include lack of personalized feedback; usability issues, particularly the ease of data entry; and integration with patients and electronic health records. CONCLUSIONS: Research into the adoption and use of user-centered and sociotechnical design principles is needed to improve usability, perceived usefulness, and, ultimately, adoption of the technology. Proliferation and efficacy of interventions involving mobile applications will benefit from a holistic approach that takes into account patients' expectations and providers' needs

Elkins, Sara R.; Moore, Todd M.; McNulty, James K.; Kivisto, Aaron J.; Handsel, Vanessa A. (2012):

Electronic Diary Assessment of the Temporal Association Between Proximal Anger and Intimate Partner Violence Perpetration.

In: *Psychology of Violence*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-28089-001%26site%3dehost-live.

Abstract:

Objective: The temporal association between proximal anger and intimate partner violence (IPV) perpetration was examined using electronic daily diary assessment methodology. In addition, relevant demographic and relational variables were examined as potential moderators of the association between anger and IPV perpetration. Method: Participants were 184 men and women in dating relationships who completed daily surveys reporting anger and IPV for a period of 2 months. Results: Increases in proximal anger were associated with greater odds of psychological (2.78), physical (2.38), and sexual aggression perpetration (2.27). Analyses also demonstrated a quadratic relationship for psychological aggression and proximal anger, such that increased anger was more strongly associated with psychological aggression when anger was relatively low versus higher in the first place. Moderators of the relationship between proximal anger and IPV perpetration included age and length of relationship. Conclusions: These data are the first to provide evidence for the temporal relationship between anger and IPV perpetration. Data support electronic diary assessment as an effective way to assess moment-to-moment partner interactions, increase participant compliance, and minimize retrospective recall bias. Electronic diary assessment may also hold promise for the creation of intervention programs that address proximal anger in conjunction with distal variables that increase risk for IPV perpetration. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Emaus, Aina; Degerstrøm, Jorid; Wilsgaard, Tom; Hansen, Bjørge Herman; Dieli-Conwright, Christina M.; Furberg, Anne-Sofie et al. (2010):

Does a variation in self-reported physical activity reflect variation in objectively measured physical activity, resting heart rate, and physical fitness? Results from the Tromsø study.

In: *Scandinavian journal of public health* 38 (5 suppl), S. 105–118.

Abstract:

AIMS:

To study the association between self-reported physical activity (PA) and objectively measured PA, resting heart rate, and physical fitness.

METHODS:

During 2007-08, 5017 men and 5607 women aged 30-69 years attended the sixth survey of the Tromsø study. Self-reported PA during leisure-time and work were assessed and resting heart rate was measured. In a sub-study, the activity study, PA (Actigraph LLC) and physical fitness (VO_2(max)) were objectively measured among 313 healthy men and women aged 40-44 years.

RESULTS:

Self-reported leisure PA was significantly correlated with VO_2(max) (ml/kg/min) (women 0.40, $p < 0.001$, men 0.44 $p < 0.001$) and moderate-to-vigorous PA (>2000 counts/min) (women 0.28, $p < 0.01$, men 0.25, $p < 0.01$). The intra-class correlation coefficient between self-reported leisure PA and overall PA (counts/min) measured by accelerometer was 0.62 (95% CI 0.51, 0.71) for women and 0.59 (95% CI 0.47, 0.69) for men, and for VO_2(max) the intra-class correlation coefficient was 0.86 (95% CI 0.81, 0.90) for both sexes. Among all participants, an inverse dose-response relationship was observed between self-reported leisure PA and resting heart rate for both men and women ($p < 0.0001$). More women than men met the international recommendations of 10,000 step counts/day (27% vs. 22%) and the recommendation of at least 30 minutes/day of moderate-to-vigorous intensities (30% vs. 22 %).

CONCLUSIONS:

The Tromsø physical activity questionnaire has acceptable validity and provides valid estimates of high-intensity leisure activity. However, these results underscore the need for collecting objectively PA measurements in large epidemiological studies.

Engel, Scott G.; Kahler, Kirsten A.; Lystad, Chad M.; Crosby, Ross D.; Simonich, Heather K.; Wonderlich, Stephen A. et al. (2009):

Eating behavior in obese BED, obese non-BED, and non-obese control participants: a naturalistic study.

In: *Behav Res Ther* 47 (10), S. 897–900. DOI: 10.1016/j.brat.2009.06.018.

Abstract:

Laboratory studies have shown considerable differences between the eating behavior, particularly binge eating behavior, of participants with and without binge eating disorder (BED). However, these findings were not replicated in two field experiments employing ecological momentary assessment (EMA) in which obese BED and obese non-BED participants reported comparable binge eating behavior. In the current study, we examined differences in binge eating with an innovative assessment scheme employing both EMA and a standardized computer-based dietary recall program to avoid some of the limitations of past laboratory and field research. Obese BED, obese non-BED, and non-obese control participants reported significant differences in eating patterns, loss of control, overeating, and binge eating behavior. Of particular importance was the finding that BED participants engaged in more overeating and more binge eating episodes than non-BED participants. These findings suggest that the use of EMA in combination with dietary recall may be a relatively objective and useful approach to assessing binge eating behavior. The findings further suggest that individuals with BED are observably different from those without the disorder, which may have implications for eating disorder diagnoses in DSM-V.

Engelbert, Mark; Carruthers, Peter (2011):

Descriptive experience sampling: What is it good for?

In: *Journal of Consciousness Studies* 18 (1), S. 130–149. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-20325-008&site=ehost-live;pcarruth@umd.edu;marke@umd.edu.

Abstract:

Comments on the book Describing inner experience? Proponent meets skeptic by Russell T. Hurlburt and Eric Schwitzgebel (see record 2007-14525-000). We defend the reliability of Hurlburt's Descriptive Experience Sampling method against some of Schwitzgebel's attacks. But we agree with Schwitzgebel that the method could be used much more widely than it has been, helping to answer questions about the nature and structure of consciousness in addition to cataloguing the latter's contents. We sketch a number of potential lines of further enquiry.

Engelen, Lina; Bundy, Anita C.; Lau, Jamie; Naughton, Geraldine; Wyver, Shirley; Bauman, Adrian; Baur, Louise (2014):

Understanding Patterns of Young Children's Physical Activity After School - It's all About Context: A Cross-Sectional Study.

In: *J Phys Act Health. DOI:* 10.1123/jpah.2013-0153.

Abstract:

BACKGROUND: To promote healthy lifestyles, we need to understand more about the patterns of children's activities after school. METHODS: Twenty 5-7 year old children and their parents participated in this study. Parents used 'real-time' diaries to

report children's activities and contextual information at three randomly selected times per day, over 4 school days. Reporting was repeated after 13 weeks. Simultaneously children wore Actical accelerometers. RESULTS: Approximately 300 simultaneous accelerometer measurements and diary entries were compared. Despite a large range, mean physical activity levels were highest when children engaged in activities generally considered as "active" and lowest for doing "nothing". However, the range within activities was very large; some children who reported TV/screen time accumulated high accelerometry counts and conversely, some children were practically sedentary during organized sports. Children spent most (78%) of their after school time indoors, but the children were significantly more active outdoors than indoors (t(74.8) = 5.0, p<.001). CONCLUSIONS: Accelerometer data in conjunction with real-time diaries provide a more complete understanding of the value of outdoor play in increasing movement opportunities for children's after school activities.

Engelen, Lina; Bundy, Anita C.; Bauman, Adrian; Naughton, Geraldine; Wyver, Shirley; Baur, Louise (2014):

Young Children's After-School Activities - There's More to it Than Screen Time: A Cross-Sectional Study of Young Primary School Children.

In: *J Phys Act Health. DOI:* 10.1123/jpah.2013-0075.

Abstract:

BACKGROUND: Children can spend substantial amounts of leisure time in sedentary activities, dominated by TV/screen time. However, objective real-time measurement of activities after school among young school children is seldom described. METHODS: School children (n=246, aged 5-7 years, mean 6.0) randomly selected from 14 schools across Sydney, Australia and their parents were recruited. Parents used a real-time objective measure (Experience Sampling Method, ESM) to record children's activities, and whether they were indoors or outdoors at three random times each day after school. Data were collected across four week days in each of two weeks separated by 13 weeks. RESULTS: Results based on 2940 responses from 214 child-parent dyads showed that 25% of behaviour involved physical activity; 51% was spent in sedentary activities; and 22% TV/screen time. Most instances (81%) occurred indoors. CONCLUSION: Despite a high proportion of TV/screen time, children were also engaged in a range of other sedentary and physically active pursuits after school. Hence TV/screen time is not a suitable proxy for all sedentary behaviour, and it is important to gather information on other non-screen based sedentary and physically active behaviors. Future research is warranted to further investigate after-school activities in young primary school children.

Engeser, Stefan (Hg.) (2012):

Advances in flow research.

New York, NY US: Springer Science + Business Media.

Engeser, Stefan; Baumann, Nicola (2014):

Fluctuation of flow and affect in everyday life: A second look at the paradox of work.

In: *Journal of Happiness Studies*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-43115-001%26site%3dehost-live.

Abstract:

Studies with the Experience Sampling Method (ESM) have shown that individuals experience more flow at work than at leisure. This indicates that people enjoy working but paradoxically at the same time leisure activities are preferred (“paradox of work”). We took a second look at the paradox of work by measuring flow directly, including affect measures, and differentiating between active and passive leisure activities. We also adopted a dynamical approach based on the idea that the transitions of experiences has to be taken into account to get the total picture. For the period of 1 week, data of 100 employees with different professions were collected with the ESM (in total 4,504 measurements). In accordance with existing work, we found that flow was high during work. It was slightly (albeit significantly) higher than during active leisure activities and considerably higher than during passive leisure activities. At the same time, negative activation was low during passive and active leisure activities and lower than during work and vice versa for valence (happiness). Thus, leisure activities do have a positive affective quality that could explain why people prefer leisure to work. Regarding the dynamical approach, we tested whether flow during work would lead to higher valence in leisure but could not support this assumption. We discussed the findings and made suggestions for future research. In an additional analysis, we reveal that perceived outcome experience could partially explain why work and leisure experience differed. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Engeser, Stefan; Schiepe-Tiska, Anja (2012):

Historical lines and an overview of current research on flow. In: Stefan Engeser (Hg.): Advances in flow research.

New York, NY US: Springer Science + Business Media, S. 1–22. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-09605-001&site=ehost-live;schiepe-tiska@tum.de;engeser@uni-n-trier.de.

Abstract:

(from the chapter) This chapter introduces the flow concept by listing the components of flow as provided by Csikszentmihalyi. We will show that these components constitute the widely shared definitional ground of researchers in the field, with only minor variation between research groups and time periods. Next, we try to clarify some lingering ambiguities regarding the components of flow, and then talk about flow as an optimal experience as well as discussing flow and happiness. Subsequently, we trace the history of flow. We take time to describe the beginnings of flow research by Csikszentmihalyi and a similar research program by Rheinberg in Germany. Following the description of flow and qualitative analyses, the quantitative method of the experience sampling method (ESM), which has greatly influenced research on flow, will be presented. Creativity and well-being remain an important part of flow research and will be considered here, but flow research has entered many other areas, spanning from a strong emphasis on sport, learning, and flow at work to the emerging research on flow in teams and social interaction or psychophysiological correlates of flow. Finally, we complete this chapter by exploring methodological aspects of the research on flow. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Entringer, Sonja; Buss, Claudia; Andersen, Judith; Chicz-Demet, Aleksandra; Wadhwa, Pathik D. (2011):

Ecological momentary assessment of maternal cortisol profiles over a multiple-day period predicts the length of human gestation.

In: *Psychosomatic Medicine* 73 (6), S. 469–474. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-26306-006&site=ehost-live;pwadhwa@uci.edu;sentring@uci.edu.

Abstract:

Objective: Biobehavioral models of prenatal stress highlight the importance of the stress-related hormone cortisol. However, the association between maternal cortisol levels and the length of human gestation requires further investigation because most previous studies have relied on one-time cortisol measures assessed at varying gestational ages. This study assessed whether ecological momentary assessment (EMA) of cortisol sampling improves the ability to predict the length of human gestation. In addition, associations between EMA-based measures of psychological state (negative affect) with cortisol levels during pregnancy were assessed. Methods: For a 4-day period, 25 healthy pregnant women (mean gestational age at assessment = 23.4 [standard deviation = 9.1] weeks) collected seven salivary samples per day for the assessment of cortisol and provided a rating of negative affect every waking hour using an electronic diary. Results: Higher salivary cortisol concentrations at awakening and throughout the day (p = .001), as well as a flatter cortisol response to awakening (p = .005), were associated with shorter length of gestation. Women who delivered an infant at 36 weeks of gestations had 13% higher salivary cortisol levels at awakening than women who delivered an infant at 41 weeks of gestation. The EMA-based measure of negative affect was associated with higher cortisol throughout the day (p = .006) but not to gestational length (p = .641). The one-time measure of cortisol was not associated with length of gestation, and traditional retrospective recall measures of negative affect were not associated with cortisol. Conclusions: Our findings support the ecological validity of repeated ambulatory assessments of cortisol in pregnancy and their ability to improve the prediction of adverse birth outcomes. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Epler, Amee J.; Tomko, Rachel L.; Piasecki, Thomas M.; Wood, Phillip K.; Sher, Kenneth J.; Shiffman, Saul; Heath, Andrew C. (2014):

Does Hangover Influence the Time to Next Drink? An Investigation Using Ecological Momentary Assessment.

In: *Alcohol Clin Exp Res. DOI:* 10.1111/acer.12386.

Abstract:

BACKGROUND: Measures of hangover are associated with current and future problematic alcohol use. At present, it is not known whether these associations reflect any direct influence of hangover events on near-term drinking behaviors. The current study aimed to determine whether hangover following a drinking episode influences time to next drink (TTND) and, if so, to

determine the direction of this effect and identify any moderating personal or contextual factors. METHODS: Community-recruited, frequent drinkers oversampled for current smoking (N = 386) carried electronic diaries for 21 days, reporting on drinking behaviors and other experiences. Survival analysis was used to model data from 2,276 drinking episodes, including 463 episodes that were followed by self-reported hangover in morning diary entries. RESULTS: When tested as the sole predictor in a survival model, hangover was associated with increased TTND. The median survival time was approximately 6 hours longer after episodes with hangovers compared to those without. In a multivariate model, hangover was only significant in the presence of interaction effects involving craving at the end of the index drinking episode and the occurrence of financial stressors. Additional predictors of TTND in the final multivariate model included age, lifetime alcohol use disorder diagnosis, typical drinking frequency, day of the week, and morning reports of craving, negative affect, and stressors after the index episode. There was no association between morning reports of hangover and contemporaneous diary ratings of likelihood of drinking later the same day. CONCLUSIONS: The findings suggest that hangover has, at best, a modest or inconsistent influence on the timing of subsequent alcohol use among frequent drinkers.

Epstein, R. S. (2014):

Mobile medical applications: old wine in new bottles?

In: *Clin Pharmacol Ther* 95 (5), S. 476–478. DOI: 10.1038/clpt.2014.35.

Abstract:

In Her, the award-winning motion picture written and directed by Spike Jonze, the lead character played by Joaquin Phoenix falls hopelessly in love with an operating system deployed on his many devices, including his mobile telephone. Although the health-care sector has not yet attained that "magic moment" with mobile devices and their applications, there appears to be quite a lot for those in the field to like.

Epstein, David H.; Marrone, Gina F.; Heishman, Stephen J.; Schmittner, John; Preston, Kenzie L. (2010):

Tobacco, cocaine, and heroin: Craving and use during daily life.

In: *Addict Behav* 35 (4), S. 318–324. DOI: 10.1016/j.addbeh.2009.11.003.

Abstract:

BACKGROUND\r\nRelationships among tobacco smoking, tobacco craving, and other drug use and craving may have treatment implications in polydrug-dependent individuals.\r\nMETHODS\r\nWe conducted the first ecological momentary assessment (EMA) study to investigate how smoking is related to other drug use and craving during daily life. For up to 20 weeks, 106 methadone-maintained outpatients carried PalmPilots (PDAs). They reported their craving, mood, behaviors, environment, and cigarette-smoking status in 2 to 5 random-prompt entries/day and initiated PDA entries when they used cocaine or heroin or had a discrete episode of craving for cocaine or heroin.\r\nRESULTS\r\nSmoking frequency increased linearly with random-prompt ratings of tobacco craving, cocaine craving, and craving for both cocaine and heroin. Smoking frequency was greater during discrete episodes of cocaine use and craving than during random-prompt reports of low craving for cocaine. This pattern was also significant for dual cocaine and heroin use and craving. Smoking and tobacco craving were each considerably reduced during periods of urine-verified abstinence from cocaine, and there was a (nonsignificant) tendency for morning smoking to be especially reduced during those periods.\r\nCONCLUSIONS\r\nThis EMA study confirms that smoking and tobacco craving are strongly associated with the use of and craving for cocaine and heroin. Together with prior findings, our data suggest that tobacco and cocaine may each increase craving for (and likelihood of continued use of) themselves and each other. Treatment for tobacco dependence should probably be offered concurrently with (rather than only after) initiation of treatment for other substance-use disorders.

Epstein, David H.; Preston, Kenzie L. (2010):

Daily life hour by hour, with and without cocaine: an ecological momentary assessment study.

In: *Psychopharmacology* 211 (2), S. 223–232. DOI: 10.1007/s00213-010-1884-x.

Abstract:

RATIONALE\r\nEffects of an intervention cannot be understood without precise knowledge of the baseline behavior on which the intervention is superimposed. For misusers of illicit drugs, patterns of daily activities and moods have not been studied in a way that is amenable to statistical aggregation.\r\nOBJECTIVE\r\nThe aim of the study was to compare hour-by-hour daily

activities in cocaine-dependent outpatients during urine-verified periods of use and abstinence.\r\nMETHODS\r\nIn a cohort design, a volunteer sample of 112 methadone-maintained cocaine- and heroin-abusing outpatients provided ecological momentary assessment (EMA) data on handheld computers for 10,781 person-days. EMA responses to questions about current location, activities, companions, moods, and recent exposure to putative drug-use triggers were compared across periods of use and abstinence using SAS Proc Glimmix (for binary outcomes) and Proc Mixed (for continuous outcomes).\r\nRESULTS\r\nPeriods of cocaine use were associated with idle, solitary, affectively negative afternoons but, unexpectedly, were also associated with a greater likelihood of early-morning or late-evening work. The whole-day concomitants of cocaine use were often distinct from the acute predecessors of use seen in prior analyses from the same sample. Several measures of negative mood increased during abstinence.\r\nCONCLUSIONS\r\nWeeks of cocaine use and abstinence in outpatients are associated with distinct patterns of mood and behavior; the detailed hourly data reported here should help inform treatment interventions aimed at changing daily activities. The findings also argue against the contention that cocaine abstinence symptoms decrease monotonically from the day of cessation.

Epstein, D. H.; Preston, K. L. (2012):

TGI Monday?: drug-dependent outpatients report lower stress and more happiness at work than elsewhere.

In: *Am.J Addict.* 21 (3), S. 189–198. DOI: 10.1111/j.1521-0391.2012.00230.x.

Abstract:

In the general population, experience-sampling studies show that work is the aspect of daily life most associated with momentary unhappiness and a desire to be elsewhere. We assessed whether this holds true for urban outpatients in treatment for heroin and cocaine dependence. In a 25-week natural-history study, 79 employed methadone-maintained misusers of heroin and cocaine carried electronic diaries on which mood and behavior were assessed up to five times per day. Being at work was associated with lower stress, greater happiness, and lower drug craving. Work accounted for 14% of the variance in stress, 30% of the variance in happiness, and 50% of the variance in cocaine craving. Participants with skilled jobs reported more positive and less negative mood states (and lower cocaine craving) at all times compared to participants with semi/unskilled jobs, although the latter reported greater mood improvement at work. In all participants, mood improvements occurred specifically in the presence of coworkers (not other companions). Our seemingly unusual findings might be specific to substance-disorder patients (for whom work may be a respite from drug-using companions), but might also hold for other urban dwellers of similar socioeconomic backgrounds (for whom work may be a respite from environmental stressors)

Epstein, D. H.; Tyburski, M.; Craig, I. M.; Phillips, K. A.; Jobes, M. L.; Vahabzadeh, M. et al. (2014):

Real-time tracking of neighborhood surroundings and mood in urban drug misusers: Application of a new method to study behavior in its geographical context.

In: *Drug Alcohol Depend* 134 (0376-8716 (Linking)), S. 22–29. DOI: 10.1016/j.drugalcdep.2013.09.007.

Abstract:

BACKGROUND: Maladaptive behaviors may be more fully understood and efficiently prevented by ambulatory tools that assess people's ongoing experience in the context of their environment. METHODS: To demonstrate new field-deployable methods for assessing mood and behavior as a function of neighborhood surroundings (geographical momentary assessment; GMA), we collected time-stamped GPS data and ecological momentary assessment (EMA) ratings of mood, stress, and drug craving over 16 weeks at randomly prompted times during the waking hours of opioid-dependent polydrug users receiving methadone maintenance. Locations of EMA entries and participants' travel tracks calculated for the 12 before each EMA entry were mapped. Associations between subjective ratings and objective environmental ratings were evaluated at the whole neighborhood and 12-h track levels. RESULTS: Participants (N=27) were compliant with GMA data collection; 3711 randomly prompted EMA entries were matched to specific locations. At the neighborhood level, physical disorder was negatively correlated with negative mood, stress, and heroin and cocaine craving (ps<.0001-.0335); drug activity was negatively correlated with stress, heroin and cocaine craving (ps .0009-.0134). Similar relationships were found for the environments around respondents' tracks in the 12h preceding EMA entries. CONCLUSIONS: The results support the feasibility of GMA. The relationships between neighborhood characteristics and participants' reports were counterintuitive and counter-hypothesized, and challenge some assumptions about how ostensibly stressful environments are associated with lived experience and how such environments ultimately impair health. GMA methodology may have applications for development of individual- or neighborhood-level interventions

Epstein, David H.; Willner-Reid, Jessica; Vahabzadeh, Massoud; Mezghanni, Mustapha; Lin, Jia-Ling; Preston, Kenzie L. (2009):

Real-time electronic diary reports of cue exposure and mood in the hours before cocaine and heroin craving and use.

In: *Archives of General Psychiatry* 66 (1), S. 88–94. DOI: 10.1001/archgenpsychiatry.2008.509.

Abstract:

CONTEXT\r\nIn ecological momentary assessment (EMA), participants electronically report their activities and moods in their daily environments in real time, enabling a truly prospective approach to the study of acute precipitants of behavioral events. Ecological momentary assessment has greatly enhanced the study of tobacco addiction, but its use has rarely been attempted in individuals with cocaine or heroin addiction.\r\nOBJECTIVE\r\nTo prospectively monitor the acute daily life precipitants of craving for and use of cocaine and heroin.\r\nDESIGN\r\nCohort study.\r\nPARTICIPANTS\r\nA volunteer sample of 114 cocaine- and heroin-abusing outpatients who were being treated with methadone provided EMA data on handheld electronic devices for 14 918 person-days (mean, 130.9; range, 6-189 days per participant). Of these outpatients, a total of 102 (63 men, 39 women) provided acute precraving and/or preuse data and were thus included in the present analyses.\r\nMAIN OUTCOME MEASURES\r\nChanges in reports of mood and exposure to 12 putative drug-use triggers at random intervals during the 5 hours preceding each self-reported episode of drug craving or use, analyzed via repeated-measures logistic regression (generalized linear mixed models).\r\nRESULTS\r\nDuring the 5 hours preceding cocaine use or heroin craving, most of the 12 putative triggers showed linear increases. Cocaine use was most robustly associated with increases in participants reporting that they \"saw [the] drug\" (P < .001), were \"tempted to use out of the blue\" (P < .001), \"wanted to see what would happen if I used\" (P < .001), and were in a good mood (P < .001). Heroin craving was most robustly associated with increases in reports of feeling sad (P < .001) or angry (P = .01). Cocaine craving and heroin use showed few reliable associations with any of the putative triggers assessed.\r\nCONCLUSIONS\r\nThese findings confirm that polydrug-abusing individuals can provide behavioral data in their daily environments using handheld electronic devices and that those data can reveal orderly patterns, including prospectively detectable harbingers of craving and use, which may differ across drugs.

Ernst, M. E.; Sezate, G. S.; Lin, W.; Weber, C. A.; Dawson, J. D.; Carter, B. L.; Bergus, G. R. (2011):

Indication-specific 6-h systolic blood pressure thresholds can approximate 24-h determination of blood pressure control.

In: *J Hum Hypertens* 25 (4), S. 250–255. DOI: 10.1038/jhh.2010.66.

Abstract:

Ambulatory blood pressure monitoring (ABPM) is an accurate method for evaluating hypertension, yet its use in clinical practice may be limited by availability, cost and patient inconvenience. The objective of this study was to investigate the ability of a 6-h ABPM window to predict blood pressure control, judging by that of the full 24-h ABPM session across several clinical indications in a cohort of 486 patients referred for ABPM. Sensitivities and specificities of the 6-h systolic blood pressure mean to accurately classify patients as hypertensive were determined using a fixed reference point of 130 mm Hg for the 24-h mean. For four common indications, in which ABPM was ordered, prediction tables were constructed varying the thresholds for the 6-h mean to find the optimal value that best predicted the 24-h hypertensive status as determined from the full 24-h interval. Using a threshold of 137 mm Hg for the indications of borderline hypertension, evaluation of current antihypertensive regimen and suspected white-coat hypertension, sensitivity and specificity ranged from 0.83-0.88 to 0.80-0.88, respectively, for the ability of 6-h ABPM to correctly categorize hypertensive status. Using 133 mm Hg as the threshold for treatment resistance resulted in a sensitivity and specificity of 0.93 and 0.83, respectively. We conclude that a shortened ABPM session of 6 h can be used to accurately classify blood pressure as controlled or not, based on the results of a 24-h session. The optimal 6-h threshold for comparison depends upon indication for referral.

Ernst, Michael E.; Weber, Cynthia A.; Dawson, Jeffrey D.; O'Connor, Michelle A.; Lin, Wenjiao; Carter, Barry L.; Bergus, George R. (2008):

How well does a shortened time interval characterize results of a full ambulatory blood pressure monitoring session?

In: *The Journal of Clinical Hypertension* 10 (6), S. 431–435.

Abstract:

Ambulatory blood pressure monitoring (ABPM) is useful in evaluating cardiovascular risk but requires significant time. The authors examined how closely shortened time intervals correlate with the systolic blood pressure (BP) determined from a full 24-

hour ABPM session in 1004 ABPM recordings. After excluding the first hour, Pearson correlations performed for the mean systolic BP of the subsequent 3-, 5-, and 7-hour periods (4, 6, and 8 hours total) with the entire, and remainder of the session, demonstrated greatest improvement in correlation when the session is increased from 4 to 6 hours. Bland-Altman analysis of the 6-hour time period revealed a mean difference of 5.41 mm Hg compared with the full session mean. The authors conclude that 6-hour ABPM can approximate the overall mean BP obtained from full 24-hour ABPM. However, shortened sessions do not characterize the influence of circadian variation on the 24-hour mean BP and may overestimate the 24-hour BP levels.

Evans, C. C.; Hanke, T. A.; Zielke, D.; Keller, S.; Ruroede, K. (2012):

Monitoring community mobility with global positioning system technology after a stroke: a case study.

In: *J Neurol.Phys.Ther.* 36 (2), S. 68–78. DOI: 10.1097/NPT.0b013e318256511a.

Abstract:

BACKGROUND: Stroke survivors often experience difficulty returning to activities and places they deem important to their social, leisure, and occupational aspirations. The extent to which stroke survivors return to community mobility and their ability to navigate and access locations they deem meaningful have not been objectively measured. PURPOSE: We used global positioning system technology (GPSt) to measure the community mobility of a person poststroke, and assess the relationship between GPSt measures and clinical measures of mobility. METHODS: : The participant was a 56-year-old man who sustained a right pontine stroke. At discharge from rehabilitation, his Six-Minute Walk Test distance was 73 m. He was fitted with a GPS unit and an accelerometer attached to a single belt and instructed to wear the devices at all times when out of bed. After identifying 10 locations that were important to his goals, he was monitored for 5 separate 1-week periods, on the first, fifth, and ninth weeks and at 6 and 12 months after discharge. RESULTS: During the first 10 weeks, he averaged 7.6 target visits (70%) and 26.7 trips per week. At 1 year, his Six-Minute Walk distance score was 287.5 m. Accelerometry data revealed that he remained primarily sedentary. Target visits and trips per week did not change substantially over the course of 1 year, and compliance wearing the GPS unit was variable. CONCLUSIONS: Given the limited correlation in gait speed and distance with target attainment and trips, these outcomes likely measure different constructs for this subject. GPSt may offer insights into participation for stroke survivors following rehabilitation

Evenson, Kelly R. (2011):

Towards an Understanding of Change in Physical Activity from Pregnancy Through Postpartum.

In: *Psychology of Sport and Exercise* 12 (1), S. 36–45. DOI: 10.1016/j.psychsport.2010.04.010.

Abstract:

OBJECTIVE: The purpose of this paper was to describe the rationale, data collection, and proposed analyses for examination of mediators of change in physical activity from pregnancy to postpartum among a cohort of pregnant women. METHOD: The Pregnancy Infection and Nutrition 3 (PIN3) Study enrolled 2006 pregnant women into the cohort from 2001 to 2005. All women lived in central North Carolina upon enrollment. Physical activity was assessed using a self-reported one week recall, measured twice during pregnancy and once each at 3- and 12-months postpartum. On a subset of women, one-week accelerometer measures were also collected during the two postpartum time periods. Potential mediators (intrapersonal, interpersonal, community) were collected during pregnancy and postpartum through interviews and take home questionnaires. RESULTS: To assess mediation of physical activity among our cohort, we will first describe change in physical activity and the mediators, as well as their associations, through pregnancy into the postpartum period. Following this, the product of coefficients approach will be applied to examine whether each measure had indirect effects on change in physical activity. Each individual level mediator will be examined one at a time and across the time points in which it was available. The Sobel standard error approximation formula will be used to test for significance of the mediation effect. CONCLUSIONS: This study will provide evidence to develop appropriate interventions targeted at physical activity and will help focus efforts on the appropriate time periods between pregnancy and postpartum.

Evenson, Kelly R.; Calhoun, Kathryn C.; Herring, Amy H.; Pritchard, David; Wen, Fang; Steiner, Anne Z. (2014):

Association of physical activity in the past year and immediately after in vitro fertilization on pregnancy.

In: *Fertil Steril* 101 (4), S. 1047-1054.e5. DOI: 10.1016/j.fertnstert.2013.12.041.

Abstract:

OBJECTIVE: To estimate the association of physical activity on in vitro fertilization (IVF). DESIGN: Prospective cohort study. SETTING: Academic infertility clinic. PATIENT(S): Women (n = 121) undergoing nondonor IVF embryo transfer (fresh or frozen). INTERVENTION(S): The women completed a questionnaire on past year physical activity and wore an accelerometer from embryo transfer to serum pregnancy testing. MAIN OUTCOME MEASURE(S): Implantation, intrauterine gestation, and live birth. RESULT(S): Based on self-reported past year physical activity, the adjusted odds of intrauterine gestation was higher among those that had higher continuous active living (odds ratio [OR] 1.96, 95% confidence interval [CI] 1.09-3.50), sports/exercise (OR 1.48, CI 1.02-2.15), and total activity (OR 1.52, 95%CI 1.15-2.01) indices. After embryo transfer, women did almost no vigorous activity (median 0 min/d) as measured by the accelerometer. More of their time was spent in light activity (median 3.0 h/d) and sedentary behaviors (median 9.3 h/d). Accelerometer-measured physical activity and sedentary behavior after embryo transfer were not associated with any IVF outcome. CONCLUSION(S): An active lifestyle in the preceding year favorably impacted the IVF outcome. After embryo transfer, women engaged in mostly light physical activity and sedentary behaviors; therefore, the impact of vigorous physical activity on implantation could not be determined.

Evenson, K. R.; Wen, F.; Hillier, A.; Cohen, D. A. (2013):

Assessing the Contribution of Parks to Physical Activity using GPS and Accelerometry.

In: *Med Sci Sports Exerc* (0195-9131 (Linking)). DOI: 10.1249/MSS.0b013e318293330e.

Abstract:

Purpose: Parks offer a free option for physical activity in many communities. How much time people spend using parks and the contribution that parks makes to their physical activity is not known. This study describes patterns of park use and physical activity among a diverse adult sample.Methods: From five US states, 238 adults enrolled in or near 31 study parks. Participants wore a global positioning system (GPS) monitor (Qstarz BT-Q1000X) and an ActiGraph accelerometer (GT1M) concurrently for three weeks. Parks were mapped from local and national park shape files. Park visits and travel to and from the parks were derived from the objective data.Results: Participants visited parks a median of 2.3 times/week and park visits lasted a median of 42.0 minutes. Overall, participants engaged in a median of 21.7 minutes/day of moderate activity and 0.1 minutes/day of vigorous activity, with an average of 8.2% of all moderate and 9.4% of all vigorous activity occurring within the parks. Among those with at least one park visit (n=218), counts per minute, moderate, moderate to vigorous physical activity (MVPA), number and time in MVPA bouts/day, and sedentary behavior were all higher on days when a park was visited compared to days when a park was not visited. Considering several definitions of active travel, walking or bicycling to and from the park added an additional 3.7 to 6.6 mean minutes of MVPA per park visit.Conclusion: Parks contributed as a place and destination for physical activity, but were underutilized. One of the next steps in this line of inquiry is to understand characteristics of parks used more often as a place and destination for physical activity

Evering, Richard M. H.; T+Nis, Thijs M.; Vollenbroek-Hutten, Miriam M. R. (2011):

Deviations in daily physical activity patterns in patients with the chronic fatigue syndrome: A case control study.

In: *Journal of Psychosomatic Research* 71 (3), S. 129–135. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-18163-007&site=ehost-live;r.evering@rrd.nl.

Abstract:

Objectives: Deviations in daily physical activity patterns may play an important role in the development and maintenance of fatigue in the chronic fatigue syndrome (CFS). The aim of this study is to gain insight into the objective daily physical activity pattern of patients with CFS in comparison with healthy controls. The secondary objective is studying the awareness in performing physical activities. Methods: The objective daily physical activity pattern was measured with a tri-axial accelerometer in 35 patients with CFS and in 35 age- and gender-matched healthy controls. The objective daily physical activity level and distribution of physical activities at low, medium and high intensity levels during the day were measured. Moreover, variability in performing physical activities within and between subjects was computed. Subjective ratings of self-reported daily physical activity levels were assessed at a visual analog scale. Results: CFS patients were significantly less physically active in the

afternoon and evening, and spent fewer activities at high intensity levels and more at low intensity levels. Moreover, CFS patients showed more variability in their own physical activity pattern during the afternoon. The heterogeneity in the physical activity pattern between subjects within the CFS and control group did not differ. Finally, CFS patients were more aware about their daily physical activity level than healthy controls. Conclusion: CFS patients showed deviations in the objectively measured daily physical activity pattern. Future research should elucidate the relation between impaired balances in daily physical activity patterns and fatigue severity in CFS. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Ewart, C. K.; Elder, G. J.; Smyth, J. M. (2011):

How Implicit Motives and Everyday Self-Regulatory Abilities Shape Cardiovascular Risk in Youth.

In: *Ann Behav Med* (0883-6612 (Linking)). DOI: 10.1007/s12160-011-9336-3.

Abstract:

BACKGROUND AND PURPOSE: Tested hypotheses from social action theory that (a) implicit and explicit measures of agonistic (social control) motives and transcendence (self-control) motives differentially predict cardiovascular risk; and (b) implicit motives interact with everyday self-regulation behaviors to magnify risk. METHODS: Implicit/explicit agonistic/transcendence motives were assessed in a multi-ethnic sample of 64 high school students with the Social Competence Interview (SCI). Everyday self-regulation was assessed with teacher ratings of internalizing, externalizing, and self-control behaviors. Ambulatory blood pressure and daily activities were measured over 48 h. RESULTS: Study hypotheses were supported: implicit goals predicted blood pressure levels but explicit self-reported coping goals did not; self-regulation indices did not predict blood pressure directly but interacted with implicit agonistic/transcendence motives to identify individuals at greatest risk (all p </= 0.05). CONCLUSIONS: Assessment of implicit motives by SCI, and everyday self-regulation by teachers may improve identification of youth at risk for cardiovascular disease

Faber, Gert S.; Kingma, Idsart; Bruijn, Sjoerd M.; van Dieën, Jaap H. (2009):

Optimal inertial sensor location for ambulatory measurement of trunk inclination.

In: *Journal of biomechanics* 42 (14), S. 2406–2409. DOI: 10.1016/j.jbiomech.2009.06.024.

Abstract:

Trunk inclination (TI) is used often to quantify back loading in ergonomic workplace evaluation. The aim of the present study was to determine whether TI can be obtained using a single inertial sensor (IS) on the back, and to determine the optimal IS location on the back for the estimation of TI. Gold standard TI, the angle between the vertical and the line connecting the L5/S1 joint and the trunk centre of mass, was measured using an optoelectronic system. Ten subjects performed experimental trials, each consisting of a symmetric and an asymmetric lifting task, and of a left-right lateral flexion movement. Trials were repeated and, in between trials, the IS was shifted in small steps from a location on the thorax towards a location on the sacrum. Optimal IS location was defined as the IS location with minimum root-mean-square (RMS) error between the gold standard TI and the IS TI. Averaged over subjects, the optimal IS location for symmetric and asymmetric lifting was at about 25% of the distance from the midpoint between the posterior superior iliac spines (MPSIS) to the C7 spinous process. The RMS error at this location, averaged over subjects, was 4.6+/-2.9 degrees. For the left-right lateral flexion task, the optimal IS location was at about 30% of the MPSIS to C7 distance. Because in most activities of daily living, pure lateral flexion does not occur often, it is recommended place the IS at 25% of the distance from the MPSIS to C7.

Factor, Perry I.; Reyes, Rachel A.; Rosen, Paul J. (2014):

Emotional impulsivity in children with adhd associated with comorbid—not adhd—symptomatology.

In: *Journal of Psychopathology and Behavioral Assessment*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-20449-001%26site%3dehost-live.

Abstract:

Children with ADHD often demonstrate sudden and intense shifts in both positive and negative affect. This study examined the role of diagnostic status on emotional impulsivity in children utilizing ecological momentary assessment (EMA). Parents of 64 8–

12 year old children (15 ADHD-only; 27 ADHD-comorbid; 22 control) completed a diagnostic structured interview and then an EMA protocol, rating the child's affect thrice daily for 28 days. Analysis of covariance (ANCOVA) suggested that children with ADHD and a comorbid disorder demonstrated significantly more EMA-derived emotional impulsivity than children with ADHD only and control children. No difference was found between children with ADHD only and control children. This study suggested that children with ADHD demonstrate significantly higher levels of emotional impulsivity than control children only in the presence of a comorbid disorder. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Fagard, R. H.; Thijs, L.; Staessen, J. A.; Clement, D. L.; Buyzere, M. L.; Bacquer, D. A. (2009):

Night-day blood pressure ratio and dipping pattern as predictors of death and cardiovascular events in hypertension.

In: *J Hum Hypertens* 23 (10), S. 645–653. DOI: 10.1038/jhh.2009.9.

Abstract:

Our objective was to assess the prognostic significance of the night-time dipping pattern and the night-day blood pressure (BP) ratio for mortality and cardiovascular events in hypertensive patients without major cardiovascular disease at baseline. We performed a meta-analysis on individual data of 3468 patients from four prospective studies performed in Europe. Age of the subjects averaged 61+/-13 years; 45% were men and 61% were under antihypertensive treatment at the time of ambulatory BP monitoring. The night-day BP ratio and 24-h BP averaged, respectively, 0.907+/-0.085/0.866+/-0.095 and 138.1+/-16.4/82.3+/-11.0 mm Hg. Total follow-up time amounted to 23 164 patient-years. We used multivariable Cox regression analysis to assess the outcome of reverse dippers, non-dippers and extreme dippers vs dippers, and to assess the hazard ratios associated with 1 standard deviation higher night-day BP ratio. In comparison with dippers, and with adjustment for confounders and 24-h BP, the incidence of cardiovascular events was worse in reverse dippers (P<or=0.05), whereas mortality was lower in extreme dippers (P<or=0.01); outcome was similar in non-dippers and dippers. The systolic night-day BP ratio independently predicted all-cause mortality and cardiovascular events (P<or=0.001), which persisted after additional adjustment for 24-h BP (P<or=0.05); appropriate interaction terms indicated that the results were similar in men and women, in younger and older patients and in treated and untreated patients. In conclusion, the dipping pattern and the night-day BP ratio significantly and independently predict mortality and cardiovascular events in hypertensive patients without history of major cardiovascular disease, even after adjustment for 24-h BP.

Fan, L.; Blumenthal, J. A.; Hinderliter, A. L.; Sherwood, A. (2012):

The effect of job strain on nighttime blood pressure dipping among men and women with high blood pressure.

In: *Scand.J.Work Environ.Health* (0355-3140 (Linking)). DOI: 10.5271/sjweh.3294.

Abstract:

OBJECTIVES: Blunted nighttime blood pressure dipping is an established cardiovascular risk factor. This study examined the effect of job strain on nighttime blood pressure dipping among men and women with high blood pressure. METHODS: The sample consisted of 122 blue- and white collar workers (men=72, women=50). The Job Content Questionnaire was used to measure job psychological demands, job control, and social support. The ratio of job demands to job control was used to assess job strain. Nighttime blood pressure dipping was evaluated from 24-hour ambulatory blood pressure monitoring performed on three workdays. RESULTS: Men with high job strain had a 5.4 mm Hg higher sleep systolic blood pressure (P=0.03) and 3.5 mm Hg higher sleep pulse pressure (P=0.02) compared to men with low job strain. Men with high job strain had a smaller fall in systolic blood pressure and pulse pressure from awake to sleep state than those with low job strain (P<0.05). Hierarchical analyses showed that job strain was an independent determinant of systolic blood pressure dipping (P=0.03) among men after adjusting for ethnicity, body mass index, anxiety and depression symptoms, current smoking status, and alcohol consumption. Further exploratory analyses indicated that job control was the salient component of job strain associated with blood pressure dipping (P=0.03). CONCLUSIONS: High job strain is associated with a blunting of the normal diurnal variation in blood pressure and pulse pressure, which may contribute to the relationship between job strain and cardiovascular disease

Fanciullo, Gilbert J.; Cravero, Joseph P.; Mudge, Bridget O.; McHugo, Gregory J.; Baird, John C. (2007):

Development of a new computer method to assess children's pain.

In: *Pain Medicine* 8 (s3), S. 121–128.

Abstract:

OBJECTIVE:

The primary objective of this study was to determine initial psychometric properties and feasibility of a new Computer Face Scale for measuring pediatric pain. Drawbacks to current measurement tools include a lack of continuous variables, suboptimal mode of implementation, and difficulty interpreting results. A computer method of pediatric pain measurement is presented that addresses these problems. Basic psychometric properties, feasibility, and children's preference when compared with Wong-Baker Faces Scale were determined.

METHODS:

Fifty-four hospitalized, pediatric inpatients were tested using both the Computer Face Scale and the Wong-Baker Faces Scale. An additional 30 children (not hospitalized) were tested using only the Computer Face Scale.

RESULTS:

Both hospitalized and nonhospitalized children between the ages of 3 and 17 years of age are able to use the Computer Face Scale to express relative amounts of pain/hurt and happiness. The Computer Face Scale shows acceptable psychometric properties and is preferred by most children.

CONCLUSIONS:

The Computer Face Scale offers advantages over traditional pediatric pain measurement tools. The opportunity for real time review, electronic and time-stamped recording, electronic display, and temporal comparisons of reports affords the potential for improvement in pediatric pain assessment and treatment.

Farjadian, A. B.; Sivak, M. L.; Mavroidis, C. (2013):

SQUID: Sensorized shirt with smartphone interface for exercise monitoring and home rehabilitation.

In: *IEEE Int.Conf.Rehabil.Robot.* 2013 (1945-7898 (Linking)), S. 1–6. DOI: 10.1109/ICORR.2013.6650451.

Abstract:

Stroke is a leading cause of serious long-term disability in the United States. There is a need for new technological adjuncts to expedite patients' scheduled discharge from hospital and pursue rehabilitation procedure at home. SQUID is a low-cost, smart shirt that incorporates a six-channel electromyography (EMG) and heart rate data acquisition module to deliver objective audiovisual and haptic biofeedback to the patient. The sensorized shirt is interfaced with a smartphone application, for the subject's usage at home, as well as the online database, for the therapist's remote supervision from hospital. A single healthy subject was recruited to investigate the system functionality during improperly performed exercise. The system can potentially be used in automated, remote monitoring of variety of physical therapy exercises, rooted in strength or coordination training of specific muscle groups

Farsang, Csaba (2014):

Efficacy and Tolerability of Fixed-Dose Combination of Perindopril/Indapamide in Type 2 Diabetes Mellitus: PICASSO Trial.

In: *Adv Ther* 31 (3), S. 333–344. DOI: 10.1007/s12325-014-0107-y.

Abstract:

BACKGROUND: Hypertension and type 2 diabetes mellitus (T2DM) synergistically deteriorate the vascular environment, making blood pressure reduction challenging, and substantially increasing cardiovascular risk. METHODS: In the real-life, open-label, observational, PICASSO study, 9,257 hypertensive patients unsuccessfully treated with antihypertensives were switched to fixed-dose combination of perindopril 10 mg/indapamide 2.5 mg. In this subgroup analysis, we analyzed changes in blood pressure and laboratory parameters of 2,762 hypertensive patients with T2DM or pre-diabetes. RESULTS: After 3 months of treatment, significant decreases in office blood pressure were noted in the whole cohort (-27.0 +/- 14.8/-12.7 +/- 9.8 mmHg; $p < 0.001$). Significant decreases were also recorded in patients with grade 1 hypertension (19.2 +/- 10.0/-9.4 +/- 7.9 mmHg), grade 2 (29.2 +/- 10.9/-13.3 +/- 8.7 mmHg) and grade 3 (-45.1 +/- 15.4/-21.5 +/- 11.2 mmHg). Significant decreases in ambulatory blood pressure were also noted ($n = 93$). In patients previously treated with angiotensin-converting enzyme inhibitor +/- hydrochlorothiazide or angiotensin receptor blocker +/- hydrochlorothiazide, mean 24-h blood pressure decreased by 23.4 +/- 13.9/11.5 +/- 9.7 and 22.3 +/- 8.7/10.4 +/- 13.2 mmHg, respectively ($p < 0.001$). Treatment was well tolerated and the switch to treatment with perindopril/indapamide was associated with improvements in laboratory parameters. CONCLUSIONS: Data from

this diabetes subgroup analysis suggest that fixed combination of perindopril 10 mg/indapamide 2.5 mg should be routinely considered for the treatment of hypertension in diabetic patients who are unsuccessfully managed with other antihypertensive medications.

Faulkner, H. J.; Arima, H.; Mohamed, A. (2012):

Latency to first interictal epileptiform discharge in epilepsy with outpatient ambulatory EEG.

In: *Clin.Neurophysiol.* (1388-2457 (Linking)). DOI: 10.1016/j.clinph.2012.01.023.

Abstract:

OBJECTIVE: The diagnosis and classification of epilepsy often relies upon the demonstration of interictal epileptiform discharges (IEDs). Routine 20-min EEG recording has low sensitivity, with multiple EEGs increasing sensitivity to a maximum of 77% (Doppelbauer et al., 1993). An alternate strategy is the use of prolonged continuous EEG; however, there are no data on the average latency to first IED with ambulatory monitoring. METHODS: In this retrospective study we reviewed 180 consecutive patients with epilepsy referred to a Specialist Epilepsy Unit who had undergone 96h outpatient ambulatory EEGs, without medication withdrawal, where IEDs were recorded. Latency to, and factors affecting first IED were analysed. RESULTS: Median latency to first IED was 316min, (interquartile range 70-772min, n=180). IEDs were recorded in 44% of patients within 4h, 58% within 8h, 85% within 24h and 95% within 48h. Recording for the full 96h period revealed only 5% further IEDs. Multivariate analysis showed the latencies to IEDs with generalised epilepsies were shorter than with focal epilepsies ($p<0.0001$). CONCLUSIONS: In 95% of patients showing scalp IEDs a 48h recording was sufficient for electro-clinical classification in this study. SIGNIFICANCE: Our data are the first to show the latency to recording interictal epileptiform discharges with prolonged outpatient EEG monitoring. These data are important in guiding diagnostic practice in Specialist Epilepsy Services

Faurholt-Jepsen, M.; Faurholt-Jepsen, D.; Range, N.; Praygod, G.; Jeremiah, K.; Aabye, M. G. et al. (2013):

The use of combined heart rate response and accelerometry to assess the level and predictors of physical activity in tuberculosis patients in Tanzania.

In: *Epidemiol.Infect.* (0950-2688 (Linking)), S. 1–9. DOI: 10.1017/S0950268813002070.

Abstract:

SUMMARY We assessed the role of tuberculosis (TB) disease and HIV infection on the level of physical activity. A combined heart rate and movement sensor was used to assess habitual physical activity in TB patients and non-TB controls. The association between sputum-negative TB, sputum-positive TB, HIV and physical activity estimates were assessed in multivariable linear regression models adjusted for age, sex, haemoglobin and alpha-1-acid glycoprotein (AGP). Sputum-positive [eB 0.43, 95% confidence interval (CI) 0.29-0.64] and sputum-negative (eB 0.67, 95% CI 0.47-0.94) TB as well as HIV infection (eB 0.59, 95% CI 0.46-0.75) were associated with reduced activity compared to controls. Anaemia accounted for a substantial part of the effects of HIV, while elevated AGP primarily mediated the TB effect. The level of physical activity is highly influenced by TB and HIV, and mainly mediated through anaemia of infection and associated with elevated acute phase response

Faurholt-Jepsen, Daniel; Hansen, Kristina Beck; van Hees, Vincent T.; Christensen, Line Brinch; Girma, Tsinuel; Friis, Henrik; Brage, Soren (2014):

Children Treated for Severe Acute Malnutrition Experience a Rapid Increase in Physical Activity a Few Days after Admission.

In: *J Pediatr. DOI:* 10.1016/j.jpeds.2014.02.014.

Abstract:

OBJECTIVE: To assess physical activity at admission and during recovery from severe acute malnutrition. STUDY DESIGN: Ethiopian children who were admitted with severe acute malnutrition received a clinical examination each week to monitor their recovery during rehabilitation. Using accelerometry (24 h/d for 5 consecutive days) at admission and again after 10 days of rehabilitation, we assessed the level and changes of physical activity. RESULTS: Among 13 children included, the mean (SD) age was 31.1 months (15.5). At baseline, the day-night activity difference was relatively small, whereas the level of activity had substantially increased at follow-up. The diurnal mean acceleration level was significantly greater at follow-up for wrist (1158.8 vs 541.4 counts per minute, $P = .003$) but not hip movements (204.1 vs 141.5, $P = .261$). During daytime (6 a.m. to 10 p.m.), hip

activity increased by 38% from baseline to follow-up (eB 1.38, 95% CI 1.17-1.62), and wrist activity more than doubled (eB 2.50, 95% CI 2.17-2.87). CONCLUSION: The level of physical activity among children with severe acute malnutrition is very low but increases rapidly during recovery. Accelerometry may be a useful approach in the recovery phase as an indicator of early improvement.

Faurholt-Jepsen, M.; Vinberg, M.; Christensen, E. M.; Frost, M.; Bardram, J.; Kessing, L. V. (2013):

Daily electronic self-monitoring of subjective and objective symptoms in bipolar disorder--the MONARCA trial protocol (MONitoring, treAtment and pRediCtion of bipolAr disorder episodes): a randomised controlled single-blind trial.

In: *BMJ Open* 3 (7). DOI: 10.1136/bmjopen-2013-003353.

Abstract:

INTRODUCTION: Electronic self-monitoring of affective symptoms using cell phones is suggested as a practical and inexpensive way to monitor illness activity and identify early signs of affective symptoms. It has never been tested in a randomised clinical trial whether electronic self-monitoring improves outcomes in bipolar disorder. We are conducting a trial testing the effect of using a Smartphone for self-monitoring in bipolar disorder. METHODS: We developed the MONARCA application for Android-based Smartphones, allowing patients suffering from bipolar disorder to do daily self-monitoring-including an interactive feedback loop between patients and clinicians through a web-based interface. The effect of the application was tested in a parallel-group, single-blind randomised controlled trial so far including 78 patients suffering from bipolar disorder in the age group 18-60 years who were given the use of a Smartphone with the MONARCA application (intervention group) or to the use of a cell phone without the application (placebo group) during a 6-month study period. The study was carried out from September 2011. The outcomes were changes in affective symptoms (primary), social functioning, perceived stress, self-rated depressive and manic symptoms, quality of life, adherence to medication, stress and cognitive functioning (secondary and tertiary). ANALYSIS: Recruitment is ongoing. ETHICS: Ethical permission has been obtained. DISSEMINATION: Positive, neutral and negative findings of the study will be published. REGISTRATION DETAILS: The trial is approved by the Regional Ethics Committee in The Capital Region of Denmark (H-2-2011-056) and The Danish Data Protection Agency (2013-41-1710). The trial is registered at ClinicalTrials.gov as NCT01446406

Faurholt-Jepsen, Maria; Vinberg, Maj; Frost, Mads; Christensen, Ellen; Bardram, Jakob; Kessing, Lars (2014):

Daily electronic monitoring of subjective and objective measures of illness activity in bipolar disorder using smartphones inverted question mark the MONARCA II trial protocol: a randomized controlled single-blind parallel-group trial.

In: *BMC Psychiatry* 14 (1), S. 309. DOI: 10.1186/s12888-014-0309-5.

Abstract:

BackgroundPatients with bipolar disorder often show decreased adherence with mood stabilizers and frequently interventions on prodromal depressive and manic symptoms are delayed.Recently, the MONARCA I randomized controlled trial investigated the effect of electronic self-monitoring on smartphones on depressive and manic symptoms. The findings suggested that patients using the MONARCA system had more sustained depressive symptoms than patients using a smartphone for normal communicative purposes, but had fewer manic symptoms during the trial. It is likely that the ability of these self-monitored measures to detect prodromal symptoms of depression and mania may be insufficient compared to automatically generated objective data on measures of illness activity such as phone usage, social activity, physical activity, and mobility. The Monsenso system, for smartphones integrating subjective and objective measures of illness activity was developed and will be tested in the present trial.MethodsThe MONARCA II trial uses a randomized controlled single-blind parallel-group design. Patients with bipolar disorder according to ICD-10 who previously have been treated at the Copenhagen Clinic for Affective Disorder, Denmark are included and randomized to either daily use of the Monsenso system including an feedback loop between patients and clinicians (the intervention group) or to the use of a smartphone for normal communicative purposes (the control group) for a 9-months trial period. The trial was started in September 2014 and recruitment is ongoing. The outcomes are: differences in depressive and manic symptoms; rate of depressive and manic episodes (primary); automatically generated objective data on measures of illness activity; number of days hospitalized; psychosocial functioning (secondary); perceived stress; quality of life; self-rated depressive symptoms; self-rated manic symptoms; recovery; empowerment and adherence to medication (tertiary) between the intervention group and the control group during the trial. Ethical permission has been obtained. Positive, neutral and negative findings will be published.DiscussionIf the system is effective in reducing depressive and/or manic symptoms (and other symptoms of bipolar disorder) and the rate of episodes, there will be basis for extending the use to the treatment of

bipolar disorder in general and in larger scale.Trial registrationClinicalTrials.gov NCT02221336. Registered 26th of September 2014.

Favela, Jesus; Tentori, Monica; Gonzalez, Victor M. (2010):

Ecological validity and pervasiveness in the evaluation of ubiquitous computing technologies for health care.

In: *Intl. Journal of Human–Computer Interaction* 26 (5), S. 414–444.

Abstract:

The difficulties associated with the evaluation of ubiquitous computing (Ubicomp) technologies increase in application domains such as hospitals, where human life can be at risk, privacy of personal records is paramount, and labor is costly and highly distributed across space and time. For the last 6 years numerous Ubicomp technologies in support of hospital work have been created and pilot-tested. In this article, the lessons learned from these evaluations are discussed, using two criteria to classify them. The first criterion is ecological validity, namely, the extent to which the evaluation is conducted under realistic conditions. Alternatives range from controlled experiments to in situ evaluations. The article argues in particular for the advantages of intermediate approaches, which is referred to as in silico and in replica. The second criterion relates to the degree of integration of the technology with the environment, which is referred to as its pervasiveness. The evaluation grid that comes out of this exercise highlights the importance of ecological validity in evaluating ambient computing technology that supports the activities conducted in complex health care settings such as hospitals. This provides a framework for evaluating Ubihealth, which can be used to select appropriate techniques as a function of the technological and environmental complexity as well as to devise novel evaluation techniques.

Favre, J.; Aissaoui, R.; Jolles, B. M.; Guise, J. A.; Aminian, K. (2009):

Functional calibration procedure for 3D knee joint angle description using inertial sensors.

In: *Journal of biomechanics* 42 (14), S. 2330–2335. DOI: 10.1016/j.jbiomech.2009.06.025.

Abstract:

Measurement of three-dimensional (3D) knee joint angle outside a laboratory is of benefit in clinical examination and therapeutic treatment comparison. Although several motion capture devices exist, there is a need for an ambulatory system that could be used in routine practice. Up-to-date, inertial measurement units (IMUs) have proven to be suitable for unconstrained measurement of knee joint differential orientation. Nevertheless, this differential orientation should be converted into three reliable and clinically interpretable angles. Thus, the aim of this study was to propose a new calibration procedure adapted for the joint coordinate system (JCS), which required only IMUs data. The repeatability of the calibration procedure, as well as the errors in the measurement of 3D knee angle during gait in comparison to a reference system were assessed on eight healthy subjects. The new procedure relying on active and passive movements reported a high repeatability of the mean values (offset<1 degrees) and angular patterns (SD<0.3 degrees and CMC>0.9). In comparison to the reference system, this functional procedure showed high precision (SD<2 degrees and CC>0.75) and moderate accuracy (between 4.0 degrees and 8.1 degrees) for the three knee angle. The combination of the inertial-based system with the functional calibration procedure proposed here resulted in a promising tool for the measurement of 3D knee joint angle. Moreover, this method could be adapted to measure other complex joint, such as ankle or elbow.

Fay, Doris; Sonnentag, Sabine (2012):

Within-person fluctuations of proactive behavior: How affect and experienced competence regulate work behavior.

In: *Human Performance* 25 (1), S. 72–93. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-04563-004&site=ehost-live;doris.fay@uni-potsdam.de.

Abstract:

This article studies proactive work behavior from a within-person perspective. Building on the broaden-and-build model and the mood-as-information approach, we hypothesized that negative trait affect and positive state affect predict the relative time

spent on proactive behavior. Furthermore, based on self-determination theory we argued that persons want to feel competent and that proactive behavior is one way to experience competence. In an experience-sampling study, 52 employees responded to surveys 3 times a day for 5 days. Hierarchical linear modeling confirmed the hypotheses on trait and state affect. Analyses furthermore showed that although a higher level of experienced competence at core task activities was associated with a subsequent increase in time spent on these activities, low experienced competence predicted an increase in time spent on proactive behavior. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Fazio, Patrik; Granieri, Gino; Casetta, Ilaria; Cesnik, Edward; Mazzacane, Sante; Caliandro, Pietro et al. (2013):

Gait measures with a triaxial accelerometer among patients with neurological impairment.

In: *Neurological Sciences* 34 (4), S. 435–440. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-12493-003%26site%3dehost-live;patrik.fazio@unife.it.

Abstract:

The purpose of the present study is to evaluate accelerometric parameters of gait in different neurological conditions with pathological gait impairment compared to healthy subjects. We studied 17 patients affected by Parkinson's disease, 24 with ataxic gait due to different diseases and 24 healthy subjects supplied with a triaxial accelerometer with a portable datalogger which measures acceleration and deceleration on an anterior-posterior, mediolateral and vertical plane at an approximate level of the center of mass (back sacral localization) and in other two positions (sternal and frontal sacral region) during a steady-state walking. Analyses of the basic accelerometric parameters associated with a jerk analysis allowed us to differentiate between the population groups. We observed a significant reduction of acceleration parameters in neurological patients when compared with healthy subjects, with a reduction of the mean acceleration of 0.30 m/s(2) for ataxic and 0.64 m/s(2) for parkinsonian patients (t test, $p < 0.01$). The root-mean square of the accelerations was used to quantify the attenuations of accelerations. This study suggests that a triaxial accelerometer is a good practical and an economic tool for assessing the alteration of perambulation. Moreover, it is plausible to use these data to obtain objective parameters in the evaluation of the progression of the disease and the efficacy of therapeutic tools.

Feinstein, Justin S.; Adolphs, Ralph; Damasio, Antonio; Tranel, Daniel (2011):

The human amygdala and the induction and experience of fear.

In: *Current biology* 21 (1), S. 34–38.

Abstract:

Although clinical observations suggest that humans with amygdala damage have abnormal fear reactions and a reduced experience of fear, these impressions have not been systematically investigated. To address this gap, we conducted a new study in a rare human patient, SM, who has focal bilateral amygdala lesions. To provoke fear in SM, we exposed her to live snakes and spiders, took her on a tour of a haunted house, and showed her emotionally evocative films. On no occasion did SM exhibit fear, and she never endorsed feeling more than minimal levels of fear. Likewise, across a large battery of self-report questionnaires, 3 months of real-life experience sampling, and a life history replete with traumatic events, SM repeatedly demonstrated an absence of overt fear manifestations and an overall impoverished experience of fear. Despite her lack of fear, SM is able to exhibit other basic emotions and experience the respective feelings. The findings support the conclusion that the human amygdala plays a pivotal role in triggering a state of fear and that the absence of such a state precludes the experience of fear itself.

Felício, João S.; Pacheco, Juliana T.; Ferreira, Sandra R.; Plavnik, Frida; Moisés, Valdir A.; Kohlmann, Oswaldo et al. (2006):

Hyperglycemia and nocturnal systolic blood pressure are associated with left ventricular hypertrophy and diastolic dysfunction in hypertensive diabetic patients.

In: *Cardiovascular diabetology* 5, S. 19. DOI: 10.1186/1475-2840-5-19.

Abstract:

BACKGROUND\r\nThe aim of this study was to determine if hypertensive type 2 diabetic patients, when compared to patients with essential hypertension have an increased left ventricular mass index (LVMI) and a worse diastolic function, and if this fact

would be related to 24-h pressoric levels changes.\r\nMETHODS\r\nNinety-one hypertensive patients with type 2 diabetes mellitus (DM) (group-1 [G1]), 59 essential hypertensive patients (group-2 [G2]) and 26 healthy controls (group-3 [G3]) were submitted to 24-h Ambulatory Blood Pressure Monitoring (ABPM) and echocardiography (ECHO) with Doppler. We calculated an average of fasting blood glucose (AFBG) values of G1 from the previous 4.2 years and a glycemic control index (GCI) (percentual of FBG above 200 mg/dl).\r\nRESULTS\r\nG1 and G2 did not differ on average of diurnal systolic and diastolic BP. However, G1 presented worse diastolic function and a higher average of nocturnal systolic BP (NSBP) and LVMI (NSBP = 132 +/- 18 vs 124 +/- 14 mmHg; P < 0.05 and LVMI = 103 +/- 27 vs 89 +/- 17 g/m2; P < 0.05, respectively). In G1, LVMI correlated with NSBP (r = 0.37; P < 0.001) and GCI (r = 0.29; P < 0.05) while NSBP correlated with GCI (r = 0.27; P < 0.05) and AFBG (r = 0.30; P < 0.01). When G1 was divided in tertiles according to NSBP, the subgroup with NSBP> or =140 mmHg showed a higher risk of LVH. Diabetics with NSBP> or =140 mmHg and AFBG>165 mg/dl showed an additional risk of LVH (P < 0.05; odds ratio = 11). In multivariate regression, both GCI and NSBP were independent predictors of LVMI in G1.\r\nCONCLUSION\r\nThis study suggests that hyperglycemia and higher NSBP levels should be responsible for an increased prevalence of LVH in hypertensive patients with Type 2 DM.

Felicity R Allen and Eliathamby Ambikairajah and Nigel H Lovell and Branko G Celler (2006):

Classification of a known sequence of motions and postures from accelerometry data using adapted Gaussian mixture models.

In: *Physiol Meas* 27 (10), S. 935. Online verfügbar unter http://stacks.iop.org/0967-3334/27/i=10/a=001.

Abstract:

Accelerometry shows promise in providing an inexpensive but effective means of long-term ambulatory monitoring of elderly patients. The accurate classification of everyday movements should allow such a monitoring system to exhibit greater 'intelligence', improving its ability to detect and predict falls by forming a more specific picture of the activities of a person and thereby allowing more accurate tracking of the health parameters associated with those activities. With this in mind, this study aims to develop more robust and effective methods for the classification of postures and motions from data obtained using a single, waist-mounted, triaxial accelerometer; in particular, aiming to improve the flexibility and generality of the monitoring system, making it better able to detect and identify short-duration movements and more adaptable to a specific person or device. Two movement classification methods were investigated: a rule-based Heuristic system and a Gaussian mixture model (GMM)-based system. A novel time-domain feature extraction method is proposed for the GMM system to allow better detection of short-duration movements. A method for adapting the GMMs to compensate for the problem of limited user-specific training data is also proposed and investigated. Classification performance was considered in relation to data gathered in an unsupervised, directed routine conducted in a three-month field trial involving six elderly subjects. The GMM system was found to achieve a mean accuracy of 91.3%, distinguishing between three postures (sitting, standing and lying) and five movements (sit-to-stand, stand-to-sit, lie-to-stand, stand-to-lie and walking), compared to 71.1% achieved by the Heuristic system. The adaptation method was found to offer a mean accuracy of 92.2%; a relative improvement of 20.2% over tests without subject-specific data and 4.5% over tests using only a limited amount of subject-specific data. While limited to a restricted subset of possible motions and postures, these results provide a significant step in the search for a more robust and accurate ambulatory classification system.

Felkey, Bill G.; Fox, Brent I. (2013):

Take two apps and call me in the morning.

In: *Hosp Pharm* 48 (8), S. 703–704. DOI: 10.1310/hpj4808-703.

Abstract:

The pace of change in the world of information technology is remarkable at times. The role of the smartphone has rapidly been evolving into that of a health care tool, which has a variety of uses for providers and patients. In this installment, we provide our perspectives on the role of the smartphone and its associated apps.

Ferguson, Stuart G.; Shiffman, Saul (2011):

Using the methods of ecological momentary assessment in substance dependence research--smoking cessation as a case study.

In: *Subst Use Misuse* 46 (1), S. 87–95. DOI: 10.3109/10826084.2011.521399.

Abstract:

Ecological momentary assessment (EMA) is the name applied to any of a range of research methodologies that aim to assess participants in near real time as they go about their regular day-to-day activities. Such methods have particular utility for studying drug use and drug dependence. Using the area of nicotine dependence as a case study, this review highlights how EMA can be used to build upon the findings from more traditional research methods to enhance our understanding of drug use. Particular attention is given to the role that advances in technology have played in the adoption of EMA in drug dependence research.

Ferguson, Stuart G.; Shiffman, Saul; Gwaltney, Chad J. (2006):

Does reducing withdrawal severity mediate nicotine patch efficacy? A randomized clinical trial.

In: *Journal of Consulting and Clinical Psychology* 74 (6), S. 1153–1161. DOI: 10.1037/0022-006X.74.6.1153.

Abstract:

Nicotine replacement therapy (NRT) repeatedly has been shown to improve smoking treatment outcome. The major mechanism posited for this improvement in outcome is that NRT reduces nicotine craving and withdrawal. The authors tested this hypothesized mechanism of action using real-time data on craving and withdrawal, collected by ecological momentary assessments administered on a palm-top computer. Smokers (N = 324) were randomized to receive either active high-dose (35 mg) 24-hr patches or placebo. Increases in positive affect and decreases in craving, negative affect, and attention disturbance severity were related to lower risk of lapsing. Although NRT treatment did significantly decrease withdrawal and craving severity, these reductions only partially accounted for NRT's impact on time to first lapse: The results from a mediation analysis showed that the hazard ratio for NRT, when controlling for withdrawal and craving severity, was only a third to a half lower than the uncontrolled hazard ratio for NRT alone. This suggests that other mechanisms for the effectiveness of NRT need to be examined.

Fernandez-Aleman, Jose Luis; Garcia, Ana Belen Sanchez; Montesinos, Maria Jose Lopez; Jimenez, Juan Jose Lopez (2014):

Examining the Benefits of Learning Based on an Audience Response System When Confronting Emergency Situations.

In: *Comput Inform Nurs. DOI:* 10.1097/CIN.0000000000000053.

Abstract:

This article presents an empirical study on the effectiveness of the use of an audience response system called SIstema De Respuesta inmediata de la Audiencia on a nursing course. A total of 130students of mixed gender, age, and computer experience and educational background on a third-year course in nursing administration and management participated in the study. The benefits of an audience response system as regards learning how to confront emergency situations were studied. The innovative aspect of the proposal is twofold: (1) the use of a smartphone to respond to the questions and (2) the analysis of the students' response time when confronting critical situations while managing nursing resources. A positive impact on the students' performance was revealed in their final assessments. Our findings show that SIstema De Respuesta inmediata de la Audiencia increases student participation and aids in identifying and correcting misconceptions. The students found SIstema De Respuesta inmediata de la Audiencia to be very motivating and wanted it to be used in additional lectures. Further research is required to study the effectiveness of SIstema De Respuesta inmediata de la Audiencia for it to be widely used in other disciplines.

Fernandez-Llatas, Carlos; Pileggi, Salvatore F.; Ibanez, Gema; Valero, Zoe; Sala, Pilar (2015):

Cloud computing for context-aware enhanced m-Health services.

In: *Methods Mol Biol* 1246, S. 147–155. DOI: 10.1007/978-1-4939-1985-7_10.

Abstract:

m-Health services are increasing its presence in our lives due to the high penetration of new smartphone devices. This new scenario proposes new challenges in terms of information accessibility that require new paradigms which enable the new applications to access the data in a continuous and ubiquitous way, ensuring the privacy required depending on the kind of data accessed. This paper proposes an architecture based on cloud computing paradigms in order to empower new m-Health applications to enrich their results by providing secure access to user data.

Fialho, Guilherme; Cavichio, Luciano; Povoa, Rui; Pimenta, João (2006):

Effects of 24-h shift work in the emergency room on ambulatory blood pressure monitoring values of medical residents.

In: *Am J Hypertens* 19 (10), S. 1005–1009. DOI: 10.1016/j.amjhyper.2006.03.007.

Abstract:

BACKGROUND\r\nMedical residency is marked by long work hours and shift work. The acute effects of these factors on the blood pressure (BP) of medical residents have not been adequately evaluated.\r\nMETHODS\r\nA total of 61 medical residents underwent to ambulatory blood pressure monitoring (ABPM) during a 24-h shift work in the emergency room (ER) and during a common working day.\r\nRESULTS\r\nBoth mean 24-h systolic and diastolic BP (DBP) and mean diastolic BP readings during sleep were higher during the 24-h shift work in the ER than during common working day (117 v 113 mm Hg, P < .05; 73 v 69 mm Hg, P < .05; and 61 v 58 mm Hg, P < .05, respectively). Abnormally high mean BP readings were more frequent during the 24-h shift work in the ER than in common working day (19 v 8, P < .05). Pressure load, nocturnal BP fall and pulse pressure values were similar in these two different working situations.\r\nCONCLUSION\r\nWorking in the ER on a 24-h shift leads to abnormal BP behavior in medical residents, thus suggesting that this type of work may be a risk factor for cardiovascular disease.

Finan, Patrick Hamilton (2012):

Genetic influences on the dynamics of pain and affect in fibromyalgia.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (12-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99120-470&site=ehost-live.

Abstract:

Fibromyalgia (FM) is a chronic musculoskeletal disorder characterized by widespread pain, fatigue, and a variety of other comorbid physiological and psychological characteristics, including a deficit of positive affect. Recently, the focus of research on the pathophysiology of FM has considered the role of a number of genomic variants. In the current manuscript, case-control analyses did not support the hypothesis that FM patients would differ from other chronic pain groups in catechol-O-methyltransferase (COMT) and mu-opioid receptor (OPRM1) genotype. However, evidence is provided in support of the hypothesis that functional single nucleotide polymorphisms on the COMT and OPRM1 genes would be associated with risk and resilience, respectively, in a dual processing model of pain-related positive affective regulation in FM. Forty-six female patients with a physician-confirmed diagnosis of FM completed an electronic diary that included once-daily assessments of positive affect and soft tissue pain. Multilevel modeling yielded a significant gene X environment interaction, such that individuals with met/met genotype on COMT experienced a greater decline in positive affect as daily pain increased than did either val/met or val/val individuals. A gene X environment interaction for OPRM1 also emerged, indicating that individuals with at least one asp allele were more resilient to elevations in daily pain than those homozygous for the asn allele. In sum, the findings offer researchers ample reason to further investigate the contribution of the catecholamine and opioid systems, and their associated genomic variants, to the still poorly understood experience of FM. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Finan, P. H.; Tennen, H.; Thoemmes, F.; Zautra, A. J.; Davis, M. C. (2012):

Ambulatory monitoring in the genetics of psychosomatic medicine.

In: *Psychosom.Med.* 74 (4), S. 349–355. DOI: 10.1097/PSY.0b013e3182544a74.

Abstract:

Psychosomatic disorders are composed of an array of psychological, biologic, and environmental features. The existing evidence points to a role for genetic factors in explaining individual differences in the development and maintenance of a variety of disorders, but studies to date have not shown consistent and replicable effects. As such, the attempt to uncover individual differences in the expression of psychosomatic disorders as a function of genetic architecture requires careful attention to their phenotypic architecture or the various intermediate phenotypes that make up a heterogeneous disorder. Ambulatory monitoring offers a novel approach to measuring time-variant and situation-dependent intermediate phenotypes. Recent examples of the use of ambulatory monitoring in genetic studies of stress reactivity, chronic pain, alcohol use disorders, and psychosocial resilience are reviewed in an effort to highlight the benefits of ambulatory monitoring for genetic study designs

Finan, Patrick H.; Zautra, Alex J.; Davis, Mary C.; Lemery-Chalfant, Kathryn; Covault, Jonathan; Tennen, Howard (2010):

Genetic influences on the dynamics of pain and affect in fibromyalgia.

In: *Health Psychol* 29 (2), S. 134–142. DOI: 10.1037/a0018647.

Abstract:

OBJECTIVE\r\nThe purpose of the present investigation was to determine if variation in the catechol-O-methyltransferase (COMT) and mu-opioid receptor (OPRM1) genes is associated with pain-related positive affective regulation in fibromyalgia (FM).\r\nDESIGN\r\nForty-six female patients with FM completed an electronic diary that included daily assessments of positive affect and pain. Between- and within-person analyses were conducted with multilevel modeling.\r\nMAIN OUTCOME MEASURE\r\nDaily positive affect was the primary outcome measure.\r\nRESULTS\r\nAnalyses revealed a significant gene x experience interaction for COMT, such that individuals with met/met genotype experienced a greater decline in positive affect on days when pain was elevated than did either val/met or val/val individuals. This finding supports a role for catecholamines in positive affective reactivity to FM pain. A gene x experience interaction for OPRM1 also emerged, indicating that individuals with at least one asp allele maintained greater positive affect despite elevations in daily pain than those homozygous for the asn allele. This finding may be explained by the asp allele's role in reward processing.\r\nCONCLUSIONS\r\nTogether, the findings offer researchers ample reason to further investigate the contribution of the catecholamine and opioid systems, and their associated genomic variants, to the still poorly understood experience of FM.

Finan, Patrick H.; Zautra, Alex J.; Davis, Mary C.; Lemery-Chalfant, Kathryn; Covault, Jonathan; Tennen, Howard (2011):

COMT moderates the relation of daily maladaptive coping and pain in fibromyalgia.

In: *Pain* 152 (2), S. 300–307. DOI: 10.1016/j.pain.2010.10.024.

Abstract:

Forty-five women with fibromyalgia (FM) engaged in a 30-day electronic diary assessment, recording daily ratings of pain and 2 forms of maladaptive coping: pain catastrophizing and pain attention. Participants were genotyped for the val158met single nucleotide polymorphism (rs4680) in the catechol-O-methyltransferase (COMT) gene. COMT genotype moderated the daily relations of both maladaptive coping processes and pain. FM women with the homozygous met/met genotype evidenced more pain on days when pain catastrophizing was elevated relative to heterozygous and homozygous val158 carriers. FM women with the homozygous met/met genotype evidenced more pain on days when pain attention was elevated relative to those with the homozygous val/val genotype. Evidence is presented to suggest that these are independent effects. The findings provide multimeasure and multimethod support for genetic moderation of a maladaptive coping and pain process, which has been previously characterized in a sample of postoperative shoulder pain patients. Further, the findings advance our understanding of the role of COMT in FM, suggesting that genetic variation in the val158met polymorphism may affect FM pain through pathways of pain-related cognition.

Finazzi, M. E.; Mesquita, M. E.; Lopes, J. R.; Fu, L. I.; Oliveira, M. G.; Del Porto, J. A. (2010):

Motor activity and depression severity in adolescent outpatients.

In: *Neuropsychobiology* 61 (1), S. 33–40. DOI: 10.1159/000262178.

Abstract:

OBJECTIVES\r\nThe present study investigated the association between motor activity and severity of depression in 6 depressed adolescent outpatients.\r\nMETHOD\r\nMotor activity was assessed by actigraphy and the severity of depression was assessed weekly using the CDRS-R. The levels of motor activity were analyzed by considering activity parameters.\r\nRESULTS\r\nAmong

the parameters of motor activity studied, the mean total activity, the mean 24-hour activity levels, the mean waking activity, and the mean activity level between 12:00 and 18:00 h were inversely correlated with severity of depression. The means of the 10 most active hours tended toward a negative correlation with the depressive severity score.\r\nCONCLUSION\r\nThe results seem to suggest an association between motor activity level and severity of depression in adolescents. Nevertheless, in order to reach a more conclusive understanding, it would be necessary to replicate this study using a larger number of individuals as well as a longer observation period.

Fingerman, Karen L.; Berg, Cynthia A.; Smith, Jacqui; Antonucci, Toni C. (Hg.) (2011):

Handbook of life-span development.

New York, NY US: Springer Publishing Co.

Fischer, Frida Marina; Wey, Daniela; Valente, Daniel; Luz, Andrea Aparecida Da; Pinheiro, Fernando; Fonseca, Barbara Cristina et al. (2014):

Sleep patterns and sleepiness among young students: A longitudinal study before and after admission as trainees and apprentices.

In: *Chronobiol Int*, S. 1–8. DOI: 10.3109/07420528.2014.993765.

Abstract:

In developing countries, youngsters start to work during the high school years. Several studies have shown the difficulties associated with double shift, i.e. to work and study concomitantly, and its negative health consequences. Work and study time, as social synchronizers, have significant effects on the sleep-wake cycle (SWC). The purpose of this study was to evaluate sleep patterns and sleepiness in young students before and after entering the workforce as apprentices or trainees. Participants were 40 adolescents (26 males), 15-18 years old (mean = 15.8 years old) engaged in a first-job program at a non-governmental organization (NGO) while attending evening high school in the outskirts of the city of Sao Paulo, Brazil. The participants wore actigraphs (Ambulatory Monitoring, Inc.) and registered subjective sleepiness on KSS (Karolinska Sleepiness Scale) along 7 consecutive days, before and after admission to the job. Descriptive analyses were performed, and the variables were tested by means of the t-test and repeated measures ANOVA taking factors day of the week and time of the day into consideration. The participants' sleep duration on weekdays exhibited significant difference before and after starting work ($F = 4.55$; $p = 0.04$); the mean sleep duration was 492 min (SD = 44 min) before admission to the job to decrease to 405 min (SD = 58 min) after starting work. The mid-sleep time exhibited significant difference on weekdays before and after starting work (04:57 h; SD = 45 min versus 03:30 h; SD = 54 min; $F = 4.91$; $p = 0.03$). Finally, also sleepiness on weekdays ($F = 6.41$; $p = 0.04$) and at the waking time ($F = 10.75$; $p < 0.01$) exhibited significant difference before and after admission to the job. This article emphasizes the fact that social synchronizers like working during the day and studying in the evening changed the participants' SWC and were associated with sleep restriction. Brazilian governmental incentives notwithstanding, simultaneous performance of several activities by young workers should be considered as an occupational health hazard. Employment policies targeting young workers should take the dual shift - study and work - and its effects on the sleep-wake cycle into account.

Fisher, Steve R.; Galloway, Rebecca V.; Kuo, Yong-Fang; Graham, James E.; Ottenbacher, Kenneth J.; Ostir, Glenn V.; Goodwin, James S. (2011):

Pilot study examining the association between ambulatory activity and falls among hospitalized older adults.

In: *Arch Phys Med Rehabil* 92 (12), S. 2090–2092. DOI: 10.1016/j.apmr.2011.06.022.

Abstract:

OBJECTIVE\r\nTo examine the ambulatory activity of older patients who had a documented fall during hospitalization for acute illness.\r\nDESIGN\r\nA retrospective case-control design was used in a pilot study of patients (n=10; ≥65y) who had a documented fall during their hospital stay and matched controls (n=25) who did not fall.\r\nSETTING\r\nAcute care medical/surgical unit.\r\nPARTICIPANTS\r\nMen and women 65 years and older who wore a step activity monitor while hospitalized.\r\nINTERVENTIONS\r\nNot applicable.\r\nMAIN OUTCOME MEASURES\r\nFall incidents during the hospital stay were documented by the nurse in a standardized patient safety event report in accordance with hospital policy. The number of steps per 24-hour interval, time spent walking, and total number of activity episodes were determined for patients and controls.\r\nRESULTS\r\nOn average ± SD, patients who fell took 480.3 ± 432.2 steps per hospital day, spent 53.8 ± 36.9 minutes

walking, and engaged in 25.8 ± 16.9 episodes of activity. Mean daily steps, time spent walking, and number of activity episodes for patients who did not fall were 680.1 ± 876.0, 50.1 ± 58.6, and 21.6 ± 23.8, respectively. Logistic regression results indicated no association between the fall outcome and mean daily steps (odds ratio=.95; 95% confidence interval, 0.84-1.06).\r\nCONCLUSIONS\r\nAmbulatory activity among patients who fell varied widely. Mean daily steps, time spent walking, and number of episodes of activity were comparable with matched controls who did not fall. Patient falls were more likely to be associated with cognitive and hospital environmental factors than actual amount of walking.

Fisher, C. D.; Minbashian, A.; Beckmann, N.; Wood, R. E. (2013):

Task appraisals, emotions, and performance goal orientation.

In: *J Appl.Psychol.* 98 (2), S. 364–373. DOI: 10.1037/a0031260.

Abstract:

We predict real-time fluctuations in employees' positive and negative emotions from concurrent appraisals of the immediate task situation and individual differences in performance goal orientation. Task confidence, task importance, positive emotions, and negative emotions were assessed 5 times per day for 3 weeks in an experience sampling study of 135 managers. At the within-person level, appraisals of task confidence, task importance, and their interaction predicted momentary positive and negative emotions as hypothesized. Dispositional performance goal orientation was expected to moderate emotional reactivity to appraisals of task confidence and task importance. The hypothesized relationships were significant in the case of appraisals of task importance. Those high on performance goal orientation reacted to appraisals of task importance with stronger negative and weaker positive emotions than those low on performance goal orientation. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Fisher, Cynthia D.; To, March L. (2012):

Using experience sampling methodology in organizational behavior.

In: *J. Organiz. Behav.* 33 (7), S. 865–877. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-25717-001%26site%3dehost-live;Cynthia.

Abstract:

Experience sampling methodology and daily diary (ESM/DD) research elicits repeated reports of immediate or very recent experiences from the same sample of people for several days or weeks. Experience sampling and diary methods were almost unheard of in organizational research 15 years ago, but the past decade has seen a rapid rise in their use. These methods are helpful in studying dynamic within-person processes involving affect, behavior, interpersonal interactions, work events, and other transient workplace phenomena over time. Assessing cross-level effects of traits or other stable features on within-person processes and reactivity is also possible with ESM/DD data. We provide an introduction to issues in designing and carrying out an ESM/DD study, including data collection choices and schedules, measures, technology, training and motivation of participants, and analysis of multilevel data. We offer best practice recommendations and refer readers to further resources for additional detail on conducting and analyzing ESM/DD research. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Fitzgerald-Dejean, Donna M.; Rubin, Scott S.; Carson, Russell L. (2012):

An application of the experience sampling method to the study of aphasia: A case report.

In: *Aphasiology* 26 (2), S. 234–251. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-29295-007&site=ehost-live;dfitzgeralddejean@cox.net.

Abstract:

Background: Researchers stress that functional health and psychological well-being are important aspects of quality of life in the investigation of individuals with aphasia. Employed in the social sciences, the experience sampling method (ESM) has begun to shed light on deviations in participants' momentary responses to behavioural contingencies in naturalistic environments. Applications of ESM have demonstrated value in monitoring within-participant variations in mood, psychopathology, and treatment outcomes while minimising the effect of memory bias. Additionally, the application of ESM in psychological cognitive-behavioural therapy and occupational therapy (OT) research reportedly appeared to contribute to treatment success. A time-

based, fixed-schedule sampling application of ESM was used in this study to attain self-reports throughout an aphasia treatment programme. Aims: The current investigation introduced the ESM paradigm to the study of aphasia and piloted its use in measuring psychoemotional variables in an individual with chronic aphasia participating in an intensive treatment regime. Methods & Procedures: Repeated ESM probes were administered during a university-based treatment programme to measure the daily responses of a 75-year-old participant with a moderate-to-severe communicative impairment secondary to a cerebral vascular accident (CVA). A total of 20 brief ESM probes were cued by clinicians at four fixed times per day, 5 days a week during a 35-hour a week, 6-week programme. Probes conducted throughout each day used a 5-point Likert scale to query participant response to psychoemotional variables perceived happiness, perceived tiredness, perceived stress, and perceived communication satisfaction. Outcomes & Results: Findings revealed that the participant with aphasia was able to respond to a 5-point Likert scale administered with a personal data assistant (PDA) with 100% compliance when cued by clinicians that it was time to complete the ESM probe (464 responses across 29 days). The internal validity of internal states used in this study is supported by the strong negative correlation found with perceived happiness between both perceived tiredness ($p < .01$) and perceived stress ($p < .01$), as well as the positive correlation found between the negative states of perceived tiredness and perceived stress ($p < .01$). Conclusions: This initial success of ESM implementation in this case study of aphasia treatment suggests that further explorations are needed in the application of ESM in aphasia research. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Fleeson, William; Noftle, Erik E. (2012):

Personality research. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 525–538. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-029%26site%3dehost-live.

Abstract:

(from the chapter) Experience sampling methodology (ESM) is a method that allows for repeated measurement of behavior states within the context of individuals' everyday lives. Our purpose in this chapter is to articulate the kinds of conceptual questions about personality that ESM and other daily methods are uniquely suited to address. Because of its ability to assess what is actually happening in the moment, on multiple occasions, ESM opens up new questions about the trait-behavior relationship and the manifestation, the dynamics, and the inner workings of personality. In other words, how much and in what ways do people's traits influence behavior? How do people's personalities and behavior vary across occasions and time? How do people's traits function, and according to which internal processes? Although ESM has contributed a great deal of understanding to the connection between relationship variables and behavior (Gable, Gosnell, & Prok, this volume), and affective traits and experienced affect (e.g., Augustine & Larsen, this volume), we wish to locate this chapter more centrally in the conceptual domain of personality by articulating five specific conceptual questions that are relevant to personality and are addressable by ESM. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Fleeson, William; Wilt, Joshua (2010):

The relevance of big five trait content in behavior to subjective authenticity: do high levels of within-person behavioral variability undermine or enable authenticity achievement?

In: *J Personality* 78 (4), S. 1353–1382. DOI: 10.1111/j.1467-6494.2010.00653.x.

Abstract:

Individuals vary their behavior from moment to moment a great deal, often acting \"out of character\" for their traits. This article investigates the consequences for authenticity. We compared 2 hypotheses-trait consistency, that individuals feel most authentic when acting in a way consistent with their traits; and state-content significance, that some ways of acting feel more authentic because of their content and consequences, regardless of the actor's corresponding traits. Three studies using experience-sampling methodology in laboratory and natural settings, with participants ages 18-51, strongly supported the state-content significance hypothesis and did not support the trait-consistency hypothesis. Authenticity was consistently associated with acting highly extraverted, agreeable, conscientious, emotionally stable, and intellectual, regardless of the actor's traits. Discussion focuses on possible implications for within-person variability in behavior and for the nature of the self-concept.

Fleury, A.; Mourcou, Q.; Franco, C.; Diot, B.; Demongeot, J.; Vuillerme, N. (2013):

Evaluation of a Smartphone-based audio-biofeedback system for improving balance in older adults - A pilot study.

In: *Conf.Proc.IEEE Eng Med.Biol.Soc.* 2013 (1557-170X (Linking)), S. 1198–1201. DOI: 10.1109/EMBC.2013.6609721.

Abstract:

This study was designed to assess the effectiveness of a Smartphone-based audio-biofeedback (ABF) system for improving balance in older adults. This so-called "iBalance-ABF" system that we recetly developed is "all-inclusive" in the sense that its three main components of a balance prosthesis, (i) the sensory input unit, (ii) the processing unit, and (iii) the sensory output unit, are entirely embedded into the Smartphone. The underlying principle of this system is to supply the user with supplementary information about the medial-lateral (ML) trunk tilt relative to a predetermined adjustable "dead zone" through sound generation in earphones. Six healthy older adults voluntarily participated in this pilot study. Eyes closed, they were asked to stand upright and to sway as little as possible in two (parallel and tandem) stance conditions executed without and with the use of the iBalance-ABF system. Results showed that, without any visual information, the use of the Smartphone-based ABF allowed the older healthy adults to significantly decrease their ML trunk sway in the tandem stance posture and to mitigate the destabilizing effect induced by this particular stance. Although an extended study including a larger number of participants is needed to confirm these data, the present results are encouraging. They do suggest that Smartphone-based ABF system could be used for balance training and rehabilitation therapy in older adults

Floro, Joshua Nicholas (2012):

Reduced regulation of negative emotion with escalations in smoking behavior during high school: A dose-response effect.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (11-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99100-084&site=ehost-live.

Abstract:

Recent research suggests that cigarette smoking is associated with developing externalizing and internalizing psychological disorders. Because reduced emotion regulation is also associated with developing externalizing and internalizing disorders, and because cigarette smoking and nicotine addiction are theorized to interfere with emotion regulation processes, the association between cigarette smoking and psychological disorders may be mediated by reduced emotion regulation. This is the first study to examine the relationship between escalations in cigarette smoking behavior and emotion regulation. In a secondary analysis of electronic diary data from a multi-cohort, longitudinal observation study of high school students, the present study tested whether cigarette smoking was associated with reduced regulation of anger, sadness, anxiety, and happiness. Semiannually across the 4 high school years, students completed electronic diaries during 4 consecutive days. For each of these 4-day waves, smoking status was categorized as nonsmoking, infrequent smoking, or light-to-moderate smoking behavior. Daily emotion regulation was measured by area under the curve (AUC) and then averaged over a 4-day monitoring wave. AUC is a composite measure of emotion intensity, lability, and duration. A total of 178 male (55.6%) and female (44.4%) participants were included. Within-subject testing of the relationship between escalations in cigarette smoking behavior and 4-day wave measures of emotion regulation was done through repeated measures logistic regression modeling (Proc Genmod, SAS). Through forward selecting, stepwise model building, the present study attempted to control for sex, age, and freshman year externalizing and internalizing levels. Escalations in cigarette smoking behavior were associated with reductions in regulation of anger and sadness. A similar trend was found for anxiety but not at a statistically significant level. Escalations in cigarette smoking behavior were not associated with reductions in regulation of happiness. These findings indicate that adolescents become less adept at regulating their negative emotions as they progress in cigarette smoking behavior from nonsmoking to light-to-moderate smoking. These smoking-related reductions in regulation of negative emotion occur at subclinical levels of nicotine addiction. Further, these smoking-related reductions in regulation of negative emotion may put adolescents at risk for developing externalizing and internalizing disorders such as conduct disorder or depression, respectively. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Foley, L. S.; Maddison, R.; Jiang, Y.; Olds, T.; Ridley, K. (2011):

It's not just the television: survey analysis of sedentary behaviour in New Zealand young people.

In: *Int J Behav Nutr Phys Act* 8 (1479-5868 (Linking)), S. 132. DOI: 10.1186/1479-5868-8-132.

Abstract:

ABSTRACT: BACKGROUND: Sedentary behaviour has been linked with adverse health outcomes in young people; however, the nature and context of being sedentary is poorly understood. Accurate quantification and description of sedentary behaviour using population-level data is required. The aim of this research was to describe sedentary behaviour among New Zealand (NZ) youth and examine whether sedentary behaviour differs by Body Mass Index (BMI) status in this population. METHODS: A national representative cross-sectional survey of young people aged 5-24 years (n = 2,503) was conducted in 2008-2009. Data from this survey, which included subjectively (recall diary; n = 1,309) and objectively (accelerometry; n = 960) measured sedentary behaviour for participants aged 10-18 years were analysed using survey weighted methods. RESULTS: Participants self-reported spending on average 521 minutes per day (standard error [SE] 5.29) in total sedentary behaviour, 181 minutes per day (SE 3.91) in screen-based sedentary activities (e.g., television and video games), and 340 minutes per day (SE 5.22) in other non-screen sedentary behaviours (e.g., school, passive transport and self-care). Accelerometer-measured total sedentary behaviour was on average 420 minutes per day (SE 4.26), or 53% (SE 0.42%) of monitored time. There were no statistically significant differences in time spent in sedentary behaviour among overweight, obese and healthy/underweight young people. CONCLUSIONS: Both subjective and objective methods indicate that NZ youth spend much of their waking time being sedentary. No relationships were found between sedentary behaviour and BMI status. These findings extend previous research by describing engagement in specific sedentary activities, as well as quantifying the behaviour using an objective method. Differences in what aspects of sedentary behaviour the two methods are capturing are discussed. This research highlights the potential for future interventions to target specific sedentary behaviours or demographic groups

Fonareva, Irina; Amen, Alexandra M.; Ellingson, Roger M.; Oken, Barry S. (2012):

Differences in stress-related ratings between research center and home environments in dementia caregivers using ecological momentary assessment.

In: *International Psychogeriatrics* 24 (1), S. 90–98. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-30506-011&site=ehost-live;oken@ohsu.edu.

Abstract:

BACKGROUND:

Clinicians and researchers working with dementia caregivers typically assess caregiver stress in a clinic or research center, but caregivers' stress is rooted at home where they provide care. This study aimed to compare ratings of stress-related measures obtained in research settings and in the home using ecological momentary assessment (EMA).

METHODS:

EMA of 18 caregivers (mean age 66.4 years ±7.8; 89% females) and 23 non-caregivers (mean age 66.4 years ±7.9; 87% females) was implemented using a personal digital assistant. Subjects rated their perceived stress, fatigue, coping with current situation, mindfulness, and situational demand once in the research center and again at 3-4 semi-random points during a day at home. The data from several assessments conducted at home were averaged for statistical analyses and compared with the data collected in the research center.

RESULTS:

The testing environment had a differential effect on caregivers and non-caregivers for the ratings of perceived stress ($p < 0.01$) and situational demand ($p = 0.01$). When tested in the research center, ratings for all measures were similar between groups, but when tested at home, caregivers rated their perceived stress as higher than non-caregivers ($p = 0.02$). Overall, caregivers reported higher perceived stress at home than in the research center ($p = 0.02$), and non-caregivers reported greater situational demand in the research center than at home ($p < 0.01$).

CONCLUSIONS:

The assessment method and environment affect stress-related outcomes. Evaluating participants in their natural environment provides a more sensitive measure of stress-related outcomes. EMA provides a convenient way to gather data when evaluating dementia caregivers.

Fontana, J. M.; Sazonov, E. S. (2012):

A robust classification scheme for detection of food intake through non-invasive monitoring of chewing.

In: *Conf.Proc.IEEE Eng Med.Biol.Soc.* 2012 (1557-170X (Linking)), S. 4891–4894. DOI: 10.1109/EMBC.2012.6347090.

Abstract:

Automatic methods for food intake detection are needed to objectively monitor ingestive behavior of individuals in a free living environment. In this study, a pattern recognition system was developed for detection of food intake through the classification of jaw motion. A total of 7 subjects participated in laboratory experiments that involved several activities of daily living: talking, walking, reading, resting and food intake while being instrumented with a wearable jaw motion sensor. Inclusion of such activities provided a high variability to the sensor signal and thus challenged the classification task. A forward feature selection process decided on the most appropriate set of features to represent the chewing signal. Linear and RBF Support Vector Machine (SVM) classifiers were evaluated to find the most suitable classifier that can generalize the high variability of the input signal. Results showed that an average accuracy of 90.52% can be obtained using Linear SVM with a time resolution of 15 sec

Foo, Maw-Der; Uy, Marilyn A.; Baron, Robert A. (2009):

How do feelings influence effort? An empirical study of entrepreneurs' affect and venture effort.

In: *J Appl Psychol* 94 (4), S. 1086–1094. DOI: 10.1037/a0015599.

Abstract:

How do feelings influence the effort of entrepreneurs? To obtain data on this issue, the authors implemented experience sampling methodology in which 46 entrepreneurs used cell phones to provide reports on their affect, future temporal focus, and venture effort twice daily for 24 days. Drawing on the affect-as-information theory, the study found that entrepreneurs' negative affect directly predicts entrepreneurs' effort toward tasks that are required immediately. Results were consistent for within-day and next-day time lags. Extending the theory, the study found that positive affect predicts venture effort beyond what is immediately required and that this relationship is mediated by future temporal focus. The mediating effects were significant only for next-day outcomes. Implications of findings on the nature of the affect-effort relationship for different time lags are discussed.

Foody, Ciara; James, Jack E.; Leader, Geraldine (2014):

Parenting stress, salivary biomarkers, and ambulatory blood pressure: A comparison between mothers and fathers of children with autism spectrum disorders.

In: *Journal of Autism and Developmental Disorders*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-42907-001%26site%3dehost-live.

Abstract:

Parents of children with autism spectrum disorders (ASD) may experience higher levels of stress and health problems than parents of children with typical development. However, most research has focused on mothers, with emphasis on parent-reported stress and wellbeing. This study compared parenting responsibility, distress, anxiety, depression, cortisol, alpha-amylase, and cardiovascular activity between 19 mother–father dyads of children with ASD. Mothers reported higher parenting responsibility, distress, anxiety, and depression than fathers, while fathers had higher blood pressure and heart rate variability. Mothers and fathers had lower than average morning cortisol levels, suggesting stress effects on the hypothalamic–pituitary–adrenal-axis. Parents of children with ASD may benefit from routine health screening (particularly adrenal and cardiovascular function) and referral for stress reduction interventions or supports. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Forand, Nicholas R.; Gunthert, Kathleen C.; German, Ramaris E.; Wenze, Susan J. (2010):

Appearance investment and everyday interpersonal functioning: An experience sampling study.

In: *Psychology of Women Quarterly* 34 (3), S. 380–393.

Abstract:

Several studies have shown that body satisfaction affects interpersonal functioning. However, few have studied the specific interpersonal correlates of another important body image dimension, appearance investment—that is, the importance a woman

places on appearance. We used an experience sampling design with PDA (personal digital assistant) devices to assess how 92 college women's appearance investment is related to perceptions of everyday social interactions and to investigate the association of these perceptions with mood and self-esteem. For 1 week, participants completed electronic diaries of their mood, self-esteem, and perceptions of one-on-one interactions. High appearance investment was associated with a stronger relationship between perceived communion of the interaction and negative mood and self-esteem. Notably, highly appearance-invested women did not report differences in average momentary levels of perceived communion or agency in interactions, negative mood, or self-esteem when compared to women with lower appearance investment. In contrast, women with low body satisfaction reported lower average perceptions of communion and self-esteem as well as higher average negative mood compared to women with higher body satisfaction, but no relationships among perceptions and self-esteem and mood were found. Thus, self-esteem and negative mood in women high in appearance investment might be contingent on perceptions of communion in interactions, even though they appear to have average levels of mood and self-esteem in general. This mood and self-esteem contingency could predispose appearance-invested women to psychological distress or eating pathology.

Forbes, E. E.; Stepp, S. D.; Dahl, R. E.; Ryan, N. D.; Whalen, D.; Axelson, D. A. et al. (2012):

Real-world affect and social context as predictors of treatment response in child and adolescent depression and anxiety: an ecological momentary assessment study.

In: *J.Child Adolesc.Psychopharmacol.* 22 (1), S. 37–47. DOI: 10.1089/cap.2011.0085.

Abstract:

OBJECTIVE: Response to treatment in child and adolescent affective disorders is variable, with limited ability of any one treatment to improve outcome across patients. Unfortunately, we know little about the factors that explain this variability in treatment response. Individual differences in the social and affective dynamics of daily life could help to elucidate the characteristics of youth who respond to treatment. METHODS: We used ecological momentary assessment of negative affect, positive affect, and companions in natural settings over 4 days in a sample of young people with depressive and anxiety disorders who participated in an 8-week open trial of cognitive behavioral therapy (CBT), selective serotonin reuptake inhibitors (SSRIs), or a combination of the two. Clinicians rated participants' clinical severity at five time points, and participants reported their symptoms before and after treatment. Latent growth curve models were used to predict rate of change in clinical severity from pretreatment affect in natural settings. RESULTS: Participants with high positive affect (PA), low negative affect (NA), and a high PA:NA ratio at baseline had lower severity, depressive symptoms, and anxiety symptoms at the end of treatment. Lower posttreatment symptoms were associated with spending more time with fathers and less time with peers before treatment. Although baseline affect was not associated with initial symptom severity, high NA and low PA:NA at baseline were related to slower rate of decline of severity during treatment. When baseline symptoms were included in models, NA and PA:NA predicted rate of decline in severity during treatment, whereas self-reported depressive and anxiety symptoms at baseline did not. CONCLUSION: A more typical profile of baseline affective functioning in natural settings-that is, lower NA and higher PA-and time with fathers, could provide a foundation for treatment response in children and adolescents. Affective and social dynamics in natural settings could ultimately help investigate which young people might benefit from current treatments

Forbush, Kelsie T.; Hunt, Tyler K. (2014):

Characterization of eating patterns among individuals with eating disorders: What is the state of the plate?

In: *Physiol Behav. DOI:* 10.1016/j.physbeh.2014.02.045.

Abstract:

Eating disorders will affect approximately 18 million individuals in the United States at some point in their lives, and are associated with significant psychological distress, psychosocial and quality-of-life impairment, medical morbidity, and mortality. Although aberrant eating behaviors play a central role in diagnostic definitions for eating disorders, much remains to be learned about eating patterns, diet quality, and energy balance among individuals with eating pathology. The goal of the current paper was to systematically review and integrate findings from published research studies characterizing the eating behaviors of individuals with eating disorders, including findings from both descriptive and laboratory-based research. We also describe results from studies using ecological momentary assessment - a methodology that assesses individuals' behaviors in their natural environment as they occurring, which may reduce retrospective recall bias, and provide improved ability to prospectively assess the temporal ordering of changes in multiple eating behaviors over time. We conclude with suggestions for future research, including the need for additional studies to test for differences in eating patterns among different demographic groups of individuals with eating disorders, and the need for new, more objective, assessment tools.

Forman, Daniel E.; Lafond, Karen; Panch, Trishan; Allsup, Kelly; Manning, Kenneth; Sattelmair, Jacob (2014):

Utility and Efficacy of a Smartphone Application to Enhance the Learning and Behavior Goals of Traditional Cardiac Rehabilitation: A FEASIBILITY STUDY.

In: *J Cardiopulm Rehabil Prev. DOI:* 10.1097/HCR.0000000000000058.

Abstract:

PURPOSE:: Most eligible patients do not participate in traditional clinic-based cardiac rehabilitation (CR) despite well-established benefits. Novel approaches to overcome logistic obstacles and increase efficiencies of learning, behavior modification, and exercise surveillance may increase CR participation. In an observational study, the feasibility and utility of a mobile smartphone application for CR, Heart Coach (HC), were assessed as part of standard care. Ultimately, innovative CR models incorporating HC may facilitate better CR usage and value. METHODS:: Twenty-six patients enrolled in CR installed HC. Over the next 30 days, they were prompted by HC to complete a daily "task list" that included medications, walking, education (text and videos), and surveys. Cardiac rehabilitation providers monitored each patient's progress through a HC-based Web dashboard and also sent them personalized feedback and support. Completion of the tasks and feedback (qualitative and quantitative) from patients and clinicians were tracked. RESULTS:: Patients engaged with HC 90% of days during the study period, with uniformly favorable impact on compliance and adherence. Eighty-three percent of patients reported a positive/very positive HC experience. Providers reported that HC enhanced their provision of therapy by improving communication, clinical insight, patient participation, and program efficiency. CONCLUSIONS:: Integrating a mobile care delivery platform into CR was feasible, safe, and agreeable to patients and clinicians. It enhanced patient perceptions of CR care and physician perceptions of the CR caregiving process. Mobile-enabled technologies hold promise to extend the quality and reach of CR, and to better achieve contemporary accountable care goals.

Fox, K. R.; Hillsdon, M.; Sharp, D.; Cooper, A. R.; Coulson, J. C.; Davis, M. et al. (2011):

Neighbourhood deprivation and physical activity in UK older adults.

In: *Health & Place* 17 (2), S. 633–640. DOI: 10.1016/j.healthplace.2011.01.002.

Abstract:

The benefits of regular physical activity for older adults are now well-established but this group remain the least active sector of the population. In this paper, the association between levels of neighbourhood deprivation and physical activity was assessed. A sample of 125 males with a mean age of 77.5 (±5.6) years, and 115 females with a mean age of age 78.6 (±8.6) underwent 7-day accelerometry, a physical performance battery, and completed a daily journeys log. Univariate associations between physical activity parameters and level of deprivation of neighbourhood were extinguished in regression models controlling for age, gender, and level of educational attainment. Age, gender, educational attainment, body mass index, physical function, and frequency of journeys from the home explained between 50% and 54% of variance in activity parameters. These results suggest the importance of strategies to help older adults maintain physical function, healthy weight, and remain active in their communities.

Fox, Kennethr.; Stathi, Afroditi; McKenna, Jim; Davis, Markg. (2007):

Physical activity and mental well-being in older people participating in the Better Ageing Project.

In: *Eur J Appl Physiol* 100 (5), S. 591–602. DOI: 10.1007/s00421-007-0392-0.

Abstract:

Increasing evidence suggests that physical activity can prevent some aspects of mental illness in older people such as depression, dementia and Alzheimer's disease. Additionally, limited research has shown that engagement in structured exercise can improve aspects of psychological well-being such as mood and self-perceptions in older adults. However, the relationship between incidental daily activity such as walking or time spent sedentary, with psychological well-being has not been investigated. The Better Ageing Project provided an opportunity to assess well-being and quality of life using standardised questionnaires with 176 adults aged 70 and over. Accelerometry was used to objectively assess daily energy expended in physical activity at different levels of intensity. In addition, an assessment of the impact of the 12-month Better Ageing structured group exercise programme was assessed through questionnaires and interviews. Total daily physical activity energy expenditure (joules/day) and amount of time spent in activity of at least moderate intensity were weakly related (r = 0.20-0.28) to quality of life, subjective well-being and physical self-perceptions. Time spent sedentary (min/day) was weakly and negatively related to several mental health indicators. The quantitative data showed only minor psychological benefits of the exercise

intervention. In contrast, interviews with 27 research participants and 4 exercise leaders suggested that important improvements in perceived function and social benefits had been experienced.

Francis, Shelby L.; Letuchy, Elena M.; Levy, Steven M.; Janz, Kathleen F. (2014):

Sustained effects of physical activity on bone health: Iowa Bone Development Study.

In: *Bone* 63C, S. 95–100. DOI: 10.1016/j.bone.2014.03.004.

Abstract:

Studies of youth athletics and interventions have shown some maintenance of bone mineral content (BMC; g) after cessation of training, but less is known about sustained effects of everyday physical activity (PA). Using a prospective cohort, this report examined potential effects of childhood PA on adolescent BMC. Participants (N=156 boys, 170 girls) had exams at ages 5, 13, and 15. Body size and maturity were determined using anthropometry. Moderate-to-vigorous-intensity PA (MVPA) and vigorous-intensity PA (Vigorous PA) were measured using accelerometry. BMC of the spine and hip was measured using dual-energy X-ray absorptiometry. Mixed regression models tested whether PA at age 5 affected BMC at ages 13 and 15 after adjustment for age (year), height (cm), weight (kg), maturity (pre-peak height velocity or post), and activity level (min/day). Analysis was repeated to control for age 5 BMC. On average, boys participated in 59, 52, and 38min of MVPA and 13, 17, and 11min of Vigorous PA at ages 5, 13, and 15, respectively. MVPA (beta=0.799) and Vigorous PA (beta=1.338) at age 5 predicted later spine BMC ($p<0.05$). MVPA (beta=0.480) at age 5 predicted hip BMC. Girls participated in 47, 33, and 26min of MVPA and 10, 9 and 7min of Vigorous PA at ages 5, 13, and 15, respectively. Neither MVPA nor Vigorous PA predicted later spine BMC. MVPA (beta=0.302) at age 5 predicted hip BMC. After controlling for BMC at age 5 as well as the other covariates, the effect of MVPA (beta=0.695) and Vigorous PA (beta=1.079) at age 5 remained significant for boys at the spine. For girls, neither MVPA nor Vigorous PA at age 5 predicted spine or hip BMC. Children's early PA appears to have a modest effect on adolescent BMC at the critical regions of spine and hip; benefits may be greater for geometric changes, which future studies should include.

Franklin, M. S.; Mrazek, M. D.; Anderson, C. L.; Smallwood, J.; Kingstone, A.; Schooler, J. W. (2013):

The silver lining of a mind in the clouds: interesting musings are associated with positive mood while mind-wandering.

In: *Front Psychol* 4 (1664-1078 (Electronic)), S. 583. DOI: 10.3389/fpsyg.2013.00583.

Abstract:

The negative effects of mind-wandering on performance and mood have been widely documented. In a recent well-cited study, Killingsworth and Gilbert (2010) conducted a large experience sampling study revealing that all off-task episodes, regardless of content, have equal to or lower happiness ratings, than on-task episodes. We present data from a similarly implemented experience sampling study with additional mind-wandering content categories. Our results largely conform to those of the Killingsworth and Gilbert (2010) study, with mind-wandering generally being associated with a more negative mood. However, subsequent analyses reveal situations in which a more positive mood is reported after being off-task. Specifically when off-task episodes are rated for interest, the high interest episodes are associated with an increase in positive mood compared to all on-task episodes. These findings both identify a situation in which mind-wandering may have positive effects on mood, and suggest the possible benefits of encouraging individuals to shift their off-task musings to the topics they find most engaging

Franklin, Michael S.; Mrazek, Michael D.; Anderson, Craig L.; Johnston, Charlotte; Smallwood, Jonathan; Kingstone, Alan; Schooler, Jonathan W. (2014):

Tracking Distraction: The Relationship Between Mind-Wandering, Meta-Awareness, and ADHD Symptomatology.

In: *J Atten Disord. DOI:* 10.1177/1087054714543494.

Abstract:

OBJECTIVE: Although earlier work has shown a link between mind-wandering and ADHD symptoms, this relationship has not been further investigated by taking into account recent advances in mind-wandering research. METHOD: The present study provides a comprehensive assessment of the relationship between mind-wandering and ADHD symptomatology in an adult community sample (N = 105, 71 females, M age = 23.1) using laboratory measures and experience sampling during daily life. RESULTS: Mind-wandering and detrimental mind-wandering were positively associated with ADHD symptoms. Meta-awareness

of mind-wandering mediated the relationship between ADHD symptomatology and detrimental mind-wandering, suggesting that some of the negative consequences can be ameliorated by strategies that facilitate meta-awareness. Interestingly, participants with low ADHD scores showed a positive relationship between detrimental mind-wandering and useful mind-wandering; however, participants with high ADHD scores failed to engage in this type of "strategic" mind-wandering. CONCLUSION: These results provide new insights into the relationship between ADHD symptomatology and mind-wandering that could have important clinical implications.

Franklin, S. S.; Thijs, L.; Hansen, T. W.; Li, Y.; Boggia, J.; Kikuya, M. et al. (2012):

Significance of white-coat hypertension in older persons with isolated systolic hypertension: a meta-analysis using the International Database on Ambulatory Blood Pressure Monitoring in Relation to Cardiovascular Outcomes population.

In: *Hypertension* 59 (3), S. 564–571. DOI: 10.1161/HYPERTENSIONAHA.111.180653.

Abstract:

The significance of white-coat hypertension in older persons with isolated systolic hypertension remains poorly understood. We analyzed subjects from the population-based 11-country International Database on Ambulatory Blood Pressure Monitoring in Relation to Cardiovascular Outcomes database who had daytime ambulatory blood pressure (BP; ABP) and conventional BP (CBP) measurements. After excluding persons with diastolic hypertension by CBP (>/=90 mm Hg) or by daytime ABP (>/=85 mm Hg), a history of cardiovascular disease, and persons <18 years of age, the present analysis totaled 7295 persons, of whom 1593 had isolated systolic hypertension. During a median follow-up of 10.6 years, there was a total of 655 fatal and nonfatal cardiovascular events. The analyses were stratified by treatment status. In untreated subjects, those with white-coat hypertension (CBP >/=140/<90 mm Hg and ABP <135/<85 mm Hg) and subjects with normal BP (CBP <140/<90 mm Hg and ABP <135/<85 mm Hg) were at similar risk (adjusted hazard rate: 1.17 [95% CI: 0.87-1.57]; P=0.29). Furthermore, in treated subjects with isolated systolic hypertension, the cardiovascular risk was similar in elevated conventional and normal daytime systolic BP as compared with those with normal conventional and normal daytime BPs (adjusted hazard rate: 1.10 [95% CI: 0.79-1.53]; P=0.57). However, both treated isolated systolic hypertension subjects with white-coat hypertension (adjusted hazard rate: 2.00; [95% CI: 1.43-2.79]; P<0.0001) and treated subjects with normal BP (adjusted hazard rate: 1.98 [95% CI: 1.49-2.62]; P<0.0001) were at higher risk as compared with untreated normotensive subjects. In conclusion, subjects with sustained hypertension who have their ABP normalized on antihypertensive therapy but with residual white-coat effect by CBP measurement have an entity that we have termed, "treated normalized hypertension." Therefore, one should be cautious in applying the term "white-coat hypertension" to persons receiving antihypertensive treatment

Franks, A. M.; Schmidt, J. M.; McCain, K. R.; Fraer, M. (2012):

Comparison of the effects of energy drink versus caffeine supplementation on indices of 24-hour ambulatory blood pressure.

In: *Ann.Pharmacother.* 46 (2), S. 192–199. DOI: 10.1345/aph.1Q555.

Abstract:

BACKGROUND: Cardiovascular events associated with energy drink consumption have been reported, but few data exist to delineate the hemodynamic effects of energy drinks. OBJECTIVE: To compare the effects of an energy drink versus caffeine supplementation on blood pressure (BP) indices as measured by 24-hour ambulatory BP monitoring (ABPM). METHODS: Healthy, nonsmoking, normotensive volunteers (aged 18-45 years) taking no medications were enrolled in a single-center, open-label, 2-period crossover pilot study. During each study period, subjects received either an energy drink (Red Bull Energy Drink, each dose containing 80 mg of caffeine and 1000 mg of taurine in an 8.3-oz serving) or a control (compounded caffeine solution, each dose containing 80 mg of caffeine solution in 8 oz of bottled water) at 0800, 1100, 1500, and 1900 hours and underwent 24-hour ABPM. The study periods were separated by a washout period (4-30 days). Mean 24-hour, daytime, and nighttime systolic (SBP), diastolic (DBP), and mean arterial (MAP) BP; BP load; and percent nocturnal dipping were compared between study periods. RESULTS: Nine subjects (5 females, mean [SD] age 27.7 [5.0] years) completed the study. Mean 24-hour SBP (123.2 vs 117.4 mm Hg, p = 0.04), DBP (73.6 vs 68.2 mm Hg, p = 0.02), and MAP (90.1 vs 84.8 mm Hg, p = 0.03) were significantly higher during energy drink supplementation versus caffeine supplementation. Daytime DBP (77.0 vs 72.0 mm Hg, p = 0.04) also was significantly higher with the energy drink versus caffeine supplementation. Trends in higher daytime SBP (127.0 vs 121.9 mm Hg, p = 0.05) and MAP (93.6 vs 88.6 mm Hg, p = 0.05) were recorded with energy drink supplementation versus caffeine supplementation. Nighttime SBP and DBP loads were significantly higher with the energy drink, but nocturnal dipping did not differ significantly between study periods. CONCLUSIONS: Single-day energy drink supplementation increased mean 24-hour and daytime BP compared to caffeine control in this pilot study. Additional research is warranted to better understand the hemodynamic effects of energy drink consumption

Freercks, R. J.; Swanepool, C. R.; Turest-Swartz, K. L.; Carrara, H. R.; El Moosa, S.; Lachman, A. S.; Rayner, B. L. (2014):

Vascular calcification is not associated with increased ambulatory central aortic systolic pressure in prevalent dialysis patients.

In: *Cardiovasc J Afr* 25 (1), S. 4–8. DOI: 10.5830/CVJA-2013-081.

Abstract:

INTRODUCTION: Central aortic systolic pressure (CASP) strongly predicts cardiovascular outcomes. We undertook to measure ambulatory CASP in 74 prevalent dialysis patients using the BPro (HealthStats, Singapore) device. We also determined whether coronary or abdominal aortic calcification was associated with changes in CASP and whether interdialytic CASP predicted ambulatory measurement. METHODS: All patients underwent computed tomography for coronary calcium score, lateral abdominal radiography for aortic calcium score, echocardiography for left ventricular mass index and ambulatory blood pressure measurement using BPro calibrated to brachial blood pressure. HealthStats was able to convert standard BPro SOFT((R)) data into ambulatory CASP. RESULTS: Ambulatory CASP was not different in those without and with coronary (137.6 vs 141.8 mmHg, respectively, p = 0.6) or aortic (136.6 vs 145.6 mmHg, respectively, p = 0.2) calcification. Furthermore, when expressed as a percentage of brachial systolic blood pressure to control for peripheral blood pressure, any difference in CASP was abolished: CASP: brachial systolic blood pressure ratio = 0.9 across all categories regardless of the presence of coronary or aortic calcification (p = 0.2 and 0.4, respectively). Supporting this finding, left ventricular mass index was also not different in those with or without vascular calcification (p = 0.7 and 0.8 for coronary and aortic calcification). Inter-dialytic office blood pressure and CASP correlated excellently with ambulatory measurements (r = 0.9 for both). CONCLUSION: Vascular calcification was not associated with changes in ambulatory central aortic systolic pressure in this cohort of prevalent dialysis patients. Inter-dialytic blood pressure and CASP correlated very well with ambulatory measurement.

Frémeaux, A. E.; Mallam, K. M.; Metcalf, B. S.; Hosking, J.; Voss, L. D.; Wilkin, T. J. (2011):

The impact of school-time activity on total physical activity: the activitystat hypothesis (EarlyBird 46).

In: *International journal of obesity (2005)* 35 (10), S. 1277–1283. DOI: 10.1038/ijo.2011.52.

Abstract:

OBJECTIVES\r\nTo explore the activitystat hypothesis in primary school children by asking whether more physical activity (PA) in school time is compensated for by less PA at other times.\r\nSTUDY DESIGN\r\nObservational, repeated measures (four consecutive occasions over a 12-month period).\r\nSETTING\r\nSouth-west England.\r\nPARTICIPANTS\r\nA total of 206 children (115 boys, aged 8-10 years) from 3 primary schools (S1, S2 and S3), which recorded large differences in PA during school time.\r\nMEASUREMENTS\r\nTotal PA (TPA) and its moderate-and-vigorous component were recorded weekly by accelerometry, in school and out of school, and adjusted for local daily rainfall and daylight hours. Habitual PA was assessed by linear mixed-effects modelling on repeated measures.\r\nRESULTS\r\nS1 children recorded 64% more in-school PA, but S2 and S3 children compensated with correspondingly more out-of-school PA, so that TPA between the three schools was no different: 35.6 (34.3-36.9), 37.3 (36.0-38.6) and 36.2 (34.9-37.5) Units, respectively (P=0.38).\r\nCONCLUSIONS\r\nThe PA of children seems to compensate in such a way that more activity at one time is met with less activity at another. The failure of PA programmes to reduce childhood obesity could be attributable to this compensation.

Friedberg, Fred; Quick, Joyce (2007):

Alexithymia in chronic fatigue syndrome: associations with momentary, recall, and retrospective measures of somatic complaints and emotions.

In: *Psychosomatic Medicine* 69 (1), S. 54–60.

Abstract:

OBJECTIVE:

The relationship between alexithymia and real-time momentary symptom assessments has not been reported. This cross-sectional study hypothesized that alexithymia would be a predictor of somatic symptoms using three different types of symptom measurement (momentary, recall, and retrospective) in the medically unexplained illness of chronic fatigue syndrome (CFS). In addition, it was hypothesized that negative affect would be a significant mediator of the relationship between alexithymia and somatic symptoms. Finally, the relation of alexithymia to physical illness attribution (a CFS illness predictor) was explored.

METHODS:

Participants were 111 adults with CFS. Alexithymia was assessed with the Toronto Alexithymia Scale. Momentary ratings of current symptoms and affect were recorded in electronic diaries carried for 3 weeks. Weekly recall of these momentary reports was also recorded. Retrospective measures included 6-month ratings of fatigue and pain, the Fatigue Severity Scale, the Brief Pain Inventory-Short Form, a CFS symptom measure, the Beck Depression Inventory-II, the Beck Anxiety Inventory, and an illness attribution rating.

RESULTS:

Partial correlations, controlling for age and sex, yielded no significant associations between general or specific forms of alexithymia and momentary ratings of fatigue or pain. On the other hand, a significant association, partially mediated by anxiety scores, was found between a specific form of alexithymia and a retrospective pain measure. Finally, physical illness attribution was not significantly associated with alexithymia.

CONCLUSION:

Based on assessments of real-time and retrospectively measured symptoms, these data provided only modest support for the alexithymia construct as a predictor of somatic symptoms in people with CFS.

Friedberg, Fred; Sohl, Stephanie J. (2009):

Longitudinal change in chronic fatigue syndrome: what home-based assessments reveal.

In: *Journal of Behavioral Medicine* 32 (2), S. 209–218. DOI: 10.1007/s10865-008-9189-9.

Abstract:

The purpose of this 2-year prospective study was to compare standard self-report and ecologically-based outcome measures in patients with chronic fatigue syndrome (CFS). Standard measures assessed physical function, fatigue impact, psychological variables, and global impression of change ratings. Ecological measures included actigraphy, a structured activity record, and an electronic fatigue/energy diary. Results for this high functioning sample (N = 75) revealed that self-report global improvement was significantly associated with lower momentary fatigue and fatigue impact, and a higher frequency of standing up (at home), but not with actigraphy or psychological variables. However, actigraphy change was significantly correlated with change in self-report physical function. At follow-up, only a small minority (<20%) scored in the healthy adult range for fatigue impact and physical function. The findings suggest that home-based measures of symptom severity and physical functioning may provide evidence of change (or lack of change) that is important for interpreting standard self-report outcomes in CFS.

Frings, Lars; Wagner, Kathrin; Maiwald, Thomas; Carius, Astrid; Schinkel, Anika; Lehmann, Christiane; Schulze-Bonhage, Andreas (2008):

Early detection of behavioral side effects of antiepileptic treatment using handheld computers.

In: *Epilepsy & Behavior* 13 (2), S. 402–406.

Abstract:

OBJECTIVE:

Treatment-emergent side effects are frequent events, particularly during the uptitration of antiepileptic drugs. So far, monitoring of such adverse events in outpatients has often been limited to intervals of weeks or months. We here report the application of a new device for temporally fine-grained assessment of objective well-being and cognitive performance using personal digital assistants (PDAs).

METHODS:

Twenty adult patients with epilepsy participated in this pilot study. Ten received add-on treatment with levetiracetam. Ten patients with constant medication served as a control group. Differences between groups with respect to self-rated cognitive condition, psychophysical condition, aggressiveness, and cognitive test performance in a concentration test assessed three times daily (morning, early afternoon, and evening), over the course of 6 days, were analyzed.

RESULTS:

Levetiracetam-treated patients manifested an early augmentation of self-rated aggressiveness, which increased in intensity over the course of days. Aggressiveness reached a maximum in the early afternoon across days. There were no major changes in cognitive performance, except for an increase in morning performance in the control group.

CONCLUSIONS:

This study demonstrates the feasibility of a new method of ambulatory assessment of behavioral and cognitive data during titration of antiepileptic drugs. Significant changes in aggressiveness under add-on treatment with levetiracetam were found to be dependent on the time of assessment during the day. These results suggest that PDA-based ambulatory monitoring of patients with epilepsy may be a promising tool for early detection of drug-related side effects and, thus, may constitute a significant improvement in patient care.

Frissen, Aleida; Lieverse, Ritsaert; Drukker, Marjan; Delespaul, Philippe; Lataster, Tineke; Myin-Germeys, Inez; van Os, Jim (2014):

Evidence that childhood urban environment is associated with blunted stress reactivity across groups of patients with psychosis, relatives of patients and controls.

In: *Social Psychiatry and Psychiatric Epidemiology* 49 (10), S. 1579–1587. DOI: 10.1037/t29468-000;

Abstract:

Purpose: Psychosis is associated with urban upbringing, and increased emotional reactivity is associated with psychosis. The aim of this study was to examine to what degree urban upbringing impacts emotional reactivity, and how this may be relevant for psychotic disorder and familial risk of psychotic disorder. Methods: Patients with a diagnosis of non-affective psychotic disorder (n = 57), 59 first degree relatives of patients and 75 healthy comparison subjects were studied with the experience sampling method (a random time sampling technique to assess affective experience in relation to fluctuating stressors in the flow of daily life), to measure a change in negative affect in relation to subjective stress. Urban exposure was defined at 5 levels, considering the population density and the number of moves between birth and the 15th birthday, using data from the Dutch Central Bureau of Statistics and the equivalent database in Belgium. Results: Multilevel random regression analyses showed that urban upbringing was consistently and strongly associated with a reduced increase in negative affect in relation to SS in adulthood in a dose–response fashion in all three groups. Regression coefficients in the patient group decreased from 0.148 (p < 0.001) in the lowest urbanicity level to 0.094 (p < 0.001) in the highest urbanicity level. Conclusion: The findings suggest that urban upbringing may occasion "habituation" rather than "sensitization" across groups, which may or may not be relevant for the onset of psychotic disorder. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Froese, T.; Gould, C.; Seth, A. K. (2011):

Validating and calibrating first-and second-person methods in the science of consciousness.

In: *Journal of Consciousness Studies* 18 (2), S. 38.

Abstract:

Comments on the articles R.T. Hurlburt & S.A. Akhter (see record 2007-19512-002); Pierre Vermersch (see record 2009-23371-002); and Claire Petitmengin & Michel Bitbol (see record 2009-23371-015). In this paper we will concentrate on two of the most common second-person methods in the science of consciousness, namely the Descriptive Experience Sampling (DES) method and the Explicitation Interview (EI) method. After a survey of recent advances in the use of these methods in the science of consciousness, we identify a key problem that stands in the way of further progress: the DES and EI methods are driven by fundamentally different conceptions of consciousness, and these have important methodological ramifications. We suggest one possibility to obtain an objective measure that may help to resolve this methodological dispute. We may have developed sophisticated methods to study the neural and behavioral correlates of verbal reports, but how those reports are generated in the first place still remains mostly hidden inside the ‘black box’ of the experiencing subject. At the same time it is reasonable to suppose that first-person and/or second-person introspection alone will never be a sufficient guide to the mechanisms underlying lived experience. However, when taken in conjunction with other behavioral and neural properties and signatures, especially those that bear an explanatory, informing or constraining relation to phenomenal properties, introspective and especially second-person interview methods are likely to form an increasingly important part of the methodological toolkit in consciousness science.

Froh, Jeffrey J.; Parks, Acacia C. (Hg.) (2013):

Activities for teaching positive psychology: A guide for instructors.

Washington, DC US: American Psychological Association.

Fukuda, Michio; Mizuno, Masashi; Yamanaka, Tamaki; Motokawa, Masahiro; Shirasawa, Yuichi; Nishio, Takae et al. (2008):

Patients with renal dysfunction require a longer duration until blood pressure dips during the night.

In: *Hypertension* 52 (6), S. 1155–1160. DOI: 10.1161/HYPERTENSIONAHA.108.115329.

Abstract:

We have postulated that the diminished renal capacity to excrete sodium causes nocturnal blood pressure (BP) elevation, which enhances pressure natriuresis in compensation for impaired daytime natriuresis. If such a mechanism holds, high BP during sleep at night may continue until excess sodium is sufficiently excreted into urine. This study examined whether the duration, defined as \"dipping time,\" until nocturnal mean arterial pressure began to fall to <90% of daytime average became longer as renal function deteriorated. Ambulatory BP measurements and urinary sodium excretion rates were evaluated for daytime and nighttime to estimate their circadian rhythms in 65 subjects with chronic kidney disease. Dipping time showed an inverse relationship with creatinine clearance (C(cr); rho=-0.61; P<0.0001) and positive relationships with night/day ratios of mean arterial pressure (rho=0.84; P<0.0001) and natriuresis (rho=0.61; P<0.0001), both of which were also inversely correlated with C(cr) (mean arterial pressure: r=-0.58, P<0.0001; natriuresis: r=-0.69, P<0.0001). When divided into tertiles by C(cr) (mL/min), hazard ratios of nocturnal BP dip adjusted for age, gender, and body mass index were 0.37 (95% CI: 0.17 to 0.79; P=0.01) for the second tertile (C(cr): 50 to 90) and 0.20 (95% CI: 0.08 to 0.55; P=0.002) for the third tertile (C(cr): 5 to 41) compared with the first tertile (C(cr): 91 to 164). These findings demonstrate that patients with renal dysfunction require a longer duration until BP falls during the night. The prolonged duration until BP dip during sleep seems an essential component of the nondipper pattern of the circadian BP rhythm.

Fukuo, Wataru; Yoshiuchi, Kazuhiro; Ohashi, Ken; Togashi, Hitomi; Sekine, Rie; Kikuchi, Hiroe et al. (2009):

Development of a hand-held personal digital assistant-based food diary with food photographs for Japanese subjects.

In: *Journal of the American Dietetic Association* 109 (7), S. 1232–1236. DOI: 10.1016/j.jada.2009.04.013.

Abstract:

Hand-held personal digital assistant (PDA)-based food diaries have been developed for self-monitoring of dietary intake, but the accuracy of these diaries is unclear for patients with diabetes. The aim of the study was to assess the accuracy and feasibility of use of a new PDA-based food diary, including food photographs. The study included 44 Japanese participants without diabetes (mean age 23 years) and 16 Japanese patients with type 2 diabetes (mean age 53 years). The PDA-based food diary was used for 7 consecutive days. Information about all dietary intake on the 7th day of PDA self-monitoring was collected by a 24-hour recall interview on the 8th day. The PDA-based data for dietary intake on the 7th day were then compared to the 24-hour recall data for the same period. Feasibility was assessed based on the frequency and timeliness of self-monitoring. There was no significant difference in daily totals for energy, protein, carbohydrate, and fat between the two methods in each group. Pearson's correlation and intraclass correlation coefficients showed strong significant relationships for all variables between the two methods in both groups. Bland-Altman plots did not indicate any bias in estimated daily caloric intake. Participants recorded 98% of their meals in the PDA, with 75% of entries recorded within 6 hours after the meal starting time. The findings suggest that the PDA-based food diary is a potential clinical method to estimate dietary intake and may be a beneficial tool for self-monitoring of dietary intake.

Fukuoka, Yoshimi; Kamitani, Emiko; Dracup, Kathleen; Jong, So Son (2011):

New Insights Into Compliance With a Mobile Phone Diary and Pedometer Use in Sedentary Women.

In: *J Phys Act Health* 8 (3), S. 398–403.

Abstract:

Objectives: The purposes of this study were 1) to determine compliance with a pedometer and mobile phone-based physical activity diary, and 2) to assess concordance between self-reported daily steps recorded and transmitted by a mobile phone and pedometer-measured daily steps in sedentary women. Methods: In this 3-week pilot clinical study, 41 sedentary women who met all inclusion criteria were recruited from local communities. We asked the participants to wear a pedometer every day and to report their daily steps using a mobile phone diary each night before retiring. In the first week, women were asked to monitor their daily steps (baseline steps). In the second and third weeks, they were asked to increase their steps by 20% from the previous week. Although the pedometer can automatically store the most recent 41 days' performance, the participants were not

informed of this function of the pedometer. Results: Overall compliance was 93.8% with pedometer use and 88.3% with the mobile phone physical activity diary. Bland Altman plots showed that the agreement between self-reported daily steps by mobile phone diary and pedometer-recorded daily steps from week 1 to week 3 was high. Conclusion: The combination of a pedometer and a mobile phone diary may enhance the quality of self-reported data in clinical studies.

Fulcher, Krysten K.; Alosco, Michael L.; Miller, Lindsay; Spitznagel, Mary Beth; Cohen, Ronald; Raz, Naftali et al. (2014):

Greater physical activity is associated with better cognitive function in heart failure.

In: *Health Psychol* 33 (11), S. 1337–1343. DOI: 10.1037/t00742-000.

Abstract:

Objective: Nearly 6 million Americans have heart failure (HF), up to 80% of which exhibit cognitive deficits on testing. Physical inactivity is common in HF, yet little is known about the possible contribution of physical inactivity to cognitive dysfunction in this population. Method: Older adults with HF (N = 93; Mage = 68.5 years, 33.7% women) completed neuropsychological testing, as well as cardiac and physical activity assessment as part of a larger protocol. HF severity was measured via impedance cardiography. Physical activity was assessed via an Actigraph accelerometer and operationalized using daily step count and time engaged in moderate-vigorous activity (minutes/day). Results: Linear regression analyses controlling for sex, high blood pressure, diabetes, depressive symptomatology, and HF severity showed that greater physical activity (both step count and minutes spent in moderate-vigorous activity) was associated with better executive function/attention, processing speed, and scores on a screening measure of cognition. Conclusions: These findings indicate that physical activity is an independent predictor of cognitive function in persons with HF. Future work is needed to clarify the mechanisms by which physical activity benefits cognitive function in HF and determine whether interventions to promote physical activity can attenuate cognitive decline over time. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Fuller-Tyszkiewicz, Matthew; Richardson, Ben; Skouteris, Helen; Austin, David; Castle, David; Busija, Lucy et al. (2014):

Optimizing prediction of binge eating episodes: a comparison approach to test alternative conceptualizations of the affect regulation model.

In: *J Eat Disord* 2 (1), S. 28. DOI: 10.1186/s40337-014-0028-9.

Abstract:

BACKGROUND: Although a wealth of studies have tested the link between negative mood states and likelihood of a subsequent binge eating episode, the assumption that this relationship follows a typical linear dose-response pattern (i.e., that risk of a binge episode increases in proportion to level of negative mood) has not been challenged. The present study demonstrates the applicability of an alternative, non-linear conceptualization of this relationship, in which the strength of association between negative mood and probability of a binge episode increases above a threshold value for the mood variable relative to the slope below this threshold value (threshold dose response model). METHODS: A sample of 93 women aged 18 to 40 completed an online survey at random intervals seven times per day for a period of one week. Participants self-reported their current mood state and whether they had recently engaged in an eating episode symptomatic of a binge. RESULTS: As hypothesized, the threshold approach was a better predictor than the linear dose-response modeling of likelihood of a binge episode. The superiority of the threshold approach was found even at low levels of negative mood (3 out of 10, with higher scores reflecting more negative mood). Additionally, severity of negative mood beyond this threshold value appears to be useful for predicting time to onset of a binge episode. CONCLUSIONS: Present findings suggest that simple dose-response formulations for the association between negative mood and onset of binge episodes miss vital aspects of this relationship. Most notably, the impact of mood on binge eating appears to depend on whether a threshold value of negative mood has been breached, and elevation in mood beyond this point may be useful for clinicians and researchers to identify time to onset.

Fuller-Tyszkiewicz, Matthew; Skouteris, Helen; Richardson, Ben; Blore, Jed; Holmes, Millicent; Mills, Jacqueline (2013):

Does the burden of the experience sampling method undermine data quality in state body image research?

In: *Body Image*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-25718-001%26site%3dehost-live.

Abstract:

Despite growing popularity of experience sampling methodology (ESM) for evaluations of state-based components of body image, there have been concerns that the frequent repeated measurement might encourage problematic responding resulting in low data quantity and/or quality. Using a sample of 105 women (mean age=24.84), this study used multilevel modelling to investigate whether (a) there were changes in compliance or response variability across a 7-day period, and (b) whether such changes are explained by participant characteristics. Present findings suggest that demands of ESM protocol undermine quantity more so than quality of obtained data. Decline in procedural compliance across the testing period correlated with BMI and body shame, whereas reduced variability in state-based assessments did not adversely impact the strength of association between state body satisfaction ratings and other variables in the dataset. The authors make several recommendations for ensuring the quality of ESM-based data in future studies. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Gaborieau, Valérie; Delarche, Nicolas; Gosse, Philippe (2008):

Ambulatory blood pressure monitoring versus self-measurement of blood pressure at home: correlation with target organ damage.

In: *J Hypertens* 26 (10), S. 1919–1927. DOI: 10.1097/HJH.0b013e32830c4368.

Abstract:

OBJECTIVE\r\nAmbulatory blood pressure (BP) monitoring and home blood pressure measurements predicted the presence of target organ damage and the risk of cardiovascular events better than did office blood pressure.\r\nMETHODS\r\nTo compare these two methods in their correlation with organ damage, we consecutively included 325 treated (70%) or untreated hypertensives (125 women, mean age = 64.5 +/- 11.3) with office (three measurements at two consultations), home (three measurements morning and evening over 3 days) and 24-h ambulatory monitoring. Target organs were evaluated by ECG, echocardiography, carotid echography and detection of microalbuminuria. Data from 302 patients were analyzed.\r\nRESULTS\r\nMean BP levels were 142/82 mmHg for office, 135.5/77 mmHg for home and 128/76 mmHg for 24-h monitoring (day = 130/78 mmHg; night = 118.5/67 mmHg). With a 135 mmHg cut-off, home and daytime blood pressure diverged in 20% of patients. Ambulatory and Home blood pressure were correlated with organ damage more closely than was office BP with a trend to better correlations with home BP. Using regression analysis, a 140 mmHg home systolic blood pressure corresponded to a 135 mmHg daytime systolic blood pressure; a 133 mmHg daytime ambulatory blood pressure and a 140 mmHg home blood pressure corresponded to the same organ damage cut-offs (Left ventricular mass index = 50 g/m, Cornell.QRS = 2440 mm/ms, carotid intima media thickness = 0.9 mm). Home-ambulatory differences were significantly associated with age and antihypertensive treatment.\r\nCONCLUSION\r\nWe showed that home blood pressure was at least as well correlated with target organ damage, as was the ambulatory blood pressure. Home-ambulatory correlation and their correlation with organ damage argue in favor of different cut-offs, that are approximately 5 mmHg higher for systolic home blood pressure.

Gabriel, Kelley Pettee; McClain, James J.; Schmid, Kendra K.; Storti, Kristi L.; High, Robin R.; Underwood, Darcy A. et al. (2010):

Issues in accelerometer methodology: The role of epoch length on estimates of physical activity and relationships with health outcomes in overweight, post-menopausal women.

In: *Int J Behav Nutr Phys Act* 7. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-32460-001%26site%3dehost-live;Kelley.P.Gabriel@uth.tmc.edu.

Abstract:

Current accelerometer technology allows for data collection using brief time sampling intervals (i.e., epochs). The study aims were to examine the role of epoch length on physical activity estimates and subsequent relationships with clinically-meaningful health outcomes in post-menopausal women. Methods: Data was obtained from the Woman On the Move through Activity and Nutrition Study (n = 102). Differences in activity estimates presented as 60s and 10s epochs were evaluated using paired t-tests. Relationships with health outcomes were examined using correlational and regression analyses to evaluate differences by epoch length. Results: Inactivity, moderate- and vigorous-intensity activity (MVPA) were significantly higher and light-intensity activity was significantly lower (all P < 0.001) when presented as 10s epochs. The correlation between inactivity and self-reported physical activity was stronger with 10s estimates (P < 0.03); however, the regression slopes were not significantly different. Conversely, relationships between MVPA and body weight, BMI, whole body and trunk lean and fat mass, and femoral neck bone mineral density was stronger with 60s estimates (all P < 0.05); however, regression slopes were similar. Conclusion: These findings suggest that although the use of a shorter time sampling interval may suggestively reduce misclassification error of physical activity estimates, associations with health outcomes did not yield strikingly different results. Additional studies are

needed to further our understanding of the ways in which epoch length contributes to the ascertainment of physical activity in research studies. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Gacek, Paul; Conner, Tamlin S.; Tennen, Howard; Kranzler, Henry R.; Covault, Jonathan (2008):

GENETIC STUDY: Tryptophan hydroxylase 2 gene and alcohol use among college students.

In: *Addict Biol* 13 (3-4), S. 440–448.

Abstract:

Genes that regulate serotonin activity are regarded as promising predictors of heavy alcohol use. Tryptophan hydroxylase (TPH2) plays an important role in serotonergic neurotransmission by serving as the rate-limiting enzyme for serotonin biosynthesis in the midbrain and serotonergic neurons. Despite the link between TPH2 and serotonergic function, TPH2's role in the pathogenesis of alcohol-use disorders remains unclear. The goal of this study was to examine whether a variation in the TPH2 gene is associated with risky alcohol consumption. Specifically, this study examined whether the TPH2 G-703T polymorphism predicted alcohol consumption among college students. In two successive years, 351 undergraduates were asked to record their alcohol use each day for 30 days using an Internet-based electronic diary. Participants' DNA was collected and polymerase chain reaction genotyping was performed. Results show that alcohol consumption was not associated with the TPH2 G-703T polymorphism alone, or the interaction of TPH2 with two other candidate polymorphisms (TPH1 C218A and the SLC6A4 tri-allelic 5-HTTLPR), or negative life events. In conclusion, this study supports recent null findings relating TPH2 to drinking outcomes. It also extends these findings by showing null interactions with the TPH1 C218A polymorphism, the SLC6A4 tri-allelic 5-HTTLPR polymorphism and environmental stressors in predicting sub-clinical alcohol use among Caucasian American young adults.

Gadassi, Reuma; Snir, Avigal; Berenson, Kathy; Downey, Geraldine; Rafaeli, Eshkol (2014):

Out of the Frying Pan, Into the Fire: Mixed Affective Reactions to Social Proximity in Borderline and Avoidant Personality Disorders in Daily Life.

In: *Journal of Abnormal Psychology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-24016-001%26site%3dehost-live.

Abstract:

Social proximity typically helps individuals meet their belongingness needs, but several forms of psychopathology, including borderline and avoidant personality disorders (BPD and APD, respectively) are characterized by social difficulties. This experience-sampling study is one of the first to directly investigate the affective reactions of individuals with BPD and APD (compared with healthy controls [HC]) to social proximity in daily life. We examined both person-level and day-level reactions. At the person level, the rate of social proximity across the diary period was associated with diminished feelings of rejection, isolation, shame, and dissociation in the HC group. In contrast, it was not associated with any affective reaction in the BPD group, and was associated with decreased rejection and isolation on the one hand, but also with increased anxiety in the APD group. At the day level, we used multilevel regression to examine affective reactions when in social proximity. The HC group showed a consistent benefit when in social proximity. In contrast, both PD groups exhibited mixed affective reactions to social proximity; specifically, benefits (increased positive affect, decreased rejection, isolation, and dissociation) were interspersed with costs (increased shame for both PD groups; increased anger for BPD; increased anxiety for APD). The mixed reactions found in both PDs may contribute to the disturbed relationships of individuals with these disorders. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Gage, William H.; Zabjek, Karl F.; Sibley, Kathryn M.; Tang, Ada; Brooks, Dina; McIlroy, William E. (2007):

Ambulatory monitoring of activity levels of individuals in the sub-acute stage following stroke: a case series.

In: *J Neuroeng Rehabil* 4, S. 41. DOI: 10.1186/1743-0003-4-41.

Abstract:

BACKGROUND\r\nThere is an important need to better understand the activities of individual patients with stroke outside of structured therapy since this activity is likely to have a profound influence on recovery. A case-study approach was used to examine the activity levels and associated physiological load of patients with stroke throughout a day.\r\nMETHODS\r\nActivities and physiologic measures were recorded during a continuous 8 hour period from 4 individuals in the sub-acute stage following stroke (ranging from 49 to 80 years old; 4 to 8 weeks post-stroke) in an in-patient rehabilitation hospital.\r\nRESULTS\r\nBoth heart rate ($p = 0.0207$) and ventilation rate ($p < 0.0001$) increased as intensity of activity increased. Results revealed individual differences in physiological response to daily activities, and large ranges in physiological response measures during 'moderately' and 'highly' therapeutic activities.\r\nCONCLUSION\r\nActivity levels of individuals with stroke during the day were generally low, though task-related changes in physiologic measures were observed. Large variability in the physiological response to even the activities deemed to be greatest intensity suggests that inclusion of such extended measurement of physiologic measures may improve understanding of physiological profile that could guide elements of the physical therapy prescription.

Gaher, Raluca M.; Simons, Jeffrey S.; Hahn, Austin M.; Hofman, Nicole L.; Hansen, Jamie; Buchkoski, Jerome (2014):

An experience sampling study of PTSD and alcohol-related problems.

In: *Psychology of Addictive Behaviors* 28 (4), S. 1013–1025. DOI: 10.1037/t04522-000.

Abstract:

Posttraumatic stress disorder (PTSD) represents a debilitating psychiatric condition that is affecting the lives of many returning veterans. PTSD and alcohol use and dependence are highly comorbid. The purpose of this study was to understand the functional mechanisms between PTSD and alcohol use and problems. Specifically, the role of negative urgency and emotional intelligence were investigated as vulnerability and resiliency factors, respectively. This study utilized experience sampling to test associations between PTSD symptoms and alcohol use and related problems in a sample of 90 OIF/OEF veterans. Participants completed 8 brief questionnaires daily for 2 weeks on palmtop computers. Elevations in PTSD symptoms during the day were associated with subsequent increases in alcohol use and associated problems that night. PTSD symptoms were associated with greater problems above and beyond the effect of drinking level at both the within- and between- person level. Emotional intelligence was associated with lower negative urgency, fewer PTSD symptoms, and less alcohol use and associated problems. The effects of emotional intelligence were primarily indirect via negative urgency and the effects of negative urgency on alcohol use and problems were indirect via its positive association with PTSD symptoms. Hypothesized cross-level effects of emotional intelligence and negative urgency were not supported. The findings suggest a functional association between PTSD symptoms and alcohol consumption. The association between PTSD symptoms and alcohol consumption is consistent with a self-medication model. However, the significant associations between PTSD symptoms and alcohol problems, after controlling for use level, suggest a broader role of dysregulation. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Gajecki, Mikael; Berman, Anne H.; Sinadinovic, Kristina; Rosendahl, Ingvar; Andersson, Claes (2014):

Mobile phone brief intervention applications for risky alcohol use among university students: a randomized controlled study.

In: *Addict Sci Clin Pract* 9, S. 11. DOI: 10.1186/1940-0640-9-11.

Abstract:

BACKGROUND: Brief interventions via the internet have been shown to reduce university students' alcohol intake. This study tested two smartphone applications (apps) targeting drinking choices on party occasions, with the goal of reducing problematic alcohol intake among Swedish university students. METHODS: Students were recruited via e-mails sent to student union members at two universities. Those who gave informed consent, had a smartphone, and showed risky alcohol consumption according to the Alcohol Use Disorders Identification Test (AUDIT) were randomized into three groups. Group 1 had access to the Swedish government alcohol monopoly's app, Promillekoll, offering real-time estimated blood alcohol concentration (eBAC) calculation; Group 2 had access to a web-based app, PartyPlanner, developed by the research group, offering real-time eBAC calculation with planning and follow-up functions; and Group 3 participants were controls. Follow-up was conducted at 7 weeks. RESULTS: Among 28574 students offered participation, 4823 agreed to join; 415 were excluded due to incomplete data, and 1932 fulfilled eligibility criteria for randomization. Attrition was 22.7-39.3 percent, higher among heavier drinkers and highest in Group 2. Self-reported app use was higher in Group 1 (74%) compared to Group 2 (41%). Per-protocol analyses revealed only one significant time-by-group interaction, where Group 1 participants increased the frequency of their drinking occasions compared to controls ($p = 0.001$). Secondary analyses by gender showed a significant difference among men in Group 1 for frequency of drinking occasions per week ($p = 0.001$), but not among women. Among all participants, 29 percent showed high-

risk drinking, over the recommended weekly drinking levels of 9 (women) and 14 (men) standard glasses. CONCLUSIONS: Smartphone apps can make brief interventions available to large numbers of university students. The apps studied using eBAC calculation did not, however, seem to affect alcohol consumption among university students and one app may have led to a negative effect among men. Future research should: 1) explore ways to increase user retention, 2) include apps facilitating technical manipulation for evaluation of added components, 3) explore the effects of adapting app content to possible gender differences, and 4) offer additional interventions to high-risk users. TRIAL REGISTRATION: clinicaltrials.gov: NCT01958398.

Galan-Mercant, Alejandro; Cuesta-Vargas, Antonio I. (2014):

Differences in trunk accelerometry between frail and non-frail elderly persons in functional tasks.

In: *BMC Res Notes* 7, S. 100. DOI: 10.1186/1756-0500-7-100.

Abstract:

BACKGROUND: Physical conditions through gait and other functional task are parameters to consider for frailty detection. The aim of the present study is to measure and describe the variability of acceleration, angular velocity and trunk displacement in the ten meter Extended Timed Get-Up-and-Go test in two groups of frail and non-frail elderly people through instrumentation with the iPhone4(R) smartphone. Secondly, to analyze the differences and performance of the variance between the study groups (frail and non-frail).This is a cross-sectional study of 30 subjects aged over 65 years, 14 frail subjects and 16 non-frail subjects. RESULTS: The highest difference between groups in the Sit-to-Stand and Stand-to-Sit subphases was in the y axis (vertical vector). The minimum acceleration in the Stand-to-Sit phase was -2.69 (-4.17/-0.96) m/s2 frail elderly versus -8.49 (-12.1/-5.23) m/s2 non-frail elderly, $p < 0.001$. In the Gait Go and Gait Come subphases the biggest differences found between the groups were in the vertical axis: -2.45 (-2.77/-1.89) m/s2 frail elderly versus -5.93 (-6.87/-4.51) m/s2 non-frail elderly, $p < 0.001$. Finally, with regards to the turning subphase, the statistically significant differences found between the groups were greater in the data obtained from the gyroscope than from the accelerometer (the gyroscope data for the mean maximum peak value for Yaw movement angular velocity in the frail elderly was specifically 25.60 degrees /s, compared to 112.8 degrees /s for the non-frail elderly, $p < 0.05$). CONCLUSIONS: The inertial sensor fitted in the iPhone4(R) is capable of studying and analyzing the kinematics of the different subphases of the Extended Timed Up and Go test in frail and non-frail elderly people. For the Extended Timed Up and Go test, this device allows more sensitive differentiation between population groups than the traditionally used variable, namely time.

Galeana-Zapien, Hiram; Torres-Huitzil, Cesar; Rubio-Loyola, Javier (2014):

Mobile phone middleware architecture for energy and context awareness in location-based services.

In: *Sensors (Basel)* 14 (12), S. 23673–23696. DOI: 10.3390/s141223673.

Abstract:

The disruptive innovation of smartphone technology has enabled the development of mobile sensing applications leveraged on specialized sensors embedded in the device. These novel mobile phone applications rely on advanced sensor information processes, which mainly involve raw data acquisition, feature extraction, data interpretation and transmission. However, the continuous accessing of sensing resources to acquire sensor data in smartphones is still very expensive in terms of energy, particularly due to the periodic use of power-intensive sensors, such as the Global Positioning System (GPS) receiver. The key underlying idea to design energy-efficient schemes is to control the duty cycle of the GPS receiver. However, adapting the sensing rate based on dynamic context changes through a flexible middleware has received little attention in the literature. In this paper, we propose a novel modular middleware architecture and runtime environment to directly interface with application programming interfaces (APIs) and embedded sensors in order to manage the duty cycle process based on energy and context aspects. The proposed solution has been implemented in the Android software stack. It allows continuous location tracking in a timely manner and in a transparent way to the user. It also enables the deployment of sensing policies to appropriately control the sampling rate based on both energy and perceived context. We validate the proposed solution taking into account a reference location-based service (LBS) architecture. A cloud-based storage service along with online mobility analysis tools have been used to store and access sensed data. Experimental measurements demonstrate the feasibility and efficiency of our middleware, in terms of energy and location resolution.

Galliher, James M.; Stewart, Thomas V.; Pathak, Paramod K.; Werner, James J.; Dickinson, L. Miriam; Hickner, John M. (2008):

Data collection outcomes comparing paper forms with PDA forms in an office-based patient survey.

In: *Annals of family medicine* 6 (2), S. 154–160. DOI: 10.1370/afm.762.

Abstract:

PURPOSE\r\nWe compared the completeness of data collection using paper forms and using electronic forms loaded on handheld computers in an office-based patient interview survey conducted within the American Academy of Family Physicians National Research Network.\r\nMETHODS\r\nWe asked 19 medical assistants and nurses in family practices to administer a survey about pneumococcal immunizations to 60 older adults each, 30 using paper forms and 30 using electronic forms on handheld computers. By random assignment, the interviewers used either the paper or electronic form first. Using multilevel analyses adjusted for patient characteristics and clustering of forms by practice, we analyzed the completeness of the data.\r\nRESULTS\r\nA total of 1,003 of the expected 1,140 forms were returned to the data center. The overall return rate was better for paper forms (537 of 570, 94%) than for electronic forms (466 of 570, 82%) because of technical difficulties experienced with electronic data collection and stolen or lost handheld computers. Errors of omission on the returned forms, however, were more common using paper forms. Of the returned forms, only 3% of those gathered electronically had errors of omission, compared with 35% of those gathered on paper. Similarly, only 0.04% of total survey items were missing on the electronic forms, compared with 3.5% of the survey items using paper forms.\r\nCONCLUSIONS\r\nAlthough handheld computers produced more complete data than the paper method for the returned forms, they were not superior because of the large amount of missing data due to technical difficulties with the hand-held computers or loss or theft. Other hardware solutions, such as tablet computers or cell phones linked via a wireless network directly to a Web site, may be better electronic solutions for the future.

Galluzzi, Valerie; Herman, Ted; Shumaker, D. J.; MacInga, D. R.; Arbogast, J. W.; Segre, Elena M. et al. (2014):

Electronic recognition of hand hygiene technique and duration.

In: *Infect Control Hosp Epidemiol* 35 (10), S. 1298–1300. DOI: 10.1086/678059.

Abstract:

We captured 3-dimensional accelerometry data from the wrists of 116 healthcare professionals as they performed hand hygiene (HH). We then used these data to train a k-nearest-neighbors classifier to recognize specific aspects of HH technique (ie, fingertip scrub) and measure the duration of HH events.

Galvez, G.; Turbin, M. B.; Thielman, E. J.; Istvan, J. A.; Andrews, J. A.; Henry, J. A. (2012):

Feasibility of ecological momentary assessment of hearing difficulties encountered by hearing aid users.

In: *Ear Hear* 33 (4), S. 497–507. DOI: 10.1097/AUD.0b013e3182498c41.

Abstract:

OBJECTIVES: : Measurement of outcomes has become increasingly important to assess the benefit of audiologic rehabilitation, including hearing aids, in adults. Data from questionnaires, however, are based on retrospective recall of events and experiences, and often can be inaccurate. Questionnaires also do not capture the daily variation that typically occurs in relevant events and experiences. Clinical researchers in a variety of fields have turned to a methodology known as ecological momentary assessment (EMA) to assess quotidian experiences associated with health problems. The objective of this study was to determine the feasibility of using EMA to obtain real-time responses from hearing aid users describing their experiences with challenging hearing situations. DESIGN: : This study required three phases: (1) develop EMA methodology to assess hearing difficulties experienced by hearing aid users; (2) make use of focus groups to refine the methodology; and (3) test the methodology with 24 hearing aid users. Phase 3 participants carried a personal digital assistant 12 hr per day for 2 weeks. The personal digital assistant alerted participants to respond to questions four times a day. Each assessment started with a question to determine whether a hearing problem was experienced since the last alert. If "yes," then up to 23 questions (depending on contingent response branching) obtained details about the situation. If "no," then up to 11 questions obtained information that would help to explain why hearing was not a problem. Each participant completed the Hearing Handicap Inventory for the Elderly (HHIE) both before and after the 2-week EMA testing period to evaluate for "reactivity" (exacerbation of self-perceived hearing problems that could result from the repeated assessments). RESULTS: : Participants responded to the alerts with a 77% compliance rate, providing a total of 991 completed momentary assessments (mean = 43.1 per participant). A substantial amount of data were obtained with the methodology. It is important to note that participants reported a "hearing problem situation since the last alert" 37.6% of the time (372 responses). The most common problem situation involved "face-to-face

conversation" (53.8% of the time). The next most common problem situation was "telephone conversation" (17.2%) followed by "TV, radio, iPod, etc." (15.3%), "environmental sounds" (9.7%), and "movies, lecture, etc." (4.0%). Comparison of pre- and post-EMA mean HHIE scores revealed no significant difference (p > 0.05), indicating that reactivity did not occur for this group. It should be noted, however, that 37.5% of participants reported a greater sense of awareness regarding their hearing loss and use of hearing aids. CONCLUSIONS: : Results showed participants were compliant, gave positive feedback, and did not demonstrate reactivity based on pre- and post-HHIE scores. We conclude that EMA methodology is feasible with patients who use hearing aids and could potentially inform hearing healthcare (HHC) services. The next step is to develop and evaluate EMA protocols that provide detailed daily patient information to audiologists at each stage of HHC. The advantages of such an approach would be to obtain real-life outcome measures, and to determine within- and between-day variability in outcomes and associated factors. Such information at present is not available from patients who seek and use HHC services

Gamaldo, Charlene E.; Spira, Adam P.; Hock, Rebecca S.; Salas, Rachel E.; McArthur, Justin C.; David, Paula M. et al. (2013):

Sleep, function and hiv: A multi-method assessment.

In: *AIDS and Behavior*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-00832-001%26site%3dehost-live;cgamald1@jhmi.edu.

Abstract:

Amongst HIV+ individuals, sleep complaints have been recognized as common and debilitating; but have rarely been formally assessed or compared to controls using validated sleep tools. In this study we conducted structured interview for sleep disorders, polysomnography, 2-week home (ambulatory) monitoring and validated sleep/functional questionnaires. 56 % (14/25) of HIV+ participants and 0 % (0/19) of controls fulfilled the diagnostic criteria for insomnia. Insomnia severity scores were correlated with fatigue and anxiety symptoms. Sleep latency on 2-week actigraphy was significantly longer (P = 0.027) for HIV+ participants and associated with lower MOS-HIV scores. Sleep quality was significantly reduced in HIV+ participants based on validated questionnaires of overall sleep quality (P = 0.0017) and insomnia related symptoms (P < 0.001) even after adjusting for education and affective symptoms. HIV+ individuals are suffering with under-diagnosed sleep disorders that are negatively impacting quality of life and functional capabilities. Further studies aimed at improving recognition of sleep disorders and implementation of efficacious medical and behavioral treatment could improve functioning and disease management.

Gao, L.; Bourke, A. K.; Nelson, J. (2012):

Activity recognition using dynamic multiple sensor fusion in body sensor networks.

In: *Conf.Proc.IEEE Eng Med.Biol.Soc.* 2012 (1557-170X (Linking)), S. 1077–1080. DOI: 10.1109/EMBC.2012.6346121.

Abstract:

Multiple sensor fusion is a main research direction for activity recognition. However, there are two challenges in those systems: the energy consumption due to the wireless transmission and the classifier design because of the dynamic feature vector. This paper proposes a multi-sensor fusion framework, which consists of the sensor selection module and the hierarchical classifier. The sensor selection module adopts the convex optimization to select the sensor subset in real time. The hierarchical classifier combines the Decision Tree classifier with the Naive Bayes classifier. The dataset collected from 8 subjects, who performed 8 scenario activities, was used to evaluate the proposed system. The results show that the proposed system can obviously reduce the energy consumption while guaranteeing the recognition accuracy

Garcia, Carolyn; Hardeman, Rachel R.; Kwon, Gyu; Lando-King, Elizabeth; Zhang, Lei; Genis, Therese et al. (2014):

Teenagers and texting: use of a youth ecological momentary assessment system in trajectory health research with latina adolescents.

In: *JMIR Mhealth Uhealth* 2 (1), S. e3. DOI: 10.2196/mhealth.2576.

Abstract:

BACKGROUND: Adolescent females send and receive more text messages than any others, with an average of 4050 texts a month. Despite this technological inroad among adolescents, few researchers are utilizing text messaging technology to collect real time, contextualized data. Temporal variables (ie, mood) collected regularly over a period of time could yield useful insights, particularly for evaluating health intervention outcomes. Use of text messaging technology has multiple benefits, including capacity of researchers to immediately act in response to texted information. OBJECTIVE: The objective of our study was to

custom build a short messaging service (SMS) or text messaging assessment delivery system for use with adolescents. The Youth Ecological Momentary Assessment System (YEMAS) was developed to collect automated texted reports of daily activities, behaviors, and attitudes among adolescents, and to examine the feasibility of YEMAS. This system was created to collect and transfer real time data about individual- and social-level factors that influence physical, mental, emotional, and social well-being. METHODS: YEMAS is a custom designed system that interfaces with a cloud-based communication system to automate scheduled delivery of survey questions via text messaging; we designed this university-based system to meet data security and management standards. This was a two-phase study that included development of YEMAS and a feasibility pilot with Latino adolescent females. Relative homogeneity of participants was desired for the feasibility pilot study; adolescent Latina youth were sought because they represent the largest and fastest growing ethnic minority group in the United States. Females were targeted because they demonstrate the highest rate of text messaging and were expected to be interested in participating. Phase I involved development of YEMAS and Phase II involved piloting of the system with Latina adolescents. Girls were eligible to participate if they were attending one of the participating high schools and self-identified as Latina. We contacted 96 adolescents; of these, 24 returned written parental consent forms, completed assent processes, and enrolled in the study. RESULTS: YEMAS was collaboratively developed and implemented. Feasibility was established with Latina adolescents (N=24), who responded to four surveys daily for two two-week periods (four weeks total). Each survey had between 12 and 17 questions, with responses including yes/no, Likert scale, and open-ended options. Retention and compliance rates were high, with nearly 18,000 texts provided by the girls over the course of the pilot period. CONCLUSIONS: Pilot results support the feasibility and value of YEMAS, an automated SMS-based text messaging data collection system positioned within a secure university environment. This approach capitalizes on immediate data transfer protocols and enables the documentation of participants' thoughts, feelings, and behaviors in real time. Data are collected using mobile devices that are familiar to participants and nearly ubiquitous in developed countries.

Garcia, Carolyn; Zhang, Lei; Holt, Katie; Hardeman, Rachel; Peterson, Barbara (2014):

Latina adolescent sleep and mood: an ecological momentary assessment pilot study.

In: *J Child Adolesc Psychiatr Nurs* 27 (3), S. 132–141. DOI: 10.1111/jcap.12082.

Abstract:

PROBLEM: Sleep and mood represent two important malleable opportunities for adolescent health. This study investigated the sleep-mood relationship in adolescent girls. METHODS: Short-term, longitudinal design. Latina adolescents (N = 19, mean age 15) completed ecological momentary assessments on sleep (perceived quality, self-report quantity) and mood (negative affect, positive affect, and positivity ratio). FINDINGS: Adolescents sent 1,598 texts on sleep and mood. Bidirectional sleep-mood relationships were in expected directions; negative affect and the positivity ratio affect predicted adolescents' sleep quality. CONCLUSIONS: Interventions should encourage sleep-mood relationship awareness, and further research should identify significant differences to inform tailored interventions with adolescents.

Garcia-Ortiz, L.; Recio-Rodriguez, J. I.; Puig-Ribera, A.; Lema-Bartolome, J.; Ibanez-Jalon, E.; Gonzalez-Viejo, N. et al. (2013):

Blood Pressure Circadian Pattern and Physical Exercise Assessment by Accelerometer and 7-Day Physical Activity Recall Scale.

In: *Am J Hypertens* (0895-7061 (Linking)). DOI: 10.1093/ajh/hpt159.

Abstract:

BACKGROUND: The relationship between regular physical activity, measured objectively and by self-report, and the circadian pattern of 24-hour ambulatory arterial blood pressure (BP) has not been clarified. METHODS: We performed a cross-sectional study in a cohort of healthy patients. We included 1,345 patients from the EVIDENT study (mean age 55+/-14 years; 59.3% women). Physical activity was assessed using the 7-day physical activity recall (PAR) questionnaire (metabolic equivalents (MET)/hour/week) and the Actigraph GT3X accelerometer (counts/minute) for 7 days; ambulatory arterial BP was measured with a radial tonometer (B-pro device). RESULTS: The dipper-pattern patients showed a higher level of activity than nondipper patients, as assessed by accelerometer and 7-day PAR. Physical activity measures correlated positively with the percent drop in systolic BP (SBP; rho = 0.19 to 0.11; P < 0.01) and negatively with the systolic and diastolic sleep to wake ratios (rho = -0.10 to -0.18; P < 0.01) and heart rate (rho = -0.13; P < 0.01). In logistic regression, considering the circadian pattern (1, dipper; 0, nondipper) as the dependent variable, the odds ratio of the third tertile of counts/minute was 1.79 (95% confidence interval [CI], 1.35-2.38; P < 0.01) and of MET/hour/week was 1.33 (95% CI, 1.01-1.75; P = 0.04) after adjustment for confounding variables. CONCLUSIONS: Physical activity, as evaluated by both the accelerometer and the 7-day PAR, was associated with a more marked nocturnal BP dip and, accordingly, a lower SBP and diastolic BP sleep to wake ratio. CLINICAL TRIAL REGISTRATION: Clinical Trials.gov Identifier: NCT01083082

Garcia-Ortiz, Luis; Recio-Rodriguez, Jose I.; Schmidt-Trucksass, Arno; Puigdomenech-Puig, Elisa; Martinez-Vizcaino, Vicente; Fernandez-Alonso, Carmen et al. (2014):

Relationship between objectively measured physical activity and cardiovascular aging in the general population - The EVIDENT trial.

In: *Atherosclerosis* 233 (2), S. 434–440. DOI: 10.1016/j.atherosclerosis.2014.01.021.

Abstract:

BACKGROUND: Aging has been associated with an increase in arterial stiffness. We analyzed the relationship between regular physical activity and cardiovascular aging evaluated by the radial augmentation index (rAIx), ambulatory arterial stiffness index (AASI), pulse pressure (PP) and heart age in subjects without atherosclerotic disease. METHODS: A cross-sectional study was performed including 1365 subjects from the EVIDENT trial (mean age 54.9 +/- 13.7 years; 60.3% women). As a measure of total volume of physical activity we used counts/minute recorded in an accelerometer (Actigraph GT3X) that participants wore for seven days, collecting data in 60-sec epochs, and respondents with >/=4 valid days were retained for the analysis. Arterial stiffness was evaluated using measures of rAIx, AASI, and central and peripheral PP on the B-pro device. rAIx was adjusted to 75 heart rate(rAIx75). Cardiovascular risk and heart age was estimated by the Framingham Risk Score. RESULTS: The median (IQR) of counts/min was 236.9 (176.3-307.8), rAIx75 90 (77-100), sleep PP 40 mmHg (33-47), central PP 39 mmHg (32-47) and heart age 57 years (45-73) and the mean +/- SD of the ASSI was 0.44 +/- 0.07. We found an inverse correlation between counts/minute and rAIx75 ($r = -0.086$; $p < 0.01$), AASI ($r = -0.146$; $p < 0.001$), heart age ($r = -0.163$; $p < 0.001$) and peripherals PP. These associations were remained after controlling for potential confounders, except for rAIx75. In the multiple regression analysis, after adjustment, an inverse association persisted between counts/minute and AASI, sleep PP and heart age, but not with rAIx75. Accordingly, for every 100 higher counts/minute of accelerometer measures, both AASI and sleep PP would be lower by one measurement unit (beta = -0.979 and -1.031 respectively, $p < 0.001$) and the estimated heart age by half year (beta = -0.525, $p = 0.023$). CONCLUSIONS: Regular physical activity was inversely associated with parameters related to advanced cardiovascular aging after adjustment for potentially influencing variables. Trial registration: Clinical Trials.gov Identifier: NCT01083082.

Garcia-Palacios, A.; Herrero, R.; Belmonte, M. A.; Castilla, D.; Guixeres, J.; Molinari, G.; Banos, R. M. (2014):

Ecological momentary assessment for chronic pain in fibromyalgia using a smartphone: a randomized crossover study.

In: *Eur J Pain* 18 (6), S. 862–872.

Abstract:

BACKGROUND: Daily diaries are a useful way of measuring fluctuations in pain-related symptoms. However, traditional diaries do not assure the gathering of data in real time, not solving the problem of retrospective assessment. Ecological momentary assessment (EMA) by means of electronic diaries helps to improve repeated assessment. However, it is important to test its feasibility in specific populations in order to reach a wider number of people who could benefit from these procedures. METHODS: The present study compares the compliance and acceptability of an electronic diary running on a smartphone using a crossover design for a sample with a specific pain condition, fibromyalgia and low familiarity with technology. Forty-seven participants were randomly assigned to one of two conditions: (1) paper diary - smartphone diary and (2) smartphone diary - paper diary, using each assessment method for 1 week. RESULTS: The findings of this study showed that the smartphone diary made it possible to gather more accurate and complete ratings. Besides, this method was well accepted by a sample of patients with fibromyalgia referred by a public hospital, with an important proportion of participants with low level of education and low familiarity with technology. CONCLUSIONS: The findings of this study support the use of smartphones for EMA even in specific populations with a specific pain condition, fibromyalgia and with low familiarity with technology. These methods could help clinicians and researchers to gather more accurate ratings of relevant pain-related variables even in populations with low familiarity with technology.

Gard, David E.; Sanchez, Amy H.; Cooper, Kathryn; Fisher, Melissa; Garrett, Coleman; Vinogradov, Sophia (2014):

Do people with schizophrenia have difficulty anticipating pleasure, engaging in effortful behavior, or both?

In: *Journal of Abnormal Psychology* 123 (4), S. 771–782. DOI: 10.1037/t05056-000.

Abstract:

Motivation deficits are common in schizophrenia, but little is known about underlying mechanisms, or the specific goals that people with schizophrenia set in daily life. Using neurobiological heuristics of pleasure anticipation and effort assessment, we

examined the quality of activities and goals of 47 people with and 41 people without schizophrenia, utilizing ecological momentary assessment. Participants were provided cell phones and called 4 times a day for 7 days, and were asked about their current activities and anticipation of upcoming goals. Activities and goals were later coded by independent raters on pleasure and effort. In line with recent laboratory findings on effort computation deficits in schizophrenia, relative to healthy participants, people with schizophrenia reported engaging in less effortful activities and setting less effortful goals, which were related to patient functioning. In addition, patients showed some inaccuracy in estimating how difficult an effortful goal would be, which in turn was associated with lower neurocognition. In contrast to previous research, people with schizophrenia engaged in activities and set goals that were more pleasure-based, and anticipated goals as being more pleasurable than controls. Thus, this study provided evidence for difficulty with effortful behavior and not anticipation of pleasure. These findings may have psychosocial treatment implications, focusing on effort assessment or effort expenditure. For example, to help people with schizophrenia engage in more meaningful goal pursuits, treatment providers may leverage low-effort pleasurable goals by helping patients to break down larger, more complex goals into smaller, lower-effort steps that are associated with specific pleasurable rewards. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Gardner, Paula J.; Campagna, Phil D. (2011):

Pedometers as measurement tools and motivational devices: new insights for researchers and practitioners.

In: *Health promotion practice* 12 (1), S. 55–62. DOI: 10.1177/1524839909334623.

Abstract:

Pedometers are increasingly used in physical activity research and health promotion initiatives. This pilot study examines the efficacy of pedometers as motivational tools for increasing daily physical activity and exploring the practical issues related to pedometer use in research and intervention studies. A mixed-method design is used to collect data on the level of activity and in-depth information about participants' experiences wearing the pedometers. Participants are 10 midlife women between the ages of 45 and 64 (mean age = 52.9). Analysis indicates pedometers function as important motivational tools for increasing daily physical activity and improving the awareness of activity patterns for participants. Findings provide new insights into participants' experiences using the pedometers and understanding how these devices function as research tools. Several important methodological considerations for future research and intervention designs using pedometers are discussed.

Gardner, Andrew W.; Montgomery, Polly S.; Scott, Kristy J.; Blevins, Steve M.; Afaq, Azhar; Nael, Raha (2008):

Association between daily ambulatory activity patterns and exercise performance in patients with intermittent claudication.

In: *Journal of vascular surgery* 48 (5), S. 1238–1244. DOI: 10.1016/j.jvs.2008.06.062.

Abstract:

PURPOSE\r\nTo determine the association between daily ambulatory activity patterns and exercise performance in patients with intermittent claudication.\r\nMETHODS\r\nOne hundred thirty-three patients limited by intermittent claudication participated in this study. Patients were assessed on their ambulatory activity patterns for 1 week with a small, lightweight step activity monitor attached to the ankle using elastic velcro straps above the lateral malleolus of the right leg. The step activity monitor recorded the number of strides taken on a minute-to-minute basis and the time spent ambulating. Patients also were characterized on ankle-brachial index (ABI), ischemic window (IW) after a treadmill test, as well as initial claudication distance (ICD), and absolute claudication distance (ACD) during treadmill exercise.\r\nRESULTS\r\nThe patient characteristics (mean +/- SD) were as follows: ABI = 0.71 +/- 0.23, IW = 0.54 +/- 0.72 mm Hg.min.meter(-1), ICD = 236 +/- 198 meters, and ACD = 424 +/- 285 meters. The patients took 3366 +/- 1694 strides/day, and were active for 272 +/- 103 min/day. The cadence for the 30 highest, consecutive minutes of each day (15.1 +/- 7.2 strides/min) was correlated with ICD (r = 0.316, P < .001) and ACD (r = 0.471, P < 0.001), and the cadence for the 60 highest, consecutive minutes of each day (11.1 +/- 5.4 strides/min) was correlated with ICD (r = 0.290, P < .01) and ACD (r = 0.453, P < .001). Similarly, the cadences for the highest 1, 5, and 20 consecutive minutes, and the cadence for the 30 highest, nonconsecutive minutes all were correlated with ICD and ACD (P < .05). None of the ambulatory cadences were correlated with ABI (P > .05) or with ischemic window (P > .05).\r\nCONCLUSION\r\nDaily ambulatory cadences are associated with severity of intermittent claudication, as measured by ACD and ICD, but not with peripheral hemodynamic measures.

Gardner, Andrew W.; Parker, Donald E.; Montgomery, Polly S.; Khurana, Aman; Ritti-Dias, Raphael M.; Blevins, Steve M. (2010):

Gender differences in daily ambulatory activity patterns in patients with intermittent claudication.

In: *Journal of vascular surgery* 52 (5), S. 1204–1210.

Abstract:

OBJECTIVES:

To compare the pattern of daily ambulatory activity in men and women with intermittent claudication, and to determine whether calf muscle hemoglobin oxygen saturation (StO2) is associated with daily ambulatory activity.

METHODS:

Forty men and 41 women with peripheral arterial disease limited by intermittent claudication were assessed on their community-based ambulatory activity patterns for 1 week with an ankle-mounted step activity monitor and on calf muscle StO2 during a treadmill test.

RESULTS:

Women had lower adjusted daily maximal cadence (mean±SE) for 5 continuous minutes of ambulation (26.2±1.2 strides/min vs 31.0±1.2 strides/min; P=.009), for 1 minute of ambulation (43.1±0.9 strides/min vs 47.2±0.9 strides/min; P=.004), and for intermittent ambulation determined by the peak activity index (26.3±1.2 strides/min vs 31.0±1.2 strides/min; P=.009). Women also had lower adjusted time to minimum calf muscle StO2 during exercise (P=.048), which was positively associated with maximal cadence for 5 continuous minutes (r=0.51; P<.01), maximal cadence for 1 minute (r=0.42; P<.05), and peak activity index (r=0.44; P<.05). These associations were not significant in men.

CONCLUSION:

Women with intermittent claudication ambulate slower in the community setting than men, particularly for short continuous durations of up to 5 minutes and during intermittent ambulation at peak cadences. Furthermore, the daily ambulatory cadences of women are correlated with their calf muscle StO2 during exercise, as women who walk slower in the community setting reach their minimum calf muscle StO2 sooner than those who walk at faster paces. Women with intermittent claudication should be encouraged to not only walk more on a daily basis, but to do so at a pace that is faster than their preferred speed.

Garner, David M.; Garfinkel, Paul E. (1997):

Handbook of treatment for eating disorders:

Guilford Press.

Garrison, Angela M.; Kahn, Jeffrey H. (2010):

Intraindividual relations between the intensity and disclosure of daily emotional events: The moderating role of depressive symptoms.

In: *Journal of counseling psychology* 57 (2), S. 187–197. DOI: 10.1037/a0018386.

Abstract:

Individuals with high levels of depressive symptoms tend to engage in lower levels of emotional disclosure than individuals who are lower in depressive symptoms. However, little is known about how depressive symptoms relate to the intraindividual relation between daily disclosure and the intensity of the daily events. The authors addressed these relations using a daily diary methodology. College students (N = 239) completed a measure of depression symptoms. They then completed measures of the intensity of the day's most unpleasant event and their disclosure of that event each day for 7 days. Results indicated that depression moderated the intensity-disclosure relation such that depression symptoms were associated with diminished emotional disclosure for high-intensity events but not for low-intensity events. Individuals with relatively higher levels of depressive symptoms also experienced unpleasant daily events at a higher intensity level than did individuals with relatively fewer symptoms. Sex differences emerged such that men were less likely than women to disclose high-intensity negative events. These findings extend the use of the diary methodology to the study of emotional disclosure and also suggest possible interventions for counseling psychology practitioners.

Gąsowski, Jerzy; Li, Yan; Kuznetsova, Tatiana; Richart, Tom; Thijs, Lutgarde; Grodzicki, Tomasz et al. (2008):

Is “usual” blood pressure a proxy for 24-h ambulatory blood pressure in predicting cardiovascular outcomes?

In: *Am J Hypertens* 21 (9), S. 994–1000.

Abstract:

BACKGROUND:

The 24-h ambulatory blood pressure (ABP) is a stronger predictor of cardiovascular disease than conventional blood pressure (CBP), but it remains unclear how it compares with "usual" blood pressure (UBP), estimated after CBP has been corrected for regression dilution bias (RDB).

METHODS:

We compared the associations of cardiovascular mortality (n = 50), cardiovascular events (n = 101), and cardiac events (n = 71) with systolic CBP, UBP, and ABP over 13 years of follow-up (median) in 1,167 randomly selected Belgians. We estimated the correction factor to compute UBP from CBP at the midpoint of follow-up (6.5 years) in 723 untreated individuals without cardiovascular disease.

RESULTS:

Cardiovascular disease increased across quartiles of systolic CBP, UBP, and ABP (P for trend < or =0.02). For each 10 mm Hg increment in systolic ABP, the multivariate-adjusted hazard ratios for cardiovascular mortality and for cardiovascular and cardiac events were 1.38, 1.27, and 1.33, respectively (P < 0.001 for all). For CBP, the corresponding hazard ratios were 1.10 (P = 0.21), 1.09 (P = 0.12), and 1.14 (P = 0.06); and for UBP, they were 1.18 (P = 0.21), 1.16 (P = 0.12), and 1.23 (P = 0.06), respectively. The risk function for cardiovascular disease in relation to ABP was significantly steeper than that for CBP, but not UBP. In Cox models, including CBP or UBP in the presence of ABP, only ABP predicted cardiovascular outcomes.

CONCLUSIONS:

Correcting CBP for RDB resulted in a steeper slope of events on blood pressure than observed for CBP. The association with UBP was not statistically significant and did not enhance the prediction of outcome to the level of ABP.

Gassman-Pines, Anna (2011):

Associations of Low-Income Working Mothers' Daily Interactions With Supervisors and Mother-Child Interactions.

In: *J Marriage and Family* 73 (1), S. 67–76. DOI: 10.1111/j.1741-3737.2010.00789.x.

Abstract:

This study investigated associations of low-income working mothers' daily interactions with supervisors and their interactions with children. Sixty-one mothers of preschool-aged children were asked to report on their interactions with their supervisors at work and their interactions with children for 2 weeks (N = 520 workdays). Results show significant within-day spillover from the quality of mothers' perceived work interactions with supervisors to their reports of interactions with children. Supervisor criticism was positively correlated with harsh and withdrawn mother–child interactions on the same day. Supervisor recognition for good work was positively associated with warm mother–child interactions on the same day. Lagged analyses showed some significant associations between perceived supervisor interactions on a given day and mother–child interactions the next day.

Gastin, P. B.; McLean, O.; Spittle, M.; Breed, R. V. (2013):

Quantification of tackling demands in professional Australian football using integrated wearable athlete tracking technology.

In: *J Sci Med Sport* (1878-1861 (Electronic)). DOI: 10.1016/j.jsams.2013.01.007.

Abstract:

OBJECTIVES: To describe and quantify the frequency, velocity and acceleration at impact during tackling in Australian football using a combination of video and athlete tracking technology. DESIGN: Quasi-experimental. METHODS: Data was collected from twenty professional Australian Football League players during four in-season matches. All tackles made by the player and those against the player were video-coded and time stamped at the point of contact and then subjectively categorised into low, medium and high intensity impact groups. Peak GPS and acceleration data were identified at the point of contact. Two-way

analysis of variance was used to assess differences (p<0.05) between tackle type (made and against) and tackle intensity. RESULTS: A total of 173 tackles made and 179 tackles against were recorded. Significant differences were found between all tackle intensity groups. Peak velocity was significantly greater in high (19.5+/-6.1kmh(-1)) compared to medium (13.4+/-5.8kmh(-1)) and low intensity (11.3+/-5.0kmh(-1)) tackles. Peak Player Load, a modified vector magnitude of tri-axial acceleration, was significantly greater in high (7.5+/-1.7a.u.) compared to medium (4.9+/-1.5a.u.) and low intensity (4.0+/-1.3a.u.) tackles. CONCLUSIONS: High intensity tackles, although less frequent, are significantly greater in speed of movement immediately prior to contact and in the resultant impact acceleration compared to tackles of lower intensity. Differences in accelerometer data between tackles observed to be progressively greater in intensity suggest a level of ecological validity and provide preliminary support for the use of accelerometers to assess impact forces in contact invasion sports

Gastin, P. B.; Meyer, D.; Robinson, D. (2012):

Perceptions of wellness to monitor adaptive responses to training and competition in elite Australian football.

In: *J Strength.Cond.Res* (1064-8011 (Linking)). DOI: 10.1519/JSC.0b013e31827fd600.

Abstract:

ABSTRACT: Perceptions of wellness are often used by athletes and coaches to assess adaptive responses to training. The purpose of this research was to describe how players were coping with the demands of elite level Australian football over a competitive season using subjective ratings of physical and psychological wellness and to assess the ecological validity of such a monitoring approach. Twenty seven players completed ratings for nine items (fatigue, general muscle, hamstring, quadriceps, pain/stiffness, power, sleep quality, stress, wellbeing). Players subjectively rated each item as they arrived at the training or competition venue on a 1 - 5 visual analog scale, with 1 representing the positive end of the continuum. A total of 2,583 questionnaires were analysed from completions on 183 days throughout the season (92 +/- 24 per player, 103 +/- 20 per week; mean +/- SD). Descriptive statistics and multi-level modelling were used to understand how player ratings of wellness varied over the season and during the week leading into game day and whether selected player characteristics moderated these relationships. Results indicated that subjective ratings of physical and psychological wellness were sensitive to weekly training manipulations (i.e., improve steadily throughout the week to a game day low, $p < 0.001$), to periods of unloading during the season (i.e., a week of no competition, $p < 0.05$) and to individual player characteristics (e.g., muscle strain after a game was poorer in players with high maximum speed, $p < 0.01$). It is concluded that self-reported player ratings of wellness provide a useful tool for coaches and practitioners to monitor player responses to the rigorous demands of training, competition and life as a professional athlete

Gay, V.; Leijdekkers, P. (2012):

Personalised mobile health and fitness apps: lessons learned from myFitnessCompanion(R).

In: *Stud.Health Technol.Inform.* 177 (0926-9630 (Linking)), S. 248–253. Online verfügbar unter PM:22942063.

Abstract:

Smartphones and tablets are slowly but steadily changing the way we look after our health and fitness. Today, many high quality mobile apps are available for users and health professionals and cover the whole health care chain, i.e. information collection, prevention, diagnosis, treatment and monitoring. Our team has developed a mobile health and fitness app called myFitnessCompanion(R) which has been available via Android market since February 2011. The objective of this paper is to share our experience with rolling out a mobile health and fitness app. We discuss the acceptance of health apps by end-users and healthcare industry. We discuss how mobile health apps will be distributed in the near future, the use of Personal Health Record (PHR) systems such as Microsoft HealthVault and the impact of regulations (FDA) on the future of mobile health apps. The paper is based on seven years of experience by the authors as mobile health and fitness application developers and we discuss the challenges and opportunities for app developers in the health industry

Gebruers, N.; Truijen, S.; Engelborghs, S.; Nagels, G.; Brouns, R.; Deyn, P. P. (2008):

Actigraphic measurement of motor deficits in acute ischemic stroke.

In: *Cerebrovascular diseases (Basel, Switzerland)* 26 (5), S. 533–540. DOI: 10.1159/000160210.

Abstract:

BACKGROUND\r\nThis study aimed to investigate the use of actigraphy (accelerometry) to measure disuse of the impaired arm in acute stroke patients. We correlated the National Institute of Health Stroke Scale (NIHSS) and the Fugl-Meyer Assessment arm section (FMA) findings with actigraphic data as a measure of validity.\r\nMETHODS\r\nThirty-nine acute ischemic stroke patients were included within 1 week after stroke onset. At inclusion, motor deficits were assessed by the NIHSS, FMA and 48-hour actigraphic recordings of both wrists were performed.\r\nRESULTS\r\nModerate but highly significant correlations (Spearman's rho) between actigraphic recordings and total NIHSS (ratio r = -0.59 and activity of impaired arm r = -0.75; p < 0.001) and FMA (ratio r = 0.54 and activity of impaired arm r = 0.69; p < 0.001) scores were found. Based on actigraphic motor activity scores, ROC curves were calculated following dichotomization of the population based on NIHSS = 7 and FMA = 45, showing good sensitivity and specificity, with negative predictive value of 100% and positive predictive value of 91% for the ratio variable.\r\nCONCLUSIONS\r\nModerate but highly significant correlations were found between actigraphy and the stroke scales NIHSS and FMA. Actigraphy was able to reliably discriminate less impaired from more impaired stroke patients with excellent sensitivity and specificity values. Actigraphy is a simple, valid, objective and reliable clinical research tool that can be used to determine motor impairment of the upper limb in stroke patients.

Gebruers, Nick; Truijen, Steven; Engelborghs, Sebastiaan; Deyn, Peter P. (2013):

Predictive value of upper-limb accelerometry in acute stroke with hemiparesis.

In: *J Rehabil Res Dev* 50 (8), S. 1099–1106. DOI: 10.1682/JRRD.2012.09.0166.

Abstract:

Few studies have investigated how well early activity measurements by accelerometers predict recovery after stroke. First, we assessed the predictive value of accelerometer-based measurements of upper-limb activity in patients with acute stroke with a hemiplegic arm. Second, we established the difference in arm activity between hospitalized stroke and nonstroke patients. In total, 129 patients with acute stroke and 19 controls participated. Activity of the upper limbs was monitored for 48 h, and these data were used to determine the predictive value of the activity variables compared with the modified Rankin Scale (mRS), which was assessed at 3 mo poststroke onset. The sensitivity and specificity in relation to the mRS were 0.80 and 0.77, respectively, for the activity of impaired arm (AIA) and 0.85 and 0.75, respectively, for the ratio variable calculated by dividing the AIA by the activity of the nonimpaired arm. The corresponding cutoff values were 597,546 counts for AIA and 0.33 for the ratio. The predictive value of AIA combined with age was 85% to the disability status defined as an mRS score of 2 or less.

Gehricke, Jean-G; Hong, Nuong; Whalen, Carol K.; Steinhoff, Kenneth; Wigal, Timothy L. (2009):

Effects of transdermal nicotine on symptoms, moods, and cardiovascular activity in the everyday lives of smokers and nonsmokers with attention-deficit/hyperactivity disorder.

In: *Psychology of Addictive Behaviors* 23 (4), S. 644–655. DOI: 10.1037/a0017441.

Abstract:

The aim of the study was to test the self-medication hypothesis by examining the effects of nicotine in the everyday lives of smokers and nonsmokers with attention-deficit/hyperactivity disorder (ADHD). Fifty-two adults with ADHD (25 abstinent smokers and 27 nonsmokers) participated in a double-blind placebo controlled study with one nicotine patch condition and one placebo patch condition in counterbalanced order. Each condition continued for two consecutive days in which patches were administered each morning. The effects of nicotine on ADHD symptoms, moods, and side effects were assessed with electronic diaries. Cardiovascular activity was recorded with ambulatory blood pressure monitors and physical activity was monitored with actigraphs. Nicotine reduced reports of ADHD symptoms by 8% and negative moods by 9%, independent of smoking status. In addition, nicotine increased cardiovascular activity during the first 3 to 6 hours after nicotine patch administration. The results support the self-medication hypothesis for nicotine in adults with ADHD and suggest that smoking cessation and prevention efforts for individuals with ADHD will need to address both the symptom reducing and mood enhancing effects of nicotine.

Gehricke, Jean-G; Hong, Nuong; Wigal, Timothy L.; Chan, Vivien; Doan, Ashley (2011):

ADHD medication reduces cotinine levels and withdrawal in smokers with ADHD.

In: *Pharmacology, biochemistry, and behavior* 98 (3), S. 485–491. DOI: 10.1016/j.pbb.2011.02.021.

Abstract:

Individuals with ADHD may self-medicate with nicotine, the main psychoactive ingredient in tobacco smoke, in order to reduce symptoms and negative moods associated with ADHD. ADHD medication (e.g., methylphenidate and atomoxetine) may mimic some of the effects of nicotine and may aid smoking cessation in smokers with ADHD. The present study examined if ADHD medication reduces smoking and withdrawal in non-treatment seeking smokers with ADHD. Fifteen adult smokers with ADHD participated in the study, which consisted of an experimental phase and field monitoring phase to examine the acute and extended effects, respectively, of ADHD medication. During the experimental phase, smokers were asked to complete a Continuous Performance Task (CPT) and the Shiffman-Jarvik smoking withdrawal questionnaire during the following four conditions: (1) ADHD medication+cigarette smoking, (2) ADHD medication+overnight abstinence, (3) placebo+cigarette smoking, and (4) placebo+overnight abstinence. During the field monitoring phase, participants were asked to provide salivary cotinine samples and complete electronic diaries about smoking, smoking urge, ADHD symptoms, and stress in everyday life for two days on ADHD medication and for two days on placebo. Results of the experimental phase showed that ADHD medication improved task performance on the CPT and reduced withdrawal during overnight abstinence. During the field monitoring phase, ADHD medication reduced salivary cotinine levels compared to placebo. In addition, the electronic diary revealed that ADHD medication improved difficulty concentrating during no smoking events and stress. The findings of the present study suggest that, along with other strategies, ADHD medication may be used to aid smoking withdrawal and cessation in smokers with ADHD.

Geiser, Christian; Bishop, Jacob; Lockhart, Ginger; Shiffman, Saul; Grenard, Jerry L. (2013):

Analyzing latent state-trait and multiple-indicator latent growth curve models as multilevel structural equation models.

In: *Front Psychol* 4, S. 975. DOI: 10.3389/fpsyg.2013.00975.

Abstract:

Latent state-trait (LST) and latent growth curve (LGC) models are frequently used in the analysis of longitudinal data. Although it is well-known that standard single-indicator LGC models can be analyzed within either the structural equation modeling (SEM) or multilevel (ML; hierarchical linear modeling) frameworks, few researchers realize that LST and multivariate LGC models, which use multiple indicators at each time point, can also be specified as ML models. In the present paper, we demonstrate that using the ML-SEM rather than the SL-SEM framework to estimate the parameters of these models can be practical when the study involves (1) a large number of time points, (2) individually-varying times of observation, (3) unequally spaced time intervals, and/or (4) incomplete data. Despite the practical advantages of the ML-SEM approach under these circumstances, there are also some limitations that researchers should consider. We present an application to an ecological momentary assessment study (N = 158 youths with an average of 23.49 observations of positive mood per person) using the software Mplus (Muthen and Muthen, 1998-2012) and discuss advantages and disadvantages of using the ML-SEM approach to estimate the parameters of LST and multiple-indicator LGC models.

Geisler, Fay C. M.; Kubiak, Thomas; Siewert, Kerstin; Weber, Hannelore (2013):

Cardiac vagal tone is associated with social engagement and self-regulation.

In: *Biol Psychol* 93 (2), S. 279–286. DOI: 10.1037/t13598-000;

Abstract:

The polyvagal theory (Porges, 2007) represents a biobehavioral model that relates autonomic functioning to self-regulation and social engagement. The aim of the two presented studies was to test the proposed association of cardiac vagal tone (CVT), assessed via resting high-frequency heart rate variability (respiratory sinus arrhythmia, RSA), with coping, emotion-regulation, and social engagement in young adults. In Study 1 (retrospective self-report), RSA was positively associated with engagement coping (situation control, response control, positive self-instructions, social-support seeking) and aspects of social wellbeing. In Study 2 (ecological momentary assessment), for 28 days following the initial assessment, RSA predicted less use of disengagement strategies (acceptance and avoidance) for regulating negative emotions and more use of socially adaptive emotion-regulation strategies (i.e., social-support seeking as a reaction to sadness and making a concession as a reaction to anger caused by others). Furthermore, RSA was higher in participants who reported no anger episodes compared to those who reported at least one anger episode and was positively associated with reported episodes of negative emotions. Results support the association proposed by the PVT between CVT and self-regulatory behavior, which promotes social bonds. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Geschwind, Nicole; Nicolson, Nancy A.; Peeters, Frenk; van Os, Jim; Barge-Schaapveld, Daniela; Wichers, Marieke (2011):

Early improvement in positive rather than negative emotion predicts remission from depression after pharmacotherapy.

In: *Eur Neuropsychopharmacol* 21 (3), S. 241–247. DOI: 10.1016/j.euroneuro.2010.11.004.

Abstract:

Knowledge on mechanisms involved in early prediction of response to antidepressant medication may help optimize clinical decision making. Recent studies regarding response to pharmacotherapy implicate resilience-like mechanisms and involvement of positive, rather than negative emotions. The aim of the current study is to examine the contribution of early change in positive affect to the prediction of response to pharmacotherapy. Positive and negative emotions were measured at baseline and during the first week of pharmacotherapy, using experience sampling techniques. The association between early change in positive and negative emotions and severity of depressive symptoms at week six was examined in a sample of 49 depressed patients. The added benefits of measuring early change in positive emotions compared to early Hamilton Depression Rating Scale (HDRS) change alone were evaluated through model comparisons. Early improvement in positive affect during the first week of treatment predicted the continuous HDRS score (β=-0.64, p<0.001), response (50% reduction; OR=4.32, p<0.01), and remission (HDRS≤7; OR=9.29, p<0.001) at week six with moderate to large effect sizes. Effects of early change in negative emotions were only half as large and disappeared when evaluated simultaneously with early change in positive emotions. When early change in positive emotions was added to the models including early HDRS change only, all three models improved significantly. In conclusion, early change in positive rather than negative emotions best predicted response to treatment, supporting the notion that antidepressants activate resilience-like mechanisms. Moreover, monitoring of positive emotions in early stages of treatment may improve clinical decision making.

Geschwind, Nicole; Peeters, Frenk; Jacobs, Nele; Delespaul, Philippe; Derom, Catherine; Thiery, Evert et al. (2010):

Meeting risk with resilience: high daily life reward experience preserves mental health.

In: *Acta Psychiatrica Scandinavica* 122 (2), S. 129–138.

Abstract:

OBJECTIVE:

To examine prospectively whether high reward experience (the ability to generate positive affect boosts from pleasurable daily events) protects against affective symptoms and whether environmental or genetic risk factors moderate protective effects.

METHOD:

At baseline, 498 female twins participated in an experience sampling study measuring reward experience in daily life. They also completed questionnaires on childhood adversity and recent stressful life events (SLE). Affective symptoms were measured at baseline and at four follow-ups using SCL-90 anxiety and depression subscales. Co-twin affective symptoms were used as indicators of genetic risk.

RESULTS:

Baseline reward experience did not predict follow-up affective symptoms, regardless of level of genetic risk. However, high reward experience was associated with reduced future affective symptoms after previous exposure to childhood adversity or recent SLE.

CONCLUSION:

High daily life reward experience increases resilience after environmental adversity; modification of reward experience may constitute a novel area of therapeutic intervention.

Gevonden, M. J.; Myin-Germeys, I.; van Den Brink, W.; van Os, J.; Selten, J. P.; Booij, J. (2014):

Psychotic reactions to daily life stress and dopamine function in people with severe hearing impairment.

In: *Psychol Med*, S. 1–10. DOI: 10.1017/S0033291714002797.

Abstract:

Background. Minor stresses measured in daily life have repeatedly been associated with increased momentary psychotic experiences, both in individuals with psychotic disorders and in persons who are genetically at an increased risk for these

disorders. Severe hearing impairment (SHI) is an environmental risk factor for psychotic disorder, possibly due to the experience of social exclusion. The aim of the current study is to investigate whether people with SHI exhibit higher levels of psychotic reactivity to social stressors in daily life than normal-hearing controls and whether this reactivity is associated with decreased baseline dopamine (DA) D2/3 receptor availability and/or elevated DA release following a dexamphetamine challenge. Method. We conducted an experience sampling study in 15 young adults with SHI and 19 matched normal-hearing controls who had previously participated in a single photon emission computed tomography study measuring DA D2/3 receptor availability and DA release in response to dexamphetamine. Results. The association between social stress and momentary psychotic experiences in daily life was stronger among SHI participants than among normal-hearing controls. Interactions between social stress and baseline striatal DA D2/3 receptor availability or DA release were not significant in multilevel models of momentary psychotic experiences including age, sex and tobacco use. Conclusions. While both elevated striatal DA release and elevated psychotic stress reactivity have been found in the same population defined by an environmental risk factor, SHI, their inter-relationship cannot be established. Further research is warranted to clarify the association between biological and psychological endophenotypes and psychosis risk.

Gibson, Carolyn; Matthews, Karen; Thurston, Rebecca (2014):

Daily physical activity and hot flashes in the Study of Women's Health Across the Nation (SWAN) Flashes Study.

In: *Fertil Steril* 101 (4), S. 1110–1116. DOI: 10.1016/j.fertnstert.2013.12.029.

Abstract:

OBJECTIVE: To examine the role of physical activity in menopausal hot flashes. DESIGN: Physiologic hot flash monitor and activity monitor over two 48-hour periods, with self-report in an electronic diary. SETTING: Community. PATIENT(S): 51 midlife women. INTERVENTION(S): None. MAIN OUTCOME MEASURE(S): Physiologically detected hot flashes and reported hot flashes with and without physiologic corroboration. RESULT(S): Competing models conceptualize physical activity as a risk or protective factor for hot flashes, but few studies have examined this relationship prospectively using physiologic measures of hot flashes and physical activity. When physiologic hot flashes, reported hot flashes, and reported hot flashes without physiologic corroboration were related to activity changes using hierarchic generalized linear modeling, adjusting for potential confounders, hot flash reports without physiologic corroboration were more likely after activity increases, particularly among women with higher levels of depressive symptoms. No other types of hot flashes were related to physical activity. CONCLUSION(S): Acute increases in physical activity were associated with increased reporting of hot flashes that lacked physiologic corroboration, particularly among women with depressive symptoms. Clinicians should consider the role of symptom perception and reporting in relations between physical activity and hot flashes.

Gidlow, Christopher J.; Cochrane, Tom; Davey, Rachel; Smith, Hannah (2008):

In-school and out-of-school physical activity in primary and secondary school children.

In: *Journal of Sports Sciences* 26 (13), S. 1411–1419. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2011-26429-005%26site%3dehost-live;c.gidlow@staffs.ac.uk.

Abstract:

The aim of this study was to compare in-school and out-of-school physical activity within a representative sample. Socio-demographic, physical activity, and anthropometric data were collected from a random sample of children (250 boys, 253 girls) aged 3-16 years attending nine primary and two secondary schools. Actigraph GT1M accelerometers, worn for seven days, were used to estimate physical activity levels for in-school (typically 09.00-15.00 h), out-of-school (weekday), and weekend periods. Physical activity as accelerometer counts per minute were lower in school versus out of school overall (in school: 437.2 +/- 172.9; out of school: 575.5 +/- 202.8; P < 0.001), especially in secondary school pupils (secondary: 321.6 +/- 127.5; primary: 579.2 +/- 216.3; P < 0.001). Minutes of moderate-to-vigorous physical activity accumulated in school accounted for 29.4 +/- 9.8% of total weekly moderate-to-vigorous physical activity overall but varied by sector (preschool: 37.4 +/- 6.2%; primary: 33.6 +/- 8.1%; secondary: 23.0 +/- 9.3%; F = 114.3, P < 0.001). Approximately half of the children with the lowest in-school activity compensated out of school during the week (47.4%) and about one-third at the weekend (30.0%). Overall, physical activity during the school day appears to be lower than that out of school, especially in secondary school children, who accumulate a lower proportion of their total weekly moderate-to-vigorous physical activity at school than younger children. As low in-school activity was compensated for beyond the school setting by less than half of children, promoting physical activity within the school day is important, especially in secondary schools.

Giesbrecht, Gerald F.; Campbell, Tavis; Letourneau, Nicole; Kooistra, Libbe; Kaplan, Bonnie (2012):

Psychological distress and salivary cortisol covary within persons during pregnancy.

In: *Psychoneuroendocrinology* 37 (2), S. 270–279. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-29692-010&site=ehost-live;Gerald.Giesbrecht@albertahealthservices.ca.

Abstract:

The mechanisms whereby maternal stress during pregnancy exerts organizational effects on fetal development require elaboration. The aim of this study was to assess the plausibility of cortisol as a biological link between maternal psychological distress during pregnancy and fetal development. Previous research has resulted in equivocal findings for between-persons differences in stress and cortisol. Ecological momentary assessment was used to simultaneously assess mood and cortisol 5 times daily for 3 days in 83 women (gestational ages 6—37 weeks). Results from multilevel analysis indicated a robust within-person association between negative mood and cortisol. For each 1.0% increase in negative mood there was a corresponding 1.9% increase in cortisol. This association was unaffected by advancing gestational age. The results suggest that cortisol is a plausible biological mechanism for transducing the effects of maternal psychological distress during pregnancy to fetal development. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Giesbrecht, G. F.; Campbell, T.; Letourneau, N.; Kaplan, B. J. (2013):

Advancing gestation does not attenuate biobehavioural coherence between psychological distress and cortisol.

In: *Biol.Psychol.* 93 (1), S. 45–51. DOI: 10.1016/j.biopsycho.2013.01.019.

Abstract:

BACKGROUND: Despite little evidence to suggest that HPA axis responses to psychological provocation are attenuated during pregnancy, it is widely held that dampening of the HPA axis response to psychological distress serves a protective function for the mother and fetus. The current study was designed to assess changes in biobehavioral coherence between psychological distress and cortisol over the course of pregnancy. METHODS: Ambulatory assessment of ecologically relevant psychological distress and salivary cortisol were repeated in all three trimesters for 82 pregnant women. Samples were collected 5 times per day over the course of 2days in each trimester. RESULTS: Psychological distress and cortisol were positively associated, beta=.024, p<.01, indicating that increases in psychological distress were associated with increases in cortisol. Gestational age did not moderate this association, beta=.0009, p=.13, suggesting that negative psychological experiences remain potent stimuli for the HPA axis during pregnancy. CONCLUSION: Biobehavioral coherence between ecologically relevant experiences of psychological distress and cortisol is not attenuated with advancing gestation

Giesbrecht, G. F.; Granger, D. A.; Campbell, T.; Kaplan, B. (2012):

Salivary alpha-amylase during pregnancy: Diurnal course and associations with obstetric history, maternal demographics, and mood.

In: *Dev.Psychobiol.* (0012-1630 (Linking)). DOI: 10.1002/dev.21008.

Abstract:

Diurnal patterns of salivary alpha amylase (sAA) in pregnant women have not previously been described. The current study employed ecological momentary assessment to examine the association between the diurnal sAA, obstetric history, maternal demographics, and mood during pregnancy. Saliva was self-collected by 83 pregnant women (89% White, age 25.3-43.0 years; mean gestational age 21.9 weeks, range 6-37 weeks; gravida 1-6) at home over three days. Results indicated that current pregnancy (gestational age and fetal sex) and maternal demographics were not related to diurnal sAA. In contrast, a history of previous miscarriage (Parameter = -.17; SE = .05; p < .05) was associated with an atypical diurnal pattern. Even after accounting for obstetric history, trait anxiety (Parameter = .16; SE = .04; p < .001) was associated with increased sAA over the day while chronic levels of fatigue (Parameter = -.06; SE = .03; p < .05) were associated with decreased sAA. In a separate model, we also tested the time varying covariation of sAA and mood. The effects of momentary mood were in contrast to those for trait mood. Both momentary depression (Parameter = .22; SE = .09; p < .01) and vigour/positive mood (Parameter = .12; SE = .04; p < .001) were associated with momentary increases in sAA while momentary anxiety and fatigue were not related to sAA. The findings suggest that basal sAA during pregnancy is sensitive to emotional arousal. Evaluating diurnal patterns of sAA holds promise for advancing understanding of how emotional arousal during pregnancy may affect fetal development. (c) 2012 Wiley Periodicals, Inc. Dev Psychobiol

Giesbrecht, Gerald F.; Granger, Douglas A.; Campbell, Tavis; Kaplan, Bonnie (2013):

Salivary alpha-amylase during pregnancy: Diurnal course and associations with obstetric history, maternal demographics, and mood.

In: *Developmental Psychobiology* 55 (2), S. 156–167. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-02268-006%26site%3dehost-live;ggiesbre@ucalgary.ca.

Abstract:

Diurnal patterns of salivary alpha amylase (sAA) in pregnant women have not previously been described. The current study employed ecological momentary assessment to examine the association between the diurnal sAA, obstetric history, maternal demographics, and mood during pregnancy. Saliva was self-collected by 83 pregnant women (89% White, age 25.3–43.0 years; mean gestational age 21.9 weeks, range 6–37 weeks; gravida 1–6) at home over three days. Results indicated that current pregnancy (gestational age and fetal sex) and maternal demographics were not related to diurnal sAA. In contrast, a history of previous miscarriage (Parameter = −.17; SE = .05; p < .05) was associated with an atypical diurnal pattern. Even after accounting for obstetric history, trait anxiety (Parameter = .16; SE = .04; p < .001) was associated with increased sAA over the day while chronic levels of fatigue (Parameter -+ .06; SE = .03; p < .05) were associated with decreased sAA. In a separate model, we also tested the time varying covariation of sAA and mood. The effects of momentary mood were in contrast to those for trait mood. Both momentary depression (Parameter = .22; SE = .09; p < .01) and vigour/positive mood (Parameter = .12; SE = .04; p < .001) were associated with momentary increases in sAA while momentary anxiety and fatigue were not related to sAA. The findings suggest that basal sAA during pregnancy is sensitive to emotional arousal. Evaluating diurnal patterns of sAA holds promise for advancing understanding of how emotional arousal during pregnancy may affect fetal development. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Giesbrecht, G. F.; Letourneau, N.; Campbell, T.; Kaplan, B. J. (2012):

Affective experience in ecologically relevant contexts is dynamic and not progressively attenuated during pregnancy.

In: *Arch.Womens Ment.Health* (1435-1102 (Electronic)). DOI: 10.1007/s00737-012-0300-4.

Abstract:

Pregnancy is thought to diminish a woman's appraisal of and affective response to stressors. To examine this assumption, we used an electronic diary and an ecological momentary assessment strategy to record women's (n = 85) experiences of positive and negative affect five times each day over 2 days within each trimester of pregnancy. The women also completed the Edinburgh Postnatal Depression Scale in each trimester. Multilevel modeling indicated nonlinear patterns for both positive and negative affect that differed by the level of depressive symptoms. The findings suggest that changes in the psychological experience over the course of pregnancy are dynamic and not progressively attenuated

Giesbrecht, Gerald F.; Letourneau, Nicole; Campbell, Tavis; Kaplan, Bonnie J. (2012):

Affective experience in ecologically relevant contexts is dynamic and not progressively attenuated during pregnancy.

In: *Archives of Women's Mental Health* 15 (6), S. 481–485. DOI: 10.1037/t01756-000;

Abstract:

Pregnancy is thought to diminish a woman's appraisal of and affective response to stressors. To examine this assumption, we used an electronic diary and an ecological momentary assessment strategy to record women's (n = 85) experiences of positive and negative affect five times each day over 2 days within each trimester of pregnancy. The women also completed the Edinburgh Postnatal Depression Scale in each trimester. Multilevel modeling indicated nonlinear patterns for both positive and negative affect that differed by the level of depressive symptoms. The findings suggest that changes in the psychological experience over the course of pregnancy are dynamic and not progressively attenuated. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Gietzelt, M.; Schnabel, S.; Wolf, K. H.; Busching, F.; Song, B.; Rust, S.; Marschollek, M. (2011):

A method to align the coordinate system of accelerometers to the axes of a human body: The depitch algorithm.

In: *Comput.Methods Programs Biomed.* (0169-2607 (Linking)). DOI: 10.1016/j.cmpb.2011.10.014.

Abstract:

One of the key problems in accelerometry based gait analyses is that it may not be possible to attach an accelerometer to the lower trunk so that its axes are perfectly aligned to the axes of the subject. In this paper we will present an algorithm that was designed to virtually align the axes of the accelerometer to the axes of the subject during walking sections. This algorithm is based on a physically reasonable approach and built for measurements in unsupervised settings, where the test persons are applying the sensors by themselves. For evaluation purposes we conducted a study with 6 healthy subjects and measured their gait with a manually aligned and a skewed accelerometer attached to the subject's lower trunk. After applying the algorithm the intra-axis correlation of both sensors was on average 0.89+/-0.1 with a mean absolute error of 0.05g. We concluded that the algorithm was able to adjust the skewed sensor node virtually to the coordinate system of the subject

Gijbels, Domien; Alders, Geert; van Hoof, Elke; Charlier, Caroline; Roelants, MacHteld; Broekmans, Tom et al. (2010):

Predicting habitual walking performance in multiple sclerosis: relevance of capacity and self-report measures.

In: *Multiple sclerosis (Houndmills, Basingstoke, England)* 16 (5), S. 618–626. DOI: 10.1177/1352458510361357.

Abstract:

The objective was to establish the extent to which physical functioning capacity and self-report measures are able to predict the habitual walking performance in ambulatory persons with multiple sclerosis. Fifty persons with multiple sclerosis (Expanded Disability Status Scale, EDSS, 1.5-6.5) were tested on leg muscle strength as well as walking and balance capacity, and completed self-report indices on perceived physical functioning. Habitual walking performance, that is, the real amount of steps that is performed in the customary living environment, was registered by means of an ambulant accelerometer-based monitor during seven consecutive days. Mild (EDSS 1.5-4.0, n = 29) and moderate (EDSS 4.5-6.5, n = 21) multiple sclerosis subgroups were additionally distinguished as predictor variables and values were hypothesized to differ depending on multiple sclerosis severity and concomitant ambulatory function. Multiple regression analyses yielded a single most significant predictor for each (sub)group with other variables making no independent contribution to the variation in habitual walking performance. For the total study sample, this was the 6-Minute Walking Test ($R(2) = 0.458$, $p < 0.01$). In the mild multiple sclerosis subgroup, the 6-Minute Walking Test was again most predictive, yet to a modest degree ($R(2) = 0.187$, $p = 0.02$). In the moderate multiple sclerosis subgroup, the 2-Minute Walking Test explained over half of the variance ($R(2) = 0.532$, $p < 0.01$). Habitual walking performance is best reflected by longer walking capacity tests. The extent to which it can be predicted based on clinical testing is larger in a multiple sclerosis patient sample with more severe walking disability. Ambulatory monitoring, however, includes aspects of community ambulation not captured in the clinic, and must be considered as an additional outcome for evaluating interventions in multiple sclerosis.

Gimpel, Charlotte; Wühl, Elke; Arbeiter, Klaus; Drozdz, Dorota; Trivelli, Antonella; Charbit, Marina et al. (2009):

Superior consistency of ambulatory blood pressure monitoring in children: implications for clinical trials.

In: *J Hypertens* 27 (8), S. 1568–1574. DOI: 10.1097/HJH.0b013e32832cb2a8.

Abstract:

BACKGROUND\r\nCasual office blood pressure (CBP) measurements are still standard in antihypertensive drug trials. In pediatric hypertensive trials, ethical considerations, very low disease prevalence and the marked impact of white-coat hypertension create the need for very sensitive and reproducible techniques of BP assessment. We hypothesized that ambulatory BP monitoring (ABPM) may identify treatment effects more sensitively than CBP and thereby reduce sample sizes required in pediatric antihypertensive trials.\r\nMETHODS\r\nStandard deviations (SDs) were used to assess population variability of CBP and ABPM at baseline and after 6 months standardized antihypertensive treatment from a trial investigating the BP-lowering effect of ramipril in children with chronic kidney disease.\r\nRESULTS\r\nIn 157 hypertensive children, ramipril had a similar mean BP-lowering effect on clinic and ambulatory 24-h BP for systolic (-10 vs. -11 mmHg, P = NS) and diastolic values (-9 vs. -11 mmHg, P = NS). However, the SDs of the CBP responses were up to 39% larger than those of ABPM (SBP 15.5 vs. 9.4; DBP 13.8 vs. 8.8; both $P < 0.0001$). Using power analysis, we demonstrate that, depending on the magnitude of the expected antihypertensive

effect and trial design, the utilization of ABPM in antihypertensive drug efficacy studies allows reduction of sample sizes by 57-75%. This reduction of cohort size with ABPM is substantially greater than previously observed for adults.\r\nCONCLUSION\r\nThe primary use of ABPM can substantially reduce the number of children put at potential risk in blinded antihypertensive drug trials by up to three quarters.

Ginexi, Elizabeth M.; Riley, William; Atienza, Audie A.; Mabry, Patricia L. (2014):

The promise of intensive longitudinal data capture for behavioral health research.

In: *Nicotine Tob Res* 16 Suppl 2, S. S73-5. DOI: 10.1093/ntr/ntt273.

Abstract:

Advances in technology and the associated cultural norms, especially the advent of the smartphone, offer an unprecedented opportunity to collect data on relevant health behaviors and experiences unobtrusively at a greater frequency and in greater volumes than ever before. This special issue will acquaint the readership of Nicotine and Tobacco Research with the potential for intensive longitudinal data and will illustrate some innovative analytic techniques for addressing research questions associated with this type of complex data. This introductory article will provide a brief history of the analytic techniques for intensive longitudinal data and will point to some resources that support and enable the use of these techniques.

Giroux, Danielle; Bacon, Samantha; King, Diane K.; Dulin, Patrick; Gonzalez, Vivian (2014):

Examining perceptions of a smartphone-based intervention system for alcohol use disorders.

In: *Telemed J E Health* 20 (10), S. 923–929. DOI: 10.1089/tmj.2013.0222.

Abstract:

Abstract Background: This study presents results from qualitative interviews conducted with participants in a study on the effectiveness of the Location-Based Monitoring and Intervention System for Alcohol Use Disorders (LBMI-A), a smartphone-based, stand-alone intervention application (app) for adults with alcohol use disorders. MATERIALS AND METHODS: Participants were provided an LBMI-A-enabled smartphone to use during a 6-week pilot study. The LBMI-A was composed of psychoeducational modules, assessment and feedback of alcohol use patterns, geographic high-risk location monitoring and alerts, and in vivo assessment and intervention for alcohol cravings and help with managing psychological distress. Semistructured interviews were conducted with all participants following 6 weeks of interacting with the LBMI-A app (n=26). Interviews explored user perceptions of the ease and utility of LBMI-A features, module helpfulness, barriers to use, and recommendations for improvements to the program. Researchers applied a systematic qualitative coding process to transcripts that included both a priori themes identified as important by the research team and new themes that emerged during the coding process. RESULTS AND CONCLUSIONS: Narrative analysis found the emergence of five main themes identified by LBMI-A users as the most helpful functions of the phone: (1) Awareness, (2) Accountability, (3) Skill Transference, (4) Tracking Progress, and (5) Prompts. These themes are explored, and implications of these findings for future smartphone-based interventions are discussed.

Gkaliagkousi, Eugenia; Gavriilaki, Eleni; Nikolaidou, Barbara; Chatzopoulou, Fani; Anyfanti, Panagiota; Triantafyllou, Areti et al. (2014):

Association Between Cardiotrophin 1 Levels and Central Blood Pressure in Untreated Patients With Essential Hypertension.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpt238.

Abstract:

BACKGROUND: Cardiotrophin 1 (CT-1) is an interleukin 6-related cytokine recently implicated in cardiac hypertrophy and vascular damage in essential hypertension (EH). We aimed first to determine CT-1 levels in naive, untreated patients with grade I EH (UH) as compared with normotensive (NT) individuals and, second, to investigate a possible association of CT-1 levels with indices of arterial stiffness. METHODS: We enrolled 45 consecutive untreated patients recently diagnosed with grade I EH by means of office and ambulatory blood pressure (BP) measurements and 25 age- and sex-matched NT subjects. CT-1 levels were measured with a commercially available enzyme-linked immunosorbent assay kit, and indices of arterial stiffness were determined by applanation tonometry. RESULTS: CT-1 levels were significantly elevated in UH patients compared with NT

subjects (P < 0.001). Furthermore, CT-1 levels correlated positively with office, ambulatory and central BP. A significant bivariable correlation was also found between CT-1 levels and pulse wave velocity (P = 0.02). In the multivariable analysis, central systolic and diastolic BP proved the only significant predictors of CT-1 levels after controlling for other related factors. CONCLUSIONS: To our knowledge, this is the first study that correlates CT-1 levels with ambulatory and central BP, as well as with pulse wave velocity in patients with essential hypertension. Thus, studying the effects of CT-1 in the cardiovascular system in patients with EH represents a promising area of investigation in the future.

Gladh, K.; Ang, B. O.; Lindholm, P.; Nilsson, J.; Westman, A. (2013):

Decelerations and muscle responses during parachute opening shock.

In: *Aviat.Space Environ.Med.* 84 (11), S. 1205–1210. Online verfügbar unter PM:24279237.

Abstract:

INTRODUCTION: Pain in the neck region among skydivers can be related to repeated parachute opening shocks (POS), but empirical data on ramair POS biomechanics is lacking in the literature. The aim of this study was to develop and evaluate a methodology for assessment of multidirectional accelerations and neck muscle activity during parachuting, and to describe preliminary data. METHODS: In an experimental design, four experienced skydivers made two consecutive skydives. Deceleration was recorded with two triaxial accelerometers, one placed on the skydiver's cervicothoracic junction (acc-neck) and the other on the harness (acc-rig). Surface electromyography (EMG) was sampled from four sites bilaterally: anterior-neck, posterior upper and lower neck, and upper shoulder muscles. EMG activity was normalized against a premeasured maximum voluntarily produced electrical signal (MVE). RESULTS: The measuring equipment did not interfere with the parachute jumps. High-quality signals were recorded. The median peak POS deceleration for the acc-neck vs. acc-rig indicated differences (4.0 G vs. 5.1 G), in addition to significant differences emerging for medians of average and maximum onset rates of deceleration (avg: 1.2 G x s(-1) vs. 19.5 G x s(-1); max: 23.0 G x s(-1) vs. 80.0 G x s(-1)). The median of overall muscleactivity was as high as 87% MVE, but no differences in peak activity were found between muscles. Temporal activations of the posterior upper neck occurred less than 50 ms after deceleration initiation, indicating feedforward control of the neck. CONCLUSION: All instruments recorded data of good quality without impeding the skydiving activity. Triaxial accelerometry on the neck vs. the harness yielded dissimilar results, underlining the importance of correct accelerometer placement. Muscle activity was high during POS and neck muscles showed anticipatory tendencies

Glaros, Alan G.; Hanson, Anne H.; Ryen, Chris C. (2014):

Headache and oral parafunctional behaviors.

In: *Appl Psychophysiol Biofeedback* 39 (1), S. 59–66. DOI: 10.1007/s10484-014-9242-0.

Abstract:

This study tested the hypotheses that individuals with headaches would show significantly more oral parafunctional behaviors than non-headache controls, be diagnosed with one or more temporomandibular disorders (TMD) significantly more frequently than controls, and would report significantly less pain and other symptoms of headache after participating in a habit reversal treatment to reduce oral parafunctional behaviors, compared to a wait list control. In Phase I, individuals with and without self-reported headaches were examined by a blinded examiner and participated in a week-long experience sampling protocol (ESM) to assess oral parafunctional behaviors, pain, and emotional states. In Phase II, those with headaches were randomly assigned to either a habit reversal treatment or to a wait list control group. In the last, sixth week of the program, participants again completed an ESM protocol. Results showed that headache patients were significantly more likely to report oral parafunctional behaviors than non-headache controls and to receive a Research Diagnostic Criteria/TMD diagnosis. Results from Phase II showed general improvement in both groups on pain and parafunctions. Individuals with headaches engage in significantly higher rates and intensities of oral parafunctional behaviors. Treatment of these behaviors using habit reversal techniques appears to have the same effect on pain as waiting.

Glaser, Jean-Paul; van Os, Jim; Portegijs, Piet J. M.; Myin-Germeys, Inez (2006):

Childhood trauma and emotional reactivity to daily life stress in adult frequent attenders of general practitioners.

In: *Journal of Psychosomatic Research* 61 (2), S. 229–236. DOI: 10.1016/j.jpsychores.2006.04.014.

Abstract:

OBJECTIVES\r\nChildhood trauma (CT) has consistently been associated with neuroticism--a personality trait reflecting vulnerability to stress. However, not much is known about the impact of a history of trauma on moment-to-moment emotions and experiences in the flow of daily life. The relationship between CT and emotional reactivity to daily life stress was investigated.\r\nMETHODS\r\nNinety frequent attenders of general practitioners, of which 29 fulfilled criteria for CT (sexual and/or physical trauma before the age of 19 years), were studied with the Experience Sampling Method (a structured diary technique assessing current context and mood in daily life) to assess: (a) appraised subjective stress related to daily events and activities, and (b) emotional reactivity conceptualized as changes in negative affect (NA).\r\nRESULTS\r\nMultilevel regression analysis revealed that subjects with a history of CT reported significantly increased emotional reactivity to daily life stress, as reflected in an increase in NA. This effect was significantly stronger for subjects who experienced trauma before the age of 10 years.\r\nCONCLUSION\r\nThese results confirm that CT may have long-lasting and enduring effects on adult psychological functioning, as exposed individuals continually react more strongly to small stressors occurring in the natural flow of everyday life. The finding that emotional stress reactivity is most pronounced for subjects who experienced trauma early in life confirms prior evidence suggesting that the effects of trauma are more detrimental when trauma occurs at a younger age.

Glaser, J-P; van Os, J.; Mengelers, R.; Myin-Germeys, I. (2008):

A momentary assessment study of the reputed emotional phenotype associated with borderline personality disorder.

In: *Psychological Medicine* 38 (09), S. 1231–1239.

Abstract:

BACKGROUND:

Stress is postulated to play an essential role in the expression of core borderline symptoms. However, the phenomenology of stress reactivity in borderline personality disorder remains unclear. The current study investigated the phenomenology of stress sensitivity in borderline personality disorder in the flow of daily life and compared this with stress sensitivity in patients suffering from psychotic disorders, a group so far known to report the largest reactivity to stress.

METHOD:

A total of 44 borderline patients, 42 patients with psychotic disorder and 49 healthy controls were studied with the Experience Sampling Method (a structured diary technique assessing current context and mood in daily life) to assess: (1) appraised subjective stress related to daily events and activities; and (2) emotional reactivity conceptualized as changes in positive and negative affect.

RESULTS:

Multilevel regression analysis revealed that subjects with borderline personality disorder experienced significantly more emotional reactivity to daily life stress compared with both patients with psychosis and healthy controls, as evidenced by a larger increase in negative affect and a larger decrease in positive affect following stress.

CONCLUSION:

These results are the first to ecologically validate the incorporation of stress reactive symptoms in the diagnosis of borderline personality disorder. Borderline patients continually react stronger than patients with psychosis and healthy controls to small disturbances that continually happen in the natural flow of everyday life. Altered emotional stress reactivity may define borderline personality disorder.

Glaser, J-P; van Os, J.; Thewissen, V.; Myin-Germeys, I. (2010):

Psychotic reactivity in borderline personality disorder.

In: *Acta Psychiatrica Scandinavica* 121 (2), S. 125–134. DOI: 10.1111/j.1600-0447.2009.01427.x.

Abstract:

OBJECTIVE\r\nTo investigate the stress relatedness and paranoia specificity of psychosis in borderline personality disorder (BPD).\r\nMETHOD\r\nFifty-six borderline patients, 38 patients with cluster C personality disorder, 81 patients with psychotic disorder and 49 healthy controls were studied with the experience sampling method (a structured diary technique) to assess: i) appraised subjective stress and ii) intensity of psychotic experiences.\r\nRESULTS\r\nAll patient groups experienced significantly more increases in psychotic experiences in relation to daily life stress than healthy controls, borderline patients displaying the strongest reactivity. Borderline patients, moreover, reported significantly more hallucinatory reactivity than healthy controls and subjects with cluster C personality disorder. Paranoid reactivity to daily life stress did not differ between the patient

groups.\r\nCONCLUSION\r\nThese results are the first to ecologically validate stress-related psychosis in BPD. However, psychotic reactivity was not limited to expression of paranoia but involved a broader range of psychotic experiences including hallucinations.

Glasgow, Mark L.; Rudra, Carole B.; Yoo, Eun-Hye; Demirbas, Murat; Merriman, Joel; Nayak, Pramod et al. (2014):

Using smartphones to collect time-activity data for long-term personal-level air pollution exposure assessment.

In: *J Expo Sci Environ Epidemiol. DOI:* 10.1038/jes.2014.78.

Abstract:

Because of the spatiotemporal variability of people and air pollutants within cities, it is important to account for a person's movements over time when estimating personal air pollution exposure. This study aimed to examine the feasibility of using smartphones to collect personal-level time-activity data. Using Skyhook Wireless's hybrid geolocation module, we developed "Apolux" (Air, Pollution, Exposure), an AndroidTM smartphone application designed to track participants' location in 5-min intervals for 3 months. From 42 participants, we compared Apolux data with contemporaneous data from two self-reported, 24-h time-activity diaries. About three-fourths of measurements were collected within 5 min of each other (mean=74.14%), and 79% of participants reporting constantly powered-on smartphones (n=38) had a daily average data collection frequency of <10 min. Apolux's degree of temporal resolution varied across manufacturers, mobile networks, and the time of day that data collection occurred. The discrepancy between diary points and corresponding Apolux data was 342.3 m (Euclidian distance) and varied across mobile networks. This study's high compliance and feasibility for data collection demonstrates the potential for integrating smartphone-based time-activity data into long-term and large-scale air pollution exposure studies.Journal of Exposure Science and Environmental Epidemiology advance online publication, 26 November 2014; doi:10.1038/jes.2014.78.

Glass, Leila; Graham, Diana M.; Deweese, Benjamin N.; Jones, Kenneth Lyons; Riley, Edward P.; Mattson, Sarah N. (2014):

Correspondence of parent report and laboratory measures of inattention and hyperactivity in children with heavy prenatal alcohol exposure.

In: *Neurotoxicol Teratol* 42, S. 43–50. DOI: 10.1016/j.ntt.2014.01.007.

Abstract:

Clinical research and practice support a multi-method approach to validating behavioral problems in children. We examined whether parent-reported symptoms of hyperactivity and inattention (using the Disruptive Behavior Disorder Rating Scale) were substantiated by objective laboratory measures [hyperactivity measured by wrist-worn actigraphy (ACT) and inattention assessed using a 20-minute continuous performance task (CPT)] in three age- and demographically-matched groups of school-age children: children with prenatal alcohol exposure (AE), non-exposed children with idiopathic ADHD (ADHD), and controls (CON). Results indicated that the clinical groups (AE, ADHD) had significantly higher parent-reported levels for both domains compared to the CON group, and did not differ from each other. On the laboratory measures, the clinical groups were more inattentive than controls on the CPT, but did not differ from each other. In contrast, the ADHD group had higher objective activity on the ACT than AE and CON, which did not differ from each other. Thus, laboratory measures differentially validated parent reports in a group-dependent manner. Actigraphy substantiated parent-reported hyperactivity for children in the ADHD group but not for children in the AE group, while the CPT validated parent-reported inattention for both clinical groups. Although the majority of children in the AE group met the criteria for ADHD, objective activity levels were not different from controls, indicating that hyperactivity may be a less prominent feature in the AE group. Thus, while there is considerable overlap between the effects of prenatal alcohol exposure and ADHD, differences in behavioral profiles may be clinically useful in differential diagnosis. Further, these data indicate that objective measures should be used to validate parent reports.

Gleaves, Alan; Walker, Caroline; Grey, John (2007):

Using digital and paper diaries for learning and assessment purposes in higher education: A comparative study of feasibility and reliability.

In: *Assessment & Evaluation in Higher Education* 32 (6), S. 631–643.

Abstract:

The incorporation of diaries and journals as learning and assessment vehicles into programmes of study within higher education has enabled the further growth of reflection, creative writing, critical thinking and meta-cognitive processes of students' learning. However, there is currently little research that aims to compare how different types of diary are used and for what specific learning and teaching purposes, so, with this in mind, a study was carried out to investigate digital diary use within a group of undergraduates, to some of whom the authors allocated Personal Digital Assistants (PDAs), which they used to contribute to a blog (digital diaries), and to some of whom hard-backed format (paper diaries) were given. This paper is the first of two from this study. The findings indicated that whilst students found both forms of diary acceptable and convenient, differences emerged in the way that the diaries were being used on a day-to-day basis, both in the frequency of entry and in the length of entries made. Throughout the study, the digital diaries were used more frequently, although the entries were often brief and incomplete. Conversely, students completing the paper diaries made significantly fewer entries in total, but those that were made were longer and more discursive in nature. Further, it was found that the paper diaries possessed positive qualities related to handling and attractiveness that promoted more prolonged use, whilst the negative qualities of the digital diaries were linked to technical limitations. The implications of this work are considered in relation to more general notions of using dynamic devices to encourage students to engage in reflexive criticism.

Glenn, Tasha; Monteith, Scott (2014):

New measures of mental state and behavior based on data collected from sensors, smartphones, and the Internet.

In: *Curr Psychiatry Rep* 16 (12), S. 523. DOI: 10.1007/s11920-014-0523-3.

Abstract:

With the rapid and ubiquitous acceptance of new technologies, algorithms will be used to estimate new measures of mental state and behavior based on digital data. The algorithms will analyze data collected from sensors in smartphones and wearable technology, and data collected from Internet and smartphone usage and activities. In the future, new medical measures that assist with the screening, diagnosis, and monitoring of psychiatric disorders will be available despite unresolved reliability, usability, and privacy issues. At the same time, similar non-medical commercial measures of mental state are being developed primarily for targeted advertising. There are societal and ethical implications related to the use of these measures of mental state and behavior for both medical and non-medical purposes.

Glomb, Theresa M.; Bhave, Devasheesh P.; Miner, Andrew G.; Wall, Melanie (2011):

DOING GOOD, FEELING GOOD: EXAMINING THE ROLE OF ORGANIZATIONAL CITIZENSHIP BEHAVIORS IN CHANGING MOOD.

In: *Personnel Psychology* 64 (1), S. 191–223. DOI: 10.1111/j.1744-6570.2010.01206.x.

Abstract:

This study investigates whether the altruism and courtesy dimensions of organizational citizenship behaviors (OCB) regulate mood at work. Social psychological theories of mood regulation suggest helping behaviors can improve individuals' moods because helping others provides gratification and directs attention away from one's negative mood. We capture mood states prior to and following the enactment of OCBs using experience sampling methodology in a sample of managerial and professional employees over a 3-week period. Results suggest altruism shows a pattern consistent with mood regulation; negative moods during the prior time period are associated with altruism and positive moods in the subsequent time period. The pattern of results for courtesy behaviors is only partially consistent with a mood regulation explanation. Consistent with theories of behavioral concordance, interaction results suggest individuals higher on Extroversion have more intense positive mood reactions after engaging in altruistic behaviors. Interactions with courtesy were not significant.

Gloster, Andrew T.; Richard, David C. S.; Himle, Joseph; Koch, Ellen; Anson, Heather; Lokers, Laura; Thornton, James (2008):

Accuracy of retrospective memory and covariation estimation in patients with obsessive–compulsive disorder.

In: *Behav Res Ther* 46 (5), S. 642–655.

Abstract:

Assessment methods relying on biased or inaccurate retrospective recall may distort knowledge about the nature of disorders and lead to faulty clinical inferences. Despite concerns about the accuracy of retrospective recall in general and in particular with obsessive-compulsive disorder (OCD) patients, the accuracy of retrospective recall for one's own symptoms assessed in vivo is unknown in this population. This study used a prospective ecological momentary assessment (EMA) methodology to create a criterion against which to assess recall accuracy in OCD patients. Although results indicated that patients' retrospective recall of OCD symptoms was fairly accurate, they consistently overestimated the magnitude of OCD symptom covariation with non-OCD facets (e.g., sleep duration, contemporaneous stress level, etc.). Findings suggest that even when recall of OCD symptoms is accurate, patients may be inaccurate in estimating symptom covariation. The findings have implications for the research, case conceptualization, and assessment of OCD, and may extend to other disorders.

Godard, C.; Roman, M.; Rodriguez, Mdel P.; Leyton, B.; Salazar, G. (2012):

Variability of physical activity in 4 to 10-year-old children: a study by accelerometry.

In: *Arch.Argent Pediatr.* 110 (5), S. 388–393. DOI: 10.1590/S0325-00752012000500005.

Abstract:

INTRODUCTION: When compared to popular questionnaires, accelerometry provides more reliable information regarding physical activity. Thus, the objective has been to document the variability of physical activity in Chilean children in relation to age, gender, nutritional status and days of the week, and to determine how many of them meet the recommendation for moderate to vigorous physical activity for more than an hour a day. POPULATION AND METHODS: One hundred and nine (109) school children aged 4-10 (67 boys, 42 girls) wore an accelerometer for 2, 3 or 4 consecutive days. Of them, 30 were obese (BMI>95th percentile by age and gender). In each subject, levels of physical activity were expressed in counts per minute (cpm) and means (SD) of cpm/hour. Moderate to vigorous physical activity was defined by the daily sum of cpm>900. RESULTS: Daytime physical activity had a mean of 21,697 (662) cpm/hour with considerable variation from one child to another, and from one time of the day to another in the same child. Individual cpm/hour was significantly associated to moderate to vigorous physical activity (R = 0.954). Differences were found between girls and boys ($p < 0.01$) and between obese and non-obese children ($p < 0.01$). There were no differences between children 9 years ($p = 0.12$). There was a slight difference between weekdays and weekends. Fifty-six (56) of 67 boys (83.6%) and 24 of 42 girls (57.1%) met the recommendation for moderate to vigorous physical activity for more than 60 minutes a day. CONCLUSION: There is a physical activity defcit in Chilean school children under 10 years, particularly in girls and obese kids

Godfrey, Acrmdog; Conway, R.; Meagher, D.; ólaighin, G. (2008):

Direct measurement of human movement by accelerometry.

In: *Med Eng Phys* 30 (10), S. 1364–1386.

Abstract:

Human movement has been the subject of investigation since the fifth century when early scientists and researchers attempted to model the human musculoskeletal system. The anatomical complexities of the human body have made it a constant source of research to this day with many anatomical, physiological, mechanical, environmental, sociological and psychological studies undertaken to define its key elements.

These studies have utilised modern day techniques to assess human movement in many illnesses. One such modern technique has been direct measurement by accelerometry, which was first suggested in the 1970s but has only been refined and perfected during the last 10–15 years.

Direct measurement by accelerometry has seen the introduction of the successful implementation of low power, low cost electronic sensors that have been employed in clinical and home environments for the constant monitoring of patients (and their controls). The qualitative and quantitative data provided by these sensors make it possible for engineers, clinicians and physicians to work together to be able to help their patients in overcoming their physical disability. This paper presents the underlying biomechanical elements necessary to understand and study human movement. It also reflects on the sociological elements of human movement and why it is important in patient life and well being. Finally the concept of direct measurement by accelerometry is presented with past studies and modern techniques used for data analysis.

Godfrey, A.; Conway, R.; Leonard, M.; Meagher, D.; Olaighin, G. (2009):

A classification system for delirium subtyping with the use of a commercial mobility monitor.

In: *Gait Posture* 30 (2), S. 245–252. DOI: 10.1016/j.gaitpost.2009.05.014.

Abstract:

The usefulness of motor subtypes of delirium is unclear due to inconsistency in subtyping methods and a lack of validation with objective measures of activity. The activity of 40 patients was measured over 24h with a commercial accelerometer-based activity monitor. Accelerometry data from patients with DSM-IV delirium that were readily divided into hyperactive, hypoactive and mixed motor subtypes, were used to create classification trees that were subsequently applied to the remaining cohort to define motoric subtypes. The classification trees used the periods of sitting/lying, standing, stepping and number of postural transitions as measured by the activity monitor as determining factors from which to classify the delirious cohort. The use of a classification system shows how delirium subtypes can be categorised in relation to overall activity and postural changes, which was one of the most discriminating measures examined. The classification system was also implemented to successfully define other patient motoric subtypes. Motor subtypes of delirium defined by observed ward behaviour differ in electronically measured activity levels.

Godfrey, Alan; Conway, Richard; Leonard, Maeve; Meagher, David; Olaighin, Gearóid M. (2009):

A continuous wavelet transform and classification method for delirium motoric subtyping.

In: *IEEE Trans Neural Syst Rehabil Eng* 17 (3), S. 298–307. DOI: 10.1109/TNSRE.2009.2023284.

Abstract:

The usefulness of motor subtypes of delirium is unclear due to inconsistency in subtyping methods and a lack of validation with objective measures of activity. The activity of 40 patients was measured over 24 h with a discrete accelerometer-based activity monitor. The continuous wavelet transform (CWT) with various mother wavelets were applied to accelerometry data from three randomly selected patients with DSM-IV delirium that were readily divided into hyperactive, hypoactive, and mixed motor subtypes. A classification tree used the periods of overall movement as measured by the discrete accelerometer-based monitor as determining factors for which to classify these delirious patients. This data used to create the classification tree were based upon the minimum, maximum, standard deviation, and number of coefficient values, generated over a range of scales by the CWT. The classification tree was subsequently used to define the remaining motoric subtypes. The use of a classification system shows how delirium subtypes can be categorized in relation to overall motoric behavior. The classification system was also implemented to successfully define other patient motoric subtypes. Motor subtypes of delirium defined by observed ward behavior differ in electronically measured activity levels.

Godfrey, Alan; Conway, Richard; Leonard, Maeve; Meagher, David; Olaighin, Gearóid M. (2010):

Motion analysis in delirium: a discrete approach in determining physical activity for the purpose of delirium motoric subtyping.

In: *Med Eng Phys* 32 (2), S. 101–110. DOI: 10.1016/j.medengphy.2009.10.012.

Abstract:

The purpose of this study was to determine the use and feasibility of accelerometry-based monitoring and to examine a discrete multi-resolution signal analysis technique to determine motoric subtypes in patients with DSM-IV delirium. Forty consecutive patients receiving palliative care (23 male, 17 female, mean age+/-standard deviation 68.4+/-11.9 years) were assessed using 24-h accelerometer-based monitoring. The total amount of time spent per activity of sitting/lying, standing and stepping were calculated. This was achieved through the multilevel decomposition and reconstruction of the accelerometer signals by means of the discrete wavelet transform. Both the reconstructed approximations and details of the discrete transform were used for motoric subtyping. This was compared to a validated activity monitor for validation purposes. Demographic and clinical data per patient were also collected. Of the 40 patients selected for accelerometry, complete 24-h readings were available for 34 patients and analyses were confined to this group. Of the 34 patients included, 25 met criteria for DSM-IV delirium while 9 were non-delirious comparison subjects with equivalent medical diagnoses receiving treatment in the same setting. It was concluded that accelerometry-based measurement of a delirious cohort within a palliative setting is both a reliable and feasible method of continuous monitoring. Of the activities performed by the patients, periods of standing proved to be the most discriminatory in determining between each subtype.

Godwin, Marshall; Birtwhistle, Richard; Delva, Dianne; Lam, Miu; Casson, Ian; MacDonald, Susan; Seguin, Rachelle (2011):

Manual and automated office measurements in relation to awake ambulatory blood pressure monitoring.

In: *Family practice* 28 (1), S. 110–117. DOI: 10.1093/fampra/cmq067.

Abstract:

BACKGROUND\r\nAutomated blood pressure (BP) devices are commonly used in doctor's offices. How BP measured on these devices relates to ambulatory BP monitoring is not clear.\r\nOBJECTIVE\r\nTo assess how well office-based manual and automated BP predicts ambulatory BP.\r\nMETHODS\r\nUsing data on 654 patients, we assessed how well sphygmomanometer measurements and measurements taken with an automated device (BpTRU) predicted results on ambulatory BP monitoring. We assess positive and negative predictive values and overall accuracy. We look at different cut-points for systolic (130, 135 and 140 mmHg) and diastolic (80, 85 and 90 mmHg) BP.\r\nRESULTS\r\nA single automated office BP (AOBP) assessment provides superior predictive values and overall accuracy compared to three manual office BP assessments. For systolic BP, the predictive values are ≤69% for any of the cut-points while the positive predictive values for the single automated measurement is between 80.0% and 86.9% and the overall accuracy gets as high as 74% for the 130 mmHg cut-point. For diastolic BP, the automated readings are also more predictive but in this case, it is the negative predictive values that are better, as well as the overall accuracy.\r\nCONCLUSIONS\r\nBased on the results, we suggest that 135/85 mmHg continue to be used as the cut-point defining high BP with the BpTRU device. However, future research might suggests that values in a grey zone between 130-139 mmHg systolic and 80-89 mmHg diastolic be confirmed using ambulatory BP monitoring. As well, three AOBP assessments might produce much greater accuracy than the single AOBP assessment used in the study.

Goetz, Thomas; Frenzel, Anne C.; Hall, Nathan C.; Nett, Ulrike E.; Pekrun, Reinhard; Lipnevich, Anastasiya A. (2014):

Types of boredom: An experience sampling approach.

In: *Motivation and Emotion* 38 (3), S. 401–419. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-40732-001%26site%3dehost-live.

Abstract:

The present study investigated different types of boredom as proposed in a four-categorical conceptual model by Goetz and Frenzel (2006; doi:10.1026/0049-8637.38.4. 149). In this model, four types of boredom are differentiated based on degrees of valence and arousal: indifferent, calibrating, searching, and reactant boredom. In two studies (Study 1: university students, N = 63, mean age 24.08 years, 66 % female; Study 2: high school students, grade 11, N = 80, mean age 17.05 years, 58 % female), real-time data were obtained via the experience-sampling method (personal digital assistants, randomized signals). Boredom experiences (N = 1,103/1,432 in Studies 1/2) were analyzed with respect to the dimensions of valence and arousal using multilevel latent profile analyses. Supporting the internal validity of the proposed boredom types, our results are in line with the assumed four types of boredom but suggest an additional, fifth type, referred to as "apathetic boredom." The present findings further support the external validity of the five boredom types in showing differential relations between the boredom types and other affective states as well as frequency of situational occurrence (achievement contexts vs. non-achievement contexts). Methodological implications as well as directions for future research are discussed. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Goetz, Thomas; Haag, Ludwig; Lipnevich, Anastasiya A.; Keller, Melanie M.; Frenzel, Anne C.; Collier, Antonie P. M. (2014):

Between-domain relations of students' academic emotions and their judgments of school domain similarity.

In: *Front Psychol* 5, S. 1153. DOI: 10.3389/fpsyg.2014.01153.

Abstract:

With the aim to deepen our understanding of the between-domain relations of academic emotions, a series of three studies was conducted. We theorized that between-domain relations of trait (i.e., habitual) emotions reflected students' judgments of domain similarities, whereas between-domain relations of state (i.e., momentary) emotions did not. This supposition was based on the accessibility model of emotional self-report, according to which individuals' beliefs tend to strongly impact trait, but not state emotions. The aim of Study 1 (interviews; N = 40; 8th and 11th graders) was to gather salient characteristics of academic domains from students' perspective. In Study 2 (N = 1709; 8th and 11th graders) the 13 characteristics identified in Study 1 were assessed along with academic emotions in four different domains (mathematics, physics, German, and English) using a questionnaire-based trait assessment. With respect to the same domains, state emotions were assessed in Study 3 (N = 121; 8th

and 11th graders) by employing an experience sampling approach. In line with our initial assumptions, between-domain relations of trait but not state academic emotions reflected between-domain relations of domain characteristics. Implications for research and practice are discussed.

Goldbogen, Jeremy A.; Stimpert, Alison K.; Deruiter, Stacy L.; Calambokidis, John; Friedlaender, Ari S.; Schorr, Greg S. et al. (2014):

Using accelerometers to determine the calling behavior of tagged baleen whales.

In: *J Exp Biol. DOI:* 10.1242/jeb.103259.

Abstract:

Low-frequency acoustic signals generated by baleen whales can propagate over vast distances, making the assignment of calls to specific individuals problematic. Here we report the novel use of acoustic recording tags equipped with high-resolution accelerometers to detect vibrations on the surface of two tagged fin whales that directly match the timing of recorded acoustic signals. A tag deployed on a buoy in the vicinity of calling fin whales, and a recording from a tag that had just fallen off of a whale, were able to detect calls acoustically but did not record corresponding accelerometer signals that were measured on calling individuals. Across the hundreds of calls measured on two tagged fin whales, the accelerometer response was generally anisotropic across all three axes, appeared to depend on tag placement, and increased with the level of received sound. These data demonstrate that high-sample-rate accelerometry can provide important insights into the acoustic behavior of baleen whales that communicate at low frequencies. This method helps identify vocalizing whales, which in turn enables the quantification of call rates, a fundamental component of models used to estimate baleen whale abundance and distribution from passive acoustic monitoring.

Goldner, Jonathan (2009):

The relations among parental monitoring and warmth, and adolescent externalizing and internalizing distress: The effects of parent and adolescent perception of neighborhood danger.

Abstract:

Parental monitoring and warmth have traditionally been studied in the context of white, middle-class families. This paper adds to recent research that has begun to explore what levels of these parenting behaviors are optimal for the prevention of adolescent psychopathology in impoverished, urban high crime areas. It also takes into account parent and child perceptions of neighborhood danger. This study employs a longitudinal design, with data collected at two times points one year apart, among a sample of 240 African American young adolescents and their parents in urban, high crime neighborhoods. It aims to study parental monitoring, parental warmth, parent perception of neighborhood danger, child perception of neighborhood danger, child internalizing distress, and child externalizing distress. Further, child internalizing and externalizing distress are measured both through retrospective questionnaire reports of psychopathology as well as in vivo accounts of daily distress through the use of the Experience Sampling Method (ESM), a time sampling technique.

Parents' perception of neighborhood danger predicted an increase in adolescents' externalizing behavior, but not internalizing distress. Contrary to expectation, parents' awareness of danger did not relate to the degree to which they monitored their children. Parental monitoring was associated with children's externalizing behavior, although a hypothesized quadratic relation between parents' monitoring and externalizing did not exist. Both linear and quadratic relations were discovered between parental monitoring and children's internalizing distress. One of the most consistent predictors of adolescents' distress, surprisingly, was their perception of neighborhood danger, which was associated with higher levels of both adolescent internalizing and externalizing symptoms. Adolescents' perception of neighborhood danger emerged as an equally strong predictor of internalizing and externalizing symptoms as parental monitoring and parental warmth. The rate of parent-child agreement regarding the presence of extreme levels of danger was lower than expected. Finally, differential relations existed between parental monitoring and parental warmth as they pertained to internalizing and externalizing. In general, parental monitoring more strongly predicted adolescent externalizing than parental warmth; however, parental warmth was a stronger predictor of adolescent internalizing than parental monitoring. Significant interactions are also discussed, as well as the implications of these findings and how they can serve as a guide to future research.

Goldner, Jonathan; Peters, Tracy L.; Richards, Maryse H.; Pearce, Steven (2011):

Exposure to community violence and protective and risky contexts among low income urban African American adolescents: a prospective study.

In: *Journal of Youth and Adolescence* 40 (2), S. 174–186. DOI: 10.1007/s10964-010-9527-4.

Abstract:

This study examined protective and risky companionship and locations for exposure to community violence among African American young adolescents living in high crime, urban areas. The Experience Sampling Method (ESM), an in vivo data collection method, was employed to gather information from 233 students (62% female) over 3 years, beginning in the 6th grade. Questionnaire variables of exposure to community violence were regressed onto ESM companionship and location variables, cross-sectionally and longitudinally, separately for boys and girls. At different points, time spent with parents, in school, and outside in private space was associated with less exposure to violence for boys and girls, while time spent with girls was protective for boys. In addition, time spent outside in public and with older peers was associated with increased risk for boys and girls. These findings are discussed in relation to previous and potential future research, and to strategies to prevent exposure to community violence.

Goldschmidt, A. B.; Crosby, R. D.; Engel, S. G.; Crow, S. J.; Cao, L.; Peterson, C. B.; Durkin, N. (2013):

Affect and eating behavior in obese adults with and without elevated depression symptoms.

In: *Int.J Eat.Disord.* (0276-3478 (Linking)). DOI: 10.1002/eat.22188.

Abstract:

OBJECTIVE: Although there is a modest relation between obesity and depression, mechanisms that contribute to this co-occurrence are unclear. This study examined mood and eating behavior among obese adults with and without elevated depression symptoms. METHOD: Obese adults (N = 50) were subtyped according to a Beck Depression Inventory (BDI) cutoff of 14, indicating "probable depression." Participants with (BDI >/= 14; n = 15) and without (BDI < 14; n = 35) elevated depression symptoms were compared on affect- and eating-related variables measured via questionnaire and ecological momentary assessment (EMA) using ANCOVA and mixed model regression. RESULTS: After adjusting for group differences in body mass index (BMI; p = .03), participants with elevated depression symptoms reported greater emotional eating via self-report questionnaire [F(1,50) = 4.3; p = .04], as well as more frequent binge eating (Wald chi2 = 13.8; p < .001) and higher daily negative affect (Wald chi2 = 7.7; p = .005) on EMA recordings. Emotional eating mediated the relationship between depression status and BMI (indirect effect estimate = 3.79; 95% CI = 1.02-7.46). DISCUSSION: Emotional eating and binge eating were more commonly reported by obese adults with elevated depression symptoms compared to those without and may occur against a general backdrop of overall low mood. Intervention and prevention programs for obesity and/or depression should address disordered eating to prevent or minimize adverse health consequences. (c) 2013 Wiley Periodicals, Inc. (Int J Eat Disord 2013)

Goldschmidt, A. B.; Peterson, C. B.; Wonderlich, S. A.; Crosby, R. D.; Engel, S. G.; Mitchell, J. E. et al. (2012):

Trait-level and momentary correlates of bulimia nervosa with a history of anorexia nervosa.

In: *Int.J Eat.Disord.* (0276-3478 (Linking)). DOI: 10.1002/eat.22054.

Abstract:

OBJECTIVE: Some investigators have suggested subtyping bulimia nervosa (BN) by anorexia nervosa (AN) history. We examined trait-level and momentary eating-related and psychosocial factors in BN with and without an AN history. METHOD: Interview, questionnaire, and ecological momentary assessment data of eating-related and psychological symptoms were collected from 122 women with BN, including 43 with (BN+) and 79 without an AN history (BN-). RESULTS: Body mass index (kg/m(2)) was lower in BN+ than BN- (p = 0.001). Groups did not differ on trait-level anxiety, shape/weight concerns, psychiatric comorbidity, or dietary restraint; or on momentary anxiety, dietary restriction, binge eating, purging, or exercise frequency, or affective patterns surrounding binge/purge behaviors. Negative affect increased prior to exercise and decreased thereafter in BN+ but not BN-, although groups did not statistically differ. DISCUSSION: Results do not support formally subtyping BN by AN history. Exercise in BN+ may modulate negative affect, which could have important treatment implications. (c) 2012 by Wiley Periodicals, Inc. (Int J Eat Disord 2012)

Goldschmidt, Andrea B.; Wonderlich, Stephen A.; Crosby, Ross D.; Engel, Scott G.; Lavender, Jason M.; Peterson, Carol B. et al. (2013):

Ecological Momentary Assessment of Stressful Events and Negative Affect in Bulimia Nervosa.

In: *Journal of Consulting and Clinical Psychology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-39411-001%26site%3dehost-live.

Abstract:

Objective: Negative affect precedes binge eating and purging in bulimia nervosa (BN), but little is known about factors that precipitate negative affect in relation to these behaviors. We aimed to assess the temporal relation among stressful events, negative affect, and bulimic events in the natural environment using ecological momentary assessment. Method: A total of 133 women with current BN recorded their mood, eating behavior, and the occurrence of stressful events every day for 2 weeks. Multilevel structural equation mediation models evaluated the relations among Time 1 stress measures (i.e., interpersonal stressors, work/environment stressors, general daily hassles, and stress appraisal), Time 2 negative affect, and Time 2 binge eating and purging, controlling for Time 1 negative affect. Results: Increases in negative affect from Time 1 to Time 2 significantly mediated the relations between Time 1 interpersonal stressors, work/environment stressors, general daily hassles, and stress appraisal and Time 2 binge eating and purging. When modeled simultaneously, confidence intervals for interpersonal stressors, general daily hassles, and stress appraisal did not overlap, suggesting that each had a distinct impact on negative affect in relation to binge eating and purging. Conclusions: Our findings indicate that stress precedes the occurrence of bulimic behaviors and that increases in negative affect following stressful events mediate this relation. Results suggest that stress and subsequent negative affect may function as maintenance factors for bulimic behaviors and should be targeted in treatment. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Goldschmidt, Andrea B.; Wonderlich, Stephen A.; Crosby, Ross D.; Cao, Li; Engel, Scott G.; Lavender, Jason M. et al. (2014):

Latent profile analysis of eating episodes in anorexia nervosa.

In: *Journal of Psychiatric Research* 53, S. 193–199. DOI: 10.1037/t04751-000;

Abstract:

Background: Despite being characterized primarily by disturbances in eating behavior, relatively little is known about specific eating behaviors in anorexia nervosa (AN) and how they relate to different emotional, behavioral, and environmental features. Methods: Women with AN (n = 118) completed a 2-week ecological momentary assessment (EMA) protocol during which they reported on daily eating- and mood-related patterns. Latent profile analysis was used to identify classes of eating episodes based on the presence or absence of the following indicators: loss of control; overeating; eating by oneself; food avoidance; and dietary restraint. Results: The best-fitting model supported a 5-class solution: avoidant eating; solitary eating; binge eating; restrictive eating; and loss of control eating. The loss of control and binge eating classes were characterized by high levels of concurrent negative affect and a greater likelihood of engaging in compensatory behaviors. The restrictive eating class was associated with the greatest number of concurrently-reported stressful events, while the avoidant and solitary eating episode classes were characterized by relatively few accompanying stressful events. Body checking was least likely to occur in conjunction with restrictive eating behaviors. Conclusions: Results support the presence of discrete types of eating episodes in AN that are associated with varying degrees of negative affect, stress, and behavioral features of eating disorders. Loss of control and dietary restriction may serve distinct functional purposes in AN, as highlighted by their differing associations with negative affect and stress. Clinical interventions for AN may benefit from targeting functional aspects of eating behavior among those with the disorder. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Goldstein, Abby L.; Stewart, Sherry H.; Hoaken, Peter N. S.; Flett, Gordon L. (2013):

Mood, Motives, and Gambling in Young Adults: An Examination of Within- and Between-Person Variations Using Experience Sampling.

In: *Psychology of Addictive Behaviors*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-20770-001%26site%3dehost-live.

Abstract:

It is well established that young adults are a population at risk for problem gambling and that young adults gamble for various reasons, including positive mood enhancement and negative mood reduction. Although these motives have been identified as

important proximal predictors of gambling, the research to date has focused on between-subjects relationships. What is missing is a process-level understanding of the specific within-subjects relations between mood-regulation motives for gambling, mood states, and gambling behaviors. The current study used experience sampling to assess the specific link between gambling motives, mood states, and gambling behavior. Participants were 108 young adults (ages 19–24 years), who completed baseline measures of gambling motives and gambling problems and then reported on their mood states and gambling behavior three times a day for 30 days. Multilevel modeling analyses revealed a significant positive moderating effect for enhancement motives on the relationship between positive mood and amount of time spent gambling and number of drinks consumed while gambling. In addition, problem gambling status was associated with consuming fewer drinks while gambling at higher levels of positive mood, and spending more money than intended at higher levels of negative mood. Unexpectedly, there was only one moderating effect for coping motives on the mood-gambling relationship; low coping motivated gamblers consumed more alcohol while gambling at higher levels of positive mood, whereas high coping motivated gamblers did not change their drinking in response to positive mood. The current findings highlight enhancement motives as risky motives for young adult gambling, particularly in the context of positive mood, and suggest that gambling interventions should include strategies to address positive mood management. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Goldstein, David H.; Wilson, Rosemary; Vandenkerkhof, Elizabeth G. (2007):

Electronic monitoring in an acute pain management service.

In: *Pain Medicine* 8 (s3), S. S94-S100.

Abstract:

Objectives. This article will address the process involved in the development and implementation of a clinician-driven portable electronic chart on an Acute Pain Management Service (APMS). We describe the latest version of the program and provide 1 year of clinical data.

Setting. Tertiary care center in Kingston, Ontario, Canada.

Patients. All patients admitted to the APMS between August 1, 2005, and July 31, 2006.

Results. A total of 8,726 APMS visits were made to 2,528 patients. Mean length of stay on the Service was 2.3 days. Sixty-one percent of patients reported an active pain score >3/10. Pain scores were highest with hip or knee surgery. Thirty-five percent of patients reported nausea.

Conclusions. Executive sponsorship, alignment with institutional priorities, and user input are essential to the development, implementation, adoption, and sustainability of an electronic patient record. Ready access to data at the bedside can improve quality of care, while ongoing, comprehensive data can contribute to Phase IV drug trials. Incorporating both clinical and research outcomes in the database improves data quality and usability, but must be balanced with the impact of clinical time constraints on documentation. Wireless technology and Tablet computers provide portability and adequate screen size for documentation and reviewing of patient data on an acute pain service. It is necessary to provide solutions to process issues, such as printing electronic records during the transition from paper to electronic records.

Gomez Garcia, Maria Teresa; Troncoso Acevedo, Maria Fernanda; Rodriguez Guzman, Marcel; Alegre De Montaner, Raquel; Fernandez Fernandez, Beatriz; Del Rio Camacho, Genoveva; Gonzalez-Mangado, Nicolas (2014):

Can Pulse Transit Time Be Useful for Detecting Hypertension in Patients in a Sleep Unit?

In: *Arch Bronconeumol. DOI:* 10.1016/j.arbres.2013.12.001.

Abstract:

INTRODUCTION: Pulse transit time (PTT) is the time that a pulse wave takes to travel between two different arterial points, and may be useful in estimating blood pressure. This noninvasive technique, which does not add any cost to the procedure, offers the advantage of avoiding 'arousals' during sleep measurement as occurs with ambulatory blood pressure monitoring (ABPM). We aim to confirm the usefulness of PTT for the detection of hypertension, and to study the correlation between both measurements. METHODS: Prospective observational study in a multidisciplinary sleep unit. We recruited 30consecutive patients attending a sleep clinic and ran a baseline polysomnography followed by an ABPM the following day. Average systolic and diastolic blood pressure (SBP, DBP) by PTT were calculated and compared with ABMP results. In accordance with international guidelines, patients with mean nocturnal ABMP >/= 120/70 mmHg were diagnosed as having arterial hypertension. RESULTS: Mean age of 60years; 66% male, 80% suffered from sleep apnoea (OSAS). Taking the ABPM as the reference technique, we found that the diagnostic sensitivity of PTT is 85% with a specificity of 88% in the case of SBP, with a positive predictive value of 85% and negative predictive value of 88%. By studying the relationship between mean SBP measured by ABPM and PTT, we found a linear correlation coefficient (R) of 0.88, showing a distribution of all subjects with a difference of between +/-15mmHg between tests. There is also a positive correlation between mean DBP measured for the two tests, with a weaker linear

correlation. CONCLUSIONS: Pulse transit time shows a strong correlation with blood pressure (measured by ABPM). PTT provides continuous, non-invasive, cuffless blood pressure monitoring free of additional cost and could be an alternative for screening hypertension.

Goñi, Alfredo; Burgos, Alfredo; Dranca, Lacramioara; Rodríguez, Jimena; Illarramendi, Arantza; Bermúdez, Jesús (2009):

Architecture, cost-model and customization of real-time monitoring systems based on mobile biological sensor data-streams.

In: *Computer methods and programs in biomedicine* 96 (2), S. 141–157. DOI: 10.1016/j.cmpb.2009.04.010.

Abstract:

Innovation in the fields of wireless data communications, mobile devices and biosensor technology enables the development of new types of monitoring systems that provide people with assistance anywhere and at any time. In this paper we present an architecture useful to build those kind of systems that monitor data streams generated by biological sensors attached to mobile users. We pay special attention to three aspects related to the system efficiency: selection of the optimal granularity, that is, the selection of the size of the input data stream package that has to be acquired in order to start a new processing cycle; the possible use of compression techniques to store and send the acquired input data stream and; finally, the performance of a local analysis versus a remote one. Moreover, we introduce two particular real systems to illustrate the suitability and applicability of our proposal: an anywhere and at any time monitoring system of heart arrhythmias and an apnea monitoring system.

González, R. C.; Alvarez, D.; López, A. M.; Alvarez, J. C. (2009):

Ambulatory estimation of mean step length during unconstrained walking by means of COG accelerometry.

In: *Computer methods in biomechanics and biomedical engineering* 12 (6), S. 721–726. DOI: 10.1080/10255840902896000.

Abstract:

It has been reported that spatio-temporal gait parameters can be estimated using an accelerometer to calculate the vertical displacement of the body's centre of gravity. This method has the potential to produce realistic ambulatory estimations of those parameters during unconstrained walking. In this work, we want to evaluate the crude estimations of mean step length so obtained, for their possible application in the construction of an ambulatory walking distance measurement device. Two methods have been tested with a set of volunteers in 20 m excursions. Experimental results show that estimations of walking distance can be obtained with sufficient accuracy and precision for most practical applications (errors of 3.66 +/- 6.24 and 0.96 +/- 5.55%), the main difficulty being inter-individual variability (biggest deviations of 19.70 and 15.09% for each estimator). Also, the results indicate that an inverted pendulum model for the displacement during the single stance phase, and a constant displacement per step during double stance, constitute a valid model for the travelled distance with no need of further adjustments. It allows us to explain the main part of the erroneous distance estimations in different subjects as caused by fundamental limitations of the simple inverted pendulum approach.

Goodman, Anna; Page, Angie S.; Cooper, Ashley R. (2014):

Daylight saving time as a potential public health intervention: an observational study of evening daylight and objectively-measured physical activity among 23,000 children from 9 countries.

In: *Int J Behav Nutr Phys Act* 11, S. 84. DOI: 10.1186/1479-5868-11-84.

Abstract:

BACKGROUND: It has been proposed that introducing daylight saving measures could increase children's physical activity, but there exists little research on this issue. This study therefore examined associations between time of sunset and activity levels, including using the bi-annual 'changing of the clocks' as a natural experiment. METHODS: 23,188 children aged 5-16 years from 15 studies in nine countries were brought together in the International Children's Accelerometry Database. 439 of these children were of particular interest for our analyses as they contributed data both immediately before and after the clocks changed. All children provided objectively-measured physical activity data from Actigraph accelerometers, and we used their average physical activity level (accelerometer counts per minute) as our primary outcome. Date of accelerometer data collection was matched to

time of sunset, and to weather characteristics including daily precipitation, humidity, wind speed and temperature. RESULTS: Adjusting for child and weather covariates, we found that longer evening daylight was independently associated with a small increase in daily physical activity. Consistent with a causal interpretation, the magnitude of these associations was largest in the late afternoon and early evening and these associations were also evident when comparing the same child just before and just after the clocks changed. These associations were, however, only consistently observed in the five mainland European, four English and two Australian samples (adjusted, pooled effect sizes 0.03-0.07 standard deviations per hour of additional evening daylight). In some settings there was some evidence of larger associations between daylength and physical activity in boys. There was no evidence of interactions with weight status or maternal education, and inconsistent findings for interactions with age. CONCLUSIONS: In Europe and Australia, evening daylight seems to play a causal role in increasing children's activity in a relatively equitable manner. Although the average increase in activity is small in absolute terms, these increases apply across all children in a population. Moreover, these small effect sizes actually compare relatively favourably with the typical effect of intensive, individual-level interventions. We therefore conclude that, by shifting the physical activity mean of the entire population, the introduction of additional daylight saving measures could yield worthwhile public health benefits.

Goodrich, Suanne; Orr, William C. (2009):

An investigation of the validity of the Lifeshirt in comparison to standard polysomnography in the detection of obstructive sleep apnea.

In: *Sleep Medicine* 10 (1), S. 118–122.

Abstract:

BACKGROUND:

Due to the cost and waiting times for traditional sleep studies, there is great interest in finding alternatives for the diagnosis of sleep apnea. Several alternatives exist, including ambulatory devices. Our laboratory utilized one such device, a form-fitting vest called the Lifeshirt, and compared its accuracy to that of polysomnography (PSG).

METHODS:

PSG was performed with simultaneous utilization of the Lifeshirt on 50 individuals who met screening criteria for obstructive sleep apnea. Participants came to the sleep laboratory approximately 2 h before their normal bedtime. A sleep technician prepared each participant for PSG and Lifeshirt monitoring. "Lights Out" occurred when the participant was ready for bed, and time in bed was standardized to approximately 7 h. PSGs were scored by experienced personnel in our laboratory, while Lifeshirt data were sent electronically to the Lifeshirt manufacturer for analysis. The major variable that was compared between PSG and Lifeshirt was the apnea hypopnea index (AHI), or the number of apneas and hypopneas per hour. Due to incomplete data on two participants, analyses were completed on 48 individuals.

RESULTS:

Sensitivity of the Lifeshirt ranged from .85 (AHI of > or =5) to 1.00 (AHI of > or =25). Specificity ranged from .67 to 1.00. Using the Bland-Altman technique of determining agreement, the mean difference between the AHI of the Lifeshirt and PSG was 1.02 (+/-16.36). When these values are plotted, every case falls within the limits of agreement, with one exception.

CONCLUSIONS:

The Lifeshirt compared favorably with PSG and could be used with considerable confidence for the screening of patients with suspected obstructive sleep apnea.

Gorczynski, Paul; Faulkner, Guy; Cohn, Tony; Remington, Gary (2014):

Examining Strategies to Improve Accelerometer Compliance for Individuals Living With Schizophrenia.

In: *Psychiatr Rehabil J. DOI:* 10.1037/prj0000093.

Abstract:

Objective: This study examined the feasibility and effect of 2 investigator-based and 2 participant-based strategies on accelerometer wear time in individuals living with schizophrenia in order to improve accelerometry compliance. Method: Four adults with schizophrenia were asked to wear an accelerometer for 1 week during the baseline, intervention, and follow-up phases of a study that evaluated exercise counseling. To encourage participants to wear their accelerometers, investigators modeled proper accelerometer use, provided verbal and written instructions, and placed reminder phone calls. Participants were also given wear time logs and reminder magnets. Results: All participants wore their accelerometers for the required amount of time during the study. Conclusions and Implications for Practice: Researchers should use multiple techniques to help ensure

compliance. Research is needed to identify the most effective combination of strategies for this population. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Gorelick, Mark L.; Bizzini, Mario; Maffiuletti, Nicola A.; Munzinger, Jeannette Petrich; Munzinger, Urs (2009):

Test-retest reliability of the IDEEA system in the quantification of step parameters during walking and stair climbing.

In: *Clinical physiology and functional imaging* 29 (4), S. 271–276. DOI: 10.1111/j.1475-097X.2009.00864.x.

Abstract:

The aim of this investigation was to evaluate the inter- and intra-session reliability of spatio-temporal gait variables collected during walking and stair climbing with the Intelligent Device for Energy Expenditure and physical Activity (IDEEA) accelerometer-based system. Eighteen healthy subjects (10 men, 8 women) completed a standardized indoor circuit comprised of walking and stair climbing. Intra-and inter-session reliability was investigated for several pertinent spatio-temporal gait variables using intraclass correlations [ICC (3,1)]. Intra-session reliability during walking showed a high reliability of the IDEEA with ICCs ranging between 0.84 (number of steps) and 0.97 (single limb support/double limb support). The ICCs for stair climbing were slightly lower than those during walking with values ranging between 0.74 (step duration) and 0.92 (number of steps). Inter-session reliability during walking showed a high reliability of the IDEEA between all trials, with values ranging between 0.87 (speed) to 0.98 (step duration). The ICCs of stair climbing were again lower than those during walking with values ranging from 0.64 (swing duration) to 0.79 (number of steps). The IDEEA accelerometer-based system provided a highly reliable measurement of spatio-temporal variables, in healthy subjects, during walking with moderately reduced correlations during stair climbing.

Gorely, Trish; Atkin, Andrew J.; Biddle, Stuart Jh; Marshall, Simon J. (2009):

Family circumstance, sedentary behaviour and physical activity in adolescents living in England: Project STIL.

In: *Int J Behav Nutr Phys Act* 6, S. 33. DOI: 10.1186/1479-5868-6-33.

Abstract:

BACKGROUND\r\nIdentification of non-modifiable correlates of physical activity and sedentary behaviour in youth contributes to the development of effective targeted intervention strategies. The purpose of this research was to examine the relationships between family circumstances (e.g. socio-economic status, single vs. dual parent household, presence/absence of siblings) and leisure-time physical activity and sedentary behaviours in adolescents.\r\nMETHODS\r\nA total of 1171 adolescents (40% male; mean age 14.8 years) completed ecological momentary assessment diaries every 15 minutes for 3 weekdays outside of school hours and 1 weekend day. Analysed behaviours were sports/exercise, active travel, TV viewing, computer use, sedentary socialising (hanging-out, using the telephone, sitting and talking) and total sedentary behaviour. Linear regression was employed to estimate levels of association between individual family circumstance variables and each behaviour.\r\nRESULTS\r\nCompared to girls from higher socioeconomic status (SES) groups, girls from low SES groups reported higher weekend TV viewing and higher weekday total sedentary behaviour. For boys, single parent status was associated with greater total sedentary behaviour compared to those from dual parent households. Boys and girls from low socio-economic neighbourhoods reported lower participation in sports/exercise compared to those living in higher socio-economic neighbourhoods.\r\nCONCLUSION\r\nAssociations were not consistent across behaviours or between genders. Overall, findings indicate that boys from single parent households and girls from low socio-economic families may be at increased risk of high sedentary behaviour. Those living in low socioeconomic neighbourhoods may be at increased risk of reduced participation in sports and exercise.

Gorely, Trish; Biddle, Stuart J. H.; Marshall, Simon J.; Cameron, Noel (2009):

The prevalence of leisure time sedentary behaviour and physical activity in adolescent boys: an ecological momentary assessment approach.

In: *International journal of pediatric obesity : IJPO : an official journal of the International Association for the Study of Obesity* 4 (4), S. 289–298. DOI: 10.3109/17477160902811181.

Abstract:

STUDY OBJECTIVE\r\nTo use ecological momentary assessment to describe how adolescent boys in the United Kingdom spend their leisure time. Design. Cross-sectional, stratified, random sample from secondary schools in 15 regions within the United Kingdom. The data are from a larger study of adolescent lifestyles (Project STIL).\r\nPARTICIPANTS\r\nA total of 561 boys with a mean age of 14.6 years (range 12.7-16.7 years). The majority were white-European (86.5%).\r\nMAIN RESULTS\r\nTelevision viewing occupied the most leisure time on both weekdays (131 minutes) and weekend (202.5 minutes) days. On weekdays the five most time consuming sedentary activities (television viewing, homework, motorised travel, playing computer/video games and shopping/hanging out) occupied on average 272.2 minutes. On weekend days, the five most time consuming sedentary activities (television viewing, shopping/hanging out, motorised travel, sitting and talking and playing computer/video games) occupied 405.5 minutes. In total, 54 minutes were occupied by active transport or sports and exercise per weekday and 81 minutes per weekend day. Only a minority watched more than 4 hours of TV per day (8.9% on weekdays and 33.8% on weekend days). Differences were noted in the means and prevalence between weekend and weekdays, reflecting the greater discretionary time available at the weekend.\r\nCONCLUSIONS\r\nAdolescent boys engage in a variety of sedentary and active free time behaviours. It appears prudent to encourage adolescents to adopt overall healthy lifestyles by considering the combination of both active and sedentary pursuits an individual engages in and by moving beyond a focus on any one single behaviour.

Gorely, Trish; Marshall, Simon J.; Biddle, Stuart J. H.; Cameron, Noel (2007):

Patterns of sedentary behaviour and physical activity among adolescents in the United Kingdom: Project STIL.

In: *Journal of Behavioral Medicine* 30 (6), S. 521–531.

Abstract:

The purpose of this study was to use ecological momentary assessment to investigate the patterning of physical activity and sedentary behaviours in UK adolescents and to examine if different lifestyle groups differ on key explanatory variables. A total of 1,371 (38% boys, mean age 14.7 years) adolescents completed diaries every 15 min for 3 weekdays outside of school hours and 1 weekend day. Cluster analysis yielded five-cluster solutions for both boys and girls to explain the grouping of sedentary behaviours and physical activity. The clusters demonstrated that adolescents engage in many leisure time behaviours but have one activity that predominates. Active adolescents spend more time outside and more time with their friends. Few demographic and environmental variables distinguished between clusters. The findings suggest a potential need for different behavioural targets in interventions to reduce sedentary behaviour in sub groups of the adolescent population. Further research is required to examine the modifiable determinants of different sedentary lifestyles among young people.

Gorely, Trish; Marshall, Simon J.; Biddle, Stuart J. H.; Cameron, Noel (2007):

The prevalence of leisure time sedentary behaviour and physical activity in adolescent girls: An ecological momentary assessment approach.

In: *International Journal of Pediatric Obesity* 2 (4), S. 227–234.

Abstract:

STUDY OBJECTIVE:

To use ecological momentary assessment to describe how adolescent girls in the United Kingdom spend their leisure time.

DESIGN:

Cross-sectional, stratified, random sample from secondary schools in 15 regions within the United Kingdom. The data are from a larger study of adolescent lifestyles (Project STIL).

PARTICIPANTS:

A total of 923 girls with a mean age of 14.7 years (range 12.5-17.6 years). The majority were white-European (88.7%).

MAIN RESULTS:

Across all behaviours, television viewing occupied the most leisure time on both weekdays and weekend days. The five most time consuming sedentary weekday activities occupied on average 262.9 minutes per weekday and 400 minutes per weekend day. In contrast, only 44.2 minutes was occupied by active transport or sports and exercise per weekday, and 53 minutes per weekend day. Only a minority watched more than 4 hours of TV per day (3.3% on weekdays and 20.7% on weekend days). Computer use is low in this group. Some differences were noted in the means and prevalences between weekend and weekdays, most likely reflecting the greater discretionary time available at the weekend. Few age differences were noted.

CONCLUSIONS:

Adolescent girls engage in a variety of behaviours that contribute to an overall lifestyle that may be active or sedentary. Effective physical activity promotion strategies must focus on facilitating shifts towards healthy overall patterns of behaviour rather than shifts in any one single behaviour.

Gorman, E.; Hanson, H. M.; Yang, P. H.; Khan, K. M.; Liu-Ambrose, T.; Ashe, M. C. (2014):

Accelerometry analysis of physical activity and sedentary behavior in older adults: a systematic review and data analysis.

In: *Eur Rev Aging Phys Act* 11, S. 35–49. DOI: 10.1007/s11556-013-0132-x.

Abstract:

Accelerometers objectively monitor physical activity and sedentary patterns and are increasingly used in the research setting. It is important to maintain consistency in data analysis and reporting, therefore, we: (1) systematically identified studies using accelerometry (ActiGraph, Pensacola, FL, USA) to measure moderate-to-vigorous physical activity (MVPA) and sedentary time in older adults, and (2) based on the review findings, we used different cut-points obtained to analyze accelerometry data from a sample of community-dwelling older women. We identified 59 articles with cut-points ranging between 574 and 3,250 counts/min for MVPA and 50 and 500 counts/min for sedentary time. Using these cut-points and data from women (mean age, 70 years), the median MVPA minutes per day ranged between 4 and 80 min while percentage of sedentary time per day ranged between 62 % and 86 %. These data highlight (1) the importance of reporting detailed information on the analysis assumptions and (2) that results can differ greatly depending on analysis parameters.

Gorostidi, Manuel; Vinyoles, Ernest; Banegas, Jose R.; La Sierra, Alejandro (2015):

Prevalence of white-coat and masked hypertension in national and international registries.

In: *Hypertens Res* 38 (1), S. 1–7. DOI: 10.1038/hr.2014.149.

Abstract:

In the past two decades, techniques for the measurement of blood pressure outside the medical setting have unmasked highly prevalent situations. A significant proportion of patients with office blood pressure levels above the thresholds for diagnosing hypertension or above the limits where those being treated are considered to be adequately controlled actually show normal ambulatory blood pressure levels. These patients have white-coat hypertension if untreated or false resistance to antihypertensive therapy because of the white-coat effect if treated. However, some individuals with normal office blood pressure measurements show elevated ambulatory blood pressure levels, and thus have masked hypertension if untreated or masked uncontrolled hypertension if treated. When looking for white-coat hypertension in patients with elevated office blood pressure levels or when looking for masked hypertension in office-controlled patients, up to one in three patients in each scenario would have white-coat or masked hypertension. Although related clinical factors, such as age, gender and global cardiovascular risk, are associated with both conditions, their abilities to predict such a misclassification are very low. Thus, assessing individual blood pressure levels by means of an ambulatory technique, particularly ambulatory blood pressure monitoring, is now considered a priority in diagnosing hypertension and in evaluating hypertension control.

Gorzelniak, L.; Dias, A.; Schultz, K.; Wittmann, M.; Karrasch, S.; Jorres, R. A.; Horsch, A. (2012):

Comparison of Recording Positions of Physical Activity in Patients with Severe COPD Undergoing LTOT.

In: *COPD* 9 (5), S. 528–537. DOI: 10.3109/15412555.2012.708066.

Abstract:

Abstract Background: Accelerometry is increasingly used to assess physical activity (PA) in patients with chronic obstructive pulmonary disease (COPD). It is not known how the relationship of PA to clinical results depends on the position of the PA sensor. Methods: We assessed the effect of monitor position by measuring lower extremity (ankle), upper extremity (wrist) and total body movement (hip) in 52 patients with severe COPD (mean [+/- SD] age, 62 +/- 10 years; FEV(1), 38 +/- 12% predicted) undergoing long-term oxygen therapy with and without walkers during a pulmonary rehabilitation (PR) program. Sensors were

worn 8.5 +/- 3.1 days and data was compared to the BODE score and the 6-minute walk distance (6MWD) assessed at the beginning and end of the PR. Results: Mean ankle PA was moderately related to the 6MWD, irrespective of patients being equipped with a walker or not ($p < 0.05$). Mean PA values were considerably lower in COPD patients with walker compared to patients without for all sensor positions. No significant association was observed between mean hip PA data and 6MWD; however, hip and ankle PA data were moderately related in walker-free and strongly related in walker patients ($p < 0.01$). In a multivariate regression model only ankle activity was significantly associated with the BODE score ($p < 0.01$). Conclusion: The sensor position had a significant impact on the association between PA recordings and the 6MWD in very severe COPD. In our setting, ankle measurement seemed to best reflect the clinical state of patients

Gosse, Philippe; Papaioanou, Georgios; Coulon, Paul; Reuter, Sylvain; Lemetayer, Philippe; Safar, Michel (2007):

Can ambulatory blood-pressure monitoring provide reliable indices of arterial stiffness?

In: *Am J Hypertens* 20 (8), S. 831–838.

Abstract:

BACKGROUND:

The use of ambulatory recordings of blood pressure (BP) was proposed to estimate arterial stiffness (AS). We compared the relative value of the ambulatory AS index (AASI), and of the slope of pulse pressure (PP) according to mean BP (MBP) obtained from 24-h ambulatory BP monitoring, to the monitoring of the arrival time of Korotkoff sounds (QKD interval) in the prediction of cardiovascular (CV) events.

METHODS:

Twenty-four-hour ambulatory BP and QKD monitoring were recorded at baseline, before antihypertensive treatment of hypertensive patients in our Bordeaux cohort. From these recordings, the AASI, the PP/MBP slope, and the theoretical value of the QKD for a systolic pressure of 100 mm Hg and a heart rate of 60 beats/min (QKD100-60) were calculated. The patients were then given antihypertensive treatment and followed by their family physicians, who were unaware of the QKD, AASI, and PP/MBP slope results. Regular updates on patients were obtained. The reproducibility of measurements was studied in 38 normal subjects evaluated on two occasions.

RESULTS:

The reproducibility of the AASI and the PP/MBP slope was less than that of BP over 24 h and of QKD100-60. The cohort comprised 469 patients. With an average follow-up of 70+/-39 months, 62 CV complications, including 13 deaths, were recorded. In the monovariate analysis, age, PP over 24 h, QKD100-60, AASI, and the PP/MBP slope were significantly related to the occurrence of complications. In the multivariate analysis, when age and PP over 24 were included in the model, only QKD100-60 remained significantly linked to CV events.

CONCLUSIONS:

Our data support the value of the AASI as an indirect estimate of AS and as an element in the evaluation of CV risk in hypertensive patients. However, the reproducibility of this index is less, and its predictive value for complications is poorer, than that of QKD100-60, a parameter that we believe is more closely linked to AS.

Goto, M.; Takedani, H.; Haga, N.; Kubota, M.; Ishiyama, M.; Ito, S.; Nitta, O. (2014):

Self-monitoring has potential for home exercise programmes in patients with haemophilia.

In: *Haemophilia* 20 (2), S. e121-7. DOI: 10.1111/hae.12355.

Abstract:

Haemophiliacs who have had to keep a physically inactive lifestyle due to bleeding during childhood are likely to have little motivation for exercise. The purpose of this study is to clarify the effectiveness of the self-monitoring of home exercise for haemophiliacs. A randomized controlled trial was conducted with intervention over 8 weeks at four hospitals in Japan. Subjects included 32 male outpatients aged 26-64 years without an inhibitor who were randomly allocated to a self-monitoring group and a control group. Individual exercise guidance with physical activity for improvement of their knee functions was given to both groups. The self-monitoring materials included an activity monitor and a feedback system so that the self-monitoring group could send feedback via the Internet and cellular phone. The self-monitoring was performed by checking exercise adherence and physical activity levels, bleeding history and injection of a coagulation factor. Both groups showed significant improvements in exercise adherence ($P < 0.001$) and physical function such as the strength of knee extension ($P < 0.001$), range of knee extension ($P < 0.001$), range of ankle dorsiflexion ($P < 0.01$), a modified Functional Reach ($P < 0.05$) and 10 metre gait

time (P < 0.01). In particular, improvements in exercise adherence (P < 0.05), self-efficacy (P < 0.05), and strength of knee extension (P < 0.05) were significant in the self-monitoring group compared with those in the control group. No increase in bleeding frequency and pain scale was noted. The self-monitoring of home exercise for haemophilic patients is useful for the improvement of exercise adherence, self-efficacy and knee extension strength.

Gould, Laura Feagans; Hussong, Andrea M.; Hersh, Matthew A. (2012):

Emotional distress may increase risk for self-medication and lower risk for mood-related drinking consequences in adolescents.

In: *The International Journal of Emotional Education* 4 (1), S. 6–24. DOI: 10.1037/t15197-000;

Abstract:

The current study examines indicators of emotional distress and coping that may define sub-populations of adolescents at risk for two potential affect-related mechanisms underlying substance misuse: self-medication and mood-related drinking consequences. Although theory and empirical evidence point to the salience of affect-related drinking to current and future psychopathology, we have little knowledge of whether or for whom such mood-related processes exist in adolescents because few studies have used methods that optimally match the phenomenon to the level of analysis. Consequently, the current study uses multi-level modeling in which daily reports of negative mood and alcohol use are nested within individuals to examine whether adolescents with more emotional distress and poorer coping skills are more likely to evidence self-medication and mood-related drinking consequences. Seventy-five adolescents participated in a multi-method, multi-reporter study in which they completed a 21-day experience sampling protocol assessing thrice daily measures of mood and daily measures of alcohol use. Results indicate that adolescents reporting greater anger are more likely to evidence self-medication. Conversely, adolescents displaying lower emotional distress and more active coping are more likely to evidence mood-related drinking consequences. Implications for identifying vulnerable sub-populations of adolescents at risk for these mechanisms of problematic alcohol use are discussed. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Goulet, Geneviève; Mongrain, Valérie; Desrosiers, Catherine; Paquet, Jean; Dumont, Marie (2007):

Daily light exposure in morning-type and evening-type individuals.

In: *Journal of biological rhythms* 22 (2), S. 151–158.

Abstract:

Morning-type individuals (M-types) have earlier sleep schedules than do evening types (E-types) and therefore differ in their exposure to the external light-dark cycle. M-types and E-types usually differ in their endogenous circadian phase as well, but whether this is the cause or the consequence of the difference in light exposure remains controversial. In this study, ambulatory monitoring was used to measure 24-h light exposure in M-type and E-type subjects for 7 consecutive days. The circadian phase of each subject was then estimated in the laboratory using the dim-light melatonin onset in saliva (DLMO) and the core body temperature minimum (Tmin). On average, M-types had earlier sleep schedules and earlier circadian phases than E-types. They also showed more minutes of daily bright light exposure (> 1000 lux) than E-types. As expected, the 24-h patterns of light exposure analyzed in relation to clock time indicated that M-types were exposed to more light in the morning than E-types and that the reverse was true in the late evening. However, there was no significant difference when the light profiles were analyzed in relation to circadian phase, suggesting that, on average, the circadian pacemaker of both M-types and E-types was similarly entrained to the light-dark cycle they usually experience. Some M-types and E-types had different sleep schedules but similar circadian phases. These subjects also had identical light profiles in relation to their circadian phase. By contrast, M-types and E-types with very early or very late circadian phases showed large differences in their profiles of light exposure in relation to their circadian phase. This observation suggests that in these individuals, early or late circadian phases are related to relatively short and long circadian periods and that a phase-delaying profile of light exposure in M-types and a phase-advancing profile in E-types are necessary to ensure a stable entrainment to the 24-h day.

Goyder, Elizabeth; Hind, Daniel; Breckon, Jeff; Dimairo, Munyaradzi; Minton, Jonathan; Everson-Hock, Emma et al. (2014):

A randomised controlled trial and cost-effectiveness evaluation of 'booster' interventions to sustain increases in physical activity in middle-aged adults in deprived urban neighbourhoods.

In: *Health Technol Assess* 18 (13), S. 1–210. DOI: 10.3310/hta18130.

Abstract:

BACKGROUND: More evidence is needed on the potential role of 'booster' interventions in the maintenance of increases in physical activity levels after a brief intervention in relatively sedentary populations. OBJECTIVES: To determine whether objectively measured physical activity, 6 months after a brief intervention, is increased in those receiving physical activity 'booster' consultations delivered in a motivational interviewing (MI) style, either face to face or by telephone. DESIGN: Three-arm, parallel-group, pragmatic, superiority randomised controlled trial with nested qualitative research fidelity and geographical information systems and health economic substudies. Treatment allocation was carried out using a web-based simple randomisation procedure with equal allocation probabilities. Principal investigators and study statisticians were blinded to treatment allocation until after the final analysis only. SETTING: Deprived areas of Sheffield, UK. PARTICIPANTS: Previously sedentary people, aged 40-64 years, living in deprived areas of Sheffield, UK, who had increased their physical activity levels after receiving a brief intervention. INTERVENTIONS: Participants were randomised to the control group (no further intervention) or to two sessions of MI, either face to face ('full booster') or by telephone ('mini booster'). Sessions were delivered 1 and 2 months post-randomisation. MAIN OUTCOME MEASURES: The primary outcome was total energy expenditure (TEE) per day in kcal from 7-day accelerometry, measured using an Actiheart device (CamNtech Ltd, Cambridge, UK). Independent evaluation of practitioner competence was carried out using the Motivational Interviewing Treatment Integrity assessment. An estimate of the per-participant intervention costs, resource use data collected by questionnaire and health-related quality of life data were analysed to produce a range of economic models from a short-term NHS perspective. An additional series of models were developed that used TEE values to estimate the long-term cost-effectiveness. RESULTS: In total, 282 people were randomised (control = 96; mini booster = 92, full booster = 94) of whom 160 had a minimum of 4 out of 7 days' accelerometry data at 3 months (control = 61, mini booster = 47, full booster = 52). The mean difference in TEE per day between baseline and 3 months favoured the control arm over the combined booster arm but this was not statistically significant (-39 kcal, 95% confidence interval -173 to 95, p = 0.57). The autonomy-enabled MI communication style was generally acceptable, although some participants wanted a more paternalistic approach and most expressed enthusiasm for monitoring and feedback components of the intervention and research. Full boosters were more popular than mini boosters. Practitioners achieved and maintained a consistent level of MI competence. Walking distance to the nearest municipal green space or leisure facilities was not associated with physical activity levels. Two alternative modelling approaches both suggested that neither intervention was likely to be cost-effective. CONCLUSIONS: Although some individuals do find a community-based, brief MI 'booster' intervention supportive, the low levels of recruitment and retention and the lack of impact on objectively measured physical activity levels in those with adequate outcome data suggest that it is unlikely to represent a clinically effective or cost-effective intervention for the maintenance of recently acquired physical activity increases in deprived middle-aged urban populations. Future research with middle-aged and relatively deprived populations should explore interventions to promote physical activity that require less proactive engagement from individuals, including environmental interventions. STUDY REGISTRATION: Current Controlled Trials ISRCTN56495859, ClinicalTrials.gov NCT00836459. FUNDING: This project was funded by the NIHR Health Technology Assessment programme and will be published in full in Health Technology Assessment; Vol. 18, No. 13. See the NIHR Journals Library website for further project information.

Graatsma, E. M.; Jacod, B. C.; van Egmond, L A J; Mulder, E. J. H.; Visser, G. H. A. (2009):

Fetal electrocardiography: feasibility of long-term fetal heart rate recordings.

In: *BJOG : an international journal of obstetrics and gynaecology* 116 (2), S. 334-7; discussion 337-8. DOI: 10.1111/j.1471-0528.2008.01951.x.

Abstract:

The feasibility and accuracy of long-term transabdominal fetal electrocardiogram (fECG) recordings throughout pregnancy were studied using a portable fECG monitor. Fifteen-hour recordings of fetal heart rate (FHR) were performed in 150 pregnant women at 20-40 weeks of gestation and 1-hour recordings were performed in 22 women in labour and compared with simultaneous scalp electrode recordings. When >or=60% of fECG signals was present, the recording was defined as good. Eighty-two percent (123/150) of antenatal recordings were of good quality. This percentage increased to 90.7 (136/150 recordings) when only the night part (11 p.m.-7 a.m.) was considered. Transabdominal measurement of FHR and its variability correlated well with scalp electrode recordings (r=0.99, P<0.01; r=0.79, P<0.01, respectively). We demonstrated the feasibility and accuracy of long-term transabdominal fECG monitoring.

Grandhi, Sukeshini; Jones, Quentin (2010):

Technology-mediated interruption management.

In: *International Journal of Human-Computer Studies* 68 (5), S. 288–306.

Abstract:

INTRODUCTION:

Nurses' work in hospital departments is highly collaborative and includes communication with a variety of actors. To further support nurses' communications, wireless phones, on which nurses receive both nurse calls and ordinary phone calls, have been introduced. However, while they ensure high availability among the mobile nurses, these phones also contribute to an increased number of interruptions.

PURPOSE:

This paper aims to discover whether all interruptions caused by the wireless phones are unwanted. Further, it investigates how nurses handle these interruptions in a hospital setting in order to construct a foundation for guidelines to use in designing these types of systems.

METHODS:

Qualitative and ethnographically inspired fieldwork, including workshops with both ordinary and student nurses from a Norwegian hospital, was undertaken. Patients from two hospital departments were interviewed.

RESULTS:

Nurses struggle to handle interruptions caused by the wireless nurse call system. Deciding whether to abort an activity or not to respond to an interruption is regarded as stressful. The decision is further complicated by the complex nature of the interruptions. At the same time, patients anticipate that nurses are able to make these judgements with limited information. Nurses' work is highly collaborative, and nurses depend on one another to carry out their work and manage interruptions.

CONCLUSION:

The dual nature of the interruptions is complex, and whether an interruption is wanted or unwanted depends on many factors. Nurses manage interruptions mainly by making their own activities visible and monitoring colleagues' work. Therefore, nurses' awareness of colleagues' activities is a key factor in how they handle interruptions in the form of nurse calls.

Granholm, E.; Ben-Zeev, D.; Link, P. C.; Bradshaw, K. R.; Holden, J. L. (2011):

Mobile Assessment and Treatment for Schizophrenia (MATS): A Pilot Trial of An Interactive Text-Messaging Intervention for Medication Adherence, Socialization, and Auditory Hallucinations.

In: *Schizophr.Bull.* (0586-7614 (Linking)). DOI: 10.1093/schbul/sbr155.

Abstract:

Mobile Assessment and Treatment for Schizophrenia (MATS) employs ambulatory monitoring methods and cognitive behavioral therapy interventions to assess and improve outcomes in consumers with schizophrenia through mobile phone text messaging. Three MATS interventions were developed to target medication adherence, socialization, and auditory hallucinations. Participants received up to 840 text messages over a 12-week intervention period. Fifty-five consumers with schizophrenia or schizoaffective disorder were enrolled, but 13 consumers with more severe negative symptoms, lower functioning, and lower premorbid IQ did not complete the intervention, despite repeated prompting and training. For completers, the average valid response rate for 216 outcome assessment questions over the 12-week period was 86%, and 86% of phones were returned undamaged. Medication adherence improved significantly, but only for individuals who were living independently. Number of social interactions increased significantly and a significant reduction in severity of hallucinations was found. In addition, the probability of endorsing attitudes that could interfere with improvement in these outcomes was also significantly reduced in MATS. Lab-based assessments of more general symptoms and functioning did not change significantly. This pilot study demonstrated that low-intensity text-messaging interventions like MATS are feasible and effective interventions to improve several important outcomes, especially for higher functioning consumers with schizophrenia

Graves, John W.; Grossardt, Brandon R.; Gullerud, Rachel E.; Bailey, Kent R.; Feldstein, Jeffrey (2006):

The trained observer better predicts daytime ABPM diastolic blood pressure in hypertensive patients than does an automated (Omron) device.

In: *Blood Press Monit* 11 (2), S. 53–58. DOI: 10.1097/01.mbp.0000200480.26669.72.

Abstract:

OBJECTIVES\r\nAccurate blood pressure measurement is critical to successful clinical trials. Concerns about observer errors have led to the use of automated oscillometric devices without evidence that their performance is similar to that of trained observers. This study compares blood pressures obtained by trained observers and with an oscillometric device (Omron 705CP) to 24-h ambulatory blood pressure monitoring.\r\nMETHODS\r\nWe performed a post-hoc analysis of 313 untreated hypertensive

patients at the end of the washout phase of a Novartis hypertension trial. Patients had three seated trained observer mercury auscultatory blood pressure measurements followed by 24-h ambulatory blood pressure monitoring. The next day, the ambulatory blood pressure monitoring was removed and three seated readings were obtained with an Omron 705CP. Correlations for systolic blood pressure and diastolic blood pressure were obtained between daytime ambulatory blood pressure monitoring (0900 and 2100) and the two office methods. In addition, we investigated the degree of difference of trained observer and Omron measurements from ambulatory blood pressure monitoring.\r\nRESULTS\r\nFor systolic blood pressure, the correlation with ambulatory blood pressure monitoring of the trained observer was significantly better than with that of the Omron 705CP (0.641 vs. 0.555, P=0.01). For diastolic blood pressure values, even greater disparity between the two office method correlations with ambulatory blood pressure monitoring was observed (trained observer=0.593 vs. Omron=0.319, P<0.0001). Both trained observer and Omron readings were consistently higher than ambulatory blood pressure monitoring for systolic blood pressure (P<0.0001) and diastolic blood pressure (P<0.0001). Omron measurements, however, deviated from ambulatory blood pressure monitoring more than those of the trained observer (P<0.0001 for systolic blood pressure and diastolic blood pressure).\r\nCONCLUSIONS\r\nFor clinical trials using diastolic blood pressure targets, the Omron 705CP cannot replace the auscultatory blood pressure measurements of a trained observer. For systolic blood pressure, the Omron device and the trained observer had similar correlations with ambulatory blood pressure monitoring; however, both methods gave consistently higher systolic blood pressure values. Further study of oscillometric devices should be conducted before universally replacing auscultatory blood pressure determinations by trained observers in clinical trials.

Graves, Lee E. F.; Ridgers, Nicola D.; Stratton, Gareth (2008):

The contribution of upper limb and total body movement to adolescents' energy expenditure whilst playing Nintendo Wii.

In: *European journal of applied physiology* 104 (4), S. 617–623.

Abstract:

Little research documents the contribution of upper limb and total body movement to energy expenditure (EE) during active video gaming. To address this, EE, heart rate (HR), and, upper limb and total body movement were assessed in 11- to 17-year-old adolescents whilst playing three active (Nintendo Wii) and one sedentary (XBOX 360) video games. Non-dominant upper limb activity, EE and HR were significantly greater during Wii Sports boxing [mean 267.2 (SD 115.8) J kg(-1) min(-1); 136.7 (24.5) beats min(-1)] than tennis or bowling (P < or = 0.044). For all active games hip activity best predicted EE (R (2) > or = 0.53), with two-measure models of HR and single-site activity data, and multi-site activity data, similarly explaining the variance in EE (R (2) > or = 0.64). The physiological cost of upper-body orientated active video games increased when movement of both upper limbs was encouraged. Improvements in EE explanatory power provide support for multi-site activity monitoring during unique, non-ambulatory activities.

Gregori, Mario; Tocci, Giuliano; Giammarioli, Benedetta; Befani, Alberto; Ciavarella, Giuseppino Massimo; Ferrucci, Andrea; Paneni, Francesco (2014):

Abnormal regulation of renin angiotensin aldosterone system is associated with right ventricular dysfunction in hypertension.

In: *Can J Cardiol* 30 (2), S. 188–194. DOI: 10.1016/j.cjca.2013.11.009.

Abstract:

BACKGROUND: Right ventricular dysfunction (RVD) is a major predictor of cardiovascular mortality. Inadequate suppression of the renin-angiotensin-aldosterone system (RAAS) after postural manoeuvres favours alterations of left ventricular (LV) function. The effects of RAAS dysregulation on RV performance remain elusive. The present study investigated RV function in hypertensive patients with or without altered RAAS activation. METHODS: Plasma renin activity (PRA) and plasma aldosterone concentration (PAC) were measured in 104 newly diagnosed hypertensive patients after both supine and upright positioning to assess dynamic changes of RAAS induced by antigravitational stress. Twenty-four-hour ambulatory blood pressure monitoring and echocardiographic evaluation of the right ventricle including tissue Doppler imaging (TDI) were performed. Patients were divided as follows: (1) normal PRA and PAC (N group [n = 58]), (2) suppressible RAAS after supine positioning (SR group [n = 24]), and (3), nonsuppressible RAAS (NSR group [n = 22]). RVD was identified by the TDI-derived myocardial performance index (MPI) calculated with a multisegmental approach. RESULTS: Patients in the NSR group had reduced indices of RV function compared with patients in the N and SR groups. MPI of the right ventricle as well as prevalence of RVD were also significantly higher in the NSR group. Regression models showed that inadequate RAAS suppression was independently associated with RVD, regardless of blood pressure values and LV dysfunction (LVD). CONCLUSIONS: Patients without supine normalization of RAAS display a significant impairment of RV function. Our findings suggest that a dynamic RAAS evaluation may help to identify hypertensive patients at higher risk of RVD.

Gregoski, Mathew J.; Barnes, Vernon A.; Tingen, Martha S.; Harshfield, Gregory A.; Treiber, Frank A. (2011):

Breathing awareness meditation and LifeSkills Training programs influence upon ambulatory blood pressure and sodium excretion among African American adolescents.

In: *The Journal of adolescent health : official publication of the Society for Adolescent Medicine* 48 (1), S. 59–64. DOI: 10.1016/j.jadohealth.2010.05.019.

Abstract:

PURPOSE\r\nTo evaluate the effect of breathing awareness meditation (BAM), Botvin LifeSkills Training (LST), and health education control (HEC) on ambulatory blood pressure and sodium excretion in African American adolescents.\r\nMETHODS\r\nFollowing 3 consecutive days of systolic blood pressure (SBP) screenings, 166 eligible participants (i.e., SBP >50th-95th percentile) were randomized by school to either BAM (n = 53), LST (n = 69), or HEC (n = 44). In-school intervention sessions were administered for 3 months by health education teachers. Before and after the intervention, overnight urine samples and 24-hour ambulatory SBP, diastolic blood pressure, and heart rate were obtained.\r\nRESULTS\r\nSignificant group differences were found for changes in overnight SBP and SBP, diastolic blood pressure, and heart rate over the 24-hour period and during school hours. The BAM treatment exhibited the greatest overall decreases on these measures (Bonferroni adjusted, ps < .05). For example, for school-time SBP, BAM showed a change of -3.7 mmHg compared with no change for LST and a change of -.1 mmHg for HEC. There was a nonsignificant trend for overnight urinary sodium excretion (p = .07), with the BAM group displaying a reduction of -.92 ± 1.1 mEq/hr compared with increases of .89 ± 1.2 mEq/hr for LST and .58 ± .9 mEq/hr for HEC group.\r\nCONCLUSION\r\nBAM appears to improve hemodynamic function and may affect sodium handling among African American adolescents who are at increased risk for development of cardiovascular disease.

Gregoski, M. J.; Vertegel, A.; Shaporev, A.; Treiber, F. A. (2012):

Tension Tamer: Delivering Meditation With Objective Heart Rate Acquisition for Adherence Monitoring Using a Smart Phone Platform.

In: *J Altern.Complement Med.* (1075-5535 (Linking)). DOI: 10.1089/acm.2011.0772.

Abstract:

Abstract Objectives: This brief report demonstrates the proof of concept of the Tension Tamer (TT) smartphone application, which integrates photoplethysmograph capabilities with breathing awareness meditation (BAM), to reduce stress and measure heart rate and adherence. Design: Methods for objectively measuring heart rate and adherence to BAM were developed as part of a future randomized controlled trial. Setting/Location: The study was conducted at Jerry Zucker Middle School of Science and the Medical University of South Carolina, Charleston. Subjects: The subjects were three prehypertensive male teachers. Intervention: The method used was smartphone delivered BAM. Outcome measures: Objective measures included heart rate, adherence, and ambulatory blood pressure (BP). Results: Adherence data was successfully collected by the TT application. Increased adherence to TT coincided with increased improvements in ambulatory BP over a 3-month period. Conclusions: TT shows promise as a simple inexpensive program for administering BAM and capturing adherence data in future clinical trials

Gr&#65533;Hn, Daniel; Lumley, Mark A.; Diehl, Manfred; Labouvie-Vief, Gisela (2012):

Time-Based Indicators of Emotional Complexity: Interrelations and Correlates.

In: *Emotion*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-30610-001%26site%3dehost-live.

Abstract:

Emotional complexity has been regarded as one correlate of adaptive emotion regulation in adulthood. One novel and potentially valuable approach to operationalizing emotional complexity is to use reports of emotions obtained repeatedly in real time, which can generate a number of potential time-based indicators of emotional complexity. It is not known, however, how these indicators relate to each other, to other measures of affective complexity, such as those derived from a cognitive-developmental view of emotional complexity, or to measures of adaptive functioning, such as well-being. A sample of 109 adults, aged 23 to 90 years, participated in an experience-sampling study and reported their negative and positive affect five times a day for one week. Based on these reports, we calculated nine different time-based indicators potentially reflecting emotional complexity. Analyses showed three major findings: First, the indicators showed a diverse pattern of interrelations suggestive of four distinct components of emotional complexity. Second, age was generally not related to time-based indicators of emotional complexity; however, older adults showed overall low variability in negative affect. Third, time-based indicators of emotional complexity were either unrelated or inversely related to measures of adaptive functioning; that is, these measures

tended to predict a less adaptive profile, such as lower subjective and psychological well-being. In sum, time-based indicators of emotional complexity displayed a more complex and less beneficial picture than originally thought. In particular, variability in negative affect seems to indicate suboptimal adjustments. Future research would benefit from collecting empirical data for the interrelations and correlates of time-based indicators of emotional complexity in different contexts. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Griffith, Sandra D.; Shiffman, Saul; Heitjan, Daniel F. (2009):

A method comparison study of timeline followback and ecological momentary assessment of daily cigarette consumption.

In: *Nicotine Tob Res* 11 (11), S. 1368–1373. DOI: 10.1093/ntr/ntp150.

Abstract:

INTRODUCTION\r\nUncertainty exists about how best to measure daily cigarette consumption. Two common measures are timeline followback (TLFB), which involves structured, prompted recall, and ecological momentary assessment (EMA), which involves recording consumption, as it occurs, on a handheld electronic device.\r\nMETHODS\r\nWe evaluated the agreement between TLFB and EMA measures collected for 14 days prior to the target quit date from 236 smokers in a smoking cessation program. We performed a Bland-Altman analysis to assess agreement of TLFB and EMA using a regression-based model that allows for a nonuniform difference between methods and limits of agreement that can vary with the number of cigarettes smoked.\r\nRESULTS\r\nFor pairs of measurements taken on the same smoker, TLFB counts were on average 3.2 cigarettes higher than EMA counts; this difference increased for larger numbers of cigarettes. Using a model that allows for variable limits of agreement, the width of the 95% interval ranged from 8.7 to 61.8 cigarettes, with an average of 26.4 cigarettes. Variation between the methods increased substantially for larger cigarette counts, leading to wider limits and poorer agreement for heavy smokers.\r\nDISCUSSION\r\nThroughout the measurement range, the estimated limits of agreement were far wider than the limits of clinical significance, defined a priori to be 20% of the number of cigarettes smoked. We conclude that TLFB and EMA cannot be considered equivalent for the assessment of daily cigarette consumption, especially for heavy smokers.

Grondin, Olivier; Johnson, Elizabeth I.; Husky, Mathilde; Swendsen, Joel (2011):

Sociotropy and autonomy vulnerabilities to depressed mood: A daily life comparison of Reunion Island and metropolitan France.

In: *Journal of Cross-Cultural Psychology* 42 (6), S. 928–943. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-15298-003&site=ehost-live;Joel.Swendsen@u-bordeaux2.fr.

Abstract:

The current study examines whether sociotropy and autonomy traits prospectively predict depressed mood following daily events in young adults and considers whether relationships between personality, daily events, and mood differ by cultural context. Samples in Metropolitan France (n = 99) and Reunion Island (n = 70) participated in identical ambulatory monitoring procedures over a 1-week period and were assessed relative to cultural variables and additional psychological vulnerabilities known to influence depression or stress reactivity. Sociotropy heightened depressed mood responses to negative interpersonal events in Metropolitan France but not in Reunion Island. This finding was replicated when a continuous measure of cultural investment replaced geographic location. Contrary to Beck's theory, there was no evidence that autonomy moderated the relationship between subjective achievement events and depressed mood at either site. The results are discussed in terms of the cultural specificity of cognitive vulnerability-stress theories of depression, as well as their usefulness for explaining normal mood variance in daily life. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Groot, J. F.; Jong, A. S.; Visser, T.; Takken, T. (2013):

Validation of the Actical and Actiheart monitor in ambulatory children with Spina Bifida.

In: *J Pediatr.Rehabil.Med* 6 (2), S. 103–111. DOI: 10.3233/PRM-130244.

Abstract:

BACKGROUND: Ambulatory children with Spina Bifida (SB) often show a decline in physical activity leading to deconditioning and functional decline. Therefore, assessment and promotion of physical activity is important. Because energy expenditure

during activities is higher in these children, the use of existing pediatric equations to predict physical activity energy expenditure (PAEE) may not be valid. AIMS: (1) To evaluate criterion validity of existing predictions converting accelerocounts into PAEE in ambulatory children with SB and (2) to establish new disease-specific equations for PAEE. METHODS: Simultaneous measurements using the Actical, the Actiheart, and indirect calorimetry took place to determine PAEE in 26 ambulatory children with SB. DATA ANALYSIS: Paired T-tests, Intra-class correlations limits of agreement (LoA), and explained variance (R<formula>^2</formula>) were used to analyze validity of the prediction equations using true PAEE as criterion. New equations were derived using regression techniques. RESULTS: While T-tests showed no significant differences for some models, the predictions developed in healthy children showed moderate ICC's and large LoA with true PAEE. The best regression models to predict PAEE were: PAEE=174.049+3.861 x H

Grossman, Ehud; Laudon, Moshe; Yalcin, Ridvan; Zengil, Hakan; Peleg, Edna; Sharabi, Yehonatan et al. (2006):

Melatonin reduces night blood pressure in patients with nocturnal hypertension.

In: *The American journal of medicine* 119 (10), S. 898–902. DOI: 10.1016/j.amjmed.2006.02.002.

Abstract:

PURPOSE\r\nNocturnal hypertension is associated with a high risk of morbidity and mortality. A blunted nocturnal surge in melatonin excretion has been described in nondipping hypertensive patients. We therefore studied the potency of melatonin to reduce nighttime blood pressure (BP) in treated hypertensive patients with nocturnal hypertension.\r\nPATIENTS AND METHODS\r\nThirty-eight treated hypertensive patients (22 males, mean age 64+/-11 years) with confirmed nocturnal hypertension (mean nighttime systolic BP >125 mm Hg), according to repeated 24-hour ambulatory blood pressure monitoring (ABPM), were randomized in a double-blind fashion to receive either controlled release (CR)-melatonin 2 mg or placebo 2 hours before bedtime for 4 weeks. A 24-hour ABPM was then performed.\r\nRESULTS\r\nMelatonin treatment reduced nocturnal systolic BP significantly from 136+/-9 to 130+/-10 mm Hg (P=.011), and diastolic BP from 72+/-11 to 69+/-9 mm Hg (P=.002), whereas placebo had no effect on nocturnal BP. The reduction in nocturnal systolic BP was significantly greater with melatonin than with placebo (P=.01), and was most prominent between 2:00 AM and 5:00 AM (P=.002).\r\nCONCLUSIONS\r\nEvening CR-melatonin 2 mg treatment for 4 weeks significantly reduced nocturnal systolic BP in patients with nocturnal hypertension. Thus, an addition of melatonin 2 mg at night to stable antihypertensive treatment may improve nocturnal BP control in treated patients with nocturnal hypertension.

Grossman, Paul; Wilhelm, Frank H.; Brutsche, Martin (2010):

Accuracy of ventilatory measurement employing ambulatory inductive plethysmography during tasks of everyday life.

In: *Biol Psychol* 84 (1), S. 121–128. DOI: 10.1016/j.biopsycho.2010.02.008.

Abstract:

Ambulatory inductive plethysmography (AIP) has recently been introduced to permit monitoring of ventilation outside the clinic and laboratory. It provides a method for nonintrusive assessment of both timing (e.g. respiration rate; RR) and volumetric parameters (e.g. tidal volume and minute ventilation volume; V(T) and V'(E), respectively). Although inductive plethysmography has been validated in laboratory investigations, quantitative validation during ambulatory, naturalistic conditions has not yet been assessed. Should AIP yield accurate estimation of ventilatory parameters, real-life monitoring of breathing pattern may provide new insights into respiratory functioning in health and disease. We examined the accuracy of AIP for assessing RR, V(T) and V'(E) during a 90-min protocol simulating activities of everyday life. A mobile backpack metabolic cart with integrated flowmeter was employed as the reference standard. Within- and between-participant minute-by-minute comparisons were made for each ventilatory measure among 9 healthy adults. Average within-participant minute-by-minute correlations between reference method and AIP were 0.96, 0.91 and 0.92 for V'(E), V(T) and RR, respectively. Average correlations across participants yielded r's of 0.98, 0.98 and 1.0. Analysis of mean task levels across participants revealed, in all cases, very close correspondences between both methods of measurement, with only a significant but minor deviance during a period of supine posture. Additionally, results indicated that within-individual variations in oxygen consumption were highly correlated with AIP-estimated V'(E), suggesting that ambulatory assessment of V'(E) may provide a reliable index of metabolic activity during everyday life.

Grover, Sukhdev S.; Pittman, Stephen D. (2008):

Automated detection of sleep disordered breathing using a nasal pressure monitoring device.

In: *Sleep Breath* 12 (4), S. 339–345.

Abstract:

To assess the accuracy of a single channel portable monitoring device (RUSleepingtrade mark RTS, Respironics, Murrysville, PA) that measures nasal pressure (a surrogate for airflow) to detect sleep disordered breathing (SDB). Twenty-five adult patients referred to a community sleep laboratory with suspected obstructive sleep apnea (OSA) participated in this investigation. The portable monitoring device was used in the sleep laboratory to acquire data concurrently with a standard multi-channel polysomnogram (PSG) to assess SDB. Respiratory events were scored manually on the PSG using standard criteria for clinical research to quantify an apnea-hypopnea index (AHI) based on events during sleep. The portable monitoring device automatically calculated an unedited respiratory event index (REI) based on recording time. These data were then compared using the Pearson product-moment correlation coefficient, Bland-Altman analysis, receiver operating characteristic (ROC) curves, and likelihood ratios. All 25 subjects completed the study. Mean age of subjects was 42.4 +/- 12.9 years and mean body mass index was 31.0 +/- 7.4 kg m(-2). There was good agreement between the REI and the AHI (R = 0.77, p < 0.001, mean difference 2.6 events per hour [2 SD: 39.8] using a Bland-Altman plot). The area under the ROC curve for detecting SDB (PSG AHI greater than or equal to five events per hour) with the REI was 0.94 (95% CI 0.84-1.0). For an REI >11.9 events per hour, the sensitivity was 0.89 (95% CI 0.65-0.99) and the specificity was 0.86 (95% CI 0.42-1.0) with a likelihood ratio of 6.2 for a positive test (LR+) and 0.13 for a negative test (LR-). Similar results were observed for detecting moderate-severe SDB (PSG AHI > or = 15 events h(-1)) using REI >15.2 events h(-1). In a population of subjects with suspected OSA, this portable monitoring device can automatically quantify an REI that compares well to the AHI scored manually on a concurrent PSG. Such a device may prove useful to assess SDB in high risk populations with self-administered testing in ambulatory settings such as the home.

Gruber, R.; Fontil, L.; Bergmame, L.; Wiebe, S. T.; Amsel, R.; Frenette, S.; Carrier, J. (2012):

Contributions of circadian tendencies and behavioral problems to sleep onset problems of children with ADHD.

In: *BMC Psychiatry* 12 (1471-244X (Linking)), S. 212. DOI: 10.1186/1471-244X-12-212.

Abstract:

ABSTRACT: BACKGROUND: Children with attention-deficit/hyperactivity disorder (ADHD) are two to three times more likely to experience sleep problems. The purpose of this study is to determine the relative contributions of circadian preferences and behavioral problems to sleep onset problems experienced by children with ADHD and to test for a moderation effect of ADHD diagnosis on the impact of circadian preferences and externalizing problems on sleep onset problems. METHODS: After initial screening, parents of children meeting inclusion criteria documented child bedtime over 4 nights, using a sleep log, and completed questionnaires regarding sleep, ADHD and demographics to assess bedtime routine prior to PSG. On the fifth night of the study, sleep was recorded via ambulatory assessment of sleep architecture in the child's natural sleep environment employing portable polysomnography equipment. Seventy-five children (26 with ADHD and 49 controls) aged 7-11 years (mean age 8.61 years, SD 1.27 years) participated in the present study. RESULTS: In both groups of children, externalizing problems yielded significant independent contributions to the explained variance in parental reports of bedtime resistance, whereas an evening circadian tendency contributed both to parental reports of sleep onset delay and to PSG-measured sleep-onset latency. No significant interaction effect of behavioral/circadian tendency with ADHD status was evident. CONCLUSIONS: Sleep onset problems in ADHD are related to different etiologies that might require different interventional strategies and can be distinguished using the parental reports on the CSHQ

Gruber, June; Kogan, Aleksandr; Mennin, Douglas; Murray, Greg (2013):

Real-world emotion? An experience-sampling approach to emotion experience and regulation in bipolar I disorder.

In: *Journal of Abnormal Psychology* 122 (4), S. 971–983. DOI: 10.1037/t20936-000;

Abstract:

Laboratory studies suggest that bipolar disorder is characterized by emotion dysregulation, yet emotion disturbance has not been systematically described using more ecologically valid methods. Using an experience-sampling approach, we therefore sought to investigate positive and negative emotionality, emotion regulation strategies, and functioning among remitted

individuals with bipolar I disorder (BD; n = 31) compared with both healthy controls (CTL; n = 32) and remitted individuals with major depressive disorder (MDD; n = 21). Hierarchical linear modeling analyses of self-report data spanning a 6-day consecutive period revealed that the BD group aligned with the CTL group in reporting greater positive emotionality than the MDD group, but aligned with the MDD group in reporting greater negative emotionality than the CTL group. Furthermore, the BD and MDD groups reported greater general use of emotion regulation strategies than the CTL group. These findings suggest that BD is characterized by amplified emotionality as well as increased efforts to regulate emotions in everyday life. Discussion focuses on implications for BD, as well as identification of unique (disorder-specific) and shared (transdiagnostic) features of emotion disturbance. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Grubler, Martin R.; Kienreich, Katharina; Gaksch, Martin; Verheyen, Nicolas; Fahrleitner-Pammer, Astrid; Schmid, Johannes et al. (2014):

Aldosterone to Active Renin Ratio Is Associated With Nocturnal Blood Pressure in Obese and Treated Hypertensive Patients: The Styrian Hypertension Study.

In: *J Clin Hypertens (Greenwich). DOI:* 10.1111/jch.12274.

Abstract:

High aldosterone levels are considered to play a key role in arterial hypertension. Data on the relationship between the aldosterone to active renin ratio (AARR), a quantity of aldosterone excess, and ambulatory blood pressure (BP) monitoring (ABPM) during the night are, however, sparse. Hypertensive patients were recruited from local outpatient clinics who underwent 24-hour urine collection and in parallel ABPM. Plasma aldosterone and renin concentrations were measured by radioimmunoassay. A total of 211 patients (age, 60.2+/-10.2 years; 51.9% female) with a mean systolic/diastolic ABPM value of 128.7+/-12.8/77.1+/-9.2 mm Hg were evaluated. In backwards linear regression analyses adjusted for age, sex, body mass index, smoking, glomerular filtration rate, hemoglobin A1c , N-terminal prohormone of brain natriuretic peptide, urinary sodium/potassium ratio, and ongoing antihypertensive medication, AARR was significantly associated with nocturnal systolic (ss-coefficient: 0.177; P=.017) and diastolic BP (ss-coefficient: 0.162; P=.027). In patients with arterial hypertension, a significant association between AARR and nighttime BP even after adjustment for a broad panel of confounders was found.

Grunerbl, Agnes; Muaremi, Amir; Osmani, Venet; Bahle, Gernot; Ohler, Stefan; Troester, Gerard et al. (2014):

Smart-Phone Based Recognition of States and State Changes in Bipolar Disorder Patients.

In: *IEEE J Biomed Health Inform. DOI:* 10.1109/JBHI.2014.2343154.

Abstract:

Today's health care is difficult to imagine without the possibility to objectively measure various physiological parameters related to patients symptoms (from temperature through blood pressure to complex tomographic procedures). Psychiatric care remains a notable exception that heavily relies on patient interviews and self assessment. This is due to the fact that mental illnesses manifest themselves mainly in the way patients behave throughout their daily life and, until recently there were no "behavior measurement devices". This is now changing with the progress in wearable activity recognition and sensor enabled smartphones. In this article we introduce a system, which, based on smartphone-sensing is able to recognize depressive and manic states and detect state changes of patients suffering from bipolar disorder. Drawing upon a real-life dataset of 10 patients, recorded over a time-period of 12 weeks (in total over 800 days of data tracing 17 state changes) by 4 different sensing modalities we could extract features corresponding to all disease-relevant aspects in behavior. Using these features we gain recognition accuracies of 76% by fusing all sensor modalities and state change detection precision and recall of over 97%. This article furthermore outlines the applicability of this system in the physician-patient relations in order to facilitate the life and treatment of bipolar patients.

Gryz, Krzysztof; Zradzinski, Patryk; Karpowicz, Jolanta; Leszko, Wieslaw (2013):

Measurement and assessment of electromagnetic fields near radiophones in line with provisions of European Directive 2013/35/EU and Polish labour law.

In: *Med Pr* 64 (5), S. 671–680.

Abstract:

BACKGROUND: The activities of rescue and uniformed services require the use of wireless communication devices, such as portable radiophones. Assessment of workers' exposure to electromagnetic fields emitted by radiophones is important in view of occupational safety and health (OSH), legislation requirements and reports on possible adverse health effects in users of devices emitting radiofrequency electromagnetic field. MATERIALS AND METHODS: In this study 50 portable radiophones of conventional and trunked communication systems were investigated. The assessment of electromagnetic hazards to users involved unperturbed electromagnetic field measurements near radiophones' antennas. RESULTS: The electric field strength corresponding to the occupational exposure level (fields of so-called safety zones established by OSH legislation in Poland) was measured at a distance of 45-65 cm from the portable radiophones antennas of conventional system and 75-95 cm from antennas of trunked system radiophones, depending on their type and mode of work. The assessment was based on the averaged results of series of measurements. The electric field strength exceeding action levels defined by Directive 2013/35/EU was found up to 15 cm from radiophone antennas of conventional system and up to 10 cm from the antennas of trunked system radiophones. CONCLUSIONS: Taking into account the range of safety zones and the use of portable radiophones near the body, their users should be classified into the group of workers occupationally exposed to electromagnetic fields. Electromagnetic field measurement results and typical conditions of using portable radiophones justify the need for additional assessment of electromagnetic hazards--the analysis of compliance with relevant exposure limit values provided by Directive 2013/35/EU.

Guidoux, Romain; Duclos, Martine; Fleury, Gerard; Lacomme, Philippe; Lamaudiere, Nicolas; Manenq, Pierre-Henri et al. (2014):

A smartphone-driven methodology for estimating physical activities and energy expenditure in free living conditions.

In: *J Biomed Inform. DOI:* 10.1016/j.jbi.2014.07.009.

Abstract:

This paper introduces a function dedicated to the estimation of total energy expenditure (TEE) of daily activities based on data from accelerometers integrated into smartphones. The use of mass-market sensors such as accelerometers offers a promising solution for the general public due to the growing smartphone market over the last decade. The TEE estimation function quality was evaluated using data from intensive numerical experiments based, first, on 12 volunteers equipped with a smartphone and two research sensors (Armband and Actiheart) in controlled conditions (CC) and, then, on 30 other volunteers in free-living conditions (FLC). The TEE given by these two sensors in both conditions and estimated from the metabolic equivalent tasks (MET) in CC served as references during the creation and evaluation of the function. The TEE mean gap in absolute value between the function and the three references was 7.0%, 16.4% and 2.7% in CC, and 17.0% and 23.7% according to Armband and Actiheart, respectively, in FLC. This is the first step in the definition of a new feedback mechanism that promotes self-management and daily-efficiency evaluation of physical activity as part of an information system dedicated to the prevention of chronic diseases.

Guimaraes, Guilherme Veiga; de Barros Cruz, Lais Galvani; Fernandes-Silva, Miguel Morita; Dorea, Egidio Lima; Bocchi, Edimar Alcides (2014):

Heated water-based exercise training reduces 24-hour ambulatory blood pressure levels in resistant hypertensive patients: A randomized controlled trial (HEx trial).

In: *Int J Cardiol* 172 (2), S. 434–441. DOI: 10.1016/j.ijcard.2014.01.100.

Abstract:

BACKGROUND: Regular exercise is an effective intervention to decrease blood pressure (BP) in hypertension, but no data are available concerning the effects of heated water-based exercise (HEx). This study examines the effects of HEx on BP in resistant hypertensive patients. METHODS: This is a parallel, randomized controlled trial. 125 nonconsecutive sedentary patients with resistant hypertension from a hypertension outpatient clinic in a university hospital were screened; 32 patients fulfilled the study requirements. The training was performed for 60-minute sessions in a heated pool (32 degrees C), three times a week for 12weeks. The HEx protocol consisted of callisthenic exercises and walking inside the pool. The control group was asked to maintain habitual activities. The main outcome measure was change in mean 24-hour ambulatory BP (ABPM). RESULTS: 32 patients (HEx n=16; control n=16) were randomized; none were lost to follow-up. Office BPs decreased significantly after heated water exercise (36/12mmHg). HEx decreased 24-hour systolic (from 137+/-23 to 120+/-12mmHg, p=0.001) and diastolic BPs (from 81+/-13 to 72+/-10mmHg, p=0.009); daytime systolic (from 141+/-24 to 120+/-13mmHg, p<0.0001) and diastolic BPs (from 84+/-14 to 73+/-11mmHg, p=0.003); and nighttime systolic (from 129+/-22 to 114+/-12mmHg, p=0.006) and diastolic BPs (from 74+/-11 to 66+/-10mmHg, p<0.0001). The control group after 12weeks significantly increased in 24-hour systolic and diastolic BPs, and daytime and nighttime diastolic BPs. CONCLUSION: HEx reduced office BPs and 24-hour ABPM levels in resistant hypertensive patients. These effects suggest that HEx may be a potential new therapeutic approach in these patients.

Guiry, John J.; van de Ven, Pepijn; Nelson, John; Warmerdam, Lisanne; Riper, Heleen (2014):

Activity recognition with smartphone support.

In: *Med Eng Phys. DOI:* 10.1016/j.medengphy.2014.02.009.

Abstract:

In this paper, the authors describe a method of accurately detecting human activity using a smartphone accelerometer paired with a dedicated chest sensor. The design, implementation, testing and validation of a custom mobility classifier are also presented. Offline analysis was carried out to compare this custom classifier to de-facto machine learning algorithms, including C4.5, CART, SVM, Multi-Layer Perceptrons, and Naive Bayes. A series of trials were carried out in Ireland, initially involving N=6 individuals to test the feasibility of the system, before a final trial with N=24 subjects took place in the Netherlands. The protocol used and analysis of 1165min of recorded activities from these trials are described in detail in this paper. Analysis of collected data indicate that accelerometers placed in these locations, are capable of recognizing activities including sitting, standing, lying, walking, running and cycling with accuracies as high as 98%.

Gulhan, Bora; Topaloglu, Rezan; Karabulut, Erdem; Ozaltin, Fatih; Aki, Fazil Tuncay; Bilginer, Yelda; Besbas, Nesrin (2014):

Post-transplant hypertension in pediatric kidney transplant recipients.

In: *Pediatr Nephrol. DOI:* 10.1007/s00467-013-2721-3.

Abstract:

BACKGROUND: The aim of the study was to investigate the prevalence of post-transplant hypertension (HT) and to assess the blood pressure (BP) of transplanted children with possible risk factors. METHODS: Office and ambulatory blood pressure measurements were performed for each patient. RESULTS: Twenty-nine patients were included in the study, including 13 patients with newly diagnosed untreated HT according to the results of ambulatory blood pressure monitoring (ABPM). Fourteen patients were on antihypertensive medication, but only in five of these patients was the HT under control; nine patients receiving antihypertensive drugs had uncontrolled HT. Of the 29 patients, two had normotension without any antihypertensive drug(s). Standard deviation scores (SDS) of the nocturnal diastolic BP of the ABPM were positively correlated with the prednisolone dosage per kilogram ($p = 0.013$, $r = 0.45$) and negatively correlated with the time period after transplantation ($p = 0.024$, $r = -0.41$). Similarly, the SDS of the 24-h diastolic BP was positively correlated with the prednisolone dosage per kilogram ($p = 0.006$, $r = 0.50$) and negatively correlated with the time period after transplantation ($p = 0.016$, $r = -0.44$). Patients with alternate-day steroid treatment had lower nocturnal systolic ($p = 0.016$), nocturnal diastolic ($p = 0.001$) and 24-h diastolic ($p = 0.008$) SDS when compared to those receiving daily steroid medication. CONCLUSION: The prevalence of HT among children after renal transplantation was high among our patient cohort, and steroids had direct impact on nocturnal and diastolic BP.

Gulur, Padma; Rodi, Scott W.; Washington, Tabitha A.; Cravero, Joseph P.; Fanciullo, Gilbert J.; McHugo, Gregory J.; Baird, John C. (2009):

Computer Face Scale for measuring pediatric pain and mood.

In: *J Pain* 10 (2), S. 173–179. DOI: 10.1016/j.jpain.2008.08.005.

Abstract:

UNLABELLED\r\nThis investigation determined the psychometric properties and acceptability of an animated face scale presented on a hand-held computer as a means to measure pediatric pain and mood. In study 1, 79 hospitalized, pediatric patients indicated their levels of pain by adjusting the expression of an animated cartoon face. The first objective was to determine feasibility, concurrent validity, and acceptability of the method. All patients were tested both with the Computer Face Scale and the poster format of the Wong-Baker Faces Scale. A second objective was to evaluate test-retest reliability of the method. In study 2, 50 hospitalized, pediatric patients were tested on 2 occasions, but in this case the patients used the Computer Face Scale to indicate both their pain (how much they hurt) and their mood (how they felt). Children in study 1 were able to use the Computer Face Scale to express relative amounts of pain/hurt; the method showed concurrent validity with the Wong-Baker Face Scale; and most children expressed a preference for the Computer Face Scale. The method also showed adequate test-retest reliability. In study 2, adequate test-retest reliability was demonstrated for ratings of both pain and mood.\r\nPERSPECTIVE\r\nThe Computer Face Scale allows the health provider to obtain reliable and valid measures of pediatric pain and mood. The method can be understood and used by children as young as 3 years and is appropriate for use with adults.

Gunay, Fatih; Alpay, Harika; Gokce, Ibrahim; Bilgen, Hulya (2013):

Is late-preterm birth a risk factor for hypertension in childhood?

In: *Eur J Pediatr. DOI:* 10.1007/s00431-013-2242-x.

Abstract:

Late-preterm birth is associated with higher rates of neonatal morbidity and mortality and higher health care utilization, but its impact on later life is not well known. In this study, we aimed to evaluate whether late-preterm birth affects blood pressure, renal function, and urinary protein excretion in children later in life. Sixty-five children aged 4 to 13 years born as late-preterm and 65 age- and sex-matched children born full term were evaluated with 24-h ambulatory blood pressure monitoring (ABPM), urinary microalbumin excretion (UAE), and glomerular filtration rate (GFR). All subjects underwent ABPM prospectively. For each gender, daytime, nighttime, and 24-h systolic and diastolic and mean blood pressures (SBP, DBP, and MAP) were transformed to standard deviation scores (SDS). Blood pressure profiles (SBP DBP, and MAP) were considered abnormal when the corresponding SDS values exceeded 1.63. Urinary microalbumin excretion was expressed as milligrams per day, and the value between 30 and 300 mg/day was defined as microalbuminuria (MA). There was no significant difference in the mean GFR and MA levels between late-preterm and term children. 24-h systolic BP SDS, daytime systolic BP SDS, nighttime systolic BP SDS, 24-h diastolic BP SDS, nighttime diastolic BP SDS, 24-h MAP BP SDS, daytime MAP BP SDS, and nighttime MAP BP SDS were found to be significantly higher in late-preterm children compared to term children. Conclusion: We conclude that late-preterm children have higher BP levels, so those children should be followed up carefully by the pediatrician regarding probable hypertension in their future life.

Gunnarsdóttir, Anna; Stenström, Pernilla; Arnbjörnsson, Einar (2008):

Wireless esophageal pH monitoring in children.

In: *Journal of Laparoendoscopic & Advanced Surgical Techniques* 18 (3), S. 443–447.

Abstract:

INTRODUCTION:

A wireless BRAVO (Medtronic, Shoreview, MN) capsule for pH measurement in the diagnosis of gastroesophageal reflux disease (GERD) is intended to be less uncomfortable, and facilitates activity during the measuring period, compared to the usual method with a naso-esophageal catheter. The aim of this study was to report on our experience with the wireless system in children. A secondary aim was to see if there was any cut-off level for esophageal acid exposure causing esophagitis as verified by pathologic examination.

MATERIALS AND METHODS:

A total of 62 wireless 24-hour pH measurements with the BRAVO capsule were carried out over a period of 2 years in 58 children with symptoms of GERD. The median age of the children was 8 +/- 4 years (range, 1-15). They underwent upper endoscopies and the placement of the capsule under general anesthesia. Correlations between endoscope findings and pathologic diagnosis were done.

RESULTS:

In 10 children, the endoscopies showed esophagitis. The median percent time of pH <4 was 7.0 +/- 9.6% (range, 0-61). The DeMeester score was abnormally high in 33 children. Three children described dysphagia during the measuring time. In 3 patients, we experienced technical problems with the wireless system. Biopsies were taken in 49 children, of which 18 showed esophagitis, with no correlation to the 24-hour pH-measurement findings.

CONCLUSIONS:

Ambulatory pH monitoring, using the wireless pH system, is feasible and was well tolerated by the children. No cut-off level for the acid exposure in correlation to pathologic diagnosis of esophagitis could be found. We recommend the use of the wireless pH-measurement system in children.

Gunter, Jedidiah D. (2012):

Examining experience in depressed and nondepressed individuals.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 73 (1-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99140-162&site=ehost-live.

Abstract:

The inner experience of nine depressed and nine nondepressed individuals was explored using Descriptive Experience Sampling. Each participant completed four days of descriptive experience sampling, exploring about six moments of their inner experience on each sampling day. Although the Depressed participants self-reported substantially higher levels of depressive symptomatology on the Center for Epidemiological Studies Depression scale (CES-D) on each day of sampling, the differences in the frequency of depressive symptomatology in the inner experiences of these two groups were not statistically significant. Despite the group differences not reaching statistical significance, the Depressed group experienced somewhat more frequent moments of depression, anxiety, fatigue, body discomfort, negative feelings, negative content, and fewer instances of positive feelings and content than the Nondepressed group. The two groups experienced the five most frequent phenomena of inner experience identified in prior DES studies (inner seeing, inner speaking, unsymbolized thinking, feelings, and sensory awareness) at similar rates. Moments reflecting constructs related to depression, such as Beck's Negative Cognitive Triad, were either very infrequent or absent. Overall, differences in the inner experience of the depressed and nondepressed participants observed via descriptive experience sampling were much less pronounced than the differences in their global self-reports of depressive symptomatology via the CES-D. The implications and possible reasons for this are discussed. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Gupta-Malhotra, Monesha; Devereux, Richard B.; Dave, Archana; Bell, Cynthia; Portman, Ronald; Milewicz, Diana (2014):

Aortic dilatation in children with systemic hypertension.

In: *J Am Soc Hypertens. DOI:* 10.1016/j.jash.2014.01.002.

Abstract:

The aim of the study was to determine the presence of aortic dilatation in hypertensive children, the prevalence of which is 4% to 10% in hypertensive adults. Prospectively enrolled multiethnic children, untreated for their hypertension, underwent an echocardiogram to exclude congenital heart disease and evaluate for end-organ damage and aortic size. The aorta was measured in the parasternal long-axis view at three levels: the sinus of Valsalva, supra-tubular junction, and the ascending aorta. Aortic dilatation was determined by z-score >2 at any one of the levels measured. Hypertension was defined as blood pressure above the 95th percentile based on the Fourth Working Group criteria confirmed by 24-hour ambulatory blood pressure monitoring. Among 142 consecutive hypertensive children (median age, 14 years; 45% females) aortic dilatation was detected in 2.8% (95% confidence interval, 1%-7%; median age, 16 years; 100% females). Children with aortic dilatation, when compared with those without, had significantly more aortic valve insufficiency (P = .005) and left ventricular hypertrophy (P = .018). Prevalence of aortic dilatation was 2.8% and was associated with significantly more aortic insufficiency and left ventricular hypertrophy in comparison to those without aortic dilatation.

Gurrin, C.; Qiu, Z.; Hughes, M.; Caprani, N.; Doherty, A. R.; Hodges, S. E.; Smeaton, A. F. (2013):

The smartphone as a platform for wearable cameras in health research.

In: *Am J Prev.Med* 44 (3), S. 308–313. DOI: 10.1016/j.amepre.2012.11.010.

Abstract:

BACKGROUND: The Microsoft SenseCam, a small camera that is worn on the chest via a lanyard, increasingly is being deployed in health research. However, the SenseCam and other wearable cameras are not yet in widespread use because of a variety of factors. It is proposed that the ubiquitous smartphones can provide a more accessible alternative to SenseCam and similar devices. PURPOSE: To perform an initial evaluation of the potential of smartphones to become an alternative to a wearable camera such as the SenseCam. METHODS: In 2012, adults were supplied with a smartphone, which they wore on a lanyard, that ran life-logging software. Participants wore the smartphone for up to 1 day and the resulting life-log data were both manually annotated and automatically analyzed for the presence of visual concepts. The results were compared to prior work using the SenseCam. RESULTS: In total, 166,000 smartphone photos were gathered from 47 individuals, along with associated sensor readings. The average time spent wearing the device across all users was 5 hours 39 minutes (SD=4 hours 11 minutes). A subset of 36,698 photos was selected for manual annotation by five researchers. Software analysis of these photos supports the automatic identification of activities to a similar level of accuracy as for SenseCam images in a previous study. CONCLUSIONS: Many aspects of the functionality of a SenseCam largely can be replicated, and in some cases enhanced, by the ubiquitous smartphone platform. This makes smartphones good candidates for a new generation of wearable sensing devices in health research, because of their widespread use across many populations. It is envisioned that smartphones will provide a compelling alternative to the dedicated SenseCam hardware for a number of users and application areas. This will be achieved by integrating new types of sensor data, leveraging the smartphone's real-time connectivity and rich user interface, and providing support for a range of relatively sophisticated applications

Gustafson, David H.; McTavish, Fiona M.; Chih, Ming-Yuan; Atwood, Amy K.; Johnson, Roberta A.; Boyle, Michael G. et al. (2014):

A Smartphone Application to Support Recovery From Alcoholism: A Randomized Clinical Trial.

In: *JAMA Psychiatry. DOI:* 10.1001/jamapsychiatry.2013.4642.

Abstract:

IMPORTANCE Patients leaving residential treatment for alcohol use disorders are not typically offered evidence-based continuing care, although research suggests that continuing care is associated with better outcomes. A smartphone-based application could provide effective continuing care. OBJECTIVE To determine whether patients leaving residential treatment for alcohol use disorders with a smartphone application to support recovery have fewer risky drinking days than control patients. DESIGN, SETTING, AND PARTICIPANTS An unmasked randomized clinical trial involving 3 residential programs operated by 1 nonprofit treatment organization in the Midwestern United States and 2 residential programs operated by 1 nonprofit organization in the Northeastern United States. In total, 349 patients who met the criteria for DSM-IV alcohol dependence when they entered residential treatment were randomized to treatment as usual (n = 179) or treatment as usual plus a smartphone (n = 170) with the Addiction-Comprehensive Health Enhancement Support System (A-CHESS), an application designed to improve continuing care for alcohol use disorders. INTERVENTIONS Treatment as usual varied across programs; none offered patients coordinated continuing care after discharge. A-CHESS provides monitoring, information, communication, and support services to patients, including ways for patients and counselors to stay in contact. The intervention and follow-up period lasted 8 and 4 months, respectively. MAIN OUTCOMES AND MEASURES Risky drinking days-the number of days during which a patient's drinking in a 2-hour period exceeded 4 standard drinks for men and 3 standard drinks for women, with standard drink defined as one that contains roughly 14 g of pure alcohol (12 oz of regular beer, 5 oz of wine, or 1.5 oz of distilled spirits). Patients were asked to report their risky drinking days in the previous 30 days on surveys taken 4, 8, and 12 months after discharge from residential treatment. RESULTS For the 8 months of the intervention and 4 months of follow-up, patients in the A-CHESS group reported significantly fewer risky drinking days than did patients in the control group, with a mean of 1.39 vs 2.75 days (mean difference, 1.37; 95% CI, 0.46-2.27; P = .003). CONCLUSIONS AND RELEVANCE The findings suggest that a multifeatured smartphone application may have significant benefit to patients in continuing care for alcohol use disorders. TRIAL REGISTRATION clinicaltrials.gov Identifier: NCT01003119.

Haakstad, Lene A. H.; Gundersen, Ingvild; Bø, Kari (2010):

Self-reporting compared to motion monitor in the measurement of physical activity during pregnancy.

In: *Acta obstetricia et gynecologica Scandinavica* 89 (6), S. 749–756. DOI: 10.3109/00016349.2010.484482.

Abstract:

UNLABELLED\r\nMost pregnancy-studies have relied on retrospective, cross-sectional surveys to measure physical activity level. Questionnaires are cost-effective, but validity of the data may be questionable.\r\nOBJECTIVE\r\nThe aim of the present study was to validate a physical activity and pregnancy questionnaire (PAPQ) with a portable activity monitor (ActiReg).\r\nDESIGN\r\nProspective comparison study.\r\nSETTING\r\nHealthy pregnant women recruited in a capital area.\r\nPOPULATION\r\nSeventy-seven pregnant women wore the ActiReg sensors during waking hours for seven consecutive days and answered the PAPQ.\r\nMAIN OUTCOME MEASURES\r\nAgreement between the two methods was analyzed by Bland-Altman plots and Spearman correlation coefficients.\r\nRESULTS\r\nThe results indicated only small differences between the PAPQ and the ActiReg((R)) in cross-tabulation of total physical activity level and proportion of participants meeting the current exercise guidelines. The correlation between the methods was good (r = 0.59) for time spent in activities with high intensity (METS > 6), moderate for time spent standing/moving (r = 0.36) and fair for sitting/lying (r = 0.29). The Bland-Altman plot of the activity patterns, showed a mean difference near zero with no apparent trends and wide scatter of individual observations.\r\nCONCLUSIONS\r\nThe PAPQ may be considered an acceptable method for assessing habitual physical activity and exercise among pregnant women at group level. However, as questionnaires and portable activity monitors have their strengths in measuring different aspects of physical activity, there may be advantages in combining these two types of instruments for registrations of physical activity level during pregnancy.

Haar, Sherry; Fees, Bronwyn; Trost, Stewart; Crowe, Linda K.; Murray, Ann (2013):

Design of a garment for data collection of toddler language and physical activity.

In: *Clothing & Textiles Research Journal* 31 (2), S. 125–140. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-10758-005%26site%3dehost-live;haar@ksu.edu.

Abstract:

Design process phases of development, evaluation and implementation were used to create a garment to simultaneously collect reliable data of speech production and intensity of movement of toddlers (18-36 months). A series of prototypes were developed and evaluated that housed accelerometer-based motion sensors and a digital transmitter with microphone. The approved test garment was a top constructed from loop-faced fabric with interior pockets to house devices. Extended side panels allowed for sizing. In total, 56 toddlers (28 male; 28 female; 16-36 months of age) participated in the study providing pilot and baseline data. The test garment was effective in collecting data as evaluated for accuracy and reliability using ANOVA for accelerometer data, transcription of video for type of movement, and number and length of utterances for speech production. The data collection garment has been implemented in various studies across disciplines. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Haaren, Birte; Loeffler, Simone Nadine; Haertel, Sascha; Anastasopoulou, Panagiota; Stumpp, Juergen; Hey, Stefan; Boes, Klaus (2013):

Characteristics of the activity-affect association in inactive people: An ambulatory assessment study in daily life.

In: *Front Psychol* 4. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-16227-001%26site%3dehost-live;birte.haaren@kit.edu.

Abstract:

Acute and regular exercise as well as physical activity (PA) is related to well-being and positive affect. Recent studies have shown that even daily, unstructured physical activities increase positive affect. However, the attempt to achieve adherence to PA or exercise in inactive people through public health interventions has often been unsuccessful. Most studies analyzing the activity-affect association in daily life, did not report participants' habitual activity behavior. Thus, samples included active and inactive people, but they did not necessarily exhibit the same affective reactions to PA in daily life. Therefore the present study investigated whether the association between PA and subsequent affective state in daily life can also be observed in inactive individuals. We conducted a pilot study with 29 inactive university students (mean age 21.3 -&#65533; 1.7 years) using the method of ambulatory assessment. Affect was assessed via electronic diary and PA was measured with accelerometers. Participants had to rate affect every 2 h on a six item bipolar scale reflecting the three basic mood dimensions energetic arousal, valence, and calmness. We calculated activity intensity level [mean Metabolic Equivalent (MET) value] and the amount of time spent in light activity over the last 15 min before every diary prompt and conducted within-subject correlations. We did not find significant associations between activity intensity and the three mood dimensions. Due to the high variability in within-subject correlations we conclude that not all inactive people show the same affective reactions to PA in daily life. Analyzing the PA-affect association of inactive people was difficult due to little variance and distribution of the assessed variables. Interactive assessment and randomized controlled trials might help solving these problems. Future studies should examine characteristics of affective responses of inactive people to PA in daily life. General assumptions considering the relation between affect and PA might not be suitable for this target group. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Habets, P.; Collip, D.; Myin-Germeys, I.; Gronenschild, E.; Van, Bronswijk S.; Hofman, P. et al. (2011):

Pituitary volume, stress reactivity and genetic risk for psychotic disorder.

In: *Psychol Med* (0033-2917 (Linking)), S. 1–11. DOI: 10.1017/S0033291711002728.

Abstract:

BACKGROUND: Hypothalamic-pituitary-adrenal (HPA) axis hyperactivity, associated with increased pituitary volume, may mediate observed alterations in stress reactivity in patients with psychotic disorder. We examined the association between pituitary volume, real-life stress reactivity and genetic liability for psychotic disorder.MethodPituitary volumes were derived from magnetic resonance imaging (MRI) scans of 20 patients with psychotic disorder, 37 non-psychotic siblings of these patients, and 32 controls. The Experience Sampling Method (ESM) was used to measure emotional stress reactivity [changes in negative affect (NA) associated with daily life stress] in the three groups, and biological stress reactivity (changes in cortisol associated with daily life stress) in siblings and controls. Interactions between group, stress and pituitary volume in models of NA and cortisol were examined. RESULTS: Groups did not differ in pituitary volume. Patients showed significantly higher emotional stress reactivity than siblings and controls. In addition, emotional stress reactivity increased with increasing pituitary volume to a greater degree in patients than in controls and siblings. Siblings had higher cortisol levels than controls but did not show increased cortisol reactivity to stress. There was no interaction between pituitary volume, stress and group in the model of cortisol. CONCLUSIONS: Higher pituitary volume was associated with increased emotional stress reactivity in patients with psychotic disorder, siblings

and controls. The association was significantly stronger in the patient group, suggesting a process of progressive sensitization mediating clinical outcome

Hachizuka, Maki; Yoshiuchi, Kazuhiro; Yamamoto, Yoshiharu; Iwase, Satoru; Nakagawa, Keiichi; Kawagoe, Koh; Akabayashi, Akira (2010):

Development of a personal digital assistant (PDA) system to collect symptom information from home hospice patients.

In: *Journal of palliative medicine* 13 (6), S. 647–651. DOI: 10.1089/jpm.2009.0350.

Abstract:

PURPOSE\r\nPrevious studies have found that inappropriate assessment of cancer pain can lead to inadequate pain management. To improve assessment, it may be helpful to collect real-time data in a natural environment using computerized ecological momentary assessment (cEMA). Therefore, the aim of the study was to develop a personal digital assistant (PDA) system to collect information on symptoms such as pain and mood states in patients with cancer using cEMA.\r\nMETHODS\r\nFollowing a pilot study in inpatients with cancer, the second phase of the study involved patients with terminal cancer receiving home hospice care. These patients were asked to record their symptoms in a PDA (a palm-sized portable device) several times per day for a week when they took rescue medications and when an alarm sounded. At the end of the week, an interview on the usability of the device was conducted and overall response rates were calculated.\r\nRESULTS\r\nFifteen patients completed the second phase of the study. Their median age was 64 years and the median survival time after the study period was 22 days. The overall response rates were 90.3% to the sound of the alarm and 80.2% after taking rescue medications. The user-friendliness of the device was rated as 8.8 on a scale of 0 (worst) to 10 (best).\r\nCONCLUSIONS\r\nThe cEMA technique using a PDA might be applicable to patients with cancer in palliative care to evaluate symptoms in a natural setting. This system may also be useful for managing symptoms such as pain and mood states in patients with cancer.

Haedt-Matt, A. A.; Keel, P. K. (2011):

Hunger and binge eating: a meta-analysis of studies using ecological momentary assessment.

In: *Int J Eat.Disord.* 44 (7), S. 573–578. DOI: 10.1002/eat.20868.

Abstract:

OBJECTIVE: Binge eating has been associated with increased hunger, suggesting a role for impaired appetite regulation. Ecological momentary assessment (EMA) is ideally suited to examine whether hunger is a precipitant of binge eating but results from such studies have not been systematically reviewed. This study provides a meta-analysis of EMA studies that have examined hunger as an antecedent of binge eating. METHOD: Electronic database and manual searches produced seven EMA studies with N = 180 participants. Meta-analyses were conducted to compare: (1) pre-binge eating hunger to average ratings of hunger, and (2) pre-binge eating hunger to hunger before regular eating. RESULTS: Across studies, hunger was significantly greater before binge eating compared with average hunger ratings, but was significantly lower before binge eating compared with before other eating episodes. DISCUSSION: Excessive hunger does not appear to be a precipitant of binge eating because higher levels of hunger are observed before regular eating episodes. However, lower hunger before food consumption may contribute to the experience of a particular eating episode as a binge

Haffey, F.; Brady, R. R.; Maxwell, S. (2013):

A comparison of the reliability of smartphone apps for opioid conversion.

In: *Drug Saf* 36 (2), S. 111–117. DOI: 10.1007/s40264-013-0015-0.

Abstract:

BACKGROUND: Many medical professionals use smartphone applications (apps) on a daily basis to support clinical decision making. Opioid switching (conversion of one opioid to another at equianalgesic dose) is common in clinical practice and often challenging for doctors. Apps providing an opioid conversion tool can therefore be a useful resource. Despite rapid growth in the use of medical apps, the lack of robust regulation and peer review to ensure the accuracy and reliability of app content is currently an area of concern. METHOD: We searched major online app stores for apps providing an opioid dose conversion tool.

We assessed output variability between apps in the dose calculation of seven opioid switches, as well as assessing the level of professional medical involvement in the authorship, creation and design of the apps. RESULTS: Of 23 different apps identified, more than half (n = 12; 52 %) had no stated medical professional involvement and only 11 (48 %) apps provided direct references to primary sources for their opioid conversion ratios. Conversion of 1 mg of oral morphine to oral codeine demonstrated the largest conversion output range (median 6.67 mg, range 3.333-12 mg). Conversion of 1 mg of oral morphine to methadone ranged from 0.05-0.67 mg, with only 44 % of methadone-converting apps (n = 4) commenting that the conversion ratio changes with magnitude of methadone dose. Overall, 35 % of apps (n = 8) did not warn the user about the standard practice of dose reduction when opioid switching. There was a statistically significant difference in the mean conversion output for hydromorphone (oral) between apps with and without medical professional involvement (0.2256 vs 0.2536; p = 0.0377). CONCLUSIONS: There are significant concerns with regard to the reliability of information provided by apps offering opioid dose conversion, with lack of information regarding evidence-based content and peer review in many cases. It is crucial that better regulation of medical apps is instigated in order to ensure that patient safety is maintained

Haffey, F.; Brady, R. R.; Maxwell, S. (2013):

Smartphone apps to support hospital prescribing and pharmacology education: a review of current provision.

In: *Br.J Clin.Pharmacol.* (0306-5251 (Linking)). DOI: 10.1111/bcp.12112.

Abstract:

AIMS: Junior doctors write the majority of hospital prescriptions but many indicate they feel underprepared to assume this responsibility and around 10% of prescriptions contain errors. Medical smartphone apps are now widely used in clinical practice and present an opportunity to provide support to inexperienced prescribers. This study assesses the contemporary range of smartphone apps with prescribing or related content. METHODS: Six smartphone app stores were searched for apps aimed at the healthcare professional with drug, pharmacology or prescribing content. RESULTS: 306 apps were identified. 34% appeared to be for use within the clinical environment in order to aid prescribing, 14% out with the clinical setting, and 51% of apps were deemed appropriate for both clinical and non-clinical use. Apps with drug reference material, such as textbooks, manuals or medical apps with drug information were the commonest app found (51%), followed by apps offering drug or infusion rate dose calculation (26%). 68% of apps charged for download, with a mean price of pound14.25 per app and a range of pound0.62 - 101.90. CONCLUSIONS: A diverse range of pharmacology-themed apps are available and there is further potential for the development of contemporary apps to improve prescribing performance. Personalised app stores may help universities/healthcare organisations offer high-quality apps to students to aid in pharmacology education. Users of prescribing apps must be aware of the lack of information regarding the medical expertise of app developers; this will enable them to make informed choices about the use of such apps in their clinical practice

Hagins, Marshall; Rundle, Andrew; Consedine, Nathan S.; Khalsa, Sat Bir S. (2014):

A randomized controlled trial comparing the effects of yoga with an active control on ambulatory blood pressure in individuals with prehypertension and stage 1 hypertension.

In: *J Clin Hypertens (Greenwich)* 16 (1), S. 54–62. DOI: 10.1111/jch.12244.

Abstract:

The purpose of this study was to compare the effects of yoga with an active control (nonaerobic exercise) in individuals with prehypertension and stage 1 hypertension. A randomized clinical trial was performed using two arms: (1) yoga and (2) active control. Primary outcomes were 24-hour day and night ambulatory systolic and diastolic blood pressures. Within-group and between-group analyses were performed using paired t tests and repeated-measures analysis of variance (time x group), respectively. Eighty-four participants enrolled, with 68 participants completing the trial. Within-group analyses found 24-hour diastolic, night diastolic, and mean arterial pressure all significantly reduced in the yoga group (-3.93, -4.7, -4.23 mm Hg, respectively) but no significant within-group changes in the active control group. Direct comparisons of the yoga intervention with the control group found a single blood pressure variable (diastolic night) to be significantly different (P=.038). This study has demonstrated that a yoga intervention can lower blood pressure in patients with mild hypertension. Although this study was not adequately powered to show between-group differences, the size of the yoga-induced blood pressure reduction appears to justify performing a definitive trial of this intervention to test whether it can provide meaningful therapeutic value for the management of hypertension.

Hagstromer, Maria; Ainsworth, Barbara E.; Oja, Pekka; Sjostrom, Michael (2010):

Comparison of a subjective and an objective measure of physical activity in a population sample.

In: *J Phys Act Health* 7 (4), S. 541.

Abstract:

BACKGROUND:

The aim of this study was to compare physical activity components in the long, self-administrated version of IPAQ with an accelerometer in a population sample.

METHODS:

In total 980 subjects (18-65 years) wore an accelerometer (Actigraph) for 7 consecutive days and thereafter filled in the IPAQ. Measures of total physical activity, time spent in moderate and in vigorous activity as well as time spent sitting as assessed by the IPAQ and the Actigraph were compared.

RESULTS:

The results showed significant low to moderate correlations (Rs = 0.07-0.36) between the 2 instruments and significantly (P < .001) higher values for sitting and vigorous intensity physical activity from the IPAQ compared with the Actigraph. The higher the values reported by the IPAQ the bigger differences were seen between the instruments. Comparison between the tertiles of total physical activity by the 2 instruments showed significant overall association with consistent agreement in the low and the high tertiles.

CONCLUSION:

The long form of IPAQ is a valid measure of physical activity in population research. However, the IPAQ likely overestimates actual physical activity as shown by its limited ability to classify adults into low and high categories of physical activity based on accelerometer data.

Hagströmer, M.; Bergman, P.; Bourdeaudhuij, I.; Ortega, F. B.; Ruiz, J. R.; Manios, Y. et al. (2008):

Concurrent validity of a modified version of the International Physical Activity Questionnaire (IPAQ-A) in European adolescents: The HELENA Study.

In: *International journal of obesity (2005)* 32 Suppl 5, S. S42-8. DOI: 10.1038/ijo.2008.182.

Abstract:

INTRODUCTION\r\nThe International Physical Activity Questionnaire (IPAQ) was developed to measure health-enhancing physical activity in adult populations. This study explores the concurrent validity of a modified version of the long IPAQ (the IPAQ-A) for the assessment of physical activity among adolescents.\r\nPARTICIPANTS AND METHODS\r\nIn total, 248 healthy adolescents, divided into one older and one younger age group (aged 15-17 years (N=188) and 12-14 years (N=60), respectively) from nine Healthy Lifestyle by Nutrition in Adolescence (HELENA) Study centres across Europe, voluntarily participated in the study. Data on total physical activity, as well as activities in different intensities derived from the IPAQ-A, were compared using Spearman's correlation coefficient and Bland-Altman analysis, with data from an accelerometer. Tertiles of total physical activity for the IPAQ-A and the accelerometer were compared using Kendall's tau-b.\r\nRESULTS\r\nFor the older age group, significant correlations between the instruments were found for time spent walking, for moderate and vigorous activities as well as for total physical activity (Rs=0.17-0.30, P<0.05). No significant correlations were found for any of the variables studied in the younger age group. Kendall's tau-b showed low but significant correlations for tertiles of total physical activity (P<0.001).\r\nCONCLUSIONS\r\nThe IPAQ-A has reasonable validity properties for assessing activities in different intensities and for total physical activity in healthy European adolescents aged 15-17 years. For adolescents aged 14 years and younger, the correlations were unsatisfactorily low and objective methodology, such as accelerometry, may be the appropriate alternative.

Hagströmer, Maria; Oja, Pekka; Sjöström, Michael (2007):

Physical activity and inactivity in an adult population assessed by accelerometry.

In: *Med Sci Sports Exerc* 39 (9), S. 1502–1508.

Abstract:

INTRODUCTION:

Strong evidence suggests a link between physical inactivity and chronic disease prevalence in the adult population. To target the right groups for interventions in a population, accurate assessment of physical activity is important. The objective of this study was to assess the levels and pattern of physical activity and inactivity in an adult population sample using an objective method.

METHODS:

In total, 1114 adults (56% women, 45+/-15 yr), randomly recruited from the Swedish population across a year, used an accelerometer (Actigraph MTI) for seven consecutive days. Inactivity was defined as <100 counts per minute, and cutoff values for moderate and vigorous activity were 1952-5724 and >5724 counts per minute, respectively. Average intensity was measured as counts per minute.

RESULTS:

The adults were active in at least moderate-intensity activity for a median (intraquartile range) of 31 (18-47) min.d(-1). Fifty-two percent accumulated 30 min.d(-1) of at least moderate-intensity physical activity. Only 1% achieved those 30 min from three or more bouts of at least 10 min. Average intensity, moderate and vigorous physical activity was lower with higher age or body mass index (BMI). Men spent more time than women in moderate and vigorous physical activity, but there was no gender difference in average intensity. The variation in inactivity could not be explained by gender, age, or BMI.

CONCLUSION:

Objectively obtained estimates of physical activity yielded lower values and a different activity pattern compared with those obtained by commonly used self-reports. This highlights the need to better understand the nature and measurement issues of health-enhancing physical activity of adults.

Håkanson, Bengt S.; Berggren, Per; Granqvist, Staffan; Ljungqvist, Olle; Thorell, Anders (2009):

Comparison of wireless 48-h (Bravo) versus traditional ambulatory 24-h esophageal pH monitoring.

In: *Scandinavian journal of gastroenterology* 44 (3), S. 276–283. DOI: 10.1080/00365520802588109.

Abstract:

OBJECTIVE\r\nTo compare wireless with catheter-based esophageal pH recordings.\r\nMATERIAL AND METHODS\r\nForty-five patients with symptoms suggestive of gastroesophageal reflux disease and 47 healthy volunteers were investigated in a university-affiliated hospital; 48-h wireless esophageal pH recording was performed. During the first 24 h, simultaneous traditional pH recording by catheter was undertaken. Nine of the volunteers underwent repeated measurements with both techniques. Outcome measures were feasibility, agreement, concordance of diagnostic yield, reproducibility, and subjective symptoms.\r\nRESULTS\r\nSubjective parameters were less affected when using the wireless technique alone ($p<0.05$). On using the wireless technique, esophageal acid exposure was underestimated approximately by half compared with traditional recording ($p<0.05$). Although pH data obtained with the two techniques were correlated ($r(2)=0.66$, $p<0.001$), the range between limits of agreement was wide (-3.7 to 10.0 percentage units of total time pH <4). Coefficients of variation for repeated measurements were 60.1+/-26.3% for catheter recordings, and 66.0+/-47.3 for wireless recordings on day 1 (NS). Concordance of diagnostic yield was 81.5% with all subjects included.\r\nCONCLUSIONS\r\nForty-eight-hour wireless Bravo pH monitoring is feasible but consistently underestimates esophageal acid exposure compared to the conventional technique. Although there is a significant correlation between the two techniques for pH recordings, the wide range in limits of agreement and the large coefficient of variation with both techniques suggest that the two methods are not immediately interchangeable for use in clinical practice.

Halen, Nisha (2011):

A randomized controlled study of the acute and sustained effects of perceived racism on negative affect.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (1-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-99140-094&site=ehost-live.

Abstract:

Racism is a stressor that has significant effects on the psychological and physical wellbeing of individuals belonging to various ethnic and minority groups. Racism may affect health by increasing the intensity and frequency of negative affect. The aim of this study was to investigate how racism acts as a unique stressor, eliciting acute affect reactivity that extends from the laboratory into the field to produce sustained distress, as measured by daily affect. In a hybrid experimental design, 65 Black college students were randomly assigned to perform either a race-related stress task (RACE) or a social evaluation stress task

(TV). Participants rated 9 emotion states at baseline, pre-task, post-task and after recovery. Ecological momentary assessment (EMA) was used to collect diary ratings in the field for the remainder of the day. Participants completed measures of hope and rumination to test the mediating mechanisms through which racial stress produces sustained negative affect. Measures of lifetime perceived racism and trait anger were completed to test the moderating effects of experiential and personality variables. Analyses revealed a significant main effect of stress exposure on acute affect, whereby individuals in the RACE condition reported greater pre- to post-task increases in anger and hurt, and greater decreases in happiness. This association was moderated by lifetime perceived racism. Individuals exposed to racial stress who report greater lifetime perceived racism exhibited greater increases in negative affect immediately following stress exposure. The interaction of condition and acute helpless reactivity was a significant predictor of daily helplessness, such that participants who reported increases in helplessness in response to the RACE task later reported feeling less daily helplessness. In contrast, participants who reported more anger and helplessness in response to the TV task experienced significantly more anger and helplessness during the day in comparison to those who had less of an emotional reaction to the stress task. These findings suggest that race-related stress elicits acute emotional reactivity that may continue to influence mood beyond exposure to the original stressor. (PsycINFO Database Record (c) 2011 APA, all rights reserved)

Hall, Amanda K.; Dodd, Virginia; Harris, Amy; McArthur, Kara; Dacso, Clifford; Colton, Lara M. (2014):

Heart failure patients' perceptions and use of technology to manage disease symptoms.

In: *Telemed J E Health* 20 (4), S. 324–331. DOI: 10.1089/tmj.2013.0146.

Abstract:

Abstract Background: Technology use for symptom management is beneficial for both patients and physicians. Widespread acceptance of technology use in healthcare fuels continued development of technology with ever-increasing sophistication. Although acceptance of technology use in healthcare by medical professionals is evident, less is known about the perceptions, preferences, and use of technology by heart failure (HF) patients. This study explores patients' perceptions and current use of technology for managing HF symptoms (MHFS). Materials and Methods: A qualitative analysis of in-depth individual interviews using a constant comparative approach for emerging themes was conducted. Fifteen participants (mean age, 64.43 years) with HF were recruited from hospitals, cardiology clinics, and community groups. Results: All study participants reported use of a home monitoring device, such as an ambulatory blood pressure device or bathroom scale. The majority of participants reported not accessing online resources for additional MHFS information. However, several participants stated their belief that technology would be useful for MHFS. Participants reported increased access to care, earlier indication of a worsening condition, increased knowledge, and greater convenience as potential benefits of technology use while managing HF symptoms. For most participants financial cost, access issues, satisfaction with current self-care routine, mistrust of technology, and reliance on routine management by their current healthcare provider precluded their use of technology for MHFS. Conclusions: Knowledge about HF patients' perceptions of technology use for self-care and better understanding of issues associated with technology access can aid in the development of effective health behavior interventions for individuals who are MHFS and may result in increased compliance, better outcomes, and lower healthcare costs.

Hall, Scott S.; Hammond, Jennifer L.; Hustyi, Kristin M. (2013):

Examining the relationship between heart rate and problem behavior: a case study of severe skin picking in Prader-Willi syndrome.

In: *Am J Intellect Dev Disabil* 118 (6), S. 460–474. DOI: 10.1352/1944.7558-118.6.460.

Abstract:

Few studies have examined the relationship between heart rate and self-injurious behavior (SIB) shown by individuals with IDD (intellectual and developmental disabilities). In this single-case study, we simultaneously monitored heart rate and activity levels during a functional analysis of severe skin picking behavior exhibited by a young man with Prader-Willi syndrome (PWS). Results of the functional analysis indicated that the participant's skin picking was maintained by automatic reinforcement. A within-session analysis of the data indicated that skin picking bouts resulted in an increase in heart rate, suggesting a positive-automatic reinforcement function. These data indicate that inclusion of heart rate and activity-level monitoring during a functional analysis may provide important additional information concerning the determinants of SIB.

Hall, Charles B.; Lipton, Richard B.; Tennen, Howard; Haut, Sheryl R. (2009):

Early follow-up data from seizure diaries can be used to predict subsequent seizures in same cohort by borrowing strength across participants.

In: *Epilepsy Behav* 14 (3), S. 472–475. DOI: 10.1016/j.yebeh.2008.12.011.

Abstract:

Accurate prediction of seizures in persons with epilepsy offers opportunities for both precautionary measures and preemptive treatment. Previously identified predictors of seizures include patient-reported seizure anticipation, as well as stress, anxiety, and decreased sleep. In this study, we developed three models using 30 days of nightly seizure diary data in a cohort of 71 individuals with a history of uncontrolled seizures to predict subsequent seizures in the same cohort over a 30-day follow-up period. The best model combined the individual's seizure history with that of the remainder of the cohort, resulting in 72% sensitivity for 80% specificity, and 0.83 area under the receiver operating characteristic curve. The possibility of clinically relevant prediction should be examined through electronic data capture and more specific and more frequent sampling, and with patient training to improve prediction.

Hall, Martica H.; Matthews, Karen A.; Kravitz, Howard M.; Gold, Ellen B.; Buysse, Daniel J.; Bromberger, Joyce T. et al. (2008):

Race and Financial Strain are Independent Correlates of Sleep in Midlife Women: The SWAN Sleep Study.

In: *Sleep* 32 (1), S. 73–82. Online verfügbar unter http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2625326/.

Abstract:

STUDY OBJECTIVES:: To examine racial differences in sleep in a large cohort of midlife women and to evaluate whether indices of socioeconomic status (SES) are associated with racial differences in sleep. DESIGN:: Cross-sectional study. SETTING:: Participants' homes. PARTICIPANTS:: Caucasian (n = 171), African American (n = 138) and Chinese women (n = 59). INTERVENTIONS:: None. MEASUREMENTS:: Sleep quality was assessed with the Pittsburgh Sleep Quality Index. Polysomnographically assessed sleep duration, continuity, architecture, and NREM electroencephalograhic (EEG) power were calculated over multiple nights. Sleep disordered breathing and periodic leg movements were measured on a separate night. Linear regression analysis was used to model the independent and synergistic effects of race and SES on sleep after adjusting for other factors that impact sleep in midlife women. Indices of SES were self-reported educational attainment and financial strain. RESULTS:: Sleep was worse in African American women than Caucasian participants as measured by self-report, visual sleep stage scoring, and NREM EEG power. Slow wave sleep differences were also observed between Chinese and Caucasian participants. Racial differences persisted after adjustment for indices of SES. Although educational attainment was unrelated to sleep, financial strain was associated with decreased sleep quality and lower sleep efficiency. Financial strain-by-race interactions were not statistically significant, suggesting that financial strain has additive effects on sleep, independent of race. CONCLUSIONS:: Independent relationships between race and financial strain with sleep were observed despite statistical adjustment for other factors that might account for these relationships. Results do not suggest that assessed indices of SES moderate the race-sleep relationship, perhaps due to too few women of low SES in the study. CITATION:: Hall MH; Matthews KA; Kravitz HM; Gold EB; Buysse DJ; Bromberger JT; Owens JF; Sowers M. Race and financial strain are independent correlates of sleep in midlife women: the SWAN sleep study. SLEEP 2009;32(1):73-82.

Hall, Katherine S.; McAuley, Edward (2010):

Individual, social environmental and physical environmental barriers to achieving 10 000 steps per day among older women.

In: *Health education research* 25 (3), S. 478–488. DOI: 10.1093/her/cyq019.

Abstract:

UNLABELLED\r\nThis study examined the determinants of attaining/not attaining 10 000 steps per day among older women.\r\nMETHODS\r\nDaily step counts over 7 days were measured using accelerometry. Self-reported environmental characteristics, self-efficacy, social support and functional limitations were assessed in 128 older women. The presence of areas for activity within 1 km of each participant's residence was assessed using Geographic Information Systems. Multivariate analysis of variances were used to examine the degree to which these groups differed on measured constructs, and discriminant analysis was used to determine the profiles that discriminate among those who did not attain 10 000 steps per day and those who did.\r\nRESULTS\r\nParticipants who did not attain 10 000 steps per day reported lower self-efficacy ($P < 0.05$), greater functional limitations ($P < 0.05$), had significantly fewer walking paths ($P < 0.05$) within 1 km of their home and reported

significantly less street connectivity (P < 0.05) and safety from traffic (P < 0.05) than those who achieved 10 000 steps per day.\r\nCONCLUSION\r\nLack of perceived and actual environmental supports for walking, more functional limitations and lower self-efficacy are barriers to achieving 10 000 steps per day. The absence of these individual and environmental characteristics inhibits walking behavior in older women and should be considered in campaigns to promote a physically active lifestyle.

Hallal, Pedro C.; Simoes, Eduardo; Reichert, Felipe F.; Azevedo, Mario R.; Ramos, Luiz R.; Pratt, Michael; Brownson, Ross C. (2010):

Validity and reliability of the telephone-administered International Physical Activity Questionnaire in Brazil.

In: *J Phys Act Health* 7 (3), S. 402.

Abstract:

PURPOSE:

To evaluate the validity and reliability of the telephone-administered long IPAQ version.

METHODS:

The questionnaire was administered by telephone to adults on days 1 and 6. On day 1, the same questionnaire was administered by face-to-face interview, and accelerometers were delivered to subjects. Reliability was measured by comparing data collected using the telephone questionnaire on days 1 and 6. Validity was measured by comparing the telephone questionnaire data with (a) face-to-face questionnaire and (b) accelerometry.

RESULTS:

Data from all instruments were available for 156 individuals. The Spearman correlation coefficient for telephone interview reliability was 0.92 for the leisure-time section of IPAQ, and 0.87 for the transport-related section of IPAQ. The telephone interview reliability kappa was 0.78. The Spearman correlation between the telephone-administered and the face-to-face questionnaire was 0.94 for the leisure-time and 0.82 for the transport-related section. The kappa was 0.69. There was a positive association between quartiles of accelerometer data and total telephone-administered IPAQ score (P < .001). The Spearman correlation was 0.22.

CONCLUSIONS:

The telephone-administered IPAQ presented almost perfect reliability and very high agreement with the face-to-face version. The agreement with accelerometer data were fair for the continuous score, but moderate for the categorical physical activity variables.

Hallman, D. M.; Ekman, A. H.; Lyskov, E. (2013):

Changes in physical activity and heart rate variability in chronic neck-shoulder pain: monitoring during work and leisure time.

In: *Int.Arch.Occup.Environ.Health* (0340-0131 (Linking)). DOI: 10.1007/s00420-013-0917-2.

Abstract:

OBJECTIVES: Neck-shoulder pain (NSP) is a common work-related musculoskeletal disorder with unclear mechanisms. Changes in physical activity and autonomic nervous system regulation may be involved in the pathogenesis of chronic NSP. The aim of the current study was to investigate autonomic regulation in relation to physical activity and perceived symptoms during work and leisure time among workers with chronic NSP (n = 29) as compared to a healthy control group (CON, n = 27). METHODS: Physical activity was objectively monitored for 7 days using accelerometry. Beat-to-beat heart rate was collected continuously for 72 h, with simultaneous momentary ratings of pain, stress, and fatigue. Duration of sitting/lying, standing and walking, number of steps, and energy expenditure were used as measures of physical activity. Heart rate variability (HRV) indices were extracted in time and frequency domains as reflecting autonomic regulation. Data were divided into work hours, leisure time, and sleep. RESULTS: The NSP group rated higher levels of stress and fatigue at work and leisure, and reduced sleep quality as compared to CON. Elevated heart rate and reduced HRV were found in NSP compared with CON, especially during sleep. The NSP group demonstrated a different pattern of physical activity than CON, with a lower activity level in leisure time. Higher physical activity was associated with increased HRV in both groups. CONCLUSION: Changes in HRV reflected an autonomic imbalance in workers with chronic musculoskeletal pain. This can be explained by reduced physical activity in leisure time. Intervention studies aimed at increasing physical activity may shed further light on the association between autonomic regulation and physical activity in work-related NSP

Hallman, D. M.; Lyskov, E. (2012):

Autonomic regulation, physical activity and perceived stress in subjects with musculoskeletal pain: 24-hour ambulatory monitoring.

In: *Int.J Psychophysiol.* 86 (3), S. 276–282. DOI: 10.1016/j.ijpsycho.2012.09.017.

Abstract:

The aim of the study was to investigate autonomic nervous system regulation, physical activity (PA) and perceived stress and energy during daily activities in subjects with chronic muscle pain in the neck-shoulders (trapezius myalgia) (n=23) and symptom-free controls (n=22). Subjects underwent 24-hour objective ambulatory monitoring of heart rate variability (HRV) and PA, and reported their perceived stress and energy in a diary. Standard HRV measures were extracted in time and frequency domains. The volume and pattern of different types of activities were quantified in terms of intensity and duration of walking, and time spent sitting, standing and lying during the 24-hour measurement. Results showed shortened inter-beat-intervals (higher heart rate) and reduced HRV in the pain group, most pronounced during sleep ($p<0.05$). For overall PA, the pain group showed increased lying time, compared to controls ($p<0.05$). A different activity pattern was found in the pain group, with reduced leisure time PA and increased PA during morning hours, in comparison with controls ($p<0.05$). Both groups demonstrated low levels of perceived stress, whereas reduced energy was observed in the pain group ($p<0.05$). In conclusion, monitoring of 24-hour HRV demonstrated diminished HRV among persons with chronic neck-shoulder pain. This reflected aberration in autonomic regulation, suggesting reduced parasympathetic activation and increased sympathetic tone as an element in maintenance of chronic muscle pain

Halsey, Lewis G.; Shepard, Emily L. C.; Wilson, Rory P. (2011):

Assessing the development and application of the accelerometry technique for estimating energy expenditure.

In: *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* 158 (3), S. 305–314.

Abstract:

A theoretically valid proxy of energy expenditure is the acceleration of an animal's mass due to the movement of its body parts. Acceleration can be measured by an accelerometer and recorded onto a data logging device. Relevant studies have usually derived a measure of acceleration from the raw data that represents acceleration purely due to movement of the animal. This is termed 'overall dynamic body acceleration' (ODBA) and to date has proved a robust derivation of acceleration for use as an energy expenditure proxy. Acceleration data loggers are generally easy to deploy and the measures recorded appear robust to slight variation in location and orientation. This review discusses important issues concerning the accelerometry technique for estimating energy expenditure and ODBA; deriving ODBA, calibrating ODBA, acceleration logger recording frequencies, scenarios where ODBA is less likely to be valid, and the power in recording acceleration and heart rate together. While present evidence suggests that ODBA may not quantify energy expenditure during diving by birds and mammals, several recent studies have assessed changes in mechanical work in such species qualitatively through variation in ODBA during periods of submergence. The use of ODBA in field metabolic studies is likely to continue growing, supported by its relative ease of use and range of applications.

Hamed, Nashwa Sayed; Abd-Elwahab, Manal Salah (2011):

Pedometer-based gait training in children with spastic hemiparetic cerebral palsy: a randomized controlled study.

In: *Clinical Rehabilitation* 25 (2), S. 157–165.

Abstract:

OBJECTIVE:

To study the effect of pedometer-based gait training on changing gait parameters in children with spastic hemiparetic cerebral palsy.

DESIGN:

Two group randomized controlled trial with pre-treatment and post-treatment measures.

SETTING:

Rehabilitation clinics.

SUBJECTS:

Thirty spastic hemiparetic children with cerebral palsy of both sexes (13 females and 17 males) ranging in age from six to eight years old with mean age 7.05 ± 0.78 years.

INTERVENTIONS:

Children were randomized equally to receive pedometer-based gait training or a traditional gait training programme three times per week for three successive months.

MAIN MEASURES:

Assessment was done before and after three months of treatment application using 3D motion analysis system with six pro-reflex cameras to evaluate spatiotemporal gait parameters. The primary outcome measure was the walking velocity while the secondary outcome measures were stride length, cadence and cycle duration.

RESULTS:

There was a high statistically significant improvement in favour of the study group more than the control group concerning all the measured gait parameters. T-test results showed that velocity was 0.68 ± 0.09 m/sec (0.26 ± 0.07 change score) for study group and 0.42 ± 0.11 m/sec (0.06 ± 0.05 change score) for control group (t = 6.2) (P < 0.0001) while cadence was much less significant 124.3 ± 4.3 step/min (-5.8 ± 2.1 change score) for study group and 128.7 ± 4.1 step/min (-0.86 ± 0.05 change score) for control group (t = 2.8) (P < 0.008).

CONCLUSION:

Pedometer-based gait training is a useful tool that can be used in improving gait parameters in children with spastic hemiparetic cerebral palsy.

Hamer, Mark; Kivimaki, Mika; Steptoe, Andrew (2012):

Longitudinal patterns in physical activity and sedentary behaviour from mid-life to early old age: A substudy of the Whitehall II cohort.

In: *Journal of Epidemiology and Community Health* 66 (12), S. 1110–1115. DOI: 10.1037/t06708-000;

Abstract:

BACKGROUND:

There are few longitudinal data on physical activity patterns from mid-life into older age. The authors examined associations of self-reported physical activity, adiposity and socio-demographic factors in mid-life with objectively assessed measures of activity in older age.

METHODS:

Participants were 394 healthy men and women drawn from the Whitehall II population-based cohort study. At the baseline assessment in 1997 (mean age 54 years), physical activity was assessed through self-report and quantified as metabolic equivalent of task hours/week. At the follow-up in 2010 (mean age 66 years), physical activity was objectively measured using accelerometers worn during waking hours for seven consecutive days (average daily wear time 891 ± 68 min/day).

RESULTS:

Self-reported physical activity at baseline was associated with objectively assessed activity at follow-up in various activity categories, including light-, moderate- and vigorous-intensity activity (all ps<0.04). Participants in the highest compared with lowest quartile of self-reported activity level at baseline recorded on average 64.1 (95% CI 26.2 to 102.1) counts per minute more accelerometer-assessed activity at follow-up and 9.0 (2.0-16.0) min/day more moderate-to-vigorous daily activity, after adjusting for baseline covariates. Lower education, obesity and self-perceived health status were also related to physical activity at follow-up. Only age and education were associated with objectively measured sedentary time at follow-up.

CONCLUSION:

Physical activity behaviour in middle age was associated with objectively measured physical activity in later life after 13 years of follow-up, suggesting that the habits in adulthood are partly tracked into older age.

Hamilton, Nancy A.; Affleck, Glenn; Tennen, Howard; Karlson, Cynthia; Luxton, David; Preacher, Kristopher J.; Templin, Jonathan L. (2008):

Fibromyalgia: The role of sleep in affect and in negative event reactivity and recovery.

In: *Health Psychol* 27 (4), S. 490.

Abstract:

OBJECTIVE:

Fibromyalgia (FM) syndrome is a chronic pain condition characterized by diffuse muscle pain, increased negative mood, and sleep disturbance. Until recently, sleep disturbance in persons with FM has been modeled as the result of the disease process or its associated pain. The current study examined sleep disturbance (i.e., sleep duration and sleep quality) as a predictor of daily affect, stress reactivity, and stress recovery.

DESIGN AND MEASURES:

A hybrid of daily diary and ecological momentary assessment methodology was used to evaluate the psychosocial functioning of 89 women with FM. Participants recorded numeric ratings of pain, fatigue, and positive and negative affect 3 times throughout the day for 30 consecutive days. At the end of each day, participants completed daily diary records of positive and negative life events. In addition, participants reported on their sleep duration and sleep quality each morning.

RESULTS:

After accounting for the effects of positive events, negative events, and pain on daily affect scores, it was found that sleep duration and quality were prospectively related to affect and fatigue. Furthermore, the effects of inadequate sleep on negative affect were cumulative. In addition, an inadequate amount of sleep prevented affective recovery from days with a high number of negative events.

CONCLUSIONS:

These results lend support to the hypothesis that sleep is a component of allostatic load and has an upstream role in daily functioning.

Hammonds, Tracy; Rickert, Krista; Goldstein, Carly; Gathright, Emily; Gilmore, Sarah; Derflinger, Bethany et al. (2014):

Adherence to Antidepressant Medications: A Randomized Controlled Trial of Medication Reminding in College Students.

In: *J Am Coll Health*, S. 0. DOI: 10.1080/07448481.2014.975716.

Abstract:

Abstract. Objectives: To determine if medication reminding via smartphone app increases adherence to antidepressant medications in college students. Participants: College students (N = 57) enrolled at a state-funded institution who had a current prescription for an antidepressant and regularly used a smartphone device. Methods: Participants were randomized to either a reminder group or a control group. Both groups were asked to complete a survey and undergo a manual pill count at the beginning of the study and 30-days later. Results: There was a strong trend suggesting that the use of a medication reminder app was beneficial for adherence to antidepressant medication regimens. Factors influencing medication adherence in college students included health beliefs, use of illicit drugs, and type of professional care received. Conclusions: Use of a medication reminder may increase adherence to antidepressant medications in college students.

Han, Heeyoung; Nelson, Erica; Wetter, Nathan (2014):

Medical students' online learning technology needs.

In: *Clin Teach* 11 (1), S. 15–19. DOI: 10.1111/tct.12092.

Abstract:

PURPOSE: This study investigated medical students' online learning technology needs at a medical school. The study aimed to provide evidence-based guidance for technology selection and online learning design in medical education. METHODS: The authors developed a 120-item survey in collaboration with the New Technology in Medical Education (NTIME) committee at the Southern Illinois University School of Medicine (SIUSOM). Overall, 123 of 290 medical students (42%) at the medical school participated in the survey. The survey focused on five major areas: students' hardware and software use; perception of educational technology (ET) in general; online behaviours; perception of ET use at the school; and demographic information. RESULTS: Students perceived multimedia tools, scheduling tools, communication tools, collaborative authoring tools, learning

management systems and electronic health records useful educational technologies for their learning. They did not consider social networking tools useful for their learning, despite their frequent use. Third-year students were less satisfied with current technology integration in the curriculum, information sharing and collaborative learning than other years. Students in clerkships perceived mobile devices as useful for their learning. Students using a mobile device (i.e. a smartphone) go online, text message, visit social networking sites and are online during classes more frequently than non-users. CONCLUSIONS: Medical students' ET needs differ between preclinical and clinical years. Technology supporting ubiquitous mobile learning and health information technology (HIT) systems at hospitals and out-patient clinics can be integrated into clerkship curricula.

Han, M.; Vinh, L. T.; Lee, Y. K.; Lee, S. (2012):

Comprehensive context recognizer based on multimodal sensors in a smartphone.

In: *Sensors.(Basel)* 12 (9), S. 12588–12605. DOI: 10.3390/s120912588.

Abstract:

Recent developments in smartphones have increased the processing capabilities and equipped these devices with a number of built-in multimodal sensors, including accelerometers, gyroscopes, GPS interfaces, Wi-Fi access, and proximity sensors. Despite the fact that numerous studies have investigated the development of user-context aware applications using smartphones, these applications are currently only able to recognize simple contexts using a single type of sensor. Therefore, in this work, we introduce a comprehensive approach for context aware applications that utilizes the multimodal sensors in smartphones. The proposed system is not only able to recognize different kinds of contexts with high accuracy, but it is also able to optimize the power consumption since power-hungry sensors can be activated or deactivated at appropriate times. Additionally, the system is able to recognize activities wherever the smartphone is on a human's body, even when the user is using the phone to make a phone call, manipulate applications, play games, or listen to music. Furthermore, we also present a novel feature selection algorithm for the accelerometer classification module. The proposed feature selection algorithm helps select good features and eliminates bad features, thereby improving the overall accuracy of the accelerometer classifier. Experimental results show that the proposed system can classify eight activities with an accuracy of 92.43%

Handojoseno, Aluysius Maria Ardi; Shine, James MacQuarie; Nguyen, Tuan Nghia; Tran, Yvonne; Lewis, Simon John Geoffrey; Nguyen, Hung T. (2014):

Analysis and Prediction of the Freezing of Gait using EEG Brain Dynamics.

In: *IEEE Trans Neural Syst Rehabil Eng. DOI:* 10.1109/TNSRE.2014.2381254.

Abstract:

Freezing of Gait (FOG) is a common symptom in the advanced stages of Parkinson's disease (PD), which significantly affects patients' quality of life. Treatment options offer limited benefit and there are currently no mechanisms able to effectively detect FOG before it occurs, allowing time for a sufferer to avert a freezing episode. Electroencephalography (EEG) offers a novel technique that may be able to address this problem. In this paper, we investigated the univariate and multivariate EEG features determined by both Fourier and wavelet analysis in the confirmation and prediction of FOG. The EEG power measures and network properties from 16 patients with PD and FOG were extracted and analyzed. It was found that both power spectral density and wavelet energy could potentially act as biomarkers during FOG. Information in the frequency domain of the EEG was found to provide better discrimination of EEG signals during transition to freezing than information coded in the time domain. The performance of the FOG prediction systems improved when the information from both domains was used. This combination resulted in a sensitivity of 86.0%, specificity of 74.4%, and accuracy of 80.2% when predicting episodes of freezing, outperforming current accelerometry-based tools for the prediction of FOG.

Hanlon, Michael; Anderson, Ross (2009):

Real-time gait event detection using wearable sensors.

In: *Gait Posture* 30 (4), S. 523–527. DOI: 10.1016/j.gaitpost.2009.07.128.

Abstract:

Real-time gait event detection is a requirement for functional electrical stimulation and gait biofeedback. This gait event detection should ideally be achieved using an ambulatory system of durable, lightweight, low-cost sensors. Previous research has reported issues with durability in footswitch systems. Therefore, this study describes the development and assessment of novel detection algorithms using footswitch and accelerometer sensors on 12 healthy individuals. Subjects were equipped with

one force sensitive resistor on the heel, one accelerometer at the foot, and one accelerometer at the knee. Subjects performed 10, 8-m walking trials in each of three conditions: normal, slow, and altered (reduced knee ROM) walking. Data from a subset of four subjects were used to develop prediction algorithms for initial contact (IC). Subsequently, these algorithms were tested on the remaining eight subjects against standard forceplate IC data (threshold of 5 N on a rising edge). The footswitch force threshold algorithm was most accurate for IC detection (mean absolute error of 2.4+/-2.1 ms) and was significantly more accurate ($p<0.001$) than the optimal accelerometer algorithm (mean absolute error of 9.5+/-9.0 ms). The optimal accelerometer algorithm used data from both accelerometers, with IC determined from the second derivative of foot fore-aft acceleration. The error results for footswitch and accelerometer algorithms are lower (approximately 60%) than in previous research on ambulatory real-time gait event detection systems. Currently, footswitch systems must be recommended over accelerometer systems for accurate detection of IC, however, further research into accelerometer algorithms is merited due to its advantages as a durable, low-cost sensor.

Hanlon, Erin; Bir, Cynthia (2010):

Validation of a wireless head acceleration measurement system for use in soccer play.

In: *J Appl Biomech* 26 (4), S. 424–431.

Abstract:

Soccer heading has been studied previously with conflicting results. One major issue is the lack of knowledge regarding what actually occurs biomechanically during soccer heading impacts. The purpose of the current study is to validate a wireless head acceleration measurement system, head impact telemetry system (HITS) that can be used to collect head accelerations during soccer play. The HIT system was fitted to a Hybrid III (HIII) head form that was instrumented with a 3-2-2-2 accelerometer setup. Fifteen impact conditions were tested to simulate impacts commonly experienced during soccer play. Linear and angular acceleration were calculated for both systems and compared. Root mean square (RMS) error and cross correlations were also calculated and compared for both systems. Cross correlation values were very strong with $r = .95 \pm 0.02$ for ball to head forehead impacts and $r = .96 \pm 0.02$ for head to head forehead impacts. The systems showed a strong relationship when comparing RMS error, linear head acceleration, angular head acceleration, and the cross correlation values.

Hanna, Fady; Molfenter, Sonja M.; Cliffe, Rebecca E.; Chau, Tom; Steele, Catriona M. (2010):

Anthropometric and demographic correlates of dual-axis swallowing accelerometry signal characteristics: a canonical correlation analysis.

In: *Dysphagia* 25 (2), S. 94–103. DOI: 10.1007/s00455-009-9229-9.

Abstract:

Swallowing accelerometry has been proposed as a potential minimally invasive tool for collecting assessment information about swallowing. The first step toward using sounds and signals for dysphagia detection involves characterizing the healthy swallow. The purpose of this article is to explore systematic variations in swallowing accelerometry signals that can be attributed to demographic factors (such as participant gender and age) and anthropometric factors (such as weight and height). Data from 50 healthy participants (25 women and 25 men), ranging in age from 18 to 80 years and with approximately equal distribution across four age groups (18-35, 36-50, 51-65, 66 and older) were analyzed. Anthropometric and demographic variables of interest included participant age, gender, weight, height, body fat percent, neck circumference, and mandibular length. Dual-axis (superior-inferior and anterior-posterior) swallowing accelerometry signals were obtained for five saliva and five water swallows per participant. Several swallowing signal characteristics were derived for each swallowing task, including variance, amplitude distribution skewness, amplitude distribution kurtosis, signal memory, total signal energy, peak energy scale, and peak amplitude. Canonical correlation analysis was performed between the anthropometric/demographic variables and swallowing signal characteristics. No significant linear relationships were identified for saliva swallows or for superior-inferior axis accelerometry signals on water swallows. In the anterior-posterior axis, signal amplitude distribution kurtosis and signal memory were significantly correlated with age ($r = 0.52$, $P = 0.047$). These findings suggest that swallowing accelerometry signals may have task-specific associations with demographic (but not anthropometric) factors. Given the limited sample size, our results should be interpreted with caution and replication studies with larger sample sizes are warranted.

Hannon, James C.; Brown, Barbara B. (2008):

Increasing preschoolers' physical activity intensities: an activity-friendly preschool playground intervention.

In: *Prev Med* 46 (6), S. 532–536.

Abstract:

OBJECTIVE:

The purpose of this study was to see if portable play equipment added to a preschool playground resulted in higher intensities of physical activity among 3-5-year-old children.

METHODS:

Activity-friendly equipment was added to an outdoor preschool playground. Accelerometry-measured intensities of 15-s epochs of physical activity were tracked for 5 pre-intervention and 5 post-intervention days during outdoor play. Data were collected during fall 2005 in Salt Lake City for 64 preschoolers aged 3, 4, and 5 years.

RESULTS:

After the intervention, both male and female 3- to 5-year-olds significantly decreased sedentary behavior and significantly increased light, moderate, and vigorous physical activity as measured by accelerometry.

CONCLUSIONS:

Results suggest simple interventions, requiring little teacher training, can yield increases in healthy physical activity.

Hansen, A. L.; Carstensen, B.; Helge, J. W.; Johansen, N. B.; Gram, B.; Christiansen, J. S. et al. (2013):

Combined Heart Rate- and Accelerometer-Assessed Physical Activity Energy Expenditure and Associations With Glucose Homeostasis Markers in a Population at High Risk of Developing Diabetes: The ADDITION-PRO Study.

In: *Diabetes Care* (0149-5992 (Linking)). DOI: 10.2337/dc12-2671.

Abstract:

OBJECTIVERegular physical activity (PA) reduces the risk of developing type 2 diabetes, and different subtypes of dysglycemia have shown different associations with PA. To better understand the associations of PA and glucose homeostasis, we examined the association of objectively measured PA energy expenditure (PAEE) with detailed measures of glucose homeostasis.RESEARCH DESIGN AND METHODSIn 1,531 men and women, with low to high risk of developing type 2 diabetes, we measured 7 days of PAEE using a combined accelerometry and heart rate monitor (ActiHeart). Measures and indices of glucose homeostasis were derived from a 3-point oral glucose tolerance test in addition to measures of long-term glycemia (glycated hemoglobin A1c and advanced glycation end products). Associations of PAEE with glucose homeostasis markers were examined using linear regression models.RESULTSMedian age (IQR) was 66.6 years (62.1-71.6) (54% men) with a median ActiHeart wear time of 6.9 days (6.0-7.1) and PAEE level of 33.0 kJ/kg/day (23.5-46.1). In fully adjusted models, we found higher levels of PAEE to be positively associated with insulin sensitivity and negatively with insulin 2 h after glucose load ($P < 0.05$).CONCLUSIONSEven in an elderly population with low levels of PA, we found higher objectively measured PAEE levels to be associated with a more beneficial glucose metabolic profile. Although our findings are cross-sectional, they indicate that even without high-intensity exercise, increasing the overall level of PAEE slightly in an entire population at risk for developing type 2 diabetes may be a realistic and worthwhile goal to reach in order to achieve beneficial effect in terms of glucose metabolism

Hansen, Tine W.; Li, Yan; Boggia, José; Thijs, Lutgarde; Richart, Tom; Staessen, Jan A. (2011):

Predictive role of the nighttime blood pressure.

In: *Hypertension* 57 (1), S. 3–10. DOI: 10.1161/HYPERTENSIONAHA.109.133900.

Abstract:

Numerous studies addressed the predictive value of the nighttime blood pressure (BP) as captured by ambulatory monitoring. However, arbitrary cutoff limits in dichotomized analyses of continuous variables, data dredging across selected subgroups, extrapolation of cross-sectional studies to prospective outcomes, and lack of comprehensive adjustments for confounders make interpretation of the literature difficult. We reviewed prospective studies with total mortality or a composite cardiovascular end point as an outcome in relation to the level and the circadian profile of systolic BP. We analyzed studies in hypertensive patients

(n = 23 856) separately from those in individuals randomly recruited from populations (n = 9641). We pooled summary statistics and individual subject data, respectively. In both patients and populations, in analyses in which nighttime BP was additionally adjusted for daytime BP and vice versa, nighttime BP was a stronger predictor than daytime BP. With adjustment for the 24-hour BP, both the night-to-day BP ratio and dipping status remained significant predictors of outcome but added little prognostic value over and beyond the 24-hour BP level. In the absence of conclusive evidence proving that nondipping is a reversible risk factor, the option whether or not to restore the diurnal blood pressure profile to a normal pattern should be left to the clinical judgment of doctors and should be individualized for each patient. Current guidelines on the interpretation of ambulatory BP recording need to be updated.

Hansen, Tine W.; Thijs, Lutgarde; Boggia, José; Li, Yan; Kikuya, Masahiro; Björklund-Bodegård, Kristina et al. (2008):

Prognostic value of ambulatory heart rate revisited in 6928 subjects from 6 populations.

In: *Hypertension* 52 (2), S. 229–235.

Abstract:

The evidence relating mortality and morbidity to heart rate remains inconsistent. We performed 24-hour ambulatory blood pressure monitoring in 6928 subjects (not on beta-blockers; mean age: 56.2 years; 46.5% women) enrolled in prospective population studies in Denmark, Belgium, Japan, Sweden, Uruguay, and China. We computed standardized hazard ratios for heart rate, while stratifying for cohort, and adjusting for blood pressure and other cardiovascular risk factors. Over 9.6 years (median), 850, 325, and 493 deaths accrued for total, cardiovascular, and noncardiovascular mortality, respectively. The incidence of fatal combined with nonfatal end points was 805, 363, 439, and 324 for cardiovascular, stroke, cardiac, and coronary events, respectively. Twenty-four-hour heart rate predicted total (hazard ratio: 1.15) and noncardiovascular (hazard ratio: 1.18) mortality but not cardiovascular mortality (hazard ratio: 1.11) or any of the fatal combined with nonfatal events (hazard ratio: < or =1.02). Daytime heart rate did not predict mortality (hazard ratio: < or =1.11) or any fatal combined with nonfatal event (hazard ratio: < or =0.96). Nighttime heart rate predicted all of the mortality outcomes (hazard ratio: > or =1.15) but none of the fatal combined with nonfatal events (hazard ratio: < or =1.11). The night:day heart rate ratio predicted total (hazard ratio: 1.14) and noncardiovascular mortality (hazard ratio: 1.12) and all of the fatal combined with nonfatal events (hazard ratio: > or =1.15) with the exception of stroke (hazard ratio: 1.06). Sensitivity analyses, in which we stratified by risk factors or from which we excluded 1 cohort at a time or the events occurring within 2 years of enrollment, showed consistent results. In the general population, heart rate predicts total and noncardiovascular mortality. With the exception of the night:day heart rate ratio, heart rate did not add to the risk stratification for fatal combined with nonfatal cardiovascular events. Thus, heart rate adds little to the prediction of cardiovascular risk.

Hansen, T. W.; Thijs, L.; Li, Y.; Boggia, J.; Liu, Y.; Asayama, K. et al. (2014):

Ambulatory blood pressure monitoring for risk stratification in obese and non-obese subjects from 10 populations.

In: *J Hum Hypertens. DOI:* 10.1038/jhh.2013.145.

Abstract:

Overweight clusters with high blood pressure (BP), but the independent contribution of both risk factors remains insufficiently documented. In a prospective population study involving 8467 participants (mean age 54.6 years; 47.0% women) randomly recruited from 10 populations, we studied the contribution of body mass index (BMI) to risk over and beyond BP, taking advantage of the superiority of ambulatory over conventional BP. Over 10.6 years (median), 1271 participants (15.0%) died and 1092 (12.9%), 637 (7.5%) and 443 (5.2%) experienced a fatal or nonfatal cardiovascular, cardiac or cerebrovascular event. Adjusted for sex and age, low BMI (<20.7 kg m-2) predicted death (hazard ratio (HR) vs average risk, 1.52; P<0.0001) and high BMI (>/=30.9 kg m-2) predicted the cardiovascular end point (HR, 1.27; P=0.006). With adjustments including 24-h systolic BP, these HRs were 1.50 (P<0.001) and 0.98 (P=0.91), respectively. Across quartiles of the BMI distribution, 24-h and nighttime systolic BP predicted every end point (1.13</=standardized HR </=1.67; 0.046 </=P<0.0001). The interaction between systolic BP and BMI was nonsignificant (P>/=0.22). Excluding smokers removed the contribution of BMI categories to the prediction of mortality. In conclusion, BMI only adds to BP in risk stratification for mortality but not for cardiovascular outcomes. Smoking probably explains the association between increased mortality and low BMI.Journal of Human Hypertension advance online publication, 16 January 2014; doi:10.1038/jhh.2013.145.

Hanson, Margaret D.; Chen, Edith (2010):

Daily stress, cortisol, and sleep: the moderating role of childhood psychosocial environments.

In: *Health Psychol* 29 (4), S. 394–402. DOI: 10.1037/a0019879.

Abstract:

OBJECTIVE\r\nThe purpose of this study was to explore whether childhood family environments moderated the relation between daily stress and daily biological outcomes (sleep, cortisol output) in healthy young adults.\r\nDESIGN\r\nThere were 87 participants, ages 19 to 25 who provided information on characteristics of their childhood family environment (conflict, parental warmth).\r\nMAIN OUTCOME MEASURES\r\nFor 1 week they completed a daily stress checklist via electronic diary, provided salivary cortisol samples 4 times a day, and wore an Actiwatch to measure sleep (minutes, efficiency). Data was analyzed using hierarchical linear modeling.\r\nRESULTS\r\nFamily risk significantly moderated the relation between daily number of stressors and sleep minutes (b = -12.10, p = .02), such that the more difficult one's childhood environment, the less sleep individuals got on days in which they experienced a greater number of stressors. Parental warmth moderated the relation between stress severity and cortisol output (b = -0.19, p = .04), such that the less parental warmth individuals received during childhood, the more cortisol they secreted on days that they experienced more severe stress.\r\nCONCLUSIONS\r\nThe childhood psychosocial environment may have long-term effects on biological responses to daily stress, creating vulnerability to disease in individuals from difficult childhoods.

Hanss, R.; Block, D.; Bauer, M.; Ilies, C.; Magheli, A.; Schildberg-Schroth, H. et al. (2008):

Use of heart rate variability analysis to determine the risk of cardiac ischaemia in high-risk patients undergoing general anaesthesia.

In: *Anaesthesia* 63 (11), S. 1167–1173. DOI: 10.1111/j.1365-2044.2008.05602.x.

Abstract:

The aim of this study was to investigate the use of pre-operative heart rate variability analysis to predict postoperative cardiac events (identified by 24 h Holter-ECG recording and an increase of creatine kinase MB) in high-risk cardiac patients. Length of hospital stay, the incidence of postoperative cardiac ischaemia and cardiac events after discharge were recorded. Fifty patients were assigned by the presence of cardiac events and the heart rate variability in 17 patients with an event was compared with 33 patients without. Total power was identified as a predictive parameter. The usefulness of this test was assessed in a second group of 50 patients. The incidence of cardiac events detected by Holter-ECG recording or an increased creatine kinase MB was greater and the duration of hospital stay longer in the 26 patients with total power < 400 ms(2).Hz(-1) compared with those with total power > 400 ms(2).Hz(-1) (eight and four patients and 10 (7) days (mean (SD)), vs 1 ($p < 0.05$) and 0 ($p < 0.05$) patients and 6 (2) days ($p < 0.05$), respectively). The total power of high-risk cardiac patients predicted postoperative cardiac events and extended length of hospital stay.

Haralabidis, Alexandros S.; Dimakopoulou, Konstantina; Vigna-Taglianti, Federica; Giampaolo, Matteo; Borgini, Alessandro; Dudley, Marie-Louise et al. (2008):

Acute effects of night-time noise exposure on blood pressure in populations living near airports.

In: *Eur Heart J* 29 (5), S. 658–664.

Abstract:

AIMS:

Within the framework of the HYENA (hypertension and exposure to noise near airports) project we investigated the effect of short-term changes of transportation or indoor noise levels on blood pressure (BP) and heart rate (HR) during night-time sleep in 140 subjects living near four major European airports.

METHODS AND RESULTS:

Non-invasive ambulatory BP measurements at 15 min intervals were performed. Noise was measured during the night sleeping period and recorded digitally for the identification of the source of a noise event. Exposure variables included equivalent noise level over 1 and 15 min and presence/absence of event (with LAmax > 35 dB) before each BP measurement. Random effects models for repeated measurements were applied. An increase in BP (6.2 mmHg (0.63-12) for systolic and 7.4 mmHg (3.1, 12) for diastolic) was observed over 15 min intervals in which an aircraft event occurred. A non-significant increase in HR was also

observed (by 5.4 b.p.m.). Less consistent effects were observed on HR. When the actual maximum noise level of an event was assessed there were no systematic differences in the effects according to the noise source.

CONCLUSION:

Effects of noise exposure on elevated subsequent BP measurements were clearly shown. The effect size of the noise level appears to be independent of the noise source.

Hardway, Christina; Fuligni, Andrew J. (2006):

Dimensions of family connectedness among adolescents with Mexican, Chinese, and European backgrounds.

In: *Developmental Psychology* 42 (6), S. 1246–1258. DOI: 10.1037/0012-1649.42.6.1246.

Abstract:

Multiple dimensions of adolescents' connectedness with their families were investigated among 489 9th-grade students (M = 14.86 years) from families with Mexican, Chinese, and European backgrounds. Participants reported on various aspects of their family relationships and completed diary checklists of daily behaviors for a 2-week period. Adolescents from European backgrounds reported levels of family identification and dyadic closeness with parents similar to or greater than those reported by their peers. For adolescents from Mexican and Chinese backgrounds, particularly those from immigrant families, family connectedness included a stronger emphasis on family obligation and assistance. The extent to which family demographic variables, including parental level of education and residence in a single-parent family, accounted for group differences was examined.

Hardwick, Mary E.; Pulido, Pamela A.; Adelson, Wendy S. (2007):

The use of handheld technology in nursing research and practice.

In: *Orthopaedic Nursing* 26 (4), S. 251–255.

Abstract:

Use of handheld devices with electronic patient diaries (EPDs) can improve the quality of patient-reported information collected in clinical and research settings. EPDs have advantages compared with traditional paper-based instruments that include decreased data entry error and decreased time spent on data management. Orthopaedic pain management, which is often dependent on patient-reported pain levels, can benefit from the use of EPDs. A pilot survey was conducted to compare two self-report pain diary methods in shoulder surgery patients: (a) EPD or (b) paper entry. Compliance was lower in the EPD group, which was attributed to insufficient ease of use. Handheld technology can be used by nurses to improve and streamline patient care by capturing clinical data, by organizing and reporting home health services, and by providing references for evidence-based practice. Handheld technology can facilitate the transformation of clinical documentation of assessments, interventions, and outcomes into evidence-based decision making in orthopaedic nursing.

Hardy, Sam A.; Zhang, Zhiyong; Skalski, Jonathan E.; Melling, Brent S.; Brinton, Chauncy T. (2014):

Daily religious involvement, spirituality, and moral emotions.

In: *Psychology of Religion and Spirituality* 6 (4), S. 338–348. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-33990-001%26site%3dehost-live.

Abstract:

This study examined relations among intraindividual variability in daily religious activities, daily spiritual experiences, and daily moral emotions (empathy, gratitude, and forgiveness). We hypothesized that spiritual experiences would mediate relations between religious activities and moral emotions, the quality of religious activities would moderate links to spiritual experiences, and the quality of spiritual experiences would moderate links to moral emotions. The sample included 139 individuals ages 18–69 who completed daily online surveys for up to 50 days. Participants completed multiple daily items reporting their religious activities, spiritual experiences, and moral emotions. Multilevel regression analyses found that daily religious activities were linked to daily moral emotions by way of daily spiritual experiences. Furthermore, the quality of the daily religious activities and spiritual experiences moderated links in the mediation model. Thus, we found evidence of mediating and moderating processes

in associations between religious activities, spiritual experiences, and moral emotions on a daily basis. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Hare, Dougal J.; Wood, Christopher; Wastell, Sarah; Skirrow, Paul (2014):

Anxiety in Asperger's syndrome: Assessment in real time.

In: *Autism. DOI:* 10.1177/1362361314531340.

Abstract:

Anxiety is a major problem for many people with Asperger's syndrome who may have qualitatively different fears from a non-Asperger's syndrome population. Research has relied on measures developed for non-Asperger's syndrome populations that require reporting past experiences of anxiety, which may confound assessment in people with Asperger's syndrome due to problems with autobiographical memory as are often reported in this group.Experience sampling methodology was used to record real-time everyday experiences in 20 adults with Asperger's syndrome and 20 neurotypical adults. Within-subject analysis was used to explore the phenomenology of thoughts occurring in people with Asperger's syndrome when they were anxious. Comparisons were made with the group that did not have Asperger's syndrome. The Asperger's syndrome group were significantly more anxious than the comparison group. Factors associated with feelings of anxiety in the Asperger's syndrome group were high levels of self-focus, worries about everyday events and periods of rumination lasting over 10 min. People in the Asperger's syndrome group also had a tendency to think in the image form, but this was not associated with feelings of anxiety. The results are discussed with reference to psychological models of Asperger's syndrome, cognitive models of anxiety and implications for psychological therapy for this group.

Harms, Holger; Amft, Oliver; Tröster, Gerhard (2010):

Estimating posture-recognition performance in sensing garments using geometric wrinkle modeling.

In: *Information Technology in Biomedicine, IEEE Transactions on* 14 (6), S. 1436–1445.

Abstract:

A fundamental challenge limiting information quality obtained from smart sensing garments is the influence of textile movement relative to limbs. We present and validate a comprehensive modeling and simulation framework to predict recognition performance in casual loose-fitting garments. A statistical posture and wrinkle-modeling approach is introduced to simulate sensor orientation errors pertained to local garment wrinkles. A metric was derived to assess fitting, the body-garment mobility. We validated our approach by analyzing simulations of shoulder and elbow rehabilitation postures with respect to experimental data using actual casual garments. Results confirmed congruent performance trends with estimation errors below 4% for all study participants. Our approach allows to estimate the impact of fitting before implementing a garment and performing evaluation studies with it. These simulations revealed critical design parameters for garment prototyping, related to performed body posture, utilized sensing modalities, and garment fitting. We concluded that our modeling approach can substantially expedite design and development of smart garments through early-stage performance analysis.

Harring, Jeffrey R.; Hancock, Gregory R. (Hg.) (2012):

Advances in longitudinal methods in the social and behavioral sciences.

Charlotte, NC US: IAP Information Age Publishing (CILVR series on latent variable methodology).

Harris, Tess J.; Owen, Christopher G.; Victor, Christina R.; Adams, Rika; Cook, Derek Gordon (2009):

What factors are associated with physical activity in older people, assessed objectively by accelerometry?

In: *British Journal of Sports Medicine* 43 (6), S. 442–450.

Abstract:

OBJECTIVS:

To assess physical activity (PA) levels measured objectively using accelerometers in community-dwelling older people and to examine the associations with health, disability, anthropometric measures and psychosocial factors.

DESIGN:

Cross-sectional survey.

SETTING:

Single general practice (primary care centre), United Kingdom.

PARTICIPANTS:

Random selection of 560 community-dwelling older people at least 65 years old, registered with the practice. 43% (238/560) participated.

ASSESSMENT OF RISK FACTORS:

Participants completed a questionnaire assessing health, disability, psychosocial factors and PA levels; underwent anthropometric assessment; and wore an accelerometer (Actigraph) for 7 days.

MAIN OUTCOME MEASURES:

Average daily accelerometer step-counts and time spent in different PA levels. Associations between step-counts and other factors were examined using linear regression.

RESULTS:

Average daily step-count was 6443 (95% CI 6032 to 6853). Men achieved 754 (84 to 1424) more steps daily than women. Step-count declined steadily with age. Independent predictors of average daily step-count were: age; general health; disability; diabetes; body mass index; exercise self-efficacy; and perceived exercise control. Activities associated independently with higher step-counts included number of long walks and dog-walking. Only 2.5% (6/238) of participants achieved the recommended 150 minutes weekly of at least moderate-intensity activity in > or = 10 minute bouts; 62% (147/238) achieved none.

CONCLUSIONS:

This is the first population-based sample of older people with objective PA and anthropometric measures. PA levels in older people are well below recommended levels, emphasising the need to increase PA in this age group, particularly in those who are overweight/obese or have diabetes. The independent effects of exercise self-efficacy and exercise control on PA levels highlight their role as potential mediators for intervention studies.

Harrison, Cheryce L.; Thompson, Russell G.; Teede, Helena J.; Lombard, Catherine B. (2011):

Measuring physical activity during pregnancy.

In: *Int J Behav Nutr Phys Act* 8. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31144-001%26site%3dehost-live;Catherine.Lombard@monash.edu.

Abstract:

BACKGROUND:

Currently, little is known about physical activity patterns in pregnancy with prior estimates predominantly based on subjective assessment measures that are prone to error. Given the increasing obesity rates and the importance of physical activity in pregnancy, we evaluated the relationship and agreement between subjective and objective physical activity assessment tools to inform researchers and clinicians on optimal assessment of physical activity in pregnancy.

METHODS:

48 pregnant women between 26-28 weeks gestation were recruited. The Yamax pedometer and Actigraph accelerometer were worn for 5-7 days under free living conditions and thereafter the International Physical Activity Questionnaire (IPAQ) was completed. IPAQ and pedometer estimates of activity were compared to the more robust and accurate accelerometer data.

RESULTS:

Of 48 women recruited, 30 women completed the study (mean age: 33.6 ± 4.7 years; mean BMI: 31.2 ± 5.1 kg/m(2)) and 18 were excluded (failure to wear [n = 8] and incomplete data [n = 10]). The accelerometer and pedometer correlated significantly on estimation of daily steps (ρ = 0.69, p < 0.01) and had good absolute agreement with low systematic error (mean difference: 505 ± 1498 steps/day). Accelerometer and IPAQ estimates of total, light and moderate Metabolic Equivalent minutes/day (MET min(-1) day(-1)) were not significantly correlated and there was poor absolute agreement. Relative to the accelerometer, the IPAQ

under predicted daily total METs (105.76 ± 259.13 min(-1) day(-1)) and light METs (255.55 ± 128.41 min(-1) day(-1)) and over predicted moderate METs (-112.25 ± 166.41 min(-1) day(-1)).

CONCLUSION:

Compared with the accelerometer, the pedometer appears to provide a reliable estimate of physical activity in pregnancy, whereas the subjective IPAQ measure performed less accurately in this setting. Future research measuring activity in pregnancy should optimally encompass objective measures of physical activity.

Hart, Teresa L.; Swartz, Ann M.; Cashin, Susan E.; Strath, Scott J. (2011):

How many days of monitoring predict physical activity and sedentary behaviour in older adults?

In: *Int J Behav Nutr Phys Act* 8. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31394-001%26site%3dehost-live;sstrath@uwm.edu.

Abstract:

BACKGROUND:

The number of days of pedometer or accelerometer data needed to reliably assess physical activity (PA) is important for research that examines the relationship with health. While this important research has been completed in young to middle-aged adults, data is lacking in older adults. Further, data determining the number of days of self-reports PA data is also void. The purpose of this study was to examine the number of days needed to predict habitual PA and sedentary behaviour across pedometer, accelerometer, and physical activity log (PA log) data in older adults.

METHODS:

Participants (52 older men and women; age = 69.3 ± 7.4 years, range= 55-86 years) wore a Yamax Digiwalker SW-200 pedometer and an ActiGraph 7164 accelerometer while completing a PA log for 21 consecutive days. Mean differences each instrument and intensity between days of the week were examined using separate repeated measures analysis of variance for with pairwise comparisons. Spearman-Brown Prophecy Formulae based on Intraclass Correlations of .80, .85, .90 and .95 were used to predict the number of days of accelerometer or pedometer wear or PA log daily records needed to represent total PA, light PA, moderate-to-vigorous PA, and sedentary behaviour.

RESULTS:

Results of this study showed that three days of accelerometer data, four days of pedometer data, or four days of completing PA logs are needed to accurately predict PA levels in older adults. When examining time spent in specific intensities of PA, fewer days of data are needed for accurate prediction of time spent in that activity for ActiGraph but more for the PA log. To accurately predict average daily time spent in sedentary behaviour, five days of ActiGraph data are needed.

CONCLUSIONS:

The number days of objective (pedometer and ActiGraph) and subjective (PA log) data needed to accurately estimate daily PA in older adults was relatively consistent. Despite no statistical differences between days for total PA by the pedometer and ActiGraph, the magnitude of differences between days suggests that day of the week cannot be completely ignored in the design and analysis of PA studies that involve < 7-day monitoring protocols for these instruments. More days of accelerometer data were needed to determine typical sedentary behaviour than PA level in this population of older adults.

Hartley, S.; Haddock, G.; Vasconcelos E Sa; Emsley, R.; Barrowclough, C. (2013):

An experience sampling study of worry and rumination in psychosis.

In: *Psychol.Med* (0033-2917 (Linking)), S. 1–10. DOI: 10.1017/S0033291713002080.

Abstract:

BACKGROUND: Increasing research effort is being dedicated to investigating the links between emotional processes and psychosis, despite the traditional demarcation between the two. Particular focus has alighted upon two specific anxious and depressive processes, worry and rumination, given the potential for links with aspects of delusions and auditory hallucinations. This study rigorously explored the nature of these links in the context of the daily life of people currently experiencing psychosis. METHOD: Experience sampling methodology (ESM) was used to assess the momentary links between worry and rumination on the one hand, and persecutory delusional ideation and auditory hallucinations on the other. Twenty-seven participants completed the 6-day experience sampling period, which required repeated self-reports on thought processes and experiences.

Multilevel modelling was used to examine the links within the clustered data. RESULTS: We found that antecedent worry and rumination predicted delusional and hallucinatory experience, and the distress they elicited. Using interaction terms, we have shown that the links with momentary symptom severity were moderated by participants' trait beliefs about worry/rumination, such that they were reduced when negative beliefs about worry/rumination (meta-cognitions) were high. CONCLUSIONS: The current findings offer an ecologically valid insight into the influence of worry and rumination on the experience of psychotic symptoms, and highlight possible avenues for future intervention strategies

Hartley, Samantha; Haddock, Gillian; Vasconcelos E Sa, Debora; Emsley, Richard; Barrowclough, Christine (2014):

The influence of thought control on the experience of persecutory delusions and auditory hallucinations in daily life.

In: *Behav Res Ther* 65C, S. 1–4. DOI: 10.1016/j.brat.2014.12.002.

Abstract:

Attempts to control or suppress thoughts are often unsuccessful and may even lead to an increase in the unwanted content. Intrusive thoughts and thought control are influential in the experience of psychosis, although recent findings have arisen from non-clinical samples and data tend to be retrospective in nature. The current study utilised repeated momentary assessments (experience sampling methodology) delivered as part of participants' daily routine to examine the associations between thought control and the experience of persecutory delusions and auditory hallucinations. The findings revealed that thought control was related to the subsequent severity and distress in relation to psychotic symptoms. Moreover, most of these effects persisted over two subsequent monitoring timepoints, although their size was diminished. These findings add weight to models of psychosis that include a role for thought control, and also highlight opportunities for targeted momentary interventions. Future work might seek to elucidate which specific aspects of thought control are important, alongside the use of more multifaceted measures of psychotic experiences.

Hartmann, Jessica A.; Wichers, Marieke; van Bemmel, Alex L.; Derom, Catherine; Thiery, Evert; Jacobs, Nele et al. (2014):

The serotonin transporter 5-HTTLPR polymorphism in the association between sleep quality and affect.

In: *Eur Neuropsychopharmacol. DOI:* 10.1016/j.euroneuro.2014.01.015.

Abstract:

A link between sleep and affect is well-known. Serotonin (5-HT) is associated with the regulation of affective as well as sleep-related processes. A functional polymorphism in the serotonin transporter gene (5-HTTLPR) has been associated with serotonergic functioning. The present study investigated whether allelic variation of this gene moderates the association between nighttime subjective sleep quality and affect the following day. A population-based sample of 361 ethnically homogenous adult female twins underwent a five day protocol based on the experience sampling method (ESM), assessing momentary negative affect, positive affect, and subjective sleep quality repeatedly and prospectively. There was a significant interaction between sleep quality and genotype in predicting positive affect the next day: carriers of one (n=167) or two S-alleles (n=78) had a significantly steeper slope compared to LL carriers (n=116) (chi2=4.16, p=.042 and chi2=3.90, p=.048 respectively). The association between subjective sleep quality and positive affect the next day varied as a function of 5-HTTLPR: it was stronger in carriers of at least one copy of the S-allele compared to homozygous L-carriers, supporting a link between sleep and affect regulation, in which serotonin may play a role. However, these results are preliminary and require replication.

Hasin, Deborah S.; Aharonovich, Efrat; Greenstein, Eliana (2014):

HealthCall for the smartphone: technology enhancement of brief intervention in HIV alcohol dependent patients.

In: *Addict Sci Clin Pract* 9 (1), S. 5. DOI: 10.1186/1940-0640-9-5.

Abstract:

BACKGROUND: Heavy drinking jeopardizes the health of patients in HIV primary care. In alcohol dependent patients in HIV primary care, a technological enhancement of brief intervention, HealthCall administered via interactive voice response (HealthCall-IVR) was effective at reducing heavy drinking. The smartphone offered a technology platform to improve HealthCall. METHODS: Working with input from patients, technology experts, and HIV clinic personnel, we further developed HealthCall,

harnessing smartphone technological capacities (HealthCall-S). In a pilot study, we compared rates of HealthCall-S daily use and drinking outcomes in 41 alcohol dependent HIV-infected patients with the 43 alcohol dependent HIV-infected patients who used HealthCall-IVR in our previous efficacy study. Procedures, clinic, personnel, and measures were largely the same in the two studies, and the two groups of patients were demographically similar (~90% minority). RESULTS: Pilot patients used HealthCall-S a median of 85.0% of the 60 days of treatment, significantly greater than the corresponding rate (63.8%) among comparison patients using HealthCall-IVR ($p < .001$). Mean end-of-treatment drinks per drinking day was similar in the two groups. Patients were highly satisfied with HealthCall-S (i.e., 92% reported that they liked using HealthCall-S). CONCLUSIONS: Among alcohol dependent patients in HIV primary care, HealthCall delivered via smartphone is feasible, obtains better patient engagement than HealthCall-IVR, and is associated with decreased drinking. In HIV primary care settings, HealthCall-S may offer a way to improve drinking outcomes after brief intervention by extending patient engagement with little additional demands on staff time.

Hausenblas, Heather A.; Gauvin, Lise; Downs, Danielle Symons; Duley, Aaron R. (2008):

Effects of abstinence from habitual involvement in regular exercise on feeling states: an ecological momentary assessment study.

In: *British Journal of Health Psychology* 13 (2), S. 237–255.

Abstract:

Regular exercise was experimentally reduced to determine its effects on positive feeling states. Using ecological momentary assessments, 40 participants maintained their regular exercise routine on 3 days and were deprived of their scheduled exercise on 3 other days. They recorded their feeling states, using the Exercise-Induced Feeling Inventory, four times daily as well as prior to and following exercise. Multi-level modelling analyses controlling for diurnal variations in feeling states revealed that positive feeling states were elevated on days when exercise deprivation occurred compared with non-exercise days and when no deprivation manipulation occurred. People with lower exercise dependence symptoms felt better on days when they were deprived from exercise compared with non-exercise days, whereas people with higher exercise dependence symptoms felt about the same when they were deprived from exercise compared with non-exercise days. These findings demonstrate that positive feeling states occur following an acute bout of exercise and that exercise deprivation had a positive impact on feeling states, with the level of exercise dependence symptoms moderating this effect.

Haut, S. R.; Hall, C. B.; Borkowski, T.; Tennen, H.; Lipton, R. B. (2013):

Modeling seizure self-prediction: an e-diary study.

In: *Epilepsia* 54 (11), S. 1960–1967. DOI: 10.1111/epi.12355.

Abstract:

PURPOSE: A subset of patients with epilepsy successfully self-predicted seizures in a paper diary study. We conducted an e-diary study to ensure that prediction precedes seizures, and to characterize the prodromal features and time windows that underlie self-prediction. METHODS: Subjects 18 or older with localization-related epilepsy (LRE) and >/=3 seizures per month maintained an e-diary, reporting a.m./p.m. data daily, including mood, premonitory symptoms, and all seizures. Self-prediction was rated by, "How likely are you to experience a seizure (time frame)?" Five choices ranged from almost certain (>95% chance) to very unlikely. Relative odds of seizure (odds ratio, OR) within time frames was examined using Poisson models with log normal random effects to adjust for multiple observations. KEY FINDINGS: Nineteen subjects reported 244 eligible seizures. OR for prediction choices within 6 h was as high as 9.31 (CI 1.92-45.23) for "almost certain." Prediction was most robust within 6 h of diary entry, and remained significant up to 12 h. For nine best predictors, average sensitivity was 50%. Older age contributed to successful self-prediction, and self-prediction appeared to be driven by mood and premonitory symptoms. In multivariate modeling of seizure occurrence, self-prediction (2.84; CI 1.68-4.81), favorable change in mood (0.82; CI 0.67-0.99), and number of premonitory symptoms (1.11; CI 1.00-1.24) were significant. SIGNIFICANCE: Some persons with epilepsy can self-predict seizures. In these individuals, the odds of a seizure following a positive prediction are high. Predictions were robust, not attributable to recall bias, and were related to self-awareness of mood and premonitory features. The 6-h prediction window is suitable for the development of preemptive therapy

Hautala, Arto J.; Karjalainen, Jaana; Kiviniemi, Antti M.; Kinnunen, Hannu; Mäkikallio, Timo H.; Huikuri, Heikki V.; Tulppo, Mikko P. (2010):

Physical activity and heart rate variability measured simultaneously during waking hours.

In: *American journal of physiology. Heart and circulatory physiology* 298 (3), S. H874-80. DOI: 10.1152/ajpheart.00856.2009.

Abstract:

Heart rate (HR) variability (HRV) during ambulatory recordings may be affected by individual differences in daily physical activity (PA). However, the influence of various levels of PA on different measures of HRV is not exactly known. We examined the association between simultaneously measured HRV and objective PA data obtained with an accelerometer during waking hours among 45 healthy adults. Bouts of PA were identified from minute-by-minute accelerometer data as metabolic equivalent (METs) values and calculated as mean METs for 30 min. HRV was analyzed concurrently. Within-individual correlation analyses and sign tests were performed to study the relationships between various HRV indexes and PA. The mean PA time was 15:44 +/- 1:01 h, and the mean MET was 1.91 +/- 0.14. HR and sample entropy, but not the other measures of HRV, had a significant relationship with PA, as shown by both correlation analyses ($r = 0.64$, $P = 0.021$, and $r = -0.55$, $P = 0.022$, respectively) and sign tests ($P < 0.0001$ for both). Beat-to-beat R-R interval fluctuation expressed as SD1 also demonstrated a significant relation to PA according to the sign test ($P = 0.037$) and a trend of association according to the correlation analysis ($r = -0.40$, $P = 0.129$). The complexity measure of HRV, in addition to average HR and the short-term index of HRV (SD1), is significantly influenced by the level of PA during ambulatory conditions. Long-term HRV indexes remained relatively stable at various activity levels, making them the most robust indexes for the assessment of cardiac autonomic function during free-running ambulatory conditions.

Havermans, Rob; Nicolson, Nancy A. (2007):

Daily hassles, uplifts, and time use in individuals with bipolar disorder in remission.

In: *The Journal of nervous and mental disease* 195 (9), S. 745–751.

Abstract:

Although life stress has been shown to trigger relapse in bipolar disorder, little is known about how bipolar patients perceive daily hassles or their positive counterparts, uplifts. We used the experience sampling method to investigate the daily experience of hassles and uplifts in 38 patients with remitted bipolar disorder and 38 healthy controls. Largely because of current unemployment, patients were more often alone and at home and spent less time working and more time in passive leisure activities. Contrary to expectations, the groups did not differ in total frequencies or appraisals of events. Within the patient group, however, those patients with current depressive symptoms and more previous depressive episodes experienced negative events as more stressful. These findings are consistent with hypothesized processes linking depressive symptoms to the generation of stressful conditions or to the reactivation of negative cognitive schemas.

Havermans, Rob; Nicolson, Nancy A.; Devries, Marten W. (2007):

Daily hassles, uplifts, and time use in individuals with bipolar disorder in remission.

In: *The Journal of nervous and mental disease* 195 (9), S. 745–751. DOI: 10.1097/NMD.0b013e318142cbf0.

Abstract:

Although life stress has been shown to trigger relapse in bipolar disorder, little is known about how bipolar patients perceive daily hassles or their positive counterparts, uplifts. We used the experience sampling method to investigate the daily experience of hassles and uplifts in 38 patients with remitted bipolar disorder and 38 healthy controls. Largely because of current unemployment, patients were more often alone and at home and spent less time working and more time in passive leisure activities. Contrary to expectations, the groups did not differ in total frequencies or appraisals of events. Within the patient group, however, those patients with current depressive symptoms and more previous depressive episodes experienced negative events as more stressful. These findings are consistent with hypothesized processes linking depressive symptoms to the generation of stressful conditions or to the reactivation of negative cognitive schemas.

Havermans, Rob; Nicolson, Nancy A.; Berkhof, Johannes; Devries, Marten W. (2010):

Mood reactivity to daily events in patients with remitted bipolar disorder.

In: *Psychiatry Res* 179 (1), S. 47–52. DOI: 10.1016/j.psychres.2009.10.020.

Abstract:

Information about mood reactions to naturally occurring stress in remitted bipolar patients may help elucidate the mechanism by which stressors influence the propensity to manic or depressive relapse in these patients. Using the experience sampling method (ESM), we therefore investigated negative and positive mood states and their reactivity to daily hassles and uplifts in 38 outpatients with remitted bipolar disorder and 38 healthy volunteers. Multilevel regression analyses confirmed that mean levels of negative affect (NA) were higher and positive affect (PA) lower in bipolar patients. Reactivity of NA and PA to hassles and

uplifts in bipolar patients was similar to controls and was unrelated to the number of previous episodes. Bipolar patients with subsyndromal depressive symptoms, however, showed particularly large NA responses to daily hassles, which they also rated as more stressful. Subsyndromal depressive symptoms in patients with remitted bipolar disorder thus appear to increase sensitivity to everyday stressors.

Hawkins, Ashley A.; Furr, R. Michael; Arnold, Elizabeth Mayfield; Law, Mary Kate; Mneimne, Malek; Fleeson, William (2014):

The structure of borderline personality disorder symptoms: A multi-method, multi-sample examination.

In: *Personality Disorders: Theory, Research, and Treatment* 5 (4), S. 380–389. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-42878-001%26site%3dehost-live.

Abstract:

We examined the factor structure of borderline personality disorder (BPD) symptoms by using a multimethod, multisample approach. The factorial structure of BPD has previously been examined through the lens of broad retrospective reports of symptoms without directly contrasting results from different samples of participants, with studies producing inconsistent patterns of results. We go beyond previous work by examining symptoms from multiple timeframes and by examining results across and within 2 diagnostic groups—individuals with and without BPD. Participants (n = 281) completed a structured clinical interview for personality disorders, 2 weekly reports of BPD symptoms, and 2 weeks of in-the-moment "immediate" symptom reports, assessed 5 times daily. Across all participants, results revealed a robust 1-factor structure that replicated across all assessment methods. Moreover, these results replicated within each diagnostic group, with the lone exception of an unclear structure in interview assessment among participants who had a BPD diagnosis. Results have implications regarding the nature, assessment, and treatment of BPD. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Hawkins, Leah K.; Rossi, Brooke V.; Correia, Katharine F.; Lipskind, Shane T.; Hornstein, Mark D.; Missmer, Stacey A. (2014):

Perceptions among infertile couples of lifestyle behaviors and in vitro fertilization (IVF) success.

In: *J Assist Reprod Genet* 31 (3), S. 255–260. DOI: 10.1007/s10815-014-0176-5.

Abstract:

PURPOSE: To assess how patients perceive various lifestyle behaviors impact IVF success. METHODS: Cross-sectional study of heterosexual, English-speaking couples (n = 138) who completed web-based surveys during IVF treatment cycle. Perceived impact of lifestyle choices assessed by multivariable logistic regression and p-value tests for linear trend (Pt). RESULT(S): During the IVF cycle, most patients consider it helpful for women to exercise (76 %), avoid stress (87 %) and limit activity after embryo transfer (92 %). The majority of patients (62 %) consider rigorous exercise (4+ h/week) helpful and nearly one-third (32 %) perceive benefit to complete bed rest after transfer. Overall, couples with a sex-specific infertility diagnosis are more likely to consider partner's lifestyle choices impactful: male-factor couples are more likely to consider it helpful for men to limit cellular phone use (OR:2.73,CI:1.06-7.04) and diminished ovarian reserve couples are more likely to consider it helpful for women to limit exposure to plastics (OR:2.38,CI:1.03-5.51). Patients at higher levels of education (Pt < 0.01) and income (Pt < 0.01) are less likely to consider lifestyle impactful. CONCLUSION(S): Patient perceptions of the impact of lifestyle factors on IVF success vary by sex, infertility diagnosis and socioeconomic factors. Despite counseling to the contrary, many patients perceive benefit to rigorous exercise during the IVF cycle and complete bedrest following transfer. Results provide insight into patient beliefs and highlight opportunities to improve patient education, alleviate patient anxieties and potentially improve IVF outcomes.

Hay, Dean Charles; Wakayama, Akinobu; Sakamura, Ken; Fukashiro, Senshi (2008):

Improved estimation of energy expenditure by artificial neural network modeling.

In: *Applied Physiology, Nutrition, and Metabolism* 33 (6), S. 1213–1222. DOI: 10.1139/h08-117.

Abstract:

Estimation of energy expenditure in daily living conditions can be a tool for clinical assessment of health status, as well as a self-measure of lifestyle and general activity levels. Criterion measures are either prohibitively expensive or restricted to laboratory settings. Portable devices (heart rate monitors, pedometers) have gained recent popularity, but accuracy of the prediction

equations remains questionable. This study applied an artificial neural network modeling approach to the problem of estimating energy expenditure with different dynamic inputs (accelerometry, heart rate above resting (HRar), and electromyography (EMG)). Nine feed-forward back-propagation models were trained, with the goal of minimizing the mean squared error (MSE) of the training datasets. Model 1 (accelerometry only) and model 2 (HRar only) performed poorly and had significantly greater MSE than all other models ($p < 0.001$). Model 3 (combined accelerometry and HRar) had overall performance similar to EMG models. Validation of all models was performed by simulating untrained datasets. MSE of all models increased when tested with validation data. While models 1 and 2 again performed poorly, model 3 MSE was lower than all but 2 EMG models. Squared correlation coefficients of measured and predicted energy expenditure for models 3 to 9 ranged from 0.745 to 0.817. Analysis of mean error within specific movement categories indicates that EMG models may be better at predicting higher-intensity energy expenditure, but combined accelerometry and HRar provides an economical solution, with sufficient accuracy.

Hayakawa, M.; Uchimura, Y.; Omae, K.; Waki, K.; Fujita, H.; Ohe, K. (2013):

A Smartphone-based Medication Self-management System with Realtime Medication Monitoring.

In: *Appl.Clin.Inform.* 4 (1), S. 37–52. DOI: 10.4338/ACI-2012-10-RA-0045.

Abstract:

BACKGROUND: Most patients cannot remember their entire medication regimen and occasionally forget to take their medication. OBJECTIVES: The objective of the study was to design, develop, and demonstrate the feasibility of a new type of medication self-management system using smartphones with real-time medication monitoring. METHODS: We designed and developed a smartphone-based medication self-management system (SMSS) based on interviews of 116 patients. The system offered patients two main functions by means of smartphones: (1) storage and provision of an accurate, portable medication history and medication-taking records of patients; and (2) provision of a reminder to take medication only when the patient has forgotten to take his/her medication. These functions were realized by two data input methods: (a) reading of prescription data represented in two-dimensional barcodes using the smartphone camera and getting the photographic images of the pills; and (b) real-time medication monitoring by novel user-friendly wireless pillboxes. RESULTS: Interviews suggested that a pocket-sized pillbox was demanded to support patient's medication-taking outside the home and pillboxes for home use should be adaptable to the different means of pillbox storage. In accordance with the result, we designed and developed SMSS. Ten patients participated in the feasibility study. In 17 out of 47 cases (36.2%), patients took their medication upon being presented with reminders by the system. Correct medication-taking occurrence was improved using this system. CONCLUSIONS: The SMSS is acceptable to patients and has the advantage of supporting ubiquitous medication self-management using a smartphone. We believe that the proposed system is feasible and provides an innovative solution to encourage medication self-management

Hayes, Gillian R.; Truong, Khai N. (2013):

Paratyping: A contextualized method of inquiry for understanding perceptions of mobile and ubiquitous computing technologies.

In: *Human-Computer Interaction* 28 (3), S. 265–286. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-09426-003%26site%3dehost-live;khai@cs.toronto.edu;gillianrh@ics.uci.edu.

Abstract:

In this article, we describe the origins, use, and efficacy of a contextualized method for evaluating mobile and ubiquitous computing systems. This technique, which we called paratyping, is based on experience prototyping and event-contingent experience sampling and allows researchers to survey people in real-life situations without the need for costly and sometimes untenable deployment evaluations. We used this tool to probe the perceptions of the conversation partners of users of the Personal Audio Loop, a memory aid with the potential for substantial privacy implications. Based on that experience, we refined and adapted the approach to evaluate SenseCam, a wearable, automatic picture-taking device, across multiple geographic locations. We describe the benefits, challenges, and methodological considerations that emerged during our use of the paratyping method across these two studies. We describe how this method blends some of the benefits of survey-based research with more contextualized methods, focusing on trustworthiness of the method in terms of generating scientific knowledge. In particular, this method is a good fit for studying certain classes of mobile and ubiquitous computing applications but can be applied to many types of applications. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Haze, K. A.; Lynaugh, J. (2013):

Building Patient Relationships: A Smartphone Application Supporting Communication Between Teenagers With Asthma and the RN Care Coordinator.

In: *Comput.Inform.Nurs.* 31 (6), S. 272–273. DOI: 10.1097/NXN.0b013e3182a01eaa.

Abstract:

Smartphone applications used in healthcare are emerging as an adjunct therapy to assist patients in self-management. Often, smartphone technology is not integrated into healthcare delivery and does not build the nurse-patient relationship, an essential mechanism to guide the patient toward health. In a pilot study using smartphones with teenagers with asthma, the application provided a method not only to share health information at the point-of-living, including health assessments, personalized health plans, and disease information, but also to allow text messaging communication between the teenager and his/her RN care coordinator. Twenty-five teenagers piloted the smartphone application and provided feedback about its use. Eighty-five percent of the teenagers responding to the end-of-pilot, semistructured interview indicated a positive change in the nurse-patient relationship. Teenagers perceived that they could ask more questions along with having improved access and quicker response times. The RN care coordinators perceived improved ability to contact teenagers and improved accuracy of assessment data. Although the pilot had several limitations, it demonstrates that smartphone technology and text messaging can further the nurse-patient relationship. For this to occur, nurses need to become involved in the development and integration of technology to focus applications on innovative ways to enhance communication in patient care.

Head, Geoffrey A.; Andrianopoulos, Nick; McGrath, Barry P.; Martin, Catherine A.; Carrington, Melinda J.; Lukoshkova, Elena V. et al. (2014):

Predictors of mean arterial pressure morning rate of rise and power function in subjects undergoing ambulatory blood pressure recording.

In: *PLoS One* 9 (3), S. e93186. DOI: 10.1371/journal.pone.0093186.

Abstract:

BACKGROUND: We determined clinical predictors of the rate of rise (RoR) in blood pressure in the morning as well as a novel measure of the power of the BP surge (BPpower) derived from ambulatory blood pressure recordings. METHODS: BPpower and RoR were calculated from 409 ambulatory blood pressure (ABP) recordings from subjects attending a cardiovascular risk clinic. Anthropometric data, blood biochemistry, and history were recorded. The 409 subjects were 20-82 years old (average 57, SD = 13), 46% male, 9% with hypertension but not on medication and 34% on antihypertensive medication. RESULTS: Average RoR was 11.1 mmHg/hour (SD = 8) and BPpower was 273 mmHg2/hour (SD = 235). Only cholesterol, low density lipoprotein and body mass index (BMI) were associated with higher BPpower and RoR ($P<0.05$) from 25 variables assessed. BPpower was lower in those taking beta-blockers or diuretics. Multivariate analysis identified that only BMI was associated with RoR (4.2% increase/unit BMI, $P = 0.020$) while cholesterol was the only remaining associated variable with BPpower (17.5% increase/mmol/L cholesterol, $P = 0.047$). A follow up of 213 subjects with repeated ABP after an average 1.8 years identified that baseline cholesterol was the only predictor for an increasing RoR and BPpower ($P<0.05$). 37 patients who commenced statin subsequently had lower BPpower whereas 90 age and weight matched controls had similar BPpower on follow-up. CONCLUSIONS: Cholesterol is an independent predictor of a greater and more rapid rise in morning BP as well as of further increases over several years. Reduction of cholesterol with statin therapy is very effective in reducing the morning blood pressure surge.

Head, Geoffrey A.; Lukoshkova, Elena V. (2008):

Understanding the morning rise in blood pressure.

In: *Clinical and Experimental Pharmacology and Physiology* 35 (4), S. 516–521.

Abstract:

1. The morning period has been recognized as the highest risk period of the day for cardiovascular events, particularly stroke and is also associated with a rapid surge in blood pressure. 2. Evidence now exists to show that the morning surge in blood pressure is an independent risk factor in some elderly hypertensive subjects. 3. However, methods to assess the contribution of the morning blood pressure surge from ambulatory recordings or home recordings, using clock times or times of waking, do not take into consideration the individual patterns of blood pressure change which can range from a rapid rise prior to or following waking to a slow increase over several hours. 4. In the present review we describe a novel method for determining the individual changes using a double logistic equation fitted to the individual pattern of blood pressure change. 5. Methods are presented to determine the rate of rise function over the morning period as well as predicting the change over a fixed time window which may be useful in refining the contribution of the blood pressure surge to cardiovascular risk. 6. Hypertensive people have an

exaggerated rise in morning blood pressure as well as a greater rate of rise. 7. Antihypertensive drugs and dosing regimes are being developed which may be useful adjuncts to standard therapy for preventing morning hypertension and hopefully also reducing cardiovascular damage or events.

Head, Geoffrey A.; Reid, Christopher M.; Shiel, Louise M.; Jennings, Garry L.; Lukoshkova, Elena V. (2006):

Rate of morning increase in blood pressure is elevated in hypertensives.

In: *Am J Hypertens* 19 (10), S. 1010–1017. DOI: 10.1016/j.amjhyper.2006.03.014.

Abstract:

BACKGROUND\r\nWe applied a new logistic curve fitting procedure to ambulatory blood pressure (ABP) recordings to determine whether the rate of increase in systolic (SBP), mean (MBP) and diastolic blood pressure (DBP) and heart rate (HR) in the morning is related to the level of BP in subjects.\r\nMETHODS\r\nThe rate of transition in the morning and evening period was determined using a six-parameter double-logistic equation applied to 528 ABP recordings from a cardiovascular risk assessment clinic. Based on daytime BP (MBP, SBP, or DBP), the upper quartile (UQ, n = 132) and lower quartile (LQ) were compared.\r\nRESULTS\r\nSubjects in the UQ of daytime MBP were hypertensive and showed greater day-night differences compared to normotensive subjects in the LQ (29 +/- 1 mm Hg for MBP compared to 20 +/- 1 mm Hg). The rate of morning increase in SBP and DBP was 42% and 30% greater in UQ subjects compared to the LQ subjects (P < .05). The rates of evening decrease in all BPs were 69% to 84% greater in the subjects in the UQ. Similar results were obtained if subjects were divided according to daytime SBP or DBP. The rate of morning increase in MBP was correlated with daytime BP, but not night-time or 24 h MBP.\r\nCONCLUSIONS\r\nThe rate of morning increase in BP is greater in those subjects with the highest daytime BP. The exaggerated rate of morning increase in BP in this group, which were all hypertensive, may also be important for greater cardiovascular risk.

Heapy, Alicia; Sellinger, John; Higgins, Diana; Chatkoff, David; Bennett, Tracy C.; Kerns, Robert D. (2007):

Using interactive voice response to measure pain and quality of life.

In: *Pain Medicine* 8 (s3), S. S145-S154.

Abstract:

Objectives. To describe the feasibility of using Interactive Voice Response (IVR) technology to collect daily, prospective data about pain and quality of life in a randomized clinical trial of transdermal fentanyl (TDF).

Design. This article focuses on the use of IVR technology within a larger study that compared the relative efficacy of TDF to short-acting opioids for treating chronic noncancer pain. IVR allows individuals to call into a telephone system to answer questions using the telephone keypad.

Participants. Forty-six participants consented to be in the study and made at least one IVR phone call. Thirty-one participants completed the study. All participants were veterans from the VA Connecticut Healthcare System, and all reported chronic pain that had previously been treated with short-acting oral opioids.

Outcome Measures. Participant adherence with calling into the IVR system was assessed via frequency counts of the number of calls placed vs the number of expected calls. Participants provided data about average pain, pain interference, medication adherence and side effects, satisfaction with pain control, and sleep quality.

Results. Participants who completed the study made 84.6% of the 1302 expected calls into the IVR system, and an additional 4% of missed calls were obtained through follow-up. Proportion of completed calls declined slightly across the three call-in intervals, but remained high (from 87.5% to 81.3%).

Conclusions. These data suggest that IVR is an effective way to collect prospective treatment data. Detailed discussion of additional benefits and potential drawbacks to the use of IVR technology is provided.

Heavey, Christopher L.; Hurlburt, Russell T.; Lefforge, Noelle L. (2010):

Descriptive experience sampling: A method for exploring momentary inner experience.

In: *Qualitative Research in Psychology* 7 (4), S. 345–368.

Abstract:

Descriptive Experience Sampling (DES) is a method developed to provide high fidelity accounts of pristine inner experience. A DES investigator gives a subject a random beeper to take into her natural environments. When the beep sounds, the subject jots down notes about her ongoing experience. The subject repeats this process, typically collecting about six moments of experience in a sampling day. Within 24 hours the investigator interviews the subject. During this expositional interview subject and investigator collaborate to develop high fidelity accounts of each sampled moment of experience. This process is repeated over a number of days until an idiographic description of the subject's inner experience has been developed. DES is open-ended, qualitative, and minimally retrospective. Because of the close examination of brief moments of experience, DES is capable of providing highly detailed accounts of inner experience. We summarize some important DES results and contrast DES with the methods of van Manen and Moustakas.

Hebden, L.; Balestracci, K.; McGeechan, K.; Denney-Wilson, E.; Harris, M.; Bauman, A.; Allman-Farinelli, M. (2013):

'TXT2BFiT' a mobile phone-based healthy lifestyle program for preventing unhealthy weight gain in young adults: study protocol for a randomized controlled trial.

In: *Trials* 14 (1745-6215 (Linking)), S. 75. DOI: 10.1186/1745-6215-14-75.

Abstract:

BACKGROUND: Despite international efforts to arrest increasing rates of overweight and obesity, many population strategies have neglected young adults as a target group. Young adults are at high risk for unhealthy weight gain which tends to persist throughout adulthood with associated chronic disease health risks. METHODS/DESIGN: TXT2BFiT is a nine month two-arm parallel-group randomized controlled trial aimed at improving weight management and weight-related dietary and physical activity behaviors among young adults. Participants are recruited via general practice (primary medical care) clinics in Sydney, New South Wales, Australia. All participants receive a mailed resource outlining national physical activity and dietary guidelines and access to the study website. Additional resources accessible to the intervention arm via the study website include Smartphone mobile applications, printable handouts, an interactive healthy weight tracker chart, and a community blog. The study consists of two phases: (1) Intensive phase (weeks 1 to 12): the control arm receives four short message service (SMS) text messages; the intervention arm receives eight SMS messages/week tailored to their baseline stage-of-change, one Email/week, and personalized coaching calls during weeks 0, 2, 5, 8, and 11; and (2) Maintenance phase (weeks 14 to 36): the intervention arm receives one SMS message/month, one Email/month and booster coaching calls during months 5 and 8. A sample of N = 354 (177 per arm) is required to detect differences in primary outcomes: body weight (kg) and body mass index (kg/m2), and secondary outcomes: physical activity, sitting time, intake of specific foods, beverages and nutrients, stage-of-change, self-efficacy and participant well-being, at three and nine months. Program reach, costs, implementation and participant engagement will also be assessed. DISCUSSION: This mobile phone based program addresses an important gap in obesity prevention efforts to date. The method of intervention delivery is via platforms that are highly accessible and appropriate for this population group. If effective, further translational research will be required to assess how this program might operate in the broader community. TRIAL REGISTRATION: Australian New Zealand Clinical Trials Registry ACTRN12612000924853

Hebden, L.; Cook, A.; van der Ploeg, H. P.; King, L.; Bauman, A.; Allman-Farinelli, M. (2013):

A mobile health intervention for weight management among young adults: a pilot randomised controlled trial.

In: *J Hum.Nutr.Diet.* (0952-3871 (Linking)). DOI: 10.1111/jhn.12155.

Abstract:

BACKGROUND: Today's generation of young adults are gaining weight faster than their parents; however, there remains insufficient evidence to inform interventions to prevent this weight gain. Mobile phones are a popular means of communication that may provide a convenient, inexpensive means to deliver health intervention programmes. This pilot study aimed to measure the effect of a 12-week mobile health (mHealth) intervention on body weight, body mass index and specific lifestyle behaviours addressed by the programme. METHODS: University students and staff aged 18-35 years (n = 51) were randomised (ratio 1 : 1, intervention : control). Both groups received a printed diet booklet with instructions prepared by a dietitian. The intervention group also received Short Message Service (SMS) text messages (four per week), e-mails (four per week), and had access to smartphone applications and Internet forums. RESULTS: Pre- to post-intervention, participants in the intervention group

decreased their body weight [mean (SD)] [-1.6 (2.6) kg], increased their light intensity activity [34 (35) min day-1] and reported an increased vegetable (1.0 median serving day-1) and decreased sugar-sweetened beverage intake [-355 (836) mL week-1]. Despite this, post-intervention changes in outcomes were not significantly different from controls. CONCLUSIONS: The piloted mHealth programme provided some short-term positive changes in weight, nutrition and physical activity using a low cost, convenient delivery method for this population. However, changes were no different from those observed among controls. This might partly be explained by intervention participants' low engagement with the programme, which is likely to require further modification to provide more regular, personalised, monitored support

Hedeker, Donald; Mermelstein, Robin J. (2012):

Mood changes associated with smoking in adolescents: An application of a mixed-effects location scale model for longitudinal ecological momentary assessment data. In: Jeffrey R. Harring und Gregory R. Hancock (Hg.): Advances in longitudinal methods in the social and behavioral sciences.

Charlotte, NC US: IAP Information Age Publishing (CILVR series on latent variable methodology), S. 59–79. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31006-003%26site%3dehost-live.

Abstract:

(from the chapter) In this chapter, the authors extend the mixed-effects location scale model to focus on the variation of mood change that is associated with smoking across measurement waves, and the degree to which subject and wave characteristics influence the variation in mood changes. Also, while Hedeker et al. (2008) only considered random subject intercepts for the one wave of ecological momentary assessment (EMA) data, here the authors allow random subject time trends for the multiple waves of EMA data. The authors further consider a three-level model that treats observations nested within waves within subjects. To aid in making this class of models accessible, sample computer syntax is provided in the Appendix. The data are drawn from a natural history study of adolescent smoking. The number of subjects at each measurement wave equaled 116 (baseline), 91 (6 months), 92 (15 months), and 88 (24 months). The study utilized a multimethod approach to assess adolescents including self-report questionnaires, a week-long time/event sampling method via hand-held computers (EMA), and detailed surveys. Overall, following smoking, adolescents reported higher positive affect and lower negative affect than before their smoking report. Additionally, the analyses indicated an increased consistency of subjective mood responses as a person's smoking experience increased over time and a diminishing of the mood change associated with smoking. The authors' data thus provide one of the few ecologically valid examinations of the development of tolerance. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (chapter)

Hedeker, Donald; Mermelstein, Robin J.; Demirtas, Hakan (2008):

An application of a mixed-effects location scale model for analysis of ecological momentary assessment (EMA) data.

In: *Biometrics* 64 (2), S. 627–634.

Abstract:

For longitudinal data, mixed models include random subject effects to indicate how subjects influence their responses over repeated assessments. The error variance and the variance of the random effects are usually considered to be homogeneous. These variance terms characterize the within-subjects (i.e., error variance) and between-subjects (i.e., random-effects variance) variation in the data. In studies using ecological momentary assessment (EMA), up to 30 or 40 observations are often obtained for each subject, and interest frequently centers around changes in the variances, both within and between subjects. In this article, we focus on an adolescent smoking study using EMA where interest is on characterizing changes in mood variation. We describe how covariates can influence the mood variances, and also extend the standard mixed model by adding a subject-level random effect to the within-subject variance specification. This permits subjects to have influence on the mean, or location, and variability, or (square of the) scale, of their mood responses. Additionally, we allow the location and scale random effects to be correlated. These mixed-effects location scale models have useful applications in many research areas where interest centers on the joint modeling of the mean and variance structure.

Hedeker, Donald; Mermelstein, Robin J.; Berbaum, Michael L.; Campbell, Richard T. (2009):

Modeling mood variation associated with smoking: an application of a heterogeneous mixed-effects model for analysis of ecological momentary assessment (EMA) data.

In: *Addiction* 104 (2), S. 297–307. DOI: 10.1111/j.1360-0443.2008.02435.x.

Abstract:

AIMS\r\nMixed models are used increasingly for analysis of ecological momentary assessment (EMA) data. The variance parameters of the random effects, which indicate the degree of heterogeneity in the population of subjects, are considered usually to be homogeneous across subjects. Modeling these variances can shed light on interesting hypotheses in substance abuse research.\r\nDESIGN\r\nWe describe how these variances can be modeled in terms of covariates to examine the covariate effects on between-subjects variation, focusing on positive and negative mood and the degree to which these moods change as a function of smoking.\r\nSETTING\r\nThe data are drawn from an EMA study of adolescent smoking.\r\nPARTICIPANTS\r\nParticipants were 234 adolescents, either in 9th or 10th grades, who provided EMA mood reports from both random prompts and following smoking events.\r\nMEASUREMENTS\r\nWe focused on two mood outcomes: measures of the subject's negative and positive affect and several covariates: gender, grade, negative mood regulation and smoking level.\r\nFINDINGS AND CONCLUSIONS\r\nFollowing smoking, adolescents experienced higher positive affect and lower negative affect than they did at random, non-smoking times. Our analyses also indicated an increased consistency of subjective mood responses as smoking experience increased and a diminishing of mood change.

Hedeker, D.; Mermelstein, R. J.; Demirtas, H. (2012):

Modeling between-subject and within-subject variances in ecological momentary assessment data using mixed-effects location scale models.

In: *Stat.Med.* (0277-6715 (Linking)). DOI: 10.1002/sim.5338.

Abstract:

Ecological momentary assessment and/or experience sampling methods are increasingly used in health studies to study subjective experiences within changing environmental contexts. In these studies, up to 30 or 40 observations are often obtained for each subject. Because there are so many measurements per subject, one can characterize a subject's mean and variance and can specify models for both. In this article, we focus on an adolescent smoking study using ecological momentary assessment where interest is on characterizing changes in mood variation. We describe how covariates can influence the mood variances and also extend the statistical model by adding a subject-level random effect to the within-subject variance specification. This permits subjects to have influence on the mean, or location, and variability, or (square of the) scale, of their mood responses. These mixed-effects location scale models have useful applications in many research areas where interest centers on the joint modeling of the mean and variance structure. Copyright (c) 2012 John Wiley & Sons, Ltd

Hedvall Kallerman, P.; Hagman, E.; Edstedt Bonamy, A-K; Zemack, H.; Marcus, C.; Norman, M.; Westerstahl, M. (2014):

Obese children without comorbidities have impaired microvascular endothelial function.

In: *Acta Paediatr* 103 (4), S. 411–417. DOI: 10.1111/apa.12549.

Abstract:

AIM: The aim was to test acetylcholine-induced endothelium-dependent vasodilatation in obese children without comorbidities, compared with normal weight controls, and to analyse associations between vasodilatation and other potential risk factors. METHODS: Endothelium-dependent vasodilatation was induced by transdermal iontophoresis of acetylcholine in 54 obese children (8.3-18.2 years old, 41% girls) and 44 normal weight controls (7.5-20.2 years old, 82% girls), and the subsequent change in perfusion was measured with laser Doppler flowmetry. In a subgroup of the obese children, associations between acetylcholine-induced vasodilatation and blood lipids, glucose/insulin metabolism, inflammation, 24-h ambulatory blood pressure (ABP), cardiovascular fitness and duration of obesity were evaluated. RESULTS: We found a lower endothelium-dependent vasodilatory response to acetylcholine in the obese children than the controls ($p < 0.001$). The peak perfusion response was 33% lower in obese children ($p = 0.001$). There was a trend towards lower vasodilatation in obese children with higher levels of triglycerides ($p = 0.07$). Children with the shortest duration of obesity exhibited the lowest vasodilatation ($p = 0.03$). No associations were found between 24-h ABP, cardiovascular fitness, inflammation and glucose/insulin metabolism. CONCLUSION: Obese children without comorbidities have significantly impaired microvascular endothelial function. The children who had been obese for a longer time seemed less affected.

Heebner, Nicholas R.; Akins, Jonathan S.; Lephart, Scott M.; Sell, Timothy C. (2014):

Reliability and validity of an accelerometry based measure of static and dynamic postural stability in healthy and active individuals.

In: *Gait Posture*. *DOI:* 10.1016/j.gaitpost.2014.12.009.

Abstract:

Postural stability is an important measure in both research and clinical practice. A portable, easy to use device that can provide higher resolution than current clinical tests may allow for better identification of patients or athletes with postural stability deficits. The purpose of this study was to evaluate the ability of a tri-axial accelerometer to quantify postural stability in a healthy athletic population. Ten subjects were recruited to determine the reliability of the accelerometer to measure dynamic postural stability and thirteen were recruited to compare the accelerometer measures across tasks of varying difficulty. Subjects were asked to complete four static postural stability tasks with eyes open and eyes closed and two dynamic postural stability tasks for a total of ten tasks. During each task postural stability was measured using a tri-axial accelerometer and force platform. Differences between postural stability scores between tasks and the correlation between the two measures were assessed. The accelerometer demonstrated moderate to good test-retest reliability (ICC=0.732 to 0.899). Only the medial-lateral axis of the accelerometer showed significant differences between static tasks but all directions were able to show significant differences between static and dynamic tasks. Additionally, Spearman's ranked correlations showed little to no correlation between the accelerometer and force platform scores. Accelerometers are a reliability tool for postural stability that measure low difficulty tasks best in the medial-lateral direction. Low correlation between the accelerometer and force platform suggest that these two methods are not measuring the same components of postural stability.

Heffner, Jaimee L.; Vilardaga, Roger; Mercer, Laina D.; Kientz, Julie A.; Bricker, Jonathan B. (2015):

Feature-level analysis of a novel smartphone application for smoking cessation.

In: *Am J Drug Alcohol Abuse* 41 (1), S. 68–73. DOI: 10.3109/00952990.2014.977486.

Abstract:

Abstract Background: Currently, there are over 400 smoking cessation smartphone apps available, downloaded an estimated 780,000 times per month. No prior studies have examined how individuals engage with specific features of cessation apps and whether use of these features is associated with quitting. OBJECTIVES: Using data from a pilot trial of a novel smoking cessation app, we examined: (i) the 10 most-used app features, and (ii) prospective associations between feature usage and quitting. METHODS: Participants (n = 76) were from the experimental arm of a randomized, controlled pilot trial of an app for smoking cessation called "SmartQuit," which includes elements of both Acceptance and Commitment Therapy (ACT) and traditional cognitive behavioral therapy (CBT). Utilization data were automatically tracked during the 8-week treatment phase. Thirty-day point prevalence smoking abstinence was assessed at 60-day follow-up. RESULTS: The most-used features - quit plan, tracking, progress, and sharing - were mostly CBT. Only two of the 10 most-used features were prospectively associated with quitting: viewing the quit plan (p = 0.03) and tracking practice of letting urges pass (p = 0.03). Tracking ACT skill practice was used by fewer participants (n = 43) but was associated with cessation (p = 0.01). CONCLUSIONS: In this exploratory analysis without control for multiple comparisons, viewing a quit plan (CBT) as well as tracking practice of letting urges pass (ACT) were both appealing to app users and associated with successful quitting. Aside from these features, there was little overlap between a feature's popularity and its prospective association with quitting. Tests of causal associations between feature usage and smoking cessation are now needed.

Heilman, Keri J.; Porges, Stephen W. (2007):

Accuracy of the LifeShirt®(Vivometrics) in the detection of cardiac rhythms.

In: *Biol Psychol* 75 (3), S. 300–305.

Abstract:

The use of heart rate measures in research requires accurate detection and timing of beat-to-beat values. Numerous technologies are available to researchers; however, benchmarking of a specific apparatus is seldom conducted. Since heart rate variability provides a portal to the neural regulation of the heart, accurate detection and timing of beat-to-beat values is essential to both basic physiological research and the clinical application of heart rate variability measures. The current study evaluated the accuracy of an ambulatory system, the LifeShirt® (Vivometrics), relative to a standard laboratory-based heart rate monitoring equipment (Biopac), during baseline and exercise conditions. LifeShirt® performed equivalently to the Biopac during both conditions, experienced few errors of detection, generated similar times between sequential heart periods, and produced similar summary indices of heart rate and heart rate variability.

Heiy, Jane E.; Cheavens, Jennifer S. (2014):

Back to basics: A naturalistic assessment of the experience and regulation of emotion.

In: *Emotion* 14 (5), S. 878–891. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-27224-001%26site%3dehost-live.

Abstract:

Emotion regulation research links regulatory responding to important outcomes in psychological well-being, physical health, and interpersonal relations, but several fundamental questions remain. As much of the previous research has addressed generalized regulatory habits, far less is known about the ways in which individuals respond to emotions in daily life. The literature is particularly sparse in explorations of positive emotion regulation. In the current study, we provide an assessment of naturalistic experiences and regulation of emotion, both positive and negative in valence. Using an electronic experience sampling methodology, participants reported on their use of 40 regulatory strategies in response to 14 emotions for 10 consecutive days. On average, participants used 15 different regulatory strategies in response to negative emotions over this time, most frequently relying on acceptance, behavioral activation, and rumination. Participants used a similarly large repertoire of strategies, approximately 16 total, in response to positive emotions, particularly savoring, future focus, and behavioral activation. Participants' mood ratings following strategy use, however, indicated that the most frequently used strategies were often not the most effective strategies. The results of this study provide estimates of the frequency and effectiveness of a large number of emotion regulation strategies in response to both negative and positive emotions. Such findings characterize naturalistic emotion regulation, and estimates of normative emotion regulation processes are imperative to determining the ways in which deviations (e.g., small emotion regulation repertoires, insufficient attention to regulation of positive emotions) impact emotional functioning. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Hektner, Joel M. (2012):

Developmental psychology. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 585–600. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-033%26site%3dehost-live.

Abstract:

(from the chapter) The development of persons is not often perceptible from one moment to the next, or even from one day to the next. Thus, the pillars of developmental science are longitudinal studies spanning years. Nevertheless, micro-longitudinal studies of daily life that produce intensive longitudinal data have been invaluable to the study of development across most of the lifespan. Beginning with Csikszentmihalyi and Larson's (1984) landmark study of the daily life of adolescents, developmental psychologists have used the experience sampling method (ESM) and its variants to capture the contexts of development, and the relations between those contexts and the behavior and inner psychological life of people. Developmental researchers have always taken context seriously, but they have also striven for methodological rigor, a frequent casualty when moving out of the laboratory. There is also a growing recognition of and interest in variations within people across time and situations. People do not all develop at the same rate or in the same direction, and some may have episodes of regressions followed by spurts of growth. Only research methods designed for studying daily life combine the "real-world," "real-time," and "within-person" perspectives in a methodologically rigorous way to satisfy many of the needs of the field of developmental science. The growing importance of such studies to the field is evident from their ever-increasing number and wider range (for a recent review, see Hoppmann & Riediger, 2009). These studies of daily life have been conducted with people ranging from childhood to old age. In the sections that follow, periods of the lifespan provide an organizational structure to a targeted review of the relevant literature. This is done, not to imply that the developmental questions and issues are different in each period—indeed, several themes recur throughout the lifespan—but because nearly all of this research is confined to a single developmental period, and most developmental psychologists still specialize in just one part of the lifespan. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Helena, Igelstrom; Margareta, Emtner; Eva, Lindberg; Pernilla, Asenlof (2013):

Tailored behavioral medicine intervention for enhanced physical activity and healthy eating in patients with obstructive sleep apnea syndrome and overweight.

In: *Sleep Breath. DOI:* 10.1007/s11325-013-0929-x.

Abstract:

PURPOSE: This study aims to evaluate the effects on physical activity (PA) and eating behavior (EB) of a tailored behavioral medicine intervention and first-time continuous positive airway pressure (CPAP) treatment compared with first-time CPAP treatment and advice in patients with obstructive sleep apnea syndrome (OSAS) and overweight. METHODS: Seventy-three patients (mean +/- SD, 55 +/- 12 years) with overweight (body mass index (BMI), 34.5 +/- 4.8) and moderate or severe OSAS (Apnea-Hypopnea Index, 41.7 +/- 20.9) scheduled for CPAP prescription were randomized to a control group (CPAP and advice on the association between weight and OSAS) or an experimental group (CPAP and a 6-month behavioral medicine intervention targeting PA and EB). At baseline and after 6 months, eating behavior (food frequency screening and Dutch Eating Behavior Questionnaire), weight, BMI, and waist circumference were assessed at one point, while PA and sedentary time were measured with accelerometry during 4 days. RESULTS: The experimental group reduced 2.1 kg (+/-4.6) in weight and 3 cm (+/-4.9) in waist circumference, significantly more than the control group. At 6 months, the experimental group ate more fruit and fish/shellfish than the control group. Low and moderate to vigorous PA did not change over time either within or between groups. Regarding BMI, steps, and sedentary time, there were within-group differences but no differences between groups. CONCLUSIONS: The behavioral medicine intervention did not change physical activity but facilitated changes in EB in patients with OSAS and overweight. The amount of weight loss and reduction in waist circumference favored the participants receiving this treatment. Since the strategies for achieving behavioral changes were tailored according to the individual's goals and personal functional behavioral analyses and progressed slowly in a graded manner, it might require higher PA quotas or a period longer than 6 months to reveal a behavioral change of larger proportions.

Helgeson, Vicki S.; Lopez, Lindsey C.; Kamarck, Thomas (2009):

Peer relationships and diabetes: retrospective and ecological momentary assessment approaches.

In: *Health Psychol* 28 (3), S. 273–282. DOI: 10.1037/a0013784.

Abstract:

OBJECTIVE\r\nTo examine the association of positive and negative aspects of friendship to psychological well-being, self-care behavior, and blood glucose control and to determine whether these relations were moderated by gender.\r\nDESIGN\r\nAdolescents with Type 1 diabetes (n = 76) completed baseline measures of friendship quality, depressive symptoms, and self-care. A measure of metabolic control was obtained from medical records. Adolescents also tested blood glucose periodically over the course of 4 days and completed ecological momentary assessments of interpersonal interactions and mood using PDAs.\r\nMAIN OUTCOME MEASURES\r\nFor between-groups analyses, primary outcomes were depressive symptoms, self-care behavior, and metabolic control. For within-groups analyses, primary outcomes were mood and blood glucose.\r\nRESULTS\r\nResults showed baseline reports of peer conflict but not support were associated with outcomes, particularly among girls. Conflict was more strongly related to poor metabolic control for girls than boys. Momentary interaction enjoyment and interaction upset were associated with mood, but were unrelated to blood glucose. Aggregate indices of enjoyable interactions were associated with fewer depressive symptoms and better self-care-especially among girls.\r\nCONCLUSIONS\r\nThese results suggest that the positive and negative aspects of peer relationships are related to the psychological well-being and physical health of adolescents with diabetes.

Hemmink, Gerrit J. M.; Weusten, Bas L A M; Bredenoord, Albert J.; Timmer, Robin; Smout, André J P M (2009):

Aerophagia: excessive air swallowing demonstrated by esophageal impedance monitoring.

In: *Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association* 7 (10), S. 1127–1129. DOI: 10.1016/j.cgh.2009.06.029.

Abstract:

BACKGROUND & AIMS\r\nPatients with aerophagia suffer from the presence of an excessive volume of intestinal gas, which is thought to result from excessive air ingestion. However, this has not been shown thus far. The aim of this study was therefore to assess swallowing and air swallowing frequencies in patients with suspected aerophagia.\r\nMETHODS\r\nAmbulatory 24-hour pH-impedance monitoring was performed in patients in whom excessive amounts of intestinal gas were visualized on plain abdominal radiograms. All patients had symptoms of bloating, abdominal distention, flatulence, or excessive belching. Reflux parameters and the number of swallows and air swallows were assessed.\r\nRESULTS\r\nThe most common symptoms were bloating, abdominal distention, and constipation. Only 3 patients reported excessive belching and 1 patient reported flatulence as their predominant symptom. During the 24-hour measurement, patients showed high incidences of air swallows (521 +/- 63) and gastric belches (126 +/- 37). Patients had normal swallowing frequency (741 +/- 71).\r\nCONCLUSIONS\r\nThis study

presents objective parameters that confirm the existence of excessive air swallowing or aerophagia using esophageal impedance monitoring.

Hendrick, P.; Bell, M. L.; Bagge, P. J.; Milosavljevic, S. (2009):

Can accelerometry be used to discriminate levels of activity?

In: *Ergonomics* 52 (8), S. 1019–1025. DOI: 10.1080/00140130902846464.

Abstract:

The aims of this study were to investigate the associations between an activity logbook and the RT3 accelerometer and to assess whether the RT3 can discriminate activity levels in healthy adults. Ten participants completed two trials wearing an RT3 accelerometer over a 4-6 h period and completed a detailed activity log. Results showed a poor correlation between the RT3 in moderate activities (r = 0.22) in comparison to low (r = 0.52) and hard (r = 0.70) from the logbook. A significant difference was found in average RT3 vector magnitude (VM) counts/min in each activity level ($p < 0.0001$). Discriminant analysis demonstrated that an RT3VM counts/min value of approximately 500 was found to have high sensitivity (88%), and specificity (88%) for discriminating between low and moderate activity levels from the logbook. This study found that accelerometry has the potential to discriminate activity levels in free living. This study is the first to investigate whether tri-axial accelerometry can discriminate different levels of free-living activity recorded in an activity logbook. The RT3 accelerometer can discriminate between low and moderate physical activities and offers a methodology that may be applicable to future research in occupational settings.

Hendriks, Martijn; Ludwigs, Kai; Veenhoven, Ruut (2014):

Why are locals happier than internal migrants? The role of daily life.

In: *Social Indicators Research*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-57850-001%26site%3dehost-live.

Abstract:

Several survey studies have found that internal migrants report lower levels of happiness than locals, even after accounting for socio-economic factors. Traditional global self-ratings reveal that the migrant–local happiness-gap is also present in the data we present. The reasons for the migrant–local happiness-gap are as yet unclear. This paper aims to open this 'black box' by exploring the role of daily activities among a population that has generally been overlooked despite their high migration frequency: young adults. An innovative smartphone application is used that combines two techniques for multiple moment assessment: the experience sampling method and the day reconstruction method. Based on the application data, we examine whether internal migrants spend their time differently than locals and in which situations they feel noticeably less happy than locals. The data reveal that internal migrants distribute less time to happiness-producing activities such as active leisure, social drinking/parties, and activities outside home/work/transit. Internal migrants feel less happy than locals when spending time with friends and while eating. Possible explanations focusing on the role of social capital are discussed. Further analyses reveal that daily life experiences greatly enhance the explanation of the migrant–local happiness-gap. This paper demonstrates the potential value of real-time data and phone applications in solving happiness puzzles. (PsycINFO Database Record (c) 2015 APA, all rights reserved). (journal abstract)

Hendrix, Yvonne; Reelick, Miriam F.; van Mierlo, Patricia; Rikkert, Marcel Olde (2012):

Activity in older people with and without a major depressive disorder.

In: *International Journal of Geriatric Psychiatry* 27 (4). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-06543-013&site=ehost-live.

Abstract:

Psychomotor disturbances are an essential feature of major depressive disorders. Many studies have been carried out to investigate these psychomotor disturbances, except in the geriatric population. This may be caused by their frailty and intrinsic problems in including depressive geriatric subjects in studies that ask compliance to protocols that require physical activity, for which depressive subjects are often not motivated. In the present pilot study, we compared the physical activity in patients with a major depressive disorder (DSM-IV), before and after treatment with a Selective Serotonin Reuptake Inhibitor, with older subjects without an affective disorder as controls. Similar to younger patients, there is less activity in patients with a major

depressive disorder, compared with controls. Although depressive symptoms improve after treatment with a Selective Serotonin Reuptake Inhibitor, there was no improvement in activity. The use of an accelerometer in the geriatric depressed population is complicated: it encountered low acceptance. A proper validation study in a larger subject sample is warranted for confirmation. Next, older depressed patients probably need specific mobility training and activation during antidepressive drug treatment to sufficiently regain their former activity level and prevent sarcopenia and malnutrition. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Henriques-Forsythe, Marshaleen N.; Ivonye, Chinedu C.; Jamched, Uma; Kamuguisha, Lois Kemilembe K.; Olejeme, Kelechukwu A.; Onwuanyi, Anekwe E. (2009):

Is telemetry overused? Is it as helpful as thought?

In: *Cleveland Clinic journal of medicine* 76 (6), S. 368–372. DOI: 10.3949/ccjm.76a.07260.

Abstract:

Cardiac telemetry is widely used in hospitals, but it is expensive and labor-intensive. Therefore, it should be used only in those most likely to benefit. The authors review the available evidence and offer their recommendations.

Henry, Brook L.; Minassian, Arpi; Young, Jared W.; Paulus, Martin P.; Geyer, Mark A.; Perry, William (2010):

Cross-species assessments of motor and exploratory behavior related to bipolar disorder.

In: *Neuroscience and Biobehavioral Reviews* 34 (8), S. 1296–1306.

Abstract:

Alterations in exploratory behavior are a fundamental feature of bipolar mania, typically characterized as motor hyperactivity and increased goal-directed behavior in response to environmental cues. In contrast, abnormal exploration associated with schizophrenia and depression can manifest as prominent withdrawal, limited motor activity, and inattention to the environment. While motor abnormalities are cited frequently as clinical manifestations of these disorders, relatively few empirical studies have quantified human exploratory behavior. This article reviews the literature characterizing motor and exploratory behavior associated with bipolar disorder and genetic and pharmacological animal models of the illness. Despite sophisticated assessment of exploratory behavior in rodents, objective quantification of human motor activity has been limited primarily to actigraphy studies with poor cross-species translational value. Furthermore, symptoms that reflect the cardinal features of bipolar disorder have proven difficult to establish in putative animal models of this illness. Recently, however, novel tools such as the Human Behavioral Pattern Monitor provide multivariate translational measures of motor and exploratory activity, enabling improved understanding of the neurobiology underlying psychiatric disorders.

Hensel, D. J.; Harezlak, J.; Craig, D.; Fortenberry, J. D. (2012):

The feasibility of cell phone based electronic diaries for STI/HIV research.

In: *BMC.Med.Res Methodol.* 12 (1), S. 75. DOI: 10.1186/1471-2288-12-75.

Abstract:

ABSTRACT: BACKGROUND: Self-reports of sensitive, socially stigmatized or illegal behavior are common in STI/HIV research, but can raise challenges in terms of data reliability and validity. The use of electronic data collection tools, including ecological momentary assessment (EMA), can increase the accuracy of this information by allowing a participant to self-administer a survey or diary entry, in their own environment, as close to the occurrence of the behavior as possible. In this paper, we evaluate the feasibility of using cell phone-based EMA as a tool for understanding sexual risk and STI among adult men and women. METHODS: As part of a larger prospective clinical study on sexual risk behavior and incident STI in clinically recruited adult men and women, using study-provided cell phones, participants (N= 243) completed thrice daily EMA diaries monitoring individual and partner-specific emotional attributes, non-sexual activities, non-coital or coital sexual behaviors, and contraceptive behaviors. Using these data, we assess feasibility in terms of participant compliance, behavior reactivity, general method acceptability and method efficacy for capturing behaviors. RESULTS: Participants were highly compliant with diary entry protocol and schedule: over the entire 12 study weeks, participants submitted 89.7% (54,914/61,236) of the expected diary entries, with an average of 18.86 of the 21 expected diaries (85.7%) each week. Submission did not differ substantially across gender, race/ethnicity and baseline sexually transmitted infection status. A sufficient volume and range of sexual behaviors were captured, with reporting trends in different legal and illegal behaviors showing small variation over time. Participants found the

methodology to be acceptable, enjoyed and felt comfortable participating in the study. CONCLUSION: Achieving the correct medium of data collection can drastically improve, or degrade, the timeliness and quality of an individual's self-reported sexual risk behavior, which in turn, is a key factor in the success of intervention or education programs relying on this information. Our findings demonstrate that completion of electronic diaries via cellular phone is feasible way to describe STI/HIV risk among clinically recruited adult men and women

Heo, Jaesung; Chun, Mison; Lee, Ki Young; Oh, Young-Taek; Noh, O. Kyu; Park, Rae Woong (2013):

Effects of a smartphone application on breast self-examination: a feasibility study.

In: *Healthc Inform Res* 19 (4), S. 250–260. DOI: 10.4258/hir.2013.19.4.250.

Abstract:

OBJECTIVES: The aims of this study were to develop a smartphone application to encourage breast self-examination (BSE), and to evaluate the effects of this application in terms of modifying BSE behavior. METHODS: A smartphone application, based on the Android OS, was developed with functions including a BSE date alarm, a reminder to encourage mother and daughter to practice BSE together, record keeping, and educational content with video clips. Females aged 19 and over were enrolled to evaluate the effectiveness of the application. Two series of questionnaires were carried out (before and after use of the application) by e-mail, telephone, and face-to-face interviews between July and September 2012. RESULTS: Forty-five subjects were enrolled in the study (age 29.5-5.9 years). Of the participants, only 28 (62.2%) had ever practiced BSE and only one of these (2.2%) was carried out at the appropriate time, based on the results of the baseline survey. After using the application, the number of participants practicing BSE increased from 28 to 32 (62.2% to 71.1%, p = 0.503). In subgroup analysis (age < 30 years), the number of participants using BSE increased from 8 to 18 (36.4% to 81.8%, p = 0.002), and the number of those using it at the appropriate time rose from 1 to 15 (2.2% to 33.3%, p < 0.001). CONCLUSIONS: The use of the developed smartphone application increased BSE in females younger than 30 years. To confirm the long-term benefits of the mobile application, additional studies must be carried out.

Heo, Jinmoo; Kim, Junhyoung; Kim, Byung-Gook; Heo, Seongmoo (2014):

Weekend Experiences and Subjective Well-being of Retired Older Adults.

In: *Am J Health Behav* 38 (4), S. 598–604. DOI: 10.5993/AJHB.38.4.13.

Abstract:

OBJECTIVES: To examine how involvement in activities is related to subjective well-being (SWB) among older adults in particular during weekends. To explore the situational and behavioral factors such as day of week, type of activities, and social context and their impact on subjective well being of older adults. METHODS: The experience sampling method (ESM) was used with retired older adults. RESULTS: Participants reported lower levels of SWB on the weekend. They experienced higher levels of SWB when they were engaged in active leisure on the weekend. Social contexts were significant predictors of older adults' SWB on the weekend. CONCLUSION: These findings extend the body of knowledge that involvement in active leisure and socializing with friends improve SWB of older adults.

Heo, Jinmoo; Lee, Youngkhill; Pedersen, Paul M.; McCormick, Bryan P. (2010):

Flow experience in the daily lives of older adults: an analysis of the interaction between flow, individual differences, serious leisure, location, and social context.

In: *Canadian journal on aging = La revue canadienne du vieillissement* 29 (3), S. 411–423. DOI: 10.1017/S0714980810000395.

Abstract:

This study examined how serious leisure, individual differences, social context, and location contribute to older adults' experiences of flow - an intense psychological state - in their daily lives. The Experience Sampling Method was used with 19 older adults in a Midwestern city in the United States. Experience of flow was the outcome measure, and the data were analyzed using hierarchical linear modeling. Results indicated that location and employment status influenced the subjects' flow experience. Furthermore, the findings revealed that retirement was negatively related to experiencing flow, and there was a significant association between home and the flow experience. The results of this study enhance the understanding of flow experiences in the everyday lives of older adults.

Hermida, Ramón C.; Ayala, Diana E.; Smolensky, Michael H.; Portaluppi, Francesco (2007):

Chronotherapy in hypertensive patients: administration-time dependent effects of treatment on blood pressure regulation.

Abstract:

Ambulatory blood pressure measurements (ABPM) correlate more closely with target organ damage and cardiovascular events than clinical cuff measurements. ABPM reveals the significant circadian variation in BP, which in most individuals presents a morning increase, small post-prandial decline, and more extensive lowering during nocturnal rest. However, under certain pathophysiological conditions, the nocturnal BP decline may be reduced (nondipper pattern) or even reversed (riser pattern). This is clinically relevant since the nondipper and riser circadian BP patterns constitute a risk factor for left ventricular hypertrophy, microalbuminuria, cerebrovascular disease, congestive heart failure, vascular dementia and myocardial infarction. Hence, there is growing interest in how to best tailor and individualize the treatment of hypertension according to the circadian BP pattern of each patient. Significant administration-time differences in the kinetics and in the beneficial and adverse effects of antihypertensive medications are well known. Thus, bedtime dosing with nifedipine gastrointestinal therapeutic system (GITS) is more effective than morning dosing, while also significantly reducing adverse effects. The therapeutic coverage and efficacy of doxazosin GITS are dependent on the circadian time of drug administration. Moreover, valsartan administration at bedtime, as opposed to upon wakening, results in an improved diurnal/nocturnal BP ratio, increased percentage of controlled patients, and significant reduction in urinary albumin excretion in hypertensive patients. Chronotherapy provides a means of individualizing the treatment of hypertension according to the circadian BP profile of each patient, and constitutes a new option to optimize BP control and reduce the risk of cardiovascular disease.

Hermida, Ramón C.; Ayala, Diana E.; Fernández, José R.; Mojón, Artemio; Calvo, Carlos (2007):

Influence of measurement duration and frequency on ambulatory blood pressure monitoring.

In: *Revista Española de Cardiología (English Edition)* 60 (2), S. 131–138.

Abstract:

INTRODUCTION AND OBJECTIVES:

Most studies of ambulatory blood pressure monitoring have involved taking measurements every 15-30 minutes over a 24-hour period. We investigated the effect of measurement duration and frequency on the diagnostic blood pressure values obtained by ambulatory monitoring.

METHODS:

The study involved 1450 hypertensive patients and a control group of 378 normotensive volunteers. Blood pressure was measured at 20-minute intervals from 07:00 to 23:00 and at 30-minute intervals at night for 48 consecutive hours. Data were subdivided in such a way as to generate different series of data that were collected at 1-, 2-, 3-, or 4-hour intervals over the 48-hour period. In addition, two data series at the original measurement frequency were derived for the first and second 24-hour periods. The correspondence between the mean blood pressure values derived from the original data series and those from the different subdivided data series was assessed.

RESULTS:

Variability in the estimated mean blood pressure increased progressively as the measurement frequency decreased: the error range grew from 11 mmHg for hourly data to 28 mmHg for 4-hourly data. The error range was even greater (i.e., 36 mmHg) for data divided into 24-hour series at the original sampling rate.

CONCLUSIONS:

This study demonstrates that the reproducibility of mean blood pressure values depends more on measurement duration than measurement frequency. The findings indicate that monitoring blood pressure for only 24 hours may be insufficient for diagnosing hypertension, identifying a dipper circadian pattern, or assessing treatment efficacy.

Hermida, Ramón C.; Ayala, Diana E.; Fernández, José R.; Calvo, Carlos (2008):

Chronotherapy improves blood pressure control and reverts the nondipper pattern in patients with resistant hypertension.

In: *Hypertension* 51 (1), S. 69–76.

Abstract:

Therapeutic strategies in resistant hypertension include adding another drug or changing drugs in search for a better synergic combination. Most patients, however, receive all of their drugs in a single morning dose. We have evaluated the impact on the circadian pattern of blood pressure on modifying the time of treatment without increasing the number of prescribed drugs. We studied 250 hypertensive patients who were receiving 3 antihypertensive drugs in a single morning dose. Patients were randomly assigned to 1 of 2 groups according to the modification in their treatment strategy: changing 1 of the drugs but keeping all 3 in the morning or the same approach but administering the new drug at bedtime. Blood pressure was measured for 48 hours before and after 12 weeks of treatment. There was no effect on ambulatory blood pressure when all of the drugs were taken on awakening. The baseline prevalence of nondipping (79%) was slightly increased after treatment (86%; P=0.131). The ambulatory blood pressure reduction was statistically significant (9.4/6.0 mm Hg for systolic/diastolic blood pressure; P<0.001) with 1 drug at bedtime. This reduction was larger in the nocturnal than in the diurnal mean of blood pressure. Thus, whereas only 16% of the patients in this group were dippers at baseline, 57% were dippers after therapy (P<0.001). Results indicate that, in resistant hypertension, time of treatment may be more important for blood pressure control and for the proper modeling of the circadian blood pressure pattern than just changing the drug combination.

Hermida, Ramón C.; Ayala, Diana E.; Mojón, Artemio; Fernández, José R. (2010):

Effects of time of antihypertensive treatment on ambulatory blood pressure and clinical characteristics of subjects with resistant hypertension.

In: *Am J Hypertens* 23 (4), S. 432–439. DOI: 10.1038/ajh.2009.260.

Abstract:

BACKGROUND\r\nSubjects with resistant hypertension present high prevalence of a nondipper blood pressure (BP) pattern, associated with increased risk of cardiovascular events. Nondipping is partly related to the absence of 24-h therapeutic coverage in hypertensives treated with single morning doses.\r\nMETHODS\r\nWe studied the impact of treatment time on ambulatory BP and clinical characteristics of 1,794 subjects with resistant hypertension, categorized according to the time of treatment (either ingesting all antihypertensive medications upon awakening, or > or =1 drug at bedtime). BP was measured for 48 consecutive hours, and physical activity was simultaneously monitored every minute by wrist actigraphy.\r\nRESULTS\r\nThe percentage of controlled subjects was higher among those taking medication at bedtime (P < 0.001). Among the 1,306 participants with true resistant hypertension, those ingesting > or =1 drug at bedtime showed significantly lower 24-h mean of systolic BP (SBP)/diastolic BP (DBP) (by 4.1/1.5 mm Hg, respectively; P < 0.015). The difference between groups was more prominent in asleep BP (9.7/4.4 mm Hg, P < 0.001). The awake/asleep BP ratio was significantly higher by 5.8% (P < 0.001) and the prevalence of nondipping lower from 83 to 40% (P < 0.001) in subjects receiving bedtime treatment. This latter group also showed significant lower mean values of glucose, total cholesterol, low-density lipoprotein-cholesterol, fibrinogen, and urinary albumin excretion.\r\nCONCLUSIONS\r\nIn resistant hypertension, pharmacological therapy should take into account when to treat with respect to the rest-activity cycle of each subject. Bedtime treatment was associated with greater clinic and ambulatory BP control, lower prevalence of a high-risk nondipper pattern, and lower values of relevant clinical markers of cardiovascular risk.

Hermida, R. C.; Ayala, D. E.; Fontao, M. J.; Mojon, A.; Fernandez, J. R. (2012):

Ambulatory Blood Pressure Monitoring: Importance of Sampling Rate and Duration-48 Versus 24 Hours-on the Accurate Assessment of Cardiovascular Risk.

In: *Chronobiol.Int.* (0742-0528 (Linking)). DOI: 10.3109/07420528.2012.701457.

Abstract:

Independent prospective studies have found that ambulatory blood pressure (BP) monitoring (ABPM) is more closely correlated with target organ damage and cardiovascular disease (CVD) risk than clinic BP measurement. This is based on studies in which BP was sampled every 15-30 min for </=24 h, without taking into account that reproducibility of any estimated parameter from a time series to be potentially used for CVD risk assessment might depend more on monitoring duration than on sampling rate. Herein, we evaluated the influence of duration (48 vs. 24 h) and sampling rate of BP measurements (form every 20-30 min up to every 2 h) on the prognostic value of ABPM-derived parameters. We prospectively studied 3344 subjects (1718 men/1626 women), 52.6 +/- 14.5 yrs of age, during a median follow-up of 5.6 yrs. Those with hypertension at baseline were randomized to ingest all their prescribed hypertension medications upon awakening or >/=1 of them at bedtime. At baseline, BP was measured at 20-min intervals from 07:00 to 23:00 h and at 30-min intervals at night for 48 h, and physical activity was simultaneously monitored every min by wrist actigraphy to accurately derive the awake and asleep BP means. Identical assessment was scheduled annually and more frequently (quarterly) if treatment adjustment was required. ABPM profiles were modified to generate time series of identical 48-h duration but with data sampled at 1- or 2-h intervals, or shorter, i.e., first 24 h, time series with data sampled at the original rate (daytime 20-min intervals/nighttime 30-min intervals). Bland-Altman plots indicated that

the range of individual differences in the estimated awake and asleep systolic (SBP) and diastolic BP (DBP) means between the original and modified ABPM profiles was up to 3-fold smaller for data sampled every 1 h for 48 h than for data sampled every 20-30 min for the first 24 h. Reduction of ABPM duration to just 24 h resulted in error of the estimated asleep SBP mean, the most significant prognostic marker of CVD events, in the range of -21.4 to +23.9 mm Hg. Cox proportional-hazard analyses adjusted for sex, age, diabetes, anemia, and chronic kidney disease revealed comparable hazard ratios (HRs) for mean BP values and sleep-time relative BP decline derived from the original complete 48-h ABPM profiles and those modified to simulate a sampling rate of one BP measurement every 1 or 2 h. The HRs, however, were markedly overestimated for SBP and underestimated for DBP when the duration of ABPM was reduced from 48 to only 24 h. This study on subjects evaluated prospectively by 48-h ABPM documents that reproducibility in the estimates of prognostic ABPM-derived parameters depends markedly on duration of monitoring, and only to a lesser extent on sampling rate. The HR of CVD events associated with increased ambulatory BP is poorly estimated by relying on 24-h ABPM, indicating ABPM for only 24 h may be insufficient for proper diagnosis of hypertension, identification of dipping status, evaluation of treatment efficacy, and, most important, CVD risk stratification. (Author correspondence: rhermida@uvigo.es)

Hermida, R. C.; Ayala, E.; Mojón, A.; Fernández (2013):

Blunted sleep-time relative blood pressure decline increases cardiovascular risk independent of blood pressure level—The 'normotensive non-dipper' paradox.

In: *Chronobiology International* 30 (1-2), S. 87–98. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-06540-008%26site%3dehost-live;rhermida@uvigo.es.

Abstract:

Numerous studies have consistently shown an association between blunted sleep-time relative blood pressure (BP) decline (non-dipping) and increased cardiovascular disease (CVD) risk in hypertension. Normotensive persons with a non-dipper BP profile also have increased target organ damage, namely, increased left ventricular mass and relative wall thickness, reduced myocardial diastolic function, increased urinary albumin excretion, increased prevalence of diabetic retinopathy, and impaired glucose tolerance. It remains a point of contention, however, whether the non-dipper BP pattern or just elevated BP, alone, is the most important predictor of advanced target organ damage and future CVD events. Accordingly, we investigated the role of dipping status and ambulatory BP level as contributing factors for CVD morbidity and mortality in the MAPEC (Monitorización Ambulatoria para Predicción de Eventos Cardiovasculares, i.e., Ambulatory Blood Pressure Monitoring for Prediction of Cardiovascular Events) study. We prospectively studied 3344 individuals (1718 men/1626 women), 52.6 ± 14.5 (mean ± SD) yrs of age, during a median follow-up of 5.6 yrs. BP was measured by ambulatory monitoring (ABPM) for 48 h at baseline, and again annually or more frequently (quarterly) if treatment adjustment was required in treated hypertensive patients. At baseline, those with ABPM-substantiated hypertension were randomized to one of two treatment-time regimen groups: (i) ingestion of all prescribed hypertension medications upon awakening or (ii) ingestion of the entire dose of ≥1 of them at bedtime. Those found to be normotensive at baseline were untreated but followed and evaluated by repeated ABPM like the hypertensive patients. Participants were divided into four investigated categories on the basis of dipping status and ambulatory BP: (i) dipper vs. non-dipper, and (ii) normal ambulatory BP if the awake systolic (SBP)/diastolic (DBP) BP means were <135/85 mm Hg and the asleep SBP/DBP means were <120/70 mm Hg, and elevated ambulatory BP otherwise. Cox survival analyses, adjusted for significant confounding variables, documented that non-dippers had significantly higher CVD risk than dippers, whether they had normal ($p = .017$) or elevated ambulatory BP ($p < .001$). Non-dippers with normal awake and asleep SBP and DBP means, who accounted for 21% of the studied population, had similar hazard ratio (HR) of CVD events (1.61 [95% confidence interval, CI: 1.09-2.37]) as dippers with elevated ambulatory BP (HR: 1.54 [95% CI: 1.01-2.36]; $p = .912$ between groups). These results remained mainly unchanged for treated and untreated patients analyzed separately. Our findings document that the risk of CVD events is influenced not only by ambulatory BP elevation, but also by blunted nighttime BP decline, even within the normotensive range, thus supporting ABPM as a requirement for proper CVD risk assessment in the general population. The elevated CVD risk in "normotensive" individuals with a non-dipper BP profile represents a clear paradox, as those persons do not have "normal BP" or low CVD risk. Our findings also indicate the need to redefine the concepts of normotension/hypertension, so far established on the unique basis of BP level, mainly if not exclusively measured at the clinic, independently of circadian BP pattern.

Hermida, R. C.; Ayala, D. E.; Mojon, A.; Smolensky, M. H.; Portaluppi, F.; Fernandez, J. R. (2014):

Sleep-time ambulatory blood pressure as a novel therapeutic target for cardiovascular risk reduction.

In: *J Hum Hypertens. DOI:* 10.1038/jhh.2014.1.

Abstract:

Diagnosis of hypertension and clinical decisions regarding its treatment are typically based upon daytime clinic blood pressure (BP) measurements, occasionally supplemented by wake-time patient self-assessment. Yet, correlation between BP level and target organ damage, cardiovascular disease (CVD) risk, and long-term prognosis is higher for ambulatory BP monitoring (ABPM) measurements. Numerous studies consistently reveal CVD events are better predicted by the asleep than awake or 24 h BP means. In addition, when the asleep BP mean is adjusted by the awake mean, only the former is a significant independent predictor of outcome. Endogenous circadian rhythms explain statistically and clinically significant ingestion time differences in efficacy, duration of action, safety and/or effects on the daily BP pattern of most hypertension medications and their combinations. Bedtime versus morning-time ingestion of angiotensin-converting enzyme inhibitors or angiotensin receptor blockers, independent of drug terminal half-life, both better reduces asleep BP and normalizes the daily BP profile into a more normal dipper pattern. The recently completed prospective outcome MAPEC Study verifies therapeutic restoration of the normal sleep-time BP decline, a novel therapeutic goal most effectively achieved by ingestion of the entire daily dose of >/=1 conventional hypertension medications at bedtime, best decreases CVD morbidity and mortality. Our findings indicate around-the-clock ABPM is a clinical necessity to accurately detect abnormal sleep-time BP and assess CVD risk, and that hypertension ought to be managed by a bedtime therapeutic strategy, preferably one including medication that antagonizes the activities and actions of the renin-angiotensin-aldosterone system.Journal of Human Hypertension advance online publication, 6 February 2014; doi:10.1038/jhh.2014.1.

Hernández-Del Rey, Raquel; Martin-Baranera, Montserrat; Sobrino, Javier; Gorostidi, Manuel; Vinyoles, Ernest; Sierra, Cristina et al. (2007):

Reproducibility of the circadian blood pressure pattern in 24-h versus 48-h recordings: the Spanish Ambulatory Blood Pressure Monitoring Registry.

In: *J Hypertens* 25 (12), S. 2406–2412. DOI: 10.1097/HJH.0b013e3282effed1.

Abstract:

OBJECTIVES\r\nTo assess the reproducibility of the circadian blood pressure (BP) pattern over a 48-h period by comparing the first 24 h of ambulatory blood pressure monitoring (ABPM) with the following 24 h and with the mean over 48 h.\r\nPATIENTS AND METHODS\r\nPatients undergoing 48-h ABPM within the National ABPM Registry of the Spanish Society of Hypertension, based on 800 Spacelabs 90207 monitors distributed throughout Spain in hypertension units and primary healthcare centres, were included. Between June 2004 and September 2005, 611 valid 48-h ABPM recordings were obtained, 235 corresponded to patients without antihypertensive treatment.\r\nRESULTS\r\nThe percentages of patients classified as non-dipper for the first 24 h, the second 24 h and the 48-h average were 47, 50 and 48%, respectively. When the first and second 24-h periods were compared, 147 (24%) subjects switched from dipper (D) to non-dipper (ND) or vice-versa. When the first 24-h period was compared to the 48-h average, 66 (11%) subjects switched patterns. The proportions were similar separately for systolic blood pressure (SBP) and diastolic blood pressure (DBP) and between treated and untreated patients. In subjects with poor ABPM reproducibility, night-to-day ratios were of an intermediate value between those of subjects always classified as D or ND.\r\nCONCLUSION\r\nCategorization of D or ND based on a single 24-h ABPM is moderately reproducible, since one out of every five patients change profile over the following 24 h. Nevertheless, the use of 48-h ABPM in clinical practice should be assessed according to cost-effectiveness criteria. Night-to-day ratios may be helpful in identifying patients with a stable profile.

Heron, Kristin E. (2012):

Ecological momentary intervention {emi}: Incorporating mobile technology into a disordered eating treatment program for college women.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (10-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99080-236&site=ehost-live.

Abstract:

Psychosocial and health behavior treatments can be extended beyond research and clinical settings by using mobile technology to provide Ecological Momentary Interventions [EMI] to individuals as they go about their daily lives. This study integrates the assessment (i.e., Ecological Momentary Assessment; EMA) and intervention (i.e., EMI) capacities of palmtop computers to provide individually tailored EMI to participants in real time. The feasibility and efficacy of using EMI to augment a disordered eating treatment intervention for college women was evaluated. Participants were randomized to view psychoeducational videos on a computer (attention control), complete an interactive CD-ROM-based intervention aimed at reducing body dissatisfaction and disordered eating behaviors (CD), or receive the CD-ROM supplemented with EMI (CD+EMI). The content and timing of EMI was individually tailored in real time and provided on palmtop computers for one week following the CD intervention. Very high compliance rates with the EMA/EMI protocol were demonstrated and women were generally satisfied with the intervention,

suggesting it is feasible to implement tailored EMI. An evaluation of treatment efficacy revealed the computerized CD-ROM intervention did not reliably produce significant improvements in body-related constructs and there was no unique or added benefit of EMI. This study was innovative in that it used palmtop computers to combine ambulatory assessment and intervention strategies to provide tailored and contextually sensitive EMI. As such, it adds to the relatively young, but growing EMI literature by identifying challenges and opportunities for ambulatory assessment and intervention methods in psychosocial and health behavior treatments. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Heron, Kristin E.; Scott, Stacey B.; Sliwinski, Martin J.; Smyth, Joshua M. (2014):

Eating behaviors and negative affect in college women's everyday lives.

In: *Int J Eat Disord. DOI:* 10.1002/eat.22292.

Abstract:

OBJECTIVE: A growing body of research seeks to understand the relationship between mood and eating behaviors. Ecological Momentary Assessment (EMA) methods provide a method for assessing these processes in natural settings. We used EMA to examine the relationship between mood and eating behaviors in everyday life among women with subclinical disordered eating behaviors. METHOD: Participants (N = 127, age M = 19.6 years, BMI M = 25.5) completed five daily EMA reports on palmtop computers for 1 week. Assessments included measures of negative affect (NA) and eating-related behavior during eating (eating large amounts of food, loss of control over eating, and restricting food intake) and noneating episodes (skip eating to control weight/shape). Time-lagged multilevel models tested mood-eating behavior relationships. RESULTS: Higher NA did not precede any unhealthy eating and weight control behaviors. However, NA was higher when women reported eating large quantities of food, losing control over eating, and restricting food intake during their most recent eating episode, but not after skipping eating to control weight/shape. DISCUSSION: These findings elucidate the processes in daily life that may influence the development and maintenance of unhealthy eating and weight control behaviors that, in turn, can inform interventions. (c) 2014 Wiley Periodicals, Inc. (Int J Eat Disord 2014).

Heron, Kristin E.; Smyth, Joshua M. (2010):

Ecological momentary interventions: incorporating mobile technology into psychosocial and health behaviour treatments.

In: *British Journal of Health Psychology* 15 (Pt 1), S. 1–39. DOI: 10.1348/135910709X466063.

Abstract:

PURPOSE\r\nPsychosocial and health behaviour treatments and therapies can be extended beyond traditional research or clinical settings by using mobile technology to deliver interventions to individuals as they go about their daily lives. These ecological momentary interventions (EMIs) are treatments that are provided to people during their everyday lives (i.e. in real time) and in natural settings (i.e. real world). The goal of the present review is to synthesize and critique mobile technology-based EMI aimed at improving health behaviours and psychological and physical symptoms.\r\nMETHODS\r\nTwenty-seven interventions using palmtop computers or mobile phones to deliver ambulatory treatment for smoking cessation, weight loss, anxiety, diabetes management, eating disorders, alcohol use, and healthy eating and physical activity were identified.\r\nRESULTS\r\nThere is evidence that EMI can be successfully delivered, are accepted by patients, and are efficacious for treating a variety of health behaviours and physical and psychological symptoms. Limitations of the existing literature were identified and recommendations and considerations for research design, sample characteristics, measurement, statistical analyses, and clinical implementation are discussed.\r\nCONCLUSIONS\r\nMobile technology-based EMI can be effectively implemented as interventions for a variety of health behaviours and psychological and physical symptoms. Future research should integrate the assessment and intervention capabilities of mobile technology to create dynamically and individually tailored EMI that are ecologically sensitive.

Heron, Kristin E.; Smyth, Joshua M. (2013):

Is intensive measurement of body image reactive? A two-study evaluation using Ecological Momentary Assessment suggests not.

In: *Body Image* 10 (1), S. 35–44. DOI: 10.1037/t13685-000;

Abstract:

Intensive assessment methods (e.g., Ecological Momentary Assessment [EMA]) are increasingly used to capture body image experiences in daily life. One concern with EMA is multiple assessments may increase reactivity to internal or external cues, potentially biasing measurement. Reactivity to EMA was evaluated in two studies (Study 1: N = 63 female undergraduates, Study 2: N = 131 women with high body dissatisfaction/disordered eating). Participants completed five daily surveys on handheld computers for 1–2 weeks and body image-related questionnaires at the start and end of each study. Results showed no systematic changes in pre- and post-EMA measures or momentary EMA reports, suggesting women were not reactive to the EMA protocols. Completing 1–2 weeks of EMA does not appear to affect body dissatisfaction, mood, or attitudes in non-clinical or at-risk samples of women. These studies provide evidence that EMA methods can be used to assess real-world body image experiences without undue concern about measurement reactivity. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Herrera, Socrates; Vallejo, Andres F.; Quintero, Juan P.; Arevalo-Herrera, Myriam; Cancino, Marcela; Ferro, Santiago (2014):

Field evaluation of an automated RDT reader and data management device for Plasmodium falciparum/Plasmodium vivax malaria in endemic areas of Colombia.

In: *Malar J* 13 (1), S. 87. DOI: 10.1186/1475-2875-13-87.

Abstract:

BACKGROUND: Massive implementation of malaria diagnostics in low-resource countries is regarded as a pivotal strategy in control and elimination efforts. Although malaria rapid diagnostic tests (RDTs) are considered a viable alternative, there are still obstacles to the widespread implementation of this strategy, such as reporting constraints and lack of proper quality assurance of RDT-based programmes at point-of-care (POC). METHODS: A prospective cohort of patients, seeking routine care for febrile episodes at health centres in malaria-endemic areas of Colombia, was used to assess the diagnostic performance of a device based on smartphone technology (Deki ReaderTM, former codename "GenZero"), that assists users at POC to process RDTs. After informed consent, patients were enrolled into the study and blood samples were collected for thick blood smear (TBS) and RDT. The RDT results were interpreted by both visual inspection and Deki Reader device and concordance between visual and device interpretation was measured. Microscopy corrected by real-time polymerase chain reaction (PCR) and microscopy were "gold standard" tests to assess the diagnostic performance. RESULTS: In total, 1,807 patients were enrolled at seven health centres in malaria-endemic areas of Colombia. Thirty-three Plasmodium falciparum and 100 Plasmodium vivax cases were positive by corrected microscopy. Both sensitivity and specificity were 93.9% (95% CI 69.7-95.2) and 98.7% (95% CI 98.5-99.4) for P. falciparum, and 98.0% (95% CI 90.3-98.9) and 97.9% (95% CI 97.1-98.5) for P. vivax. Percentage concordance between visual and device interpretation of RDT was 98.5% and 99.0% for P. vivax and P. falciparum, respectively.The RDT, when compared to TBS, showed high sensitivity and specificity for P. falciparum in both visual and device interpretation, and good overall diagnostic performance for P. vivax. Comparison between PCR as gold standard and visual and device interpretation showed acceptable overall performance for both species. CONCLUSIONS: The diagnostic performance of the Deki Reader was comparable to visual interpretation of RDTs (without significant differences) for both malaria species. Providing standardized automated interpretation of RDTs at POC in remote areas, in addition to almost real-time reporting of cases and enabling quality control would greatly benefit large-scale implementation of RDT-based malaria diagnostic programmes.

Hesketh, Kathryn R.; Goodfellow, Laura; Ekelund, Ulf; McMinn, Alison M.; Godfrey, Keith M.; Inskip, Hazel M. et al. (2014):

Activity levels in mothers and their preschool children.

In: *Pediatrics* 133 (4), S. e973-80. DOI: 10.1542/peds.2013-3153.

Abstract:

OBJECTIVES: To investigate the association between objectively measured maternal and preschool-aged children's physical activity, determine how this association differs by demographic and temporal factors, and identify factors associated with maternal activity levels. METHODS: In the UK Southampton Women's Survey, physical activity levels of 554 4-year-olds and their mothers were measured concurrently by using accelerometry for </=7 days. Two-level mixed-effects linear regression was used to model the association between maternal and children's minutes spent sedentary, in light (LPA) and moderate-to-vigorous physical activity (MVPA). Linear regression was used to investigate correlates of maternal activity. RESULTS: Mother-child daily activity levels were positively associated at all activity intensities (sedentary, LPA, and MVPA; all P < .001). The association for sedentary time was stronger for normal-weight children (versus those who were overweight/obese), and those attending preschool part-time (versus full-time). The mother-child association for LPA differed by maternal education and was stronger at the weekend (versus weekdays). The opposite was true for MVPA. Sedentary time and MVPA were most strongly associated in mornings, with LPA most strongly associated in the evenings. Maternal BMI, age leaving school, number and age of children at home, and working hours were independently associated with maternal daily sedentary time and LPA. CONCLUSIONS: Physical

activity levels in mothers and their 4-year-old children are directly associated, with associations at different activity intensities influenced by temporal and demographic factors. Influences on maternal physical activity levels also differ by activity intensity. Providing targeted interventions for mothers of young children may increase both groups' activity.

Hesketh, Kathryn R.; McMinn, Alison M.; Ekelund, Ulf; Sharp, Stephen J.; Collings, Paul J.; Harvey, Nicholas C. et al. (2014):

Objectively measured physical activity in four-year-old British children: a cross-sectional analysis of activity patterns segmented across the day.

In: *Int J Behav Nutr Phys Act* 11, S. 1. DOI: 10.1186/1479-5868-11-1.

Abstract:

BACKGROUND: Little is known about preschool-aged children's levels of physical activity (PA) over the course of the day. Using time-stamped data, we describe the levels and patterns of PA in a population-based sample of four-year-old British children. METHODS: Within the Southampton Women's Survey the PA levels of 593 4-year-old children (51% female) were measured using (Actiheart) accelerometry for up to 7 days. Three outcome measures: minutes spent sedentary (<20 cpm); in light (LPA: >/=20-399 cpm) and in moderate-to-vigorous activity (MVPA: >/=400 cpm) were derived. Average daily activity levels were calculated and then segmented across the day (morning, afternoon and evening). MVPA was log-transformed. Two-level random intercept models were used to analyse associations between activity level and temporal and demographic factors. RESULTS: Children were active for 67% (mean 568.5 SD 79.5 minutes) of their daily registered time on average, with 88% of active time spent in LPA. All children met current UK guidelines of 180 minutes of daily activity. There were no differences in children's average daily levels of sedentary activity and LPA by temporal and demographic factors: differences did emerge when activity was segmented across the day. Sex differences were largest in the morning, with girls being more sedentary, spending fewer minutes in LPA and 18% less time in MVPA than boys. Children were more sedentary and less active (LPA and MVPA) in the morning if they attended childcare full-time compared to part-time, and on weekend mornings compared to weekdays. The reverse was true for weekend afternoons and evenings. Children with more educated mothers were less active in the evenings. Children were less sedentary and did more MVPA on summer evenings compared to winter evenings. CONCLUSIONS: Preschool-aged children meet current physical activity guidelines, but with the majority of their active time spent in LPA, investigation of the importance of activity intensity in younger children is needed. Activity levels over the day differed by demographic and temporal factors, highlighting the need to consider temporality in future interventions. Increasing girls' morning activity and providing opportunities for daytime activity in winter months may be worthwhile.

Hilbert, Anja; Rief, Winfried; Tuschen-Caffier, Brunna; Zwaan, Martina; Czaja, Julia (2009):

Loss of control eating and psychological maintenance in children: an ecological momentary assessment study.

In: *Behav Res Ther* 47 (1), S. 26–33. DOI: 10.1016/j.brat.2008.10.003.

Abstract:

OBJECTIVE\r\nRecent research suggests that binge eating is a common experience in youth. However, it remains largely unknown how children's binge eating presents in everyday life and which psychological factors serve to maintain this binge eating.\r\nMETHODS\r\nChildren aged 8-13 years with binge eating (n=59), defined as at least one episode of loss of control (LOC) over eating within the past three months, and 59 matched children without LOC history were recruited from the community. Following a combined random- and event-sampling protocol, children were interviewed about their day-to-day eating behavior, mood, and eating disorder-specific cognitions using child-specific cell phones during a 4-day assessment period in their natural environment.\r\nRESULTS\r\nLOC episodes led to a significantly greater intake of energy, particularly from carbohydrates, than regular meals of children with and without LOC eating. While LOC episodes were preceded and followed by cognitions about food/eating and body image, there was minimal evidence that negative mood states were antecedents of LOC eating.\r\nCONCLUSIONS\r\nThe results provide support for the construct validity of LOC eating in children. Maintenance theories of binge eating for adults apply to children regarding eating disorder-specific cognitions, but the association with affect regulation difficulties requires further investigation.

Hilgefort, Jordan P.; Fitzpatrick, Sean; Lycans, Dana; Wilson-Byrne, Timothy; Fisher, Chad; Shuler, Franklin D. (2014):

Smartphone medical applications useful for the rural practitioner.

In: *W V Med J* 110 (1), S. 40–44.

Abstract:

Like other similarly situated rural states, West Virginia's patients and practitioners often experience access barriers to current medical expertise for multiple disciplines. This article was generated to help bridge this gap and highlights the best-rated mobile medical applications (Apps) for smartphone use. From finding drug interactions and dosing schedules to discussing patients in HIPAA-compliant formats, Apps are becoming integral to the practice of 21st Century medicine. The increased use of these Apps by physicians-in-training and established practitioners highlights the shift from reliance upon the medical library to the easy to use mobile-based technology platforms. This article provides our practitioners, physician extenders, medical trainees, and office staff a guide to access and assess the utility of some of the best rated medical and HIPAA compliant Apps.

Hill, C. L.; Updegraff, J. A. (2011):

Mindfulness and its relationship to emotional regulation.

In: *Emotion* (1528-3542 (Linking)). DOI: 10.1037/a0026355.

Abstract:

Research on the effectiveness and mechanisms of mindfulness training applied in psychotherapy is still in its infancy (Erisman & Roemer, 2010). For instance, little is known about the extent and processes through which mindfulness practice improves emotion regulation. This experience sampling study assessed the relationship between mindfulness, emotion differentiation, emotion lability, and emotional difficulties. Young adult participants reported their current emotional experiences 6 times per day during 1 week on a PalmPilot device. Based on these reports of emotions, indices of emotional differentiation and emotion lability were composed for negative and positive emotions. Mindfulness was associated with greater emotion differentiation and less emotional difficulties (i.e., emotion lability and self-reported emotion dysregulation). Mediational models indicated that the relationship between mindfulness and emotion lability was mediated by emotion differentiation. Furthermore, emotion regulation mediated the relationship between mindfulness and both negative emotion lability and positive emotion differentiation. This experience sampling study indicates that self-reported levels of mindfulness are related to higher levels of differentiation of one's discrete emotional experiences in a manner reflective of effective emotion regulation. (PsycINFO Database Record (c) 2011 APA, all rights reserved)

Hilliard, Marisa E.; Hahn, Amy; Ridge, Alana K.; Eakin, Michelle N.; Riekert, Kristin A. (2014):

User Preferences and Design Recommendations for an mHealth App to Promote Cystic Fibrosis Self-Management.

In: *JMIR Mhealth Uhealth* 2 (4), S. e44. DOI: 10.2196/mhealth.3599.

Abstract:

BACKGROUND: mHealth apps hold potential to provide automated, tailored support for treatment adherence among individuals with chronic medical conditions. Yet relatively little empirical research has guided app development and end users are infrequently involved in designing the app features or functions that would best suit their needs. Self-management apps may be particularly useful for people with chronic conditions like cystic fibrosis (CF) that have complex, demanding regimens. OBJECTIVE: The aim of this mixed-methods study was to involve individuals with CF in guiding the development of engaging, effective, user-friendly adherence promotion apps that meet their preferences and self-management needs. METHODS: Adults with CF (n=16, aged 21-48 years, 50% male) provided quantitative data via a secure Web survey and qualitative data via semi-structured telephone interviews regarding previous experiences using apps in general and for health, and preferred and unwanted features of potential future apps to support CF self-management. RESULTS: Participants were smartphone users who reported sending or receiving text messages (93%, 14/15) or emails (80%, 12/15) on their smartphone or device every day, and 87% (13/15) said it would be somewhat or very hard to give up their smartphone. Approximately one-half (53%, 8/15) reported having health apps, all diet/weight-related, yet many reported that existing nutrition apps were not well-suited for CF management. Participants wanted apps to support CF self-management with characteristics such as having multiple rather than single functions (eg, simple alarms), being specific to CF, and minimizing user burden. Common themes for desired CF app features were having information at one's fingertips, automation of disease management activities such as pharmacy refills, integration with smartphones' technological capabilities, enhancing communication with health care team, and facilitating socialization within the CF community. Opinions were mixed regarding gamification and earning rewards or prizes. Participants emphasized the need for customization options to meet individual preferences and disease management goals. CONCLUSIONS: Unique capabilities of emerging smartphone technologies (eg, social networking integration, movement and location detection, integrated sensors, or electronic monitors) make many of these requests possible. Involving end users in all stages of mHealth app development and collaborating with technology experts and the health care system may result in apps that maintain engagement, improve integration and automation, and ultimately impact self-management and health outcomes.

Hinkley, T.; O'Connell, E.; Okely, A. D.; Crawford, D.; Hesketh, K.; Salmon, J. (2012):

Assessing Volume of Accelerometry Data for Reliability in Preschool Children.

In: *Med.Sci.Sports Exerc.* (0195-9131 (Linking)). DOI: 10.1249/MSS.0b013e3182661478.

Abstract:

PURPOSE: This study examines what volume of accelerometry data (hours/days) is required to reliably estimate preschool children's physical activity and whether it is necessary to include weekday and weekend data. METHODS: Accelerometry data from 493-799 (depending on wear-time) preschool children from the Melbourne-based Healthy Active Preschool Years study were utilized. Percent of wear-time each child spent in total (light-vigorous) physical activity was the main outcome. Hourly increments of daily data were analyzed. T-tests, controlling for age and clustering by centre of recruitment, assessed differences between weekday and weekend physical activity. Intraclass correlation coefficients estimated reliability for an individual day. Spearman-Brown Prophecy Formula estimated number of days required to reach reliability estimates of 0.7, 0.8 and 0.9. RESULTS: Children spent a significantly greater percent of time being physically active on weekend compared with week days regardless of the minimum number of hours included (t=12.49-16.76, P<0.001 for all). The number of days required to reach each of the predetermined reliability estimates increased as the number of hours of data per day decreased. For instance, 2.7-2.8 days of data were required to reach a reliability estimate of 0.7 with 10 or more hours of data per day; 3.3-3.4 days were required to meet the same reliability estimate for days with seven hours of data. CONCLUSIONS: Future studies should ensure they include the minimum amount of data (hours/day and number of days) as identified in this study to meet at least a 0.7 reliability level and should report the level of reliability for their study. In addition to weekdays, at least one weekend day should be included in analyses to reliably estimate physical activity levels for preschool children

Hinkley, Trina; Salmon, Jo; Okely, Anthony D.; Trost, Stewart G. (2010):

Correlates of sedentary behaviours in preschool children: a review.

In: *Int J Behav Nutr Phys Act* 7, S. 66. DOI: 10.1186/1479-5868-7-66.

Abstract:

BACKGROUND\r\nSedentary behaviour has been linked with a number of health outcomes. Preschool-aged children spend significant proportions of their day engaged in sedentary behaviours. Research into the correlates of sedentary behaviours in the preschool population is an emerging field, with most research being published since 2002. Reviews on correlates of sedentary behaviours which include preschool children have previously been published; however, none have reported results specific to the preschool population. This paper reviews articles reporting on correlates of sedentary behaviour in preschool children published between 1993 and 2009.\r\nMETHODS\r\nA literature search was undertaken to identify articles which examined correlates of sedentary behaviours in preschool children. Articles were retrieved and evaluated in 2008 and 2009.\r\nRESULTS\r\nTwenty-nine studies were identified which met the inclusion criteria. From those studies, 63 potential correlates were identified. Television viewing was the most commonly examined sedentary behaviour. Findings from the review suggest that child's sex was not associated with television viewing and had an indeterminate association with sedentary behaviour as measured by accelerometry. Age, body mass index, parental education and race had an indeterminate association with television viewing, and outdoor playtime had no association with television viewing. The remaining 57 potential correlates had been investigated too infrequently to be able to draw robust conclusions about associations.\r\nCONCLUSIONS\r\nThe correlates of preschool children's sedentary behaviours are multi-dimensional and not well established. Further research is required to provide a more comprehensive understanding of the influences on preschool children's sedentary behaviours to better inform the development of interventions.

Hinton, Elanor C.; Brunstrom, Jeffery M.; Fay, Stephanie H.; Wilkinson, Laura L.; Ferriday, Danielle; Rogers, Peter J.; Wijk, Rene (2013):

Using photography in 'The Restaurant of the Future'. A useful way to assess portion selection and plate cleaning?

In: *Appetite* 63, S. 31–35. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-13384-008%26site%3dehost-live;Jeff.Brunstrom@bristol.ac.uk.

Abstract:

Laboratory-based studies of human dietary behaviour benefit from highly controlled conditions; however, this approach can lack ecological validity. Identifying a reliable method to capture and quantify natural dietary behaviours represents an important challenge for researchers. In this study, we scrutinised cafeteria-style meals in the 'Restaurant of the Future.' Self-selected meals

were weighed and photographed, both before and after consumption. Using standard portions of the same foods, these images were independently coded to produce accurate and reliable estimates of (i) initial self-served portions, and (ii) food remaining at the end of the meal. Plate cleaning was extremely common; in 86% of meals at least 90% of self-selected calories were consumed. Males ate a greater proportion of their self-selected meals than did females. Finally, when participants visited the restaurant more than once, the correspondence between selected portions was better predicted by the weight of the meal than by its energy content. These findings illustrate the potential benefits of meal photography in this context. However, they also highlight significant limitations, in particular, the need to exclude large amounts of data when one food obscures another. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Hintzen, Anouk; Delespaul, Philippe; van Os, Jim; Myin-Germeys, Inez (2010):

Social needs in daily life in adults with Pervasive Developmental Disorders.

In: *Psychiatry Res* 179 (1), S. 75–80. DOI: 10.1016/j.psychres.2010.06.014.

Abstract:

Although social deficits remain a persistent component of the behavioural phenotype of Pervasive Developmental Disorders (PDD) in adulthood, it remains unclear whether these represent diminished social needs, as is seen in social anhedonia, or rather thwarted social needs, as is seen in social anxiety. This study used the Experience Sampling Method (ESM)--a structured diary technique--to examine social interaction in daily life of 8 adults with PDD, compared to 14 healthy controls. Multilevel linear regression analyses showed that PDD subjects a) did not spend more time alone, b) had no increased preference to be alone when in company, and c) spent more time with familiar people, compared to control subjects. Patients experienced more negative affect and anxiety when in the company of less familiar people compared to when they are alone, whereas no difference in affect could be found between being alone or being with familiar people. All these lines of evidence suggest that PDD subjects do have a desire to interact. However, this may be thwarted as is seen in social anxiety. Therapeutic interventions should aim at decreasing negative affect and anxiety in social interactions possibly by improving social skills to fulfil the existing social needs in adults with PDD.

Hirst, Jane E.; MacKillop, Lucy; Loerup, Lise; Kevat, Dev A.; Bartlett, Katy; Gibson, Oliver et al. (2015):

Acceptability and user satisfaction of a smartphone-based, interactive blood glucose management system in women with gestational diabetes mellitus.

In: *J Diabetes Sci Technol* 9 (1), S. 111–115. DOI: 10.1177/1932296814556506.

Abstract:

The increase in gestational diabetes mellitus (GDM) is challenging maternity services. We have developed an interactive, smartphone-based, remote blood glucose (BG) monitoring system, GDm-health. The objective was to determine women's satisfaction with using the GDm-health system and their attitudes toward their diabetes care. In a service development program involving 52 pregnant women (September 2012 to June 2013), BG was monitored using GDm-health from diagnosis until delivery. Following birth, women completed a structured questionnaire assessing (1) general satisfaction, (2) equipment issues, and (3) relationship with the diabetes care team. Responses were scored on a 7-point Likert-type scale. Reliability and validity of the questionnaire were assessed using statistical methods. Of 52 women, 49 completed the questionnaire; 32 had glucose tolerance test confirmed GDM (gestation at recruitment 29 +/- 4 weeks (mean +/- SD), and 17 women previous GDM recommended for BG monitoring (18 +/- 6 weeks). In all, 45 of 49 women agreed their care was satisfactory and the best for them, 47 of 49 and 43 of 49 agreed the equipment was convenient and reliable respectively, 42 of 49 agreed GDm-health fitted into their lifestyle, and 46 of 49 agreed they had a good relationship with their care team. Written comments supported these findings, with very positive reactions from the majority of women. Cronbach's alpha was .89 with factor analysis corresponding with question thematic trends. This pilot demonstrates that GDm-health is acceptable and convenient for a large proportion of women. Effects on clinical and economic outcomes are currently under investigation in a randomized trial (clinicaltrials.gov NCT01916694).

Hislop, J. F.; Bulley, C.; Mercer, T. H.; Reilly, J. J. (2012):

Comparison of accelerometry cut points for physical activity and sedentary behavior in preschool children: a validation study.

In: *Pediatr.Exerc.Sci.* 24 (4), S. 563–576. Online verfügbar unter PM:23196764.

Abstract:

This study compared accelerometry cut points for sedentary behavior, light and moderate to vigorous intensity activity (MVPA) against a criterion measure, the Children's Activity Rating Scale (CARS), in preschool children. Actigraph accelerometry data were collected from 31 children (4.4 +/- 0.8 yrs) during one hour of free-play. Video data were coded using the CARS. Cut points by Pate et al., van Cauwenberghe et al., Sirard et al. and Puyau et al. were applied to calculate time spent in sedentary, light and MVPA. Repeated-measures ANOVA and paired t tests tested differences between the cut points and the CARS. Bland and Altman plots tested agreement between the cut points and the CARS. No significant difference was found between the CARS and the Puyau et al. cut points for sedentary, light and MVPA or between the CARS and the Sirard et al. cut point for MVPA. The present study suggests that the Sirard et al. and Puyau et al. cut points provide accurate group-level estimates of MVPA in preschool children

Hislop, J. F.; Bulley, C.; Mercer, T. H.; Reilly, J. J. (2012):

Comparison of epoch and uniaxial versus triaxial accelerometers in the measurement of physical activity in preschool children: a validation study.

In: *Pediatr.Exerc.Sci.* 24 (3), S. 450–460. Online verfügbar unter PM:22971560.

Abstract:

The objectives of this study were to explore whether triaxial is more accurate than uniaxial accelerometry and whether shorter sampling periods (epochs) are more accurate than longer epochs. Physical activity data from uniaxial and triaxial (RT3) devices were collected in 1-s epochs from 31 preschool children (15 males, 16 females, 4.4 +/- 0.8 yrs) who were videoed while they engaged in 1-hr of free-play. Video data were coded using the Children's Activity Rating Scale (CARS). A significant difference ($p < .001$) in the number of minutes classified as moderate to vigorous physical activity (MVPA) was found between the RT3 and the CARS ($p < .002$) using the cut point of relaxed walk. No significant difference was found between the GT1M and the CARS or between the RT3 and the CARS using the cut point for light jog. Shorter epochs resulted in significantly greater overestimation of MVPA, with the bias increasing from 0.7 mins at 15-s to 3.2 mins at 60-s epochs for the GT1M and 0 mins to 1.7 mins for the RT3. Results suggest that there was no advantage of a triaxial accelerometer over a uniaxial model. Shorter epochs result in significantly higher number of minutes of MVPA with smaller bias relative to direct observation

Hislop, Jane; Law, James; Rush, Robert; Grainger, Andrew; Bulley, Cathy; Reilly, John J.; Mercer, Tom (2014):

An investigation into the minimum accelerometry wear time for reliable estimates of habitual physical activity and definition of a standard measurement day in pre-school children.

In: *Physiol Meas* 35 (11), S. 2213–2228. DOI: 10.1088/0967-3334/35/11/2213.

Abstract:

The purpose of this study was to determine the number of hours and days of accelerometry data necessary to provide a reliable estimate of habitual physical activity in pre-school children. The impact of a weekend day on reliability estimates was also determined and standard measurement days were defined for weekend and weekdays.Accelerometry data were collected from 112 children (60 males, 52 females, mean (SD) 3.7 (0.7)yr) over 7 d. The Spearman-Brown Prophecy formula (S-B prophecy formula) was used to predict the number of days and hours of data required to achieve an intraclass correlation coefficient (ICC) of 0.7. The impact of including a weekend day was evaluated by comparing the reliability coefficient (r) for any 4 d of data with data for 4 d including one weekend day.Our observations indicate that 3 d of accelerometry monitoring, regardless of whether it includes a weekend day, for at least 7 h d(-1) offers sufficient reliability to characterise total physical activity and sedentary behaviour of pre-school children. These findings offer an approach that addresses the underlying tension in epidemiologic surveillance studies between the need to maintain acceptable measurement rigour and retention of a representatively meaningful sample size.

Hjorth, Mads F.; Chaput, Jean Philippe; Damsgaard, Camilla T.; Dalskov, Stine Mathilde; Michaelsen, Kim F.; Tetens, Inge; Sj&#65533;Din, Anders (2012):

Measure of sleep and physical activity by a single accelerometer: Can a waist-worn Actigraph adequately measure sleep in children?

In: *Sleep and Biological Rhythms* 10 (4), S. 328–335. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-27120-011%26site%3dehost-live;madsfiil@life.ku.dk.

Abstract:

Accelerometers could potentially be used to assess physical activity and sleep using the same monitor; however, two different positions are typically used for the assessment of physical activity and sleep (waist and wrist, respectively). The aim of this study is to evaluate the concordance between wrist- and waist-worn Actigraphs for sleep scoring using existing algorithms developed for placement on the wrist. Sixty-two Danish children aged 10.3 -&#65533; 0.6 years (mean -&#65533; standard deviation) wore an accelerometer (Actigraph GT3X+ Tri-Axis Accelerometer Monitor) on the right hip and on the non-dominant wrist for a continuous 7 days and 8 nights. The minute-by-minute sleep–wake agreement was evaluated and the concordance among sleep indicators was assessed using one-way ANOVA, Bland-Altman plots and Pearson correlations. The sensitivity, specificity and accuracy were 98.8–99.7, 29.8–46.9 and 86.6–88.9%, respectively. Total sleep time and sleep efficiency were higher when assessed from the waist compared to the wrist measurement site (73.8 min, P < 0.001; 12.6%, P < 0.001, respectively). In conclusion, the waist-worn and wrist-worn Actigraph monitors cannot be used interchangeably for the measurement of sleep indicators in children using the present algorithms. However, the waist-worn Actigraph monitor can provide a proxy measure of total sleep time for ranking purposes in epidemiologic studies. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Ho, V.; Simmons, R. K.; Ridgway, C. L.; van Sluijs, E. M.; Bamber, D. J.; Goodyer, I. M. et al. (2013):

Is wearing a pedometer associated with higher physical activity among adolescents?

In: *Prev.Med* (0091-7435 (Linking)). DOI: 10.1016/j.ypmed.2013.01.015.

Abstract:

OBJECTIVE: To examine whether wearing a pedometer was associated with higher objectively-measured physical activity (PA) among adolescents independent of other behavior change strategies, and whether this association differed by sex or day of wear. METHOD: In a parallel-group population-based cohort study, 892 adolescents (43.4% male, mean+/-SD age, 14.5+/-0.5years) from Eastern England were recruited. PA was measured (in 2005-2006) by accelerometry over four days; a sub-group (n=345) wore a pedometer coterminously with the accelerometer. Three-level (individual, day of wear and school level) multiple linear regression was used to examine the association between accelerometry (counts/min, cpm) and pedometer wear, stratified by sex and adjusted for weekday/weekend. RESULTS: For the entire cohort, there was a significant decline in cpm over four days (p<0.01). Girls wearing pedometers had higher mean cpm than those not wearing a pedometer, independent of BMI z-score, socio-economic status, weekday/weekend, and school clustering (beta=5.1; 95% CI: 0.8 to 9.5, p=0.02). This association was not seen in boys. CONCLUSION: Pedometer wear was associated with higher PA among adolescent girls, but not boys. Findings may support sex-specific intervention strategies. In addition to pedometer monitoring, additional strategies may be required to promote PA levels, especially among boys

Hodgkinson, J. A.; Sheppard, J. P.; Heneghan, C.; Martin, U.; Mant, J.; Roberts, N.; McManus, R. J. (2013):

Accuracy of ambulatory blood pressure monitors: a systematic review of validation studies.

In: *J Hypertens* 31 (2), S. 239–250. DOI: 10.1097/HJH.0b013e32835b8d8b.

Abstract:

BACKGROUND: Recent research and guidelines recommend the routine use of ambulatory blood pressure monitoring for the diagnosis of hypertension, so accuracy of such monitors is more important than ever. AIM: : To systematically review the literature regarding the accuracy of ambulatory monitors currently in use. METHODS: Medline, Embase, Cinahl, the Cochrane database, Medion and the dabl Educational Trust website were searched until February 2011. No language or publication date limits were applied. Data were extracted separately by two independent reviewers. Methodological quality was assessed by whether a validation protocol had been used and followed correctly. RESULTS: From 5420 journal articles identified, 108 met the inclusion criteria. Excluding studies assessing monitors no longer in use, 40 relevant studies were found using 21 different monitors. Thirty-eight (95%) studies used a validation protocol of which 28 studies assessed a monitor in the general population.

Of these, protocols were passed in 24 of 28 studies, but 12 of 24 (50%) found a difference of at least 5 mmHg systolic between the test device and the reference standard for 30% or more of the readings. Of the 10 studies conducted in special population groups (e.g. pregnancy, elderly people), only four devices passed the protocols. Only six (16%) studies correctly adhered to the protocols. CONCLUSION: Published validation studies assessed most ambulatory monitors as accurate, but many failed to adhere to the underlying protocols, undermining this conclusion and peer review standards. Furthermore, most monitors which 'passed' validation showed significant variation in blood pressure from the reference standard, highlighting inadequacies in older validation protocols. Future validation studies should use protocols with simpler methodologies but more rigorous accuracy criteria

Hodgson, Jonathan M.; Woodman, Richard J.; Croft, Kevin D.; Ward, Natalie C.; Bondonno, Catherine P.; Puddey, Ian B. et al. (2014):

Relationships of vascular function with measures of ambulatory blood pressure variation.

In: *Atherosclerosis* 233 (1), S. 48–54. DOI: 10.1016/j.atherosclerosis.2013.12.026.

Abstract:

BACKGROUND: Characteristics of short-term blood pressure (BP) variation may influence cardiovascular disease risk via effects on vascular function. OBJECTIVE: In a cross-sectional study of a group of treated hypertensive and untreated largely normotensive subjects we investigated the relationships of measures of short-term BP variation with brachial artery vasodilator function. METHODS: A total of 163 treated hypertensive (n = 91) and untreated largely normotensive (n = 72) men and women were recruited from the general population. Measures of systolic and diastolic BP variation were calculated from 24 h ambulatory BP assessments and included: (i) rate of measurement-to-measurement BP variation (SBP-var and DBP-var); and (ii) day-to-night BP dip (SBP-dip and DBP dip). Endothelium-dependent vasodilation was assessed as flow-mediated dilation (FMD) and endothelium-independent vasodilation was assessed in response to glyceryl trinitrate (GTN). Relationships were explored using univariate and multivariate linear regression. RESULTS: The relationships of brachial artery vasodilator function with BP variation were not significantly different between treated hypertensive and untreated subjects, therefore these groups were combined for analysis. In univariate analysis, higher SBP-var ($P < 0.001$) and lower DBP-dip ($P = 0.004$) were associated with lower FMD; and higher SBP-var ($P = 0.002$) and lower SBP-dip ($P = 0.003$) and DBP-dip ($P = 0.001$) were associated with lower GTN-mediated dilation. In multivariate analysis, lower SBP-dip ($P = 0.007$) and DBP-dip ($P = 0.03$) were independently associated with lower GTN response. CONCLUSIONS: Our results indicate that a lower day-to-night BP dip is independently associated with impaired smooth muscle cell function. Although rate of BP variation was associated with measures of endothelial and smooth muscle cell function, relationships were attenuated after accounting for age and BP.

Hofmann, W.; Adriaanse, M.; Vohs, K. D.; Baumeister, R. F. (2013):

Dieting and the self-control of eating in everyday environments: An experience sampling study.

In: *Br.J Health Psychol.* (1359-107X (Linking)). DOI: 10.1111/bjhp.12053.

Abstract:

OBJECTIVE: The literature on dieting has sparked several debates over how restrained eaters differ from unrestrained eaters in their self-regulation of healthy and unhealthy food desires and what distinguishes successful from unsuccessful dieters. We addressed these debates using a four-component model of self-control that was tested using ecological momentary assessment, long-term weight change, and a laboratory measure of inhibitory control. DESIGN: A large sample of adults varying in dietary restraint and inhibitory control (as measured by a Stroop task) were equipped with smartphones for a week. They were beeped on random occasions and provided information on their experience and control of healthy and unhealthy food desires in everyday environments. MAIN OUTCOME MEASURES: The main outcome measures were desire strength, experienced conflict, resistance, enactment of desire, and weight change after a 4-month follow-up. RESULTS AND CONCLUSIONS: Dietary restraint was unrelated to desire frequency and strength, but associated with higher conflict experiences and motivation to use self-control with regard to food desires. Most importantly, relationships between dietary restraint and resistance, enactment of desire, and long-term weight change were moderated by inhibitory control: Compared with dieters low in response inhibition, dieters high in response inhibition were more likely to attempt to resist food desires, not consume desired food (especially unhealthy food), and objectively lost more weight over the ensuing 4 months. These results highlight the combinatory effects of aspects of the self-control process in dieters and highlight the value in linking theoretical process frameworks, experience sampling, and laboratory-based assessment in health science. STATEMENT OF CONTRIBUTION: What is already known on this subject? Dieting is a multifaceted process that can be viewed from the lens of self-control. Dietary restraint measures can be used to capture dieting status, but it is relatively unclear what differentiates successful from unsuccessful dieters (e.g., differences in desire frequency, desire strength, motivation, executive functions). What does this study add? A novel four-step conceptual model of self-control is applied to eating behaviour in everyday life. This model allows a fine-grained look at the self-control

process in restrained eaters (dieters) as compared to non-dieters. Dieters and non-dieters do not differ in desire frequency and strength (they are not simply more tempted). Dieters high (as compared to low) in inhibitory control are more likely to engage in self-control. Dieters high (as compared to low) in inhibitory control are more likely to resist unhealthy food desires. Dieters high (as compared to low) in inhibitory control are more likely to loose weight over a 4-month period. Together, the study shows clear differences among successful and unsuccessful dieters that can be linked to differences in executive functioning (inhibitory control). The present article is one of the first studies combining a conceptual model with smartphone experience sampling to study weight control and thus paradigmatic from a methodological perspective

Hofmann, Wilhelm; Adriaanse, Marieke; Vohs, Kathleen D.; Baumeister, Roy F. (2014):

Dieting and the self-control of eating in everyday environments: An experience sampling study.

In: *British Journal of Health Psychology* 19 (3), S. 523–539. DOI: 10.1037/t18359-000.

Abstract:

Objective The literature on dieting has sparked several debates over how restrained eaters differ from unrestrained eaters in their self-regulation of healthy and unhealthy food desires and what distinguishes successful from unsuccessful dieters. We addressed these debates using a four-component model of self-control that was tested using ecological momentary assessment, long-term weight change, and a laboratory measure of inhibitory control. Design A large sample of adults varying in dietary restraint and inhibitory control (as measured by a Stroop task) were equipped with smartphones for a week. They were beeped on random occasions and provided information on their experience and control of healthy and unhealthy food desires in everyday environments. Main outcome measures The main outcome measures were desire strength, experienced conflict, resistance, enactment of desire, and weight change after a 4-month follow-up. Results and conclusions Dietary restraint was unrelated to desire frequency and strength, but associated with higher conflict experiences and motivation to use self-control with regard to food desires. Most importantly, relationships between dietary restraint and resistance, enactment of desire, and long-term weight change were moderated by inhibitory control: Compared with dieters low in response inhibition, dieters high in response inhibition were more likely to attempt to resist food desires, not consume desired food (especially unhealthy food), and objectively lost more weight over the ensuing 4 months. These results highlight the combinatory effects of aspects of the self-control process in dieters and highlight the value in linking theoretical process frameworks, experience sampling, and laboratory-based assessment in health science. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Hofmann, Wilhelm; Baumeister, Roy F.; F+�Rster, Georg; Vohs, Kathleen D. (2011):

Everyday temptations: An experience sampling study of desire, conflict, and self-control.

In: *Journal of Personality and Social Psychology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-28783-001&site=ehost-live.

Abstract:

How often and how strongly do people experience desires, to what extent do their desires conflict with other goals, and how often and successfully do people exercise self-control to resist their desires? To investigate desire and attempts to control desire in everyday life, we conducted a large-scale experience sampling study based on a conceptual framework integrating desire strength, conflict, resistance (use of self-control), and behavior enactment. A sample of 205 adults wore beepers for a week. They furnished 7,827 reports of desire episodes and completed personality measures of behavioral inhibition system/behavior activation system (BIS/BAS) sensitivity, trait self-control, perfectionism, and narcissistic entitlement. Results suggest that desires are frequent, variable in intensity, and largely unproblematic. Those urges that do conflict with other goals tend to elicit resistance, with uneven success. Desire strength, conflict, resistance, and self-regulatory success were moderated in multiple ways by personality variables as well as by situational and interpersonal factors such as alcohol consumption, the mere presence of others, and the presence of others who already had enacted the desire in question. Whereas personality generally had a stronger impact on the dimensions of desire that emerged early in its course (desire strength and conflict), situational factors showed relatively more influence on components later in the process (resistance and behavior enactment). In total, these findings offer a novel and detailed perspective on the nature of everyday desires and associated self-regulatory successes and failures. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Hofmann, Wilhelm; Fisher, Rachel R. (2012):

How guilt and pride shape subsequent self-control.

In: *Social Psychological and Personality Science* 3 (6), S. 682–690. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-28528-005%26site%3dehost-live;Wilhelm.Hofmann@ChicagoBooth.edu.

Abstract:

The present research utilized experience sampling data to investigate how guilt and pride experiences in response to self-control failure versus success affect future self-control when encountering the same type of temptation (thematic self-control). Guilt showed signs of a "mixed blessing" such that previous guilt led to an increase in subsequent self-regulatory goal importance and conflict awareness; however, accounting for these beneficial effects, guilt also had a detrimental residual effect on the successful inhibition of recurring temptation. Pride, in contrast, had uniformly positive effects on subsequent self-control in the form of increased goal importance, increased conflict, and increased likelihood to use self-control to resist temptation. These results contrasted in theoretically important ways from an analysis of short-term spillover effects of incidental guilt and pride on thematically unrelated subsequent self-control. Potential mechanisms and implications of these findings are discussed. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Hofmann, W.; Fisher, R. R.; Luhmann, M.; Vohs, K. D.; Baumeister, R. F. (2013):

Yes, But Are They Happy? Effects of Trait Self-Control on Affective Well-Being and Life Satisfaction.

In: *J Pers* (0022-3506 (Linking)). DOI: 10.1111/jopy.12050.

Abstract:

OBJECTIVE: Does trait self-control (TSC) predict affective well-being and life satisfaction -positively, negatively, or not? METHOD: We conducted three studies (Study 1: n=414; 64.0% female; Mage =35.0 years; Study 2: n=208; 66.0% female; Mage =25.24 years; Study 3: n=234; 61.0% female; Mage =34.53 years). The key predictor was TSC, with affective well-being and life satisfaction ratings as key outcomes. Potential explanatory constructs including goal conflict, goal balancing, and emotional distress also were investigated. RESULTS: TSC is positively related to affective well-being and life satisfaction, and managing goal conflict is a key as to why. All studies, moreover, showed that the effect of TSC on life satisfaction was at least partially mediated by affect. Study 1's correlational study established the effect. Study 2's experience sampling study demonstrated that compared to those low in TSC, those high in TSC experience higher levels of momentary affect even as they experience desire, an effect partially mediated through experiencing lower conflict and emotional distress. Study 3 found evidence for the proposed mechanism-that TSC may boost well-being by helping people to avoid frequent conflict and balance vice-virtue conflicts by favoring virtues. CONCLUSION: Self-control positively contributes to happiness through avoiding and dealing with motivational conflict

Hofmann, Wilhelm; Kotabe, Hiroki; Luhmann, Maike (2013):

The spoiled pleasure of giving in to temptation.

In: *Motivation and Emotion*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-12452-001%26site%3dehost-live;wilhelm.hofmann@chicagobooth.edu.

Abstract:

Satisfying one’s desires is typically a pleasurable experience and thus a source of momentary happiness. Getting happy in the here and now, however, may be more complicated when people yield to temptations—desires that conflict with personal self-regulatory goals so that they have reason to resist them. Using data from a large experience sampling study on everyday desire, we show that people receive considerably smaller gains in momentary happiness from enacting tempting as compared to nontempting desires. We further demonstrate that this “spoiled pleasure” effect can largely be explained by self-conscious emotions, as statistically accounting for guilt, pride, and regret as mediators reduced the observed hedonic gap to nonsignificance. The present findings challenge the assumption that the costs associated with temptation lie only in the future. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Hofmann, Wilhelm; Wisneski, Daniel C.; Brandt, Mark J.; Skitka, Linda J. (2014):

Morality in everyday life.

In: *Science* 345 (6202), S. 1340–1343. DOI: 10.1126/science.1251560.

Abstract:

The science of morality has drawn heavily on well-controlled but artificial laboratory settings. To study everyday morality, we repeatedly assessed moral or immoral acts and experiences in a large (N = 1252) sample using ecological momentary assessment. Moral experiences were surprisingly frequent and manifold. Liberals and conservatives emphasized somewhat different moral dimensions. Religious and nonreligious participants did not differ in the likelihood or quality of committed moral and immoral acts. Being the target of moral or immoral deeds had the strongest impact on happiness, whereas committing moral or immoral deeds had the strongest impact on sense of purpose. Analyses of daily dynamics revealed evidence for both moral contagion and moral licensing. In sum, morality science may benefit from a closer look at the antecedents, dynamics, and consequences of everyday moral experience.

Hohn, P.; Menne-Lothmann, C.; Peeters, F.; Nicolson, N. A.; Jacobs, N.; Derom, C. et al. (2013):

Moment-to-moment transfer of positive emotions in daily life predicts future course of depression in both general population and patient samples.

In: *PLoS.One.* 8 (9), S. e75655. DOI: 10.1371/journal.pone.0075655.

Abstract:

OBJECTIVE: Positive affect (PA) is closely linked to prevention of, and recovery from, depression. Previous studies have investigated PA reactivity to pleasant situations with respect to its protective properties in relation to mood disorder. The purpose of this study was to examine, and replicate, whether moment-to-moment transfer of PA in daily life (PA persistence) is relevant to the prediction of future course of depression. METHOD: Individuals from three different studies (one general population sample (n=540), and two patient samples (n=43 and n=50) with matching controls (n=39 and n=21, respectively)) participated in an Experience Sampling Method (ESM) study. Time-lagged multilevel analyses were used to assess the degree of transfer (or persistence) of momentary positive affective states over time, in relation to naturalistic outcome (study 1) or treatment outcome (studies 2 and 3). Depressive symptoms were measured using the Symptom Checklist (SCL-90R) in sample 1 and the Hamilton Depression Rating Scale (HDRS) in samples 2 and 3. RESULTS: In study 1, participants with greater momentary PA persistence were less likely to show depressive symptoms at follow-up. In study 2, patients were more likely to respond to treatment if they displayed greater momentary PA persistence, particularly in those with recurrent depression. In study 3, patients with greater momentary PA persistence were similarly more likely to respond to treatment, especially when treated with imipramine rather than placebo. CONCLUSION: The ability to transfer PA from one moment to the next is an important factor in the prevention of and recovery from depressive symptoms. Patients with recurrent depression and those who receive antidepressants rather than placebo may benefit most from this effect. The results suggest that treatment-induced improvement in depression is mediated by increased levels of momentary transfer of PA in daily life, acquisition of which may be contingent on duration of exposure to depressive experience

Holden, George W.; Williamson, Paul A.; Holland, Grant W. O. (2014):

Eavesdropping on the family: A pilot investigation of corporal punishment in the home.

In: *Journal of Family Psychology* 28 (3), S. 401–406. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-12893-001%26site%3dehost-live.

Abstract:

This study tested the feasibility of using audio recorders to collect novel information about family interactions. Research into corporal punishment (CP) has relied, almost exclusively, on self-report data; audio recordings have the promise of revealing new insights into the use and immediate consequences of CP. So we could hear how parents respond to child conflicts, 33 mothers wore digital audio recorders for up to 6 evenings. We identified a total of 41 CP incidents, in 15 families and involving 22 parent–child dyads. These incidents were evaluated on 6 guidelines culled from the writings of CP advocates. The results indicated, contrary to advice, CP was not being used in line with 3 of the 6 recommendations and for 2 others, the results were equivocal. The last recommendation could not be assessed with audio. Latency analyses revealed children, after being hit, were misbehaving again within 10 minutes after 73% of the incidents. Mothers' self reports about whether they used CP were found to correspond to the audio data in 81% of the cases. Among the mothers who were hitting, CP occurred at a much higher rate than the literature indicates. These results should be viewed as preliminary because of the small sample of families and the even

smaller number of families who used CP. Nevertheless, this pilot study demonstrates that audio recording naturally occurring momentary processes in the family is a viable method for collecting new data to address important questions about family interactions. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Hollier, Carly A.; Harmer, Alison R.; Maxwell, Lyndal J.; Menadue, Collette; Willson, Grant N.; Black, Deborah A.; Piper, Amanda J. (2014):

Validation of respiratory inductive plethysmography (LifeShirt) in obesity hypoventilation syndrome.

In: *Respir Physiol Neurobiol* 194, S. 15–22. DOI: 10.1016/j.resp.2014.01.014.

Abstract:

Validation of respiratory inductive plethysmography (LifeShirt system) (RIPLS) for tidal volume (VT), minute ventilation (V E), and respiratory frequency (fB) was performed among people with untreated obesity hypoventilation syndrome (OHS) and controls. Measures were obtained simultaneously from RIPLS and a spirometer during two tests, and compared using Bland Altman analysis. Among 13 OHS participants (162 paired measures), RIPLS-spirometer agreement was unacceptable for VT: mean difference (MD) 3mL (1%); limits of agreement (LOA) -216 to 220mL (+/-36%); V E MD 0.1Lmin(-1) (2%); LOA -4.1 to 4.3Lmin(-1) (+/-36%); and fB: MD 0.2brmin(-1) (2%); LOA -4.6 to 5.0brmin(-1) (+/-27%). Among 13 controls (197 paired measures), RIPLS-spirometer agreement was acceptable for fB: MD -0.1brmin(-1) (-1%); LOA -1.2 to 1.1brmin(-1) (+/-12%), but unacceptable for VT: MD 5mL (1%); LOA -160 to 169mL (+/-20%) and V E: MD 0.1Lmin(-1) (1%); LOA -1.4 to 1.5Lmin(-1) (+/-20%). RIPLS produces valid measures of fB among controls but not OHS patients, and is not valid for quantifying respiratory volumes among either group.

Holman, R. M.; Carson, V.; Janssen, I. (2011):

Does the fractionalization of daily physical activity (sporadic vs. bouts) impact cardiometabolic risk factors in children and youth?

In: *PLoS.One.* 6 (10), S. e25733. DOI: 10.1371/journal.pone.0025733.

Abstract:

OBJECTIVE: Children and youth accumulate their daily moderate-to-vigorous physical activity (MVPA) in bouts (i.e., >/= 5 consecutive minutes) and in a sporadic manner (i.e., <5 consecutive minutes). The study objective was to determine, within children and youth, whether MVPA accumulated in bouts is more strongly associated with cardiometabolic risk factors than an equivalent volume of MVPA accumulated sporadically. METHODS: Participants consisted of 2754 children and youth aged 6-19 years from the 2003-2006 National Health and Nutrition Examination Survey, a representative cross-sectional study. Bouts and sporadic MVPA were measured objectively over 7 days using Actigraph accelerometers. Thresholds of 5 and 10 consecutive minutes were used to differentiate between bouts and sporadic MVPA. A high cardiometabolic risk factor score (CRS) was created based on measures of waist circumference, non-high-density lipoprotein cholesterol, C-reactive protein, and systolic blood pressure. Associations were examined using logistic regression and controlled for covariates (sex, age, ethnicity, socioeconomic status, dietary fat and sodium, smoking, and accelerometry wear time). RESULTS: The odds of a high CRS decreased in a dose-response for both the sporadic and bout MVPA measures. Relative to quartile 1, the odds ratio (95% confidence interval) for a high CRS in quartile 4 was 0.25 (0.10-0.60) for sporadic MVPA, 0.17 (0.09-0.34) for >/= 5 minute bouts of MVPA, and 0.19 (0.11-0.34) for >/= 10 minute bouts of MVPA. The sporadic and bout MVPA measures had a similar ability to distinguish between participants with high and normal CRS. Relative to 0 minutes of MVPA, an equivalent number of minutes of sporadic MVPA and bouts of MVPA had an almost identical odds ratio for a high CRS. The findings were consistent for 5 and 10 minute bout thresholds. CONCLUSIONS: The relations between sporadic MVPA and bouts of MVPA with cardiometabolic risk factors were remarkably similar in children and youth

Holmes, Millicent; Fuller-Tyszkiewicz, Matthew; Skouteris, Helen; Broadbent, Jaclyn (2014):

Improving prediction of binge episodes by modelling chronicity of dietary restriction.

In: *European Eating Disorders Review* 22 (6), S. 405–411. DOI: 10.1037/t04353-000.

Abstract:

This study evaluates the influences of chronicity of, and time lag between, dietary restriction and binge outcome for predicting binge episode onset. Sixty-two women aged 18 to 40 years old completed an online survey at random intervals seven times daily for a 7-day period. Participants self-reported engagement in dietary restriction and/or binging, and temptation to binge. Consecutive instances of reported dietary restriction better predicted subsequent binges than single instances. As the time lag between the first report of dietary restriction and binge onset increased, a clear linear trend emerged, such that the value of restriction for predicting binges increased with the number of consecutive assessments in which they reported dietary restriction. A similar pattern was found when predicting temptation to binge. Present findings suggest that duration of restriction is a crucial determinant of binge onset. These findings have implications for clinical practice by highlighting the time course from dietary restriction to binging. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Holmes, Millicent; Fuller-Tyszkiewicz, Matthew; Skouteris, Helen; Broadbent, Jaclyn (2014):

Improving Prediction of Binge Episodes by Modelling Chronicity of Dietary Restriction.

In: *Eur Eat Disord Rev. DOI:* 10.1002/erv.2315.

Abstract:

This study evaluates the influences of chronicity of, and time lag between, dietary restriction and binge outcome for predicting binge episode onset. Sixty-two women aged 18 to 40 years old completed an online survey at random intervals seven times daily for a 7-day period. Participants self-reported engagement in dietary restriction and/or binging, and temptation to binge. Consecutive instances of reported dietary restriction better predicted subsequent binges than single instances. As the time lag between the first report of dietary restriction and binge onset increased, a clear linear trend emerged, such that the value of restriction for predicting binges increased with the number of consecutive assessments in which they reported dietary restriction. A similar pattern was found when predicting temptation to binge. Present findings suggest that duration of restriction is a crucial determinant of binge onset. These findings have implications for clinical practice by highlighting the time course from dietary restriction to binging. Copyright (c) 2014 John Wiley & Sons, Ltd and Eating Disorders Association.

Holmes, Millicent; Fuller-Tyszkiewicz, Matthew; Skouteris, Helen; Broadbent, Jaclyn (2014):

Tests of an extension of the dual pathway model of bulimic symptoms to the state-based level.

In: *Eat Behav* 15 (2), S. 280–285. DOI: 10.1016/j.eatbeh.2014.03.011.

Abstract:

The dual pathway model proposes that trait body dissatisfaction leads to bulimic symptoms via two distinct pathways: dieting and trait negative affect. As many of these modelled variables have state-based equivalents, the present study evaluated the generalisability of this model to predict associations between state body dissatisfaction and instances of disordered eating. 124 women aged 18 to 40 years completed an online survey (accessed via a mobile phone device with web access) over a 7-day period. The mobile phone device prompted participants at random intervals seven times daily to self-report their state body dissatisfaction, current mood experiences, dieting attempts, and disordered eating practices. Multi-level mediation modelling revealed that both negative mood states and dieting significantly mediated the state body dissatisfaction-disordered eating relationships, although the strength of these associations depended on the aspect of disordered eating measured and individual differences in trait body dissatisfaction, internalization of appearance standards, tendency towards dieting, and BMI. Collectively, these results not only support adapting the dual pathway model to the state-level, but also suggest that several of the model implied pathways may be more relevant for individuals with more pathological eating- and body-related concerns and behaviours.

Holt, Laura J.; Litt, Mark D.; Cooney, Ned L. (2011):

Prospective analysis of early lapse to drinking and smoking among individuals in concurrent alcohol and tobacco treatment.

In: *Psychology of Addictive Behaviors*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-24244-001&site=ehost-live.

Abstract:

The aims of the current study were to examine, prospectively, (a) dynamic changes in affective state, self-efficacy, and urge in the hours before initial smoking and drinking lapses among individuals in concurrent alcohol and smoking treatment, and (b) the extent to which self-efficacy, urge to use, and/or the use of one substance predicted lapse to the other substance. Ninety-six men and women recruited for a clinical trial of concurrent alcohol and tobacco treatment were eligible for inclusion. Only data from those who experienced an initial lapse to drinking (n = 29) or smoking (n = 32) were included. Two outpatient substance abuse clinics provided concurrent alcohol and smoking treatment on a weekly basis for three months. Ecological Momentary Assessment (EMA) methods were employed over a 28-day monitoring period to assess antecedents to first drink, and a 14-day monitoring period was examined for initial smoking lapses. Baseline and EMA measures of positive and negative affect, alcohol/smoking urge, alcohol/smoking abstinence self-efficacy, nicotine withdrawal, and quantity/frequency of alcohol and tobacco use were examined as lapse predictors. Analyses of EMA ratings controlled for the corresponding baseline measure. Smoking lapse among individuals in concurrent alcohol and tobacco treatment was foreshadowed by higher urges to smoke, lower positive mood, and lower confidence to resist smoking. Drinking lapse was preceded by lower confidence to resist smoking, but only among individuals who reported recent smoking. Concurrent alcohol and smoking treatment should focus on the enhancement of abstinence self-efficacy, positive mood, and the curbing of urges in order to offset lapse risk. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Holtkamp, Kristian; Herpertz-Dahlmann, Beate; Hebebrand, Kathrin; Mika, Claudia; Kratzsch, Jürgen; Hebebrand, Johannes (2006):

Physical activity and restlessness correlate with leptin levels in patients with adolescent anorexia nervosa.

In: *Biological Psychiatry* 60 (3), S. 311–313.

Abstract:

BACKGROUND:

In food-restricted rats, leptin suppresses semistarvation-induced hyperactivity (SIH) and decreases exploratory behavior. Leptin ameliorates anxiety-related movement in ob/ob mice. In this study, we assessed the relationship between leptin and qualities of physical activity and restlessness in acute anorexia nervosa (AN).

METHODS:

Serum leptin, body mass index (BMI), % body fat, and self- and expert-ratings of qualities of physical activity and restlessness were assessed in 26 inpatients with acute AN. Accelerometry was also performed. Regression analyses were used to predict activity and restlessness using BMI, % body fat, and leptin levels as predictor variables.

RESULTS:

Leptin levels significantly contributed to the prediction of all measures of activity and restlessness.

CONCLUSIONS:

This is the first study linking hypoleptinemia in AN patients to subjective and objective measures of higher physical activity and motor and inner restlessness. Leptin may directly or indirectly (or both) influence behaviors and cognitions contributing to hyperactivity and motor restlessness.

Holt-Lunstad, Julianne; Birmingham, Wendy A.; Light, Kathleen C. (2008):

Influence of a \"warm touch\" support enhancement intervention among married couples on ambulatory blood pressure, oxytocin, alpha amylase, and cortisol.

In: *Psychosomatic Medicine* 70 (9), S. 976–985. DOI: 10.1097/PSY.0b013e318187aef7.

Abstract:

OBJECTIVE\r\nTo investigate whether a support intervention (warm touch enhancement) influences physiological stress systems that are linked to important health outcomes. Growing evidence points to a protective effect of social and emotional support on both morbidity and mortality.\r\nMETHODS\r\nIn this study, 34 healthy married couples (n = 68), aged 20 to 39 years (mean = 25.2 years), were randomly assigned to a \"behavior monitoring\" control group or participated in a 4-week intervention study in which clinic levels of plasma oxytocin, 24-hour ambulatory blood pressure, and salivary cortisol and alpha amylase were obtained pre and post intervention, at the same time salivary oxytocin was taken at home during weeks 1 and 4.\r\nRESULTS\r\nSalivary oxytocin was enhanced both early and late in the intervention group and alpha amylase was reduced at post treatment in intervention group husbands and wives relative to controls. Husbands in the intervention group had

significantly lower post treatment 24-hour systolic blood pressure than the control group.\r\nCONCLUSION\r\nIncreasing warm touch among couples has a beneficial influence on multiple stress-sensitive systems.

Holt-Lunstad, Julianne; Birmingham, Wendy; Jones, Brandon Q. (2008):

Is there something unique about marriage? The relative impact of marital status, relationship quality, and network social support on ambulatory blood pressure and mental health.

In: *Annals of Behavioral Medicine* 35 (2), S. 239–244.

Abstract:

BACKGROUND:

Having close social relationships and being married specifically have been reliably associated with health benefits including lower morbidity and mortality.

PURPOSE:

The purpose of this study was to examine the influence of marital status, relationship quality, and network support on measures of psychological and cardiovascular health.

METHOD:

We examined ambulatory blood pressure (ABP) among 204 married and 99 single males and females (N = 303).

RESULTS:

We found that both marital status and marital quality were important. Married individuals had greater satisfaction with life (SWL) and blood pressure dipping than single individuals. High marital quality was associated with lower ABP, lower stress, less depression, and higher SWL. Importantly, contrasting those who are unmarried with those in low-quality marriages, we find that single individuals had lower ABP-suggesting that single individuals fare better than their unhappily married counterparts. Likewise, having a supportive network did not moderate (i.e., buffer) the effects of being single or unhappily married.

CONCLUSIONS:

Findings indicate being married per se is not universally beneficial, rather, the satisfaction and support associated with such a relationship is important. However, marriage may be distinctive, as evidence further suggests that support from one's network does not compensate for the effect of being single. These results highlight the complexities in understanding the influence of social relationships on long-term health, and they may help clarify the physiological pathways by which such associations exist.

Holtz, Bree; Whitten, Pamela (2009):

Managing asthma with mobile phones: a feasibility study.

In: *Telemed J E Health* 15 (9), S. 907–909. DOI: 10.1089/tmj.2009.0048.

Abstract:

Asthma is a chronic disease and a growing health problem worldwide. The objective of this pilot study was to test the feasibility and utilization of tracking asthma symptoms through an innovative mobile phone application. The subjects for this research project consisted of 4 individuals who are currently receiving treatment for asthma from a primary care physician in Ingham County, Michigan. Participants took their peak flow reading each day and used the short message service (SMS) function on their phone and sent it to a Web server. If they did not send it by 11 AM, they received a reminder via an automated SMS to their phone. The resulting data suggest that this method of management is feasible. The data also demonstrate participants' satisfaction in monitoring their asthma in this manner. Using mobile phones for asthma management could improve compliance with asthma action plans and reduce adverse asthma events. Future research could further demonstrate that mobile phones are a new and effective method for providing healthcare.

Hong, Ryan Y. (2010):

Neuroticism, anxiety sensitivity thoughts, and anxiety symptomatology: Insights from an experience-sampling approach.

In: *Cogn Ther Res* 34 (3), S. 254–262.

Abstract:

Relations among Neuroticism, anxiety sensitivity (AS) thoughts, and anxiety symptoms were examined in this study using an experience-sampling methodology. Daily AS thoughts and anxiety symptoms arising from naturally-occurring negative events were assessed among 100 participants over a 1 month period. Neuroticism moderated the relation between anxiety symptoms and AS thoughts such that individuals high on Neuroticism reported more AS thoughts on days when high (rather than low) anxiety was experienced. Conversely, the relation between anxiety and AS thoughts on a daily basis was weaker for low Neuroticism individuals. Consistent with previous research, elevated levels of AS thoughts on any particular day were associated with increased subsequent anxiety symptoms. The present findings highlight the importance of elucidating psychopathological processes associated with AS and anxiety not only at the interindividual level, but also at the intraindividual level.

Hong, Jong Il; Chang, Byoung-Yong (2014):

Development of the smartphone-based colorimetry for multi-analyte sensing arrays.

In: *Lab Chip. DOI:* 10.1039/c3lc51451j.

Abstract:

Here we report development of a smartphone app (application) that digitizes the colours of a colorimetric sensor array. A conventional colorimetric sensor array consists of multiple paper-based sensors, and reports the detection results in terms of colour change. Evaluation of the colour changes is normally done by the naked eye, which may cause uncertainties due to personal subjectivity and the surrounding conditions. Solutions have been particularly sought in smartphones as they are capable of spectrometric functions. Our report specifically focuses on development of a practical app for immediate point-of-care (POC) multi-analyte sensing without additional devices. First, the individual positions of the sensors are automatically identified by the smartphone; second, the colours measured at each sensor are digitized based on a correction algorithm; and third, the corrected colours are converted to concentration values by pre-loaded calibration curves. All through these sequential processes, the sensor array taken in a smartphone snapshot undergoes laboratory-level spectrometry. The advantages of inexpensive and convenient paper-based colorimetry and the ubiquitous smartphone are tied to achieve a ready-to-go POC diagnosis.

Hopenfeld, Bruce; John, M. Sasha; Fischell, David R.; Medeiros, Paulo; Guimarães, Hélio P.; Piegas, Leopoldo S. (2009):

The Guardian: an implantable system for chronic ambulatory monitoring of acute myocardial infarction.

In: *J Electrocardiol* 42 (6), S. 481–486. DOI: 10.1016/j.jelectrocard.2009.06.017.

Abstract:

The AngelMed Guardian is an implantable medical device that records cardiac data and detects ischemic events using a standard pacemaker intracardiac lead positioned in the right ventricular apex. The Guardian has been implanted in 55 people in the United States and Brazil and is currently undergoing a Food and Drug Administration phase 2 pivotal trial in the United States. The Guardian detects acute ischemic events by analyzing ST-segment shifts. The ST-segment shifts are calculated as the difference between the ST deviation of a current 10-second electrogram window and a baseline ST deviation value. If the ST-segment shift is greater than a heart rate-dependent programmable threshold, then the device generates an emergency alert signal. Results thus far have demonstrated that (i) the intracardiac electrogram is relatively noise-free and (ii) the ST-shift technique used by the Guardian is effective for detecting acute ischemic events.

Hopper, James W.; Su, Zhaohui; Looby, Alison R.; Ryan, Elizabeth T.; Penetar, David M.; Palmer, Christopher M.; Lukas, Scott E. (2006):

Incidence and patterns of polydrug use and craving for ecstasy in regular ecstasy users: an ecological momentary assessment study.

In: *Drug Alcohol Depend* 85 (3), S. 221–235. DOI: 10.1016/j.drugalcdep.2006.04.012.

Abstract:

BACKGROUND\r\nPrevious studies employing retrospective assessments methods found that regular ecstasy users frequently use alcohol, marihuana and other drugs in combination with ecstasy.\r\nMETHODS\r\nTwenty-two participants (13 males, 9 females) wore a wrist actigraph/data recorder to record real-time drug use and ecstasy craving for 6 weeks. Rates of alcohol and drug use on ecstasy use versus non-use nights, and before, during, and after ecstasy use were analyzed with generalized estimation equations (GEE). Craving was modeled with GEE and linear mixed models.\r\nRESULTS\r\nApproximately 70% of ecstasy uses occurred on Friday or Saturday nights. No drug was significantly more likely to be used on ecstasy use nights than comparison Friday and Saturday nights. On nights ecstasy was used, in general across all drugs assessed, use was more likely before and during than after ecstasy intoxication, while alcohol use was also more likely before than during ecstasy intoxication. Though low overall, craving for ecstasy increased over 24 h before use and was higher on Friday nights of weeks ecstasy was used on weekends than weeks it was not used.\r\nCONCLUSIONS\r\nUse of ecstasy on a particular night may not be associated with any greater likelihood of using any other intoxicating drug, and use of other drugs on nights involving ecstasy use may simply reflect a \"natural history\" of drug-use nights that begins with alcohol, progresses to more intoxicating drugs, and ends with little drug use. Confirmation of these findings awaits further advances in the application of ecological momentary assessment methodologies.

Hoppmann, Christiane A.; Gerstorf, Denis; Smith, Jacqui; Klumb, Petra L. (2007):

Linking possible selves and behavior: Do domain-specific hopes and fears translate into daily activities in very old age?

In: *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 62 (2), S. P104-P111.

Abstract:

We used time-sampling information from a subsample of the Berlin Aging Study (N=83; M=81.1 years) to investigate the link between possible selves in three domains (health, everyday cognition, and social relations) and performance of daily activities. In the domains of health and social relations, hoped-for selves were associated with higher probabilities of performing daily activities in those domains. There were no associations in the cognitive domain or between feared selves and activities. Individuals who engaged in hope-related activities reported concurrent higher positive affect and subsequently had a higher probability of survival over a 10-year period. These findings speak to important associations between beliefs about possible selves and activities in advanced old age and the value of considering associations between microlevel and macrolevel indicators of successful aging.

Hoppmann, Christiane A.; Klumb, Petra L. (2006):

Daily goal pursuits predict cortisol secretion and mood states in employed parents with preschool children.

In: *Psychosomatic Medicine* 68 (6), S. 887–894. DOI: 10.1097/01.psy.0000238232.46870.f1.

Abstract:

OBJECTIVE\r\nThis study examined the relationship between the personal relevance of daily activities with respect to self-set work and family goals and affective and neuroendocrine stress reactions.\r\nMETHODS\r\nA total of 53 dual-earner couples with preschool children participated in a 1-week interval-sampling study. At the beginning, participants reported their personal work and family goals. During the time-sampling phase, both partners reported the goal relevance of their daily activities, current mood, and provided saliva samples for cortisol estimation every 3 hours.\r\nRESULTS\r\nHierarchical linear models show that the performance of goal-furthering activities is associated with more positive mood and decreased secretion of cortisol. The relationship between the goal relevance of daily activities and cortisol was partially mediated by affect quality.\r\nCONCLUSIONS\r\nThese findings speak to a person-centered approach in research on stress by showing that knowledge of individual goals is important for an understanding of affective and neuroendocrine stress reactions in employed parents with preschool children.

Hoppmann, Christiane A.; Riediger, Michaela (2009):

Ambulatory assessment in lifespan psychology: An overview of current status and new trends.

In: *European Psychologist* 14 (2), S. 98–108.

Abstract:

Ambulatory assessment represents a powerful research tool in lifespan psychology because it allows assessing the within-person variability of developmental processes as it occurs within context-specific influences of people's natural environments. Following a discussion of historical origins, we review four current research themes in developmentally relevant ambulatory assessment studies that use electronic devices as assessment instruments: (a) affective-motivational development, (b) social contexts of development, (c) age-related challenges and everyday functioning, and (d) cognitive development. Overall, the reviewed research demonstrates that ambulatory assessment complements traditional developmental study designs and laboratory assessments in important ways. Acknowledging the strengths and limitations of ambulatory assessment approaches, we propose that ambulatory assessment will benefit lifespan psychology most if it becomes an integral part of multimethod investigations of developmental phenomena that balance the external and internal validity of findings. Future research should strengthen the lifespan perspective in ambulatory assessment approaches, combine multiple indicators (subjective and objective) of successful development, and attend to the fact that individual development often interacts with significant others. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Horvath, Sylvia; Taylor, David G.; Marsh, Jonathan P.; Kriellaars, Dean J. (2007):

The effect of pedometer position and normal gait asymmetry on step count accuracy.

In: *Applied Physiology, Nutrition, and Metabolism* 32 (3), S. 409–415.

Abstract:

Manufacturers of pedometers recommend wearing a pedometer on the midline of the right thigh and this recommendation is used in research. However, there is conflicting evidence regarding the effect of pedometer position on accuracy. The purpose of this study was to systematically evaluate the effect of pedometer position on accuracy for 3 modes of gait. The Yamax SW200 pedometer was evaluated in 20 subjects in 5 different positions simultaneously: left mid-axillary, left mid-thigh, umbilical, right mid-thigh, and right mid-axillary. Each subject was asked to walk on a treadmill (54, 80, and 107 m.min(-1)), to walk overground (slow, preferred, and fast speeds), and to ascend and descend stairs. Pedometer steps were recorded and compared with actual steps observed. Using the same protocol, instantaneous triaxial accelerometry was used to explain position-dependent differences in accuracy. At slow speeds, the left mid-axillary position demonstrated the lowest net mean (+/-SD) error across all modes of gait (7.7% (+/-11.6%) overground;-0.6% (+/-2.2%) stairs). The right mid-thigh position had significantly ($p<0.01$) higher error for treadmill (18.1% (+/-17.3%)), overground (12.9% (+/-15.2%)), and stairs (2.9% (+/-3.9%)). Pedometer position dependent error was demonstrated, with the left mid-axillary position superior to the recommended position of right mid-thigh. The greater accuracy on the left side was wholly explained by gait asymmetry evident in step-induced accelerations recorded at right and left pedometer positions. A model of absolute error based on the ratio of steps at different gait speeds was generated to demonstrate the importance of this finding in pedometer-based lifestyle intervention studies.

Houtveen, Jan H.; Geus, Eco Jc (2009):

Noninvasive psychophysiological ambulatory recordings: Study design and data analysis strategies.

In: *European Psychologist* 14 (2), S. 132–141.

Abstract:

Rapid technical developments have greatly facilitated noninvasive 24-hour recording of physiological signals at relatively low costs, including blood pressure, activity of the autonomic nervous system, respiratory behavior, and activity of the hypothalamic-pituitary-adrenocortical axis. Ambulatory noninvasive recordings can be used to study the baseline levels of these physiological variables as well as their reactivity to naturalistic stressors. Levels and reactivity can be compared across groups differing in exposure to risk factors (e.g., stress, genotypes) or used to sharpen the clinical profile of individual subjects (e.g., in panic or somatoform disorders). The focus of the current paper is on the importance of a priori choices in study design and data analysis strategies when ambulatory recording specifically targets the reciprocal relationship between physiological and psychological events. These choices are illustrated with ambulatory-assessed indices of the cardiac autonomic nervous system, blood pressure, respiration, and cortisol secretion. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Houtveen, Jan H.; Groot, Paul F. C.; de Geus, Eco J C (2006):

Validation of the thoracic impedance derived respiratory signal using multilevel analysis.

In: *International journal of psychophysiology : official journal of the International Organization of Psychophysiology* 59 (2), S. 97–106. DOI: 10.1016/j.ijpsycho.2005.02.003.

Abstract:

The purpose of the current study was to validate the change in thoracic impedance (dZ) derived respiratory signal obtained from four spot electrodes against incidental spirometry. Additionally, a similar validation was performed for a dual respiratory belts signal to compare the relative merit of both methods. Participants were 38 healthy adult subjects (half male, half female). Cross-method comparisons were performed at three (paced) respiration frequencies in sitting, supine and standing postures. Multilevel regression was used to examine the within- and between-subjects structure of the relationship between spirometric volume and the respiratory amplitude signals obtained from either dZ or respiratory belts. Both dZ derived respiratory rate and dual belts derived respiratory rate accurately reflected the pacing frequencies. For both methods, fixed factors indicated acceptable but posture-specific regression on spirometric volume. However, random factors indicated large individual differences, which was supported by variability of gain analyses. It was concluded that both the dZ and dual belts methods can be used for measurement of respiratory rate and within-subjects, posture-specific, changes in respiratory volume. The need for frequent subject-specific and posture-specific calibration combined with relatively large measurement errors may strongly limit the usefulness of both methods to assess absolute tidal volume and minute ventilation in ambulatory designs.

Houtveen, Jan H.; Hamaker, Ellen L.; Van Doornen, Lorenz J P (2010):

Using multilevel path analysis in analyzing 24-h ambulatory physiological recordings applied to medically unexplained symptoms.

In: *Psychophysiology* 47 (3), S. 570–578. DOI: 10.1111/j.1469-8986.2009.00951.x.

Abstract:

A non-clinical group high on heterogeneous medically unexplained symptoms (MUS; n=97) was compared with healthy controls (n=66) on the within-subject relationships between physiological measures using multilevel path analysis. Momentary experienced somatic complaints, mood (tension and depression), cardiac autonomic activity (inter-beat intervals, pre-ejection period (PEP), and respiratory sinus arrhythmia (RSA)) and respiration (rate and partial pressure of CO(2) at the end of a normal expiration) were monitored for 24 h using electronic diary and ambulatory devices. Relationships between measures were controlled for diurnal variation and individual means. Only subtle group differences were found in the diurnal rhythm and in the within-subject relationships between physiological measures. For participants high on MUS, within-subject changes in bodily symptoms were related to changes in mood, but only marginally to the physiological measures. Results of the current path analysis confirm the subordinate role of cardiac autonomic and respiratory parameters in MUS.

Houtveen, Jan H.; Oei, Nicole Y. L. (2007):

Recall bias in reporting medically unexplained symptoms comes from semantic memory.

In: *Journal of Psychosomatic Research* 62 (3), S. 277–282.

Abstract:

OBJECTIVE:

When people report somatic complaints retrospectively, they depend on their memory. Therefore, retrospective reports can be influenced by general beliefs on sickness and health from semantic memory. We hypothesized that individuals with medically unexplained symptoms (MUS) would have recall biases stronger than those of people without complaints when reporting symptoms retrospectively, and that this effect would be a function of time between symptom experience and report.

METHODS:

To compare two time frames, 37 participants who were high and low on MUS reported momentary symptoms combined by daily recall and weekly recall using an electronic diary.

RESULTS:

Both groups reported more symptoms when recalling the entire week than what could be expected from average momentary reports. However, participants high on MUS also reported more symptoms when recalling a week than when recalling a day. For this group, recall bias was not associated with peak heuristic or symptoms variability.

CONCLUSION:

Symptom reports in people high on MUS increases as time passes by, probably as a results of a shift in memory retrieval strategy from using episodic knowledge to using semantic beliefs.

Houtveen, J. H.; Sorbi, M. J. (2013):

Prodromal functioning of migraine patients relative to their interictal state - an ecological momentary assessment study.

In: *PLoS One* 8 (8), S. e72827. DOI: 10.1371/journal.pone.0072827.

Abstract:

Smartphones were used in an online Ecological Momentary Assessment (EMA) design to test prodromal functioning relative to the interictal state in migraine patients. Eighty-seven participants completed an electronic diary 4 times daily during 3-6 weeks to monitor their migraine attacks. Twice daily the diary additionally included 16 multi-answer questions covering physical symptoms (30 items), cognitive-affective functioning (25 items) and external factors (25 items). Eight clustered prodromal features were identified in the current study: sensory sensitivity, pain/stiffness, fatigue, cognitive functioning, positive affect, negative affect, effort spent and stressors encountered. Per feature, individual change scores with interictal control days - excluding 24-hour post-attack recovery - were computed for six 12-hour pre-attack time windows covering three prodromal days. Linear mixed model (fixed-effect) analysis established significant increases in sensory sensitivity, pain/stiffness and fatigue, and a tendency for increased negative affect, in the 12 hours prior to the attack. Positive affect and cognitive functioning were impaired both in the 25-36 hour and - more strongly - in the 12-hour time window before the attack. No effects were found for effort spent and stressors encountered. Exploratory (random effect) analysis revealed significant individual differences in the change scores in sensory sensitivity, pain/stiffness, fatigue and negative affect. It is concluded that the prodromal change in migraine - relative to interictal functioning - predominantly exists within the last 12 hours before attack onset. Individual diversity is large, however. Future research should zoom in to identify prodrome development within the 12 pre-attack hours as well as to isolate individual patterns

Houtveen, Jan H.; van Doornen, Lorenz J. P. (2007):

Medically unexplained symptoms and between-group differences in 24-h ambulatory recording of stress physiology.

In: *Biol Psychol* 76 (3), S. 239–249.

Abstract:

People with medically unexplained symptoms (MUS) often have a comorbid history of stress and negative affect. Although the verbal-cognitive and (peripheral) physiological stress systems have shown a great degree of independence, at the same time it is claimed that chronic stress and negative affect can result in a disregulated physiological stress system, which may lead to MUS. Previous studies could not demonstrate a straightforward between subject relationship between MUS and stress physiology, supporting the view of independence. The aim of the current study was to further explore this relationship using an improved methodology based on ecologically valid 24-h real-life ambulatory recordings. Seventy-four participants (19 male; 55 female) with heterogeneous MUS were compared with 71 healthy controls (26 male; 45 females). Momentary experienced somatic complaints and mood, heart rate, cardiac autonomic activity, respiration and saliva cortisol were monitored using electronic diary and ambulatory registration devices. Participants with MUS reported much more momentary complaints and negative affect as compared to controls. Although MUS seemed to be associated with elevated heart rate and reduced low and very-low frequency heart period variability, these effects disappeared after controlling for differences in sports behaviour. No group differences were found for cardiac autonomic activity, respiration, end-tidal CO(2) and saliva cortisol. Our 24-h real-life ambulatory study did not support the existence of a connection between MUS and disregulated peripheral stress physiology. Future studies may instead focus on central measures to reveal potential abnormalities such as deviant central processing of visceral signals in MUS patients.

Hovi, Petteri; Andersson, Sture; Räikkönen, Katri; Strang-Karlsson, Sonja; Järvenpää, Anna-Liisa; Eriksson, Johan G. et al. (2010):

Ambulatory blood pressure in young adults with very low birth weight.

In: *J Pediatr* 156 (1), S. 54-59.e1. DOI: 10.1016/j.jpeds.2009.07.022.

Abstract:

OBJECTIVE\r\nWe hypothesized that, as compared with a matched control group born at term, young adults with very low birth weight (VLBW <1.5 kg) would have higher 24-hour ambulatory blood pressure.\r\nSTUDY DESIGN\r\nWe studied 118 18- to 27-year-old subjects born with VLBW within the greater Helsinki area and 120 term-born control subjects with similar age, sex, and birth hospital. The mean birth weight for VLBW subjects was 1.1 kg (standard deviation [SD], 0.2) and for controls, 3.6 kg (SD, 0.5). Gestational ages were 29.2 (SD, 2.3) and 40.1 (SD, 1.0) weeks. Current education of higher-educated parents served as an indicator of childhood socioeconomic status. Ambulatory blood pressure was measured during a 24-hour period with an oscillometric device (Spacelabs 90207).\r\nRESULTS\r\nVLBW subjects had, with sex, age, and body mass index adjustment, a 2.4 mm Hg (95% confidence interval, 0.2 to 4.6) higher 24-hour systolic pressure. We found hypertension in 11 VLBW subjects and in 3 term-born subjects, giving an adjusted odds ratio of 4.0 (1.1 to 14.8). When socioeconomic status was taken into account, results remained unchanged.\r\nCONCLUSIONS\r\nHigher rates of hypertension and higher 24-hour blood pressure among young adults with VLBW may indicate higher risk for adverse cardiovascular outcomes.

Howells, Annika; Ivtzan, Itai; Eiroa-Orosa, Francisco Jose (2014):

Putting the 'app' in happiness: A randomised controlled trial of a smartphone-based mindfulness intervention to enhance wellbeing.

In: *Journal of Happiness Studies*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-51006-001%26site%3dehost-live.

Abstract:

Smartphones are revolutionizing approaches to wellbeing investment. Those seeking greater happiness can engage with thousands of downloadable self-help applications instantly, yet their effectiveness remains largely unknown. This investigation explored the viability of delivering a positive psychological intervention in application format to authentic happiness seekers. A smartphone-based randomized-controlled trial was conducted with a diverse self-selecting pool, randomly assigned to engage with an empirically supported mindfulness intervention (n = 57) or a control intervention (n = 64) for 10 days. The study explored smartphone methodology, the importance of empirically based content for wellbeing enhancement and the extent to which user experience related to wellbeing gains. Results of repeated measures ANOVAs showed statistically significant increases in positive affect with a medium effect size and reduced depressive symptoms with a small effect size, although no statistically significant differences in satisfaction with life, flourishing or negative affect were found. No statistically significant gains were observed in the control condition. Ratings of task enjoyment were positively correlated (Pearson's r) with positive affect increase. Findings support the viability of smartphone-based interventions to significantly enhance elements of wellbeing, underscoring the importance of application content and the role of person-activity fit. This investigation presents implications for happiness seeking strategies in the real world whilst showcasing a dynamic method of intervention delivery that can benefit future research and practice. If the greatest mission of positive psychology is to enhance global flourishing, the potential of smartphone-based interventions may play a vital role. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Hsieh, Jui-Chien; Yu, Kuo-Chiang; Yang, Chung-Chi (2009):

The realization of ubiquitous 12-lead ECG diagnosis in emergency telemedicine.

In: *Telemed J E Health* 15 (9), S. 898–906. DOI: 10.1089/tmj.2009.0006.

Abstract:

This study presents an e-technology to realize a mobile 12-lead electrocardiography (ECG) information system capable of providing clinicians with ubiquitous 12-lead ECG diagnoses. Until now, there has been limited information on mobile systems that can exchange information with clinically used 12-lead ECG for emergency telemedicine. The development of mobilized 12-lead ECG diagnoses in clinical practice is impeded by the heterogeneous 12-lead ECG file formats and compressed ECG waveform data. In this study, clinically used Standard Communications Protocol ECG and Extensible Markup Language ECG interpreters were developed to extract compressed 12-lead ECG waveform data. A 12-lead ECG database server connecting with a hospital information system was then built to collect 12-lead ECG files and related clinical data. Additionally, a mobile 12-lead ECG database was implemented on mobile phones for remote 12-lead ECG diagnoses. Clinical evaluations confirmed the usefulness of this mobile 12-lead ECG information system, which significantly improves the diagnostic accuracy and the performance of medical treatments in cardio-emergency telemedicine. In summary, this system facilitated ubiquitous 12-lead ECG diagnoses and enhanced the efficiency and service quality of emergency telemedicine.

Huang, Po Hsien; Weng, Li Jen (2012):

Estimating the reliability of aggregated and within-person centered scores in ecological momentary assessment.

In: *Multivariate Behavioral Research* 47 (3), S. 421–441. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-16670-004&site=ehost-live;ljweng@ntu.edu.tw.

Abstract:

A procedure for estimating the reliability of test scores in the context of ecological momentary assessment (EMA) was proposed to take into account the characteristics of EMA measures. Two commonly used test scores in EMA were considered: the aggregated score (AGGS) and the within-person centered score (WPCS). Conceptually, AGGS and WPCS represent the interindividual differences and the intraindividual differences, respectively. The reliability coefficients for AGGS and WPCS were derived using a multilevel factor model with a serial correlation structure framework. Point estimates and confidence intervals of these coefficients were obtained using Mx (Neale, Boker, Xie, & Maes, 2004). A simulation study showed that the proposed procedure performed well empirically. Diary data from Huang (2009), which recorded daily joy level of 110 undergraduate students for 8 days, was used to illustrate the applicability of the proposed method. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Huberty, Jennifer L.; Dinkel, Danae M.; Beets, Michael W. (2014):

Evaluation of GoGirlGo!; A practitioner based program to improve physical activity.

In: *BMC Public Health* 14, S. 118. DOI: 10.1186/1471-2458-14-118.

Abstract:

BACKGROUND: GoGirlGo! (GGG) is designed to increase girls' physical activity (PA) using a health behavior and PA-based curriculum and is widely available for free to afterschool programs across the nation. However, GGG has not been formally evaluated. The purpose of this pilot study was to evaluate the effectiveness of the GGG curricula to improve PA, and self-efficacy for and enjoyment of PA in elementary aged girls (i.e., 5-13 years). METHODS: Nine afterschool programs were recruited to participate in the pilot (within subjects repeated measures design). GGG is a 12-week program, with a once a week, one-hour lesson with 30 minutes of education and 30 minutes of PA). Data collection occurred at baseline, mid (twice), post, and at follow-up (3-months after the intervention ended). PA was assessed via accelerometry at each time point. Self-efficacy for and enjoyment of PA was measured using the Self-Efficacy Scale and the Short-PA enjoyment scale and was assessed at baseline, post, and follow-up. Fidelity was assessed at midpoint. RESULTS: Across all age groups there was a statistically significant increase in PA. Overall, on days GGG was offered girls accumulated an average of 11 minutes of moderate-to-vigorous PA compared to 8 minutes during non-GGG days. There was a statistically significant difference in girls' self-efficacy for PA reported between baseline and post, which was maintained at follow-up. An improvement in enjoyment of PA for girls was found between baseline and follow-up. According to fidelity assessment, 89% of the activities within the curriculum were completed each lesson. Girls appeared to respond well to the curriculum but girls 5-7 years had difficulties paying attention and understanding discussion questions. CONCLUSIONS: Even though there were statistically significant differences in self-efficacy for PA and enjoyment of PA, minimal increases in girls' PA were observed. GGG curricula improvements are warranted. Future GGG programming should explore offering GGG every day, modifying activities so that they are moderate-to-vigorous in intensity, and providing additional trainings that allow staff to better implement PA and improve behavior management techniques. With modifications, GGG could provide a promising no-cost curriculum that afterschool programs may implement to help girls achieve recommendations for PA.

Huckvale, K.; Car, M.; Morrison, C.; Car, J. (2012):

Apps for asthma self-management: a systematic assessment of content and tools.

In: *BMC Med* 10 (1741-7015 (Linking)), S. 144. DOI: 10.1186/1741-7015-10-144.

Abstract:

ABSTRACT: BACKGROUND: Apps have been enthusiastically adopted by the general public. They are increasingly recognized by policy-makers as a potential medium for supporting self-management of long-term conditions. We assessed the degree to which current smartphone and tablet apps for people with asthma offer content and tools of appropriate quality to support asthma self-management. METHODS: We adapted systematic review methodology to the assessment of apps. We identified English-language asthma apps for all ages through a systematic search of official app stores. We systematically assessed app content using criteria derived from international guidelines and systematic review of strategies for asthma self-management. We

covered three domains: comprehensiveness of asthma information, consistency of advice with evidence and compliance with health information best practice principles. RESULTS: We identified 103 apps for asthma in English, of which 56 were sources of information about the condition and 47 provided tools for the management of asthma. No apps offered both types of functionality. Only three information apps approached our definition of comprehensiveness of information about asthma. No apps provided advice on lay management of acute asthma that included details of appropriate reliever medication use. In 32 of 72 instances, apps made unequivocal recommendations about strategies for asthma control or prophylaxis that were unsupported by current evidence. Although 90% of apps stated a clear purpose, compliance with other best practice principles for health information was variable. Contact details were located for 55%, funding source for 18% and confidentiality policy for 17%. CONCLUSIONS: No apps for people with asthma combined reliable, comprehensive information about the condition with supportive tools for self-management. Healthcare professionals considering recommending apps to patients as part of asthma self-management should exercise caution, recognizing that some apps like calculators may be unsafe; that no current app will meet the need of every patient; and that ways of working must be adapted if apps are to be introduced, supported and sustained in routine care. Policy-makers need to consider the potential role for assurance mechanisms in relation to apps. There remains much to be done if apps are to find broad use in clinical practice; clinicians cannot recommend tools that are inaccurate, unsafe or lack an evidence base

Hudock, Daniel; Kalinowski, Joseph (2014):

Stuttering inhibition via altered auditory feedback during scripted telephone conversations.

In: *Int J Lang Commun Disord* 49 (1), S. 139–147. DOI: 10.1111/1460-6984.12053.

Abstract:

BACKGROUND: Overt stuttering is inhibited by approximately 80% when people who stutter read aloud as they hear an altered form of their speech feedback to them. However, levels of stuttering inhibition vary from 60% to 100% depending on speaking situation and signal presentation. For example, binaural presentations of delayed auditory feedback (DAF) and frequency-altered feedback (FAF) have been shown to reduce stuttering by approximately 57% during scripted telephone conversations. AIMS: To examine stuttering frequency under monaural auditory feedback with one combination of DAF with FAF (COMBO-2) and two combinations of DAF with FAF (COMBO-4) during scripted telephone conversations. METHODS & PROCEDURES: Nine adult participants who stutter called 15 local businesses during scripted telephone conversations; each condition consisted of five randomized telephone calls. Conditions consisted of (1) baseline (i.e. non-altered feedback), (2) COMBO-2 (i.e. 50-ms delay with a half octave spectral shift up), and (3) COMBO-4 (i.e. 200-ms delay and a half octave spectral shift down in addition to the COMBO-2). Participants wore a supra-aural headset with a dynamic condenser microphone while holding a receiver to their contralateral ear when making telephone calls. OUTCOMES & RESULTS: Stuttering was significantly reduced during both altered auditory feedback (AAF) conditions by approximately 65%. Furthermore, a greater reduction in stuttering was revealed during the COMBO with four effects (74%) as compared with the COMBO with two effects (63%). CONCLUSIONS & IMPLICATIONS: Results from the current study support prior research reporting decreased stuttering under AAF during scripted telephone conversations. Findings that stuttering was significantly reduced to a greater extent under the COMBO with four effects condition suggest that second signals reduce stuttering along a continuum. Additionally, findings support prior research results of decreased stuttering frequency under AAF during hierarchically difficult speaking situations. Clinical application of these findings may be that people who stutter can use specific software or smartphone applications that produce second speech signals to inhibit stuttering frequency effectively during telephone conversations.

Huffziger, Silke; Ebner-Priemer, Ulrich; Zamoscik, Vera; Reinhard, Iris; Kirsch, Peter; Kuehner, Christine (2013):

Effects of mood and rumination on cortisol levels in daily life: An ambulatory assessment study in remitted depressed patients and healthy controls.

In: *Psychoneuroendocrinology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-17752-001%26site%3dehost-live.

Abstract:

The influence of naturally occurring emotional and cognitive experiences on hypothalamic–pituitary–adrenal axis (HPAA) activity is still underinvestigated, particularly in clinical populations. The present study examined effects of mood and rumination on cortisol levels in daily life in remitted depressed patients with recurrent episodes or a chronic precourse (n=31) and healthy controls (n=32). Ambulatory assessment of subjective variables (valence, calmness, energetic-arousal, ruminative self-focus), daily stressors, and saliva cortisol samples was performed five times a day on two consecutive workdays, whereby cortisol was collected 20min after the subjective assessments. In addition, depressive symptoms and trait rumination (brooding, reflection)

were measured retrospectively. Multilevel models revealed that remitted depressed patients showed lower cortisol activity compared to healthy controls. Depressive symptoms and trait rumination did not predict HPAA activity, whereas, by controlling for daily stressors, higher daily means of ruminative self-focus and lower daily means of valence, energetic arousal and calmness were associated with higher daily cortisol levels. Separate analyses per group revealed that mean daily ruminative self-focus predicted higher cortisol in both samples. In contrast, lower daily means of calmness, but also of valence and energetic arousal, were significantly linked to higher cortisol output only in healthy controls, but not in the patient sample. These findings indicate that naturally occurring rumination and low mood are associated with increased activation of the HPAA in daily life. Moreover, our data revealed a potentially reduced mood–cortisol coupling in remitted recurrent depression, possibly indicating that during the course of recurrent depression HPAA activation might become less responsive toward subtle emotional experiences in natural contexts. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Huffziger, S.; Ebner-Priemer, U.; Eisenbach, C.; Koudela, S.; Reinhard, I.; Zamoscik, V. et al. (2013):

Induced ruminative and mindful attention in everyday life: An experimental ambulatory assessment study.

In: *J Behav.Ther.Exp.Psychiatry* 44 (3), S. 322–328. DOI: 10.1016/j.jbtep.2013.01.007.

Abstract:

BACKGROUND AND OBJECTIVES: Rumination has been proposed as a risk factor for depression, while mindful attention might be protective. Differential effects of these attention foci have so far only been examined in the laboratory. Therefore, we conducted an experimental ambulatory assessment study using ruminative and mindful attention inductions in everyday life to examine their effects in a natural context. METHODS: Fifty young adults carried palmtops over three weekdays (rumination induction day, mindful attention induction day, noninduction day; randomized cross-over design). Ten times a day, participants rated ruminative self-focus and mood. On the induction days, they were additionally subjected to 3-min inductions of ruminative or mindful attention at each assessment. RESULTS: The two induction modes exhibited differential immediate effects on ruminative self-focus and mood. While induced rumination immediately deteriorated valence and calmness, induced mindful attention specifically enhanced calmness. Depressive symptoms did not moderate these effects. While overall longer term effects of the inductions were missing, the mindful attention day was associated with slightly increasing positive valence over the day. LIMITATIONS: The results need to be replicated in high-risk and patient samples to demonstrate the clinical significance of identified effects. CONCLUSIONS: Results confirm the emotional relevance of rumination and mindful attention in real world settings. Future work may test whether adaptive attention-focusing instructions delivered in daily life can support clinical interventions

Hughes, A. J.; Rutherford, B. J. (2012):

Hemispheric interaction, task complexity, and emotional valence: Evidence from naturalistic images.

In: *Brain Cogn* 81 (2), S. 167–175. DOI: 10.1016/j.bandc.2012.11.004.

Abstract:

Two experiments extend the ecological validity of tests of hemispheric interaction in three novel ways. First, we present a broad class of naturalistic stimuli that have not yet been used in tests of hemispheric interaction. Second, we test whether probable differences in complexity within the class of stimuli are supported by outcomes from measures of hemispheric interaction. Third, we use a procedure that presents target stimuli at fixation rather than at a lateralized location in order to more closely approximate normal viewing behavior. Images of positive or negative valence were presented with a lateralized distractor or no distractor at all. Response time and accuracy to determine whether an image was pleasant or unpleasant was measured. Results found that positive images were more quickly and accurately processed by the left hemisphere alone, while negative images were more quickly processed when the hemispheres interacted, and were more accurately processed when the hemispheres interacted than the left hemisphere alone. The findings support the idea that hemispheric interaction costs the performance of a simple task and benefits the performance of a complex task, and that the respective cost or gain is mediated by the pattern of laterality for emotional processing

Huguet, Anna; Stinson, Jennifer; MacKay, Bonnie; Watters, Carolyn; Tougas, Michelle; White, Meghan; McGrath, Patrick J. (2014):

Bringing psychosocial support to headache sufferers using information and communication technology: lessons learned from asking potential users what they want.

In: *Pain Res Manag* 19 (1), S. e1-8.

Abstract:

BACKGROUND: Headaches are a major concern for which psychosocial interventions are recommended. However, headache sufferers do not always have ready access to these interventions. Technology has been used to improve access, especially in young people. OBJECTIVES: To examine user preferences to inform the development of an Internet-based psychosocial intervention including smartphone technology, referred to as the Wireless Headache Intervention. METHODS: The methodology followed a participatory design cycle, including 25 headache sufferers (14 to 28 years of age) who informed the prototype design. All participants were familiar with smartphones and the Internet. Through two iterative cycles of focus groups stratified according to age, qualitative data were collected by asking user preferences for the different planned components of the intervention (ie, smartphone pain diary, Internet-based self-management treatment, social support) and other relevant aspects (ie, smartphone versus computer delivery, and ways of reaching target audience). NVivo 8 with content analysis was used to analyze data and reflect themes as guided by the thematic survey. RESULTS: Participants reported a preference for completing the smartphone pain diary on a daily basis. Participants believed that the program should facilitate easy access to information regarding headaches and management strategies. They also wanted access to other headache sufferers and experts. Participants believed that the program should be customizable and interactive. They reinforced the need and value of an integrated smartphone and Internet-based application. CONCLUSIONS: The results provide insight into a participatory design to guide design decisions for the type of intervention for which success relies largely on self-motivation. The results also provide recommendations for design of similar interventions that may benefit from the integration of mobile applications to Internet-based interventions. The present research contributes to the theoretical frameworks that have been formulated for the development of Internet-based applications.

Huh, Jimi; Shin, Heesung; Leventhal, Adam M.; Spruijt-Metz, Donna; Abramova, Zarina; Cerrada, Christian et al. (2014):

Momentary negative moods and being with friends precede cigarette use among Korean American emerging adults.

In: *Nicotine & Tobacco Research* 16 (9), S. 1248–1254. DOI: 10.1037/t04295-000.

Abstract:

Introduction: The objective of this study was to determine contextual antecedents to smoking among Korean American emerging adult (KAEA) smokers using ecological momentary assessment. Based on extant theory and data documenting the importance of negative affect (NA) and social context, we examined the extent to which being with friends and NA independently and concomitantly were associated with the likelihood of subsequent smoking, over and beyond other known situational correlates of smoking. Methods: Twenty-two KAEA daily smokers recorded their smoking events in real time and participated in short surveys implemented on mobile phones for 7 days. Individual, interpersonal, and situational contexts immediately preceding and during smoking events were examined in comparison to nonsmoking events using a within-subject modeling approach. Results: Both NA and being with friends independently were correlated with increased likelihood of smoking. We also found an interaction showing that the effects of NA on smoking were significant only in presence of friends. Conclusions: Unlike more established smokers, these younger smokers may be strongly influenced by peer contexts as well as unpleasant affect. The interaction between social contexts and NA highlights a potential window for intervention for the population of KAEA smokers. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Huisinga, J. M.; Mancini, M.; St George, R. J.; Horak, F. B. (2012):

Accelerometry Reveals Differences in Gait Variability Between Patients with Multiple Sclerosis and Healthy Controls.

In: *Ann.Biomed.Eng* (0090-6964 (Linking)). DOI: 10.1007/s10439-012-0697-y.

Abstract:

Variability of movement reflects important information for the maintenance of the health of the system. For pathological populations, changes in variability during gait signal the presence of abnormal motor control strategies. For persons with multiple sclerosis (PwMS), extensive gait problems have been reported including changes in gait variability. While previous studies have focused on footfall variability, the present study used accelerometers on the trunk to measure variability during

walking. Thus, the purpose of this study was to examine the variability of the acceleration pattern of the upper and lower trunk in PwMS compared to healthy controls. We extracted linear and nonlinear measures of gait variability from 30 s of steady state walking for 15 PwMS and 15 age-matched healthy controls. PwMS had altered variability compared to controls with greater Lyapunov exponent in the ML ($p < 0.001$) and AP ($p < 0.001$) directions, and greater frequency dispersion in the ML direction ($p = 0.034$). PwMS also demonstrated greater mean velocity in the ML direction ($p = 0.045$) and lower root mean square of acceleration in the AP direction ($p = 0.040$). These findings indicate that PwMS have altered structure of variability of the trunk during gait compared to healthy controls and agree with previous findings related to changes in gait variability in PwMS

Humber, N.; Emsley, R.; Pratt, D.; Tarrier, N. (2013):

Anger as a predictor of psychological distress and self-harm ideation in inmates: A structured self-assessment diary study.

In: *Psychiatry Res* (0165-1781 (Linking)). DOI: 10.1016/j.psychres.2013.02.011.

Abstract:

Suicidal ideation and behaviour are common among inmates. Anger is found at exaggerated levels and has been associated with suicidal ideation and behaviour in inmate samples suggesting its possible salience in the prediction of suicide. The study investigated relationships between anger, psychological distress, and self-harm/suicidal ideation among inmates. The principles of Ecological Momentary Assessment were considered and a structured self-assessment diary was utilised to examine relationships between the variables of interest. Participants completed a structured self-assessment diary for six consecutive days which included momentary ratings of items describing psychological states of concurrent affects, thoughts, and appraisals related to anger, psychological distress, and self-harm/suicidal ideation. Psychometric assessment measures were also conducted. Temporal associations between predictors and outcomes were investigated. Multilevel modelling analyses were performed. Increased anger was significantly associated with concurrent high levels of self-harm ideation in inmates, when controlling for depression and hopelessness. Temporal analyses also revealed that anger at one time point did not predict suicidal ideation at the next time point. Elucidating the temporal nature of the relationship between anger, psychological distress, and self-harm/suicidal ideation has advanced understanding of the mechanisms of suicidal behaviour, by demonstrating an increased risk of suicide when a male inmate is angry

Hundert, Amos S.; Huguet, Anna; McGrath, Patrick J.; Stinson, Jennifer N.; Wheaton, Mike (2014):

Commercially available mobile phone headache diary apps: a systematic review.

In: *JMIR Mhealth Uhealth* 2 (3), S. e36. DOI: 10.2196/mhealth.3452.

Abstract:

BACKGROUND: Headache diaries are often used by headache sufferers to self-monitor headaches. With advances in mobile technology, mobile electronic diary apps are becoming increasingly common. OBJECTIVE: This review aims to identify and evaluate all commercially available mobile headache diary apps for the two most popular mobile phone platforms, iOS and Android. METHODS: The authors developed a priori a set of 7 criteria that define an ideal headache diary app intended to help headache sufferers better understand and manage their headaches, while providing relevant data to health professionals. The app criteria were intended as minimum requirements for an acceptable headache diary app that could be prescribed by health care professionals. Each app was evaluated and scored against each criterion. RESULTS: Of the 38 apps identified, none of the apps met all 7 app criteria. The 3 highest scoring apps, meeting 5 of the app criteria, were iHeadache (developed by Better QOL), ecoHeadache (developed by ecoTouchMedia), and Headache Diary Pro (developed by Froggyware). Only 18% of the apps were created with scientific or clinical headache expertise and none of the apps reported on psychometric properties. CONCLUSIONS: Despite the growing market and demand, there is a concerning lack of scientific expertise and evidence base associated with headache diary apps.

Hundt, Natalie E.; Brown, Leslie H.; Kimbrel, Nathan A.; Walsh, Molly A.; Nelson-Gray, Rosemery; Kwapil, Thomas R. (2013):

Reinforcement sensitivity theory predicts positive and negative affect in daily life.

In: *Personality and Individual Differences* 54 (3), S. 350–354. DOI: 10.1037/t04113-000;

Abstract:

Laboratory studies of Reinforcement Sensitivity Theory have associated sensitivity to punishment (SP) with negative affect and sensitivity to reward (SR) with positive affect. However, few studies have examined the expression of these systems and their

response to cues of reward in daily life. The current study employed experience sampling methodology (ESM) to assess the association of SP and SR with affect and perceptions of situations in daily life. SP was positively associated with negative affect and negatively associated with positive affect in daily life, whereas SR was associated with positive affect and one aspect of negative affect, irritability/anger. Furthermore, high SP participants experienced smaller increases in positive affect and smaller decreases in negative affect in some situations that were perceived as positive, in comparison to low SP participants. In contrast, high SR participants experienced greater decreases in negative affect in some situations that were perceived as positive, in comparison to low SR participants. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Hunter, E. J. (2012):

Teacher response to ambulatory monitoring of voice.

In: *Logoped.Phoniatr.Vocol.* (1401-5439 (Linking)). DOI: 10.3109/14015439.2012.664657.

Abstract:

Voice accumulation and dosimetry devices are used for unobtrusive monitoring of voice use. While numerous studies have used these devices to examine how individuals use their voices, little attention has been paid to how subjects respond to them. Therefore, the purpose of this short communication is to begin to explore two questions: 1) How do voice monitoring devices affect daily communication? and 2) How do participants feel about the physical design and function of these types of voice monitoring devices? One key finding is that most of the subjects remain aware of the dosimeter while wearing it, which may impact the data collected. Further, most subjects have difficulty with the accelerometer and/or the data storage device

Hurlburt, Russell T. (2011):

Nine clarifications of descriptive experience sampling.

In: *Journal of Consciousness Studies* 18 (1), S. 274–287. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-20325-015&site=ehost-live;russ@unlv.nevada.edu.

Abstract:

Reply by the current author to the comments made by Christopher S. Hill (see record 2011-20325-002); Claire Petitmengin (see record 2011-20325-003); Charles Siewert (see record 2011-20325-004); Eric Klinger (see record 2011-20325-005); Gualtiero Piccinini (see record 2011-20325-006); John Sutton (see record 2011-20325-007); Mark Engelbert and Peter Carruthers (see record 2011-20325-008); Michael J. Kane (see record 2011-20325-009); Maja Spener (see record 2011-20325-010); Terry Horgan and Mark Timmons (see record 2011-20325-011) on the book Describing inner experience? Proponent meets skeptic by Russell T. Hurlburt and Eric Schwitzgebel (see record 2007-14525-000). The commentaries in this symposium reveal nine misconceptions about Descriptive Experience Sampling (DES) that the present paper attempts to clear up: about pristine experience, about the iterative nature of DES, about the term of DES retrospection, about the accuracy of DES, about the diachronic abilities of DES, about the inability of DES to target specific questions, about the worry that DES stifles careful observation, about the difficulty/expense of DES, and about the transformative power of DES to trump a lifetime of observations. (PsycINFO Database Record (c) 2011 APA, all rights reserved)

Hurlburt, Russell T.; Heavey, Christopher L. (2015):

Investigating pristine inner experience: Implications for experience sampling and questionnaires.

In: *Conscious Cogn* 31, S. 148–159. DOI: 10.1016/j.concog.2014.11.002.

Abstract:

We argue that inquiring about directly apprehended ("pristine") inner experience requires four overlapping methodological characteristics: effectively limiting investigation to specific, clearly identified moments; effectively limiting investigation to pristine experience; bracketing presuppositions; and iteratively acquiring skills. We compare and contrast Descriptive Experience Sampling (DES), other (non-DES) experience sampling methods, and questionnaires and conclude that whereas non-DES sampling methods and questionnaires appear to inquire about pristine inner experience, they fall short on all four methodological counts and therefore might be better understood as investigating an ill-defined mixture of presuppositions, judgments about experience, and pristine experience itself. Typical experience sampling studies and questionnaires can be valid and useful, but their validity and utility does not (or at least does not necessarily) arise from their phenomenological fidelity.

Hurst, John R.; Donaldson, Gavin C.; Quint, Jennifer K.; Goldring, James J. P.; Patel, Anant R. C.; Wedzicha, Jadwiga A. (2010):

Domiciliary pulse-oximetry at exacerbation of chronic obstructive pulmonary disease: prospective pilot study.

In: *BMC pulmonary medicine* 10 (1), S. 52.

Abstract:

Background

The ability to objectively differentiate exacerbations of chronic obstructive pulmonary disease (COPD) from day-to-day symptom variations would be an important development in clinical practice and research. We assessed the ability of domiciliary pulse oximetry to achieve this.

Methods

40 patients with moderate-severe COPD collected daily data on changes in symptoms, heart-rate (HR), oxygen saturation (SpO2) and peak-expiratory flow (PEF) over a total of 2705 days. 31 patients had data suitable for baseline analysis, and 13 patients experienced an exacerbation. Data were expressed as multiples of the standard deviation (SD) observed from each patient when stable.

Results

In stable COPD, the SD for HR, SpO2 and PEF were approximately 5 min-1, 1% and 10l min-1. There were detectable changes in all three variables just prior to exacerbation onset, greatest 2-3 days following symptom onset. A composite Oximetry Score (mean magnitude of SpO2 fall and HR rise) distinguished exacerbation onset from symptom variation (area under receiver-operating characteristic curve, AUC = 0.832, 95%CI 0.735-0.929, p = 0.003). In the presence of symptoms, a change in Score of ≥1 (average of ≥1SD change in both HR and SpO2) was 71% sensitive and 74% specific for exacerbation onset.

Conclusion

We have defined normal variation of pulse oximetry variables in a small sample of patients with COPD. A composite HR and SpO2 score distinguished exacerbation onset from symptom variation, potentially facilitating prompt therapy and providing validation of such events in clinical trials.

Hurtig-Wennlöf, Anita; Ruiz, Jonatan R.; Harro, Maarike; Sjöström, Michael (2007):

Cardiorespiratory fitness relates more strongly than physical activity to cardiovascular disease risk factors in healthy children and adolescents: the European Youth Heart Study.

In: *European journal of cardiovascular prevention and rehabilitation : official journal of the European Society of Cardiology, Working Groups on Epidemiology & Prevention and Cardiac Rehabilitation and Exercise Physiology* 14 (4), S. 575–581. DOI: 10.1097/HJR.0b013e32808c67e3.

Abstract:

BACKGROUND\r\nPhysical activity and cardiorespiratory fitness are closely related to health variables in adults, especially those considered to be among risk factors for cardiovascular diseases. The possible tracking of cardiovascular disease risk factors from childhood to adulthood makes it important to increase our understanding of the complex relationships between physical activity, cardiorespiratory fitness and cardiovascular risk factors early in life.\r\nDESIGN\r\nA cross-sectional, school-based study on healthy children and adolescents, aged 9-10 years (295 girls, 295 boys) and 15-16 years (302 girls, 233 boys) was performed during a school year in Sweden and Estonia, as part of the European Youth Heart Study.\r\nMETHODS\r\nTotal physical activity, and minutes spent in inactivity and activity of moderate or higher intensity were measured by accelerometry. A maximal ergometer bike test was used for estimation of cardiorespiratory fitness. The risk factors included blood pressure and fasting blood levels of insulin, glucose, triglycerides, total cholesterol and high-density lipoprotein cholesterol.\r\nRESULTS\r\nCanonical correlations between physical activity and cardiorespiratory fitness versus cardiovascular disease risk factors showed significant associations in both age and sex groups (rc=0.46-0.61, P<0.0001). The cardiorespiratory fitness was found to be the strongest contributor to these relationships. In girls high values of the physical activity variables were also associated with a favourable cardiovascular profile.\r\nCONCLUSIONS\r\nCardiorespiratory fitness relates more strongly to cardiovascular risk factors than components of objectively measured physical activity in children and adolescents. Physical activity becomes more important in the 15-year-old adolescents, indicating that these modifiable lifestyle factors increase in importance with age.

Hurum, Harald; Sulheim, Dag; Thaulow, Erik; Wyller, Vegard Bruun (2011):

Elevated nocturnal blood pressure and heart rate in adolescent chronic fatigue syndrome.

In: *Acta Paediatr* 100 (2), S. 289–292.

Abstract:

AIM:

To compare ambulatory recordings of heart rate (HR) and blood pressure in adolescents with chronic fatigue syndrome (CFS) and healthy controls. We hypothesized both HR and blood pressure to be elevated among CFS patients.

METHODS:

Forty-four CFS patients aged 12-18 years were recruited from our paediatric outpatient clinic. The controls were 52 healthy adolescents having similar distribution of age and gender. 24-h ambulatory blood pressure and HR were recorded using a validated, portable oscillometric device.

RESULTS:

At night (sleep), HR, mean arterial blood pressure and diastolic blood pressure were significantly higher in CFS patients as compared with controls ($p < 0.01$). During daytime, HR was significantly higher among CFS patients ($p < 0.05$), whereas blood pressures were equal among the two groups.

CONCLUSIONS:

The findings support previous experimental evidence of sympathetic predominance of cardiovascular control in adolescent CFS patients. Also, the findings prompt increased focus on cardiovascular risk assessment and suggest a possible target for therapeutic intervention.

Hurvitz, Philip M.; Moudon, Anne Vernez; Kang, Bumjoon; Saelens, Brian E.; Duncan, Glen E. (2014):

Emerging technologies for assessing physical activity behaviors in space and time.

In: *Front Public Health* 2, S. 2. DOI: 10.3389/fpubh.2014.00002.

Abstract:

Precise measurement of physical activity is important for health research, providing a better understanding of activity location, type, duration, and intensity. This article describes a novel suite of tools to measure and analyze physical activity behaviors in spatial epidemiology research. We use individual-level, high-resolution, objective data collected in a space-time framework to investigate built and social environment influences on activity. First, we collect data with accelerometers, global positioning system units, and smartphone-based digital travel and photo diaries to overcome many limitations inherent in self-reported data. Behaviors are measured continuously over the full spectrum of environmental exposures in daily life, instead of focusing exclusively on the home neighborhood. Second, data streams are integrated using common timestamps into a single data structure, the "LifeLog." A graphic interface tool, "LifeLog View," enables simultaneous visualization of all LifeLog data streams. Finally, we use geographic information system SmartMap rasters to measure spatially continuous environmental variables to capture exposures at the same spatial and temporal scale as in the LifeLog. These technologies enable precise measurement of behaviors in their spatial and temporal settings but also generate very large datasets; we discuss current limitations and promising methods for processing and analyzing such large datasets. Finally, we provide applications of these methods in spatially oriented research, including a natural experiment to evaluate the effects of new transportation infrastructure on activity levels, and a study of neighborhood environmental effects on activity using twins as quasi-causal controls to overcome self-selection and reverse causation problems. In summary, the integrative characteristics of large datasets contained in LifeLogs and SmartMaps hold great promise for advancing spatial epidemiologic research to promote healthy behaviors.

Husky, Mathilde M.; Gindre, Claire; Mazure, Carolyn M.; Brebant, Catherine; Nolen-Hoeksema, Susan; Sanacora, Gerard; Swendsen, Joel (2010):

Computerized ambulatory monitoring in mood disorders: feasibility, compliance, and reactivity.

In: *Psychiatry Res* 178 (2), S. 440–442. DOI: 10.1016/j.psychres.2010.04.045.

Abstract:

Patients with depression (n=20) or bipolar disorder (n=21) completed computerized ambulatory monitoring for three consecutive days. Results indicate satisfactory rates of acceptance and compliance, with no salient fatigue effects. However, some evidence for reactive effects was found. The findings provide support for this approach in the study of mood disorders.

Husky, Mathilde; Olie, Emilie; Guillaume, Sebastien; Genty, Catherine; Swendsen, Joel; Courtet, Philippe (2014):

Feasibility and validity of ecological momentary assessment in the investigation of suicide risk.

In: *Psychiatry Res. DOI:* 10.1016/j.psychres.2014.08.019.

Abstract:

Ecological Momentary Assessment has been used to investigate a wide range of behaviors and psychiatric conditions. Previous investigations have consistently obtained promising results with high acceptance and compliance rates, and with only minor reactive effects for specific variables. Despite the promise of this methodology for the study of severe psychiatric populations, little is known about its feasibility in samples at risk for suicide. In the present study, four samples at varying risk for suicide completed an Ecological Momentary Assessment study by responding to five electronic assessments per day over a one-week period. Samples included healthy controls (n=13), affective controls (n=21), past suicide attempters (n=20), and recent suicide attempters (n=42). The results demonstrate satisfactory participation rates and high compliance with daily life repeated assessments across all groups. Importantly, negative thoughts or suicidal ideation were not reactive to the duration of the study, indicating that the repeated assessment of such cognitions in daily life have little or no effect on their frequency. The findings provide support for the use of Ecological Momentary Assessment in the study of suicidal ideation and suggest that mobile technologies represent new opportunities for the assessment of high-risk cognitive states experienced by patients in daily life.

Hussong, Andrea M. (2007):

Predictors of drinking immediacy following daily sadness: An application of survival analysis to experience sampling data.

In: *Addict Behav* 32 (5), S. 1054–1065.

Abstract:

Previous studies of daily assessments show modest mood-drinking covariation as a function of gender and coping motives; however previous analyses also assume a fixed interval across all individuals in the onset of drinking following negative mood. The current study used survival analysis and experience sampling methods to test whether gender and coping motives predicted shorter sadness-to-drinking intervals among those with greater alcohol-related drinking consequences. A sample of 85 college students (46% male; 78% Caucasian) completed daily assessments over 28 days. Survival analyses showed that women drank more on days following elevated sadness when they reported being motivated to drink to cope and having experienced alcohol-related consequences. For men, the two groups showing greater drinking risk following days of elevated sadness did not report alcohol-related consequences, with those reporting the presence of coping motives showing the greatest risk. Implications of these findings for self-medication mechanisms are discussed.

Hussong, Andrea M.; Gould, Laura Feagans; Hersh, Matthew A. (2008):

Conduct problems moderate self-medication and mood-related drinking consequences in adolescents.

In: *Journal of Studies on Alcohol and Drugs* 69 (2), S. 296.

Abstract:

OBJECTIVE:

We tested whether conduct problems moderate the relation between negative mood and drinking in adolescents as consistent with either a self-medication or a drinking consequences model.

METHOD:

The sample included 75 rising ninth graders (i.e., in the summer before starting ninth grade) who completed a two-stage, multimethod, multireporter study. We used experience sampling to assess negative mood and drinking across 21 days and hierarchical linear modeling to test our hypotheses.

RESULTS:

Counter to predictions, both self-medication and drinking consequence mechanisms were evident only in youth with fewer conduct problems.

CONCLUSIONS:

Findings provide support for the importance of considering multiple mechanisms as underlying the relation between negative mood and drinking as pertaining to subpopulations of vulnerable youth. Implications for prevention and understanding negative mood-drinking relations in adolescents are discussed.

Hutchesson, Melinda J.; Rollo, Megan E.; Callister, Robin; Collins, Clare E. (2014):

Self-Monitoring of Dietary Intake by Young Women: Online Food Records Completed on Computer or Smartphone Are as Accurate as Paper-Based Food Records but More Acceptable.

In: *J Acad Nutr Diet. DOI:* 10.1016/j.jand.2014.07.036.

Abstract:

Adherence and accuracy of self-monitoring of dietary intake influences success in weight management interventions. Information technologies such as computers and smartphones have the potential to improve adherence and accuracy by reducing the burden associated with monitoring dietary intake using traditional paper-based food records. We evaluated the acceptability and accuracy of three different 7-day food record methods (online accessed via computer, online accessed via smartphone, and paper-based). Young women (N=18; aged 23.4+/-2.9 years; body mass index 24.0+/-2.2) completed the three 7-day food records in random order with 7-day washout periods between each method. Total energy expenditure (TEE) was derived from resting energy expenditure (REE) measured by indirect calorimetry and physical activity level (PAL) derived from accelerometers (TEE=REExPAL). Accuracy of the three methods was assessed by calculating absolute (energy intake [EI]-TEE) and percentage difference (EI/TEEx100) between self-reported EI and TEE. Acceptability was assessed via questionnaire. Mean+/-standard deviation TEE was 2,185+/-302 kcal/day and EI was 1,729+/-249 kcal/day, 1,675+/-287kcal/day, and 1,682+/-352 kcal/day for computer, smartphone, and paper records, respectively. There were no significant differences between absolute and percentage differences between EI and TEE for the three methods: computer, -510+/-389 kcal/day (78%); smartphone, -456+/-372 kcal/day (80%); and paper, -503+/-513 kcal/day (79%). Half of participants (n=9) preferred computer recording, 44.4% preferred smartphone, and 5.6% preferred paper-based records. Most participants (89%) least preferred the paper-based record. Because online food records completed on either computer or smartphone were as accurate as paper-based records but more acceptable to young women, they should be considered when self-monitoring of intake is recommended to young women.

Hutton, J.; Leung, J. (2012):

Treatment of spinal cord compression: are we overusing radiotherapy alone compared to surgery and radiotherapy?

In: *Asia Pac.J Clin.Oncol.* (1743-7555 (Linking)). DOI: 10.1111/j.1743-7563.2012.01568.x.

Abstract:

INTRODUCTION: This article describes how patients with metastatic spinal cord compression (MSCC) were treated from 2005 to 2011 at a single institution. A comparison is made with an international and standardized scoring system which would have predicted which patients would have a better outcome with neurosurgery in addition to radiotherapy in accordance with current best practice standards. METHOD: A retrospective audit of all MSCC patients presenting from 2005 to 2011 was undertaken. An assessment of outcome was made by using ambulatory assessment tool and by comparing overall survival with published standards. RESULTS: In all, 39 patients were identified, of whom 37 received radiotherapy alone and two (5%) received surgery and postoperative radiotherapy. The international standardized scoring system predicted 28 (72%) of the 39 patients might have had a better outcome with neurosurgery in addition to radiotherapy. MSCC patients generally had reasonable outcomes, but selected patients could potentially do better with decompressive surgery. CONCLUSION: There is a subset of MSCC patients who have poor predicted ambulatory rates after radiotherapy alone and who may benefit from decompressive surgery. It is recommended that MSCC patients be categorized according to the international scoring system to identify appropriate candidates for surgical intervention and postoperative radiotherapy or radiotherapy alone

Hynynen, Esa; Konttinen, Niilo; Rusko, Heikki (2009):

Heart rate variability and stress hormones in novice and experienced parachutists anticipating a jump.

In: *Aviation, space, and environmental medicine* 80 (11), S. 976–980.

Abstract:

INTRODUCTION:

Chronic work stress and overtraining are known to influence heart rate (HR) and heart rate variability (HRV) at rest and decreased nocturnal HRV is associated with cardiovascular health and disease. The purpose of this study was to examine whether anticipation of an acute highly stressful event influences HR and HRV during the night and morning.

METHODS:

Nocturnal HR and HRV and urinary stress hormones (cortisol, adrenaline, noradrenaline) as well as HR and HRV responses to an orthostatic test on the morning of a parachute jump day or control day were analyzed from 14 novice and 7 experienced parachute jumpers.

RESULTS:

There were no differences in any HRV indices during the night or the orthostatic test between the jump and control situations. The novices had higher HR than experienced jumpers in the orthostatic test in the morning and also during the jump, but no differences were found between the groups in nocturnal HR and HRV indices or HRV indices during the orthostatic test. There were no differences in nocturnal stress hormone secretions except slightly elevated adrenaline secretion during the jump night compared to the control night (P = 0.014).

CONCLUSIONS:

The parachute jump did not substantially influence HR, HRV, or stress hormones during the night or the orthostatic test in the morning preceding the jump. The results suggest that the parachute jump as an acute highly stressful event had no anticipatory effect on autonomic modulation of the heart even though both the novices and experienced jumpers had markedly accentuated sympathetic activation during the parachuting.

Ibuki, Chikao; Seino, Yoshihiko; Otsuka, Toshiaki; Mizuno, Kyoichi (2014):

The fixed-dose combination of losartan/hydrochlorothiazide elicits potent blood pressure lowering during nighttime in obese hypertensive patients.

In: *J Clin Med Res* 6 (1), S. 8–16. DOI: 10.4021/jocmr1649w.

Abstract:

BACKGROUND: Hypertension is one of the most powerful predictor of the future cardiovascular events, and antihypertensive therapy adopting multiple drug regimen is often needed to obtain the appropriate blood pressure (BP) control. To clarify the blood pressure-lowering effect of the fixed-dose combination (FDC) of an angiotensin receptor blocker (ARB) and diuretic agent in poorly controlled hypertensive patients, we intended a multicenter prospective observational study (Investigation for Normalized Blood pressure control with the Appropriate medication: INBA) by means of the sequential ambulatory blood pressure monitoring (ABPM). METHODS: One hundred and thirteen hypertensive patients who had not achieved the target BP control proposed in the guidelines with medication containing any ARB but without diuretic agents (54 men; mean age, 66 years old; mean office systolic/diastolic BP (SBP/DBP), 158/82 mmHg) were enrolled. Daytime and nighttime blood pressures were assessed with ABPM before and at 12 weeks after switching the ARB to the FDC of 50 mg of losartan, and 12.5 mg of hydrochlorothiazide (HCTZ). RESULTS: Daytime SBP/DBP (mean +/- SD) decreased from 151 +/- 14/88 +/- 8 mmHg to 140 +/- 11/82 +/- 8 mmHg (P < 0.001, P < 0.001, respectively), and nocturnal SBP/DBP from 138 +/- 18/78 +/- 9 mmHg to 125 +/- 14/72 +/- 9 mmHg (P < 0.001, P < 0.001, respectively) during the 12 weeks treatment. Pulse rate did not change irrespective of the time window. Among various parameters (age, history of hypertension, body mass index (BMI), serum potassium, uric acid, estimated glomerular filtration rate, plasma B-type natriuretic peptide), BMI alone showed significant negative correlation with 12-weeks reduction in nocturnal SBP (r = -0.43, P < 0.05). No parameters correlated with reduction in daytime SBP during this period. Patients with BMI >/= median (25.8 kg/m(2)) showed significantly greater reduction in nocturnal SBP for 12 weeks than patients with BMI < median (20.1 +/- 15.6 mmHg vs 6.1 +/- 10.9 mmHg, P < 0.001) although reduction in daytime SBP was comparable between the two groups (8.9 +/- 13.5 mmHg vs 11.9 +/- 12.7 mmHg). CONCLUSIONS: The administration of the FDC of losartan/HCTZ lowers BP both in day- and nighttime, and the nocturnal antihypertensive potency is remarkable in obese patients.

Igic, Ivana; Ryser, Samuel; Elfering, Achim (2013):

Does work stress make you shorter? An ambulatory field study of daily work stressors, job control, and spinal shrinkage.

In: *Journal of Occupational Health Psychology* 18 (4), S. 469–480. DOI: 10.1037/t10391-000;

Abstract:

Body height decreases throughout the day due to fluid loss from the intervertebral disk. This study investigated whether spinal shrinkage was greater during workdays compared with nonwork days, whether daily work stressors were positively related to spinal shrinkage, and whether job control was negatively related to spinal shrinkage. In a consecutive 2-week ambulatory field study, including 39 office employees and 512 days of observation, spinal shrinkage was measured by a stadiometer, and calculated as body height in the morning minus body height in the evening. Physical activity was monitored throughout the 14 days by accelerometry. Daily work stressors, daily job control, biomechanical workload, and recreational activities after work were measured with daily surveys. Multilevel regression analyses showed that spinal disks shrank more during workdays than during nonworkdays. After adjustment for sex, age, body weight, smoking status, biomechanical work strain, and time spent on physical and low-effort activities during the day, lower levels of daily job control significantly predicted increased spinal shrinkage. Findings add to knowledge on how work redesign that increases job control may possibly contribute to preserving intervertebral disk function and preventing occupational back pain. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Iida, Masumi; Stephens, Mary Ann Parris; Franks, Melissa M.; Rook, Karen S. (2013):

Daily symptoms, distress and interaction quality among couples coping with type 2 diabetes.

In: *Journal of Social and Personal Relationships* 30 (3), S. 293–300. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-16118-005%26site%3dehost-live;Masumi.Iida@asu.edu.

Abstract:

In this electronic diary study (N = 127 couples), we examined how a diabetic partner's symptoms and distress are associated with relationship interactions over 24 days. Using dyadic multilevel models, we examined the effects of patients' daily diabetes symptom severity and diabetes-specific distress on each partner's evaluations of their daily interaction enjoyment and tension. For both patients and spouses, diabetes symptoms were associated with a decrease in enjoyment and an increase in tension. For spouses, but not for patients, daily diabetes distress was marginally associated with an increase in tension. Among spouses whose patients' diabetes was of longer duration, the negative association of symptoms and spouses' enjoyment was stronger. These findings suggest that the stress of patients' disease and distress affects both partners on a daily basis. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Ilies, Remus; Johnson, Michael D.; Judge, Timothy A.; Keeney, Jessica (2011):

A within-individual study of interpersonal conflict as a work stressor: Dispositional and situational moderators.

In: *J. Organiz. Behav.* 32 (1), S. 44–64. DOI: 10.1002/job.677.

Abstract:

Focusing on interpersonal conflict as a work stressor, the authors used a within-subjects research design to examine the effect of conflict episodes on employees' negative affect on the job. The roles of agreeableness and social support in moderating the negative effects of conflict episodes were also examined. A two-week experience-sampling study revealed that interpersonal conflict influenced employees' intraindividual fluctuations in negative affect. As predicted, agreeableness and social support influenced individuals' patterns of affective responses to conflict, such that conflict was more strongly associated with negative affect for agreeable employees, and for those with lower levels of social support at work. Overall, the results suggest that both personality (agreeableness) and context (social support) significantly moderate the affective implications of interpersonal conflict at work. Copyright © 2010 John Wiley & Sons, Ltd.

Ilies, Remus; Keeney, Jessica; Scott, Brent A. (2011):

Work–family interpersonal capitalization: Sharing positive work events at home.

In: *Organizational Behavior and Human Decision Processes* 114 (2), S. 115–126. DOI: 10.1016/j.obhdp.2010.10.008.

Abstract:

In a 3-week experience-sampling study of 52 full-time employees, the authors investigated the within-individual relationships among positive work events, affective states, and job satisfaction. They also examined the influence of work–family interpersonal capitalization (sharing work events with one's spouse or partner at home) on employees' job and relationship satisfaction. Results revealed that positive events influenced job satisfaction through positive affect, and work–family interpersonal capitalization on the most positive work event of the day positively impacted job satisfaction over and above the effects of the event's pleasantness and of the number of other positive work events experienced that day.

Ilott, N.; Saudino, K. J.; Wood, A.; Asherson, P. (2010):

A genetic study of ADHD and activity level in infancy.

In: *Genes, brain, and behavior* 9 (3), S. 296–304. DOI: 10.1111/j.1601-183X.2009.00560.x.

Abstract:

It is well known that there are strong genetic influences on attention-deficit hyperactivity disorder (ADHD), with genetic association studies providing good evidence for the involvement of the dopamine neurotransmitter system in its aetiology. Developmental origins of ADHD represent an interesting area of research to understand the genetics that underlie early appearing individual differences. However, understanding the molecular basis of ADHD requires accurate, unbiased, heritable measures that can be used for molecular genetic association analyses. We take two approaches to examine the genetics of ADHD behaviours in infancy. Using quantitative genetic techniques, we explore the relationship between objective measures of activity level (AL) in both home and laboratory environments as well as with parent ratings of ADHD symptoms in a population sample of 2-year-old twins. Molecular association analyses of these measures examine candidate genes previously associated with ADHD. We find that ADHD symptoms, AL in the home and AL in the lab represent heritable phenotypes in 2-year-old infants. AL measured in the home has a strong genetic correlation with symptoms of ADHD, whereas AL in the lab correlates only modestly with the same ADHD measure. Genetic correlations suggest that AL in the home is more comparable than AL in the lab to ADHD behaviour and support the separation of all three for molecular analyses. There was modest evidence for association between DAT1, NET1 and ADHD symptom scores, as well as between DAT1 and AL in the lab.

Impett, Emily A.; Gordon, Amie M.; Strachman, Amy (2008):

Attachment and daily sexual goals: A study of dating couples.

In: *Personal Relationships* 15 (3), S. 375–390.

Abstract:

This research provides the first empirical investigation of how both partners' attachment orientations contribute to daily sexual goals. Both members of 84 dating couples who attended a large urban university on the West Coast in the United States completed a measure of attachment orientation, and 1 member completed a measure of sexual goals for 14 consecutive days. Analyses showed that attachment anxiety was associated with engaging in sex to please one's partner and express love, whereas attachment avoidance was associated with engaging in sex to avoid negative relational consequences and was negatively associated with engaging in sex to express love. Daily sexual goals were also associated with the partner's attachment orientation. Gender moderated many of these associations. Theoretical and practical implications are discussed.

Inal, S.; Karakoc, M. A.; Kan, E.; Ebinc, F. A.; Toruner, F. B.; Aslan, M. (2012):

The effect of overt and subclinical hypothyroidism on the development of non-dipper blood pressure.

In: *Endokrynol.Pol.* 63 (2), S. 97–103. Online verfügbar unter PM:22538747.

Abstract:

INTRODUCTION: 'Non-dippers' are individuals without the anticipated nocturnal decrease in blood pressure. An increased incidence of target organ damage and a worse outcome in terms of cardiovascular events have been reported in this group of people. The pathogenesis of non-dipper hypertension is not clear at present. We aimed to investigate the effects of overt and subclinical hypothyroidism on the development of a non-dipper blood pressure pattern via 24-hour ambulatory blood pressure monitoring. MATERIAL AND METHODS: 109 normotensive patients with overt and subclinical hypothyroidism were evaluated, and 95 of these patients without reverse dipping and masked hypertension were included in the study. The control group consisted of 75 gender- and age-matched, normotensive, euthyroid healthy individuals. RESULTS: Median serum TSH levels were 7.61 and 1.59 mUmL in patient and control groups, respectively. The number of non-dippers according to systolic, diastolic and mean blood pressure was significantly higher in the patients with hypothyroidism compared to the control group. In linear regression analysis, TSH had a negative effect on the night/day ratio of the systolic, diastolic and mean blood pressures. CONCLUSION: Despite the fact that the effect of hypothyroidism on non-dipper blood pressure pattern is not known, the present study has revealed that elevated TSH levels are likely to increase the risk of non-dipping in normotensive patients with either overt or subclinical hypothyroidism

Inkinen, Mikko; Lonka, Kirsti; Hakkarainen, Kai; Muukkonen, Hanni; Litmanen, Topi; Salmela-Aro, Katariina (2013):

The interface between core affects and the challenge–skill relationship.

In: *Journal of Happiness Studies*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-24440-001%26site%3dehost-live;Mikko.Inkinen@helsinki.fi.

Abstract:

Different models have been developed to describe human experiences. One of these models is the core affect model, which states that the core of emotional experience is a simple state of feeling good or bad, energized or drowsy. Another model is the experience fluctuation model (EFM), which has been developed to map how emotions and other experiences fluctuate along with the relationship between challenges and skills. In this study, we first mathematically refined the EFM. Second, we tested if fluctuations in core affect could be modeled with a continuous wave-like sine function (Study 1). Third, we applied the sine function to our own experience-sampling data, which we collected via mobile phones from 55 university students, and located each challenge–skill relationship in a two-dimensional core affect space (Study 2). The results were consistent in both studies and showed that fluctuations in core affect dimensions, measured as a function of the relationship between challenges and skills, can be modeled with the sine function. The results also indicated that there is a systematic link between challenge–skill relationships and core affect: High challenge–high skill situations were connected to a very active and pleasant core affect, whereas high challenge–low skill situations were connected to a quite active but unpleasant core affect, low challenge–low skill situations to a very passive and unpleasant core affect, and low challenge–high skill situations to a quite passive and pleasant core affect. Compared to previous studies, this study presents a more fine-grained and comprehensive level of information on the relationship between core affect and challenges and skills. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Inoue, Ryusuke; Ohkubo, Takayoshi; Kikuya, Masahiro; Metoki, Hirohito; Asayama, Kei; Obara, Taku et al. (2006):

Predicting stroke using 4 ambulatory blood pressure monitoring-derived blood pressure indices: the Ohasama Study.

In: *Hypertension* 48 (5), S. 877–882. DOI: 10.1161/01.HYP.0000242285.83728.ee.

Abstract:

We investigated the association between stroke and blood pressure (BP) indices (systolic BP [SBP], diastolic BP [DBP], mean BP [MBP], and pulse pressure [PP]) determined by ambulatory BP monitoring. The predictive power for stroke of these indices was compared in the general Japanese population. We obtained ambulatory BP data in 1271 subjects (40% men) aged > or = 40 (mean: 61) years. During a mean follow-up of 11 years, 113 strokes were observed. The multivariate adjusted relative hazard and likelihood ratio for a 1-SD increase for each BP index was determined by Cox proportional hazard regression. Comparison of the likelihood ratio between Cox models including 2 indices and those including 1 index indicated that PP was significantly less informative than other indices ($P<0.01$ when adding MBP, SBP, or DBP to the PP model; $P>0.09$ when adding PP to the model including another index). However, after removing age from covariates, PP became more informative than DBP and MBP ($P<0.0001$ when adding PP to the MBP or DBP model, whereas SBP was more informative than PP even after removing age; $P<0.05$ when adding SBP to the PP model). In conclusion, PP was the weakest predictor of stroke. Exclusion of age from covariates increased the predictive power of PP, suggesting that the stroke risk associated with PP reflected the risk of aging per se.

Inoue, Shigeru; Ohya, Yumiko; Odagiri, Yuko; Takamiya, Tomoko; Kamada, Masamitsu; Okada, Shinpei et al. (2010):

Characteristics of Accelerometry Respondents to a Mail-Based Surveillance Study.

In: *Journal of Epidemiology* 20 (6), S. 446–452. DOI: 10.2188/jea.JE20100062.

Abstract:

Background

Differences in the characteristics of respondents and nonrespondents to a survey can be a cause of selection bias. The aim of this study was to determine the sociodemographic and lifestyle characteristics of respondents to a field-based accelerometry survey.

Methods

A cross-sectional mail survey was sent to 4000 adults (50% male; age 20 to 69 years) who were randomly selected from the registries of residential addresses of 4 cities in Japan. There were 1508 respondents (responding subsample) to the initial questionnaire. A total of 786 participants from the responding subsample also agreed to wear an accelerometer for 7 days (accelerometer subsample). Age, sex, and city of residence were compared between the accelerometer subsample and all 3214 nonrespondents, including those who did not respond to the initial questionnaire. In addition, multiple logistic regression analyses were used to compare the sociodemographic and lifestyle characteristics of the accelerometer subsample and the 722 respondents who participated in the questionnaire survey but not the accelerometry (questionnaire-only subsample).

Results

As compared with all nonrespondents, the accelerometer subsample included significantly more women, middle-aged and older adults, and residents of specific cities. Multiple logistic regression analyses comparing the accelerometer and questionnaire-only subsamples revealed that participation in the accelerometry survey was greater among nonsmokers (odds ratio, 1.35; 95% confidence interval, 1.02–1.79) and persons who reported a habit of leisure walking (1.56, 1.21–2.01).

Conclusions

Sex, age, city of residence, smoking status, and leisure walking were associated with participation in accelerometry. This response pattern reveals potential selection bias in mail-based accelerometry studies.

Intille, Stephen S. (2012):

Emerging technology for studying daily life. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 267–282. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-015%26site%3dehost-live.

Abstract:

(from the chapter) This chapter explores emerging developments in the use of technology for studying daily life. The rapid adoption of sensor-enabled mobile technologies, especially phones, will create new opportunities for researchers interested in measurement of behavior. Innovations in technology will also make possible novel forms of real-time, computer-driven interventions, in which the computer presents information at automatically determined and behaviorally based "teachable moments." This chapter highlights measurement and intervention opportunities that will emerge as sensor-enabled mobile devices become more computationally powerful and commonplace. These phones make possible a new fusion of ecological momentary assessment (EMA) and ambulatory monitoring, in which triggering of self-report, data collection, or feedback related to encouraging participant compliance is based on automatic analysis of the ambulatory monitoring data in real time by the mobile device. Researchers will no longer be limited to systematic, stratified, or purposive EMA sampling methods. Context-sensitive ecological momentary assessment (CS-EMA; Intille, 2007; Intille et al., 2003) creates a fourth option: purposive sampling in response to automatically detected user behavior, context, or physiological response, as measured passively or semiautomatically using sensors. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Iosa, Marco; Fusco, Augusto; Morone, Giovanni; Paolucci, Stefano (2014):

Development and decline of upright gait stability.

In: *Front Aging Neurosci* 6, S. 14. DOI: 10.3389/fnagi.2014.00014.

Abstract:

Upright gait is a peculiar characteristic of humans that requires the ability to manage upper body dynamic balance while walking, despite the perturbations that are generated by movements of the lower limbs. Most of the studies on upright gait stability have compared young adults and the elderly to determine the effects of aging. In other studies, the comparison was between healthy subjects and patients to examine specific pathologies. Fewer researches have also investigated the development of upright gait stability in children. This review discusses these studies in order to provide an overview of this relevant aspect of human locomotion. A clear trend from development to decline of upright gait stability has been depicted across the entire lifespan, from toddlers at first steps to elderly. In old individuals, even if healthy, the deterioration of skeletal muscle, combined with sensorial and cognitive performance, reduces the ability to maintain an upright trunk during walking, increasing the instability and the risk of falls. Further, the pathological causes of altered development or of a sudden loss of gait stability, as well as the environmental influence are investigated. The last part of this review is focused on the control of upper body accelerations during walking, a particularly interesting topic for the recent development of low-cost wearable accelerometers.

Iosa, Marco; Morelli, Daniela; Nisi, Enrica; Sorbara, Carlo; Negrini, Stefano; Gentili, Paola et al. (2014):

Assessment of upper body accelerations in young adults with intellectual disabilities while walking, running, and dual-task running.

In: *Hum Mov Sci. DOI:* 10.1016/j.humov.2014.02.005.

Abstract:

There is an increasing interest about upper body accelerations during locomotion and how they are altered by physical impairments. Recent studies have demonstrated that cognitive impairments affect gait stability in the elderly (i.e., their capacity for smoothing upper body accelerations during walking) but little attention has been paid to young adults with intellectual disabilities. The purpose of this study was to examine upright stability in young adults with intellectual disabilities during walking, running, and dual-task running (playing soccer). To this aim a wearable trunk-mounted device that permits on-field assessment was used to quantify trunk acceleration of 18 male teenagers with intellectual disabilities (IDG) and 7 mental-age-matched healthy children (HCG) who participated in the same soccer program. We did not find any significant difference during walking in terms of speed, whereas speed differences were found during running (p=.001). Upper body accelerations were altered in a pathology-specific manner during the dual task: the performance of subjects with autistic disorders was compromised while running and controlling the ball with the feet. Differences in upright locomotor patterns between IDG and HCG emerged during more demanding motor tasks in terms of a loss in the capacity of smoothing accelerations at the trunk level.

Ireland, A. M.; Wiklund, I.; Hsieh, R.; Dale, P.; O'Rourke, E. (2012):

An electronic diary is shown to be more reliable than a paper diary: results from a randomized crossover study in patients with persistent asthma.

In: *J Asthma* 49 (9), S. 952–960. DOI: 10.3109/02770903.2012.724754.

Abstract:

OBJECTIVES: Test-retest reliability of an asthma paper diary versus an electronic diary (e-diary) with an integrated peak flow meter was investigated. The equivalence of the two modes was also evaluated. METHODS: Prospective, randomized crossover study design in adolescents (12-17 years) and adults (>/=18 years). Key inclusion criteria were persistent asthma, Asthma Control Test (ACT) scores >/=16, use of inhaled corticosteroid with or without long-acting beta-agonist for >/=12 weeks, nocturnal awakenings <2 times in the past week, and activity limitations <1 per week. Participants were randomized to either paper then e-diary or e-diary then paper, to be completed for 14 days each. RESULTS: Forty-seven participants completed all study visits. Weekly percentage of symptom-free days (SFDs) and rescue-free days (RFDs) were calculated. Intraclass correlation coefficients (ICCs) of Week 1 mean SFD and RFD (test) and Week 2 mean SFD and RFD (retest), respectively, were estimated in three groups defined as stable: (i) minimal changes in asthma symptoms, as measured by the global patient reported symptom change question, (ii) less than 15% change (absolute value) in 1 second FEV(1) at adjacent study visits, and (iii) changes in ACT scores less than three points for each mode. SFD demonstrated acceptable ICC (>/=0.70) using all three definitions of asthma stability for both modes. CONCLUSION: Acceptable reproducibility of the percentage of RFD (ICC = 0.78) was only observed for the e-diary using the FEV(1) stability criterion. The ICCs for SFD and RFD were acceptable, 0.84 and 0.70, respectively, suggesting better reliability for the e-diary

Ishikawa, Joji; Carroll, Deirdre J.; Kuruvilla, Sujith; Schwartz, Joseph E.; Pickering, Thomas G. (2008):

Changes in home versus clinic blood pressure with antihypertensive treatments: a meta-analysis.

In: *Hypertension* 52 (5), S. 856–864. DOI: 10.1161/HYPERTENSIONAHA.108.115600.

Abstract:

Home blood pressure (HBP) monitoring is recommended for assessing the effects of antihypertensive treatment, but it is not clear how the treatment-induced changes in HBP compare with the changes in clinic blood pressure (CBP). We searched PubMed using the terms \"home or self-measured blood pressure,\" and selected articles in which the changes in CBP and HBP (using the upper arm oscillometric method) induced by antihypertensive drugs were presented. We performed a systematic review of 30 articles published before March 2008 that included a total of 6794 subjects. As there was significant heterogeneity in most of the outcomes, a random effects model was used for the meta-analyses. The mean changes (+/-SE) in CBP and HBP (systolic/diastolic) were -15.2+/-0.03/-10.3+/-0.03 mm Hg and -12.2+/-0.04/-8.0+/-0.04 mm Hg respectively, although there were wide varieties of differences in the reduction between HBP and CBP. The reductions in CBP were correlated with those of HBP (systolic BP; r=0.66, B=0.48, diastolic BP; r=0.71, B=0.52, P<0.001). In 7 studies that also included 24-hour BP monitoring, the reduction of HBP was greater than that of 24-hour BP in systolic (HBP; -12.6+/-0.06 mm Hg, 24-hour BP; -11.9+/-0.04 mm Hg, P<0.001). In 5 studies that included daytime and nighttime systolic BP separately, HBP decreased 15% more than daytime ambulatory BP and 30% more than nighttime ambulatory BP. In conclusion, HBP falls approximately 20% less than CBP with antihypertensive treatments. Daytime systolic BP falls 15% less and nighttime systolic BP falls 30% less than home systolic BP.

Ivuskans, Arturs; Jurimae, Toivo; Latt, Evelin; Jurimae, Jaak; Purge, Priit; Saar, Meeli et al. (2014):

The Role of Physical Acivity in Bone Health in Peripubertal Boys.

In: *Pediatr Int. DOI:* 10.1111/ped.12337.

Abstract:

BACKGROUND: The aim of the present cross-sectional study was to investigate the relationship of different physical activity levels to bone mineral parameters in 11-13 year old boys. METHODS: In total, 264 boys, divided into normal-weight (n=154) and overweight (n=110), participated in this study. Physical activity was measured with a 7-day accelerometry and bone mineral parameters by DXA. RESULTS: In overweight boys, vigorous physical activity was associated with total bone mineral density (BMD), total bone mineral component (BMC), while moderate to vigorous physical activity MVPA was associated with femoral neck BMD. However, in normal weight boys only vigorous physical activity was associated with femoral neck BMD. Dividing the normal weight group into tertiles by MVPA levels indicated that femoral neck BMD was higher in the highest tertile compared to the lowest tertile. No more significant differences were found in bone mineral parameters according to the tertiles of MVPA. CONCLUSIONS: Our results suggest that in overweight peribubertal boys, physical activity is more associated with bone mineral parameters compared to normal-weight subjects. In addition to vigorous physical activity, already moderate physical activity levels have had significant impact to bone mineral parameters in overweight subjects.

Ivuskans, Arturs; Maestu, Jarek; Jurimae, Toivo; Latt, Evelin; Purge, Priit; Saar, Meeli et al. (2014):

Sedentary time has a negative influence on bone mineral parameters in peripubertal boys: a 1-year prospective study.

In: *J Bone Miner Metab. DOI:* 10.1007/s00774-013-0556-4.

Abstract:

One of the key determinants of adult skeletal health is the maximization of bone mass during the growth period. Physical activity (PA) in combination with lean mass and fat mass contribute to a great extent to bone mineral accrual; however, PA changes significantly during puberty. The aim of the present study was to examine PA exposure relative to bone mass acquisition during a longer observation period. Daily PA was measured with 7-day accelerometry and bone mineral parameters by DXA in 11- to 13-year-old peripubertal boys (n = 169). Similar testing was done after 1 calendar year. Changes in sedentary time were negatively related to changes in whole-body bone mineral density (BMD), lumbar spine bone mineral content (BMC), lumbar spine bone area (BA), femoral neck (FN) BMD, and FN BMC ($r > -0.157$; $p < 0.05$). Sedentary time emerged as the main PA level in predicting changes in FN BMC ($p = 0.027$) and in combination with vigorous PA predicting changes in FN BMD ($p < 0.024$). In addition to the effect of body composition on the skeleton, increase in sedentary time emerged as one main physical activity predictor (in addition to vigorous PA) of bone mineral acquisition during a 12-month period in peripubertal boys.

J E Slaven and M E Andrew and J M Violanti and C M Burchfiel and B J Vila (2006):

A statistical test to determine the quality of accelerometer data.

In: *Physiol Meas* 27 (4), S. 413. Online verfügbar unter http://stacks.iop.org/0967-3334/27/i=4/a=007.

Abstract:

Accelerometer data quality can be inadequate due to data corruption or to non-compliance of the subject with regard to study protocols. We propose a simple statistical test to determine if accelerometer data are of good quality and can be used for analysis or if the data are of poor quality and should be discarded. We tested several data evaluation methods using a group of 105 subjects who wore Motionlogger actigraphs (Ambulatory Monitoring, Inc.) over a 15 day period to assess sleep quality in a study of health outcomes associated with stress among police officers. Using leave-one-out cross-validation and calibration-testing methods of discrimination statistics, error rates for the methods ranged from 0.0167 to 0.4046. We found that the best method was to use the overall average distance between consecutive time points and the overall average mean amplitude of consecutive time points. These values gave us a classification error rate of 0.0167. The average distance between points is a measure of smoothness in the data, and the average mean amplitude between points gave an average reading. Both of these values were then normed to determine a final statistic, K , which was then compared to a cut-off value, K C , to determine data quality.

Jaatinen, Nora; Korpela, Riitta; Poussa, Tuija; Turpeinen, Anu; Mustonen, Sari; Merilahti, Juho; Peuhkuri, Katri (2014):

Effects of daily intake of yoghurt enriched with bioactive components on chronic stress responses: a double-blinded randomized controlled trial.

In: *Int J Food Sci Nutr. DOI:* 10.3109/09637486.2014.880669.

Abstract:

Abstract Chronic stress has a negative influence on health. The aim was to determine stress reducing effects of yoghurt enriched with bioactive components as compared to normal yoghurt. High-trait anxiety individuals (n = 67) aged 18-63 years participated in a randomized, placebo-controlled, double-blinded intervention with parallel groups. They received either yoghurt enriched with alpha-lactalbumin, casein tripeptides and B vitamins (active) or isoenergetic standard yoghurt (control). To detect changes in psychological and physiological stress, State-Trait Anxiety Inventory, Profile of Mood States, salivary cortisol, inflammatory markers, blood pressure, heart rate variability (HRV) and actigraphy were monitored. We observed higher ratings of vigor (p = 0.047) and reduced feeling of inefficiency (p = 0.048) in the active group. HRV (baseline adjusted mean 49.1 +/- 2.3 ms) and recovery index (106.6 +/- 33.4) were higher in the active group than in controls (42.5 +/- 2.2 ms and 80.0 +/- 29.3) (p = 0.046 and p = 0.02, respectively). In conclusion, daily intake of yoghurt enriched with bioactive components may aid in stress coping.

Jabłoński, Ireneusz (2011):

Wearable interrupter module for home-based applications in a telemedical system dedicated to respiratory mechanics measurements.

In: *Biomedical Engineering, IEEE Transactions on* 58 (3), S. 785–789.

Abstract:

The mobile interrupter module, dedicated to the enhanced interrupter (EIT) measurement of respiratory mechanics in a home environment and capable of cooperation with a telemedical system, is presented. Characterized by noninvasiveness and minimal requirements regarding patient cooperation, the EIT algorithm is especially suitable for newborns, preschool children, and patients suffering from respiratory muscle impairment. Furthermore, this device enables access to raw data--without initial preprocessing--in a fully flexible measurement protocol (which is not available in any commercial apparatus), and the EIT procedure improves insight (the number and precision of assessed parameters) into the physiological system with respect to the classical occlusive methods.

Jackson, Diane M.; Djafarian, Kurosh; Stewart, Joanne; Speakman, John R. (2009):

Increased television viewing is associated with elevated body fatness but not with lower total energy expenditure in children.

In: *Am J Clin Nutr* 89 (4), S. 1031–1036. DOI: 10.3945/ajcn.2008.26746.

Abstract:

BACKGROUND\r\nTelevision (TV) viewing in children is associated with a higher body mass index, but it is unknown whether this reflects body fatness, and, if it does, why.\r\nOBJECTIVE\r\nThe objective was to investigate whether TV viewing is associated with body fatness, physical activity, and total energy expenditure in preschool children.\r\nDESIGN\r\nEighty-nine children were recruited into a cross-sectional study. Total daily energy expenditure (TEE) was measured by doubly labeled water, body composition by dual-energy X-ray absorptiometry, and physical activity by accelerometry.\r\nRESULTS\r\nThere was a significant positive association between fat mass (corrected for fat-free body mass) and TV viewing (F = 9.05, P = 0.004). Each extra hour of watching TV was associated with an extra 1 kg of body fat. Children who watched more TV were also significantly less physically active (F = 5.16, P = 0.026). Independent of body composition and sex, children with greater physical activity levels had higher TEE (F = 5.15, P = 0.029); however, physical activity did not mediate the relation between TV viewing and adiposity (P > 0.05).\r\nCONCLUSIONS\r\nPreschool children who watch more TV are fatter and are less active, and activity influences TEE. However, despite TV viewing being linked to lower physical activity, the relation between TV viewing and fatness is not mediated by physical activity. The results suggest that a relation between TV viewing and fatness is more likely to be due to an effect on food intake.

Jacob, Eufemia; Duran, Joana; Stinson, Jennifer; Lewis, Mary Ann; Zeltzer, Lonnie (2013):

Remote monitoring of pain and symptoms using wireless technology in children and adolescents with sickle cell disease.

In: *Journal of the American Academy of Nurse Practitioners* 25 (1), S. 42–54. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-00006-007%26site%3dehost-live;ejacob@sonnet.ucla.edu.

Abstract:

Purpose: The purpose of this study was to examine (a) symptoms, (b) pain characteristics (intensity, location, quality), (c) pain medications and non-pharmacological strategies used for pain, (d) thoughts and feelings, and (e) healthcare visits. We also examined the relationship between pain and sleep. Data sources: Pain and symptoms were entered on an electronic e-Diary using a smartphone and were remotely monitored by an advanced practice registered nurse (APRN). Sixty-seven children and adolescents (10–17 years) reported mild to severe pain at home that did not require healthcare visits. Symptoms reported were (a) general symptoms such as tiredness/fatigue (34.7%), headache (20.8%), yellowing of the eyes (28.4%); (b) respiratory symptoms such as sniffling (32.9%), coughing (19.1%), changes in breathing (10.0%); and (c) musculoskeletal symptoms such as stiffness in joints (15.8%). A significant negative correlation was found between pain and sleep (r = −.387, p = .024). Factors that predict pain included previous history of sickle cell disease (SCD) related events, symptoms, and negative thoughts. Conclusion: Pain and multiple symptoms entered on a web-based e-Diary were remotely monitored by an APRN and prompted communications, further evaluation, and recommendations. Implications for practice: Remote monitoring using wireless technology may facilitate timely management of pain and symptoms and minimize negative consequences in SCD. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Jacobi, David; Charles, Marie-Aline; Tafflet, Muriel; Lommez, Agnès; Borys, Jean-Michel; Oppert, Jean-Michel (2009):

Relationships of self-reported physical activity domains with accelerometry recordings in French adults.

In: *European Journal of Epidemiology* 24 (4), S. 171–179. DOI: 10.1007/s10654-009-9329-8.

Abstract:

The objective was to examine the relationships of self-reported physical activity (PA) by domain (leisure, occupational, other) with PA and sedentary time as measured objectively by accelerometry. Subjects were adults with low habitual PA levels from a community in northern France. Among subjects in the lowest tertile of a PA score from a screening questionnaire, 160 (37% males, age: 41.0 +/- 10.8 years, BMI: 25.1 +/- 4.1 kg/m(2), mean +/- SD) completed a detailed instrument (Modifiable Activity Questionnaire), and wore an accelerometer (Actigraph) for seven consecutive days. Relationships between questionnaire domains (occupational, leisure, and \"non-occupational non-leisure\") and accelerometry measures (total activity and sedentary

time) were assessed using Spearman correlation coefficients. In this population, the highest contributor to total reported PA (h/week) was occupational PA. Time spent in non-occupational non-leisure PA ranked second in women and third in men. The most frequent non-occupational non-leisure PA were shopping and household chores. In women, non-occupational non-leisure PA contributed more than occupational or leisure-time PA to total PA energy expenditure (median: 18.0, 9.1, and 4.9 MET-h/week, respectively). Total PA by accelerometry (count/day) was correlated to leisure-time PA in women ($r = 0.22$, $P < 0.05$) and to occupational ($r = 0.43$, $P < 0.01$) and total reported PA ($r = 0.39$, $P < 0.01$) in men (all in MET-h/week). There was an inverse relationship between accelerometry sedentary time (h/day) and non-occupational non-leisure PA (MET-h/week, $r = -0.30$, $P < 0.001$). These findings indicate the importance of assessing non-occupational non-leisure PA for a better understanding of how individuals partition their time between active or sedentary occupations.

Jacobs, K.; Foley, G.; Punnett, L.; Hall, V.; Gore, R.; Brownson, E. et al. (2011):

University students' notebook computer use: lessons learned using e-diaries to report musculoskeletal discomfort.

In: *Ergonomics* 54 (2), S. 206–219. DOI: 10.1080/00140139.2010.544764.

Abstract:

The objective of this pilot study was to identify if notebook accessories (ergonomic chair, desktop monitor and notebook riser) combined with a wireless keyboard, mouse and participatory ergonomics training would have the greatest impact on reducing self-reported upper extremity musculoskeletal discomfort in university students. In addition to pre-post computing and health surveys, the Ecological Momentary Assessment was used to capture change in discomfort over time using a personal digital assistant (PDA) as the e-diary. The PDA was programmed with a survey containing 45 questions. Four groups of university students were randomised to either intervention (three external computer accessories) or to control. Participants reported less discomfort with the ergonomic chair and notebook riser based on the pre-post survey data and the e-diary/PDA ANOVA analysis. However, the PDA data, adjusted for the effect of hours per day of computer use, showed no benefit of the chair and limited benefit from the riser. Statement of Relevance:University students' use of notebook computers has increased. This study found evidence of a positive effect of an adjustable chair or notebook riser when combined with ergonomic training on reducing discomfort. Daily notebook computer use of 4 h was confirmed as a risk factor. Without some form of ergonomic intervention, these students are likely to enter the workforce with poor computing habits, which places them on the road to future injuries as technology continues to play a dominant role in their lives.

Jacobs, N.; Menne-Lothmann, C.; Derom, C.; Thiery, E.; Van, Os J.; Wichers, M. (2012):

Deconstructing the familiality of variability in momentary negative and positive affect.

In: *Acta Psychiatr.Scand.* (0001-690X (Linking)). DOI: 10.1111/j.1600-0447.2012.01924.x.

Abstract:

Jacobs N, Menne-Lothmann C, Derom C, Thiery E, van Os J, Wichers M. Deconstructing the familiality of variability in momentary negative and positive affect. Objective: The daily life, affective phenotypes of momentary negative affect (NA), positive affect (PA) variability and NA variability are associated with future depressive symptomatology. This study investigates the extent to which genetic and environmental factors contribute to the inter-individual differences in these daily life, affective phenotypes. Method: Two hundred and seventy-nine female twins from the Flemish (Belgium) general population participated in an experience sampling study measuring affect in daily life. Structural equation modelling was used to fit univariate and bivariate models. Results: Genetic factors explained, respectively, 18%, 18% and 35% of the inter-individual differences in momentary NA, PA variability and NA variability. Non-shared environmental factors were found to explain the remaining inter-individual variation. In addition, 41% of the association between positive and NA variability was attributed to shared genetic factors. Conclusion: Results of this study show that daily life patterns of affective expression are subject to substantial environmental influence. Prospective assessments of the effect of interventions on these expressions may therefore represent a powerful tool to prevent transition from subclinical depressive symptomatology to a clinical outcome or to reduce symptomatology in those with clinical depression

Jacobs, N.; van Os, J.; Derom, C.; Thiery, E.; Delespaul, P.; Wichers, M. (2011):

Neuroticism explained? From a non-informative vulnerability marker to informative person-context interactions in the realm of daily life.

In: *British Journal of Clinical Psychology* 50 (1), S. 19–32. DOI: 10.1348/014466510X491397.

Abstract:

OBJECTIVES\r\nDespite the well-replicated finding that neuroticism is associated with increased susceptibility for psychopathology, it remains unclear what 'vulnerability as indexed by neuroticism' represents in terms of everyday life emotional processes. This study examined the association between neuroticism and six phenotypes of daily life emotional responses: positive affect (PA), negative affect (NA), PA variability, NA variability, stress sensitivity, and reward experience, and investigated the contribution of genetic and environmental factors to these associations.\r\nDESIGN\r\nA prospective cohort study in a population-based sample of 416 adult female twins.\r\nMETHOD\r\nA momentary assessment approach (experience sampling method) was used to collect multiple assessments of affect in daily life. Neuroticism was assessed with the Eysenck Personality Scale. Multi-level regression analyses were carried out to examine the association between neuroticism and the phenotypes of daily life emotional responses. Cross-twin, cross-trait analyses, and bivariate structural equation modelling (SEM) were performed in order to investigate the nature of these associations.\r\nRESULTS\r\nA high neuroticism score was associated with lower momentary PA levels and increased NA variability, independent of momentary NA, PA variability, stress sensitivity, and reward experience. Both the cross-twin, cross-trait analyses, and the bivariate SEM showed that unique, non-shared environmental factors drive the association between neuroticism and PA and that the association between neuroticism and increased NA variability is based on shared genetic factors as well as individual-specific environmental factors.\r\nCONCLUSIONS\r\nNeuroticism as measured by Eysenck questionnaire may index an environmental risk for decreased daily life PA levels and a genetic as well as an environmental risk for increased NA variability. Decomposing the broad measure of neuroticism into measurable persons-context interactions increases its 'informative' value in explaining psychopathology.

Jacobson, Judith S.; Lieblein, Andrea; Fierman, Arthur H.; Fishkin, Edward R.; Hutchinson, Vincent E.; Rodriguez, Luis et al. (2009):

Randomized trial of an electronic asthma monitoring system among New York City children.

In: *The American journal of managed care* 15 (11), S. 809–814.

Abstract:

OBJECTIVES: To test the efficacy of an electronic asthma monitoring system (AMS) to reduce pediatric emergency department (ED) visits and hospitalizations for asthma.

STUDY DESIGN: Randomized clinical trial.

METHODS: Families of pediatric patients with asthma aged 8 to 17 years were recruited at 6 medical centers. Children were randomly assigned to the American Medical Alert Corporation pediatric AMS or a paper diary. The numbers of and costs associated with ED visits and hospitalizations for the 2 groups in the year following randomization were compared using t tests of statistical significance.

RESULTS: Of 59 children recruited to the trial, 29 were randomized to the AMS and 30 to the diary. The 2 groups were similar in demographic and clinical characteristics. During their study year, 24 AMS group members logged on a mean (SD) of 211.0 (117.3) days; 13 diary group members provided data on a mean (SD) of 136.6 (128.0) days. During the 32 months that the study was in progress, the case managers logged on a mean (SD) of 171.0 (97.2) days. Overall, 35 children had at least 1 ED visit, but only 7 children were hospitalized. The 2 groups had no statistically significant differences in the numbers of or charges associated with ED visits or hospitalizations.

CONCLUSION: Electronic devices are being developed to make chronic disease management easier for patients and their families, but they should not be adopted without careful study, including randomized trials, to ascertain their use, costs, and benefits.

Jafari, B.; Austin, N.; Lemke, R.; Poojary, S. (2013):

An audit of the prevalence and characteristics of advance care planning for patients from residential aged care facilities (racfs) referred to the mobile assessment and treatment service (mats).

In: *BMJ Support Palliat Care* 3 (2), S. 280. DOI: 10.1136/bmjspcare-2013-000491.143.

Abstract:

BACKGROUND: Advance Care Planning (ACP) ensures recognition of a person's wishes and promotes autonomy, however, completion and implementation has been a challenge. AIM: To assess the prevalence of ACP in patients from Residential Aged Care Facilities (RACFs) referred to the 'Residential In-reach' service of Alfred Health known as Mobile Assessment and Treatment Service (MATS), and to assess how the process of ACP has been approached by the mangers of those facilities. METHODS: Part A: Prospective audit of documentation of ACP for 100 patients referred to MATS Part B: De-identified, paper-based surveys of the managers of the RACFs where the patients from part A of the study were residing. RESULTS: Part A: The prevalence of ACP, Medical Enduring Power Of Attorney and 'Not for Resuscitation' form were 38%, 37% and 35%, respectively. Patients with ACP or a separate 'NFR' form were significantly more likely to be living in high care compared to low care facilities (79% vs 21%, p=0.049 and 80% vs 20%, p=0.032, respectively). Part B: There was a significant inconsistency between the facilities with regards to 'facility requirements' for ACP, 'person responsible', 'documentation' and 'GP involvement'. DISCUSSION: This study found a low prevalence of ACP, MEPOA and 'NFR' form in patients from RACFs referred to MATS. There was also lack of a systematic approach in the process of ACP. CONCLUSION: There is a need for structured policy coupled with appropriate funding as well as further education of both public and health professionals.

Jagannathan, Mukund (2013):

Efficacy of communication amongst staff members at plastic and reconstructive surgery section using smartphone and mobile Whats App.

In: *Indian J Plast Surg* 46 (3), S. 506–507.

Abstract:

Objective: The objective of this study is to assess the efficacy of smartphone and its WhatsApp application as a communication method amongst the staff of plastic and reconstructive surgery section at tertiary care health facility. Materials and Methods: From January 2012 onwards, the authors used smartphones and its WhatsApp application as a communication method amongst their team for various aspects of patient management and as a tool for academic endorsements. Results: During the period of this study, there were 116 episodes regarding patient management, which were handled, in a timely fashion by using this application. In addition opinion of rotating residents in the section was sought regarding the efficacy of this method of communication. Overall majority of residents were satisfied with this mode of communication. Conclusions: This new method of communication is an effective method for clinical and academic endorsements. The method is cheap and quick and easy to operate.

Jago, Russell; Baranowski, Tom; Baranowski, Janice C. (2006):

Observed, GIS, and self-reported environmental features and adolescent physical activity.

In: *Am J Health Promot* 20 (6), S. 422–428.

Abstract:

Purpose. Examine associations among observed, self-reported, and Geographical Information Systems (GIS) environmental features and physical activity among adolescent males.

Design. Cross-sectional study.

Setting. Boy Scout troops and neighborhoods in Houston, Texas.

Subjects. Two hundred and ten 10- to 14-year-old Boy Scouts.

Measures. Accelerometry to obtain minutes of sedentary, light, and moderate to vigorous activity per day. GIS sources were used to identify the numbers of parks, gymnasiums, trails, bus stops, grocery stores, and restaurants within a 1-mile radius of participant residences as well as residential density, connectivity, and crime. Participants provided a self-report of their environment.

Analysis. Principal component analysis was used to reduce the number of GIS and self-reported items. Four factors were previously obtained from direct observations of the neighborhoods. Correlations were conducted among factors and physical activity. Regression models were run in which minutes of sedentary behavior, light, or moderate to vigorous physical activity were the dependent variables and environmental factors were the independent variables. Nonsignificant variables were removed in a backward deletion process.

Results. Three GIS factors, Parks, Crime, and Gyms, were obtained as were two self-reported factors: difficulty and access and safety. Factor scores were interrelated and associated with the four observed factors. Only observed sidewalk characteristics were correlated with physical activity and were retained in the regression models.

Conclusion. Environmental factors were interrelated. Only sidewalk characteristics were associated with sedentary behavior and light intensity physical activity. (Am J Health Promot 2006;20[6]:422–428.)

Jago, Russell; Fox, Kenneth R.; Page, Angie S.; Brockman, Rowan; Thompson, Janice L. (2010):

Physical activity and sedentary behaviour typologies of 10-11 year olds.

In: *Int J Behav Nutr Phys Act* 7. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-32462-001%26site%3dehost-live;russ.jago@bris.ac.uk.

Abstract:

Background: Targeted interventions may be more effective at increasing children's physical activity. The aim of this study was to identify clusters of children based on physical activity and sedentary patterns across the week. Methods: Participants were 761, 10-11 year old children. Participants self-reported time spent in eight physical activity and sedentary contexts and wore an accelerometer. Cluster analysis was conducted on the time spent in the self-reported physical activity and sedentary contexts. Mean minutes of accelerometer derived of moderate to vigorous physical activity (MVPA) and sedentary time were derived for the entire week, weekdays only, weekend days and four different time periods across each type (weekend or weekday) of days. Differences in the physical activity patterns of the groups derived from the cluster analysis were assessed for overall physical activity as well as for the four time periods on weekdays and weekend days. Results: Three clusters emerged: 1) High active/Low sedentary; 2) Low active/Moderate sedentary; and 3) High Active/High sedentary. Patterns of activity differed across the week for each group and the High Active/High sedentary obtained the most minutes of MVPA. Conclusions: Patterns of physical activity and sedentary time differed across the week for each cluster. Interventions could be targeted to the key periods when each group is inactive. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Jahng, Seungmin (2012):

Multilevel models for intensive longitudinal data with heterogeneous error structure: Covariance transformation and variance function models.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 73 (2-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-99160-591%26site%3dehost-live.

Abstract:

Recent developments in data collection methods in the behavioral and social sciences, such as Ecological Momentary Assessment (EMA) enables researchers to gather intensive longitudinal data (ILD) and to examine more detailed features of intraindividual variation of a variable(s) over time. Due to its high intensity of assessments within individuals, ILD often has different characteristics from traditional longitudinal data with a few measurement occasions and requires different assumptions of statistical models in use. In the present thesis, issues in the analysis of ILD and problems of current use of statistical models for the analysis of ILD are discussed and investigated. Specifically, the issue of heterogeneity of autocorrelation and variance across individuals in ILD is extensively studied for multilevel models (MLMs). In chapter 2, a brief introduction to multilevel models and issues in modeling residual covariance structure in MLMs are provided and discussed. In chapter 3, it is shown that bias in estimation of parameters in MLMs under homogeneity assumption is not ignorable when autocorrelation differs across individuals and its average is high. It is also shown that a transformation method, which multiplies variables in the model by the inverse of Cholesky factor of individual-specific error covariance, attenuates the bias for ILD. Chapter 4 reviews variance function models for heterogeneous variance and introduces a two-step MLM approach for modeling heterogeneous variance using squared residuals. A simulation study showed that the two-step MLM does not suffer from non-convergence and is applicable to ILD. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Jahng, Seungmin; Wood, Phillip K.; Trull, Timothy J. (2008):

Analysis of affective instability in ecological momentary assessment: Indices using successive difference and group comparison via multilevel modeling.

In: *Psychological methods* 13 (4), S. 354–375. DOI: 10.1037/a0014173.

Abstract:

Temporal instability of affect is a defining characteristic of psychological disorders such as borderline personality disorder (BPD) and mood cycling disorders. Ecological momentary assessment (EMA) enables researchers to directly assess such frequent and extreme fluctuations over time. The authors examined 4 operationalizations of such temporal instability: the within-person variance (WPV), the first-order autocorrelation, the mean square successive difference (MSSD), and the probability of acute change (PAC). It is argued that the MSSD and PAC measures are preferred indices of affective instability because they capture both variability and temporal dependency in a time series. Additionally, the performance of these 2 measures in capturing within- and between-day instability is discussed. To illustrate, the authors present EMA data from a study of negative mood in BPD and major depressive disorder patients. In this study, MSSD and PAC captured affective instability better than did WPV. Given that MSSD and PAC are individual difference measures, the authors propose that group differences on these indices be explored using generalized multilevel models. Versions of MSSD and PAC that adjust for randomly elapsed time interval between assessments are also presented.

James, Kirstyn; Dolan, Eamon; O'Brien, Eoin (2014):

Making ambulatory blood pressure monitoring accessible in pharmacies.

In: *Blood Press Monit. DOI:* 10.1097/MBP.0000000000000034.

Abstract:

OBJECTIVES: Ambulatory blood pressure measurement (ABPM), although recommended for the diagnosis and management of hypertension, has limited availability. The objective of this study was to show that if the characteristics of patients attending pharmacies for ABPM are similar to those attending primary care, the technique can be made more widely available to patients through pharmacies. PATIENTS AND METHODS: A comparative study using a software program that allowed central collection, analysis and comparison of ABPM data from patients attending primary care and pharmacies for assessment of hypertension in Ireland. RESULTS: ABPM data from 46 978 patients attending primary care were compared with 1698 attending pharmacies between 2007 and 2013. The age, sex and blood pressure characteristics of patients attending primary care and pharmacies were similar. The mean pressures in all categories, except for systolic blood pressure recorded in primary care, were higher in men. The first ABPM measurements recorded in pharmacies were slightly higher than those in primary care (150.8+/-19.5/88.7+/-13.7 vs. 149.6+/-20.7/88.0+/-14.4 mmHg). More patients attending primary care were normotensive than those attending pharmacies (19.5 vs. 16.4%), whereas more patients attending pharmacies were hypertensive than those attending primary care (62.8 vs. 60.7%), particularly female patients (61.0 vs. 56.4%). White-coat hypertension was similar in patients attending primary care and pharmacies (19.8 vs. 20.8%), but it was more prevalent in men attending pharmacies (22.0 vs. 17.4%) and in women attending primary care (21.9 vs. 19.7%). There were more dippers in pharmacy then primary care ABPMs (84.7 vs. 79.4%). A preference for having ABPM on Fridays and Saturdays was evident in patients attending pharmacies (19.6 vs. 6.6%), whereas there was a preference for early morning recording in primary care (4.1 vs. 1.1%). CONCLUSION: This study, which is the first to report on ABPM data from the pharmacy setting, shows that the blood pressure characteristics of patients with ABPMs recorded in pharmacies are similar to those recorded in primary care practices. It is feasible, therefore, to perform ABPM in pharmacies, which can be utilized to make ABPM more accessible to the large number of patients in the population with hypertension.

Janney, C. A.; Fagiolini, A.; Swartz, H. A.; Jakicic, J. M.; Holleman, R. G.; Richardson, C. R. (2014):

Are adults with bipolar disorder active? Objectively measured physical activity and sedentary behavior using accelerometry.

In: *J.Affect.Disord.* 152-154 (0165-0327 (Linking)), S. 498–504. DOI: 10.1016/j.jad.2013.09.009.

Abstract:

BACKGROUND: Little is known about physical activity and sedentary behavior of adults with bipolar disorder (BP). Physical activity and sedentary behaviors may be modifiable factors associated with elevated rates of obesity, diabetes, cardiovascular disease, metabolic syndrome, and mortality in adults with BP. METHODS: Sixty adult outpatients treated for BP (>18yr) wore accelerometers for seven consecutive days. Each minute epoch was assigned an activity level based on the number of counts per minute; sedentary(<100 counts), light(101-1951 counts), or moderate/vigorous(>1952 counts). Adults with BP were matched 1:1 to users and non-users of mental health services (MHS) (NHANES 2003-2004) by gender, closest BMI, and age. RESULTS: On average, adults with BP wore actigraphs over 17h/day. The majority of monitoring time (78%) was classified as sedentary (approximately 13.5h/day). Light physical activity accounted for 21% of the monitoring time/day (215min/day). None achieved 150min/wk of moderate/vigorous activity as recommended by national guidelines. Adults with BP were significantly less active and more sedentary than MHS users and non-users in NHANES 2003-2004 ($p<0.01$). LIMITATIONS: Majority of the participants were relatively asymptomatic with most (87%) having no more than mild depressive symptoms and none experiencing severe manic symptoms. The sedating effects of medications on physical activity were not investigated. CONCLUSION: From clinical

perspectives, these findings justify physical activity interventions targeting adults with BP as a possible means to improve their physical and mental health and to reduce the elevated risk of commonly observed medical comorbidities in this high-risk population

Janney, C. A.; Ganguli, R.; Richardson, C. R.; Holleman, R. G.; Tang, G.; Cauley, J. A.; Kriska, A. M. (2013):

Sedentary behavior and psychiatric symptoms in overweight and obese adults with schizophrenia and schizoaffective disorders (WAIST Study).

In: *Schizophr.Res* 145 (1-3), S. 63–68. DOI: 10.1016/j.schres.2013.01.010.

Abstract:

OBJECTIVE: Examine the association between sedentary behavior and psychiatric symptoms among overweight and obese adults with schizophrenia or schizoaffective disorders (SZO/SA). DESIGN: Randomized clinical trial; Weight Assessment and Intervention in Schizophrenia Treatment (WAIST) Study: baseline data collected 2005-2008. SETTING: University of Pittsburgh Medical Center, Pittsburgh, PA, USA. PARTICIPANTS: Community-dwelling adults diagnosed with SZO/SA, with mild symptom severity [Positive and Negative Syndrome Scale (PANSS)<90], who were interested in losing weight, age 18-70years, BMI>27kg/m. MEASUREMENTS: Objectively measured sedentary behavior by accelerometry, and psychopathology assessed by PANSS. Participants wore the actigraphs for 7 consecutive days during their waking hours. Sedentary behavior was defined as </=100 counts per minute during wear-time and excluded sleep and non-wear time. RESULTS: On average, 81% of the participant's monitoring time or 756min/day was classified as sedentary behavior using accelerometry. No association was observed between sedentary behaviors and PANSS psychiatric symptoms [total (p>/=0.75), positive (p>/=0.81), negative (p>/=0.59) and general psychopathology (p>/=0.65) subscales]. No association was observed between sedentary behaviors and age, race, gender and BMI. CONCLUSION: From a clinical and public health perspective, the amount of time (approximately 13h) and percentage of time (81% excluding non-wear time associated with sleeping) engaged in sedentary behavior among overweight and obese adults in this population is alarming, and points to an urgent need for interventions to decrease sedentary behaviors. The lack of associations between sedentary behavior and psychiatric symptoms may be due to a ceiling effect for sedentary behavior

Janssen, Wim G. M.; Külcü, Duygu Geler; Horemans, Herwin L. D.; Stam, Henk J.; Bussmann, Johannes B. J. (2008):

Sensitivity of accelerometry to assess balance control during sit-to-stand movement.

In: *IEEE Trans Neural Syst Rehabil Eng* 16 (5), S. 479–484. DOI: 10.1109/TNSRE.2008.2003386.

Abstract:

Accelerometry has the potential to measure balance, defined as high-frequency body sway, ambulatorily in a simple and inexpensive way. The aim of this study was to determine and compare the sensitivity of accelerometric balance parameters during the sit-to-stand (STS) movement. Eleven healthy subjects (four males, 28.2 +/-7.9 years) and 31 patients with stroke (21 males; 63.3+/-12.8 years) were included. The healthy subjects performed STS movements in four conditions with different levels of difficulty. Data of the patients were compared 1) with healthy subjects, 2) between patient subgroups, and 3) between different phases of recovery to assess the sensitivity of accelerometry for differences in balance control. Accelerometers were attached to the trunk, and force plate measurements were simultaneously done in the healthy subjects. Main outcome measures were root mean square (rms) and area under the curve (AUC) derived from the high-frequency component of the transversal acceleration signal of the trunk. In all comparisons there was a significant difference in AUC data ($p < 0.05$), and AUC appeared to be more sensitive than rms. Variability in AUC was not completely or mainly the result of changes and differences in the duration of the STS movement. As a conclusion, accelerometry is a potentially valuable technique to measure balance during the STS movement.

Janssens, M.; Lataster, T.; Simons, C. J.; Oorschot, M.; Lardinois, M.; Van, Os J.; Myin-Germeys, I. (2012):

Emotion recognition in psychosis: no evidence for an association with real world social functioning.

In: *Schizophr.Res* 142 (1-3), S. 116–121. DOI: 10.1016/j.schres.2012.10.003.

Abstract:

BACKGROUND: Patients with psychotic disorders show impairments in the recognition of emotions in other people. These impairments have been associated with poor social functioning as measured by self-report questionnaires, clinical interviews and

laboratory-based tests of social skills. The ecological validity of these tests, however, is low. Associations were examined between emotion recognition and daily life social interactions in 50 patients diagnosed with a non-affective psychotic disorder and 67 healthy controls. METHODS: All participants were assessed with the Degraded Facial Affect Recognition Task (DFAR), a computer test measuring the recognition of emotional facial expressions. Social functioning in daily life was assessed using the Experience Sampling Method (a random time sampling technique) with focus on measures of social context and appraisal of the social situation. RESULTS: Groups differed significantly in the recognition of angry faces, whereas no differences existed for other emotions. There were no associations between emotion recognition and social functioning in daily life and there was no evidence for differential associations in patients as compared to controls. DISCUSSION: Social functioning, when assessed in an ecologically valid fashion, is not sensitive to variation in the traditional experimental assessment of emotion recognition. Real life measures of functioning should guide research linking the handicaps associated with psychosis to underlying cognitive and emotional dysregulation

Janz, Kathleen F.; Kwon, Soyang; Letuchy, Elena M.; Eichenberger Gilmore, Julie M.; Burns, Trudy L.; Torner, James C. et al. (2009):

Sustained effect of early physical activity on body fat mass in older children.

In: *Am J Prev Med* 37 (1), S. 35–40. DOI: 10.1016/j.amepre.2009.03.012.

Abstract:

BACKGROUND\r\nPhysical activity is assumed to reduce excessive fatness in children. This study examined whether the benefits of early childhood moderate-to-vigorous physical activity (MVPA) on fatness are sustained throughout childhood.\r\nMETHODS\r\nMVPA minutes per day (min/d) and fat mass (kilograms; kg) were measured using accelerometry and dual-energy x-ray absorptiometry in 333 children aged 5, 8, and 11 years who were participating in the Iowa Bone Development Study. Mixed regression models were used to test whether MVPA at age 5 years had an effect on fat mass at age 8 years and age 11 years, after adjustment for concurrent height, weight, age, maturity, and MVPA. The analysis was repeated to control for fat mass at age 5 years. Using mixed-model least-squares means, adjusted means of fat mass at age 8 years and age 11 years were compared between the highest and lowest quartiles of MVPA at age 5 years. Data were collected between 1998 and 2006 and analyzed in 2008.\r\nRESULTS\r\nFor boys and girls, MVPA at age 5 years was a predictor of adjusted fat mass at age 8 years and age 11 years ($p<0.05$). In girls, the effect of MVPA at age 5 years was not significant when fat mass at age 5 years was included. Boys and girls in the highest quartile of MVPA at age 5 years had a lower fat mass at age 8 years and age 11 years than children in the lowest MVPA quartile at age 5 years ($p<0.05$; mean difference 0.85 kg at age 8 years and 1.55 kg at age 11 years).\r\nCONCLUSIONS\r\nSome effects of early-childhood MVPA on fatness appear to persist throughout childhood. Results indicate the potential importance of increasing MVPA in young children as a strategy to reduce later fat gains.

Janz, Kathleen F.; Medema-Johnson, H. C.; Letuchy, Elena M.; Burns, Trudy L.; Gilmore, J. Eichenbergerm; Torner, James C. et al. (2008):

Subjective and objective measures of physical activity in relationship to bone mineral content during late childhood: the Iowa Bone Development Study.

In: *British Journal of Sports Medicine* 42 (8), S. 658–663.

Abstract:

OBJECTIVE:

This study compared accelerometry to self-report for the assessment of physical activity (PA) in relation to bone mineral content (BMC). In addition, we compared the ability of these measures to assess PA in boys versus girls.

METHODS:

Participants in this cross-sectional study included 449 children (mean age 11 years) from the Iowa Bone Development Study. PA was measured via 3-5 days of accelerometry using the Actigraph and 7 day self-report questionnaire using the Physical Activity Questionnaire for Children (PAQ-C). Hip, spine, and whole body BMC were measured via dual energy x ray absorptiometry (DXA).

RESULTS:

Partial correlation analysis (controlling for height, weight, and maturity) showed the Actigraph was significantly associated with hip ($r = 0.40$), spine ($r = 0.20$), and whole body ($r = 0.33$) BMC in boys, as was the PAQ-C ($r = 0.28$ hip, $r = 0.19$ spine, and $r = 0.22$ whole body). Among girls, only the Actigraph was significantly associated with hip ($r = 0.18$) and whole body ($r = 0.16$) BMC. Both the Actigraph and PAQ-C were significant in hip, spine, and whole body multivariable linear regression models (after controlling for body size and maturity) in boys. Only the Actigraph entered hip BMC regression model in girls.

CONCLUSIONS:

Our study supports previous work showing associations between everyday PA and BMC in older children. These associations are more likely to be detected with an objective versus subjective measure of PA, particularly in girls.

Jappe, L. M.; Cao, L.; Crosby, R. D.; Crow, S. J.; Peterson, C. B.; Le, Grange D. et al. (2013):

Stress and eating disorder behavior in anorexia nervosa as a function of menstrual cycle status.

In: *Int.J.Eat.Disord.* (0276-3478 (Linking)). DOI: 10.1002/eat.22211.

Abstract:

OBJECTIVE: Fluctuations in ovarian hormones during the menstrual cycle and psychosocial stress contribute to eating disorder (ED) behavior. METHOD: Using ecological momentary assessment techniques, this study examined relationships between stress and binge eating, self-induced vomiting, and dietary restriction based on menstrual cycle status in anorexia nervosa (AN). One hundred nine females with full and subthreshold AN (17-45 years old) recorded ED behavior and stress ratings over 2 weeks. Using hierarchical linear modeling, individuals with eumenorrhea and those with amenorrhea or oligomenorrhea were compared. RESULTS: Following episodes of meal skipping, momentary stress decreased in individuals with normal menstrual cycles and increased in those with irregular menstrual cycles. DISCUSSION: Results suggest that changes in stress severity in response to food restriction may differ based on ovarian hormonal status and may be a mechanism by which AN is maintained in individuals without menstrual disturbance. (c) 2013 Wiley Periodicals, Inc.(Int J Eat Disord 2013)

Japuntich, Sandra J.; Piper, Megan E.; Schlam, Tanya R.; Bolt, Daniel M.; Baker, Timothy B. (2009):

Do smokers know what we're talking about? The construct validity of nicotine dependence questionnaire measures.

In: *Psychological Assessment* 21 (4), S. 595–607. DOI: 10.1037/a0017312.

Abstract:

Few studies have examined whether nicotine dependence self-report questionnaires can predict specific behaviors and symptoms at specific points in time. The present study used data from a randomized clinical trial (N = 608; M. E. Piper et al., 2007) to assess the construct validity of scales and items from 3 nicotine dependence measures: the Fagerström Test for Nicotine Dependence (T. F. Heatherton, L. T. Kozlowski, R. C. Frecker & K.-O. Fagerström, 1991), the Nicotine Dependence Syndrome Scale (S. Shiffman, A. J. Waters, & M. Hickcox, 2004), and the Wisconsin Inventory of Smoking Dependence Motives (M. E. Piper et al., 2004). Scales from these measures were used to predict participants' reports on real-time measures of withdrawal symptoms and smoking behavior and retrospective self-report questionnaires to assess convergent and discriminative validity. The nicotine dependence measures' scales and items generally predicted the real-time measures of similar constructs, but the percent of variance accounted for was low. The nicotine dependence measures did, however, show evidence of discriminative validity. Thus, this study provides modest support for the construct validity of these nicotine dependence scales.

Jason, L. A.; Brown, M. M. (2012):

Sub-typing daily fatigue progression in chronic fatigue syndrome.

In: *J Ment.Health* (0963-8237 (Linking)). DOI: 10.3109/09638237.2012.670879.

Abstract:

Background Activity logs involve patients writing down their activities and symptoms over 1 or more days. Aims This study sought to classify daily fatigue patterns among patients with chronic fatigue syndrome (CFS) using activity logs. Method Fatigue intensity was self-reported every 30 min in a sample of 90 patients with CFS over 1 day. A cluster analysis using fatigue intensity, variability and slope was conducted. Results Three clusters emerged involving patients with different trajectories. One group evidenced high fatigue intensity, low variability, and fatigue intensity stayed the same over time. A second group had moderate fatigue intensity, high variability, and fatigue intensity decreased over time. A third group had moderate fatigue intensity, high variability, but fatigue intensity increased over time. The three clusters of patients differed on measures of actigraphy, pain and immune functioning. Conclusions Activity logs can provide investigators and clinicians with valuable sources of data for understanding patterns of fatigue and activity among patients with CFS

Jasper, Fabian; Hiller, Wolfgang; Berking, Matthias; Rommel, Thilo; Witthoft, Michael (2014):

The affective response to health-related information and its relationship to health anxiety: An ambulatory approach.

In: *Cogn Emot*, S. 1–9. DOI: 10.1080/02699931.2014.930022.

Abstract:

Affective reactions to health-related information play a central role in health anxiety. Therefore, using ambulatory assessment, we analysed the time course of negative affect in a control group (CG, n = 60) which only rated their negative affect and an experimental group (EG, n = 97) which also rated the presence of somatic symptoms (e.g., back pain). By means of mixed regression models, we observed a decline of negative affect following the symptom self-ratings in the EG and a stable affect in the CG. The decline of negative affect was not moderated by the degree of health anxiety. Our findings might indicate that evaluating one's health status leads to a general reduction of negative affect in healthy individuals. The results of the study are in line with a bidirectional symptom perception model and underline the crucial role of affect regulation in the processing of health-related information.

Jasser, Samar A.; Garvin, Jennifer H.; Wiedemer, Nancy; Roche, Dominic; Gallagher, Rollin M. (2007):

Information Technology in Mental Health Research: Impediments and Implications in One Chronic Pain Study Population.

In: *Pain Medicine* 8 (s3), S. S176-S181.

Abstract:

Objective. The Department of Veterans Affairs and Veterans' Administration hospitals began using the electronic medical record in 1994, streamlining provider-to-provider communication of vital clinical information, and simultaneously providing investigators access to vast amounts of clinical data for research purposes. Administrative and coded data, including symptoms and diagnoses as derived from chart content, are one of the most ready substrates for analysis of these massive databases to answer various research-related inquiries. We evaluated the capability of this type of coded data to accurately identify patients with schizophrenia from a group of 819 patients taking opioids for chronic pain in the primary care clinic of the Philadelphia Veterans' Administration Medical Center.

Methods. Patients were identified for inclusion in this analysis by their sequential enrollment in an Opioid Renewal Clinic as referred by their primary care providers, as well as a nonreferred cohort of chronic pain patients maintained on opioids by their primary care providers (N = 819). The prevalence of schizophrenia obtained by coded diagnostic labeling by computerized chart review was compared with the prevalence of schizophrenia obtained by systematic independent manual chart review of all cases by a research psychiatrist.

Results. Based purely on coded diagnostic labeling, the prevalence of schizophrenia in this population was 14%, nearly 14 times the estimated general population prevalence. However, manual independent chart review of the identified cases by a research psychiatrist (N = 119) resulted in the actual prevalence in this group to be estimated at 1.8%. None of the patients with three or less incidents of diagnostic labeling by code had schizophrenia. Of those with four or more incidents, 74% had schizophrenia.

Conclusions. Better accuracy is obtained when cases of schizophrenia are identified by multiple coding incidents derived from longitudinal clinical encounters. These findings suggest that the extraction of up to three coding incidents for schizophrenia alone is not an accurate means of identifying this clinical population for research and epidemiological purposes. Further, when designing automated, information technology-based approaches to the identification of subjects for clinical research and extracting their data from electronic medical records using International Classification of Disease, Ninth Revision, Clinical Modification (ICD-9-CM) codes, mental health diagnoses must be uniquely considered on a disease-by-disease basis.

Javelot, Herve; Spadazzi, Anne; Weiner, Luisa; Garcia, Sonia; Gentili, Claudio; Kosel, Markus; Bertschy, Gilles (2014):

Telemonitoring with respect to mood disorders and information and communication technologies: overview and presentation of the PSYCHE project.

In: *Biomed Res Int* 2014, S. 104658. DOI: 10.1155/2014/104658.

Abstract:

This paper reviews what we know about prediction in relation to mood disorders from the perspective of clinical, biological, and physiological markers. It then also presents how information and communication technologies have developed in the field of mood disorders, from the first steps, for example, the transition from paper and pencil to more sophisticated methods, to the

development of ecological momentary assessment methods and, more recently, wearable systems. These recent developments have paved the way for the use of integrative approaches capable of assessing multiple variables. The PSYCHE project stands for Personalised monitoring SYstems for Care in mental HEalth.

Jeffrey Kao, Ming-Chih; Jarosz, Renata; Goldin, Michael; Patel, Amy; Smuck, Matthew (2014):

Determinants of Physical Activity in America: A First Characterization of Physical Activity Profile using National Health and Nutrition Examination Survey (NHANES).

In: *PM R. DOI:* 10.1016/j.pmrj.2014.03.004.

Abstract:

OBJECTIVE: To develop and implement methodologies for characterizing accelerometry-derived patterns of physical activity (PA) in the United States in relation to demographics, anthropometrics, behaviors, and co-morbidities using the NHANES dataset. DESIGN: Retrospective analysis of nationally representative database SETTING: Computer-generated modeling in silico PARTICIPANTS: 6,329 adults in the U.S. from NHANES 2003-2004 database. METHODS: In order to discover subtle multivariate signal in the dynamic and noisy accelerometry data, we develop a novel approach, termed discretized multiple adaptive regression (DMAR), and implement the algorithm in SAS. Main Outcome Measurements: Demographic, anthropometric, co-morbidity, and behavioral variables. RESULTS: The intensity of PA decreases with both increased age and increased BMI. Both higher education and greater income correlate with increased activity over short durations and reduced activity intensity over long durations. Numerous predictors that demonstrated effects that may be masked by use of these larger intervals were found. This includes age, one of the most robust variables, where we discovered decreasing activities particularly in the moderate activity range. It also includes gender where women compared to men have increased proportions of active times upto the center of light activity range; and income greater than $45,000 where a complex effect is seen with little correspondence to existing cut-points. CONCLUSIONS: The results presented in this study suggest that the method of multiple regression and heat map visualization can generate insights otherwise hidden in large datasets such as NHANES. A review of the provided heat maps reveals the trends discussed above involving demographic, anthropometric, co-morbidity, and behavioral variables. It also demonstrates the power of accelerometry to expose alterations in PA. Ultimately, this study provides a U.S. population-based norm to use in future studies of PA.

Jehad Sarkar, A. M. (2011):

An Intelligent Tool for Activity Data Collection.

In: *Sensors.(Basel)* 11 (4), S. 3988–4008. DOI: 10.3390/s110403988.

Abstract:

Activity recognition systems using simple and ubiquitous sensors require a large variety of real-world sensor data for not only evaluating their performance but also training the systems for better functioning. However, a tremendous amount of effort is required to setup an environment for collecting such data. For example, expertise and resources are needed to design and install the sensors, controllers, network components, and middleware just to perform basic data collections. It is therefore desirable to have a data collection method that is inexpensive, flexible, user-friendly, and capable of providing large and diverse activity datasets. In this paper, we propose an intelligent activity data collection tool which has the ability to provide such datasets inexpensively without physically deploying the testbeds. It can be used as an inexpensive and alternative technique to collect human activity data. The tool provides a set of web interfaces to create a web-based activity data collection environment. It also provides a web-based experience sampling tool to take the user's activity input. The tool generates an activity log using its activity knowledge and the user-given inputs. The activity knowledge is mined from the web. We have performed two experiments to validate the tool's performance in producing reliable datasets

Jehle, Sigrid; Lardi, Alessia; Felix, Barbara; Hulter, Henry N.; Stettler, Christoph; Krapf, Reto (2014):

Effect of large doses of parenteral vitamin D on glycaemic control and calcium/phosphate metabolism in patients with stable type 2 diabetes mellitus: a randomised, placebo-controlled, prospective pilot study.

In: *Swiss Med Wkly* 144, S. w13942. DOI: 10.4414/smw.2014.13942.

Abstract:

OBJECTIVE: Vitamin D (D(3)) status is reported to correlate negatively with insulin production and insulin sensitivity in patients with type 2 diabetes mellitus (T2DM). However, few placebo-controlled intervention data are available. We aimed to assess the effect of large doses of parenteral D3 on glycosylated haemoglobin (HbA((1)c)) and estimates of insulin action (homeostasis model assessment insulin resistance: HOMA-IR) in patients with stable T2DM. MATERIALS AND METHODS: We performed a prospective, randomised, double-blind, placebo-controlled pilot study at a single university care setting in Switzerland. Fifty-five patients of both genders with T2DM of more than 10 years were enrolled and randomised to either 300,000 IU D(3) or placebo, intramuscularly. The primary endpoint was the intergroup difference in HbA((1)c) levels. Secondary endpoints were: changes in insulin sensitivity, albuminuria, calcium/phosphate metabolism, activity of the renin-aldosterone axis and changes in 24-hour ambulatory blood pressure values. RESULTS: After 6 months of D(3) supply, there was a significant intergroup difference in the change in HbA((1)c) levels (relative change [mean +/- standard deviation] +2.9% +/- 1.5% in the D(3) group vs +6.9% +/- 2.1% the in placebo group, p = 0.041) as HOMA-IR decreased by 12.8% +/- 5.6% in the D(3) group and increased by 10% +/- 5.4% in the placebo group (intergroup difference, p = 0.032). Twenty-four-hour urinary albumin excretion decreased in the D(3) group from 200 +/- 41 to 126 +/- 39, p = 0.021). There was no significant intergroup difference for the other secondary endpoints. CONCLUSIONS: D(3) improved insulin sensitivity (based on HOMA-IR) and affected the course of HbA((1)c) positively compared with placebo in patients with T2DM.

Jentzsch, N. S.; Camargos, P. A. M.; Colosimo, E. A.; Bousquet, J. (2009):

Monitoring adherence to beclomethasone in asthmatic children and adolescents through four different methods.

In: *Allergy* 64 (10), S. 1458–1462. DOI: 10.1111/j.1398-9995.2009.02037.x.

Abstract:

BACKGROUND\r\nSuboptimal adherence to inhaled steroids is a known problem in children and adolescents, even when medications are administered under parental supervision. This study aimed to verify the adherence rate to beclomethasone dipropionate (BDP) by four currently available methods.\r\nMETHODS\r\nIn this concurrent cohort study, 102 randomly selected asthmatic children and adolescents aged 3-14 years were followed for 12 months. Adherence rate was assessed every 2 months by self and/or parent report, pharmacy dispensing data, electronic device (Doser); Meditrack Products, Hudson, MA, USA) monitor, and canister weight.\r\nRESULTS\r\nMean adherence rates to BDP by self and/or parent report, pharmacy records, Doser, and canister weight were 97.9% (95% CI 88.0-98.6), 70.0% (95% CI 67.6-72.4), 51.5% (95% CI 48.3-54.6), and 46.3% (95% CI 44.1-48.4), respectively. Agreement analysis between (Doser) and canister weight revealed a weighted kappa equal to 0.76 (95% CI 0.65-0.87).\r\nCONCLUSIONS\r\nAdherence was a dynamic event and rates decreased progressively for all methods over the 12-month follow-up. Canister weight and electronic monitoring measures were more accurate than self/parent reports and pharmacy records. Rates obtained by these two methods were very close and statistical analysis also showed a substantial agreement between them. As measurements by canister weight are less costly compared with currently available electronic devices, it should be considered as an alternative method to assess adherence in both clinical research and practice.

Jeon, Eunjoo; Park, Hyeoun-Ae; Min, Yul Ha; Kim, Hyun-Young (2014):

Analysis of the information quality of korean obesity-management smartphone applications.

In: *Healthc Inform Res* 20 (1), S. 23–29. DOI: 10.4258/hir.2014.20.1.23.

Abstract:

OBJECTIVES: This study analyzed smartphone obesity-management applications developed in Korea and the quality of the information that they provide. METHODS: Obesity-management smartphone applications were searched using the keywords 'obesity + management,' 'weight + management,' 'weight + loss,' 'weight + exercise,' 'weight + diet,' 'weight + calories,' and 'diet,' with a search application programming interface (provided by Apple) between September 23 and September 27, 2013. These applications were then classified according to their main purpose, type of interventions used, price, type of developer, and user ratings. The information quality of the applications was analyzed using the Silberg scale. RESULTS: In total, 148 smartphone applications for obesity management were found. The main purpose of most of these applications (70.95%) was to provide information regarding weight control. The most frequently used intervention (34.62%) was to provide information on exercise management. More than half of the applications (58.78%) were free of charge. The mean of users' rating of these applications was 3.68 out of 5. The quality of information provided by these applications was evaluated as 4.55 out of 9: specifically, 1.79 out of 3 for authorship, 0.22 out of 2 for attribution, 1.29 out of 2 for disclosure, and 1.25 out of 2 for currency. Only three of the applications (2.88%) had a score on the Silberg scale greater than or equal to 7 points. CONCLUSIONS: The findings of this study

suggest that the quality of information provided by smartphone applications in the healthcare domain urgently need to be evaluated to prevent users being misinformed by these applications.

Jern, Patrick; Gunst, Annika; Sandqvist, Felicia; Sandnabba, N. Kenneth; Santtila, Pekka (2011):

Using Ecological Momentary Assessment to investigate associations between ejaculatory latency and control in partnered and non-partnered sexual activities.

In: *Journal of sex research* 48 (4), S. 316–324. DOI: 10.1080/00224499.2010.518293.

Abstract:

Ecological Momentary Assessment (EMA) was used to investigate associations between, and variations in, ejaculatory control and ejaculation latency time (ELT) over repeated measurements of sexual activities. Differences between measures recorded in partnered or non-partnered settings were also investigated. The sample consisted of 21 male Finns aged 18 years or above, contributing a total of 158 reports of partnered and non-partnered sexual activities over a six-week period. In the context of non-partnered sexual activities, after controlling for within-subjects dependence, ELTs between events were predictive of one another, but ELT did not predict ejaculatory control when measured simultaneously, nor at subsequent events. Also, ejaculatory control could not predict simultaneously measured ELT or ejaculatory control at subsequent events. During partnered sexual activities, both ejaculatory control and ELT could be accurately predicted by observing ejaculatory control at prior events. In this context, ejaculatory control could also reliably predict simultaneously measured ELT. ELT or ejaculatory control during partnered sexual activity could not be predicted by observing ELT at prior events. Between-event correlations were generally low, indicating considerable variation in ejaculatory functioning over time. EMA is a thrifty assessment method for studying variations in ejaculatory function, and is likely suitable for studying sexual dysfunctions in general.

Ji, Jun; Ling, Xuefeng B.; Zhao, Yingzhen; Hu, Zhongkai; Zheng, Xiaolin; Xu, Zhening et al. (2014):

A data-driven algorithm integrating clinical and laboratory features for the diagnosis and prognosis of necrotizing enterocolitis.

In: *PLoS One* 9 (2), S. e89860. DOI: 10.1371/journal.pone.0089860.

Abstract:

BACKGROUND: Necrotizing enterocolitis (NEC) is a major source of neonatal morbidity and mortality. Since there is no specific diagnostic test or risk of progression model available for NEC, the diagnosis and outcome prediction of NEC is made on clinical grounds. The objective in this study was to develop and validate new NEC scoring systems for automated staging and prognostic forecasting. STUDY DESIGN: A six-center consortium of university based pediatric teaching hospitals prospectively collected data on infants under suspicion of having NEC over a 7-year period. A database comprised of 520 infants was utilized to develop the NEC diagnostic and prognostic models by dividing the entire dataset into training and testing cohorts of demographically matched subjects. Developed on the training cohort and validated on the blind testing cohort, our multivariate analyses led to NEC scoring metrics integrating clinical data. RESULTS: MACHINE LEARNING USING CLINICAL AND LABORATORY RESULTS AT THE TIME OF CLINICAL PRESENTATION LED TO TWO NEC MODELS: (1) an automated diagnostic classification scheme; (2) a dynamic prognostic method for risk-stratifying patients into low, intermediate and high NEC scores to determine the risk for disease progression. We submit that dynamic risk stratification of infants with NEC will assist clinicians in determining the need for additional diagnostic testing and guide potential therapies in a dynamic manner. ALGORITHM AVAILABILITY: http://translationalmedicine.stanford.edu/cgi-bin/NEC/index.pl and smartphone application upon request.

Jiang, Li (2012):

Absence makes the heart grow fonder, behaviors adaptive and perceptions idealized: The effects of geographic separation and interpersonal media on intimacy process.

In: *Dissertation Abstracts International Section A: Humanities and Social Sciences* 73 (2-A). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99150-106&site=ehost-live.

Abstract:

Many people assume that it is challenging to maintain a romantic relationship when the partners are separated by a considerable distance. Recent research on long-distance relationships, however, suggests that long-distance romantic

relationships are equally or even more intimate and satisfied than geographically close counterparts. The present study examined whether the everyday intimacy process unfolds differently in long-distance versus geographically close dating relationships and whether the use of interpersonal media interplays with geographic separation to affect intimacy in specific interactions. Drawing on the Interpersonal Process Model of Intimacy (IPMI; Reis & Shaver, 1988), the study tested an intimacy enhancement mechanism in which long-distance couples engage in more adaptive self-disclosure behaviors and form more idealized relationship perceptions than do geographically close couples for the pursuit of intimacy across various interpersonal media. These predictions were examined with a novel electronic diary method. Long-distance and geographically close dating couples completed a 7-day diary study in which both members of the couple independently reported their interactions that took place each day. The results provide support for the behavioral adaptation and perceptual idealization effects proposed, and suggest that the two effects vary along the media dimensions of cue multiplicity, synchronicity and mobility. These findings offer a contextual extension to the IPMI and advance the understanding of communication and relational processes in long-distance and mixed-mode relationships. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Jiang, Hong; Han, Jiangna; Zhu, Zhu; Xu, Wenbin; Zheng, Jinping; Zhu, Yuanjue (2009):

Patient compliance with assessing and monitoring of asthma.

In: *J Asthma* 46 (10), S. 1027–1031. DOI: 10.3109/02770900903229685.

Abstract:

BACKGROUND\r\nThe current asthma guidelines encourage use of a diary for assessing and monitoring symptoms and airway function. However, patient compliance and acceptability are usually poor owing to the burden of frequent and prolonged assessment.\r\nOBJECTIVE\r\nWe investigated whether better patient compliance could be ensured if a study was more relevant to patient convenience and had less impact on their daily life.\r\nMETHODS\r\nA total of 106 patients with symptomatic asthma underwent a fixed-time thrice-daily assessment schedule for a period lasting 2 weeks, and they were assigned to a doctor visit after the assessment. Symptoms and medication use were recorded in a booklet (paper diary) and airway function measured by a portable spirometer (electronic diary).\r\nRESULTS\r\nOf 4,452 expected entries, the paper diary yielded 3,186 compliant entries and the electronic diary yielded 3,557 compliant entries; 71% of patients completed at least 30 compliant entries in the paper diary and 79% in the electronic diary. Use of an electronic device was associated with better compliance compared with paper technique (80.0% vs. 71.7%, $p < 0.0001$). Patient compliance decreased in the second week compared with the first week of diary keeping for both types of diaries (paper diary: 68.6% vs. 74.8%, $p < 0.0001$; electronic diary: 76.7% vs. 83.4%, $p < 0.0001$). The morning compliance was the least good, the afternoon better, and the evening best (paper diary: 68.2% vs. 71.0% vs. 75.9%, $p < 0.0001$; electronic diary: 77.2% vs. 79.0% vs. 83.9%, $p < 0.0001$). Among demographics and clinical factors, higher anxiety levels were linked to lower patient compliance.\r\nCONCLUSION\r\nGood patient compliance and acceptability can be achieved when a study takes into account patient convenience, uses user friendly electronic devices, and is less disruptive to patients' daily life.

Jiang, Li; Mancuso, Matthew; Lu, Zhengda; Akar, Gunkut; Cesarman, Ethel; Erickson, David (2014):

Solar thermal polymerase chain reaction for smartphone-assisted molecular diagnostics.

In: *Sci Rep* 4, S. 4137. DOI: 10.1038/srep04137.

Abstract:

Nucleic acid-based diagnostic techniques such as polymerase chain reaction (PCR) are used extensively in medical diagnostics due to their high sensitivity, specificity and quantification capability. In settings with limited infrastructure and unreliable electricity, however, access to such devices is often limited due to the highly specialized and energy-intensive nature of the thermal cycling process required for nucleic acid amplification. Here we integrate solar heating with microfluidics to eliminate thermal cycling power requirements as well as create a simple device infrastructure for PCR. Tests are completed in less than 30 min, and power consumption is reduced to 80 mW, enabling a standard 5.5 Wh iPhone battery to provide 70 h of power to this system. Additionally, we demonstrate a complete sample-to-answer diagnostic strategy by analyzing human skin biopsies infected with Kaposi's Sarcoma herpesvirus (KSHV/HHV-8) through the combination of solar thermal PCR, HotSHOT DNA extraction and smartphone-based fluorescence detection. We believe that exploiting the ubiquity of solar thermal energy as demonstrated here could facilitate broad availability of nucleic acid-based diagnostics in resource-limited areas.

Jibb, Lindsay A.; Stevens, Bonnie J.; Nathan, Paul C.; Seto, Emily; Cafazzo, Joseph A.; Stinson, Jennifer N. (2014):

A smartphone-based pain management app for adolescents with cancer: establishing system requirements and a pain care algorithm based on literature review, interviews, and consensus.

In: *JMIR Res Protoc* 3 (1), S. e15. DOI: 10.2196/resprot.3041.

Abstract:

BACKGROUND: Pain that occurs both within and outside of the hospital setting is a common and distressing problem for adolescents with cancer. The use of smartphone technology may facilitate rapid, in-the-moment pain support for this population. To ensure the best possible pain management advice is given, evidence-based and expert-vetted care algorithms and system design features, which are designed using user-centered methods, are required. OBJECTIVE: To develop the decision algorithm and system requirements that will inform the pain management advice provided by a real-time smartphone-based pain management app for adolescents with cancer. METHODS: A systematic approach to algorithm development and system design was utilized. Initially, a comprehensive literature review was undertaken to understand the current body of knowledge pertaining to pediatric cancer pain management. A user-centered approach to development was used as the results of the review were disseminated to 15 international experts (clinicians, scientists, and a consumer) in pediatric pain, pediatric oncology and mHealth design, who participated in a 2-day consensus conference. This conference used nominal group technique to develop consensus on important pain inputs, pain management advice, and system design requirements. Using data generated at the conference, a prototype algorithm was developed. Iterative qualitative testing was conducted with adolescents with cancer, as well as pediatric oncology and pain health care providers to vet and refine the developed algorithm and system requirements for the real-time smartphone app. RESULTS: The systematic literature review established the current state of research related to nonpharmacological pediatric cancer pain management. The 2-day consensus conference established which clinically important pain inputs by adolescents would require action (pain management advice) from the app, the appropriate advice the app should provide to adolescents in pain, and the functional requirements of the app. These results were used to build a detailed prototype algorithm capable of providing adolescents with pain management support based on their individual pain. Analysis of qualitative interviews with 9 multidisciplinary health care professionals and 10 adolescents resulted in 4 themes that helped to adapt the algorithm and requirements to the needs of adolescents. Specifically, themes were overall endorsement of the system, the need for a clinical expert, the need to individualize the system, and changes to the algorithm to improve potential clinical effectiveness. CONCLUSIONS: This study used a phased and user-centered approach to develop a pain management algorithm for adolescents with cancer and the system requirements of an associated app. The smartphone software is currently being created and subsequent work will focus on the usability, feasibility, and effectiveness testing of the app for adolescents with cancer pain.

Jilcott Pitts, Stephanie B.; Gustafson, Alison; Wu, Qiang; Leah Mayo, Mariel; Ward, Rachel K.; McGuirt, Jared T. et al. (2014):

Farmers' market use is associated with fruit and vegetable consumption in diverse southern rural communities.

In: *Nutr J* 13, S. 1. DOI: 10.1186/1475-2891-13-1.

Abstract:

BACKGROUND: While farmers' markets are a potential strategy to increase access to fruits and vegetables in rural areas, more information is needed regarding use of farmers' markets among rural residents. Thus, this study's purpose was to examine (1) socio-demographic characteristics of participants; (2) barriers and facilitators to farmers' market shopping in southern rural communities; and (3) associations between farmers' market use with fruit and vegetable consumption and body mass index (BMI). METHODS: Cross-sectional surveys were conducted with a purposive sample of farmers' market customers and a representative sample of primary household food shoppers in eastern North Carolina (NC) and the Appalachian region of Kentucky (KY). Customers were interviewed using an intercept survey instrument at farmers' markets. Representative samples of primary food shoppers were identified via random digit dial (RDD) cellular phone and landline methods in counties that had at least one farmers' market. All questionnaires assessed socio-demographic characteristics, food shopping patterns, barriers to and facilitators of farmers' market shopping, fruit and vegetable consumption and self-reported height and weight. The main outcome measures were fruit and vegetable consumption and BMI. Descriptive statistics were used to examine socio-demographic characteristics, food shopping patterns, and barriers and facilitators to farmers' market shopping. Linear regression analyses were used to examine associations between farmers' market use with fruit and vegetable consumption and BMI, controlling for age, race, education, and gender. RESULTS: Among farmers' market customers, 44% and 55% (NC and KY customers, respectively) reported shopping at a farmers' market at least weekly, compared to 16% and 18% of NC and KY RDD respondents. Frequently reported barriers to farmers' market shopping were market days and hours, "only come when I need something", extreme weather, and market location. Among the KY farmers' market customers and NC and KY RDD respondents, fruit and vegetable consumption was positively associated with use of farmers' markets. There were no associations between use

of farmers' markets and BMI. CONCLUSIONS: Fruit and vegetable consumption was associated with farmers' market shopping. Thus, farmers' markets may be a viable method to increase population-level produce consumption.

Jimenez, Antonio R.; Zampella, Francisco; Seco, Fernando (2014):

Improving inertial Pedestrian Dead-Reckoning by detecting unmodified switched-on lamps in buildings.

In: *Sensors (Basel)* 14 (1), S. 731–769. DOI: 10.3390/s140100731.

Abstract:

This paper explores how inertial Pedestrian Dead-Reckoning (PDR) location systems can be improved with the use of a light sensor to measure the illumination gradients created when a person walks under ceiling-mounted unmodified indoor lights. The process of updating the inertial PDR estimates with the information provided by light detections is a new concept that we have named Light-matching (LM). The displacement and orientation change of a person obtained by inertial PDR is used by the LM method to accurately propagate the location hypothesis, and vice versa; the LM approach benefits the PDR approach by obtaining an absolute localization and reducing the PDR-alone drift. Even from an initially unknown location and orientation, whenever the person passes below a switched-on light spot, the location likelihood is iteratively updated until it potentially converges to a unimodal probability density function. The time to converge to a unimodal position hypothesis depends on the number of lights detected and the asymmetries/irregularities of the spatial distribution of lights. The proposed LM method does not require any intensity illumination calibration, just the pre-storage of the position and size of all lights in a building, irrespective of their current on/off state. This paper presents a detailed description of the light-matching concept, the implementation details of the LM-assisted PDR fusion scheme using a particle filter, and several simulated and experimental tests, using a light sensor-equipped Galaxy S3 smartphone and an external foot-mounted inertial sensor. The evaluation includes the LM-assisted PDR approach as well as the fusion with other signals of opportunity (WiFi, RFID, Magnetometers or Map-matching) in order to compare their contribution in obtaining high accuracy indoor localization. The integrated solution achieves a localization error lower than 1 m in most of the cases.

Johansson, E.; Ekelund, U.; Nero, H.; Marcus, C.; Hagstromer, M. (2014):

Calibration and cross-validation of a wrist-worn Actigraph in young preschoolers.

In: *Pediatr Obes. DOI:* 10.1111/j.2047-6310.2013.00213.x.

Abstract:

OBJECTIVE: To calibrate the Actigraph GT3X+ accelerometer for wrist-worn placement in young preschoolers by developing intensity thresholds for sedentary, low- and high-intensity physical activity. Furthermore, to cross-validate the developed thresholds in young preschoolers. METHODS: Actigraph GT3X+ was used to measure physical activity during structured activities and free play in 38 children (15-36 months). Activity was video recorded and scored into sedentary, low- and high-intensity physical activity based on Children's Activity Rating Scale (CARS) and combined with accelerometer data using a 5 s epoch. Receiver operating characteristic analysis was used to develop intensity thresholds in 26 randomly selected children. The remaining 12 children were used for cross-validation. RESULTS: Intensity thresholds for sedentary were </=89 vertical counts (Y) and </=221 vector magnitude (VM) counts per 5 s and >/=440 Y counts and >/=730 VM counts per 5 s for high-intensity physical activity. Sensitivity and specificity were 60-100% for the developed intensity thresholds. Strong correlations (Spearman rank correlation 0.69-0.91) were found in the cross-validation sample between the developed thresholds for the accelerometer and CARS scoring time in all intensity categories. CONCLUSION: The developed intensity thresholds appear valid to categorize sedentary behaviour and physical activity intensity categories in children 2 years of age.

John, D.; Staudenmayer, J.; Freedson, P. (2013):

Simple to complex modeling of breathing volume using a motion sensor.

In: *Sci.Total Environ.* 454-455 (0048-9697 (Linking)), S. 184–188. DOI: 10.1016/j.scitotenv.2013.02.092.

Abstract:

PURPOSE: To compare simple and complex modeling techniques to estimate categories of low, medium, and high ventilation (VE) from ActiGraph activity counts. METHODS: Vertical axis ActiGraph GT1M activity counts, oxygen consumption and VE were measured during treadmill walking and running, sports, household chores and labor-intensive employment activities. Categories of low (<19.3 l/min), medium (19.3 to 35.4 l/min) and high (>35.4 l/min) VEs were derived from activity intensity classifications

(light <2.9 METs, moderate 3.0 to 5.9 METs and vigorous >6.0 METs). We examined the accuracy of two simple techniques (multiple regression and activity count cut-point analyses) and one complex (random forest technique) modeling technique in predicting VE from activity counts. RESULTS: Prediction accuracy of the complex random forest technique was marginally better than the simple multiple regression method. Both techniques accurately predicted VE categories almost 80% of the time. The multiple regression and random forest techniques were more accurate (85 to 88%) in predicting medium VE. Both techniques predicted the high VE (70 to 73%) with greater accuracy than low VE (57 to 60%). Actigraph cut-points for light, medium and high VEs were <1381, 1381 to 3660 and >3660 cpm. CONCLUSIONS: There were minor differences in prediction accuracy between the multiple regression and the random forest technique. This study provides methods to objectively estimate VE categories using activity monitors that can easily be deployed in the field. Objective estimates of VE should provide a better understanding of the dose-response relationship between internal exposure to pollutants and disease

Johnson, Elizabeth I.; Grondin, Olivier; Barrault, Marion; Faytout, Malika; Helbig, Sylvia; Husky, Mathilde et al. (2009):

Computerized ambulatory monitoring in psychiatry: a multi-site collaborative study of acceptability, compliance, and reactivity.

In: *International Journal of Methods in Psychiatric Research* 18 (1), S. 48–57. DOI: 10.1002/mpr.276.

Abstract:

Computerized ambulatory monitoring overcomes a number of methodological and conceptual challenges to studying mental disorders, however concerns persist regarding the feasibility of this approach with severe psychiatric samples and the potential of intensive monitoring to influence data quality. This multi-site investigation evaluates these issues in four independent samples. Patients with schizophrenia (n = 56), substance dependence (n = 85), anxiety disorders (n = 45), and a non-clinical sample (n = 280) were contacted to participate in investigations using computerized ambulatory monitoring. Micro-computers were used to administer electronic interviews several times per day for a one-week period. Ninety-five percent of contacted individuals agreed to participate in the study, and minimum compliance was achieved by 96% of these participants. Seventy-eight percent of all programmed assessments were completed overall, and only 1% of micro-computers were not returned to investigators. There was no evidence that missing data or response time increased over the duration of the study, suggesting that fatigue effects were negligible. The majority of variables investigated did not change in frequency as a function of study duration, however some evidence was found that socially sensitive behaviors changed in a manner consistent with reactivity.

Johnson, Jarrod A.; Keiser, Heidi N.; Skarin, Evan M.; Ross, Scott R. (2014):

The Dispositional Flow Scale-2 as a Measure of Autotelic Personality: An Examination of Criterion-Related Validity.

In: *J Pers Assess. DOI:* 10.1080/00223891.2014.891524.

Abstract:

The Dispositional Flow Scale-2 (DFS-2; Jackson & Eklund, 2002) may be one of the most promising measures for assessing Csikszentmihalyi's (1990) construct of "autotelic personality." Despite strong internal validity, external validity of the DFS-2 remains open. We used 2 methods to provide evidence for external validity: (1) multiple-time assessments of experience sampling (1,856 entries generated over 7 days) to derive aggregate indices of criterion validity; and (2) single-time assessments of flow and personality for additional criterion-related validity. For single-time assessments of flow, we used a modified version of the Flow Questionnaire (Csikszentmihalyi & Larson, 1984). To assess personality, we included a measure of the Five-factor traits using the Revised NEO Personality Inventory (Costa & McCrae, 1992). A path model of NEO domains, DFS-2 global scores, and experience sampling aggregates fit the data well.

Johnson, Russell E.; Lanaj, Klodiana; Barnes, Christopher M. (2014):

The Good and Bad of Being Fair: Effects of Procedural and Interpersonal Justice Behaviors on Regulatory Resources.

In: *J Appl Psychol. DOI:* 10.1037/a0035647.

Abstract:

The justice literature has paid considerable attention to the beneficial effects of fair behaviors for recipients of such behaviors. It is possible, however, that exhibiting fair behaviors may come at a cost for actors. In this article, we integrate ego depletion

theory with organizational justice research in order to examine the consequences of justice behaviors for actors. We used an experience-sampling method in a sample of managerial employees to examine the relations of performing procedural justice and interpersonal justice behaviors with subsequent changes in actors' regulatory resources. Our results indicate that procedural justice behaviors are draining, whereas interpersonal justice behaviors are replenishing for actors. Depletion, in turn, adversely affected the performance of citizenship behavior, and depletion mediated relations of justice behavior with citizenship. Furthermore, 2 traits that impact self-regulatory skills-extraversion and neuroticism-moderated the replenishing effects of engaging in interpersonal justice behaviors. We conclude by discussing implications and avenues for future research. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Johnson, Jarrod A.; Miller, Michelle L.; Lynam, Donald R.; South, Susan C. (2012):

Five-factor model facets differentially predict in-the-moment affect and cognitions.

In: *Journal of Research in Personality* 46 (6), S. 752–759. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-30580-012%26site%3dehost-live;ssouth@purdue.edu;dlynam@psych.purdue.edu;johns468@purdue.edu.

Abstract:

The facets of the Five-Factor Model (FFM) of personality are presumed to represent distinct, biologically-based tendencies to act, think, and behave; yet they have received little behaviorally-based empirical validation. In this study, FFM facets were used to examine individual differences in affective and cognitive responses to stressors as they are experienced in daily life. Participants (N = 79) completed the NEO-PI-R followed by a week-long experience sampling procedure. As expected, hierarchical linear modeling showed that FFM facets captured affective and cognitive tendencies that were missed at the domain level. They additionally demonstrated convergent and divergent validity in predicting momentary affect. These results provide evidence that facets are distinct, non-interchangeable predictors of daily thoughts and emotions. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Johnson, E. I.; Sibon, I.; Renou, P.; Rouanet, F.; Allard, M.; Swendsen, J. (2009):

Feasibility and validity of computerized ambulatory monitoring in stroke patients.

In: *Neurology* 73 (19), S. 1579–1583. DOI: 10.1212/WNL.0b013e3181c0d466.

Abstract:

BACKGROUND\r\nComputerized ambulatory monitoring provides real-time assessments of clinical outcomes in natural contexts, and it has been increasingly applied in recent years to investigate symptom expression in a wide range of disorders. The purpose of this study was to examine the feasibility and validity of this data collection strategy with adult stroke patients.\r\nMETHODS\r\nForty-eight individuals (75% of the contacted sample) agreed to participate in the current study and were instructed to complete electronic interviews using a personal digital assistant 5 times per day over a 1-week period.\r\nRESULTS\r\nMore than 80% of programmed assessments were completed by the sample, and no evidence was found for fatigue effects. Expected patterns of associations were observed among daily life variables, and data collected through ambulatory monitoring were significantly correlated with standard clinic-based measures of similar constructs.\r\nCONCLUSION\r\nSupport was found for the feasibility and validity of computerized ambulatory monitoring with stroke patients. The application of these novel methods with stroke patients should provide complementary information that is inaccessible to standard hospital-based assessments and permit increased understanding of the significance of clinical results and test scores for daily life experience.

Johnston, D. W.; Jones, M. C.; Charles, K.; McCann, S. K.; McKee, L. (2013):

Stress in Nurses: Stress-Related Affect and Its Determinants Examined Over the Nursing Day.

In: *Ann.Behav.Med* (0883-6612 (Linking)). DOI: 10.1007/s12160-012-9458-2.

Abstract:

BACKGROUND: Nurses are a stressed group and this may affect their health and work performance. The determinants of occupational stress in nurses and other occupational groups have almost invariably been examined in between subject studies. PURPOSE: This study aimed to determine if the main determinants of occupation stress, i.e. demand, control, effort and reward, operate within nurses. METHODS: A real time study using personal digital-assistant-based ecological momentary assessment to

measure affect and its hypothesised determinants every 90 min in 254 nurses over three nursing shifts. The measures were negative affect, positive affect, demand/effort, control and reward. RESULTS: While the effects varied in magnitude between people, in general increased negative affect was predicted by high demand/effort, low control and low reward. Control and reward moderated the effects of demand/effort. High positive affect was predicted by high demand/effort, control and reward. CONCLUSIONS: The same factors are associated with variations in stress-related affect within nurses as between

Johnston, N. W.; Lambert, K.; Hussack, P.; Gerhardsson,De,V; Higenbottam, T.; Lewis, J. et al. (2013):

Detection of COPD Exacerbations and Compliance with Patient Reported Daily Symptom Diaries Using a BlackBerry-Based Information System.

In: *Chest* (0012-3692 (Linking)). DOI: 10.1378/chest.12-2308.

Abstract:

ABSTRACT BACKGROUND: Paper-based diaries and self-report of symptom worsening in COPD studies may lead to under-detection of exacerbations. Epidemiologically, COPD exacerbations exhibit seasonal patterns peaking at year-end. We examined whether use of a BlackBerry-based daily symptom diary would detect 95% or more of exacerbations and enable characterization of seasonal differences between them. METHODS: Fifty participants with GOLD stage I to IV COPD began a community-based study in December 2007. Another 30 began in December 2008. Participants transmitted daily symptom diaries using a BlackBerry. Alerts were triggered when symptom changes, missed diary transmissions or medical care for a respiratory problem occurred. Participant encounters were initiated if COPD exacerbations were suspected. Participants reported returns to normal breathing using their BlackBerry. RESULTS: Participants transmitted 99.9% of 28,514 possible daily diaries. All 191 (2.5/participant-year) COPD exacerbations meeting Anthonisen criteria were detected. During 148/191 exacerbations (78%; 1.97/participant-year) patients were hospitalized and/or ordered prednisone, an antibiotic or both. Respiratory viruses were detected in 78/191 (41%) of exacerbations. Those coinciding with a respiratory viral infection averaged 12.0 days, those without averaged 8.9 days (P <.04), with no difference in Anthonisen score. Respiratory symptom scores before exacerbations and after normal breathing return showed no differences. Exacerbations were more frequent during the Christmas period than the rest of the year but not than the rest of winter alone. CONCLUSIONS: Smartphone-based collection of COPD symptom diaries enables near complete identification of exacerbations at inception. Exacerbation rates in the Christmas season do not reach levels that necessitate changes in disease management

Jokerst, Nan M.; Brooke, Martin A.; Cho, Sang-Yeon; Shang, Allan B. (2007):

Chip-scale sensor system integration for portable health monitoring.

In: *Anesthesia & Analgesia* 105 (6), S. S42-S47.

Abstract:

The revolution in integrated circuits over the past 50 yr has produced inexpensive computing and communications systems that are powerful and portable. The technologies for these integrated chip-scale sensing systems, which will be miniature, lightweight, and portable, are emerging with the integration of sensors with electronics, optical systems, micromachines, microfluidics, and the integration of chemical and biological materials (soft/wet material integration with traditional dry/hard semiconductor materials). Hence, we stand at a threshold for health monitoring technology that promises to provide wearable biochemical sensing systems that are comfortable, inauspicious, wireless, and battery-operated, yet that continuously monitor health status, and can transmit compressed data signals at regular intervals, or alarm conditions immediately. In this paper, we explore recent results in chip-scale sensor integration technology for health monitoring. The development of inexpensive chip-scale biochemical optical sensors, such as microresonators, that are customizable for high sensitivity coupled with rapid prototyping will be discussed. Ground-breaking work in the integration of chip-scale optical systems to support these optical sensors will be highlighted, and the development of inexpensive Si complementary metal-oxide semiconductor circuitry (which makes up the vast majority of computational systems today) for signal processing and wireless communication with local receivers that lie directly on the chip-scale sensor head itself will be examined.

Jola, C.; Grosbras, M. H. (2013):

In the here and now: Enhanced motor corticospinal excitability in novices when watching live compared to video recorded dance.

In: *Cogn Neurosci* 4 (2), S. 90–98. DOI: 10.1080/17588928.2013.776035.

Abstract:

Enhanced motor corticospinal excitability (MCE) in passive action observation is thought to signify covert motor resonance with the actions seen. Actions performed by others are an important social stimulus and thus, motor resonance is prevalent during social interaction. However, most studies employ simple/short snippets of recorded movements devoid of any real-life social context, which has recently been criticized for lacking ecological validity. Here, we investigated whether the co-presence of the actor and the spectator has an impact on motor resonance by comparing novices' MCE for the finger (FDI) and the arm (ECR) with single-pulse transcranial magnetic stimulation when watching five-minute solos of ballet dance, Bharatanatyam (Indian dance) and an acting control condition either live or on video. We found that (1) MCE measured in the arm muscle was significantly enhanced in the live compared to the video condition, (2) differences across performances were only evident in the live condition, and (3) our novices reported enjoying the live presentations significantly more. We suggest that novice spectators' MCE is susceptible to the performers' live presence

Jones, Helen; Atkinson, Greg; Leary, Andrew; George, Keith; Murphy, Michael; Waterhouse, Jim (2006):

Reactivity of ambulatory blood pressure to physical activity varies with time of day.

In: *Hypertension* 47 (4), S. 778–784. DOI: 10.1161/01.HYP.0000206421.09642.b5.

Abstract:

Blood pressure (BP) fluctuates over a 24-hour period, but it is unclear to what extent this variation is governed completely by changes in physical activity. Our aim was to use a BP \"reactivity index\" to investigate whether the BP response to a given level of physical activity changes during a normal sleep-wake cycle. Hypertensive patients (n=440) underwent simultaneous 24-hour ambulatory BP, heart rate (HR), and activity monitoring. BP and HR were measured every 20 minutes. Actigraphy data were averaged over the 15 minutes that preceded a BP measurement. Individual BP and HR reactivity indices were calculated using least-squares regression for twelve 2-hour periods. These indices were then analyzed for time-of-day differences using a general linear model. Systolic BP and HR were generally more reactive to physical activity than diastolic BP. The highest reactivity of systolic BP (mean+/-SE=4+/-1 mm Hg per logged unit change in activity) was observed between 8:00 AM and 10:00 AM (P=0.014). Between 10:00 AM and 12:00 PM, BP reactivity then decreased (P=0.048) and showed a secondary rise in the early afternoon. These 24-hour changes in BP reactivity did not differ significantly between groups formed on the basis of early and late wake times (P=0.485), medication use, age, and sex (P>0.350). In conclusion, under conditions of normal living, the reactivity of BP and HR to a given unit change in activity is highest in the morning and shows a secondary rise in the afternoon.

Jones, Michelle D.; Crowther, Janis H.; Ciesla, Jeffrey A. (2014):

A naturalistic study of fat talk and its behavioral and affective consequences.

In: *Body Image* 11 (4), S. 337–345. DOI: 10.1016/j.bodyim.2014.05.007.

Abstract:

Fat talk is a style of verbal expression among young women involving negative self-statements, complaints about physical appearance, and weight management. This research used ecological momentary assessment to examine the impact of naturalistic fat talk experiences on body dissatisfaction, body checking, negative affect, and disordered eating behaviors. We examined trait self-objectification as a moderator. Sixty-five female college students completed a baseline questionnaire and responded to questions when randomly prompted by palm pilot devices for five days. Results indicated fat talk is common and associated with greater body dissatisfaction, body checking, negative affect, and disordered eating behaviors. Fat talk participation was associated with greater body checking than overhearing fat talk. Greater trait self-objectification was associated with greater body dissatisfaction and body checking following fat talk. These results suggest that fat talk negatively impacts the cognitions, affect, and behavior of young women and has increased negative effects for women higher in self-objectification.

Jones, Helen; George, K.; Edwards, Benjamin; Atkinson, Greg (2009):

Exercise intensity and blood pressure during sleep.

In: *Int J Sports Med* 30 (2), S. 94–99.

Abstract:

Exercise, of appropriate intensity and duration, could help maintain normotension if post-exercise hypotension persists over subsequent everyday activities. Therefore, we monitored ambulatory blood pressure (BP) for 24 h following four separate

exercise bouts which differed in intensity, duration and total work completed. At 08:00 h, six normotensive males completed a no exercise control and, in two further trials, 30 min of cycling at 70 % V O (2 peak) and 40 % V O (2 peak). A fourth trial involved cycling at 40 % V O (2 peak) for a time which equated total work with that in the most intense exercise trial. Between 20 min and 24 h after exercise, ambulatory BP, heart rate (HR) and wrist-activity were compared between trials using general linear models. Participants slept normally at night. Post-exercise changes in BP and HR were not affected by exercise intensity or total work completed from 20 min after exercise until nocturnal sleep-onset (p > 0.21). During sleep, mean arterial BP was lower following exercise at 70 % V O (2 peak) compared to the other trials (p = 0.03), including the 40 % V O (2 peak) trial equated for total work (90 % CI for difference = - 22.1 to - 0.1). We conclude that daytime exercise can elicit a physiologically meaningful lower BP during sleep and exercise intensity is the most important factor in this phenomenon.

Jones, Deborah P.; Richey, Phyllis A.; Alpert, Bruce S. (2008):

Validation of the AM5600 ambulatory blood pressure monitor in children and adolescents.

In: *Blood Press Monit* 13 (6), S. 349–351. DOI: 10.1097/MBP.0b013e3283102cfe.

Abstract:

OBJECTIVE\r\nWe measured ambulatory blood pressure using the AM5600 in children and adolescents participating in a research study to assess the relationship of blood pressure to risk factors for cardiovascular disease. Although the use of this monitor has been previously reported in adults, it has not been validated in pediatric patients.\r\nPARTICIPANTS AND METHODS\r\nIn this study, we assess the accuracy of the monitor as compared with the mercury sphygmomanometer in children of 7-18 years of age.\r\nRESULTS\r\nWe found that the mean of the difference between the monitor and the mercury device was 0.29+/-3.5 and 0.045+/-3.7 mmHg for systolic and diastolic blood pressure, respectively, which fulfills the Advancement of Medical Instrumentation standard for use of a device. The cumulative percentage of readings between the two devices which differed by 5, 10 and 15 mmHg or more assigned a grade of A grade to the device according to the British Hypertension Society.\r\nCONCLUSION\r\nThe AM5600 ambulatory blood pressure device is valid for measurement of blood pressure in children and adolescents.

Jones, Nathan; Youngs, Peter (2012):

Attitudes and affect: Daily emotions and their association with the commitment and burnout of beginning teachers.

In: *Teachers College Record* 114 (2), S. 1–36. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-16299-001%26site%3dehost-live.

Abstract:

Background/Context: The increasing number of districts implementing mentoring and induction programs suggests that policymakers are aware of the need to increase the support available to new teachers. The argument underlying many of these programs is based, at least partly, on assumptions about beginning teachers' emotional responses to their work. Yet while considerable research has studied the effects of induction programs, few researchers have rigorously collected data on how beginning teachers' affective experiences seem to impact their career plans. Purpose of the Study: We tested a framework developed in the organizational behavior literature known as affective events theory (AET), which proposes that emotional responses to work, coupled with abstract beliefs about one's job, can influence overall judgments about job satisfaction. Specifically, we drew on research from education and organizational behavior to test whether mean levels of positive affect, negative affect, skill, and fatigue are associated with intentions to remain in teaching (i.e., commitment to one's teaching assignment), commitment to one's school, and levels of burnout. Research Design: Sources of data in this study include survey data collected at two time points (fall 2007 and spring 2008) from 42 beginning general and special education teachers in three districts in Michigan and Indiana, as well as data collected using the experience sampling method (ESM), a time sampling method for gaining information about individuals' immediate experiences. The inclusion of both data sources allowed us to capitalize on the richness of the ESM data—which accounts for variation in teachers' momentary affective states—while also supporting the data with more traditional survey measures. Conclusions/Recommendations: We found that mean levels of positive affect and skill are positively associated with commitment, even when controlling for prior commitment. Similarly, negative affect and tiredness seem to be predictive of teacher burnout. These results suggest that, by taking account of teachers' emotional reactions to their work (in addition to features of their work environments), researchers, policymakers, and district administrators will be better positioned to support special and general educators during their early years of teaching. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Jonge, Peter; Mangano, Dennis; Whooley, Mary A. (2007):

Differential association of cognitive and somatic depressive symptoms with heart rate variability in patients with stable coronary heart disease: findings from the Heart and Soul Study.

In: *Psychosomatic Medicine* 69 (8), S. 735.

Abstract:

Objective

To determine if depression associated with low heart rate variability (HRV) in patients post myocardial infarction (MI), but not in patients with stable coronary heart disease (CHD), may be the result of differential associations of somatic and cognitive depressive symptoms with HRV.

Methods

To examine the association of somatic and cognitive depressive symptoms with 24-hour HRV, we performed a cross-sectional study of 863 outpatients with stable CHD. The severity of somatic and cognitive depressive symptoms was determined using factor analysis of items of the Patient Health Questionnaire (PHQ-9). Time-domain (SDNN, SDANN) and frequency-domain (VLF, LF, HF, WBF) indices of HRV were derived using ambulatory monitoring.

Results

Unadjusted analyses revealed that somatic symptom scores were significantly associated with HRV (r = −.09 for SDNN; r = −.08 for SDANN; r = −.08 for LnVLF; r = −.08 for LnLF; r = −.10 for LnHF; r = −.08 for LnWBF). After adjustment for demographic variables, comorbidities, and lifestyle factors, somatic symptom scores were no longer associated with lower HRV, with the possible exception of LnWBF (r = −.06). Cognitive depressive symptom scores were not associated with HRV using either unadjusted or adjusted analyses.

Conclusions

We found that somatic depressive symptoms were associated with lower HRV, although cognitive depressive symptoms were not. The inverse association of somatic symptoms with HRV was largely explained by differences in comorbidities and lifestyle factors. These results suggest that individual symptoms of depression may have differential associations with HRV.

Jongste, Johan C.; Carraro, Silvia; Hop, Wim C.; Baraldi, Eugenio (2009):

Daily telemonitoring of exhaled nitric oxide and symptoms in the treatment of childhood asthma.

In: *American journal of respiratory and critical care medicine* 179 (2), S. 93–97. DOI: 10.1164/rccm.200807-1010OC.

Abstract:

RATIONALE\r\nAsthma treatment might improve when inhaled steroids are titrated on airway inflammation. Fractional exhaled nitric oxide (FeNO0.05), a marker of eosinophilic airway inflammation, can be measured at home.\r\nOBJECTIVES\r\nWe assessed daily FeNO0.05 telemonitoring in the management of childhood asthma.\r\nMETHODS\r\nChildren with atopic asthma (n = 151) were randomly assigned to two groups: FeNO0.05 plus symptom monitoring, or monitoring of symptoms only. All patients scored asthma symptoms in an electronic diary over 30 weeks; 77 received a portable nitric oxide (NO) analyzer. Data were transmitted daily to the coordinating centers. Patients were phoned every 3 weeks and their steroid dose was adapted according to FeNO0.05 and symptoms, or according to symptoms. Children were seen at 3, 12, 21, and 30 weeks for examination and lung function testing. The primary end point was the proportion of symptom-free days in the last 12 study weeks.\r\nMEASUREMENTS AND MAIN RESULTS\r\nTelemonitoring was feasible with reliable FeNO0.05 data for 86% of days, and valid diary entries for 79% of days. Both groups showed an increase in symptom-free days, improvement of FEV1 and quality of life, and a reduction in steroid dose. None of the changes from baseline differed between groups. The difference in symptom-free days over the last 12 weeks was 0.3% (P = 0.95; 95% confidence interval, -10 to 11%). There was a trend for fewer exacerbations in the FeNO0.05 group.\r\nCONCLUSIONS\r\nThirty weeks of daily FeNO0.05 and symptom telemonitoring was associated with improved asthma control and a lower steroid dose. We found no added value of daily FeNO0.05 monitoring compared with daily symptom monitoring only.

Jose, Paul E.; Lim, Bee T.; Bryant, Fred B. (2012):

Does savoring increase happiness? A daily diary study.

In: *The Journal of Positive Psychology* 7 (3), S. 176–187. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-11218-002&site=ehost-live;paul.jose@vuw.ac.nz.

Abstract:

Bryant and Veroff (2007, Savoring: A new model of positive experience. Mahwah, NJ: Lawrence Erlbaum Associates) have proposed that savoring, namely, regulating the emotional impact of positive events by one's cognitive or behavioral responses, increases happiness. The present study was designed to determine whether and how savoring influences daily happiness. Experience sampling methodology was used with 101 participants, who provided self-reports of their momentary positive events, savoring responses, and positive affect daily over a period of 30 days. Multilevel modeling analyses verified that (a) these three constructs were positively related to each other within a given day, (b) momentary savoring both mediated and moderated the impact of daily positive events on momentary happy mood, and (c) levels of trait savoring moderated the observed mediational pattern. These results provide support for the hypothesis that savoring is an important mechanism through which people derive happiness from positive events. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Joseph, Bellal; Pandit, Viraj; Wynne, Julie; Aziz, Hassan; Tang, Andrew; Kulvatunyou, Narong et al. (2014):

Telephotography in trauma: a 2-year clinical experience.

In: *Telemed J E Health* 20 (4), S. 342–345. DOI: 10.1089/tmj.2013.0190.

Abstract:

Abstract Introduction: Smartphones can be used to record and transmit high-quality clinical photographs. The aim of this study was to describe our experience with smartphone telephotography in the care of trauma patients. We hypothesized that smartphone telephotography can be safely and effectively implemented on a trauma service. Subjects and Methods: We performed a 2-year (January 2011-December 2012) prospective analysis of all patient photographs recorded by members of our trauma team at our Level I trauma center. All members of the trauma team recorded patient photographs and e-mailed them to a secure e-mail account. An administrative assistant uploaded a copy of each photgrapho into the patient's electronic medical record. We assessed the number of photographs collected and uploaded, as well as the success, failure, and complication rates. Results: Our trauma team sent 7,200 photographs to a secure e-mail account. Of those, 6,120 (85%) were considered, after an initial review, to be of good quality. Of these, 3,320 photographs (54%) were successfully uploaded into a patient's electronic medical record; the remaining 2,800 photographs lacked adequate labeling and could not be uploaded. The average interval to uploading was 3 months. In total, 10 photographs were uploaded into the wrong patient's electronic medical record, for an error rate of 0.003%. We received only three complaints during the study period. Conclusions: Telephotography can be safely and effectively implemented in trauma clinical practice. Fears of Health Insurance Portability and Accountability Act violations are not valid, as the incidence of patient complaints is minimal when telephotography is implemented under strict guidelines and rules. Dedicated administrative personnel are essential for effective implementation of smartphone photography.

Joundi, Raed A.; Brittain, John-Stuart; Jenkinson, Ned; Green, Alexander L.; Aziz, Tipu (2011):

Rapid tremor frequency assessment with the iPhone accelerometer.

In: *Parkinsonism & related disorders* 17 (4), S. 288–290. DOI: 10.1016/j.parkreldis.2011.01.001.

Abstract:

The physician is often seeking more efficient ways of performing patient assessments. Currently, measuring tremor frequency requires expensive and bulky equipment. We propose the use of the in-built accelerometer of the iPhone via the iSeismo application for rapid measurement of tremor frequency. We use this device in a series of 7 different tremor cases, and show that the frequency measurements on the iSeismo graph closely match the more sophisticated EMG analysis during tremor. This is a preliminary confirmation of the usefulness of this device in the clinical setting for quick assessment of the dominant frequency component in a variety of tremors.

Jovanov, Emil; Poon, Carmen C. Y.; Yang, Guang-Zhong; Zhang, Y. T. (2009):

Guest editorial. Body sensor networks: from theory to emerging applications.

In: *IEEE transactions on information technology in biomedicine : a publication of the IEEE Engineering in Medicine and Biology Society* 13 (6), S. 859–863. DOI: 10.1109/TITB.2009.2034564.

Abstract:

The use of sensor networks for healthcare, well-being, and working in extreme environments has long roots in the engineering sector in medicine and biology community. With the maturity of wireless sensor networks, body area networks (BANs), and wireless BANs (WBANs), recent efforts in promoting the concept of body sensor networks (BSNs) aim to move beyond sensor connectivity to adopt a system-level approach to address issues related to biosensor design, interfacing, and embodiment, as well as ultralow-power processing/communication, power scavenging, autonomic sensing, data mining, inferencing, and integrated wireless sensor microsystems. As a result, the system architecture based on WBAN and BSN is becoming a widely accepted method of organization for ambulatory and ubiquitous monitoring systems. This editorial paper presents a snapshot of the current research and emerging applications and addresses some of the challenges and implementation issues.

Jovanovic, Jennifer L.; Hughes, Daniel C.; Baum, George P.; Carmack, Cindy; Greisinger, Anthony J.; Basen-Engquist, Karen (2011):

Accelerometry and self-report in sedentary populations.

In: *Am J Health Behav* 35 (1), S. 71–80.

Abstract:

OBJECTIVES: To determine whether self-reported exercise duration and intensity matched accelerometer data in sedentary endometrial cancer survivors and age-matched controls. METHODS: Participants were asked to wear an accelerometer and self-report exercise bouts, duration, and intensity for one week. Self-reported duration was compared with accelerometer data. RESULTS: Self-reported exercise-bout duration matched accelerometer duration 93% for survivors and 99% for controls. Self-reported exercise-bout intensity matched accelerometer intensity 70% for survivors and 66% for controls. There were no significant differences between groups. CONCLUSIONS: Sedentary endometrial cancer survivors and controls self-reported duration and intensity of physical activity consistent with accelerometer data.

Juarascio, Adrienne S.; Manasse, Stephanie M.; Goldstein, Stephanie P.; Forman, Evan M.; Butryn, Meghan L. (2014):

Review of Smartphone Applications for the Treatment of Eating Disorders.

In: *Eur Eat Disord Rev. DOI:* 10.1002/erv.2327.

Abstract:

mHealth tools may be a feasible modality for delivering evidence-based treatments and principles (EBPs), and may enhance treatment for eating disorders (EDs). However, research on the efficacy of mHealth tools for EDs and the extent to which they include EBPs is lacking. The current study sought to (i) review existing apps for EDs, (ii) determine the extent to which available treatment apps utilize EBPs, and (iii) assess the degree to which existing smartphone apps utilize recent advances in smartphone technology. Overall, existing ED intervention apps contained minimal EBPs and failed to incorporate smartphone capabilities. For smartphone apps to be a feasible and effective ED treatment modality, it may be useful for creators to begin taking utilizing the abilities that set smartphones apart from in-person treatment while incorporating EBPs. Before mHealth tools are incorporated into treatments for EDs, it is necessary that the feasibility, acceptability, and efficacy be evaluated. Copyright (c) 2014 John Wiley & Sons, Ltd and Eating Disorders Association.

Judge, Timothy A.; Simon, Lauren S.; Hurst, Charlice; Kelley, Ken (2013):

What I Experienced Yesterday Is Who I Am Today: Relationship of Work Motivations and Behaviors to Within-Individual Variation in the Five-Factor Model of Personality.

In: *J Appl Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-35325-001%26site%3dehost-live.

Abstract:

Historically, organizational and personality psychologists have ignored within-individual variation in personality across situations or have treated it as measurement error. However, we conducted a 10-day experience sampling study consistent with whole trait theory (Fleeson, 2012), which conceptualizes personality as a system of stable tendencies and patterns of intraindividual variation along the dimensions of the Big Five personality traits (Costa & McCrae, 1992). The study examined whether (a) internal events (i.e., motivation), performance episodes, and interpersonal experiences at work predict deviations from central tendencies in trait-relevant behavior, affect, and cognition (i.e., state personality), and (b) there are individual differences in responsiveness to work experiences. Results revealed that personality at work exhibited both stability and variation within individuals. Trait measures predicted average levels of trait manifestation in daily behavior at work, whereas daily work experiences (i.e., organizational citizenship, interpersonal conflict, and motivation) predicted deviations from baseline tendencies. Additionally, correlations of neuroticism with standard deviations in the daily personality variables suggest that, although work experiences influence state personality, people higher in neuroticism exhibit higher levels of intraindividual variation in personality than do those who are more emotionally stable. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Jung, Werner; Rillig, Andreas; Birkemeyer, Ralf; Miljak, Tomislav; Meyerfeldt, Udo (2008):

Advances in remote monitoring of implantable pacemakers, cardioverter defibrillators and cardiac resynchronization therapy systems.

In: *Journal of interventional cardiac electrophysiology : an international journal of arrhythmias and pacing* 23 (1), S. 73–85. DOI: 10.1007/s10840-008-9311-5.

Abstract:

Unlike the standard quarterly or semi-annual direct ambulatory device interrogations procedures, state-of-the-art implantable electronic cardiovascular devices (IECD) enable their wireless remote interrogation and monitoring, and automatically send reports and special alerts on a daily basis. This allows physicians to respond more proactively to changes in patient or device status, more appropriately triage patient care, and more efficiently perform the post-implant ambulatory follow-ups. This review presents the-state-of the-art technology of remote IECD monitoring and summarizes the main clinical observations published through June 2008. Cardiovascular remote monitoring systems made by several manufacturers are currently in various phases of development, clinical investigation, and medical applications. Data collected in several completed and ongoing studies strongly suggest that this new technology will make important contributions, particularly with respect to the facilitation of IECD follow-ups, enhancement of patient safety and quality of life, and lowering of medical costs. Further technological advances and a more clear understanding and appreciation of the clinical and economic benefits of telecardiology, will likely increase sharply the use of remote IECD monitoring in upcoming years.

Junker, Uwe; Freynhagen, Rainer; Längler, Klaus; Gockel, Ulrich; Schmidt, Uwe; Tölle, Thomas R. et al. (2008):

Paper versus electronic rating scales for pain assessment: a prospective, randomised, cross-over validation study with 200 chronic pain patients.

In: *Current Medical Research and Opinion®* 24 (6), S. 1797–1806.

Abstract:

OBJECTIVE:

Following the recent introduction of hand-held computers to be used by patients instead of conventional pencil-and-paper questionnaires, a validation study under 'real-life' conditions was conducted, in order to compare these two clinical instruments when used by chronic pain patients to describe their pain using visual and numerical rating scales.

METHOD:

Each of 200 chronic pain patients attending a single physician's practice was given two pain questionnaires to complete, one on paper and one on a hand-held computer; completion of these took place directly before and after consultation, in randomised order. The questions asked in the two questionnaires were identical: present pain, average pain, worst pain and those of the painDETECT questionnaire (the latter distinguishes characteristic symptoms of nociceptive pain). In accordance with standard practice, the paper questionnaire used numerical rating scales and the electronic one employed visual analogue scales, with or without a numerical indicator.

RESULTS:

Nearly all patients (99%) of the study population (58% female; aged 57+/-14 years) completed both questionnaires. In spite of the expected substantial intra-individual scatter, overall results from the two questionnaire types were highly consistent. Only a

few differences of potential statistical significance (p<5%) were observed, and none were found that would have led to different interpretations. No difference was seen between results from the electronic visual analogue scales with and without a numerical indicator.

CONCLUSION:

Under conditions of routine clinical practice, the hand-held computer questionnaire can give results equivalent to those obtained with the conventional paper questionnaire.

Juslin, Patrik N.; Liljeström, Simon; Västfjäll, Daniel; Barradas, Gonçalo; Silva, Ana (2008):

An experience sampling study of emotional reactions to music: listener, music, and situation.

In: *Emotion* 8 (5), S. 668–683. DOI: 10.1037/a0013505.

Abstract:

The Experience Sampling Method was used to explore emotions to music as they naturally occurred in everyday life, with a focus on the prevalence of different musical emotions and how such emotions are related to various factors in the listener, the music, and the situation. Thirty-two college students, 20 to 31 years old, carried a palmtop that emitted a sound signal seven times per day at random intervals for 2 weeks. When signaled, participants were required to complete a questionnaire on the palmtop. Results showed that music occurred in 37% of the episodes, and in 64% of the music episodes, the participants reported that the music affected how they felt. Comparisons showed that happiness-elation and nostalgia-longing were more frequent in episodes with musical emotions, whereas anger-irritation, boredom-indifference, and anxiety-fear were more frequent in episodes with nonmusical emotions. The prevalence of specific musical emotions correlated with personality measures and also varied depending on the situation (e.g., current activity, other people present), thus highlighting the need to use representative samples of situations to obtain valid estimates of prevalence.

Juth, Vanessa; Dickerson, Sally S.; Zoccola, Peggy M.; Lam, Suman (2014):

Understanding the utility of emotional approach coping: evidence from a laboratory stressor and daily life.

In: *Anxiety Stress Coping*, S. 1–21. DOI: 10.1080/10615806.2014.921912.

Abstract:

Background: Dispositional emotional approach coping (EAC) marks an adaptive tendency to process and express emotions. EAC's association with cognitions, affect, and intra- and interindividual characteristics that may account for its utility was examined in response to an acute stressor and in daily life. Design: This study included a laboratory stress task and ecological momentary assessment. Methods: Healthy undergraduate students (n = 124; mean age: 20; women: 56%) completed a laboratory component (baseline survey, speech stress task, pre- and posttask measures) and five subsequent days of surveys via palm pilot (six surveys/day). Results: Controlling for sex, neuroticism, and social support, greater EAC was associated with more positive cognitive appraisals, personal resources, and positive affect and less-negative affect during the lab stressor, and with more perceived control and positive affect in daily life. Significant EAC x sex interactions were found for poststressor affect: men with high EAC reported more positive affect and women with high EAC reported less negative affect. Conclusions: Findings provide support that EAC's utility may be independent of intra- and interindividual characteristics, and that men and women may benefit from EAC in different ways in regards to affect. The proclivity to use EAC may come with a resiliency that protects against stress and promotes general well-being.

Juth, Vanessa; Smyth, Joshua M.; Santuzzi, Alecia M. (2008):

How do you feel? Self-esteem predicts affect, stress, social interaction, and symptom severity during daily life in patients with chronic illness.

In: *Journal of health psychology* 13 (7), S. 884–894. DOI: 10.1177/1359105308095062.

Abstract:

Self-esteem has been demonstrated to predict health and well-being in a number of samples and domains using retrospective reports, but little is known about the effect of self-esteem in daily life. A community sample with asthma (n = 97) or rheumatoid

arthritis (n = 31) completed a self-esteem measure and collected Ecological Momentary Assessment (EMA) data 5x/day for one week using a palmtop computer. Low self-esteem predicted more negative affect, less positive affect, greater stress severity, and greater symptom severity in daily life. Naturalistic exploration of mechanisms relating self-esteem to physiological and/or psychological components in illness may clarify causal relationships and inform theoretical models of self-care, well-being, and disease management.

Kackar, Hayal Z.; Shumow, Lee; Schmidt, Jennifer A.; Grzetich, Janel (2011):

Age and gender differences in adolescents' homework experiences.

In: *Journal of Applied Developmental Psychology* 32 (2), S. 70–77. DOI: 10.1016/j.appdev.2010.12.005.

Abstract:

Extant data collected through the Experience Sampling Method were analyzed to describe adolescents' subjective experiences of homework. Analyses explored age and gender differences in the time adolescents spend doing homework, and the situational variations (location and companions) in adolescents' reported concentration, effort, interest, positive affect and stress while doing homework. Regarding age differences, middle school students reported more positive experiences when homework was done with companions and in locations other than home, whereas high school students reported more positive experiences when homework was done alone and at home. Regarding gender differences, girls, regardless of age, reported greater stress than boys when doing homework alone, and lower stress when doing homework with friends. High school girls reported lower interest than middle school boys when doing homework alone. Findings provide an understanding of age and gender differences in adolescents' perceptions of homework, which might help educators and parents structure engaging homework environments.

Kaiser, Lukas; Beister, Thomas; Wiese, Andrea; Wedel, Jasper; Meincke, Felix; Kreidel, Felix et al. (2014):

Results of the ALSTER BP real-world registry on renal denervation employing the Symplicity system.

In: *EuroIntervention*.

Abstract:

Aims: To prove the efficacy and safety of renal sympathetic denervation as a new treatment option for patients suffering from resistant hypertension in a real-world setting. Methods and results: This single-centre real-world registry included 93 patients who underwent renal denervation employing the Symplicity system. Patients were followed for six months. The patient cohort was divided into early responders with a reduction of office systolic blood pressure >10 mmHg three months after the procedure (n=53, 57%), late responders (six months after the procedure, n=16, 17%) and non-responders (n=24, 26%). After six months, systolic blood pressure was lowered by 46+/-2.9 mmHg (mean+/-SEM, p<0.001), 31+/-3.4 mmHg (p<0.001) and 7.1+/-3.3 mmHg (p=0.79, ns), respectively. Ambulatory blood pressure monitoring also showed a significant reduction in the early responder group (20+/-5.7 mmHg, p=0.002). We subjected eight patients to a re-do procedure which led to a significant reduction of blood pressure in another five patients after six months (63%). One patient in this cohort developed a one-sided renal artery stenosis associated with an increase in blood pressure. Conclusions: This real-world analysis of renal sympathetic denervation confirms the procedure to be safe and efficient in the majority of patients. Non-responders may profit from a second ablation, arguing in favour of the hypothesis that the procedure did not destroy sufficient amounts of sympathetic innervation in these patients. However, repeated denervations may also increase side effects.

Kaleth, Anthony S.; Ang, Dennis C.; Chakr, Rafael; Tong, Yan (2010):

Validity and reliability of community health activities model program for seniors and short-form international physical activity questionnaire as physical activity assessment tools in patients with fibromyalgia.

In: *Disability and rehabilitation* 32 (5), S. 353–359. DOI: 10.3109/09638280903166352.

Abstract:

PURPOSE\r\nThere currently is a paucity of well-validated instruments to quantitatively measure physical activity (PA) levels in patients with fibromyalgia syndrome (FMS). This study aims to determine the construct validity and test-retest reliability of two self-report physical activity questionnaires [short-form international physical activity questionnaire (s-IPAQ) and community

health activities model program for seniors (CHAMPS)] in a fibromyalgia population.\r\nMETHODS\r\nThirty subjects (mean age 49.1 +/- 9.6 years; 90% females) who met the American College of Rheumatology criteria for FMS were invited to participate in the study. Two-week test-retest reliability was evaluated for the CHAMPS and s-IPAQ. Construct validity was evaluated by comparing PA reported from these questionnaires with data obtained from accelerometry (steps/week, counts/week) and the 6-minute walk test (6-MWT).\r\nRESULTS\r\nCHAMPS showed greater test-retest reliability (r = 0.58; p < 0.001) compared with s-IPAQ (r = 0.18; p = 0.15). No significant correlations were observed between the self-report PA questionnaires and the 6-MWT or accelerometry data (p > 0.05).\r\nCONCLUSIONS\r\nIn a fibromyalgia population, the s-IPAQ does not appear to be a reliable and valid PA assessment tool. CHAMPS displayed moderate test-retest reliability; however, no associations were found between CHAMPS and objectives measures of PA. In view of the known benefits of exercise in patients with FMS, there is a need to develop new measures or validate other existing well-established PA questionnaires.

Kallem, Radhakrishna R.; Meyers, Kevin E. C.; Cucchiara, Andrew J.; Sawinski, Deirdre L.; Townsend, Raymond R. (2014):

Blood pressure variability of two ambulatory blood pressure monitors.

In: *Blood Press Monit* 19 (2), S. 98–102. DOI: 10.1097/MBP.0000000000000019.

Abstract:

OBJECTIVE: There are no data on the evaluation of blood pressure (BP) variability comparing two ambulatory blood pressure monitoring monitors worn at the same time. Hence, this study was carried out to compare variability of BP in healthy untreated adults using two ambulatory BP monitors worn at the same time over an 8-h period. METHODS: An Accutorr device was used to measure office BP in the dominant and nondominant arms of 24 participants.Simultaneous 8-h BP and heart rate data were measured in 24 untreated adult volunteers by Mobil-O-Graph (worn for an additional 16 h after removing the Spacelabs monitor) and Spacelabs with both random (N=12) and nonrandom (N=12) assignment of each device to the dominant arm. Average real variability (ARV), SD, coefficient of variation, and variation independent of mean were calculated for systolic blood pressure, diastolic blood pressure, mean arterial pressure, and pulse pressure (PP). RESULTS: Whether the Mobil-O-Graph was applied to the dominant or the nondominant arm, the ARV of mean systolic (P=0.003 nonrandomized; P=0.010 randomized) and PP (P=0.009 nonrandomized; P=0.005 randomized) remained significantly higher than the Spacelabs device, whereas the ARV of the mean arterial pressure was not significantly different. The average BP readings and ARVs for systolic blood pressure and PP obtained by the Mobil-O-Graph were considerably higher for the daytime than the night-time. CONCLUSION: Given the emerging interest in the effect of BP variability on health outcomes, the accuracy of its measurement is important. Our study raises concerns about the accuracy of pooling international ambulatory blood pressure monitoring variability data using different devices.

Kalpakjian, Claire Z.; Farrell, Debra J.; Albright, Kathie J.; Chiodo, Anthony; Young, Elizabeth A. (2009):

Association of daily stressors and salivary cortisol in spinal cord injury.

In: *Rehabilitation Psychology* 54 (3), S. 288–298. DOI: 10.1037/a0016614.

Abstract:

OBJECTIVE\r\nExamine the diurnal variation of salivary cortisol in adults with spinal cord injury (SCI) and the effect of stressors on cortisol and mood.\r\nMETHOD\r\nEcological momentary assessment (EMA) to capture cortisol, stress, and mood from 25 persons with SCI and 26 without SCI. Data were analyzed using linear mixed models.\r\nRESULTS\r\nThere were no systematic differences between groups on missing data. Diurnal variation of cortisol of participants with SCI reflected an expected pattern. No significant group differences for cortisol diurnal pattern, stress, or mood; when group interactions were significant, results indicated lower cortisol reactivity to stress in participants with SCI. Stress had a significant impact on positive, negative and agitated moods.\r\nCONCLUSIONS\r\nStress in daily life and its association with cortisol and mood were largely similar between persons with and without SCI. A key methodological contribution is the demonstration of using EMA to collect biological and behavioral data in the field from participants with SCI. The use of EMA in rehabilitation psychology research has great potential to advance our understanding of the dynamics of daily life with disability.

Kalz, Marco; Lenssen, Niklas; Felzen, Marc; Rossaint, Rolf; Tabuenca, Bernardo; Specht, Marcus; Skorning, Max (2014):

Smartphone apps for cardiopulmonary resuscitation training and real incident support: a mixed-methods evaluation study.

In: *J Med Internet Res* 16 (3), S. e89. DOI: 10.2196/jmir.2951.

Abstract:

BACKGROUND: No systematic evaluation of smartphone/mobile apps for resuscitation training and real incident support is available to date. To provide medical, usability, and additional quality criteria for the development of apps, we conducted a mixed-methods sequential evaluation combining the perspective of medical experts and end-users. OBJECTIVE: The study aims to assess the quality of current mobile apps for cardiopulmonary resuscitation (CPR) training and real incident support from expert as well as end-user perspective. METHODS: Two independent medical experts evaluated the medical content of CPR apps from the Google Play store and the Apple App store. The evaluation was based on pre-defined minimum medical content requirements according to current Basic Life Support (BLS) guidelines. In a second phase, non-medical end-users tested usability and appeal of the apps that had at least met the minimum requirements. Usability was assessed with the System Usability Scale (SUS); appeal was measured with the self-developed ReactionDeck toolkit. RESULTS: Out of 61 apps, 46 were included in the experts' evaluation. A consolidated list of 13 apps resulted for the following layperson evaluation. The interrater reliability was substantial (kappa=.61). Layperson end-users (n=14) had a high interrater reliability (intraclass correlation 1 [ICC1]=.83, P<.001, 95% CI 0.75-0.882 and ICC2=.79, P<.001, 95% CI 0.695-0.869). Their evaluation resulted in a list of 5 recommendable apps. CONCLUSIONS: Although several apps for resuscitation training and real incident support are available, very few are designed according to current BLS guidelines and offer an acceptable level of usability and hedonic quality for laypersons. The results of this study are intended to optimize the development of CPR mobile apps. The app ranking supports the informed selection of mobile apps for training situations and CPR campaigns as well as for real incident support.

Kam, H. J.; Lee, K.; Cho, S. M.; Shin, Y. M.; Park, R. W. (2011):

High-Resolution Actigraphic Analysis of ADHD: A Wide Range of Movement Variability Observation in Three School Courses - A Pilot Study.

In: *Healthc.Inform.Res.* 17 (1), S. 29–37. DOI: 10.4258/hir.2011.17.1.29.

Abstract:

OBJECTIVES: This study was conducted to determine whether or not newly proposed high-resolution activity features could provide a superior analytic foundation compared to those commonly used to assess transitions in children's activities, under circumstances in which the types of courses attended exert different situational effects on activity levels. METHODS: From 153 children at a local elementary school, 10 subjects with attention deficit hyperactivity disorder (ADHD) and 7 controls were recruited. Their activity data was collected using an actigraph while they attended school. Ratios of partitioned activity ranges (0.5-2.8 G) during the entire activity were extracted during three classes: art, mathematics, and native language (Korean). Extracted activity features for each participant were compared between the two groups of children (ADHD and control) using graphs and statistical analysis. RESULTS: Activity distributions between ADHD and control groups for each class showed statistically significant differences spread through the entire range in art class compared to native language and mathematics classes. The ADHD group, but not the control group, experienced many significantly different intervals (> 50%) having low to very high activity acceleration regions during the art and languages courses. CONCLUSIONS: Class content appears to influence the activity patterns of ADHD children. Monitoring the actual magnitude and activity counts in a wide range of subjects could facilitate the examination of distributions or patterns of activities. Objective activity measurements made with an actigraph may be useful for monitoring changes in activities in children with ADHD in a timely manner

Kamarck, Thomas W.; Shiffman, Saul; Sutton-Tyrrell, Kim; Muldoon, Matthew F.; Tepper, Ping (2012):

Daily psychological demands are associated with 6-year progression of carotid artery atherosclerosis: The Pittsburgh Healthy Heart Project.

In: *Psychosomatic Medicine* 74 (4), S. 432–439. DOI: 10.1037/t03609-000;

Abstract:

Objective: We examine associations between the perception of ongoing psychological demands by ecological momentary assessment (EMA) and 6-year changes in carotid artery atherosclerosis by ultrasonography. Methods: A total of 270 initially healthy participants collected ambulatory blood pressure (ABP) and recorded their daily experiences, using electronic diaries, during two 3-day periods. Mean intima-media thickness (IMT) and plaque were assessed in the carotid arteries using B-mode ultrasound at baseline and again during a 6-year follow-up (mean follow-up duration = 73 months). Results: Among those who had no exposure to antihypertensive medications during the course of follow-up (n = 192), daily psychological demands were associated with greater progression of IMT as well as plaque, after adjusting for demographic and risk factor covariates. Associations between demands and plaque change were partially accounted for by ABP differences among those reporting high demands. Among those who were employed at baseline (n = 117), 6-year IMT changes were more strongly associated with ratings of daily demands than with traditional measures of occupational stress. Conclusions: These data support the role of psychological demands as a correlate of subclinical atherosclerotic progression, they point to ABP as a potential mechanism

facilitating these effects, and they highlight the utility of EMA measures for capturing daily psychological demands with potential effects on health. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Kamarck, T. W.; Shiffman, S.; Sutton-Tyrrell, K.; Muldoon, M. F.; Tepper, P. (2012):

Daily psychological demands are associated with 6-year progression of carotid artery atherosclerosis: the Pittsburgh Healthy Heart Project.

In: *Psychosom.Med.* 74 (4), S. 432–439. DOI: 10.1097/PSY.0b013e3182572599.

Abstract:

OBJECTIVE: We examine associations between the perception of ongoing psychological demands by ecological momentary assessment (EMA) and 6-year changes in carotid artery atherosclerosis by ultrasonography. METHODS: A total of 270 initially healthy participants collected ambulatory blood pressure (ABP) and recorded their daily experiences, using electronic diaries, during two 3-day periods. Mean intima-media thickness (IMT) and plaque were assessed in the carotid arteries using B-mode ultrasound at baseline and again during a 6-year follow-up (mean follow-up duration = 73 months). RESULTS: Among those who had no exposure to antihypertensive medications during the course of follow-up (n = 192), daily psychological demands were associated with greater progression of IMT as well as plaque, after adjusting for demographic and risk factor covariates. Associations between demands and plaque change were partially accounted for by ABP differences among those reporting high demands. Among those who were employed at baseline (n = 117), 6-year IMT changes were more strongly associated with ratings of daily demands than with traditional measures of occupational stress. CONCLUSIONS: These data support the role of psychological demands as a correlate of subclinical atherosclerotic progression, they point to ABP as a potential mechanism facilitating these effects, and they highlight the utility of EMA measures for capturing daily psychological demands with potential effects on health

Kamel, Nuri; Gursoy, Alptekin; Koseoglulari, Osman; Dincer, Irem; Gullu, Sevim (2006):

Isolated office hypertension: association with target organ damage and cardiovascular risk indices.

In: *Journal of the National Medical Association* 98 (4), S. 601–606. Online verfügbar unter http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2569228/.

Abstract:

BACKGROUND: Isolated office hypertension (IOH) has been accepted as a benign condition by some researchers, whereas others believe that it is associated with cardiovascular abnormalities and increased cardiovascular risk. The aim of this present study was to evaluate the effects of IOH on target organ damage and cardiovascular risk indices. METHODS: Arterial blood pressure (BP) measured in the office and by 24-hour ambulatory blood pressure measurement (ABMP), carotid intima-media thickness (CIMT), left ventricular mass index (LVMI), cardiothoracic index (CTI), duration of QTc, 24-hour microalbuminuria, fibrinogen, C-reactive protein (CRP), total cholesterol, low-density-lipoprotein (LDL) cholesterol, high-density-lipoprotein (HDL) cholesterol and triglyceride levels were evaluated. Thirty-three subjects with IOH (office BP > or = 140/90 mmHg and daytime ambulatory BP <135/85 mmHg), 17 patients with sustained hypertension (office BP > or = 140/90 mmHg and daytime ambulatory BP > or = 135/85 mmHg), and 17 normotensive control subjects were recruited in the study. The three groups were matched for age, sex and body mass index. RESULTS: CIMT was greater in patients with IOH than in normotensive subjects, and it was significantly lower than that of sustained hypertension patients. Significantly higher LVMI was determined in subjects with IOH compared to normotensive subjects. CTI, QTc, microalbuminuria, fibrinogen, CRP, total cholesterol, LDL cholesterol, HDL cholesterol and triglyceride levels did not differ significantly among the three groups. CONCLUSIONS: IOH causes significant target organ damage and should not be regarded as a benign condition.

Kang, B.; Moudon, A. V.; Hurvitz, P. M.; Reichley, L.; Saelens, B. E. (2013):

Walking Objectively Measured: Classifying Accelerometer Data with GPS and Travel Diaries.

In: *Med Sci Sports Exerc* (0195-9131 (Linking)). DOI: 10.1249/MSS.0b013e318285f202.

Abstract:

PURPOSE: This study developed and tested an algorithm to classify accelerometer data as walking or non-walking using either GPS or travel diary data within a large sample of adults under free-living conditions. METHODS: Participants wore an accelerometer and a GPS unit, and concurrently completed a travel diary for 7 consecutive days. Physical activity (PA) bouts were identified using accelerometry count sequences. PA bouts were then classified as walking or non-walking based on a decision-tree algorithm consisting of 7 classification scenarios. Algorithm reliability was examined relative to two independent analysts' classification of a 100-bout verification sample. The algorithm was then applied to the entire set of PA bouts. RESULTS: The 706 participants' (mean age 51 years, 62% female, 80% non-Hispanic white, 70% college graduate or higher) yielded 4,702 person-days of data and had a total of 13,971 PA bouts. The algorithm showed a mean agreement of 95% with the independent analysts. It classified physical activity into 8,170 (58.5 %) walking bouts and 5,337 (38.2%) non-walking bouts; 464 (3.3%) bouts were not classified for lack of GPS and diary data. Nearly 70% of the walking bouts and 68% of the non-walking bouts were classified using only the objective accelerometer and GPS data. Travel diary data helped classify 30% of all bouts with no GPS data. The mean duration of PA bouts classified as walking was 15.2 min (SD=12.9). On average, participants had 1.7 walking bouts and 25.4 total walking minutes per day. CONCLUSIONS: GPS and travel diary information can be helpful in classifying most accelerometer-derived PA bouts into walking or non-walking behavior

Kanning, M. (2012):

Using objective, real-time measures to investigate the effect of actual physical activity on affective States in everyday life differentiating the contexts of working and leisure time in a sample with students.

In: *Front Psychol* 3 (1664-1078 (Electronic)), S. 602. DOI: 10.3389/fpsyg.2012.00602.

Abstract:

Multiple studies suggest that physical activity causes positive affective reactions and reduces depressive mood. However, studies and interventions focused mostly on structured activity programs, but rarely on actual physical activity (aPA) in daily life. Furthermore, they seldom account for the context in which the aPA occur (e.g., work, leisure). Using a prospective, real-time assessment design (ambulatory assessment), we investigated the effects of aPA on affective states (valence, energetic arousal, calmness) in real-time during everyday life while controlling for the context. Eighty-seven undergraduates students (Age: M = 24.6; SD = 3.2, females: 54%) participated in this study. aPA was assessed through accelerometers during 24-h. Palmtop devices prompted subjects approximately every 45 min during a 14-h daytime period to assess their affective states and the context. We analyzed within- and between-person effects with hierarchical modeling (HLM 6.0). Multilevel analyses revealed that both aPA and context influenced subsequent affective states. The interaction of aPA and context did predict energetic arousal only. State levels of affects did not differ between men and women. For both men and women, aPA in everyday life has an effect on individual's affective states. For valence and calmness, it seems to be independent of the context in which the aPA occur. For energetic arousal, men reported to have lower feelings of energy and women reported to have more feelings of energy during leisure time compared to working episodes

Kanning, M.; Ebner-Priemer, U.; Brand, R. (2012):

Autonomous regulation mode moderates the effect of actual physical activity on affective States: an ambulant assessment approach to the role of self-determination.

In: *J Sport Exerc.Psychol.* 34 (2), S. 260–269. Online verfügbar unter PM:22605366.

Abstract:

Studies have shown that physical activity influences affective states. However, studies have seldom depicted these associations in ongoing real-life situations, and there is no investigation showing that motivational states (i.e., more or less autonomously regulated) would moderate these effects in situ. To investigate the interaction of autonomous regulation and actual physical activity (aPA) with affective states, we use an ambulatory assessment approach. The participants were 44 university students (mean age: 26.2 +/- 3.2 years). We assessed aPA through 24-hr accelerometry and affective states and autonomous regulation via electronic diaries. Palmtop devices prompted subjects every 45 min during a 14-hr daytime period. We performed hierarchical multilevel analyses. Both aPA and autonomous regulation significantly influenced affective states. The interaction was significant for two affects. The higher the volume of aPA and thereby the more autonomously regulated the preceding bout of aPA was, the more our participants felt energized (r = .16) but agitated (r = -.18)

Kannisto, Kati Anneli; Koivunen, Marita Hannele; Välimäki, Maritta Anneli (2014):

Use of mobile phone text message reminders in health care services: A narrative literature review.

In: *J Med Internet Res* Vo 16 (10), S. 55–68. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-44170-005%26site%3dehost-live.

Abstract:

Background: Mobile text messages are a widely recognized communication method in societies, as the global penetration of the technology approaches 100% worldwide. Systematic knowledge is still lacking on how the mobile telephone text messaging (short message service, SMS) has been used in health care services. Objective: This study aims to review the literature on the use of mobile phone text message reminders in health care. Methods: We conducted a systematic literature review of studies on mobile telephone text message reminders. The data sources used were PubMed (MEDLINE), CINAHL, Proquest Databases/ PsycINFO, EMBASE, Cochrane Library, Scopus, and hand searching since 2003. Studies reporting the use of SMS intended to remind patients in health services were included. Given the heterogeneity in the studies, descriptive characteristics, purpose of the study, response rates, description of the intervention, dose and timing, instruments, outcome measures, and outcome data from the studies were synthesized using a narrative approach. Results: From 911 initial citations, 60 studies were included in the review. The studies reported a variety of use for SMS. Mobile telephone text message reminders were used as the only intervention in 73% (44/60) of the studies, and in 27% (16/60) of the remaining studies, SMS was connected to another comprehensive health intervention system. SMS reminders were sent to different patient groups: patients with HIV/AIDS (15%, 9/60) and diabetes (13%, 8/60) being the most common groups. The response rates of the studies varied from 22-100%. Typically, the text message reminders were sent daily. The time before the specific intervention to be rendered varied from 10 minutes (eg, medication taken) to 2 weeks (eg, scheduled appointment). A wide range of different evaluation methods and outcomes were used to assess the impact of SMS varying from existing databases (eg, attendance rate based on medical records), questionnaires, and physiological measures. About three quarters of the studies (77%, 46/60) reported improved outcomes: adherence to medication or to treatment reportedly improved in 40% (24/60) of the studies, appointment attendance in 18% (11/60) of the studies, and non-attendance rates decreased in 18% (11/60) of the studies. Other positive impacts were decreased amount of missed medication doses, more positive attitudes towards medication, and reductions in treatment interruptions. Conclusions: We can conclude that although SMS reminders are used with different patient groups in health care, SMS is less systematically studied with randomized controlled trial study design. Although the amount of evidence for SMS application recommendations is still limited, having 77% (46/60) of the studies showing improved outcomes may indicate its use in health care settings. However, more well-conducted SMS studies are still needed. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Kanno, Atsuhiro; Metoki, Hirohito; Kikuya, Masahiro; Terawaki, Hiroyuki; Hara, Azusa; Hashimoto, Takanao et al. (2010):

Usefulness of assessing masked and white-coat hypertension by ambulatory blood pressure monitoring for determining prevalent risk of chronic kidney disease: the Ohasama study.

In: *Hypertens Res* 33 (11), S. 1192–1198. DOI: 10.1038/hr.2010.139.

Abstract:

Masked hypertension (MHT) is considered to be associated with organ damage, whereas the association of white-coat hypertension (WCHT) with organ damage remains controversial. Using home blood pressure measurements, we have previously reported that MHT is associated with a risk of chronic kidney disease (CKD) compared with sustained normal blood pressure (SNBP), although WCHT was not significantly related to CKD in a general Japanese population. The objective of this study was to examine CKD risk associated with WCHT and MHT as determined by ambulatory blood pressure (ABP) monitoring. Among 1023 residents in the general Japanese population of Ohasama, ABP and casual blood pressure (CBP) levels were recorded and blood and urine samples were collected. CKD was defined as a positive proteinuria and/or estimated glomerular filtration rate <60 ml min^{-1} per 1.73 m^2. Participants were categorized into four groups using daytime ABP of 140/85 mm Hg and CBP of 140/90 mm Hg as cutoff points: SNBP, 60.0%; WCHT, 15.4%; MHT, 15.0%; and sustained hypertension (SHT), 9.6%. Odds ratios (ORs) for prevalence of CKD were calculated using a multiple logistic regression model. Compared with SNBP, risk of CKD was significantly higher in SHT (OR, 2.81; 95% confidence interval (CI), 1.66-4.75; P=0.0001), MHT (OR, 2.29; 95% CI, 1.45-3.63; P=0.0004) and WCHT (OR, 1.67; 95% CI, 1.03-2.71; P=0.0368). CKD was significantly associated with MHT and WCHT on the basis of ABP monitoring compared with SNBP in the general Japanese population.

Kaplan, R. M.; Stone, A. A. (2012):

Bringing the Laboratory and Clinic to the Community: Mobile Technologies for Health Promotion and Disease Prevention.

In: *Annu.Rev.Psychol.* (0066-4308 (Linking)). DOI: 10.1146/annurev-psych-113011-143736.

Abstract:

Health-related information collected in psychological laboratories may not be representative of people's everyday health. For at least 70 years, there has been a call for methods that sample experiences from everyday environments and circumstances. New technologies, including cell phones, sensors, and monitors, now make it possible to collect information outside of the laboratory in environments representative of everyday life. We review the role of mobile technologies in the assessment of health-related behaviors, physiological responses, and self-reports. Ecological momentary assessment offers a wide range of new opportunities for ambulatory assessment and evaluation. The value of mobile technologies for interventions to improve health is less well established. Among 21 randomized clinical trials evaluating interventions that used mobile technologies, more than half failed to document significant improvements on health outcomes or health risk factors. Theoretical and practical issues for future research are discussed.

Kapur, Kush; Li, Xue; Blood, Emily A.; Hedeker, Donald (2014):

Bayesian mixed-effects location and scale models for multivariate longitudinal outcomes: an application to ecological momentary assessment data.

In: *Stat Med. DOI:* 10.1002/sim.6345.

Abstract:

In the statistical literature, the methods to understand the relationship of explanatory variables on each individual outcome variable are well developed and widely applied. However, in most health-related studies given the technological advancement and sophisticated methods of obtaining and storing data, a need to perform joint analysis of multivariate outcomes while explaining the impact of predictors simultaneously and accounting for all the correlations is in high demand. In this manuscript, we propose a generalized approach within a Bayesian framework that models the changes in the variation in terms of explanatory variables and captures the correlations between the multivariate continuous outcomes by the inclusion of random effects at both the location and scale levels. We describe the use of a spherical transformation for the correlations between the random location and scale effects in order to apply separation strategy for prior elicitation while ensuring positive semi-definiteness of the covariance matrix. We present the details of our approach using an example from an ecological momentary assessment study on adolescents. Copyright (c) 2014 John Wiley & Sons, Ltd.

Kaputa, David; Price, David; Enderle, John D. (2010):

A portable, inexpensive, wireless vital signs monitoring system.

In: *Biomed Instrum Technol* 44 (4), S. 350–353. DOI: 10.2345/0899-8205-44.4.350.

Abstract:

The University of Connecticut, Department of Biomedical Engineering has developed a device to be used by patients to collect physiological data outside of a medical facility. This device facilitates modes of data collection that would be expensive, inconvenient, or impossible to obtain by traditional means within the medical facility. Data can be collected on specific days, at specific times, during specific activities, or while traveling. The device uses biosensors to obtain information such as pulse oximetry (SpO2), heart rate, electrocardiogram (ECG), non-invasive blood pressure (NIBP), and weight which are sent via Bluetooth to an interactive monitoring device. The data can then be downloaded to an electronic storage device or transmitted to a company server, physician's office, or hospital. The data collection software is usable on any computer device with Bluetooth capability, thereby removing the need for special hardware for the monitoring device and reducing the total cost of the system. The modular biosensors can be added or removed as needed without changing the monitoring device software. The user is prompted by easy-to-follow instructions written in non-technical language. Additional features, such as screens with large buttons and large text, allow for use by those with limited vision or limited motor skills.

Kardous, Chucri A.; Shaw, Peter B. (2014):

Evaluation of smartphone sound measurement applications.

In: *J Acoust Soc Am* 135 (4), S. EL186. DOI: 10.1121/1.4865269.

Abstract:

This study reports on the accuracy of smartphone sound measurement applications (apps) and whether they can be appropriately employed for occupational noise measurements. A representative sample of smartphones and tablets on various platforms were acquired, more than 130 iOS apps were evaluated but only 10 apps met our selection criteria. Only 4 out of 62 Android apps were tested. The results showed two apps with mean differences of 0.07 dB (unweighted) and -0.52 dB (A-weighted) from the reference values. Two other apps had mean differences within +/-2 dB. The study suggests that certain apps may be appropriate for use in occupational noise measurements.

Kario, Kazuomi; Sun, Ningling; Chiang, Fu-Tien; Supasyndh, Ouppatham; Baek, Sang Hong; Inubushi-Molessa, Akiko et al. (2014):

Efficacy and Safety of LCZ696, a First-in-Class Angiotensin Receptor Neprilysin Inhibitor, in Asian Patients With Hypertension: A Randomized, Double-Blind, Placebo-Controlled Study.

In: *Hypertension* 63 (4), S. 698–705. DOI: 10.1161/HYPERTENSIONAHA.113.02002.

Abstract:

LCZ696 (Japanese adopted name: sucabitril valsartan sodium hydrate), a first-in-class angiotensin receptor neprilysin inhibitor, concomitantly inhibits neprilysin and blocks angiotensin type 1 receptor. This randomized, double-blind, placebo-controlled study, the first in Asia for this drug, evaluated the dose-related efficacy and safety of LCZ696 in patients with hypertension using 24-hour ambulatory blood pressure (BP) monitoring. Asian patients aged >/=18 years (n=389) with hypertension were randomized to receive LCZ696 100 mg (n=100), 200 mg (n=101), 400 mg (n=96), or placebo (n=92) for 8 weeks. The primary end point was mean difference across the 3 single-dose pairwise comparisons of LCZ696 versus placebo in clinic diastolic BP after 8-week treatment. Key secondary efficacy variables included changes in clinic systolic BP and pulse pressure and changes in 24-hour, daytime, and nighttime ambulatory BPs and pulse pressure. Safety assessments included recording all adverse events and serious adverse events. A total of 362 patients completed the study. Reductions in clinic systolic BP, diastolic BP (P<0.0001), and pulse pressure (P<0.001) were significantly greater with all doses of LCZ696 than with placebo. There were also significant reductions in 24-hour, daytime, and nighttime ambulatory systolic BP, diastolic BP, and pulse pressure for all doses of LCZ696 compared with placebo (P<0.0001). LCZ696 was well tolerated, and no cases of angioedema were reported. In conclusion, LCZ696 is effective for the treatment of hypertension in Asian population and, in general, is safe and well tolerated. Clinical Trial Information- URL: http://www.clinicaltrials.gov. Unique identifier: NCT01193101.

Karpettas, Nikos; Destounis, Antonis; Kollias, Anastasios; Nasothimiou, Efthimia; Moyssakis, Ioannis; Stergiou, George S. (2014):

Prediction of treatment-induced changes in target-organ damage using changes in clinic, home and ambulatory blood pressure.

In: *Hypertens Res. DOI:* 10.1038/hr.2014.24.

Abstract:

Cross-sectional studies have shown that ambulatory and home blood pressure (ABP and HBP, respectively) measurements are more closely associated with preclinical organ damage than are office measurements. This study investigated the association between treatment-induced changes in BP assessed by the three methods and the corresponding changes in organ damage. Untreated hypertensives were evaluated with office, ABP and HBP measurements and indices of organ damage (echocardiographic left-ventricular mass index (LVMI), pulse wave velocity (PWV), albuminuria) before and after 12 months of treatment. A total of 116 subjects completed the study (mean age 50.7+/-10.5 years, 69 men (59%), mean follow-up 13.4+/-1.4 months). The treatment-induced change in the LVMI was correlated with changes in BP and pulse pressure (PP) assessed by all methods. The change in PWV was correlated with changes in home systolic and ABP and PP and with the change in home diastolic BP. Albuminuria showed no correlations. In linear regression models, changes in home BP and PP had the strongest predictive ability for the change in the LVMI, whereas the change in ABP was the strongest predictor of the change in PWV. The change in office BP had no predictive value. HBP and ABP measurements appear to be superior to office BP measurements and should be considered complementary rather than interchangeable methods for monitoring the effects of antihypertensive treatment on target-organ damage.Hypertension Research advance online publication, 27 February 2014; doi:10.1038/hr.2014.24.

Karpettas, Nikos; Kollias, Anastasios; Vazeou, Andriani; Stergiou, George S. (2010):

Office, ambulatory and home blood pressure measurement in children and adolescents.

In: *Expert review of cardiovascular therapy* 8 (11), S. 1567–1578.

Abstract:

There is an increasing interest in pediatric hypertension, the prevalence of which is rising in parallel with the obesity epidemic. Traditionally the assessment of hypertension in children has relied on office blood pressure (BP) measurements by the physician. However, as in adults, office BP might be misleading in children mainly due to the white coat and masked hypertension phenomena. Thus, out-of-office BP assessment, using ambulatory or home monitoring, has gained ground for the accurate diagnosis of hypertension and decision-making. Ambulatory monitoring is regarded as indispensable for the evaluation of pediatric hypertension. Preliminary data support the usefulness of home monitoring, yet more evidence is needed. Office, ambulatory and home BP normalcy tables providing thresholds for diagnosis have been published and should be used for the assessment of elevated BP in children.

Karr, T. M.; Crosby, R. D.; Cao, L.; Engel, S. G.; Mitchell, J. E.; Simonich, H.; Wonderlich, S. A. (2012):

Posttraumatic stress disorder as a moderator of the association between negative affect and bulimic symptoms: an ecological momentary assessment study.

In: *Compr.Psychiatry* (0010-440X (Linking)). DOI: 10.1016/j.comppsych.2012.05.011.

Abstract:

OBJECTIVE: The purpose of this study was to examine the potential moderating effect of posttraumatic stress disorder (PTSD) on the emotion-behavior relationship in individuals with bulimia nervosa (BN). METHOD: A total of 119 women with BN were involved in the study. Participants were divided into 2 groups: those with BN and PTSD (n = 20) and those with BN only (n = 99). Ecological momentary assessment procedures were used for the examination of affect, frequency of bulimic behaviors, and the relationship of affect and bulimic behavior over time. The Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Axis I Disorders was conducted for the diagnosis of BN, PTSD, mood disorders, anxiety disorders, and substance use disorders. Mood disorders, anxiety disorders, and substance use disorders functioned as covariates in all analyses. RESULTS: Statistical models showed that those in the PTSD group reported a greater daily mean level of negative affect (NA) and a greater daily frequency of bulimic behaviors than those in the BN-only group. Moderation was found for the association between NA and time in that the PTSD group showed a faster acceleration in NA before purging and faster deceleration in NA after purging. The association between positive affect and time was also moderated by group, indicating that the PTSD group had a faster acceleration in positive affect after purging than the BN-only group. CONCLUSION: These findings highlight the importance of recognizing PTSD when interpreting the emotion-behavior relationship in individuals with BN

Kashdan, Todd B.; Collins, R. Lorraine (2010):

Social anxiety and the experience of positive emotion and anger in everyday life: an ecological momentary assessment approach.

In: *Anxiety Stress Coping* 23 (3), S. 259–272. DOI: 10.1080/10615800802641950.

Abstract:

A few recent studies have found evidence showing that social anxiety is associated with diminished positive affect and elevated anger. However, prior work has relied on trait self-report measures of global positive mood or anger. In this preliminary study, we examined how trait social anxiety relates to moment-to-moment positive and angry emotional states as people navigate through their natural environment in a given day. Of additional interest was whether any associations were limited to social situations or were evident more broadly in non-social situations as well. For 14 days, 38 non-clinical community adults carried electronic diaries to assess their experience of positive emotions, anger, and their current social context and activity. Participants were randomly prompted up to four times per day, leading to 1702 observations. Results showed that social anxiety was associated with less time spent feeling happy and relaxed and more time spent feeling angry throughout the day. In general, people felt happier when they were with other people compared to being alone. Interestingly, people with relatively higher levels of social anxiety reported fewer and less intense positive emotions and greater anger episodes across social and non-social situations.

Kashdan, Todd B.; Farmer, Antonina S. (2014):

Differentiating emotions across contexts: Comparing adults with and without social anxiety disorder using random, social interaction, and daily experience sampling.

In: *Emotion* 14 (3), S. 629–638. DOI: 10.1037/t00532-000.

Abstract:

The ability to recognize and label emotional experiences has been associated with well-being and adaptive functioning. This skill is particularly important in social situations, as emotions provide information about the state of relationships and help guide interpersonal decisions, such as whether to disclose personal information. Given the interpersonal difficulties linked to social anxiety disorder (SAD), deficient negative emotion differentiation may contribute to impairment in this population. We hypothesized that people with SAD would exhibit less negative emotion differentiation in daily life, and these differences would translate to impairment in social functioning. We recruited 43 people diagnosed with generalized SAD and 43 healthy adults to describe the emotions they experienced over 14 days. Participants received palmtop computers for responding to random prompts and describing naturalistic social interactions; to complete end-of-day diary entries, they used a secure online website. We calculated intraclass correlation coefficients to capture the degree of differentiation of negative and positive emotions for each context (random moments, face-to-face social interactions, and end-of-day reflections). Compared to healthy controls, the SAD group exhibited less negative (but not positive) emotion differentiation during random prompts, social interactions, and (at trend level) end-of-day assessments. These differences could not be explained by emotion intensity or variability over the 14 days, or to comorbid depression or anxiety disorders. Our findings suggest that people with generalized SAD have deficits in clarifying specific negative emotions felt at a given point of time. These deficits may contribute to difficulties with effective emotion regulation and healthy social relationship functioning. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Kashdan, Todd B.; Ferssizidis, Patty; Collins, R. Lorraine; Muraven, Mark (2010):

Emotion differentiation as resilience against excessive alcohol use: an ecological momentary assessment in underage social drinkers.

In: *Psychological Science* 21 (9), S. 1341–1347. DOI: 10.1177/0956797610379863.

Abstract:

Some people are adept at using discrete emotion categories (anxious, angry, sad) to capture their felt experience; other people merely communicate how good or bad they feel. We theorized that people who are better at describing their emotions might be less likely to self-medicate with alcohol. During a 3-week period, 106 underage social drinkers used handheld computers to self-monitor alcohol intake. From participants' reported experiences during random prompts, we created an individual difference measure of emotion differentiation. Results from a 30-day timeline follow-back revealed that people with intense negative emotions consumed less alcohol if they were better at describing emotions and less reliant on global descriptions. Results from ecological momentary assessment procedures revealed that people with intense negative emotions prior to drinking episodes consumed less alcohol if they were better at describing emotions. These findings provide support for a novel methodology and dimension for understanding the influence of emotions on substance-use patterns.

Kashdan, Todd B.; Yarbro, Jessica; McKnight, Patrick E.; Nezlek, John B. (2013):

Laughter with someone else leads to future social rewards: Temporal change using experience sampling methodology.

In: *Personality and Individual Differences*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-36550-001%26site%3dehost-live.

Abstract:

Prior research suggests that laughter is correlated with resilience and well-being. To date, there is little research on the subsequent social benefits following laughter with another person. We hypothesized that laughing with another person would be associated with greater social rewards in subsequent social interactions. Using a two-week daily diary study with 162 people (68% women), we collected data on 5510 face-to-face social interactions in everyday life. We found that laughing with another person during an interaction predicted greater intimacy, positive emotions, and enjoyment in the subsequent social interaction. There was no evidence for the reverse direction, as intimacy, positive emotions, and enjoyment failed to predict laughter in subsequent social interactions. As for specificity, laughter was associated with subsequent intimacy and positive emotions even

after accounting for the variance attributable to enjoyment felt when socializing. As for robustness, laughter with another person had the same effect on subsequent interactions regardless of whether interacting with the same person or a new person. In summary, besides being immediately pleasurable, laughing with social interaction partners influences the likelihood of future social rewards. This study adds to theory and research suggesting that laughing is an important social bonding mechanism. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kashdan, Todd B.; Yarbro, Jessica; McKnight, Patrick E.; Nezlek, John B. (2014):

Corrigendum to 'Laughter with someone else leads to future social rewards: Temporal change using experience sampling methodology.'.

In: *Personality and Individual Differences* 61-62, S. 109. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-09908-010%26site%3dehost-live.

Abstract:

Reports an error in "Laughter with someone else leads to future social rewards: Temporal change using experience sampling methodology" by Todd B. Kashdan, Jessica Yarbro, Patrick E. McKnight and John B. Nezlek (Personality and Individual Differences, Advanced Online Publication, Oct 15, 2013, np). In the original article, there was an error in the affiliation of the author John B. Nezlek. The corrected affiliation is present in the erratum. (The following abstract of the original article appeared in record [rid]2013-36550-001[/rid]). Prior research suggests that laughter is correlated with resilience and well-being. To date, there is little research on the subsequent social benefits following laughter with another person. We hypothesized that laughing with another person would be associated with greater social rewards in subsequent social interactions. Using a two-week daily diary study with 162 people (68% women), we collected data on 5510 face-to-face social interactions in everyday life. We found that laughing with another person during an interaction predicted greater intimacy, positive emotions, and enjoyment in the subsequent social interaction. There was no evidence for the reverse direction, as intimacy, positive emotions, and enjoyment failed to predict laughter in subsequent social interactions. As for specificity, laughter was associated with subsequent intimacy and positive emotions even after accounting for the variance attributable to enjoyment felt when socializing. As for robustness, laughter with another person had the same effect on subsequent interactions regardless of whether interacting with the same person or a new person. In summary, besides being immediately pleasurable, laughing with social interaction partners influences the likelihood of future social rewards. This study adds to theory and research suggesting that laughing is an important social bonding mechanism. (PsycINFO Database Record (c) 2014 APA, all rights reserved)

Kassel, Jon D. (2010):

Substance abuse and emotion:

American Psychological Association.

Katz, Philip O.; Matheus, Tonantzin (2008):

Telemetry capsule for ambulatory pH monitoring: is it time for a change?

In: *The American journal of gastroenterology* 103 (12), S. 2986–2987. DOI: 10.1111/j.1572-0241.2008.02179.x.

Abstract:

There is currently no clear gold standard for the diagnosis of gastroesophageal reflux disease. The most common practice, a therapeutic trial of antisecretory therapy, falls short of being ideal. Endoscopy is insensitive and impractical as an early diagnostic test for the majority of patient presentations. Ambulatory reflux monitoring offers the most effective means of documenting the presence of abnormal esophageal acid exposure and abnormal reflux frequency and to correlate the association of symptoms and reflux episodes. However, even this diagnostic test has fallen short of being an adequate and reliable standard for diagnosis. Telemetry capsule monitoring offers the opportunity for creative improvement in the diagnostic utility of pH monitoring and is the subject of the study discussed.

Kavanagh, Justin J.; Cross, Troy J.; Newell, Karl M.; Morrison, Steven (2014):

Load-induced changes in older individual's hand-finger tremor are ameliorated with targeting.

In: *J Neurol Sci* 339 (1-2), S. 69–74. DOI: 10.1016/j.jns.2014.01.023.

Abstract:

The purpose of this study was to investigate hand-finger tremor dynamics when a load was applied to the finger in a group of healthy older adults. Moreover, we sought to determine if projecting a representation of the subject's finger tremor on a target was capable of overcoming the effects of loading so that hand-finger interactions returned to a state that was similar to normal tremor. Eight healthy older males (67+/-1year) performed a postural pointing task, where tremor was assessed using lightweight accelerometers attached to the hand and finger. Tremor was then assessed when a laser pointer was attached to the finger and switched off (the load), and then with the laser pointer attached and switched on pointing at targets of 40mm and 20mm in diameter. The main findings of this study were that 1) loading the finger resulted in a reduction in finger tremor amplitude and increased finger tremor regularity, but no change in hand tremor, 2) loading caused increased hand-finger 8-12Hz cross wavelet coherence and phase synchrony, and 3) pointing at different targets while the finger was loaded resulted in an increase in finger tremor amplitude, and changes in inter-segmental coupling to the extent that hand-finger dynamics reflected normal unloaded conditions. Overall, these results illustrate that the damping effects of limb loading can be offset, in part, by altering the accuracy demands of the task to make the pointing action more challenging.

Kavanagh, Justin J.; Menz, Hylton B. (2008):

Accelerometry: a technique for quantifying movement patterns during walking.

In: *Gait Posture* 28 (1), S. 1–15.

Abstract:

The popularity of using accelerometer-based systems to quantify human movement patterns has increased in recent years for clinicians and researchers alike. The benefits of using accelerometers compared to more traditional gait analysis instruments include low cost; testing is not restricted to a laboratory environment; accelerometers are small, therefore walking is relatively unrestricted; and direct measurement of 3D accelerations eliminate errors associated with differentiating displacement and velocity data. However, accelerometry is not without its disadvantages, an issue which is scarcely reported in gait analysis literature. This paper reviews the use of accelerometer technology to investigate gait-related movement patterns, and addresses issues of acceleration measurement important for experimental design. An overview of accelerometer mechanics is provided before illustrating specific experimental conditions necessary to ensure the accuracy of gait-related acceleration measurement. A literature review is presented on how accelerometry has been used to examine basic temporospatial gait parameters, shock attenuation, and segmental accelerations of the body during walking. The output of accelerometers attached to the upper body has provided useful insights into the motor control of normal walking, age-related differences in dynamic postural control, and gait patterns in people with movement disorders.

Kawada, Tomoyuki (2013):

Sleep parameters in rhesus monkeys by using actigraphy.

In: *Psychopharmacology* 228 (3). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-24823-016%26site%3dehost-live;kawada@nms.ac.jp.

Abstract:

Comments on an article by ML. Andersen et al. (see record 2010-10371-013). Andersen et al. reported the effect of methamphetamine on sleep parameters in rhesus monkeys by using actigraphy. As a conclusion, methamphetamine (0.03 mg/kg) disrupted sleep by producing an increase in sleep latency and sleep fragmentation, in combination with a decrease in sleep efficiency. After concluding the drug experiment, the effect disappeared. Author have two concerns on their study. First, actigraphy cannot become a substitute for sleep polysomnography. Actigraphy is based on an accelerometer for movement, and it does not directly reflect brain activity. They quoted one validation study with Actiwatch-�. Second, they prepared two concentrations of methamphetamine and the effect of methamphetamine treatment was evaluated. Author agree with the simplicity of actigraphy to monitor sleep, but much more trials are needed to establish validation for the application of actigraphy to small nonhuman primates. Activity monitoring and sleep monitoring are different concepts, and special caution should be paid when inferring sleep based on actigraphy. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Kawada, Tomoyuki; Suzuki, Hiroko; Shimizu, Takako; Katsumata, Masao (2012):

Agreement in regard to total sleep time during a nap obtained via a sleep polygraph and accelerometer: A comparison of different sensitivity thresholds of the accelerometer.

In: *International Journal of Behavioral Medicine* 19 (3), S. 398–401. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-22767-018%26site%3dehost-live;kawada@nms.ac.jp.

Abstract:

Background: Appropriate sensitivity threshold of accelerometer to measure total sleep time during nap is not established. Purpose Actigraphy-derived total sleep times during naps were calculated using three different sensitivity threshold values and compared with polysomnography. Method: The mean age of the 60 subjects (53 men and 7 women) was 22.8, ranging from 22 to 27 years. Determination of the sleep stage by the polygraph and the sleep/wake judgment by the accelerometer obeyed the sleep/wake judgment, and the accelerometer was monitored under different sensitivity threshold settings. The study was carried out during one afternoon with a 3-h nap opportunity. Kappa statistics, correlations, and several indices of accuracy were compared using statistical methods. Results: The mean total sleep times during a nap set for 180 min were 160.4, 151.8, and 140.5 min, respectively, as judged under the low-sensitive, middle-sensitive, high-sensitive settings of an accelerometer worn on the non-dominant wrist. The corresponding mean total sleep time as calculated using a sleep polygraph was 133.0 min. Sleep/wake judgment by three levels of threshold values for the accelerometer showed that high-sensitive threshold showed relatively high specificity (0.452) compared with specificities by the low-sensitive threshold (0.249) or by the middle-sensitive threshold (0.358). The concordance correlation coefficients and 95% confidence intervals (in parenthesis) between the total sleep time judged by polygraph and low-sensitive, middle-sensitive, or high-sensitive accelerometer were 0.40 (0.26–0.51), 0.53 (0.38–0.65), and 0.64 (0.49–0.75), respectively. The Bland–Altman plot of the measurements showed higher agreement between the total sleep time by polygraph and by the accelerometer using the high-sensitive threshold. Conclusions: From the result obtained in this study, the high-sensitive accelerometer showed the strongest agreement of total sleep time and sleep/wake judgment with the calculated value using the sleep polygraph. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Kawahara, Junko; Tanaka, Shigeho; Tanaka, Chiaki; Hikihara, Yuki; Aoki, Yasunobu; Yonemoto, Junzo (2011):

Estimation of the respiratory ventilation rate of preschool children in daily life using accelerometers.

In: *J Air Waste Manag Assoc* 61 (1), S. 46–54.

Abstract:

Inhalation rate is an essential factor for determining the inhaled dose of air pollutants. Here, accelerometers were used to develop regression equations for predicting the minute ventilation rate (V(E)) to estimate the daily inhalation rate in young children. Body acceleration and heart rate were measured in 29 Japanese preschool children (6 yr of age) during nine different levels of activities (lying down, sitting, standing, playing with plastic bricks, walking, building with blocks, climbing stairs, ball tossing, and running) using the Actical omnidirectional accelerometer, the ActivTracer triaxial accelerometer, and a heart rate monitor. Measurements were calibrated against the V(E) measured by the Douglas bag method. ActivTracer accelerometer measurements gave a strong correlation with V(E) (Pearson's r = 0.913), which was marginally stronger than that for the Actical counts (r = 0.886) and comparable to the correlation between heart rate and logarithmic V(E) (r = 0.909). According to the linear regression equation, the V(E) for lying down, sitting, standing, playing with plastic bricks, walking, and running was overestimated by 14-60% by the Actical and by 14-37% by the ActivTracer. By comparison, for building with blocks, climbing stairs, and ball tossing, the V(E) was underestimated by 19-23% by the Actical and by 13-18% by the ActivTracer. When these three activities were excluded, a stronger correlation was found between the V(E) and ActivTracer measurements (r = 0.949); this correlation was 0.761 for the three excluded activities. Discriminant analysis showed that the ratio between vertical and horizontal acceleration obtained by the ActivTracer could discriminate walking from building with blocks, climbing stairs, and ball tossing with a sensitivity of 75%. The error in estimating V(E) was considerably improved for the ActivTracer measurements by the use of two regression equations developed for each type of activity.

Kelly, D.; Caulfield, B. (2012):

An investigation into non-invasive physical activity recognition using smartphones.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 3340–3343. DOI: 10.1109/EMBC.2012.6346680.

Abstract:

Technology utilized to automatically monitor Activities of Daily Living (ADL) could be a key component in identifying deviations from normal functional profiles and providing feedback on interventions aimed at improving health. However, if activity recognition systems are to be implemented in real world scenarios such as health and wellness monitoring, the activity sensing modality must unobtrusively fit the human environment rather than forcing humans to adhere to sensor specific conditions. Modern smart phones represent a ubiquitous computing device which has already undergone mainstream adoption. In this paper, we investigate the feasibility of using a modern smartphone, with limited placement constraints, as the sensing modality for an activity recognition system. A dataset of 4 subjects performing 7 activities, using varying sensor placement conditions, is utilized to investigate this. Initial experiments show that a decision tree classifier performs activity classification with precision and recall scores of 0.75 and 0.73 respectively. More importantly, as part of this initial experiment, 3 main problems, and subsequently 3 solutions, relating to unconstrained sensor placement were identified. Using our proposed solutions, classification precision and recall scores were improved by +13% and +14.6% respectively

Kelly, Nichole R.; Cotter, Elizabeth W.; Mazzeo, Suzanne E. (2014):

Examining the role of distress tolerance and negative urgency in binge eating behavior among women.

In: *Eat Behav* 15 (3), S. 483–489. DOI: 10.1016/j.eatbeh.2014.06.012.

Abstract:

The current study examined whether distress tolerance and negative urgency moderate the link between depressive symptoms and binge eating frequency, and between disordered eating attitudes and binge eating frequency. Young adult women (N=186) completed questionnaires assessing depressive symptoms, cognitive restraint, eating, shape and weight concerns, distress tolerance, impulsivity (including negative urgency), and binge eating. After controlling for body mass index, race/ethnicity, and other domains of impulsivity, negative urgency was significantly associated with binge eating above and beyond the influence of disordered eating attitudes and depressive symptoms. Distress tolerance, in contrast, was not associated with binge eating. In addition, neither negative urgency nor distress tolerance moderated the associations between disordered eating attitudes and binge eating frequency, or between depressive symptoms and binge eating. Results support the additive role of difficulties responding adaptively to distress in binge eating frequency, above and beyond the influence of emotional distress. Findings highlight the potential value of focusing on negative urgency in targeted treatments for binge eating among women. Importantly, results from the current study differ from those of previous research; these discrepancies could be the result of variations in sample characteristics and approaches to the assessment of binge eating behavior. Additional research, including longitudinal studies and research using "real-time" assessment strategies, such as ecological momentary assessment, is necessary to elucidate further the role of various emotion regulation strategies in maintaining binge eating behavior in adult women.

Kelly, J.; Gooding, P.; Pratt, D.; Ainsworth, J.; Welford, M.; Tarrier, N. (2012):

Intelligent real-time therapy: Harnessing the power of machine learning to optimise the delivery of momentary cognitive-behavioural interventions.

In: *J.Ment.Health* (0963-8237 (Linking)). DOI: 10.3109/09638237.2011.638001.

Abstract:

Background Experience sampling methodology (ESM) [Csikszentmihalyi, M. & Larson, R. (1987). Validity and reliability of the experience-sampling method. Journal of Nervous and Mental Disease, 175(9), 526-536] has been used to elucidate the cognitive-behavioural mechanisms underlying the development and maintenance of complex mental disorders as well as mechanisms involved in resilience from such states. We present an argument for the development of intelligent real-time therapy (iRTT). Machine learning and reinforcement learning specifically may be used to optimise the delivery of interventions by observing and altering the timing of real-time therapies based on ongoing ESM measures. Aims The aims of the present article are to outline the principles of iRTT and to consider how it would be applied to complex problems such as suicide prevention. Methods Relevant literature was identified through use of PychInfo. Results iRTT may provide an important and ecologically valid adjunct to traditional CBT, providing a means of balancing population-based data with individual data, thus addressing the "knowledge-practice gap" [Tarrier, N. (2010b). The cognitive and behavioral treatment of PTSD, what is known and what is known to be unknown: How not to fall into the practice gap. Clinical Psychology: Science and Practice, 17(2), 134-143] and facilitating the delivery of interventions in situ, thereby addressing the "therapy-real-world gap". Conclusions iRTT may provide a platform for the development of individualised and multifaceted momentary intervention strategies that are ecologically valid and aimed at attenuating pathological pathways to complex mental health problems and amplifying pathways associated with resilience

Kenny, P. Pang; Christine, G. Gourin; David, J. Terris (2007):

A comparison of polysomnography and the WatchPAT in the diagnosis of obstructive sleep apnea.

In: *Otolaryngology--Head and Neck Surgery* 137 (4), S. 665–668.

Abstract:

OBJECTIVE:

Our goal was to validate the WatchPAT in the diagnosis of obstructive sleep apnea.

STUDY DESIGN:

We conducted a prospective, blinded, nonrandomized clinical trial.

METHODS:

Patients with suspected obstructive sleep apnea scheduled for an overnight level I polysomnogram were offered enrollment in a study to compare the WatchPAT (Itamar Ltd, Israel) device with polysomnography. Patients wore the WatchPAT device simultaneously while undergoing polysomnography during evaluation in the sleep lab.

RESULTS:

Thirty-seven patients participated in the study. They had a mean age of 50.1 years (range, 31-73 years) and mean body mass index of 34.6 kg/m(2) (range, 21.2-46.8 kg/m(2)). There was high correlation between the polysomnogram and WatchPAT apnea-hypopnea index (r = 0.9288; 95% confidence interval = 0.8579-0.9650, P < 0.0001). The lowest oxygen saturation also showed high correlation (r = 0.989; 95% confidence interval = 0.9773-0.9947, P < 0.0001). The overall polysomnogram and WatchPAT sleep times revealed a correlation of r = 0.5815 (P = 0.005).

CONCLUSION:

The WatchPAT showed a high correlation with the polysomnogram in apnea-hypopnea index, lowest oxygen saturation, and sleep time.

SIGNIFICANCE:

It's use as a reliable tool in the diagnosis of Obstructive Sleep Apnea.

Kent, Lisa; O'Neill, Brenda; Davison, Gareth; Nevill, Alan; Elborn, J. Stuart; Bradley, Judy M. (2009):

Validity and reliability of cardiorespiratory measurements recorded by the LifeShirt during exercise tests.

In: *Respir Physiol Neurobiol* 167 (2), S. 162–167. DOI: 10.1016/j.resp.2009.03.013.

Abstract:

The LifeShirt is a novel ambulatory monitoring system that records cardiorespiratory measurements outside the laboratory. Validity and reliability of cardiorespiratory measurements recorded by the LifeShirt were assessed and two methods of calibrating the LifeShirt were compared. Participants performed an incremental treadmill test and a constant work rate test (65% peak oxygen uptake) on four occasions (>48 h apart) and wore the LifeShirt, COSMED system and Polar Sport Tester simultaneously. The LifeShirt was calibrated using two methods: comparison to a spirometer; and 800 ml fixed-volume bag. Ventilation, respiratory rate, expiratory time and heart rate recorded by the LifeShirt were compared to measurements recorded by laboratory equipment. Sixteen adults participated (6M:10 F); mean (SD) age 23.1 (2.9) years. Agreement between the LifeShirt and laboratory equipment was acceptable. Agreement for ventilation was improved by calibrating the LifeShirt using a spirometer. Reliability was similar for the LifeShirt and the laboratory equipment. This study suggests that the LifeShirt provides a valid and reliable method of ambulatory monitoring.

Kerr, J.; Marshall, S.; Godbole, S.; Neukam, S.; Crist, K.; Wasilenko, K. et al. (2012):

The relationship between outdoor activity and health in older adults using GPS.

In: *Int.J.Environ.Res.Public Health* 9 (12), S. 4615–4625. Online verfügbar unter PM:23330225.

Abstract:

Physical activity (PA) provides health benefits in older adults. Research suggests that exposure to nature and time spent outdoors may also have effects on health. Older adults are the least active segment of our population, and are likely to spend less time outdoors than other age groups. The relationship between time spent in PA, outdoor time, and various health outcomes was assessed for 117 older adults living in retirement communities. Participants wore an accelerometer and GPS device for 7 days. They also completed assessments of physical, cognitive, and emotional functioning. Analyses of variance were employed with a main and interaction effect tested for +/-30 min PA and outdoor time. Significant differences were found for those who spent >30 min in PA or outdoors for depressive symptoms, fear of falling, and self-reported functioning. Time to complete a 400 m walk was significantly different by PA time only. QoL and cognitive functioning scores were not significantly different. The interactions were also not significant. This study is one of the first to demonstrate the feasibility of using accelerometer and GPS data concurrently to assess PA location in older adults. Future analyses will shed light on potential causal relationships and could inform guidelines for outdoor activity

Keyes, Alexandra; Woerwag-Mehta, Sabine; Bartholdy, Savani; Koskina, Antonia; Middleton, Benita; Connan, Frances et al. (2014):

Physical activity and the drive to exercise in anorexia nervosa.

In: *Int J Eat Disord. DOI:* 10.1002/eat.22354.

Abstract:

OBJECTIVES: To investigate physical activity (PA) and drive for exercise in anorexia nervosa (AN) in relation to eating disorder (ED) pathology and anxiety. METHOD: Female participants were recruited into four groups: AN outpatients (n = 37), AN inpatients (n = 18), an anxiety group (n = 34), and healthy controls (HCs; n = 30). PA was measured by actigraphy and self-report together with drive/reasons for exercise, ED pathology, anxiety, depression, stress, BMI, and body composition. RESULTS: ED psychopathology, general psychopathology, and physiological measures were consistent with diagnosis. All groups showed a wide range in activity, especially on self-report. No significant group differences were observed in objective PA levels, yet AN groups reported 57-92% higher total activity than HCs. Outpatients reported more walking and moderate exercise than HCs, and inpatients reported more walking but less moderate and vigorous activity than all other groups. AN groups had significantly higher drive to exercise and valued "improving tone" as important and health and enjoyment as less important reasons to exercise. DISCUSSION: Self-perceived activity rather than objective data may partly explain the increased activity reported in AN. Drive to exercise in AN appears to be more related to ED pathology than to anxiety. (c) 2014 Wiley Periodicals, Inc. (Int J Eat Disord 2014).

Khan, Tareq Hasan; Shrestha, Ravi; Wahid, Khan A. (2014):

A modular and programmable development platform for capsule endoscopy system.

In: *J Med Syst* 38 (6), S. 57. DOI: 10.1007/s10916-014-0057-6.

Abstract:

The state-of-the-art capsule endoscopy (CE) technology offers painless examination for the patients and the ability to examine the interior of the gastrointestinal tract by a noninvasive procedure for the gastroenterologists. In this work, a modular and flexible CE development system platform consisting of a miniature field programmable gate array (FPGA) based electronic capsule, a microcontroller based portable data recorder unit and computer software is designed and developed. Due to the flexible and reprogrammable nature of the system, various image processing and compression algorithms can be tested in the design without requiring any hardware change. The designed capsule prototype supports various imaging modes including white light imaging (WLI) and narrow band imaging (NBI), and communicates with the data recorder in full duplex fashion, which enables configuring the image size and imaging mode in real time during examination. A low complexity image compressor based on a novel color-space is implemented inside the capsule to reduce the amount of RF transmission data. The data recorder contains graphical LCD for real time image viewing and SD cards for storing image data. Data can be uploaded to a computer or Smartphone by SD card, USB interface or by wireless Bluetooth link. Computer software is developed that decompresses and reconstructs images. The fabricated capsule PCBs have a diameter of 16 mm. An ex-vivo animal testing has also been conducted to validate the results.

Khoo Chee Han, Christopher; Shanmugam, Rukmanikanthan Al; Choon Siew Kit, David (2014):

Accuracy, Consistency, and Reproducibility of the Triaxial Accelerometer in the iPod Touch: A Pilot Study.

In: *JMIR Mhealth Uhealth* 2 (4), S. e39. DOI: 10.2196/mhealth.3008.

Abstract:

BACKGROUND: The use of a mobile consumer communicative device as a motion analysis tool for patients has been researched and documented previously, examining the triaxial accelerometer embedded in such devices. However, there have been few reports in the literature testing the sensitivity of an embedded triaxial accelerometer. OBJECTIVE: Our goal in this study was to test the accuracy, consistency, and reproducibility of the triaxial accelerometer in the iPod Touch. METHODS: In this pilot study, we subjected the triaxial accelerometer in the iPod Touch to a free fall from a height of 100 cm in order to test its accuracy, consistency, and reproducibility under dynamic conditions. RESULTS: The resultant vectorial sum acceleration was mean 0.999 g (standard gravity; SD 1.51%; 95% CI 0.99-1.01), indicating very high accuracy and sensitivity under dynamic conditions. CONCLUSIONS: Our results highlighted the reproducibility of the capability of the triaxial accelerometer in the iPod Touch to capture data accurately and consistently. Thus, the device has huge potential as a motion analysis tool for measuring gait and studying balance and mobility in patients before and after surgery.

Khor, A. S.; Gray, K. M.; Reid, S. C.; Melvin, G. A. (2014):

Feasibility and validity of ecological momentary assessment in adolescents with high-functioning autism and Asperger's disorder.

In: *J.Adolesc.* 37 (1), S. 37–46. DOI: 10.1016/j.adolescence.2013.10.005.

Abstract:

Ecological Momentary Assessment (EMA) may increase accuracy of data compared with retrospective questionnaires by assessing behaviours as they occur, hence decreasing recall biases and increasing ecological validity. This study examined the feasibility and concurrent validity of an EMA tool for adolescents with High-Functioning Autism Spectrum Disorders (HFASD). Thirty-one adolescents with HFASD completed a mobile phone EMA application that assessed stressors and coping for two weeks. Parents and adolescents also completed retrospective measures of the adolescent's coping/stressors. Moderate compliance with the EMA tool was achieved and some concurrent validity was established with the retrospective measure of coping. Concordance was found between the types of stressors reported by parents and adolescents but not the quantity. The results suggest adolescents with HFASD are capable of reporting on their stressors and coping via EMA. EMA has the potential to be a valuable research tool in this population

Khor, A. S.; Melvin, G. A.; Reid, S. C.; Gray, K. M. (2013):

Coping, Daily Hassles and Behavior and Emotional Problems in Adolescents with High-Functioning Autism/Asperger's Disorder.

In: *J Autism Dev.Disord.* (0162-3257 (Linking)). DOI: 10.1007/s10803-013-1912-x.

Abstract:

Although daily hassles and coping are associated with behavior and emotional problems in non-clinical populations, few studies have investigated these relationships in individuals with high-functioning autism/Asperger's Disorder (HFASD). This study examined the relationships between daily hassles, coping and behavior and emotional problems in adolescents with HFASD. Thirty-one adolescents with HFASD completed questionnaires assessing their coping and behavior and emotional problems, and completed an Ecological Momentary Assessment run via a mobile phone application on their coping and daily hassles. Parents completed questionnaires of the adolescents' daily hassles, coping, and behavior and emotional problems. The disengagement coping style was associated with significantly higher levels of behavior and emotional problems regardless of respondent or methodology, suggesting it may be a valuable target for intervention

Kikuchi, H.; Yoshiuchi, K.; Miyasaka, N.; Ohashi, K.; Yamamoto, Y.; Kumano, H. et al. (2006):

Reliability of recalled self-report on headache intensity: investigation using ecological momentary assessment technique.

In: *Cephalalgia* 26 (11), S. 1335–1343. DOI: 10.1111/j.1468-2982.2006.01221.x.

Abstract:

Recalled evaluation of headache intensity is often affected by several factors. Recently, computerized ecological momentary assessment (EMA) has been developed to avoid such problems as recall bias. Here, we compared recalled headache intensity with momentary headache intensity using EMA in tension-type headache (TTH). Forty patients with TTH wore watch-type computers for 1 week to record momentary headache intensity and also rated their headache intensities by recall. We calculated intraclass correlation coefficients between recalled headache intensity and indices from EMA recordings in the whole study population and in two subgroups divided by variability of momentary headache intensity. The results showed that consistency and agreement of momentary and recalled headache intensity were low, and this was especially marked in the subjects whose headache varied widely. These observations suggested that variability of headache intensity may affect recall of headache intensity and this should be taken into consideration in both clinical and research settings.

Kikuchi, H.; Yoshiuchi, K.; Ohashi, K.; Yamamoto, Y.; Akabayashi, A. (2007):

Tension-type headache and physical activity: an actigraphic study.

In: *Cephalalgia* 27 (11), S. 1236–1243.

Abstract:

There have been some studies on the relationship between tension-type headache (TTH) and physical activity. However, most previous studies were not prospective and assessed physical activity by questionnaire. Therefore, this study was aimed to investigate the relationship between TTH intensity and physical activity prospectively utilizing computerized ecological momentary assessment and actigraphy. Thirty-one TTH patients wore watch-type computers equipped with actigraphy inside for 1 week to record momentary headache intensity and physical activity. Multilevel modelling was used to investigate the effect of headache intensity on the simultaneous and subsequent activity level. There were significant negative associations between headache intensity and the simultaneous and subsequent activity level, and activity level was significantly reduced at headache exacerbations. These results provide objective and quantitative evidence suggesting that TTH negatively affects physical activity.

Kikuchi, Hiroe; Yoshiuchi, Kazuhiro; Yamamoto, Yoshiharu; Komaki, Gen; Akabayashi, Akira (2011):

Does sleep aggravate tension-type headache?: An investigation using computerized ecological momentary assessment and actigraphy.

In: *BioPsychoSocial Medicine* 5. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-22750-001&site=ehost-live;kikuchih-tky@umin.ac.jp.

Abstract:

Background: Both insufficient sleep and oversleeping have been reported as precipitating and aggravating factors of tension-type headache (TTH). However, previous studies relied on recalled self-reports, and the relationship has not been confirmed prospectively and objectively in a daily life situation. Recently, ecological momentary assessment (EMA) using electronic diaries, i.e., computerized EMA, is used to record subjective symptoms with the advantages of avoiding recall bias and faked compliance in daily settings. In addition, actigraphy has become an established method to assess sleep outside laboratories. Therefore, the aim of this study was to investigate the within-individual effect of sleep on the following momentary headache intensity in TTH patients during their daily lives utilizing EMA and actigraphy. Methods: Twenty-seven patients with TTH wore watch-type computers as electronic diaries for seven consecutive days and recorded their momentary headache intensity using a visual analog scale of 0-100 approximately every six hours, on waking up, when going to bed, and at the time of headache exacerbations. They also recorded their self-report of sleep quality, hours of sleep and number of awakenings with the computers when they woke up. Physical activity was continuously recorded by an actigraph inside the watch-type computers. Activity data were analyzed by Cole's algorithm to obtain total sleep time, sleep efficiency, sleep latency, wake time after sleep onset and number of awakenings for each night. Multilevel modeling was used to test the effect of each subjective and objective sleep-related variable on momentary headache intensity on the following day. Results: Objectively measured total sleep time was significantly positively associated with momentary headache intensity on the following day, while self-reported sleep quality was significantly negatively associated with momentary headache intensity on the following day. Conclusions: Using computerized EMA and actigraphy, longer sleep and worse sleep quality were shown to be related to more intense headache

intensity on within-individual basis and they may be precipitating or aggravating factors of TTH. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Kim, Hyunna (2013):

Exercise rehabilitation for smartphone addiction.

In: *J Exerc Rehabil* 9 (6), S. 500–505. DOI: 10.12965/jer.130080.

Abstract:

Internet addiction after launching smartphone is becoming serious. Therefore this paper has attempted to sketch out the diverse addiction treatment and then check the feasibility of exercise rehabilitation. The reason to addict the internet or smartphone is personalized individual characters related personal psychological and emotional factors and social environmental factors around them. We have shown that 2 discernible approaches due to 2 different addiction causes: that is behavioral treatment and complementary treatment. In the behavioral treatment, cognitive behavioral approach (CBT) is representative methods for changing additive thoughts and behaviors. Motivational interviewing (MI) is also the brief approach for persons not ready to change their behavior. Mindfulness behavioral cognitive treatment (MBCT) also the adapted treatment based on CBT. There are different types following the emphatic point, mindfulness-based relapse prevention (MBRP) or mindfulness oriented recovery enhancement (MORE). It is apparent that therapeutic recreation, music therapy using drumming activity, and art therapy are useful complementary treatment. Exercise rehabilitation contained the systematic procedures and comprehensive activities compared to previous addiction treatments by contents and techniques. Exercise rehabilitation can treat both physical symptoms at first and mental problems in the next step. So more evidence-based exercise rehabilitation researches need to do, but it is highly probable that exercise rehab can apply for smartphone addiction.

Kim, J.; Kikuchi, H.; Yamamoto, Y. (2012):

Systematic comparison between ecological momentary assessment and day reconstruction method for fatigue and mood states in healthy adults.

In: *Br.J Health Psychol.* (1359-107X (Linking)). DOI: 10.1111/bjhp.12000.

Abstract:

OBJECTIVES: While both ecological momentary assessment (EMA) and the day reconstruction method (DRM) have been used to overcome recall bias, a full systematic comparison of these methods has not been conducted. This study was aimed to investigate the differences and correlations between momentary fatigue and mood states recorded by EMA and reconstructed ones recorded by simultaneous DRM in healthy adults. DESIGN: Each of two different designs (time-based and episode-based) of EMA and DRM were simultaneously conducted. METHODS: Twenty-five healthy adults recorded momentary fatigue and mood states with EMA, and then, reconstructed them with DRM. Differences between the mean and the variability of momentary and reconstructed recordings, and the correlations between them, are analysed for different EMA designs. RESULTS: No significant differences are found between the mean or the variability of EMA and DRM estimated over the monitoring period. However, correlations between EMA and DRM are low, albeit statistically significant. CONCLUSIONS: Although the overall mean and variability of EMA recordings may be accessible with DRM, detailed changes over time of momentary fatigue and mood states are not retrieved by DRM. Statement of contribution What is already known on this subject? Day reconstruction method (DRM) may be a reliable substitute strategy for the measurement of subjective symptoms instead of ecological momentary assessment (EMA). Remembering the context of daily activities with DRM is assumed to be helpful in reconstructing subjective symptoms without recall bias. What this study adds? We are not able to reconstruct our diurnal time course (i.e. detailed changes over time) of subjective symptoms (e.g. fatigue and mood states in this study) with DRM, while their approximate mean and overall variability during the study period may be accessible with DRM. Reconstructed depression by DRM could be biased when the subjects remembered whether their behaviour was active or inactive

Kim, Jinhyuk; Kikuchi, Hiroe; Yamamoto, Yoshiharu (2013):

Systematic comparison between ecological momentary assessment and day reconstruction method for fatigue and mood states in healthy adults.

In: *British Journal of Health Psychology* 18 (1), S. 155–167. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-01559-011%26site%3dehost-live;kikuchih-tky@umin.ac.jp.

Abstract:

Objectives: While both ecological momentary assessment (EMA) and the day reconstruction method (DRM) have been used to overcome recall bias, a full systematic comparison of these methods has not been conducted. This study was aimed to investigate the differences and correlations between momentary fatigue and mood states recorded by EMA and reconstructed ones recorded by simultaneous DRM in healthy adults. Design: Each of two different designs (time-based and episode-based) of EMA and DRM were simultaneously conducted. Methods: Twenty-five healthy adults recorded momentary fatigue and mood states with EMA, and then, reconstructed them with DRM. Differences between the mean and the variability of momentary and reconstructed recordings, and the correlations between them, are analysed for different EMA designs. Results: No significant differences are found between the mean or the variability of EMA and DRM estimated over the monitoring period. However, correlations between EMA and DRM are low, albeit statistically significant. Conclusions: Although the overall mean and variability of EMA recordings may be accessible with DRM, detailed changes over time of momentary fatigue and mood states are not retrieved by DRM. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kim, Su Young; Kim, Jee Seon (2012):

Investigating stage-sequential growth mixture models with multiphase longitudinal data.

In: *Structural Equation Modeling* 19 (2), S. 293–319. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-13451-007&site=ehost-live;suyoung93@gmail.com.

Abstract:

This article investigates three types of stage-sequential growth mixture models in the structural equation modeling framework for the analysis of multiple-phase longitudinal data. These models can be important tools for situations in which a single-phase growth mixture model produces distorted results and can allow researchers to better understand population heterogeneity and growth over multiple phases. Through theoretical and empirical comparisons of the models, the authors discuss strategies with respect to model selection and interpreting outcomes. The unique attributes of each approach are illustrated using ecological momentary assessment data from a tobacco cessation study. Transitional discrepancy between phases as well as growth factors are examined to see whether they can give us useful information related to a distal outcome, abstinence at 6 months postquit. It is argued that these statistical models are powerful and flexible tools for the analysis of complex and detailed longitudinal data. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Kim, Kyunghee; Kim, Hae-Joon; Song, Dae Jong; Cho, Yong Min; Choi, Jae Wook (2014):

Risk perception and public concerns of electromagnetic waves from cellular phones in Korea.

In: *Bioelectromagnetics* 35 (4), S. 235–244. DOI: 10.1002/bem.21836.

Abstract:

In this study, the difference between the risk perception of electromagnetic waves from cellular phones and the risk perception of other factors such as environment and food was analyzed. The cause of the difference in the psychological and social factors that affect the group with high risk perception of electromagnetic waves was also analyzed. A questionnaire survey on the risk perception of electromagnetic waves from cellular phones was carried out on 1001 subjects (men and women) over the age of 20. In the group with high risk perception of electromagnetic waves from cellular phones, women had higher risk perception than men. Logistic regression analysis, where the group with high risk perception of electromagnetic waves and the group with low risk perception were used as dependent variables, indicated that the risk perception of electromagnetic waves in women was 1.815 times statistically significantly higher than the risk perception of men (95% CI: 1.340-2.457). Also, high risk perception of electromagnetic waves from cellular phones was observed when the subjects considered that they had more personal knowledge (OR: 1.416, 95% CI: 1.216-1.648), that the seriousness of the risk to future generations was high (OR: 1.410, 95% CI: 1.234-1.611), and their outrage for the occurrence of accidents related to electromagnetic waves was high (OR: 1.460, 95% CI: 1.264-1.686). The results of this study need to be sufficiently considered and reflected in designing the risk communication strategies and communication methods for the preventive measures and advice on electromagnetic waves from cellular phones. Bioelectromagnetics. 35:235-244, 2014. (c) 2014 Wiley Periodicals, Inc.

Kim, Jae Heon; Kwon, Soon-Sun; Shim, Sung Ryul; Sun, Hwa Yeon; Ko, Young Myoung; Chun, Dong-Il et al. (2014):

Validation and reliability of a smartphone application for the international prostate symptom score questionnaire: a randomized repeated measures crossover study.

In: *J Med Internet Res* 16 (2), S. e38. DOI: 10.2196/jmir.3042.

Abstract:

BACKGROUND: Smartphone-based assessment may be a useful diagnostic and monitoring tool for patients. There have been many attempts to create a smartphone diagnostic tool for clinical use in various medical fields but few have demonstrated scientific validity. OBJECTIVE: The purpose of this study was to develop a smartphone application of the International Prostate Symptom Score (IPSS) and to demonstrate its validity and reliability. METHODS: From June 2012 to May 2013, a total of 1581 male participants (>/=40 years old), with or without lower urinary tract symptoms (LUTS), visited our urology clinic via the health improvement center at Soonchunhyang University Hospital (Republic of Korea) and were enrolled in this study. A randomized repeated measures crossover design was employed using a smartphone application of the IPSS and the conventional paper form of the IPSS. Paired t test under a hypothesis of non-inferior trial was conducted. For the reliability test, the intraclass correlation coefficient (ICC) was measured. RESULTS: The total score of the IPSS (P=.289) and each item of the IPSS (P=.157-1.000) showed no differences between the paper version and the smartphone version of the IPSS. The mild, moderate, and severe LUTS groups showed no differences between the two versions of the IPSS. A significant correlation was noted in the total group (ICC=.935, P<.001). The mild, moderate, and severe LUTS groups also showed significant correlations (ICC=.616, .549, and .548 respectively, all P<.001).There was selection bias in this study, as only participants who had smartphones could participate. CONCLUSIONS: The validity and reliability of the smartphone application version were comparable to the conventional paper version of the IPSS. The smartphone application of the IPSS could be an effective method for measuring lower urinary tract symptoms.

Kim, J.; Nakamura, T.; Kikuchi, H.; Sasaki, T.; Yamamoto, Y. (2013):

Co-variation of depressive mood and locomotor dynamics evaluated by ecological momentary assessment in healthy humans.

In: *PLoS One* 8 (9), S. e74979. DOI: 10.1371/journal.pone.0074979.

Abstract:

Computerized ecological momentary assessment (EMA) is widely accepted as a "gold standard" method for capturing momentary symptoms repeatedly experienced in daily life. Although many studies have addressed the within-individual temporal variations in momentary symptoms compared with simultaneously measured external criteria, their concurrent associations, specifically with continuous physiological measures, have not been rigorously examined. Therefore, in the present study, we first examined the variations in momentary symptoms by validating the associations among self-reported symptoms measured simultaneously (depressive mood, anxious mood, and fatigue) and then investigated covariant properties between the symptoms (especially, depressive mood) and local statistics of locomotor activity as the external objective criteria obtained continuously. Healthy subjects (N = 85) from three different populations (adolescents, undergraduates, and office workers) wore a watch-type computer device equipped with EMA software for recording the momentary symptoms experienced by the subjects. Locomotor activity data were also continuously obtained by using an actigraph built into the device. Multilevel modeling analysis confirmed convergent associations by showing positive correlations among momentary symptoms. The increased intermittency of locomotor activity, characterized by a combination of reduced activity with occasional bursts, appeared concurrently with the worsening of depressive mood. Further, this association remained statistically unchanged across groups regardless of group differences in age, lifestyle, and occupation. These results indicate that the temporal variations in the momentary symptoms are not random but reflect the underlying changes in psychophysiological variables in daily life. In addition, our findings on the concurrent changes in depressive mood and locomotor activity may contribute to the continuous estimation of changes in depressive mood and early detection of depressive disorders

Kim, Ka Young; Park, Sunhong; Jung, Sung Ho; Lee, Shim Sung; Park, Ki-Min; Shinkai, Seiji; Jung, Jong Hwa (2014):

Geometric Change of a Thiacalix4arene Supramolecular Gel with Volatile Gases and Its Chromogenic Detection for Rapid Analysis.

In: *Inorg Chem* 53 (6), S. 3004–3011. DOI: 10.1021/ic402804p.

Abstract:

A coordination polymer gel that is self-assembled to form a network structure between a thiacalix[4]arene derivative (L) and Co(2+) has been prepared. This gel is capable of selectively changing color in the presence of gases that yield hydrogen chloride

upon hydrolysis. The UV-vis absorption spectrum of a coordination polymer gel derived from Co(NO3)2 exhibits an absorption band at 527 nm and is colored red, indicating the formation of an octahedral Co(2+) complex. Treatment with a small amount of volatile gases containing a chlorine atom (VGCl) causes a red shift of approximately 150 nm, resulting in a new strong band with a maximum at 670 nm and a color change to blue. In addition, the red color of the filter paper coated with a Co(NO3)2 coordination polymer gel changed to blue upon exposure to VGCl, reflecting a change in the coordination geometry. Red and blue colors of single crystals of Co(2+) complexes were obtained from a basic solution. From X-ray crystallographic analysis, the red Co(2+) complex corresponds to an octahedral structure, while the blue Co(2+) complex reflects the presence of a tetrahedral structure. Thus, the induced color change of Co(2+) gel from red to blue upon exposure to VGCl is due to the coordination geometry. The quantitative concentration of VGCl was calculated by employing the RGB histogram available in a smartphone application.

Kim, Junghoon; Tanabe, Kai; Yokoyama, Noriko; Zempo, Hirofumi; Kuno, Shinya (2013):

Objectively measured light-intensity lifestyle activity and sedentary time are independently associated with metabolic syndrome: A cross-sectional study of Japanese adults.

In: *Int J Behav Nutr Phys Act* 10. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-11681-001%26site%3dehost-live;kuno@taiiku.tsukuba.ac.jp.

Abstract:

Background: Reducing sedentary time and increasing lifestyle activities, including light-intensity activity, may be an option to help prevent metabolic syndrome (MetS). The purpose of the present study was to examine whether objectively measured light-intensity lifestyle activity and sedentary time is associated with MetS, independent of moderate–vigorous intensity physical activity (MVPA). Methods: The participants in this cross-sectional study were 483 middle-aged Japanese adults, aged 30–64 years. The participants were divided into those with or without MetS according to the Japanese criteria for MetS. A triaxial accelerometer was used to measure light-intensity lifestyle activity [1.6–2.9 metabolic equivalents (METs)] and sedentary time (≤1.5 METs). Logistic regression was used to predict MetS from the levels of light-intensity lifestyle activity and sedentary time with age, sex, smoking, calorie intake, accelerometer wear time, and MVPA as covariates. Results: The odds ratios (OR) for MetS in the highest and middle tertiles of light-intensity lifestyle activity were 0.44 [95% confidence interval (CI): 0.24 to 0.81] and 0.51 (95% CI: 0.29 to 0.89) relative to the lowest tertile, after adjustment for age, sex, smoking, calorie intake, accelerometer wear time and MVPA (P[sub]trend[/sub] = 0.012). Sedentary time was also associated with the risk of MetS (P[sub]trend[/sub] = 0.018). Among participants in the highest tertile of sedentary time, the risk of MetS was 2.27-times greater than that in the lowest tertile (95% CI: 1.25 to 4.11). The risk of MetS was not significantly increased in subjects in the middle tertile of sedentary time. Conclusions: We found that light-intensity lifestyle activity and sedentary time were significantly associated with the risk of MetS, independent of MVPA. The results of our study suggest that public health messages and guidelines should be refined to include increases in light-intensity lifestyle activity and/or decreases in sedentary time, alongside promoting MVPA, to prevent MetS. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kimhy, David; Delespaul, Philippe; Corcoran, Cheryl; Ahn, Hongshik; Yale, Scott; Malaspina, Dolores (2006):

Computerized experience sampling method (ESMc): assessing feasibility and validity among individuals with schizophrenia.

In: *Journal of Psychiatric Research* 40 (3), S. 221–230. DOI: 10.1016/j.jpsychires.2005.09.007.

Abstract:

The Experience Sampling Method (ESM) is an ecologically valid, time-sampling of self-reports developed to study the dynamic process of person-environment interactions. ESM with digital wristwatch and booklets (paper-based ESM; ESMp) has been used extensively to study schizophrenia. The present study is designed to test the feasibility and validity of using Computerized ESM (ESMc) among individuals with schizophrenia. ESMc is advantageous in allowing for recording of precise time-stamps of responses. We used PDAs (\"Personal Digital Assistant\"; Palm handheld computers) to collect data on momentary psychotic symptoms, mood, and thoughts over a one day period among 10 hospitalized schizophrenia patients and 10 healthy controls. ESMc was equally acceptable to both groups, with similar ratings of comfort carrying the PDAs and operating them, interference with daily activities, as well as response rates. The schizophrenia patients reported significantly higher ratings of auditory and visual hallucinations, suspiciousness, sense of unreality, lack of thought control, fear of losing control, difficulty expressing thoughts, as well as depression/sadness, loneliness and less cheerfulness. Significant inverse relationships were found among both groups between ratings of feeling cheerful and being stressed, irritated, and sad/depressed. Among the schizophrenia subjects, the correlation between ratings of suspiciousness on ESMc and Scale for Assessment of Positive Symptoms (SAPS)

approached significance, as well as the link between suspiciousness and stress. Our results support the feasibility and validity of using ESMc for assessment of momentary psychotic symptoms, mood, and experiences among individuals with schizophrenia. The authors discuss the potential applications of combining ESMc with ambulatory physiological measures.

Kimhy, David; Delespaul, Philippe; Ahn, Hongshik; Cai, Shengnan; Shikhman, Marina; Lieberman, Jeffrey A. et al. (2010):

Concurrent measurement of \"real-world\" stress and arousal in individuals with psychosis: assessing the feasibility and validity of a novel methodology.

In: *Schizophrenia Bulletin* 36 (6), S. 1131–1139. DOI: 10.1093/schbul/sbp028.

Abstract:

BACKGROUND\r\nPsychosis has been repeatedly suggested to be affected by increases in stress and arousal. However, there is a dearth of evidence supporting the temporal link between stress, arousal, and psychosis during \"real-world\" functioning. This paucity of evidence may stem from limitations of current research methodologies. Our aim is to the test the feasibility and validity of a novel methodology designed to measure concurrent stress and arousal in individuals with psychosis during \"real-world\" daily functioning.\r\nMETHOD\r\nTwenty patients with psychosis completed a 36-hour ambulatory assessment of stress and arousal. We used experience sampling method with palm computers to assess stress (10 times per day, 10 AM → 10 PM) along with concurrent ambulatory measurement of cardiac autonomic regulation using a Holter monitor. The clocks of the palm computer and Holter monitor were synchronized, allowing the temporal linking of the stress and arousal data. We used power spectral analysis to determine the parasympathetic contributions to autonomic regulation and sympathovagal balance during 5 minutes before and after each experience sample.\r\nRESULTS\r\nPatients completed 79% of the experience samples (75% with a valid concurrent arousal data). Momentary increases in stress had inverse correlation with concurrent parasympathetic activity (ρ = -.27, P < .0001) and positive correlation with sympathovagal balance (ρ = .19, P = .0008). Stress and heart rate were not significantly related (ρ = -.05, P = .3875).\r\nCONCLUSION\r\nThe findings support the feasibility and validity of our methodology in individuals with psychosis. The methodology offers a novel way to study in high time resolution the concurrent, \"real-world\" interactions between stress, arousal, and psychosis. The authors discuss the methodology's potential applications and future research directions.

Kimhy, David; Myin-Germeys, Inez; Palmier-Claus, Jasper; Swendsen, Joel (2012):

Mobile assessment guide for research in schizophrenia and severe mental disorders.

In: *Schizophrenia Bulletin* 38 (3), S. 386–395. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-15724-007&site=ehost-live;Joel.Swendsen@u-bordeaux2.fr.

Abstract:

Mobile assessment techniques have been used for nearly 3 decades in mental health research, including in investigations of individuals with schizophrenia and other severe disorders. This article reviews the benefits of these data collection strategies relative to traditional self-report or clinician-administered measures administered in hospital or laboratory settings. A detailed discussion of the technical decisions facing researchers in the field is then presented, covering study design issues, questionnaire content development, and choices in hardware and software selection. Following these points, sample recruitment and retention strategies are discussed, as well as the main statistical issues that are necessary to consider in the exploitation of repeated measures data generated by this methodology. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Kimhy, David; Vakhrusheva, Julia; Khan, Samira; Chang, Rachel W.; Hansen, Marie C.; Ballon, Jacob S. et al. (2014):

Emotional granularity and social functioning in individuals with schizophrenia: An experience sampling study.

In: *Journal of Psychiatric Research* 53, S. 141–148. DOI: 10.1037/t15180-000;

Abstract:

Previous research has shown that healthy individuals who fail to differentiate among emotional states (i.e., those with low emotional granularity; EG) have poorer social functioning (SF) than those with high EG. It is unknown, however, whether these associations extend to clinical disorders characterized by impaired SF, such as schizophrenia. In the present study, we compared SF and EG in individuals with schizophrenia and healthy controls, and then, within the schizophrenia group, we examined the

links between EG and SF. Employing an Experience Sampling Method approach, 77 individuals with schizophrenia and 27 healthy controls rated their momentary emotions (sadness, anxiety, anger, and happiness) up to 10 times/day over a two-day period using mobile electronic devices. For each participant, we then calculated the within-subject average correlations among the momentary emotion ratings, producing two EG indices—EGIall for all emotions and EGIneg for negative ones. A subsample of participants with schizophrenia also completed self-report, interview, and ability-based measures of SF. Compared to healthy controls, individuals with schizophrenia displayed significantly poorer SF and lower EGIall, but comparable EGIneg. Within the schizophrenia group, hierarchical multiple regression analyses indicated that EGIall, but not EGIneg, significantly predicted social dysfunction after controlling for emotional awareness, symptoms, and emotional intensity and variability. Our findings indicate that individuals with schizophrenia have a relatively intact ability to differentiate among negative emotions in everyday life. However, they experience significant difficulties differentiating between positive and negative emotions, and this may contribute to their social difficulties. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Kimhy, David; Vakhrusheva, Julia; Liu, Ying; Wang, Yuanjia (2014):

Use of mobile assessment technologies in inpatient psychiatric settings.

In: *Asian J Psychiatr* 10, S. 90–95. DOI: 10.1016/j.ajp.2014.04.004.

Abstract:

Mobile electronic devices (i.e., PDAs, cellphones) have been used successfully as part of research studies of individuals with severe mental illness living in the community. More recently, efforts have been made to incorporate such technologies into outpatient treatments. However, few attempts have been made to date to employ such mobile devices among hospitalized psychiatric patients. In this article, we evaluate the potential use of such devices in inpatient psychiatric settings using 33 hospitalized patients with schizophrenia. Employing an Experience Sampling Method approach, we provide support for the feasibility of using such devices, along with examples of potentially clinically-relevant information that can be obtained using such technologies, including assessment of fluctuations in the severity of psychotic symptoms and negative mood in relation to social context, unit location, and time of day. Following these examples, we discuss issues related to the potential use of mobile electronic devices by patients hospitalized at inpatient psychiatric settings including issues related to patients' compliance, assessment schedules, questionnaire development, confidentiality issues, as well as selection of appropriate software/hardware. Finally, we delineate some issues and areas of inquiry requiring additional research and development.

King, Abby C.; Ahn, David K.; Oliveira, Brian M.; Atienza, Audie A.; Castro, Cynthia M.; Gardner, Christopher D. (2008):

Promoting physical activity through hand-held computer technology.

In: *Am J Prev Med* 34 (2), S. 138–142.

Abstract:

BACKGROUND:

Efforts to achieve population-wide increases in walking and similar moderate-intensity physical activities potentially can be enhanced through relevant applications of state-of-the-art interactive communication technologies. Yet few systematic efforts to evaluate the efficacy of hand-held computers and similar devices for enhancing physical activity levels have occurred. The purpose of this first-generation study was to evaluate the efficacy of a hand-held computer (i.e., personal digital assistant [PDA]) for increasing moderate intensity or more vigorous (MOD+) physical activity levels over 8 weeks in mid-life and older adults relative to a standard information control arm.

DESIGN:

Randomized, controlled 8-week experiment. Data were collected in 2005 and analyzed in 2006-2007.

SETTING/PARTICIPANTS:

Community-based study of 37 healthy, initially underactive adults aged 50 years and older who were randomized and completed the 8-week study (intervention=19, control=18).

INTERVENTION:

Participants received an instructional session and a PDA programmed to monitor their physical activity levels twice per day and provide daily and weekly individualized feedback, goal setting, and support. Controls received standard, age-appropriate written physical activity educational materials.

MAIN OUTCOME MEASURE:

Physical activity was assessed via the Community Healthy Activities Model Program for Seniors (CHAMPS) questionnaire at baseline and 8 weeks.

RESULTS:

Relative to controls, intervention participants reported significantly greater 8-week mean estimated caloric expenditure levels and minutes per week in MOD+ activity ($p<0.04$). Satisfaction with the PDA was reasonably high in this largely PDA-naive sample.

CONCLUSIONS:

Results from this first-generation study indicate that hand-held computers may be effective tools for increasing initial physical activity levels among underactive adults.

King, A. C.; Hekler, E. B.; Castro, C. M.; Buman, M. P.; Marcus, B. H.; Friedman, R. H.; Napolitano, M. A. (2013):

Exercise Advice by Humans Versus Computers: Maintenance Effects at 18 Months.

In: *Health Psychol* (0278-6133 (Linking)). DOI: 10.1037/a0030646.

Abstract:

Objective: An automated telehealth counseling system, aimed at inactive midlife and older adults, was shown previously to achieve 12-month physical activity levels similar to those attained by human advisors. This investigation evaluated the sustained 18-month impacts of the automated advisor compared with human advisors. Methods: Following the end of the 12-month randomized, controlled trial, participants who had been randomized to either the human advisor (n = 73) or automated advisor (n = 75) arms were followed for an additional 6 months. During that period, human or automated advisor-initiated telephone contacts ceased and participants were encouraged to initiate contact with their advisor as deemed relevant. The primary outcome was moderate-to-vigorous physical activity (MVPA), measured using the Stanford Physical Activity Recall and validated during the major trial via accelerometry. Results: The two arms did not differ significantly in 18-month MVPA or the percentage of participants meeting national physical activity guidelines (ps >.50). No significant within-arm MVPA differences emerged between 12 and 18 months. Evaluation of the trajectory of physical activity change across the 18-month study period indicated that, for both arms, the greatest physical activity increases occurred during the first 6 months of intervention, followed by a relatively steady amount of physical activity across the remaining months. Conclusions: The results provide evidence that an automated telehealth advice system can maintain physical activity increases at a level similar to that achieved by human advisors through 18 months. Given the accelerated use of mobile phones in developing countries, as well as industrialized nations, automated telehealth systems merit further evaluation. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

King, Eden B.; Mohr, Jonathan J.; Peddie, Chad I.; Jones, Kristen P.; Kendra, Matt (2014):

Predictors of identity management: An exploratory experience-sampling study of lesbian, gay, and bisexual workers.

In: *Journal of Management*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-26939-001%26site%3dehost-live.

Abstract:

This study examined workplace interactions in which lesbian, gay, and bisexual (LGB) workers faced decisions related to revealing or concealing their LGB identities at work (i.e., identity management situations). Participants were 61 LGB adults who completed a baseline survey about their organization and, over 3 weeks, responded to event-based surveys immediately after identity management situations. Results suggested that LGB workers manage their stigmatized identity strategically according to situational characteristics. Indeed, much of the variance in use of revealing and concealing strategies was due to differences within people from situation to situation. Use of identity management strategies was predicted by interaction partner cues of acceptance or rejection as well as perception of LGB-related organizational climate and policies. Results at the within-person and between-person levels diverged in noteworthy ways. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Kirby, Tony; Thornber-Dunwell, Michelle (2014):

Phone apps could help promote sexual health in MSM.

In: *The Lancet* 384 (9952), S. 1415. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-44639-011%26site%3dehost-live.

Abstract:

This article focuses on promoting sexual health in men who have sex with men (MSM) through phone apps. Since the advent of smartphone technology, people worldwide of all sexualities have been using various downloadable apps to help them meet people for dates, casual sex, and in some cases, group sex. For many (but by no means all) men who have sex with men (MSM), smartphone apps such as Grindr, Hornet, FindFred, Growlr, Scruff , and many others have become part of daily life. These MSM will look at a list of other men in their area, start up a conversation, and can ultimately end up engaging in casual sex. Some of the MSM using apps to meet partners are also using a range of recreational drugs during these sexual encounters. Thus, experts say, it is vital that apps off er links for users to fi nd drug counseling and support as well as promoting good sexual health. (PsycINFO Database Record (c) 2014 APA, all rights reserved)

Kirk, G. D.; Linas, B. S.; Westergaard, R. P.; Piggott, D.; Bollinger, R. C.; Chang, L. W.; Genz, A. (2013):

The exposure assessment in current time study: implementation, feasibility, and acceptability of real-time data collection in a community cohort of illicit drug users.

In: *AIDS Res.Treat.* 2013 (2090-1240 (Linking)), S. 594671. DOI: 10.1155/2013/594671.

Abstract:

Objective. We describe the study design and evaluate the implementation, feasibility, and acceptability of an ecological momentary assessment (EMA) study of illicit drug users. Design. Four sequential field trials targeting observation of 30 individuals followed for a four week period. Participants. Participants were recruited from an ongoing community-cohort of current or former injection drug users. Of 113 individuals enrolled, 109 completed study procedures during four trials conducted from November 2008 to May 2013. Methods. Hand-held electronic diaries used in the initial trials were transitioned to a smartphone platform for the final trial with identical data collection. Random-prompts delivered five times daily assessed participant location, activity, mood, and social context. Event-contingent data collection involved participant self-reports of illicit drug use and craving. Main Outcome Measures. Feasibility measures included participant retention, days of followup, random-prompt response rates, and device loss rate. Acceptability was evaluated from an end-of-trial questionnaire. Sociodemographic, behavioral, clinical, and trial characteristics were evaluated as correlates of weekly random-prompt response rates >/=80% using logistic regression with generalized estimating equations. Results. Study participants were a median of 48.5 years old, 90% African American, 52% male, and 59% HIV-infected with limited income and educational attainment. During a median followup of 28 days, 78% of 11,181 random-prompts delivered were answered (mean of 2.8 responses daily), while 2,798 participant-initiated events were reported (30% drug use events; 70% craving events). Self-reported acceptability to study procedures was uniformly favorable. Device loss was rare (only 1 lost device every 190 person-days of observation). Higher educational attainment was consistently associated with a higher response rate to random-prompts, while an association of HIV infection with lower response rates was not observed after accounting for differences in trial recruitment procedures. Conclusion. Near real-time EMA data collection in the field is feasible and acceptable among community-dwelling illicit drug users. These data provide the basis for future studies of EMA-informed interventions to prevent drug relapse and improve HIV treatment outcomes in this population

Kirwan, Morwenna; Duncan, Mitch J.; Vandelanotte, Corneel; Mummery, W. Kerry (2012):

Using smartphone technology to monitor physical activity in the 10,000 steps program: A matched case-control trial.

In: *J Med Internet Res* 14 (2), S. 176–185. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-32352-014%26site%3dehost-live;m.kirwan@cqu.edu.au.

Abstract:

Background: Website-delivered physical activity interventions are successful in producing short-term behavior change. However, problems with engagement and retention of participants in these programs prevent long-term behavior change. New ways of accessing online content (eg, via smartphones) may enhance engagement in these interventions, which in turn may improve the effectiveness of the programs. Objective: To measure the potential of a newly developed smartphone application to improve

health behaviors in existing members of a website-delivered physical activity program (10,000 Steps, Australia). The aims of the study were to (1) examine the effect of the smartphone application on self-monitoring and self-reported physical activity levels, (2) measure the perceived usefulness and usability of the application, and (3) examine the relationship between the perceived usefulness and usability of the application and its actual use. Methods: All participants were existing members of the 10,000 Steps program. We recruited the intervention group (n = 50) via email and instructed them to install the application on their smartphone and use it for 3 months. Participants in this group were able to log their steps by using either the smartphone application or the 10,000 Steps website. Following the study, the intervention group completed an online questionnaire assessing perceived usability and usefulness of the smartphone application. We selected control group participants (n = 150), matched for age, gender, level of self-monitoring, preintervention physical activity level, and length of membership in the 10,000 Steps program, after the intervention was completed. We collected website and smartphone usage statistics during the entire intervention period. Results: Over the study period (90 days), the intervention group logged steps on an average of 62 days, compared with 41 days in the matched group. Intervention participants used the application 71.22% (2210/3103) of the time to log their steps. Logistic regression analyses revealed that use of the application was associated with an increased likelihood to log steps daily during the intervention period compared with those not using the application (odds ratio 3.56, 95% confidence interval 1.72–7.39). Additionally, use of the application was associated with an increased likelihood to log greater than 10,000 steps on each entry (odds ratio 20.64, 95% confidence interval 9.19–46.39). Linear regression analysis revealed a nonsignificant relationship between perceived usability (r = .216, P = .21) and usefulness (r = .229, P = .17) of the application and frequency of logging steps in the intervention group. Conclusion: Using a smartphone application as an additional delivery method to a website-delivered physical activity intervention may assist in maintaining participant engagement and behavior change. However, due to study design limitations, these outcomes should be interpreted with caution. More research, using larger samples and longer follow-up periods, is needed to replicate the findings of this study. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kirwan, Morwenna; Duncan, Mitch J.; Vandelanotte, Corneel; Mummery, W. Kerry (2013):

Design, development, and formative evaluation of a smartphone application for recording and monitoring physical activity levels: The 10,000 steps “iStepLog”.

In: *Health Education & Behavior* 40 (2), S. 140–151. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-12138-005%26site%3dehost-live;m.kirwan@uws.edu.au.

Abstract:

Objectives: Limited research exists addressing the development of health-related smartphone apps, a new and potentially effective health promotion delivery strategy. This article describes the development and formative evaluation of a smartphone app associated with a physical activity promotion website. Methods: A combination of qualitative and quantitative techniques (performance measures, direct observation, and subjective participant preferences) were implemented during two usability testing sessions (pre- and postmodification) while participants were completing tasks using the app. Results: Design improvements to the app resulted in a reduction in the problems experienced and a decrease in the time taken to complete tasks. Four usability themes emerged from the data: design, feedback, navigation, and terminology. Conclusion: This study demonstrates the relevance of usability testing to the design and modification of a smartphone app related to a health promotion website. This study resulted in an app with much higher usability, which might increase usage and maintenance of health behavior change in the long term. Practical implications: This study demonstrates the need for formative evaluation in health-related smartphone apps. Attention should be given to basic design principles as well as feedback, navigation, and terminology in order to ensure utility and ease of use of future smartphone app designs. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kirwan, M.; Vandelanotte, C.; Fenning, A.; Duncan, M. J. (2013):

Diabetes self-management smartphone application for adults with type 1 diabetes: randomized controlled trial.

In: *J.Med.Internet.Res.* 15 (11), S. e235. DOI: 10.2196/jmir.2588.

Abstract:

BACKGROUND: Persistently poor glycemic control in adult type 1 diabetes patients is a common, complex, and serious problem initiating significant damage to the cardiovascular, renal, neural, and visual systems. Currently, there is a plethora of low-cost and free diabetes self-management smartphone applications available in online stores. OBJECTIVE: The aim of this study was to examine the effectiveness of a freely available smartphone application combined with text-message feedback from a certified diabetes educator to improve glycemic control and other diabetes-related outcomes in adult patients with type 1 diabetes in a

two-group randomized controlled trial. METHODS: Patients were recruited through an online type 1 diabetes support group and letters mailed to adults with type 1 diabetes throughout Australia. In a 6-month intervention, followed by a three-month follow-up, patients (n=72) were randomized to usual care (control group) or usual care and the use of a smartphone application (Glucose Buddy) with weekly text-message feedback from a Certified Diabetes Educator (intervention group). All outcome measures were collected at baseline and every three months over the study period. Patients' glycosylated hemoglobin levels (HbA1c) were measured with a blood test and diabetes-related self-efficacy, self-care activities, and quality of life were measured with online questionnaires. RESULTS: The mean age of patients was 35.20 years (SD 10.43) (28 male, 44 female), 39% (28/72) were male, and patients had been diagnosed with type 1 diabetes for a mean of 18.94 years (SD 9.66). Of the initial 72 patients, 53 completed the study (25 intervention, 28 control group). The intervention group significantly improved glycemic control (HbA1c) from baseline (mean 9.08%, SD 1.18) to 9-month follow-up (mean 7.80%, SD 0.75), compared to the control group (baseline: mean 8.47%, SD 0.86, follow-up: mean 8.58%, SD 1.16). No significant change over time was found in either group in relation to self-efficacy, self-care activities, and quality of life. CONCLUSIONS: In adjunct to usual care, the use of a diabetes-related smartphone application combined with weekly text-message support from a health care professional can significantly improve glycemic control in adults with type 1 diabetes. TRIAL REGISTRATION: Australian New Zealand Clinical Trials Registry: ACTRN12612000132842; https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?ACTRN=1261200013284 2 (Archived by WebCite at http://www.webcitation.org/6Kl4jqn5u)

Klauer, Sheila G.; Guo, Feng; Simons-Morton, Bruce G.; Ouimet, Marie Claude; Lee, Suzanne E.; Dingus, Thomas A. (2014):

Distracted driving and risk of road crashes among novice and experienced drivers.

In: *N Engl J Med* 370 (1), S. 54–59. DOI: 10.1056/NEJMsa1204142.

Abstract:

BACKGROUND: Distracted driving attributable to the performance of secondary tasks is a major cause of motor vehicle crashes both among teenagers who are novice drivers and among adults who are experienced drivers. METHODS: We conducted two studies on the relationship between the performance of secondary tasks, including cell-phone use, and the risk of crashes and near-crashes. To facilitate objective assessment, accelerometers, cameras, global positioning systems, and other sensors were installed in the vehicles of 42 newly licensed drivers (16.3 to 17.0 years of age) and 109 adults with more driving experience. RESULTS: During the study periods, 167 crashes and near-crashes among novice drivers and 518 crashes and near-crashes among experienced drivers were identified. The risk of a crash or near-crash among novice drivers increased significantly if they were dialing a cell phone (odds ratio, 8.32; 95% confidence interval [CI], 2.83 to 24.42), reaching for a cell phone (odds ratio, 7.05; 95% CI, 2.64 to 18.83), sending or receiving text messages (odds ratio, 3.87; 95% CI, 1.62 to 9.25), reaching for an object other than a cell phone (odds ratio, 8.00; 95% CI, 3.67 to 17.50), looking at a roadside object (odds ratio, 3.90; 95% CI, 1.72 to 8.81), or eating (odds ratio, 2.99; 95% CI, 1.30 to 6.91). Among experienced drivers, dialing a cell phone was associated with a significantly increased risk of a crash or near-crash (odds ratio, 2.49; 95% CI, 1.38 to 4.54); the risk associated with texting or accessing the Internet was not assessed in this population. The prevalence of high-risk attention to secondary tasks increased over time among novice drivers but not among experienced drivers. CONCLUSIONS: The risk of a crash or near-crash among novice drivers increased with the performance of many secondary tasks, including texting and dialing cell phones. (Funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development and the National Highway Traffic Safety Administration.).

Kleiboer, Annet M.; Kuijer, Roeline G.; Hox, Joop J.; Jongen, Peter J. H.; Frequin, Stephan Tfm; Bensing, Jozien M. (2007):

Daily negative interactions and mood among patients and partners dealing with multiple sclerosis (MS): The moderating effects of emotional support.

In: *Social Science & Medicine* 64 (2), S. 389–400.

Abstract:

Negative interactions with intimate partners may have adverse consequences for well-being, especially for individuals dealing with chronic illness. However, it is not clear whether negative interactions affect both dimensions of positive and negative well-being and factors that may moderate this effect have not been well-described. The aim of the present ... read more

Kleim, B.; Graham, B.; Bryant, R. A.; Ehlers, A. (2013):

Capturing intrusive re-experiencing in trauma survivors' daily lives using ecological momentary assessment.

In: *J.Abnorm.Psychol.* 122 (4), S. 998–1009. DOI: 10.1037/a0034957.

Abstract:

Intrusive memories are common following traumatic events and among the hallmark symptoms of posttraumatic stress disorder (PTSD). Most studies assess summarized accounts of intrusions retrospectively. We used an ecological momentary approach and index intrusive memories in trauma survivors with and without PTSD using electronic diaries. Forty-six trauma survivors completed daily diaries for 7 consecutive days recording a total of 294 intrusions. Participants with PTSD experienced only marginally more intrusions than those without PTSD, but experienced them with more "here and now quality," and responded with more fear, helplessness, anger, and shame than those without PTSD. Most frequent intrusion triggers were stimuli that were perceptually similar to stimuli from the trauma. Individuals with PTSD experienced diary-prompted voluntary trauma memories with the same sense of nowness and vividness as involuntary intrusive trauma memories. The findings contribute to a better understanding of everyday experiences of intrusive reexperiencing in trauma survivors with PTSD and offer clinical treatment implications. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Klumb, Petra; Elfering, Achim; Herre, Christiane (2009):

Ambulatory assessment in industrial/organizational psychology: Fruitful examples and methodological issues.

In: *European Psychologist* 14 (2), S. 120–131.

Abstract:

In this review, we demonstrate the contribution of ambulatory assessment (AA) research to I/O psychology by reference to four dynamic phenomena, the investigation of which we judge to benefit most from the application of AA techniques: (a) work strain and coping with work stressors, (b) the work/nonwork interface, (c) social interactions at the workplace, and (d) job attitudes and work-related emotions. As we see it, the greatest potential of these studies lies in the analysis of how interindividual differences modulate intraindividual processes. After demonstrating the value of the method, we outline and discuss ways of tackling a number of methodological issues raised in the studies reviewed: selective participation and attrition, altered reporting behavior and reactivity, noncompliance with study instructions, low acceptance, and development of reduced scales or single-item measures. Future studies can pave the way for the broad acceptance and utilization of AA methods by contributing to the resolution of these issues.

Klumb, Petra; Hoppmann, Christiane; Staats, Melanie (2006):

Division of Labor in German Dual-Earner Families: Testing Equity Theoretical Hypotheses.

In: *J Marriage and Family* 68 (4), S. 870–882. DOI: 10.1111/j.1741-3737.2006.00301.x.

Abstract:

On the basis of 52 German dual-earner couples with at least 1 child younger than 5 years, we tested the effects of an unequal division of labor on relationship satisfaction. We analyzed diary reports of time allocated to productive activities according to the actor-partner-interdependence model. Hierarchical linear models showed that rather than individual time allocated to household work, the absolute difference in partners' contribution to productive activities influenced relationship satisfaction. This reduction in satisfaction disappeared after accounting for perceived social appreciation of individual contributions. Models with gender-specific slopes showed the effect of input and output to be different for women and men. The findings indicate that a relative equity model best explains the effects of an unequal division of labor.

Klumb, Petra; Hoppmann, Christiane; Staats, Melanie (2006):

Work hours affect spouse's cortisol secretion--for better and for worse.

In: *Psychosomatic Medicine* 68 (5), S. 742–746. DOI: 10.1097/01.psy.0000233231.55482.ff.

Abstract:

OBJECTIVE\r\nIn a sample of 52 German dual-earner couples with at least one child under age 5, we examined the bodily costs and benefits of the amount of time each spouse spent on productive activities.\r\nMETHODS\r\nDiary reports of time allocated to formal and informal work activities were analyzed according to the Actor-Partner Interdependence model.\r\nRESULTS\r\nHierarchical linear models showed that each hour an individual allocated to market, as well as household work, increased his or her total cortisol concentration (by 192 and 134 nmol/l, respectively). Unexpectedly, the time the spouse allocated to paid work also raised an individual's total cortisol concentration (by 64 nmol/l). In line with our expectations, there was a tendency for the time the spouse allocated to household work to decrease the individual's cortisol concentration (by 81 nmol/l).\r\nCONCLUSIONS\r\nThis study contributes to the body of evidence on the complex nature of social relationships and complements the literature on specific working conditions and couples' well-being.

Knafl, Urs; Lehmann, Hugo; Riederer, Markus (2008):

Electromagnetic field measurements using personal exposimeters.

In: *Bioelectromagnetics* 29 (2), S. 160–162.

Abstract:

The goal of this brief communication is to call the attention of researchers to possible pit falls when using personal exposimeters (PEM) in epidemiological field studies. One example of problematic handling of PEMs is presented in detail, whereas other possible error sources and other aspects to be considered using such devices are outlined only briefly.

Knatz, Stephanie (2013):

Ecological momentary assessment of shame trends and subtypes throughout the binge-purge cycle.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 73 (9-B(E)). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-99060-374%26site%3dehost-live.

Abstract:

Despite extensive research documenting the role of negative affect in bulimic behaviors, little is known about the specific role that shame plays in relation to these behaviors. The present study examined temporal patterns of shame related to characterological and behavioral features over the course of a binge-purge episode. Thirty women with bulimic symptoms provided momentary self-reports of shame and other negative affect levels during a binge-purge episode. A multi-level factor analysis revealed three distinct subtypes of shame emerging on a momentary basis—shame about the body, and self-judgment (internal shame) and perceived judgment by others (external shame) about engaging in bulimic behaviors. Repeated measures ANOVA was used to identify changes in shame over the course of a bulimic episode. Analysis revealed changes in shame levels throughout a binge-purge episode and distinctive temporal trends for shame subtypes. These findings support the notion that shame is intimately tied to bulimic behaviors and that levels of shame vary depending on the feature or event to which they are tied. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Kneipp, Shawn M.; Welch, Dinah P.; Wood, Charles E.; Yucha, Carolyn B.; Yarandi, Hossein (2007):

Psychosocial and physiological stress among women leaving welfare.

In: *Western Journal of Nursing Research*.

Abstract:

Women receiving Temporary Assistance for Needy Families (TANF) report more stress and have poorer health than women in the general population. Studies suggest chronic stress may contribute to poor health via physiological mechanisms, yet little is known about these mechanisms in this population. This study examined psychosocial stress, salivary cortisol, 24-hr ambulatory blood pressure and heart rate, and health among 40 single mothers before and after exiting TANF. As a group, perceived stress decreased after leaving TANF (p = .02), with other measures of psychosocial and physiological stress remaining unchanged. Within participants, changes in psychosocial stress predicted depression and general health over time (adjusted R(2) = .30 and .22; p = .006 and .004, respectively). These findings indicate psychosocial stress is positively associated with depression and

negatively associated with general health as women exit welfare. Psychosocial stress was not associated with changes in physiologic indicators of stress.

Knestel, Andrea (2011):

Religious orientation and naturally occurring stress: Ecological momentary assessment of cardiovascular function.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (2-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-99160-012&site=ehost-live.

Abstract:

Research suggests that religious orientation may impact cardiovascular stress response. Historically, the concept of religious orientation focused on intrinsic and extrinsic religiousness as has research investigating the relationship between religious orientation and cardiovascular stress response. These findings indicate that older intrinsically religious adults demonstrate reduced blood pressure and heart rate reactivity to interpersonal laboratory stressors as compared to older extrinsically religious individuals. A more recent study found that pro-religious adults showed decreased cardiovascular reactivity to laboratory stressors as compared to adults with an intrinsic or non-religious orientation. Although these findings provide valuable information about the religion-health relationship, the study of religious orientation and cardiovascular stress response is still in its early stages. For example, the relationship between religious orientation and cardiovascular response to naturally occurring daily stressors has not been studied. Consequently, this study: (1) explored the relationship between religious orientation and the rate of occurrence of overall stress, interpersonal stress, and non-interpersonal stress, and (2) tested the hypothesis that individuals with a pro-religious orientation would display reduced cardiovascular response to naturally occurring interpersonal stressors as compared to the intrinsic and non-religious groups. Hypotheses were tested using a community sample (n=83) of middle-aged to older adults (40–65 years) with measures of religious orientation, stress, and 24-hour ambulatory blood pressure (ABP) and ambulatory heart rate (AHR). Findings from this study did not reveal statistically significant relationships between religious orientation and cardiovascular response to naturally occurring stress. Visual inspection of these non-significant results does show, however, that the pro-religious group experienced fewer stressors, specifically interpersonal stressors, over the course of a 24-hour period. Surprisingly, the pro-religious group also demonstrated considerable decreases in SBP, DBP, and HR responses to those stressors that they had identified as being the strongest in intensity as compared to the no stress (for SBP and HR), some stress (for SBP, DBP, and HR), and moderate stress (for SBP, DBP, and HR) categories. The intrinsic group showed the largest increases in cardiovascular response to the stressors they identified as being very strong. These observations suggest that religious orientation may be an important variable to consider when examining middle-aged and older adults? cardiovascular responding to stressors in naturalistic environments, particularly, interpersonal stressors. (PsycINFO Database Record (c) 2011 APA, all rights reserved)

Knols, Ruud H.; Bruin, Eling D.; Aufdemkampe, Geert; Uebelhart, Daniel; Aaronson, Neil K. (2009):

Reliability of ambulatory walking activity in patients with hematologic malignancies.

In: *Arch Phys Med Rehabil* 90 (1), S. 58–65. DOI: 10.1016/j.apmr.2008.06.020.

Abstract:

OBJECTIVES\r\nTo determine the relative and absolute reliability of the assessment of ambulatory walking activity during 2 consecutive weeks in patients with hematologic malignancies recovering at home from their medical treatment and to compare the physical activity level of hematologic cancer patients after high-dose chemotherapy with healthy subjects.\r\nDESIGN\r\nTest-retest study of 2 consecutive 7-day recordings using the microprocessor-based step accelerometer 3 (SAM3).\r\nSETTING\r\nHome and community.\r\nPARTICIPANTS\r\nPatients (n=23) with hematologic malignancies recovering from high-dose chemotherapy and healthy controls (n=30).\r\nINTERVENTIONS\r\nNot applicable.\r\nMAIN OUTCOME MEASURES\r\nThe intraclass correlation coefficient (ICC(3,1)) and its 95% confidence interval (CI), SE of measurement procedure and its 95% CI, the smallest detectable difference (SDD), the coefficient of variation (CV), and t tests for the variables total steps and peak activity.\r\nRESULTS\r\nThe day-to-day and week-to-week CVs for walking activity and peak activity were 35.17% and 13.17% and 18.61% and 6.90%, respectively. For relative reliability, the ICCs for 2 consecutive 7-day recordings including the 95% CI for total steps and peak activity were 0.90 (95% CI, 0.75-0.98) and 0.85 (95% CI, 0.66-0.94), respectively. The absolute reliability for total steps and peak activity including the SE of measurement procedure and the 95% CI were 564 (95% CI, +/-1106) and 2.42 steps (95% CI, +/-4.74), respectively, for 2 consecutive 7-day recordings. The week-to-week SDD was 1564 for total steps and 6.70 for peak activity. The 7-day mean for total step activity was 5355 for the patients with hematologic malignancies and 6364 for healthy subjects (P<0.05).\r\nCONCLUSIONS\r\nThe results of this study indicate that there is good relative reliability for the assessment of 2 consecutive 7-day recordings of ambulatory walking activity, and it showed that the SDD derived from this sample may be useful in detecting changes in daily walking activity in hematologic cancer patients who

are recovering from intensive medical treatment. The study also documented compromised levels of ambulatory walking activity among hematologic cancer patients recovering from high-dose chemotherapy as compared with healthy controls.

Knouse, Laura E.; Mitchell, John T.; Brown, Leslie H.; Silvia, Paul J.; Kane, Michael J.; Myin-Germeys, Inez; Kwapil, Thomas R. (2008):

The expression of adult ADHD symptoms in daily life: an application of experience sampling methodology.

In: *J Atten Disord* 11 (6), S. 652–663. DOI: 10.1177/1087054707299411.

Abstract:

OBJECTIVE\r\nTo use experience sampling method (ESM) to examine the impact of inattentive and hyperactive-impulsive ADHD symptoms on emotional well-being, activities and distress, cognitive impairment, and social functioning assessed in the daily lives of young adults. The impact of subjective appraisals on their experiences is also examined.\r\nMETHOD\r\nParticipants (n = 206) complete up to 56 in-the-moment assessments of mood and current activities using Personal Digital Assistants for 1 week.\r\nRESULTS\r\nMultilevel modeling techniques reveal that ADHD inattentive and hyperactive-impulsive symptoms differentially relate to daily experiences. Higher inattentive symptoms are associated with indices of general distress, including less positive and more negative mood as well as more concentration problems. Higher hyperactive-impulsive symptoms are associated with reduced sensitivity to contextual factors in perceptions of situations.\r\nCONCLUSION\r\nThese findings demonstrate predictive validity for adult self-report of ADHD symptoms in a general population sample and suggest future research directions using ESM.

Köblitz, Amber R.; Magnan, Renee E.; McCaul, Kevin D.; O'Neill, H. Katherine; Crosby, Ross; Dillard, Amanda J. (2009):

Smokers' thoughts and worries: a study using ecological momentary assessment.

In: *Health Psychol* 28 (4), S. 484–492. DOI: 10.1037/a0014779.

Abstract:

OBJECTIVE\r\nThe purpose of this study was to investigate smokers' thoughts and worries about their smoking behavior. Researchers have sometimes asked smokers to make such self-assessments but typically using retrospective summary judgments.\r\nDESIGN\r\nUsing ecological momentary assessment, community and student smokers reported five times daily during two separate 1-week intervals.\r\nMAIN OUTCOME MEASURES\r\nSmokers reported their thoughts about smoking, worries about smoking, and level of contemplation to quit smoking.\r\nRESULTS\r\nSmokers reported thinking negatively about their smoking 26.8% of the time they had a cigarette. The most frequent thoughts reported by smokers related to immediate reinforcement of smoking (e.g., \"How I smell like cigarettes\"). However, smokers reported more intense worry about thoughts related to health concerns (e.g., \"Symptoms I'm having because of smoking\"). The occurrence of negative thoughts was significantly and positively related to contemplation about quitting, worry about smoking, and risk perceptions. Finally, self-reported worry intensity was more strongly related to contemplation of quitting than negative thought occurrence.\r\nCONCLUSION\r\nOur results show that thoughts about smoking (i.e., cognitions) and feelings about smoking (i.e., worry) are loosely connected and it is feelings rather than cognitions that are most related to contemplation to quit.

Kocyigit, Ismail; Eroglu, Eray; Orscelik, Ozcan; Unal, Aydin; Gungor, Ozkan; Ozturk, Fahir et al. (2014):

Pentraxin 3 as a novel bio-marker of inflammation and endothelial dysfunction in autosomal dominant polycystic kidney disease.

In: *J Nephrol* 27 (2), S. 181–186. DOI: 10.1007/s40620-014-0045-4.

Abstract:

BACKGROUND/AIMS: Cardiovascular disease (CVD) is the main cause of mortality in patients with autosomal dominant polycystic kidney disease (ADPKD). Prior to hypertension early vascular changes and inflammation have been reported. We aimed to investigate long pentraxin 3 (PTX-3), which has been recently described as a biomarker of inflammation, and its relation with endothelial dysfunction in early ADPKD patients. METHODS: Twenty-five ADPKD patients without hypertension and 25 healthy controls were studied cross-sectionally. Hypertension was diagnosed with ambulatory blood pressure monitoring. Plasma concentrations of PTX-3 and proteinuria levels were obtained from each participant. Endothelial dysfunction was assessed using ischemia-induced forearm flow-mediated vasodilation (FMD). RESULTS: PTX-3 levels were higher in ADPKD patients compared to healthy controls (4.2 [1.2-10.1] vs. 1.4 [0.4-3.1] ng/ml, $p < 0.001$). Additionally, C-reactive protein (CRP) and

proteinuria levels were higher in ADPKD patients than in healthy subjects. In the whole cohort, PTX-3 correlated negatively with FMD (r: -0.58, p < 0.001) and positively with proteinuria (r: 0.56, p < 0.001) and uric acid (r: 0.57, p < 0.001). In all subjects, FMD was independently predicted by PTX-3, but not by uric acid, CRP or proteinuria. CONCLUSION: PTX-3 may be a better biomarker of inflammation than CRP to predict endothelial dysfunction in normotensive ADPKD patients with well-preserved kidney function. Hence, inflammation which is demonstrated by PTX-3 may potentially be used to predict future CVD in this population.

Kocyigit, Ismail; Gungor, Ozkan; Unal, Aydin; Orscelik, Ozcan; Eroglu, Eray; Tunca, Onur et al. (2014):

The effect of strict volume control on cardiac biomarker and arterial stiffness in peritoneal dialysis patients.

In: *Clin Nephrol* 81 (4), S. 238–246. DOI: 10.5414/CN108148.

Abstract:

Introduction: Arterial stiffness is a risk marker for cardiovascular events in peritoneal dialysis (PD) patients. Strict volume control strategy has been shown to result in better cardiac functions and control of hypertension in these patients. The aim of the study was to identify the determinants of arterial stiffness and evaluate the changes in cardiac biomarkers in PD patients under strict volume control strategy. Methods: 58 PD patients were enrolled into this prospective observational study. Arterial stiffness determined by aortic pulse wave velocity (PWV), echocardiography, ambulatory blood pressure and NT-pro-BNP levels were measured at baseline and at first year. Results: The mean age of the patients was 46.4 +/- 14 years. 30 patients were on automated PD (APD) and 28 on continuous ambulatory PD (CAPD) group. In both groups, there were significant differences in PWV values at baseline and at the end of the study. A similar decrease was observed with NT-proBNP and PWV levels. In addition, a significant improvement was found in echocardiographic parameters in all patients. Comparison of APD and CAPD groups with respect to change in one year, showed no difference in echocardiographic findings, while the reduction in PWV, NTproBNP and blood pressure values was higher in the CAPD group. Conclusions: In PD patients, strict volume control leads to a reduction in NT-pro-BNP levels, better control of blood pressure and significant improvements in cardiac functions and arterial stiffness.

Kolar, David Raphael; Burger, Arne; Hammerle, Florian; Jenetzky, Ekkehart (2014):

Aversive tension of adolescents with anorexia nervosa in daily course: a case-controlled and smartphone-based ambulatory monitoring trial.

In: *BMJ Open* 4 (4), S. e004703. DOI: 10.1136/bmjopen-2013-004703.

Abstract:

INTRODUCTION: Monitoring and reduction of aversive tension is a core issue in dialectical behaviour therapy of patients. It has been shown that aversive tension is increased in adult borderline personality disorder and is linked to low emotion labelling ability. However, until now there is no documented evidence that patients with anorexia nervosa suffer from aversive tension as well. Furthermore the usability of a smartphone application for ambulatory monitoring purposes has not been sufficiently explored. METHODS AND ANALYSIS: We compare the mean and maximum self-reported aversive tension in 20 female adolescents (12-19 years) with anorexia nervosa in outpatient treatment with 20 healthy controls. They are required to answer hourly, over a 2-day period, that is, about 30 times, four short questions on their smartphone, which ensures prompt documentation without any recall bias. At the close out, the participants give a structured usability feedback on the application and the procedure. ETHICS AND DISSEMINATION: The achieved result of this trial has direct relevance for efficient therapy strategies and is a prerequisite for trials regarding dialectical behaviour therapy in anorexia nervosa. The results will be disseminated through peer-review publications. The ethics committee of the regional medical association in Mainz, Germany approved the study protocol under the reference number 837.177.13. TRIAL REGISTRATION NUMBER: The trial is registered at the German clinical trials registration under the reference number DRKS00005228.

Kolesnik, M.; Sokolova, M. (2014):

Predictors of cardiac arrhythmias in patients with arterial hypertension during exercise stress testing.

In: *Georgian Med News* (227), S. 37–42.

Abstract:

Arterial hypertension is an important risk factor for atrial and ventricular arrhythmias. 203 male patients were examined in order to identify predictors of cardiac arrhythmias in patients with arterial hypertension during exercise stress testing. All participants were studied by 24-hour ambulatory blood pressure monitoring, transthoracic echocardiography, an ultrasound scan of the carotid arteries and treadmill test. 47,3% of patients presented cardiac arrhythmias during exercise stress testing. The left ventricular mass, diastolic function and carotid intima-media thickness were found to be independent predictors of exercise-induced arrhythmias. The use of the exercise stress testing may be reasonable for additional risk stratification in hypertensive patients.

Kollias, Anastasios; Ntineri, Angeliki; Stergiou, George S. (2014):

Is white-coat hypertension a harbinger of increased risk?

In: *Hypertens Res. DOI:* 10.1038/hr.2014.35.

Abstract:

White-coat hypertension is defined by elevated office and normal out-of-office blood pressure (home or ambulatory) in untreated subjects. This condition is common in clinical practice and requires appropriate work-up for detection and management. Many studies have examined the relationship between white-coat hypertension and cardiovascular risk but with marked heterogeneity in the definitions and methodology applied. Thus, the results have been inconsistent leading to confusion in scientific research and clinical practice. Some but not all the relevant studies suggested that white-coat hypertension is associated with subclinical target-organ damage, yet the cross-sectional design of these studies and the fact that these indices are only surrogate end points do not allow firm conclusions to be drawn. In recent years, longitudinal studies have examined the prognostic significance of white-coat hypertension in terms of cardiovascular morbidity and mortality. Most of them indicate that white-coat hypertensive compared with normotensive subjects present a moderate-in most cases not significant-increase in risk. Meta-analyses of raw data from large databases, such as the International Database on Ambulatory blood pressure and Cardiovascular Outcomes (IDACO) and the International Database on HOme blood pressure in relation to Cardiovascular Outcomes (IDHOCO) allowed separate powered analyses in untreated subjects and provided a clearer picture regarding the modest risk associated with white-coat hypertension, especially in the long term. White-coat hypertension is regarded as an intermediate phenotype between normotension and hypertension associated with increased risk of developing sustained hypertension, and therefore requires regular follow-up using nonpharmacological measures.Hypertension Research advance online publication, 6 March 2014; doi:10.1038/hr.2014.35.

Kolodyazhniy, Vitaliy; Späti, Jakub; Frey, Sylvia; Götz, Thomas; Wirz-Justice, Anna; Kräuchi, Kurt et al. (2011):

Estimation of human circadian phase via a multi-channel ambulatory monitoring system and a multiple regression model.

In: *Journal of biological rhythms* 26 (1), S. 55–67.

Abstract:

Reliable detection of circadian phase in humans using noninvasive ambulatory measurements in real-life conditions is challenging and still an unsolved problem. The masking effects of everyday behavior and environmental input such as physical activity and light on the measured variables need to be considered critically. Here, we aimed at developing techniques for estimating circadian phase with the lowest subject burden possible, that is, without the need of constant routine (CR) laboratory conditions or without measuring the standard circadian markers, (rectal) core body temperature (CBT), and melatonin levels. In this validation study, subjects (N = 16) wore multi-channel ambulatory monitoring devices and went about their daily routine for 1 week. The devices measured a large number of physiological, behavioral, and environmental variables, including CBT, skin temperatures, cardiovascular and respiratory function, movement/posture, ambient temperature, and the spectral composition and intensity of light received at eye level. Sleep diaries were logged electronically. After the ambulatory phase, subjects underwent a 32-h CR procedure in the laboratory for measuring unmasked circadian phase based on the "midpoint" of the salivary melatonin profile. To overcome the complex masking effects of confounding variables during ambulatory measurements, multiple regression techniques were applied in combination with the cross-validation approach to subject-independent prediction of circadian phase. The most accurate estimate of circadian phase was achieved using skin temperatures, irradiance for ambient light in the blue spectral band, and motion acceleration as predictors with lags of up to 24 h. Multiple regression showed statistically significant improvement of variance of prediction error over the traditional approaches to determining circadian phase based on single predictors (motion acceleration or sleep log), although CBT was intentionally not included as the predictor. Compared to CBT alone, our method resulted in a 40% smaller range of prediction errors and a nonsignificant reduction of error variance. The proposed noninvasive measurement method could find applications in sleep

medicine or in other domains where knowing the exact endogenous circadian phase is important (e.g., for the timing of light therapy).

Kolodziejczyk, J. K.; Norman, G. J.; Barrera-Ng, A.; Dillon, L.; Marshall, S.; Arredondo, E. et al. (2013):

Feasibility and effectiveness of an automated bilingual text message intervention for weight loss: pilot study.

In: *JMIR.Res.Protoc.* 2 (2), S. e48. DOI: 10.2196/resprot.2789.

Abstract:

BACKGROUND: Little is known about the feasibility and acceptability of tailored text message based weight loss programs for English and Spanish-language speakers. OBJECTIVE: This pilot study evaluated the feasibility, acceptability, and estimated impact of a tailored text message based weight loss program for English and Spanish-language speakers. The purpose of this pilot study was to inform the development of a full-scale randomized trial. METHODS: There were 20 overweight or obese participants (mean age 40.10, SD 8.05; 8/20, 40% male; 9/20, 45% Spanish-speakers) that were recruited in San Diego, California, from March to May 2011 and evaluated in a one-group pre/post clinical trial. For 8 weeks, participants received and responded to 3-5 text messages daily sent from a fully automated text messaging system. They also received printed weight loss materials and brief 10-15 minute weekly counseling calls. To estimate the impact of the program, the primary outcome was weight (kg) measured during face-to-face measurement visits by trained research staff. Pre and post differences in weight were analyzed with a one-way repeated measures analysis of variance. Differences by language preference at both time points were analyzed with t tests. Body mass index and weight management behaviors also were examined. Feasibility and acceptability were determined by recruitment success, adherence (ie, percentage of replies to interactive text messages and attrition), and participant satisfaction. RESULTS: Participants who completed the final assessment (N=18) decreased body weight by 1.85 kg (F1,17=10.80, P=.004, CI 0.66-3.03, eta(2)=0.39). At both time points, there were no differences in weight by language preference. Participants responded to 88.04% (986/1120) of interactive text messages, attrition rate was 10% (2/20), and 94% (19/20) of participants reported satisfaction with the program. CONCLUSIONS: This fully automated text message based weight program was feasible with English and Spanish-speakers and may have promoted modest weight loss over an 8-week period. TRIAL REGISTRATION: Clinicaltrials.gov NCT01171586; http://clinicaltrials.gov/ct2/show/NCT01171586 (Archived by WebCite at http://www.webcitation.org/6Ksr6dl7n)

Komulainen, Emma; Meskanen, Katarina; Lipsanen, Jari; Lahti, Jari Marko; Jylha, Pekka; Melartin, Tarja et al. (2014):

The effect of personality on daily life emotional processes.

In: *PLoS One* 9 (10), S. e110907. DOI: 10.1371/journal.pone.0110907.

Abstract:

Personality features are associated with individual differences in daily emotional life, such as negative and positive affectivity, affect variability and affect reactivity. The existing literature is somewhat mixed and inconclusive about the nature of these associations. The aim of this study was to shed light on what personality features represent in daily life by investigating the effect of the Five Factor traits on different daily emotional processes using an ecologically valid method. The Experience Sampling Method was used to collect repeated reports of daily affect and experiences from 104 healthy university students during one week of their normal lives. Personality traits of the Five Factor model were assessed using NEO Five Factor Inventory. Hierarchical linear modeling was used to analyze the effect of the personality traits on daily emotional processes. Neuroticism predicted higher negative and lower positive affect, higher affect variability, more negative subjective evaluations of daily incidents, and higher reactivity to stressors. Conscientiousness, by contrast, predicted lower average level, variability, and reactivity of negative affect. Agreeableness was associated with higher positive and lower negative affect, lower variability of sadness, and more positive subjective evaluations of daily incidents. Extraversion predicted higher positive affect and more positive subjective evaluations of daily activities. Openness had no effect on average level of affect, but predicted higher reactivity to daily stressors. The results show that the personality features independently predict different aspects of daily emotional processes. Neuroticism was associated with all of the processes. Identifying these processes can help us to better understand individual differences in daily emotional life.

Konen, Tanja; Dirk, Judith; Schmiedek, Florian (2014):

Cognitive benefits of last night's sleep: daily variations in children's sleep behavior are related to working memory fluctuations.

In: *J Child Psychol Psychiatry. DOI:* 10.1111/jcpp.12296.

Abstract:

BACKGROUND: Recent studies have suggested substantial fluctuations of cognitive performance in adults both across and within days, but very little is known about such fluctuations in children. Children's sleep behavior might have an important influence on their daily cognitive resources, but so far this has not been investigated in terms of naturally occurring within-person variations in children's everyday lives. METHODS: In an ambulatory assessment study, 110 elementary school children (8-11 years old) completed sleep items and working memory tasks on smartphones several times per day in school and at home for 4 weeks. Parents provided general information about the children and their sleep habits. RESULTS: We identified substantial fluctuations in the children's daily cognitive performance, self-reported nightly sleep quality, time in bed, and daytime tiredness. All three facets were predictive of performance fluctuations in children's school and daily life. Sleep quality and time in bed were predictive of performance in the morning, and afternoon performance was related to current tiredness. The children with a lower average performance level showed a higher within-person coupling between morning performance and sleep quality. CONCLUSIONS: Our findings contribute important insights regarding a potential source of performance fluctuations in children. The effect of varying cognitive resources should be investigated further because it might impact children's daily social, emotional, and learning-related functioning. Theories about children's cognitive and educational development should consider fluctuations on micro-longitudinal scales (e.g., day-to-day) to identify possible mechanisms behind long-term changes.

Konrad, T.; Franke, S.; Schneider, F.; Bär, F.; Vetter, G.; Winkler, K. (2011):

Nocturnal blood pressure but not insulin resistance influences endothelial function in treated hypertensive patients.

In: *J Hum Hypertens* 25 (1), S. 18–24.

Abstract:

The impact of insulin sensitivity, casual blood pressure and 24-h ambulatory blood pressure on endothelial function was studied in treated hypertensive subjects. Flow-mediated dilatation of the brachial artery after reperfusion was used to determine endothelial function. Insulin sensitivity indices were obtained by using the homeostasis model assessment, after 75 g Dextrose oral glucose tolerance tests (Matsuda index) and the euglycemic hyperinsulinemic clamp (M-value) in 49 patients with arterial hypertension. The insulin sensitivity indices were compared with healthy controls matched for body weight, age and sex (n=23). Hypertensive patients under therapy were insulin resistant, had higher LDL-cholesterol levels, higher blood pressure and lower endothelial function than healthy controls. Flow-mediated dilatation showed, in the study population being treated for arterial hypertension, no relationships of all insulin sensitivity indices with flow-mediated dilatation, casual blood pressure in the morning before the tests and 24-h ambulatory blood pressure. Flow-mediated dilatation was strongly influenced by nocturnal systolic and diastolic 24-h ambulatory blood pressure (systolic: R^2=0.0943, P<0.05; diastolic: R^2=0.0947, P<0.05). Therefore, endothelial function in these patients is predominantly influenced by nocturnal systolic and diastolic blood pressure and not by insulin sensitivity.

Kööts, Liisi; Realo, Anu; Allik, Jüri (2012):

Relationship between linguistic antonyms in momentary and retrospective ratings of happiness and sadness.

In: *Journal of Individual Differences* 33 (1), S. 43–53. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-30352-006&site=ehost-live;liisi.koots@ut.ee.

Abstract:

Momentary ratings of affective states with a pair of strict antonyms (“happy” vs. “sad”) were studied with an experience-sampling method in a group of 110 participants during 14 consecutive days at 7 randomly determined occasions per day. Before and after the experimental session participants also retrospectively rated how happy or sad they had been during the previous 2 weeks. Multilevel analysis showed that, at the level of single measurement trials, the momentary ratings of happiness and sadness were moderately negatively correlated (r = –.32, p < .001). A between-subject correlation of the two antonyms, however, was in a positive direction (r = .13, p = .123). Participants experienced mixed feelings during a considerable number of measurement

trials, whereas the tendency to feel mixed emotions was predicted by all Big Five personality traits except Agreeableness. A configural frequency analysis (CFA) demonstrated that, although there was no strict bipolarity between momentary ratings of happiness and sadness, they were nevertheless used in an exclusive manner in many occasions. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Kostandonis, Dimitrios; Papadopoulos, Vassilios; Toumanidis, Savvas; Papamichael, Christos; Kanakakis, Ioannis; Zakopoulos, Nikolaos (2008):

Topography and severity of coronary artery disease in white-coat hypertension.

In: *European journal of internal medicine* 19 (4), S. 280–284.

Abstract:

BACKGROUND:

White-coat hypertension (WCH) has been evaluated as a risk factor for cardiovascular disease. In this study, the role of WCH is evaluated in a cohort of patients with suspected coronary artery disease with both coronary angiography and non-invasive techniques.

METHODS:

One hundred patients with suspected coronary artery disease underwent coronary angiography, 24-h ambulatory blood pressure monitoring (ABPM), and ultrasound imaging of the myocardium and carotids. The lesions in percentage of stenosis in the left coronary artery stem (LM), left anterior descending ramus (LAD), left circumflex artery (LCX), diagonal artery (D1), and right coronary artery (RCA), along with the Gensini score (GS), were recorded. After a series of manual blood pressure measurements, the patients were divided into two groups (patients with and patients without WCH).

RESULTS:

GS was higher in the WCH group (P=0.042), a difference that could be attributed to lesions in the LAD (P=0.007). GS correlated significantly with left ventricular end-diastolic diameter (LVEDD - P=0.041), left ventricular end-systolic diameter (LVESD - P=0.005), end-diastolic volume (EDV - P=0.042), end-systolic volume (ESV - P=0.004), LvMass/BSA (P=0.012), right internal carotid artery intima-media thickness (RICA - P=0.018), left internal carotid artery intima-media thickness (LICA - P=0.021), and their mean (MICA - P=0.005) in the WCH group but not in normotensives.

CONCLUSIONS:

Coronary disease may be more severe among patients with WCH than among those without. In this group, data from myocardial and carotid ultrasound may help to estimate coronary artery disease.

Koster, A.; Caserotti, P.; Patel, K. V.; Matthews, C. E.; Berrigan, D.; van Domelen, D. R. et al. (2012):

Association of sedentary time with mortality independent of moderate to vigorous physical activity.

In: *PLoS One* 7 (6), S. e37696. DOI: 10.1371/journal.pone.0037696.

Abstract:

BACKGROUND: Sedentary behavior has emerged as a novel health risk factor independent of moderate to vigorous physical activity (MVPA). Previous studies have shown self-reported sedentary time to be associated with mortality; however, no studies have investigated the effect of objectively measured sedentary time on mortality independent of MVPA. The objective our study was to examine the association between objectively measured sedentary time and all-cause mortality. METHODS: 7-day accelerometry data of 1906 participants aged 50 and over from the U.S. nationally representative National Health and Nutrition Examination Survey (NHANES) 2003-2004 were analyzed. All-cause mortality was assessed from the date of examination through December 31, 2006. RESULTS: Over an average follow-up of 2.8 years, there were 145 deaths reported. In a model adjusted for sociodemographic factors, lifestyle factors, multiple morbidities, mobility limitation, and MVPA, participants in third quartile (hazard ratio (HR):4.05; 95%CI:1.55-10.60) and fourth quartile (HR:5.94; 95%CI: 2.49-14.15) of having higher percent sedentary time had a significantly increased risk of death compared to those in the lowest quartile. CONCLUSIONS: Our study suggests that sedentary behavior is a risk factor for mortality independent of MVPA. Further investigation, including studies with longer follow-up, is needed to address the health consequences of sedentary behavior

Koval, P.; Ogrinz, B.; Kuppens, P.; van Den Bergh, O.; Tuerlinckx, F.; Sutterlin, S. (2013):

Affective instability in daily life is predicted by resting heart rate variability.

In: *PLoS.One.* 8 (11), S. e81536. DOI: 10.1371/journal.pone.0081536.

Abstract:

Previous research has shown that being affectively unstable is an indicator of several forms of psychological maladjustment. However, little is known about the mechanisms underlying affective instability. Our research aims to examine the possibility that being prone to extreme fluctuations in one's feelings is related to maladaptive emotion regulation. We investigated this hypothesis by relating affective instability, assessed in daily life using the experience sampling method, to self-reported emotion regulation strategies and to parasympathetically mediated heart rate variability (HRV), a physiological indicator of emotion regulation capacity. Results showed that HRV was negatively related to instability of positive affect (as measured by mean square successive differences), indicating that individuals with lower parasympathetic tone are emotionally less stable, particularly for positive affect

Koval, P.; Pe, M. L.; Meers, K.; Kuppens, P. (2013):

Affect Dynamics in Relation to Depressive Symptoms: Variable, Unstable or Inert?

In: *Emotion* (1528-3542 (Linking)). DOI: 10.1037/a0033579.

Abstract:

Depression not only involves disturbances in prevailing affect, but also in how affect fluctuates over time. Yet, precisely which patterns of affect dynamics are associated with depressive symptoms remains unclear; depression has been linked with increased affective variability and instability, but also with greater resistance to affective change (inertia). In this paper, we argue that these paradoxical findings stem from a number of neglected methodological/analytical factors, which we address using a novel paradigm and analytic approach. Participants (N = 99), preselected to represent a wide range of depressive symptoms, watched a series of emotional film clips and rated their affect at baseline and following each film clip. We also assessed participants' affect in daily life over 1 week using experience sampling. When controlling for overlap between different measures of affect dynamics, depressive symptoms were independently associated with higher inertia of negative affect in the lab, and with greater negative affect variability both in the lab and in daily life. In contrast, depressive symptoms were not independently related to higher affective instability either in daily life or in the lab. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Krajnik, Malgorzata; Damps-Konstanska, Iwona; Gorska, Lucyna; Jassem, Ewa (2010):

A portable automatic cough analyser in the ambulatory assessment of cough.

In: *Biomed Eng Online* 9, S. 17. DOI: 10.1186/1475-925X-9-17.

Abstract:

BACKGROUND\r\nCough is one of the main symptoms of advanced lung disease. However, the efficacy of currently available treatment remains unsatisfactory. Research into the new antitussives requires an objective assessment of cough.\r\nMETHODS\r\nThe aim of the study was to test the feasibility of a new automatic portable cough analyser and assess the correlation between subjective and objective evaluations of cough in 13 patients with chronic cough. The patients' individual histories, a cough symptom score and a numeric cough scale (1-10) were used as a subjective evaluation of cough and a computerized audio-timed recorder was used to measure the frequency of coughing.\r\nRESULTS\r\nThe pre-clinical validation has shown that an automated cough analyser is an accurate and reliable tool for the ambulatory assessment of chronic cough. In the clinical part of the experiment for the daytime, subjective cough scoring correlated with the number of all cough incidents recorded by the cough analyser (r = 0.63; p = 0.022) and the number of cough incidents per hour (r = 0.60; p = 0.03). However, there was no relation between cough score and the time spent coughing per hour (r = 0.48; p = 0.1). As assessed for the night-time period, no correlation was found between subjective cough scoring and the number of incidents per hour (r = 0.29; p = 0.34) or time spent coughing (r = 0.26; p = 0.4).\r\nCONCLUSION\r\nAn automated cough analyser seems to be a feasible tool for the ambulatory monitoring of cough. There is a moderate correlation between subjective and objective assessments of cough during the daytime, whereas the discrepancy in the evaluation of night-time coughing might suggest that subjective analysis is unreliable.

Kramer, I.; Simons, C. J.; Wigman, J. T.; Collip, D.; Jacobs, N.; Derom, C. et al. (2013):

Time-Lagged Moment-to-Moment Interplay Between Negative Affect and Paranoia: New Insights in the Affective Pathway to Psychosis.

In: *Schizophr.Bull* (0586-7614 (Linking)). DOI: 10.1093/schbul/sbs194.

Abstract:

Evidence suggests that affect plays a role in the development of psychosis but the underlying mechanism requires further investigation. This study examines the moment-to-moment dynamics between negative affect (NA) and paranoia prospectively in daily life. A female general population sample (n = 515) participated in an experience sampling study. Time-lagged analyses between increases in momentary NA and subsequent momentary paranoia were examined. The impact of childhood adversity, stress sensitivity (impact of momentary stress on momentary NA), and depressive symptoms on these time-lagged associations, as well as associations with follow-up self-reported psychotic symptoms (Community Assessment of Psychic Experiences and the Symptom Checklist-90-Revised) were investigated. Moments of NA increase resulted in a significant increase in paranoia over 180 subsequent minutes. Both stress sensitivity and depressive symptoms impacted on the transfer of NA to paranoia. Stress sensitivity moderated the level of increase in paranoia during the initial NA increase, while depressive symptoms increased persistence of paranoid feelings from moment to moment. Momentary paranoia responses to NA increases were associated with follow-up psychotic symptoms. Examination of microlevel momentary experience may thus yield new insights into the mechanism underlying co-occurrence of altered mood states and psychosis. Knowledge of the underlying mechanism is required in order to determine source and place where remediation should occur

Krane-Gartiser, Karoline; Henriksen, Tone Elise Gjotterud; Morken, Gunnar; Vaaler, Arne; Fasmer, Ole Bernt (2014):

Actigraphic assessment of motor activity in acutely admitted inpatients with bipolar disorder.

In: *PLoS One* 9 (2), S. e89574. DOI: 10.1371/journal.pone.0089574.

Abstract:

INTRODUCTION: Mania is associated with increased activity, whereas psychomotor retardation is often found in bipolar depression. Actigraphy is a promising tool for monitoring phase shifts and changes following treatment in bipolar disorder. The aim of this study was to compare recordings of motor activity in mania, bipolar depression and healthy controls, using linear and nonlinear analytical methods. MATERIALS AND METHODS: Recordings from 18 acutely hospitalized inpatients with mania were compared to 12 recordings from bipolar depression inpatients and 28 healthy controls. 24-hour actigraphy recordings and 64-minute periods of continuous motor activity in the morning and evening were analyzed. Mean activity and several measures of variability and complexity were calculated. RESULTS: Patients with depression had a lower mean activity level compared to controls, but higher variability shown by increased standard deviation (SD) and root mean square successive difference (RMSSD) over 24 hours and in the active morning period. The patients with mania had lower first lag autocorrelation compared to controls, and Fourier analysis showed higher variance in the high frequency part of the spectrum corresponding to the period from 2-8 minutes. Both patient groups had a higher RMSSD/SD ratio compared to controls. In patients with mania we found an increased complexity of time series in the active morning period, compared to patients with depression. The findings in the patients with mania are similar to previous findings in patients with schizophrenia and healthy individuals treated with a glutamatergic antagonist. CONCLUSION: We have found distinctly different activity patterns in hospitalized patients with bipolar disorder in episodes of mania and depression, assessed by actigraphy and analyzed with linear and nonlinear mathematical methods, as well as clear differences between the patients and healthy comparison subjects.

Krause, Amanda E.; North, Adrian C.; Hewitt, Lauren Y. (2014):

The Role of Location in Everyday Experiences of Music.

In: *Psychology of Popular Media Culture*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-44153-001%26site%3dehost-live.

Abstract:

Mehrabian and Russell's (1974) Pleasure–Arousal–Dominance model states that a propensity to approach/avoid an environment can be conceptualized in terms of the pleasure and arousal it elicits and one's degree of dominance therein. Using the Experience Sampling Method, 177 individuals provided responses concerning Mehrabian and Russell's model throughout 1 wk regarding music experiences that occurred in their daily life (including how the music was heard and how their responses related to the listening location). Results indicate that the time of day and day of week are related to where music is experienced, and

that the consequences of what was heard are related to both time and location. Although music was experienced more often in private locations than in public overall, interesting patterns of music experiences that occurred in public locations demonstrate in detail how music listening varies by location. Specifically, portable devices were associated with positive responses, which contrasted sharply with the responses to music broadcasted publicly in public settings. Participants' ratings of choice, liking, and arousal demonstrated the importance of considering choice as an indication of dominance, such that music usage is consistent with Mehrabian and Russell's model, and has functions that vary according to the specific characteristics of the situation. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Kristensen, Peter Lund; Korsholm, L.; Møller, N. C.; Wedderkopp, N.; Andersen, Lars Bo; Froberg, K. (2008):

Sources of variation in habitual physical activity of children and adolescents: the European youth heart study.

In: *Scandinavian Journal of Medicine & Science in Sports* 18 (3), S. 298–308.

Abstract:

The present study examined the influence of gender, maturity state, seasonality, type of measurement day and socioeconomic status (SES) on habitual physical activity in 8-10-year-old children and 14-16-year-old adolescents (n=1318). Physical activity was assessed objectively by accelerometry. The results showed a significant effect of the type of measurement day on physical activity with a general pattern of lower activity levels in weekends compared with weekdays. Furthermore, higher physical activity levels were observed during the months of spring/summer compared with the months of autumn/winter for the 8-10-year-olds, whereas no significant effect of months was observed for the 14-16-year-olds, possibly due to exam preparations and lack of physical activity registration during the months of summer for this cohort. SES was unrelated to physical activity in the 8-10-year-olds, whereas an inverse association was observed in the 14-16-year-olds. However, a post hoc analysis provided strong evidence that this latter result was biased by the accelerometers inability to pick up bicycling activities. Finally, boys were more physically active compared with girls, and maturity state was unrelated to physical activity. The results could prove useful for working out strategies to prevent inactivity and for adjusting for temporal sources of variation in physical activity in future studies.

Kristjánsdóttir ÓB, Fors EA, Eide E, Finset A, Stensrud TL, van Dulmen S, Wigers SH, Eide H. (2013):

A smartphone-based intervention with diaries and therapist feedback to reduce catastrophizing and increase functioning in women with chronic widespread pain. Part 2: 11-month follow-up results of a randomized trial.

In: *J Med Internet Res* 15 (3), S. 152–170. DOI: 10.1037/t00297-000;

Abstract:

Background: Internet-based interventions are increasingly used to support self-management of individuals with chronic illnesses. Web-based interventions may also be effective in enhancing self-management for individuals with chronic pain, but little is known about long-term effects. Research on Web-based interventions to support self-management following participation in pain management programs is limited. Objective: The aim is to examine the long-term effects of a 4-week smartphone-intervention with diaries and therapist-written feedback following an inpatient chronic pain rehabilitation program, previously found to be effective at short-term and 5-month follow-ups. Methods: 140 women with chronic widespread pain, participating in a 4-week inpatient rehabilitation program, were randomized into two groups: with or without a smartphone intervention after the rehabilitation. The smartphone intervention consisted of one face-to-face individual session and 4 weeks of written communication via a smartphone, consisting of three diaries daily to elicit pain-related thoughts, feelings, and activities, as well as daily personalized written feedback based on cognitive behavioral principles from a therapist. Both groups were given access to an informational website to promote constructive self-management. Outcomes were measured with self-reported paper-and-pencil format questionnaires with catastrophizing as the primary outcome measure. Secondary outcomes included daily functioning and symptom levels, acceptance of pain, and emotional distress. Results: By the 11-month follow-up, the favorable between-group differences previously reported post-intervention and at 5-month follow-up on catastrophizing, acceptance, functioning, and symptom level were no longer evident (P > .10). However, there was more improvement in catastrophizing scores during the follow-up period in the intervention group (M = −2.36, SD 8.41) compared to the control group (M = .40, SD 7.20), P = .045. Also, per protocol within-group analysis showed a small positive effect (Cohen's d = .33) on catastrophizing in the intervention group (P = .04) and no change in the control group from the smartphone intervention baseline to 11-month follow-up. A positive effect (Cohen's d = .73) on acceptance was found within the intervention group (P < .001) but not in the control group. Small to large negative effects were found within the control group on functioning and symptom levels, emotional distress, and fatigue (P = .05) from the intervention baseline to the 11-month follow-up. Conclusion: The long-term results of this randomized trial are ambiguous. No significant between-group effect was found on the study variables at 11-

month follow-up. However, the within-group analyses, comparing the baseline for the smartphone intervention to the 11-month data, indicated changes in the desired direction in catastrophizing and acceptance in the intervention group but not within the control group. This study provides modest evidence supporting the long-term effect of the intervention. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kristjansdottir, O. B.; Fors, E. A.; Eide, E.; Finset, A.; Stensrud, T. L.; Van, Dulmen S. et al. (2013):

A Smartphone-Based Intervention With Diaries and Therapist Feedback to Reduce Catastrophizing and Increase Functioning in Women With Chronic Widespread Pain. Part 2: 11-month Follow-up Results of a Randomized Trial.

In: *J Med Internet Res* 15 (3), S. e72. DOI: 10.2196/jmir.2442.

Abstract:

BACKGROUND: Internet-based interventions are increasingly used to support self-management of individuals with chronic illnesses. Web-based interventions may also be effective in enhancing self-management for individuals with chronic pain, but little is known about long-term effects. Research on Web-based interventions to support self-management following participation in pain management programs is limited. OBJECTIVE: The aim is to examine the long-term effects of a 4-week smartphone-intervention with diaries and therapist-written feedback following an inpatient chronic pain rehabilitation program, previously found to be effective at short-term and 5-month follow-ups. METHODS: 140 women with chronic widespread pain, participating in a 4-week inpatient rehabilitation program, were randomized into two groups: with or without a smartphone intervention after the rehabilitation. The smartphone intervention consisted of one face-to-face individual session and 4 weeks of written communication via a smartphone, consisting of three diaries daily to elicit pain-related thoughts, feelings, and activities, as well as daily personalized written feedback based on cognitive behavioral principles from a therapist. Both groups were given access to an informational website to promote constructive self-management. Outcomes were measured with self-reported paper-and-pencil format questionnaires with catastrophizing as the primary outcome measure. Secondary outcomes included daily functioning and symptom levels, acceptance of pain, and emotional distress. RESULTS: By the 11-month follow-up, the favorable between-group differences previously reported post-intervention and at 5-month follow-up on catastrophizing, acceptance, functioning, and symptom level were no longer evident (P>.10). However, there was more improvement in catastrophizing scores during the follow-up period in the intervention group (M=-2.36, SD 8.41) compared to the control group (M=.40, SD 7.20), P=.045. Also, per protocol within-group analysis showed a small positive effect (Cohen's d=.33) on catastrophizing in the intervention group (P=.04) and no change in the control group from the smartphone intervention baseline to 11-month follow-up. A positive effect (Cohen's d=.73) on acceptance was found within the intervention group (P<.001) but not in the control group. Small to large negative effects were found within the control group on functioning and symptom levels, emotional distress, and fatigue (P=.05) from the intervention baseline to the 11-month follow-up. CONCLUSION: The long-term results of this randomized trial are ambiguous. No significant between-group effect was found on the study variables at 11-month follow-up. However, the within-group analyses, comparing the baseline for the smartphone intervention to the 11-month data, indicated changes in the desired direction in catastrophizing and acceptance in the intervention group but not within the control group. This study provides modest evidence supporting the long-term effect of the intervention. TRIAL REGISTRATION: Clinicaltrials.gov NCT01236209; http://www.clinicaltrials.gov/ct2/show/NCT01236209 (Archived by WebCite at http://www.webcitation.org/6FF7KUXo0)

Krmar, Rafael T.; Berg, Ulla B. (2008):

Blood pressure control in hypertensive pediatric renal transplants: role of repeated ABPM following transplantation.

In: *Am J Hypertens* 21 (10), S. 1093–1099. DOI: 10.1038/ajh.2008.251.

Abstract:

BACKGROUND\r\nHypertension in pediatric renal transplants is a widespread condition associated with high mortality risk in early adult life. Ambulatory blood pressure monitoring (ABPM) was found to be superior to office blood pressure (BP) in identifying true hypertensive and responders to treatment. The aim of this study was to investigate the role of repeated ABPM, performed at yearly intervals following transplantation, in the assessment and decision-making processes of post-transplant hypertension.\r\nMETHODS\r\nThirty-seven recipients (23 males; aged 10.5 +/- 4.3 years) who were followed for 4.3 +/- 2.2 years (range 2-9) after transplantation were eligible for analysis. The mean follow-up time between the baseline (1 year post-transplantation) and the most recent ABPM examination was 3.3 +/- 2.2 years (range 1-8).\r\nRESULTS\r\nThroughout the follow-up period, antihypertensive therapy was either started or intensified in 27 recipients. These interventions were decided based on ABPM results obtained on 40 of 44 occasions. At last follow-up, 24 of 29 treated hypertensive recipients displayed controlled BP. This figure was significantly higher compared to our historical hypertensive control recipients in whom ABPM was

applied for the first time in treatment at 6 +/- 3.3 years (range 2-15) after transplantation, while therapeutic decisions were driven by office BP measurements (95 % confidence interval (95% CI) for the difference between proportions (80.6-32 %) 36-60 %, P = 0.001).\r\nCONCLUSIONS\r\nOur study shows that, in a population with high risk for hypertension, repeated ABPM may significantly help to improve BP control.

Kross, E.; Verduyn, P.; Demiralp, E.; Park, J.; Lee, D. S.; Lin, N. et al. (2013):

Facebook use predicts declines in subjective well-being in young adults.

In: *PLoS One* 8 (8), S. e69841. DOI: 10.1371/journal.pone.0069841.

Abstract:

Over 500 million people interact daily with Facebook. Yet, whether Facebook use influences subjective well-being over time is unknown. We addressed this issue using experience-sampling, the most reliable method for measuring in-vivo behavior and psychological experience. We text-messaged people five times per day for two-weeks to examine how Facebook use influences the two components of subjective well-being: how people feel moment-to-moment and how satisfied they are with their lives. Our results indicate that Facebook use predicts negative shifts on both of these variables over time. The more people used Facebook at one time point, the worse they felt the next time we text-messaged them; the more they used Facebook over two-weeks, the more their life satisfaction levels declined over time. Interacting with other people "directly" did not predict these negative outcomes. They were also not moderated by the size of people's Facebook networks, their perceived supportiveness, motivation for using Facebook, gender, loneliness, self-esteem, or depression. On the surface, Facebook provides an invaluable resource for fulfilling the basic human need for social connection. Rather than enhancing well-being, however, these findings suggest that Facebook may undermine it

Krüger, Andreas; Edelmann-Nusser, Jürgen (2010):

Application of a full body inertial measurement system in alpine skiing: A comparison with an optical video based system.

In: *J. Appl. Biomech* 26, S. 516–521.

Abstract:

This study aims at determining the accuracy of a full body inertial measurement system in a real skiing environment in comparison with an optical video based system. Recent studies have shown the use of inertial measurement systems for the determination of kinematical parameters in alpine skiing. However, a quantitative validation of a full body inertial measurement system for the application in alpine skiing is so far not available. For the purpose of this study, a skier performed a test-run equipped with a full body inertial measurement system in combination with a DGPS. In addition, one turn of the test-run was analyzed by an optical video based system. With respect to the analyzed angles, a maximum mean difference of 4.9° was measured. No differences in the measured angles between the inertial measurement system and the combined usage with a DGPS were found. Concerning the determination of the skier's trajectory, an additional system (e.g., DGPS) must be used. As opposed to optical methods, the main advantages of the inertial measurement system are the determination of kinematical parameters without the limitation of restricted capture volume, and small time costs for the measurement preparation and data analysis.

Kubiak, Thomas; Krog, Katharina (2012):

Computerized sampling of experiences and behavior. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 124–143. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-007%26site%3dehost-live.

Abstract:

(from the chapter) Conducting experience sampling studies has been made substantively easier over the last two decades with readily available computerized solutions. Our aim in this chapter is to offer the reader advice about which criteria to consider before choosing a particular software package for experience sampling and a current overview of available solutions. The chapter is divided into four parts. First, we give a short overview of currently available platforms. We also dare to venture some—

necessarily subjective—predictions as to which platform is the safest choice for a researcher who seriously wants to engage in computerized experience sampling in the years to come. Second, we will briefly outline criteria one should consider before choosing a particular software solution. In our view, the criteria for software choice should be based largely on the features one needs for a given study. Third, we give an overview of currently available software solutions, with a particular focus on open-source software. Commercial software is included as well. Finally, we give some helpful hints for implementing computerized experience sampling using a given software solution and platform. We conclude this chapter with some final remarks on future trends and possibilities that are to be expected in the field. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Kubiak, Thomas; Vögele, Claus; Siering, Mareike; Schiel, Ralf; Weber, Hannelore (2008):

Daily hassles and emotional eating in obese adolescents under restricted dietary conditions—The role of ruminative thinking.

In: *Appetite* 51 (1), S. 206–209.

Abstract:

Emotional eating is conceptualized as eating in response to negative affect or distress and is discussed as a mechanism leading to eating binges. Recent evidence suggests that eating may not only be triggered by negative affect, but also ruminative thinking. We report results of an experience sampling study examining the role of rumination for emotional eating in 16 obese adolescents (M=15.5 years, S.D.=1.4; range 14-17, body mass index M = 31.1 kgm(-2), S.D.=5.5) under restricted dietary conditions. We hypothesized that daily hassles type of stress predicted the individuals' desire to eat, with the predictive value further increased when negative affect and rumination were accounted for. The results of mixed regression modeling were in line with our predictions, suggesting a significant contribution of ruminative thinking to the mechanisms of negative affect induced eating.

Kubiak, T.; Wittig, A.; Koll, C.; Mraz, B.; Gustav, J.; Herrmann, U. et al. (2010):

Continuous glucose monitoring reveals associations of glucose levels with QT interval length.

In: *Diabetes technology & therapeutics* 12 (4), S. 283–286. DOI: 10.1089/dia.2009.0153.

Abstract:

BACKGROUND\r\nQTc interval lengthening during hypoglycemia is discussed as a mechanism linked to sudden death in diabetes patients and the so-called \"dead in bed syndrome.\" Previous research reported a high interindividual variability in the glucose-QTc association. The present study aimed at deriving parameters for direction and strength of the glucose-QTc association on the patient level using combined Holter electrocardiogram (ECG) and continuous glucose monitoring.\r\nMETHODS\r\nTwenty type 1 diabetes patients were studied: mean (SD, range) age, 43.6 (10.8, 22-65) years; gender male (n [%]), 10 (50.0%); mean (SD) hemoglobin A1C, 8.5% (1.0%); and impaired hypoglycemia awareness (n [%]), six (30.0%). Continuous interstitial glucose monitoring and Holter ECG monitoring were performed for 48 h. Hierarchical (mixed) regression modeling was used to account for the structure of the data.\r\nRESULTS\r\nGlucose levels during nighttime were negatively associated with QTc interval length if the data structure was accounted for (b [SE] = -0.76 [0.17], P = 0.000). Exploratory regression analysis revealed hypoglycemia awareness as the only predictor of the individual strength of the glucose-QTc association, with the impaired awareness group showing less evidence for an association of low glucose with QTc lengthening.\r\nCONCLUSIONS\r\nMixed regression allows for deriving parameters for the glucose-QTc association on the patient level. Consistent with previous studies, we found a large interindividual variability in the glucose-QTc association. The finding on impaired hypoglycemia awareness patients has to be interpreted with caution but provides some support for the role of sympathetic activation for the QTc-glucose link.

Kubiak, T.; Zahn, D.; Siewert, K.; Jonas, C.; Weber, H. (2013):

Positive Beliefs about Rumination Are Associated with Ruminative Thinking and Affect in Daily Life: Evidence for a Metacognitive View on Depression.

In: *Behav.Cogn Psychother* (1352-4658 (Linking)), S. 1–9. DOI: 10.1017/S1352465813000325.

Abstract:

Background: Self-regulatory executive function theory (Wells and Matthews, 1994; Wells, 2008) stresses the role of metacognitions in the development of emotional disorders. Within this metacognitive model, positive beliefs about ruminative thinking are thought to be a risk factor for engaging in rumination and subsequently for depression. However, most of the existing research relies on retrospective self-report trait measures. Aims: The aim of the present study was to examine the theory's predictions with an Ecological Momentary Assessment approach capturing rumination as it occurs in daily life. Method: Non-clinical participants (N = 93) were equipped with electronic diaries and completed four signal-contingent momentary self-reports per day for 4 weeks. A multilevel mediation model was computed to examine associations between positive beliefs about rumination and ruminative thinking and negative affect in daily life. Results: Positive beliefs about rumination were significantly associated with ruminative thinking as it occurs in daily life. We further found evidence for a negative association with positive affect that was completely mediated via ruminative thinking in daily life occurring in response to negative emotions. Conclusions: Our results add ecologically valid corroborating evidence for the metacognitive model of emotional disorders within the framework of self-regulatory executive function theory

Kubiak, Thomas; Zahn, Daniela; Siewert, Kerstin; Jonas, Cornelia; Weber, Hannelore (2014):

Positive beliefs about rumination are associated with ruminative thinking and affect in daily life: Evidence for a metacognitive view on depression.

In: *Behavioural and Cognitive Psychotherapy* 42 (5), S. 568–576. DOI: 10.1037/t12149-000.

Abstract:

Background: Self-regulatory executive function theory (Wells and Matthews, 1994; Wells, 2008) stresses the role of metacognitions in the development of emotional disorders. Within this metacognitive model, positive beliefs about ruminative thinking are thought to be a risk factor for engaging in rumination and subsequently for depression. However, most of the existing research relies on retrospective self-report trait measures. Aims: The aim of the present study was to examine the theory’s predictions with an Ecological Momentary Assessment approach capturing rumination as it occurs in daily life. Method: Non-clinical participants (N = 93) were equipped with electronic diaries and completed four signal-contingent momentary self-reports per day for 4 weeks. A multilevel mediation model was computed to examine associations between positive beliefs about rumination and ruminative thinking and negative affect in daily life. Results: Positive beliefs about rumination were significantly associated with ruminative thinking as it occurs in daily life. We further found evidence for a negative association with positive affect that was completely mediated via ruminative thinking in daily life occurring in response to negative emotions. Conclusions: Our results add ecologically valid corroborating evidence for the metacognitive model of emotional disorders within the framework of self-regulatory executive function theory. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Kudielka, Brigitte M.; Buchtal, Jörg; Uhde, Alexander; Wüst, Stefan (2007):

Circadian cortisol profiles and psychological self-reports in shift workers with and without recent change in the shift rotation system.

In: *Biol Psychol* 74 (1), S. 92–103.

Abstract:

Cortisol profiles including the cortisol rise in the first hour after awakening (CAR) were assessed during shift work and days off (eight saliva samples per shift). Participants were 102 healthy permanent day and night shift workers (comparison groups) and former permanent day and night shift workers after implementation of a new fast-forward rota including morning, evening, and night shifts. Results show that the CAR is detectable in day as well as night shifts. In permanent night workers cortisol profiles appear to be blunted during night work and days off. However, circadian cortisol profiles are not disturbed in former night workers who recently switched to the fast rotating shift schedule. In contrast, implementation of night work in former day workers seems to lead to initially blunted cortisol profiles that normalize after a short adjustment period. Results of a psychological assessment including exhaustion, chronic stress, effort-reward imbalance, and ratings of sleep quality and sleep length are also presented.

Kuepper, R.; Oorschot, M.; Myin-Germeys, I.; Smits, M.; Van, Os J.; Henquet, C. (2013):

Is psychotic disorder associated with increased levels of craving for cannabis? An Experience Sampling study.

In: *Acta Psychiatr.Scand.* (0001-690X (Linking)). DOI: 10.1111/acps.12078.

Abstract:

OBJECTIVE: Although cannabis use among individuals with psychotic disorder is considerable, little is known about patterns of use and factors contributing to continuation of use. Therefore, we investigated craving in relation to cannabis use in patients with psychotic disorder and healthy controls. METHOD: The study included 58 patients with non-affective psychotic disorder and 63 healthy controls; all were frequent cannabis users. Craving was assessed with the Obsessive Compulsive Drug Use Scale (OCDUS) for cannabis, as well as in daily life using the Experience Sampling Method (ESM). RESULTS: Patients scored higher on the OCDUS (B = 1.18, P = 0.022), but did not differ from controls in ESM indices of craving (all P > 0.05). In daily life, ESM craving predicted cannabis use and this was stronger in controls (chi(2) = 4.5, P = 0.033; B(controls) = 0.08, P < 0.001; B(patients) = 0.06, P < 0.001). In both groups ESM craving was predicted by negative affect, paranoia, and hallucinations (B(negativeaffect) = 0.12, P = 0.009; B(paranoia) = 0.13, P = 0.013; B(hallucinations) = 0.13, P = 0.028), and followed by an increase in negative affect at non-cannabis-using moments (B = 0.03, P = 0.002). CONCLUSION: The temporal dynamics of craving as well as craving intensity in daily life appear to be similar in patients and controls. Further research is needed to elucidate the inconsistencies between cross-sectional and daily-life measures of craving in psychosis

Kuerbis, Alexis; Armeli, Stephen; Muench, Frederick; Morgenstern, Jon (2014):

Profiles of confidence and commitment to change as predictors of moderated drinking: A person-centered approach.

In: *Psychology of Addictive Behaviors* 28 (4), S. 1065–1076. DOI: 10.1037/t01528-000.

Abstract:

Identifying who, among problem drinkers, is best suited for moderation and has the greatest likelihood to control drinking has important public health implications. The current study aimed to identify profiles of problem drinkers who may be more or less successful in moderating drinking within the context of a randomized clinical trial of a brief treatment for alcohol use disorder. A person-centered approach was implemented, utilizing composite, baseline daily diary values of confidence and commitment to reduce drinking. Problem drinkers (N = 89) were assessed, provided feedback about their drinking, and randomly assigned to 1 of 3 conditions: 2 brief alcohol use disorder treatments or a third group asked to change on their own. Global self-report assessments were administered at baseline and Week 8 (end of treatment). Daily diary composites were created from data collected via an interactive voice recording system during the week prior to baseline. A K-means cluster analysis identified 3 groups: high, moderate, and low confidence and commitment to change drinking. Group differences were explored, and then group membership was entered into generalized estimating equations to predict drinking trajectories over time. Findings revealed that the groups differentially reduced their drinking, such that the high group had greater reduction in drinking and a faster rate of reduction than the other 2 groups, and the moderate group had greater reduction than the low group. Findings suggest that baseline motivation and self-efficacy are important for predicting prognoses related to successful moderated drinking. Limitations and arenas for future research are discussed. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Kuffel, Erin E.; Crouter, Scott E.; Haas, Jere D.; Frongillo, Edward A.; Bassett, David R. J. (2011):

Validity of estimating minute-by-minute energy expenditure of continuous walking bouts by accelerometry.

In: *Int J Behav Nutr Phys Act* 8. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31468-001%26site%3dehost-live;ekuffel@winona.edu.

Abstract:

BACKGROUND:

Objective measurement of physical activity remains an important challenge. For wearable monitors such as accelerometer-based physical activity monitors, more accurate methods are needed to convert activity counts into energy expenditure (EE).

PURPOSE:

The purpose of this study was to examine the accuracy of the refined Crouter 2-Regression Model (C2RM) for estimating EE during the transition from rest to walking and walking to rest. A secondary purpose was to determine the extent of overestimation in minute-by-minute EE between the refined C2RM and the 2006 C2RM.

METHODS:

Thirty volunteers (age, 28 ± 7.7 yrs) performed 15 minutes of seated rest, 8 minutes of over-ground walking, and 8 minutes of seated rest. An ActiGraph GT1M accelerometer and Cosmed K4b2 portable metabolic system were worn during all activities. Participants were randomly assigned to start the walking bout at 0, 20, or 40 s into the minute (according to the ActiGraph clock). Acceleration data were analyzed by two methods: 2006 Crouter model and a new refined model.

RESULTS:

The 2006 Crouter 2-Regression model over-predicted measured kcal kg-1 hr-1 during the first and last transitional minutes of the 20-s and 40-s walking conditions ($P < 0.001$). It also over-predicted the average EE for a walking bout (4.0 ± 0.5 kcal kg-1 hr-1), compared to both the measured kcal kg-1 hr-1 (3.6 ± 0.7 kcal kg-1 hr-1) and the refined Crouter model (3.5 ± 0.5 kcal kg-1 hr-1) ($P < 0.05$).

CONCLUSION:

The 2006 Crouter 2-regression model over-predicts EE at the beginning and end of walking bouts, due to high variability in accelerometer counts during the transitional minutes. The new refined model eliminates this problem and results in a more accurate prediction of EE during walking.

Kuhbeck, Felizian; Engelhardt, Stefan; Sarikas, Antonio (2014):

OnlineTED.com - a novel web-based audience response system for higher education. A pilot study to evaluate user acceptance.

In: *GMS Z Med Ausbild* 31 (1), S. Doc5. DOI: 10.3205/zma000897.

Abstract:

Background and aim: Audience response (AR) systems are increasingly used in undergraduate medical education. However, high costs and complexity of conventional AR systems often limit their use. Here we present a novel AR system that is platform independent and does not require hardware clickers or additional software to be installed. Methods and results: "OnlineTED" was developed at Technische Universitat Munchen (TUM) based on Hypertext Preprocessor (PHP) with a My Structured Query Language (MySQL)-database as server- and Javascript as client-side programming languages. "OnlineTED" enables lecturers to create and manage question sets online and start polls in-class via a web-browser. Students can participate in the polls with any internet-enabled device (smartphones, tablet-PCs or laptops). A paper-based survey was conducted with undergraduate medical students and lecturers at TUM to compare "OnlineTED" with conventional AR systems using clickers. "OnlineTED" received above-average evaluation results by both students and lecturers at TUM and was seen on par or superior to conventional AR systems. The survey results indicated that up to 80% of students at TUM own an internet-enabled device (smartphone or tablet-PC) for participation in web-based AR technologies. Summary and Conclusion: "OnlineTED" is a novel web-based and platform-independent AR system for higher education that was well received by students and lecturers. As a non-commercial alternative to conventional AR systems it may foster interactive teaching in undergraduate education, in particular with large audiences.

OPublisher: Abstract available from the publisher.

Kuhn, Eric; Eftekhari, Afsoon; Hoffman, Julia E.; Crowley, Jill J.; Ramsey, Kelly M.; Reger, Greg M.; Ruzek, Josef I. (2014):

Clinician Perceptions of Using a Smartphone App with Prolonged Exposure Therapy.

In: *Adm Policy Ment Health. DOI:* 10.1007/s10488-013-0532-2.

Abstract:

Clinician perceptions of clinical innovations affect their adoption and spread. This study investigated mental health clinicians' (n = 163) perceptions of a patient-facing smartphone application (app) for prolonged exposure (PE) therapy for posttraumatic stress disorder, before its public release. After reading a description of the app, participants rated perceptions of it based on diffusion of innovations theory constructs. Perceptions were generally favorable regarding the app's relative advantage over existing PE practices, compatibility with their values and needs, and complexity. Age (<40 years), smartphone ownership, and having used apps in care related to more favorable perceptions. Smartphone ownership, relative advantage, and complexity significantly predicted intention to use the app if it were available. These findings suggest that clinicians are receptive to using a PE app and that dissemination efforts should target sub-groups of PE clinicians to maximize adoption.

Kuhn, Eric; Greene, Carolyn; Hoffman, Julia; Nguyen, Tam; Wald, Laura; Schmidt, Janet et al. (2014):

Preliminary evaluation of PTSD Coach, a smartphone app for post-traumatic stress symptoms.

In: *Mil Med* 179 (1), S. 12–18. DOI: 10.7205/MILMED-D-13-00271.

Abstract:

PTSD Coach is a mobile application (app) designed to help individuals who have post-traumatic stress disorder (PTSD) symptoms better understand and self-manage their symptoms. It has wide-scale use (over 130,000 downloads in 78 countries) and very favorable reviews but has yet to be evaluated. Therefore, this study examines user satisfaction, perceived helpfulness, and usage patterns of PTSD Coach in a sample of 45 veterans receiving PTSD treatment. After using PTSD Coach for several days, participants completed a survey of satisfaction and perceived helpfulness and focus groups exploring app use and benefit from use. Data indicate that participants were very satisfied with PTSD Coach and perceived it as being moderately to very helpful with their PTSD symptoms. Analysis of focus group data resulted in several categories of app use: to manage acute distress and PTSD symptoms, at scheduled times, and to help with sleep. These findings offer preliminary support for the acceptability and perceived helpfulness of PTSD Coach and suggest that it has potential to be an effective self-management tool for PTSD. Although promising, future research is required to validate this, given study limitations.

Kuhnhausen, J.; Leonhardt, A.; Dirk, J.; Schmiedek, F. (2013):

Physical activity and affect in elementary school children's daily lives.

In: *Front Psychol* 4 (1664-1078 (Electronic)), S. 456. DOI: 10.3389/fpsyg.2013.00456.

Abstract:

A positive influence of physical activity (PA) on affect has been shown in numerous studies. However, this relationship has not yet been studied in the daily life of children. We present a part of the FLUX study that attempts to contribute to filling that gap. To this end, a proper way to measure PA and affect in the daily life of children is needed. In pre-studies of the FLUX study, we were able to show that affect can be measured in children with self-report items that are answered using smartphones. In the current article, we show that it is feasible to objectively measure children's PA with accelerometers for a period of several weeks and report descriptive information on the amount of activity of 51 children from 3rd and 4th grade. Additionally, we investigate the influence of daily PA on daily affect in children. Mixed effects models show no effect of PA on any of the four measured dimensions of affect. We discuss that this might be due to effects taking place at shorter time intervals, which can be investigated in future analyses

Kumahara, H.; Tanaka, H.; Schutz, Y. (2009):

Are pedometers adequate instruments for assessing energy expenditure?

In: *Eur J Clin Nutr* 63 (12), S. 1425–1432. DOI: 10.1038/ejcn.2009.108.

Abstract:

OBJECTIVE\r\nAssessing energy expenditure (EE) is important for the control of obesity. Daily step counts have become popular and constitute one practical technique for evaluating the physical activity (PA) in large population studies. However, information on the capacity of pedometers to track EE in free-living conditions remains scanty.\r\nSUBJECTS AND METHODS\r\nThe 24-h EE of 71 healthy adults was measured by indirect calorimetry in a large respiratory chamber. Two accelerometers were attached to the waist, one for counting the total daily steps (ACC(STEP)) and another for measuring the anteroposterior whole body acceleration calculated as the root mean square of the acceleration signal at every second (ACC(RMS)).\r\nRESULTS\r\nThe ACC(STEP) was not associated with PA-related EE (PAEE) or 24-h EE. Body weight (BW) was the main determinant of both the values (explaining 30 and 75% of the variance, respectively). Approximately 8% ($P<0.001$) of the variance in PAEE was attributed to the ACC(RMS) after BW was accounted for, whereas the ACC(STEP) did not explain any additional variance. A multiple stepwise regression analysis revealed that BW, height and ACC(RMS) were highly significant determinants of 24-h EE and accounted for as much as 83% of the total variance.\r\nCONCLUSIONS\r\nRecording the number of steps per day does not provide accurate information on EE, and at best is only a crude predictor of the general PA in terms of displacement. In contrast, accelerometry signals are considered to be a more meaningful factor in the assessment of EE rather than step counts under sedentary conditions.

Kumar, Amit; Killingsworth, Matthew A.; Gilovich, Thomas (2014):

Waiting for Merlot: Anticipatory consumption of experiential and material purchases.

In: *Psychological Science* 25 (10), S. 1924–1931. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-43635-009%26site%3dehost-live.

Abstract:

Experiential purchases (money spent on doing) tend to provide more enduring happiness than material purchases (money spent on having). Although most research comparing these two types of purchases has focused on their downstream hedonic consequences, the present research investigated hedonic differences that occur before consumption. We argue that waiting for experiences tends to be more positive than waiting for possessions. Four studies demonstrate that people derive more happiness from the anticipation of experiential purchases and that waiting for an experience tends to be more pleasurable and exciting than waiting to receive a material good. We found these effects in studies using questionnaires involving a variety of actual planned purchases, in a large-scale experience-sampling study, and in an archival analysis of news stories about people waiting in line to make a purchase. Consumers derive value from anticipation, and that value tends to be greater for experiential than for material purchases. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Kumpula, Mandy J. (2012):

Motivations for sex and sexual behavior among female college students: An event-level analysis.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 73 (6-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-99240-134%26site%3dehost-live.

Abstract:

College-aged women frequently engage in sexual behavior associated with negative physical and psychological outcomes, and understanding factors that promote high-risk sexual behavior is necessary to inform effective interventions. Motivational influences on sexual behavior have been implicated in promoting patterns of sexual risk; however, the precise nature of these relationships is unclear. Event-level associations between motivations for sexual intercourse and sexual risk-taking behavior were examined in an eight-week online electronic diary study from a sample of 241 undergraduate women. Hierarchical linear modeling indicated that situation-specific coping, self-affirmation, and enhancement motives for sex, along with associated contextual and dispositional factors, demonstrated differential influences on indiscriminate sexual behavior and engaging in actions to protect against sexually transmitted diseases and unwanted pregnancy. Women were more likely to engage in sex with a new partner when intercourse was preceded by depressed mood and motivated by a desire to cope with negative emotion. Sexual intercourse resulting from self-affirmation motivation in the context of low self-esteem also was associated with increased likelihood of sex with a new partner, as well as lower probability of condom and contraceptive use. In addition, event-level reports of self-affirmation motives for sex were associated with sex with a less familiar partner when self-esteem ratings were high. Sexual experiences driven by enhancement motives were associated with lower perceived intimacy with a sexual partner, and enhancement motivation interacted with propensity for sensation seeking to predict likelihood of condom use. The results suggest that sexual motivation plays an important role in sexual risk-taking behavior; however, its effects are best understood in the context of other situational and dispositional factors. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Kuntsche, Emmanuel; Labhart, Florian (2013):

Using personal cell phones for ecological momentary assessment: An overview of current developments.

In: *European Psychologist* 18 (1), S. 3–11. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-13184-002%26site%3dehost-live;ekuntsche@suchtschweiz.ch.

Abstract:

Ecological Momentary Assessment (EMA) is a way of collecting data in people's natural environments in real time and has become very popular in social and health sciences. The emergence of personal digital assistants has led to more complex and sophisticated EMA protocols but has also highlighted some important drawbacks. Modern cell phones combine the functionalities of advanced communication systems with those of a handheld computer and offer various additional features to

capture and record sound, pictures, locations, and movements. Moreover, most people own a cell phone, are familiar with the different functions, and always carry it with them. This paper describes ways in which cell phones have been used for data collection purposes in the field of social sciences. This includes automated data capture techniques, for example, geolocation for the study of mobility patterns and the use of external sensors for remote health-monitoring research. The paper also describes cell phones as efficient and user-friendly tools for prompt manual data collection, that is, by asking participants to produce or to provide data. This can either be done by means of dedicated applications or by simply using the web browser. We conclude that cell phones offer a variety of advantages and have a great deal of potential for innovative research designs, suggesting they will be among the standard data collection devices for EMA in the coming years. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kuppens, Peter; Allen, Nicholas B.; Sheeber, Lisa B. (2010):

Emotional inertia and psychological maladjustment.

In: *Psychological Science* 21 (7), S. 984–991. DOI: 10.1177/0956797610372634.

Abstract:

In this article, we examine the concept of emotional inertia as a fundamental property of the emotion dynamics that characterize psychological maladjustment. Emotional inertia refers to the degree to which emotional states are resistant to change. Because psychological maladjustment has been associated with both emotional underreactivity and ineffective emotion-regulation skills, we hypothesized that its overall emotion dynamics would be characterized by high levels of inertia. We provide evidence from two naturalistic studies that, using different methods, showed that the emotional fluctuations of individuals who exhibited low self-esteem (Study 1) and depression (Study 2) were characterized by higher levels of inertia in both positive and negative emotions than the emotional fluctuations of people who did not exhibit low self-esteem and depression. We also discuss the usefulness of the concept of emotional inertia as a hallmark of maladaptive emotion dynamics.

Kuppens, Peter; Champagne, Dominique; Tuerlinckx, Francis (2012):

The dynamic interplay between appraisal and core affect in daily life.

In: *Front Psychol* 3. DOI: 10.1037/t01286-000;

Abstract:

Appraisals and core affect are both considered central to the experience of emotion. In this study we examine the bidirectional relationships between these two components of emotional experience by examining how core affect changes following how people appraise events and how appraisals in turn change following how they feel in daily life. In an experience sampling study, participants recorded their core affect and appraisals of ongoing events; data were analyzed using cross-lagged multilevel modeling. Valence-appraisal relationships were found to be characterized by congruency: the same appraisals that were associated with a change in pleasure-displeasure (motivational congruency, other-agency, coping potential, and future expectancy), changed themselves as a function of pleasure-displeasure. In turn, mainly secondary appraisals of who is responsible and how one is able to cope with events were associated with changes in arousal, which itself is followed by changes in the future appraised relevance of events. These results integrate core affect and appraisal approaches to emotion by demonstrating the dynamic interplay of how appraisals are followed by changes in core affect which in turn change our basis for judging future events. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kuppens, P.; Champagne, D.; Tuerlinckx, F. (2012):

The Dynamic Interplay between Appraisal and Core Affect in Daily Life.

In: *Front Psychol* 3 (1664-1078 (Electronic)), S. 380. DOI: 10.3389/fpsyg.2012.00380.

Abstract:

Appraisals and core affect are both considered central to the experience of emotion. In this study we examine the bidirectional relationships between these two components of emotional experience by examining how core affect changes following how people appraise events and how appraisals in turn change following how they feel in daily life. In an experience sampling study, participants recorded their core affect and appraisals of ongoing events; data were analyzed using cross-lagged multilevel modeling. Valence-appraisal relationships were found to be characterized by congruency: the same appraisals that were associated with a change in pleasure-displeasure (motivational congruency, other-agency, coping potential, and future expectancy), changed themselves as a function of pleasure-displeasure. In turn, mainly secondary appraisals of who is

responsible and how one is able to cope with events were associated with changes in arousal, which itself is followed by changes in the future appraised relevance of events. These results integrate core affect and appraisal approaches to emotion by demonstrating the dynamic interplay of how appraisals are followed by changes in core affect which in turn change our basis for judging future events

Kuppens, Peter; Oravecz, Zita; Tuerlinckx, Francis (2010):

Feelings change: accounting for individual differences in the temporal dynamics of affect.

In: *Journal of Personality and Social Psychology* 99 (6), S. 1042.

Abstract:

People display a remarkable variability in the patterns and trajectories with which their feelings change over time. In this article, we present a theoretical account for the dynamics of affect (DynAffect) that identifies the major processes underlying individual differences in the temporal dynamics of affective experiences. It is hypothesized that individuals are characterized by an affective home base, a baseline attractor state around which affect fluctuates. These fluctuations vary as the result of internal or external processes to which an individual is more or less sensitive and are regulated and tied back to the home base by the attractor strength. Individual differences in these 3 processes--affective home base, variability, and attractor strength--are proposed to underlie individual differences in affect dynamics. The DynAffect account is empirically evaluated by means of a diffusion modeling approach in 2 extensive experience-sampling studies on people's core affective experiences. The findings show that the model is capable of adequately capturing the observed dynamics in core affect across both large (Study 1) and shorter time scales (Study 2) and illuminate how the key processes are related to personality and emotion dispositions. Implications for the understanding of affect dynamics and affective dysfunctioning in psychopathology are also discussed.

Kuppens, Peter; van Mechelen, Iven; Nezlek, John B.; Dossche, Dorien; Timmermans, Tinneke (2007):

Individual differences in core affect variability and their relationship to personality and psychological adjustment.

In: *Emotion* 7 (2), S. 262.

Abstract:

How people's feelings change across time can be represented as trajectories in a core affect space defined by the dimensions of valence and activation. In this article, the authors analyzed individual differences in within-person affective variability defined as characteristics of core affect trajectories, introducing new ways to conceptualize affective variability. In 2 studies, participants provided multiple reports across time describing how they were feeling in terms of core affect. From these data, characteristics of participants' core affect trajectories were derived. Across both studies, core affect variability was negatively related to average valence, self-esteem, and agreeableness, and it was positively related to neuroticism and depression. Moreover, spin, a measure of how much people experienced qualitatively different feelings within the core affect space, was related more consistently to trait measures of adjustment and personality than other measures of within-person variability, including widely used measures of within-person single-dimension standard deviations.

Kurti, Allison N.; Logan, Henrietta; Manini, Todd; Dallery, Jesse (2014):

Physical Activity Behavior, Barriers to Activity, and Opinions About a Smartphone-Based Physical Activity Intervention Among Rural Residents.

In: *Telemed J E Health. DOI:* 10.1089/tmj.2014.0034.

Abstract:

Abstract Background: Rural Americans engage in less physical activity (PA) and experience higher rates of consequent health problems (i.e., obesity, cardiovascular disease) than urban Americans. Although geographic barriers have historically made this population hard to reach, rural individuals are increasingly gaining access to smartphones. Thus, the purpose of this study was to evaluate PA behavior and barriers to PA among rural residents and to gauge their receptiveness to a smartphone-based PA intervention that is currently in the development stage. Materials and Methods: Rural Floridian adults (n=113), 18 years of age and older, completed surveys to assess PA behavior, PA barriers, and opinions about an intervention to increase PA. Specifically, they were asked to imagine a program that would require them to do PA with their mobile phones and whether they viewed intended aspects of the program as helpful. The present work is therefore formative research that sought to determine the

feasibility and acceptability of a smartphone-based intervention among rural residents. Results of the survey will inform the development of a tailored, smartphone-based PA intervention. Results: The 37.2% of participants with low PA levels (<600 metabolic equivalent [MET]-min per week) were more likely to report personal and environmental barriers to PA than the 47.8% of participants with moderate PA levels (>/=600 MET-min per week). More barriers were reported among participants who self-reported as white and among participants of older age, lower education level, and lower socioeconomic status. Additionally, 75.9% of participants reported features of the intervention as at least somewhat helpful. Conclusions: The growing ubiquity of smartphones among rural residents, combined with participants' positive response to the program description, supports the acceptability of a smartphone-based PA intervention for rural communities. Given the participants' receptiveness, future research should evaluate the efficacy of smartphone-delivered health behavior interventions among this population.

Kurultak, Ilhan; Sengul, Sule; Kocak, Senem; Erdogmus, Siyar; Calayoglu, Reyhan; Mescigil, Pinar et al. (2014):

Urinary angiotensinogen, related factors and clinical implications in normotensive autosomal dominant polycystic kidney disease patients.

In: *Ren Fail. DOI:* 10.3109/0886022X.2014.890857.

Abstract:

Abstract Background: Although several lines of evidence suggest that renin angiotensin system (RAS) proteins are synthesized by cyst epithelium and dilated tubules, role of intrarenal RAS in the progression of otozomal dominant polycystic kidney disease (ADPKD) is not well known. We aimed to study the levels and clinical correlations of urinary angiotensinogen (UAGT) in normotensive ADPKD patients compared with age- and sex-matched healthy subjects. Methods: The study included 20 normotensive ADPKD patients (F/M: 11/9) and 20 age and sex matched healthy controls (F/M: 9/11). Diagnosis of ADPKD was made based on Ravine criteria. Twenty-four hours ambulatory blood pressure monitoring (ABPM) was performed. Serum concentrations of creatinine, Na, K, uric acid, and urinary concentrations of Na, K, uric acid, creatinine, protein and albumin were measured. UAGT were measured via commercially available ELISA kit. Results: ADPKD patients had higher urinary albumin:creatinine ratio (UAlb/UCrea) than healthy controls ($p < 0.01$). UAGT/UCrea levels significantly positively correlated with urinary protein: creatinine ratio (UPro/UCrea) ($r = 0.785$, $p = 0.01$), and UAlb/UCrea ($r = 0.681$, $p = 0.01$) in normotensive ADPKD patients. Conclusion: This pilot study demonstrates that UAGT levels tend to be elevated and are correlated with proteinuria and albuminuria in normotensive ADPKD patients during relatively early stages of the disease.

Kusserow, M.; Candia, V.; Amft, O.; Hildebrandt, H.; Folkers, G.; Troster, G. (2012):

Monitoring stage fright outside the laboratory: an example in a professional musician using wearable sensors.

In: *Med.Probl.Perform.Art.* 27 (1), S. 21–30. Online verfügbar unter PM:22543319.

Abstract:

We implemented and tested a wearable sensor system to measure patterns of stress responses in a professional musician under public performance conditions. Using this sensor system, we monitored the cellist's heart activity, the motion of multiple body parts, and their gradual changes during three repeated performances of a skill-demanding piece in front of a professional audience. From the cellist and her teachers, we collected stage fright self-reports and performance ratings that were related to our sensor data analysis results. Concomitant to changes in body motion and heart rate, the cellist perceived a reduction in stage fright. Performance quality was objectively improved, as technical playing errors decreased throughout repeated renditions. In particular, from performance 1 to 3, the wearable sensors measured a significant increase in the cellist's bowing motion dynamics of approximately 6% and a decrease in heart rate. Bowing motion showed a marginal correlation to the observed heart rate patterns during playing. The wearable system did not interfere with the cellist's performance, thereby allowing investigation of stress responses during natural public performances

Kusuyama, Takanori; Ogata, Hirohito; Takeshita, Hiroaki; Kohno, Hiroaki; Shimodozono, Shinichi; Iida, Hidetaka; Tsukazaki, Takashi (2014):

Effects of Azilsartan Compared to Other Angiotensin Receptor Blockers on Left Ventricular Hypertrophy and the Sympathetic Nervous System in Hemodialysis Patients.

In: *Ther Apher Dial. DOI:* 10.1111/1744-9987.12168.

Abstract:

Hypertension is a major risk factor for cardiovascular and cerebrovascular events, and most patients with hypertension are administered antihypertensive drugs. However, not all patients achieve normal blood pressure levels. The new angiotensin receptor blocker azilsartan (Takeda Pharmaceutical Company Limited, Osaka, Japan) has been reported to have a strong hypotensive effect. Our study investigated the efficacy of azilsartan compared with other angiotensin receptor blockers. This study included 17 hypertensive patients on HD, who had been administered angiotensin receptor blockers, except for azilsartan, for more than 6 months before enrolling, and after enrollment, they were switched to azilsartan. Blood tests, Holter electrocardiogram, ambulatory blood pressure monitoring, and echocardiography were performed at baseline and at the 6-month follow-up. The blood pressure from baseline to 6 months had significantly decreased (24-h systolic blood pressure from 150.9 +/- 16.2 mm Hg to 131.3 +/- 21.7 mm Hg, P = 0.008), awakening time systolic blood pressure from 152.1 +/- 16.9 mm Hg to 131.7 +/- 23.2 mm Hg, P = 0.01, sleep-time systolic blood pressure from 148.1 +/- 19.7 mm Hg to 130.0 +/- 20.1 mm Hg, P = 0.005). There was a significant reduction in serum noradrenaline levels as well as left ventricular mass index after switching to azilsartan (from 550.1 +/- 282.9 pg/mL, to 351.7 +/- 152.3 pg/mL, P = 0.002; from 117.0 +/- 26.4 g/m2 to 111.3 +/- 23.9 g/m2 , P = 0.01, respectively). Azilsartan had a significantly stronger hypotensive effect than other angiotensin receptor blockers. Thus, the switch to azilsartan might improve prognosis of hemodialysis patients. We suggest that the strong anti-hypertensive effect of azilsartan originated from a combination of primary angiotensin receptor blocker class-effect and a stronger suppression of sympathetic nervous system.

Kwapil, T. R.; Brown, L. H.; Silvia, P. J.; Myin-Germeys, I.; Barrantes-Vidal, N. (2012):

The expression of positive and negative schizotypy in daily life: An experience sampling study.

In: *Psychological Medicine* 42 (12), S. 2555–2566. DOI: 10.1037/t02328-000;

Abstract:

Background: Psychometrically identified positive schizotypy and negative schizotypy are differentially related to psychopathology, personality and social functioning. However, little is known about the experience and expression of schizotypy in daily life and the psychological mechanisms that trigger psychotic-like experiences. Method: The present study employed experience sampling methodology (ESM) to assess positive and negative schizotypy in daily life in a non-clinical sample of 412 young adults. ESM is a structured diary technique in which participants are prompted at random times during the day to complete assessments of their current experiences. Results: As hypothesized, positive schizotypy was associated with increased negative affect, thought impairment, suspiciousness, negative beliefs about current activities and feelings of rejection, but not with social disinterest or decreased positive affect. Negative schizotypy, on the other hand, was associated with decreased positive affect and pleasure in daily life, increased negative affect, and decreases in social contact and interest. Both positive schizotypy and negative schizotypy were associated with the desire to be alone when with others. However, this was moderated by anxiety in positive schizotypy and by diminished positive affect in negative schizotypy Conclusions: The results support the construct validity of a multidimensional model of schizotypy and the ecological validity of the positive and negative schizotypy dimensions. ESM appears to be a promising method for examining the daily life experiences of schizotypic individuals. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Kwon, S.; Burns, T. L.; Levy, S. M.; Janz, K. F. (2011):

Breaks in Sedentary Time during Childhood and Adolescence: Iowa Bone Development Study.

In: *Med.Sci.Sports Exerc.* (0195-9131 (Linking)). DOI: 10.1249/MSS.0b013e318245ca20.

Abstract:

PURPOSE: The frequency of interruptions in sedentary time (sedentary breaks) is an aspect of sedentary behaviors which may be associated with metabolic health outcomes. The aim of this study was to describe the change in the frequency of sedentary breaks over a 10-year period from ages 5 to 15. METHODS: The longitudinal Iowa Bone Development Study has collected accelerometry data at approximately 5, 8, 11, 13, and 15 years of age. Data from participants who wore an accelerometer at least 10 hours per day and three days per data collection episode were used (423 children at age 5, 550 at age 8, 520 at age 11, 454 at age 13, and 344 at age 15). The frequency of sedentary breaks was determined based on accelerometry data and compared by weekday/weekend, time period during the day, gender, and data collection episode. RESULTS: The frequency of sedentary breaks decreased by > 200 times/day over a 10-year period from ages 5 to 15. Linear regression models estimated a 1.84 times/hour decrease per year for boys and a 2.04 times/hour decrease per year for girls (Ps < 0.0001). Both boys and girls showed significantly fewer breaks on weekdays from morning to 3:00 PM than on weekends from morning to 3:00 PM (Ps < 0.0001). The frequency of sedentary breaks was slightly higher among boys than girls (gender difference </= 2 times/hour; Ps <

0.01 at ages 11, 13, and 15). CONCLUSION: Breaks in sedentary time notably decrease during childhood and adolescence. During school hours, boys and girls have fewer breaks in sedentary time than during any other time period of weekday or weekend day

Kwon, Yongjin; Kang, Kyuchang; Bae, Changseok; Chung, Hee-Joon; Kim, Ju Han (2014):

Lifelog agent for human activity pattern analysis on health avatar platform.

In: *Healthc Inform Res* 20 (1), S. 69–75. DOI: 10.4258/hir.2014.20.1.69.

Abstract:

OBJECTIVES: To provide accurate personalized medical care, it is necessary to gather individual-related data or contextual information regarding the target person. Nowadays a large number of people possess smartphones, which enables sensors in the smartphones to be used for lifelogging. The objective of the study is to analyze human activity pattern by using lifelog agent cooperating with the Health Avatar platform. METHODS: Using the lifelog measured by accelerometer and gyroscope in a smartphone at a 50 Hz rate, the agent reveals how long the user walks, runs, sits, stands, and lies down, and this information is summarized by hours. The summaries are sent to the Health Avatar platform and finally are written in the Continuity of Care Record (CCR) format. RESULTS: The lifelog agent is successfully operated with the Health Avatar platform. In addition, we implement an application that displays the user's activity patterns in a graph and calculates the metabolic equivalent of task based calorie burned by hour or by day using the lifelog of the CCR form to show that the lifelog can be used as medical records. CONCLUSIONS: The agent shows how lifelogs are analyzed and summarized to help activity recognition. We believe that our agent demonstrates a way of incorporating lifelogs into medical care and a way of exploiting lifelogs in a medical format.

Kwon, S.; Kim, H.; Park, K. S. (2012):

Validation of heart rate extraction using video imaging on a built-in camera system of a smartphone.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 2174–2177. DOI: 10.1109/EMBC.2012.6346392.

Abstract:

As a smartphone is becoming very popular and its performance is being improved fast, a smartphone shows its potential as a low-cost physiological measurement solution which is accurate and can be used beyond the clinical environment. Because cardiac pulse leads the subtle color change of a skin, a pulsatile signal which can be described as photoplethysmographic (PPG) signal can be measured through recording facial video using a digital camera. In this paper, we explore the potential that the reliable heart rate can be measured remotely by the facial video recorded using smartphone camera. First, using the front facing-camera of a smartphone, facial video was recorded. We detected facial region on the image of each frame using face detection, and yielded the raw trace signal from the green channel of the image. To extract more accurate cardiac pulse signal, we applied independent component analysis (ICA) to the raw trace signal. The heart rate was extracted using frequency analysis of the raw trace signal and the analyzed signal from ICA. The accuracy of the estimated heart rate was evaluated by comparing with the heart rate from reference electrocardiogram (ECG) signal. Finally, we developed FaceBEAT, an iPhone application for remote heart rate measurement, based on this study

Kwon, Min; Kim, Dai-Jin; Cho, Hyun; Yang, Soo (2013):

The smartphone addiction scale: development and validation of a short version for adolescents.

In: *PLoS One* 8 (12), S. e83558. DOI: 10.1371/journal.pone.0083558.

Abstract:

OBJECTIVE: This study was designed to investigate the revised and short version of the smartphone addiction scale and the proof of its validity in adolescents. In addition, it suggested cutting off the values by gender in order to determine smartphone addiction and elaborate the characteristics of smartphone usage in adolescents. METHOD: A set of questionnaires were provided to a total of 540 selected participants from April to May of 2013. The participants consisted of 343 boys and 197 girls, and their average age was 14.5 years old. The content validity was performed on a selection of shortened items, while an internal-consistency test was conducted for the verification of its reliability. The concurrent validity was confirmed using SAS, SAPS and

KS-scale. Receiver operating characteristics analysis was conducted to suggest cut-off. RESULTS: The 10 final questions were selected using content validity. The internal consistency and concurrent validity of SAS were verified with a Cronbach's alpha of 0.911. The SAS-SV was significantly correlated with the SAS, SAPS and KS-scale. The SAS-SV scores of gender (p<.001) and self-evaluation of smartphone addiction (p<.001) showed significant difference. The ROC analysis results showed an area under a curve (AUC) value of 0.963(0.888-1.000), a cut-off value of 31, sensitivity value of 0.867 and specificity value of 0.893 in boys while an AUC value of 0.947(0.887-1.000), a cut-off value of 33, sensitivity value of 0.875, and a specificity value of 0.886 in girls. CONCLUSIONS: The SAS-SV showed good reliability and validity for the assessment of smartphone addiction. The smartphone addiction scale short version, which was developed and validated in this study, could be used efficiently for the evaluation of smartphone addiction in community and research areas.

Kwon, Sungjun; Kim, Jeehoon; Kang, Seungwoo; Lee, Youngki; Baek, Hyunjae; Park, Kwangsuk (2014):

CardioGuard: A Brassiere-Based Reliable ECG Monitoring Sensor System for Supporting Daily Smartphone Healthcare Applications.

In: *Telemed J E Health* 20 (12), S. 1093–1102. DOI: 10.1089/tmj.2014.0008.

Abstract:

Abstract We propose CardioGuard, a brassiere-based reliable electrocardiogram (ECG) monitoring sensor system, for supporting daily smartphone healthcare applications. It is designed to satisfy two key requirements for user-unobtrusive daily ECG monitoring: reliability of ECG sensing and usability of the sensor. The system is validated through extensive evaluations. The evaluation results showed that the CardioGuard sensor reliably measure the ECG during 12 representative daily activities including diverse movement levels; 89.53% of QRS peaks were detected on average. The questionnaire-based user study with 15 participants showed that the CardioGuard sensor was comfortable and unobtrusive. Additionally, the signal-to-noise ratio test and the washing durability test were conducted to show the high-quality sensing of the proposed sensor and its physical durability in practical use, respectively.

Kwon, Hyung-Min; Lim, Jae-Sung; Kim, Young Seo; Moon, Jangsup; Park, Hyeri; Kim, Hyun Young et al. (2014):

Cerebral microbleeds are associated with nocturnal reverse dipping in hypertensive patients with ischemic stroke.

In: *BMC Neurol* 14, S. 8. DOI: 10.1186/1471-2377-14-8.

Abstract:

BACKGROUND: Abnormalities in nocturnal blood pressure dipping are well known for its relationship to cardiovascular diseases. Cerebral microbleeds are frequently observed in patients with hypertension and are known to be potent risk factors for stroke. However, there are scanty reports about the relationship between nocturnal dipping and cerebral microbleeds. METHODS: We recruited consecutive patients with both hypertension and ischemic stroke within 7 days after symptom onset, and those with cardioembolism were excluded. We applied 24-hour ambulatory blood pressure monitoring two weeks after stroke onset, and we used brain MRI to detect cerebral microbleeds. Various blood pressure parameters such as mean 24-hour blood pressure, awake/sleep blood pressure, and morning surge were compared between cerebral microbleeds (+) vs. (-) groups. Subjects were further classified according to nocturnal dipping status and were analyzed by logistic regression to determine its association with cerebral microbleeds with adjustment for age, gender, and cardiovascular risk factors. RESULTS: A total of 162 patients (100 males, age 65.33 +/- 10.32 years) were included. Cerebral microbleeds were detected in 65 patients (40.1%). Most ambulatory blood pressure parameters except morning surge were significantly higher in those who had cerebral microbleeds. After adjusting for the confounding factors, the reverse dippers were prone to have cerebral microbleeds (odds ratio, 3.81; 95% confidential interval, 1.36-10.65; p-value = 0.01). CONCLUSION: Cerebral microbleeds are independently associated with reverse dipping on ambulatory blood pressure monitoring in hypertensive stroke patients.

La Sierra, Alejandro; Redon, Josep; Banegas, José R.; Segura, Julián; Parati, Gianfranco; Gorostidi, Manuel et al. (2009):

Prevalence and factors associated with circadian blood pressure patterns in hypertensive patients.

In: *Hypertension* 53 (3), S. 466–472. DOI: 10.1161/HYPERTENSIONAHA.108.124008.

Abstract:

Ambulatory blood pressure (BP) monitoring has become useful in the diagnosis and management of hypertensive individuals. In addition to 24-hour values, the circadian variation of BP adds prognostic significance in predicting cardiovascular outcome. However, the magnitude of circadian BP patterns in large studies has hardly been noticed. Our aims were to determine the prevalence of circadian BP patterns and to assess clinical conditions associated with the nondipping status in groups of both treated and untreated hypertensive subjects, studied separately. Clinical data and 24-hour ambulatory BP monitoring were obtained from 42,947 hypertensive patients included in the Spanish Society of Hypertension Ambulatory Blood Pressure Monitoring Registry. They were 8384 previously untreated and 34,563 treated hypertensives. Twenty-four-hour ambulatory BP monitoring was performed with an oscillometric device (SpaceLabs 90207). A nondipping pattern was defined when nocturnal systolic BP dip was <10% of daytime systolic BP. The prevalence of nondipping was 41% in the untreated group and 53% in treated patients. In both groups, advanced age, obesity, diabetes mellitus, and overt cardiovascular or renal disease were associated with a blunted nocturnal BP decline (P<0.001). In treated patients, nondipping was associated with the use of a higher number of antihypertensive drugs but not with the time of the day at which antihypertensive drugs were administered. In conclusion, a blunted nocturnal BP dip (the nondipping pattern) is common in hypertensive patients. A clinical pattern of high cardiovascular risk is associated with nondipping, suggesting that the blunted nocturnal BP dip may be merely a marker of high cardiovascular risk.

La Vega, Rocio De; Roset, Roman; Castarlenas, Elena; Sanchez-Rodriguez, Elisabet; Sole, Ester; Miro, Jordi (2014):

Development and testing of Painometer: a Smartphone app to assess pain intensity.

In: *J Pain. DOI:* 10.1016/j.jpain.2014.04.009.

Abstract:

The so-called electronic and information technologies (EITs) are increasingly being used to assess pain. This study aims (1) to introduce Painometer, a Smartphone app that helps users to assess pain intensity, and (2) to report on its usability (i.e., user performance and satisfaction) and acceptability (i.e. the willingness to use it) when it is used by healthcare professionals and non-professionals. Painometer includes four well-known pain intensity scales: the Faces Pain Scale-Revised, the Numerical Rating Scale-11, the Coloured Analogue Scale, and the Visual Analogue Scale. Scores reported with these scales, when used in its traditional format, have demonstrated to be valid and reliable. The app was tested in a sample of 24 healthcare professionals, and 30 non-professionals. Two iterative usability cycles were conducted with a qualitative usability testing approach and a semi-structured interview. The participants had an average of 10 years' experience in using computers. The domains measured were ease of use, errors in usage, most popular characteristics, suggested changes and acceptability. Adding instructions and changing format and layout details solved the usability problems reported in cycle 1. No further problems were reported in cycle 2. Painometer has been found to be a useful, user-friendly app that may help to improve the accuracy of pain intensity assessment. PERSPECTIVE: Painometer, a Smarphone application to assess pain intensity, shows good usability and acceptability properties when used by healthcare professionals and non-professional users.

Labinson, Paul T.; Giacco, Sharon; Gift, Henry; Mansoor, George A.; White, William B. (2008):

The importance of the clinical observer in the development of a white-coat effect in African–American patients with hypertension.

In: *Blood Press Monit* 13 (3), S. 139–142.

Abstract:

INTRODUCTION:

As the office-awake blood pressure (BP) difference (white-coat effect) in African-Americans has not been evaluated, we studied the ethnicity, professional status (nurse versus doctor) and sex of the observer on the white-coat effect in African-American patients with hypertension.

METHODS:

Seated clinical BP measurements were obtained in random order by an African-American male research physician, a Caucasian male research physician, and a Caucasian female nurse who is of similar age and clinical experience. Within 1 week, ambulatory BP recordings were performed.

RESULTS:

A total of 65 African-American patients [54+/-13 years, 55% women, body mass index (BMI) 31+/-6 kg/m, 62% on drug therapy, 28% current smokers] participated in the study. Twenty-two percent had a systolic white-coat effect >20 mmHg and 49% had a diastolic white-coat effect >10 mmHg (average of all observers). Although there were no differences in the magnitude of the

white-coat effect among the three study observers, the primary physician's diastolic white-coat effect was significantly greater than that of the African-American physician (14+/-12 vs. 9+/-12, P=0.05), but not the systolic white-coat effect (16+/-16 vs. 10+/-16 mmHg, P=0.09). BMI positively correlated with the systolic and diastolic white-coat effect (r=0.30, P=0.02 and r=0.41, P=0.0001), but this correlation was true only for female patients in multiple regression analyses. BMI significantly predicted the systolic (P=0.043) and diastolic (P=0.004) white-coat effects.

CONCLUSION:

A white-coat effect is relatively common in African-American patients with hypertension and is the largest when the observer is their usual doctor. The clinical observer's ethnicity or sex does not play an important role in generating a white-coat effect in African-American patients with hypertension.

Lackner, J. M.; Jaccard, J.; Keefer, L.; Firth, R.; Carosella, A. M.; Sitrin, M.; Brenner, D. (2014):

The accuracy of patient-reported measures for GI symptoms: a comparison of real time and retrospective reports.

In: *Neurogastroenterol Motil* 26 (12), S. 1802–1811. DOI: 10.1111/nmo.12466.

Abstract:

BACKGROUND: Obtaining accurate information about gastrointestinal (GI) symptoms is critical to achieving the goals of clinical research and practice. The accuracy of patient data is especially important for functional GI disorders (e.g., IBS) whose symptoms lack a biomarker and index illness severity and treatment response. Retrospective patient-reported data are vulnerable to forgetting and various cognitive biases whose impact has not been systematically studied in patients with GI disorders. The aim of this study was to document the accuracy of patient-reported GI symptoms over a reporting period (1 week) most representative of the time frame used in research and clinical care. METHODS: Subjects were 273 Rome III-diagnosed IBS patients (mean age = 39 years, 89% F) who completed end of day GI symptom ratings for 7 days using an electronic diary. On Day 8, Subjects recalled the frequency and/or intensity of IBS symptoms over the past 7 days. Reports were then compared against a validation criterion based on aggregated end of day ratings. KEY RESULTS: At the group level, subjects recalled most accurately abdominal pain and urgency intensity at their worst, urgency days, and stool frequency. When data were analyzed at the individual level, a subgroup of subjects had difficulty recalling accurately symptoms that showed convergence between recall and real time reports at the group level. CONCLUSIONS & INFERENCES: Although many patients' recollection for specific GI symptoms (e.g., worst pain, stool frequency) is reasonably accurate, a non-trivial number of other symptoms (e.g., typical pain) are vulnerable to distortion from recall biases that can reduce sensitivity of detecting treatment effects in clinical and research settings.

Laing, Brian Yoshio; Mangione, Carol M.; Tseng, Chi-Hong; Leng, Mei; Vaisberg, Ekaterina; Mahida, Megha et al. (2014):

Effectiveness of a smartphone application for weight loss compared with usual care in overweight primary care patients: a randomized, controlled trial.

In: *Ann Intern Med* 161 (10 Suppl), S. S5-12. DOI: 10.7326/M13-3005.

Abstract:

BACKGROUND: Many smartphone applications (apps) for weight loss are available, but little is known about their effectiveness. OBJECTIVE: To evaluate the effect of introducing primary care patients to a free smartphone app for weight loss. DESIGN: Randomized, controlled trial. (ClinicalTrials.gov: NCT01650337). SETTING: 2 academic primary care clinics. PATIENTS: 212 primary care patients with body mass index of 25 kg/m2 or greater. INTERVENTION: 6 months of usual care without (n = 107) or with (n = 105) assistance in downloading the MyFitnessPal app (MyFitnessPal). MEASUREMENTS: Weight loss at 6 months (primary outcome) and changes in systolic blood pressure and behaviors, frequency of app use, and satisfaction (secondary outcomes). RESULTS: After 6 months, weight change was minimal, with no difference between groups (mean between-group difference, -0.30 kg [95% CI, -1.50 to 0.95 kg]; P = 0.63). Change in systolic blood pressure also did not differ between groups (mean between-group difference, -1.7 mm Hg [CI, -7.1 to 3.8 mm Hg]; P = 0.55). Compared with patients in the control group, those in the intervention group increased use of a personal calorie goal (mean between-group difference, 2.0 d/wk [CI, 1.1 to 2.9 d/wk]; P < 0.001), although other self-reported behaviors did not differ between groups. Most users reported high satisfaction with MyFitnessPal, but logins decreased sharply after the first month. LIMITATIONS: Despite being blinded to the name of the app, 14 control group participants (13%) used MyFitnessPal. In addition, 32% of intervention group participants and 19% of control group participants were lost to follow-up at 6 months. The app was given to patients by research assistants, not by physicians. CONCLUSION: Smartphone apps for weight loss may be useful for persons who are ready to self-monitor calories, but introducing a smartphone app is unlikely to produce substantial weight change for most patients. PRIMARY FUNDING SOURCE: Robert Wood Johnson Foundation Clinical Scholars Program, National Institutes of Health/National Center for Advancing

Translational Sciences for the UCLA Clinical and Translational Science Institute, and the Resource Centers for Minority Aging Research Center for Health Improvement of Minority Elderly under the National Institutes of Health/National Institute on Aging.

Lalloo, Chitra; Jibb, Lindsay A.; Rivera, Jordan; Agarwal, Arnav; Stinson, Jennifer N. (2014):

"There's a Pain App for That": Review of Patient-Targeted Smartphone Applications for Pain Management.

In: *Clin J Pain. DOI:* 10.1097/AJP.0000000000000171.

Abstract:

OBJECTIVES:: There are a growing number of pain self-management apps available for users to download on personal smartphones. The purpose of this study was to critically appraise the content and self-management functionality of currently available pain apps. METHODS:: An electronic search was conducted between May and June 2014 of the official stores for the four major operating systems. Two authors independently identified patient-focused apps with a stated goal of pain management. Discrepancies regarding selection were resolved through discussion with a third party. Metadata from all included apps were abstracted into a standard form. The content and functionality of each app as it pertained to pain self-management was rated. RESULTS:: A total of 279 apps met the inclusion criteria. Pain self-care skill support was the most common self-management function (77.4%). Apps also purported providing patients with the ability to engage in pain education (45.9%), self-monitoring (19%), social support (3.6%) and goal-setting (0.72%). No apps were comprehensive in terms of pain self-management, with the majority of apps including only a single self-management function (58.5%). Additionally, only 8.2% of apps included a healthcare professional in their development, not a single app provided a theoretical rationale, and only 1 app underwent scientific evaluation. DISCUSSION:: Currently available pain self-management apps for patients are simplistic, lack the involvement of healthcare professionals in their development, and have not been rigorously tested for effectiveness on pain-related health outcomes. There is a need to develop and test theoretically- and evidence-based apps to better support patients with accessible pain care self-management.

Lam, Jessica; Barr, Ronald G.; Catherine, Nicole; Tsui, Haley; Hahnhaussen, Claire L.; Pauwels, Julie; Brant, Rollin (2010):

Electronic and paper diary recording of infant and caregiver behaviors.

In: *Journal of Developmental & Behavioral Pediatrics* 31 (9), S. 685–693.

Abstract:

OBJECTIVES:

To assess (1) preference of parental use of an electronic diary (e-diary) over a paper diary to record continuous infant and caregiver behaviors over 7 days; (2) whether e-diary recordings would differ in systematic ways from those obtained by paper diaries, and (3) frequency of diary entries when parents provide entries when convenient.

METHODS:

Mothers of normal newborns were randomized at 5 weeks infant age to a paper diary first (n = 34) or e-diary first (n = 35) group. With 3 days between, mothers completed 7-day recordings on both the paper Baby's Day Diary and an analogous personal digital assistant e-diary for infant (sleep, awake alert, feeding, fussing, crying, inconsolable crying) and caregiver (carrying/holding, moving) behaviors, and completed post diary ease-of-use ratings and poststudy preference ratings.

RESULTS:

Mothers found e-diaries less bothersome but similarly disruptive and enjoyable to paper diaries. At study end, more found e-diaries easier to use, less bothersome and more efficient. E-diary behaviors were consistently more frequent, but rarely different in duration, then paper diary behaviors. Time-stamped e-diary entries (1) generally declined across weeks, (2) were higher if e-diaries were used first, and (3) settled at a modal 2 to 3 entries/day by the second week.

CONCLUSIONS:

For behavioral recording of infant and caregiver behaviors, mothers generally expressed more approval for e-diaries than paper diaries, but neither was considered onerous. E-diaries consistently report more frequent but similar durations of behaviors. If recording when convenient, daily diary entries trend toward 2 to 3 entries a day. The e-diary results provide convergent evidence that paper diary recordings of common infant and caregiver behavior durations provide good estimates of durations, but that behavioral frequencies may be underestimated.

Lam, C. Y.; Businelle, M. S.; Aigner, C. J.; McClure, J. B.; Cofta-Woerpel, L.; Cinciripini, P. M.; Wetter, D. W. (2013):

Individual and Combined Effects of Multiple High-Risk Triggers on Postcessation Smoking Urge and Lapse.

In: *Nicotine.Tob.Res.* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt190.

Abstract:

INTRODUCTION: Negative affect, alcohol consumption, and presence of others smoking have consistently been implicated as risk factors in smoking lapse and relapse. What is not known, however, is how these factors work together to affect smoking outcomes. This paper uses ecological momentary assessment (EMA) collected during the first 7 days of a smoking cessation attempt to test the individual and combined effects of high-risk triggers on smoking urge and lapse. METHODS: Participants were 300 female smokers who enrolled in a study that tested an individually tailored smoking cessation treatment. Participants completed EMA, which recorded negative affect, alcohol consumption, presence of others smoking, smoking urge, and smoking lapse, for 7 days starting on their quit date. RESULTS: Alcohol consumption, presence of others smoking, and negative affect were, independently and in combination, associated with increase in smoking urge and lapse. The results also found that the relationship between presence of others smoking and lapse and the relationship between negative affect and lapse were moderated by smoking urge. CONCLUSIONS: The current study found significant individual effect of alcohol consumption, presence of other smoking, and negative affect on smoking urge and lapse. Combing the triggers increased smoking urge and the risk of lapse to varying degrees and the presence of all 3 triggers resulted in the highest urge and lapse risk

Lam, Cho Y.; Businelle, Michael S.; Cofta-Woerpel, Ludmila; McClure, Jennifer B.; Cinciripini, Paul M.; Wetter, David W. (2014):

Positive smoking outcome expectancies mediate the relation between alcohol consumption and smoking urge among women during a quit attempt.

In: *Psychol Addict Behav* 28 (1), S. 163–172. DOI: 10.1037/a0034816.

Abstract:

Social learning models of addiction hypothesize that situational factors interact with cognitive determinants to influence a person's motivation to use substances. Ecological momentary assessment was used to examine the association between alcohol consumption, smoking outcome expectancies, and smoking urge during the first 7 days of a smoking quit attempt. Participants were 113 female smokers who enrolled in a study that tested an individually tailored smoking cessation treatment. Participants carried a palm-top personal computer for 7 days and were instructed to complete 4 random assessments each day and to initiate an assessment when they were tempted to smoke. Multilevel mediational analyses were used to examine (a) the effects of alcohol consumption before time j and positive smoking outcome expectancies at time j on smoking urge at time j + 1 (Model 1) and (b) the effects of alcohol consumption before time j and smoking urge at time j on positive smoking outcome expectancies at time j + 1 (Model 2). Model 1 found a significant effect of alcohol consumption before time j on smoking urge at time j + 1 ($p = .04$), and this effect was significantly mediated by positive smoking outcome expectancies at time j ($p < .0001$). Model 2 failed to find a significant effect of alcohol consumption before time j on positive smoking outcome expectancies at time j + 1. The findings suggest that alcohol consumption is significantly associated with increased positive smoking outcome expectancies that, in turn, are associated with increased smoking urge in women seeking to quit smoking.

Lambert, Joseph; Chapman, Judith; Lurie, Deborah (2013):

Challenges to the four-channel model of flow: Primary assumption of flow support the moderate challenging control channel.

In: *The Journal of Positive Psychology* 8 (5), S. 395–403. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-29305-004%26site%3dehost-live;jl185872@sju.edu.

Abstract:

Flow theory postulates that the psychological state of flow emerging when one engages in activities where skill level and challenge are both high, results in ‘optimal’ subjective experiences relative to other psychological states, and is intrinsically motivated. The experience sampling method was used on a sample of college students to compare daily activities associated with flow (high skill, high challenge) to the psychological state of control (high skill, moderate challenge) in relation to the subjective experiences of enjoyment, happiness, intrinsic motivation, and cognitive involvement. Contrary to flow theory, enjoyment, happiness, and intrinsic motivation were characteristic of activities associated with being in ‘control,’ as opposed to flow. Flow activities were associated with being cognitively involved in the task at hand. We believe such theoretically important

findings have been masked when using the original four-channel model of flow, but are clarified with use of the revised experience fluctuation model. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Lambert, Elisabeth A.; Chatzivlastou, Kanella; Schlaich, Markus; Lambert, Gavin; Head, Geoffrey A. (2014):

Morning Surge in Blood Pressure Is Associated With Reactivity of the Sympathetic Nervous System.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpt273.

Abstract:

BACKGROUND: An exaggerated morning surge in blood pressure (BP) closely relates to target organ damage and cardiovascular risk, but whether the causative mechanism involves greater reactivity of the sympathetic nervous system (SNS) is unknown. We determined whether the response of the SNS to a cold pressor test predicted the BP morning surge. METHODS: Ambulatory BP recordings were obtained from 14 men and 19 women (age = 41+/-4 years), and the amplitude (day-night difference), rate of rise (RoR), rate by amplitude product (BPPower), and morning BP surge (MBPS; post-awake minus pre-awake) of morning mean arterial pressure (MAP) were determined. The reactivity of the SNS to CPT was assessed by recording of muscle sympathetic nerve activity (MSNA). RESULTS: CPT induced a marked increase in MAP and all parameters of MSNA, including burst amplitude. Log-normalized BPPower positively correlated with the overall average CPT-induced increases in total MSNA (r = 0.38; P = 0.04) and burst amplitude (r = 0.43; P = 0.02) but was not related to the increase in MSNA frequency. Furthermore, a strong positive linear trend in the CPT-induced changes in burst amplitude across tertiles of BPPower and RoR was observed. BPPower and RoR were not related to CPT-induced hemodynamic changes. The MBPS did not correlate with any of the CPT-induced changes in vascular or MSNA variables. CONCLUSIONS: These results suggest that the central nervous system mechanisms influencing the increase in MSNA burst amplitude during arousal may also be fundamental in determining the rate and power of BP rise during the morning period.

Lamont, Alexandra; Webb, Rebecca (2009):

Short-and long-term musical preferences: what makes a favourite piece of music?

In: *Psychology of Music*.

Abstract:

Within the growing field of music preferences, little is currently known about the concept of a favourite piece of music. The current study explores listeners' nominated favourite pieces of music over short and longer time-spans, combining diary and interview methods to uncover what a favourite means, how stable it is, and what factors influence the development of favourites. Nine undergraduate students participated in a diary study spanning one month, with follow-up interviews conducted with two participants. Results indicate that musical favourites are subject to rapid change and highly context-dependent. Most daily favourites were heard on the day, either deliberately or by chance. 'Magpie' listeners collected a large number of relatively transient favourites, while 'squirrel' listeners had a large catalogue of music stored from which to select. Long-term favourites differed from daily favourites, being associated with intense emotional events in listeners' lives. In this small-scale study, diary methods successfully captured fluctuations in music preferences over time for most listeners, while interviews revealed more about listeners' motivations and personal stories connected with their favourite music. Future research is required with larger samples to tease out the complexities of developing music preferences over time and engagement with music in everyday life settings.

Lamoth, Claudine J. C.; van Lummel, Rob C.; Beek, Peter J. (2009):

Athletic skill level is reflected in body sway: a test case for accelometry in combination with stochastic dynamics.

In: *Gait Posture* 29 (4), S. 546–551. DOI: 10.1016/j.gaitpost.2008.12.006.

Abstract:

Recent studies on postural control have shown that the variability of body sway during quiet standing may provide valuable information to characterize changes in postural control due to age, pathology, skill and task. The aim of the present study was to determine - as spade work for possible clinical applications - whether body sway measured with a three-axial accelerometer at the trunk can differentiate between three healthy young populations that differ in athletic skill level. The three groups in

question (group size: n=22) consisted of regular bachelor students, physical education students and physical education students specialized in gymnastics. Data were recorded during tandem stance with eyes open or closed and while standing on foam. The acceleration time-series were analysed in anteriorposterior and mediolateral direction. Differences in postural control were quantified in terms of variability, spectral properties and stochastic dynamical measures, i.c., regularity (sample entropy, long-range correlations) and local stability (largest Lyapunov exponent). The results were clear-cut. Standing with eyes closed and on foam increased variability. Compared to standing with eyes open, standing with eyes closed resulted in less regular sway patterns but with greater local stability, whereas standing on foam had an opposite effect. With greater gymnastic skills, acceleration time-series were less variable, less regular and more stable. These results imply that quantifying the stochastic-dynamical structure of postural sway using ambulant accelerometry may provide a useful diagnostic tool.

Lampert, Rachel; Bremner, J. Douglas; Su, Shaoyong; Miller, Andrew; Lee, Forrester; Cheema, Faiz et al. (2008):

Decreased heart rate variability is associated with higher levels of inflammation in middle-aged men.

In: *Am Heart J* 156 (4), S. 759.e1-7. DOI: 10.1016/j.ahj.2008.07.009.

Abstract:

BACKGROUND\r\nMany traditional risk factors for coronary artery disease (CAD) are associated with altered autonomic function. Inflammation may provide a link between risk factors, autonomic dysfunction, and CAD. We examined the association between heart rate variability (HRV), a measure of autonomic function, and inflammation, measured by C-reactive protein (CRP) and interleukin-6 (IL-6).\r\nMETHODS\r\nWe examined 264 middle-aged male twins free of symptomatic CAD. All underwent ambulatory electrocardiogram monitoring and 24-hour ultra low, very low, low, and high-frequency power were calculated using power spectral analysis. C-reactive protein and IL-6 were measured, and risk factors including age, smoking, hypertension, lipids, diabetes, body mass index (BMI), depression, and physical activity were assessed.\r\nRESULTS\r\nPhysical activity, BMI, high-density lipoprotein cholesterol, smoking, depression, and hypertension were directly associated with CRP and IL-6 and inversely associated with one or more HRV variables. There was a graded inverse relationship between all HRV parameters (except high frequency) and CRP and IL-6. After adjustment for age, BMI, activity, high-density lipoprotein, smoking, hypertension, depression, and diabetes, ultra low frequency and very low frequency remained significant predictors of CRP ($P < .01$).\r\nCONCLUSIONS\r\nC-reactive protein is associated with decreased HRV, even after controlling for traditional CAD risk factors. Autonomic dysregulation leading to inflammation may represent one pathway through which traditional risk factors promote development of CAD.

Lamprecht, Marnie L.; Bradley, Andrew P.; Tran, Tommy; Boynton, Alison; Terrill, Philip I. (2015):

Multisite accelerometry for sleep and wake classification in children.

In: *Physiol Meas* 36 (1), S. 133–147. DOI: 10.1088/0967-3334/36/1/133.

Abstract:

Actigraphy is a useful alternative to the gold standard polysomnogram for non-invasively measuring sleep and wakefulness. However, it is unable to accurately assess sleep fragmentation due to its inability to differentiate restless sleep from wakefulness and quiet wake from sleep. This presents significant limitations in the assessment of sleep-related breathing disorders where sleep fragmentation is a common symptom. We propose that this limitation may be caused by hardware constraints and movement representation techniques. Our objective was to determine if multisite tri-axial accelerometry improves sleep and wake classification. Twenty-four patients aged 6-15 years (median: 8 years, 16 male) underwent a diagnostic polysomnogram while simultaneously recording motion from the left wrist and index fingertip, upper thorax and left ankle and great toe using a custom accelerometry system. Movement was quantified using several features and two feature selection techniques were employed to select optimal features for restricted feature set sizes. A heuristic was also applied to identify movements during restless sleep. The sleep and wake classification performance was then assessed and validated against the manually scored polysomnogram using discriminant analysis. Tri-axial accelerometry measured at the wrist significantly improved the wake detection when compared to uni-axial accelerometry (specificity at 85% sensitivity: 71.3(14.2)% versus 55.2(24.7)%, $p < 0.01$). Multisite accelerometry significantly improved the performance when compared to the single wrist placement (specificity at 85% sensitivity: 82.1(12.5)% versus 71.3(14.2)%, $p < 0.05$). Our results indicate that multisite accelerometry offers a significant performance benefit which could be further improved by analysing movement in raw multisite accelerometry data.

Lanaj, Klodiana; Johnson, Russell E.; Barnes, Christopher M. (2014):

Beginning the workday yet already depleted? Consequences of late-night smartphone use and sleep.

In: *Organizational Behavior and Human Decision Processes* 124 (1), S. 11–23. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-09380-003%26site%3dehost-live.

Abstract:

Smartphones have become a prevalent technology as they provide employees with instant access to work-related information and communications outside of the office. Despite these advantages, there may be some costs of smartphone use for work at night. Drawing from ego depletion theory, we examined whether smartphone use depletes employees' regulatory resources and impairs their engagement at work the following day. Across two studies using experience sampling methodology, we found that smartphone use for work at night increased depletion the next morning via its effects on sleep. Morning depletion in turn diminished daily work engagement. The indirect effects of smartphone use on depletion and engagement the next day were incremental to the effects of other electronic devices (e.g., computer, tablet, and television use). We also found some support that the negative effects of morning depletion on daily work engagement may be buffered by job control, such that depletion impairs work engagement only for employees who experience low job control. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Lanata, Antonio; Valenza, Gaetano; Nardelli, Mimma; Gentili, Claudio; Scilingo, Enzo Pasquale (2015):

Complexity index from a personalized wearable monitoring system for assessing remission in mental health.

In: *IEEE J Biomed Health Inform* 19 (1), S. 132–139. DOI: 10.1109/JBHI.2014.2360711.

Abstract:

This study discusses a personalized wearable monitoring system, which provides information and communication technologies to patients with mental disorders and physicians managing such diseases. The system, hereinafter called the PSYCHE system, is mainly comprised of a comfortable t-shirt with embedded sensors, such as textile electrodes, to monitor electrocardiogram-heart rate variability (HRV) series, piezoresistive sensors for respiration activity, and triaxial accelerometers for activity recognition. Moreover, on the patient-side, the PSYCHE system uses a smartphone-based interactive platform for electronic mood agenda and clinical scale administration, whereas on the physician-side provides data visualization and support to clinical decision. The smartphone collects the physiological and behavioral data and sends the information out to a centralized server for further processing. In this study, we present experimental results gathered from ten bipolar patients, wearing the PSYCHE system, with severe symptoms who exhibited mood states among depression (DP), hypomania(HM), mixed state (MX), and euthymia (EU), i.e., the good affective balance. In analyzing more than 400 h of cardiovascular dynamics, we found that patients experiencing mood transitions from a pathological mood state (HM, DP, or MX-where depressive and hypomanic symptoms are simultaneously present) to EU can be characterized through a commonly used measure of entropy. In particular, the SampEn estimated on long-term HRV series increases according to the patients' clinical improvement. These results are in agreement with the current literature reporting on the complexity dynamics of physiological systems and provides a promising and viable support to clinical decision in order to improve the diagnosis and management of psychiatric disorders.

Lande, Marc B.; Carson, Nancy L.; Roy, Jason; Meagher, Cecilia C. (2006):

Effects of childhood primary hypertension on carotid intima media thickness: a matched controlled study.

In: *Hypertension* 48 (1), S. 40–44. DOI: 10.1161/01.HYP.0000227029.10536.e8.

Abstract:

To determine whether carotid intima media thickness is increased in children with primary hypertension, the current study compared carotid intima media thickness in hypertensive children with that of normotensive control subjects matched closely for body mass index and determined the relationship between carotid intima media thickness and hypertension severity determined by ambulatory blood pressure monitoring. Children with newly diagnosed office hypertension (n=28) had carotid intima media thickness, left ventricular mass index, and ambulatory blood pressure monitoring performed. Carotid intima media thickness was performed in normotensive control subjects (n=28) matched pairwise to hypertensive subjects for age (+/-1 year), gender, and body mass index (+/-10%). Eighty-two percent of subjects were overweight or obese (body mass index > or =85th

percentile). The median carotid intima media thickness of hypertensive subjects was greater than that of matched controls (0.67 versus 0.63 mm; P=0.045). In the hypertensive subjects, carotid intima media thickness correlated strongly with several ambulatory blood pressure monitoring parameters, with the strongest correlation for daytime systolic blood pressure index (r=0.57; P=0.003). In the hypertensive group, the prevalence of left ventricular hypertrophy was 32%, but unlike carotid intima media thickness, left ventricular mass index did not correlate with ambulatory blood pressure monitoring. Together, the findings that hypertensive subjects had increased carotid intima media thickness compared with matched controls and that higher carotid intima media thickness correlated with more severe hypertension by ambulatory blood pressure monitoring provide strong evidence that carotid intima media thickness is increased in childhood primary hypertension, independent of the effects of obesity.

Landon, Chris (2009):

Novel methods of ambulatory physiologic monitoring in patients with neuromuscular disease.

In: *Pediatrics* 123 Suppl 4, S. S250-2. DOI: 10.1542/peds.2008-2952L.

Abstract:

This is a summary of the presentation on novel methods of ambulatory physiologic monitoring in patients with neuromuscular disease, presented as part of the program on pulmonary management of pediatric patients with neuromuscular disorders at the 30th annual Carrell-Krusen Neuromuscular Symposium on February 20, 2008.

Landsbergis, P. A.; Dobson, M.; Koutsouras, G.; Schnall, P. (2013):

Job strain and ambulatory blood pressure: a meta-analysis and systematic review.

In: *Am J Public Health* 103 (3), S. e61-e71. DOI: 10.2105/AJPH.2012.301153.

Abstract:

We reviewed evidence of the relationship between job strain and ambulatory blood pressure (ABP) in 29 studies (1985-2012). We conducted a quantitative meta-analysis on 22 cross-sectional studies of a single exposure to job strain. We systematically reviewed 1 case-control study, 3 studies of cumulative exposure to job strain, and 3 longitudinal studies. Single exposure to job strain in cross-sectional studies was associated with higher work systolic and diastolic ABP. Associations were stronger in men than women and in studies of broad-based populations than those with limited occupational variance. Biases toward the null were common, suggesting that our summary results underestimated the true association. Job strain is a risk factor for blood pressure elevation. Workplace surveillance programs are needed to assess the prevalence of job strain and high ABP and to facilitate workplace cardiovascular risk reduction interventions

Lane, Andrew M.; Wilson, Mathew (2011):

Emotions and trait emotional intelligence among ultra-endurance runners.

In: *Journal of Science and Medicine in Sport* 14 (4), S. 358–362.

Abstract:

OBJECTIVES:

The aim of this study was to investigate relationships between trait emotional intelligence and emotional state changes over the course of an ultra-endurance foot race covering a route of approximately 175 miles (282 km) and held in set stages over six days.

DESIGN:

A repeated measures field design that sought to maintain ecological validity was used. Trait emotional intelligence was defined as a relatively stable concept that should predict adaptive emotional states experienced over the duration of the race and therefore associate with pleasant emotions during a 6-stage endurance event.

METHOD:

Thirty-four runners completed a self-report measure of trait emotional intelligence before the event started. Participants reported emotional states before and after each of the six races.

RESULTS:

Repeated measures ANOVA results showed significant variations in emotions over time and a main effect for trait emotional intelligence. Runners high in self-report trait emotional intelligence also reported higher pleasant and lower unpleasant emotions than runners low in trait emotional intelligence.

CONCLUSIONS:

Findings lend support to the notion that trait emotional intelligence associates with adaptive psychological states, suggesting that it may be a key individual difference that explains why some athletes respond to repeated bouts of hard exercise better than others. Future research should test the effectiveness of interventions designed to enhance trait emotional intelligence and examine the attendant impact on emotional responses to intense exercise during multi-stage events.

Lange, Stefanie; Suss, Heinz-Martin (2014):

Measuring slips and lapses when they occur - ambulatory assessment in application to cognitive failures.

In: *Conscious Cogn* 24, S. 1–11. DOI: 10.1016/j.concog.2013.12.008.

Abstract:

Cognitive failures are lapses in attention, cognition, and actions that everybody experiences in everyday life. Self-reports are mainly used for assessment but those instruments are memory-biased and more related to personality aspects than to actual behavior. Ambulatory assessment is already used for capturing emotions or addictive behavior, but not yet for cognitive failures. The newly developed Questionnaire for Cognitive Failures in Everyday Life (KFA) was applied via mobile phones (electronic KFA) wherein an acoustic signal asked participants (N=91, 60-76 years) 4 times daily to answer 13 questions for 1 week. The new instrument showed satisfying reliability and was compared with a self-report method (Cognitive Failures Questionnaire; Broadbent, Cooper, Fitzgerald, and Parkes, 1982) in terms of correlations with cognitive abilities (working memory capacity, short-term memory, switching ability, and reasoning), personality traits, and demographical aspects. Although further validation is needed, first results are promising and eKFA enriches cognitive failures research.

Langrish, Jeremy P.; Mills, Nicholas L.; Chan, Julian Kk; Leseman, Daan Lac; Aitken, Robert J.; Fokkens, Paul Hb et al. (2009):

Beneficial cardiovascular effects of reducing exposure to particulate air pollution with a simple facemask.

In: *Particle and fibre toxicology* 6, S. 8. DOI: 10.1186/1743-8977-6-8.

Abstract:

BACKGROUND\r\nExposure to air pollution is an important risk factor for cardiovascular morbidity and mortality, and is associated with increased blood pressure, reduced heart rate variability, endothelial dysfunction and myocardial ischaemia. Our objectives were to assess the cardiovascular effects of reducing air pollution exposure by wearing a facemask.\r\nMETHODS\r\nIn an open-label cross-over randomised controlled trial, 15 healthy volunteers (median age 28 years) walked on a predefined city centre route in Beijing in the presence and absence of a highly efficient facemask. Personal exposure to ambient air pollution and exercise was assessed continuously using portable real-time monitors and global positional system tracking respectively. Cardiovascular effects were assessed by continuous 12-lead electrocardiographic and ambulatory blood pressure monitoring.\r\nRESULTS\r\nAmbient exposure (PM2.5 86 +/- 61 vs 140 +/- 113 mug/m3; particle number 2.4 +/- 0.4 vs 2.3 +/- 0.4 x 104 particles/cm3), temperature (29 +/- 1 vs 28 +/- 3 degrees C) and relative humidity (63 +/- 10 vs 64 +/- 19%) were similar (P > 0.05 for all) on both study days. During the 2-hour city walk, systolic blood pressure was lower (114 +/- 10 vs 121 +/- 11 mmHg, P < 0.01) when subjects wore a facemask, although heart rate was similar (91 +/- 11 vs 88 +/- 11/min; P > 0.05). Over the 24-hour period heart rate variability increased (SDNN 65.6 +/- 11.5 vs 61.2 +/- 11.4 ms, P < 0.05; LF-power 919 +/- 352 vs 816 +/- 340 ms2, P < 0.05) when subjects wore the facemask.\r\nCONCLUSION\r\nWearing a facemask appears to abrogate the adverse effects of air pollution on blood pressure and heart rate variability. This simple intervention has the potential to protect susceptible individuals and prevent cardiovascular events in cities with high concentrations of ambient air pollution.

Lanningham-Foster, Lorraine; Foster, Randal C.; McCrady, Shelly K.; Jensen, Teresa B.; Mitre, Naim; Levine, James A. (2009):

Activity-promoting video games and increased energy expenditure.

In: *J Pediatr* 154 (6), S. 819–823. DOI: 10.1016/j.jpeds.2009.01.009.

Abstract:

OBJECTIVES\r\nTo test the hypothesis that both children and adults would expend more calories and move more while playing activity-promoting video games compared with sedentary video games.\r\nSTUDY DESIGN\r\nIn this single-group study, 22 healthy children (12 +/- 2 years; 11 male, 11 female) and 20 adults (34 +/- 11 years; 10 male, 10 female) were recruited. Energy expenditure and physical activity were measured while participants were resting, standing, watching television seated, sitting and playing a traditional sedentary video game, and while playing an activity-promoting video game (Nintendo Wii Boxing). Physical activity was measured with accelerometers, and energy expenditure was measured with an indirect calorimeter.\r\nRESULTS\r\nEnergy expenditure was significantly greater than all other activities when children or adults played Nintendo Wii (mean increase over resting, 189 +/- 63 kcal/hr, P < .001, and 148 +/- 71 kcal/hr, P < .001, respectively). When examining movement with accelerometry, children moved significantly more than adults (55 +/- 5 arbitrary acceleration units and 23 +/- 2 arbitrary acceleration units, respectively, P < .001) while playing Nintendo Wii.\r\nCONCLUSION\r\nActivity-promoting video games have the potential to increase movement and energy expenditure in children and adults.

Larkin, K. T.; Schauss, S. L.; Elnicki, D. M.; Goodie, J. L. (2007):

Detecting white coat and reverse white coat effects in clinic settings using measures of blood pressure habituation in the clinic and patient self-monitoring of blood pressure.

In: *J Hum Hypertens* 21 (7), S. 516–524.

Abstract:

To examine the utility of blood pressure (BP) habituation within and across multiple clinic visits and patient-determined home BP monitoring for detecting white coat (WCE) and reverse white coat effects (RWCE) commonly observed in medical settings, 54 patients undergoing evaluation for hypertension in an internal medicine group practice were categorized according to the magnitude of differences between systolic BP (SBP) and diastolic BP (DBP) obtained in the clinic and through ambulatory BP monitoring. BPs were measured four times during three separate clinic visits, during a 1-week home BP monitoring period, and during a single 24-h ambulatory monitoring period. Patients whose mean clinic and average daytime BPs were within +/-5 mm Hg were categorized as having stable BP; patients whose clinic BPs were >5 mm Hg of their daytime BPs were categorized as showing a WCE and patients whose average daytime BPs were >5 mm Hg of their clinic BPs were categorized as showing a RWCE. Results revealed that degree of habituation occurring between the first and third clinic visits significantly predicted magnitude of both the WCE and RWCE for SBP, with greater habituation being associated with the WCE and lesser habituation associated with the RWCE. Greater SBP habituation within clinic visits was associated with the WCE for SBP and greater DBP habituation within clinic visits was associated with the WCE for DBP. Lesser DBP habituation within clinic visits was associated with the RWCE for both SBP and DBP. Home BP monitoring did not contribute to predicting either WCE or RWCE.

Larsen, H.; Overbeek, G.; Granic, I.; Engels, R. C. (2012):

The strong effect of other people's drinking: two experimental observational studies in a real bar.

In: *Am.J.Addict.* 21 (2), S. 168–175. DOI: 10.1111/j.1521-0391.2011.00200.x.

Abstract:

Research has demonstrated that when people are with heavy-drinking peers, they consume more alcohol than when they are in the company of light-drinking peers. This social influence process has usually been investigated in clinical laboratories or seminaturalistic drinking settings such as laboratory bars. The question remains whether these robust effects can be replicated in real-life drinking settings. The aim of these experimental studies was to examine social influence processes in real bars. In Study 1 a two (confederate drank alcoholic vs. nonalcoholic drinks) by two (male vs. female participant) between-participant design was used to test imitation in same-sex dyads (N = 79). Study 2 tested differences in imitation between same- and other-sex dyads with a two (confederate drank alcoholic vs. nonalcoholic drinks) by two (male vs. female confederate) between-participant design (N = 60). Both studies showed that participants consumed more alcohol in the alcohol condition than the nonalcohol condition. No sex differences emerged in the extent to which participants imitated their drinking partners. Study 2 demonstrated no difference in imitation between same-sex and other-sex dyads. Results support the ecological validity of research on imitation of alcohol consumption conducted in laboratory bars

Larsson, Bo; Stinson, Jennifer N. (2011):

Commentary: On the importance of using prospective diary data in the assessment of recurrent headaches, stressors, and health behaviors in children and adolescents.

In: *Journal of Pediatric Psychology* 36 (8), S. 863–867. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-18469-003&site=ehost-live;bo.larsson@ntnu.no.

Abstract:

Comments on an article by M. Connelly, and J. Bickel (see record 2011-18469-002). The authors explore the stress and health behavior triggers of primary headaches in children using a daily process evaluation that is captured using a handheld electronic diary (e-diary). They reported on the evaluation of stress and health behavior triggers in a small sample of children aged 8–17 years referred to a pediatric clinic because of frequent headaches. The authors' innovative use of prospective measurement of headaches and potential triggers three times a day during two weeks in an electronic computer diary is a clear advancement of previous research and provided an opportunity for conducting statistical analyses of temporal and casual relationships between new headache episodes and the included triggers. The study provide encouraging data on potential triggers of frequent headaches in a selected clinic and small sample of children and adolescents based on prospective electronic diary measurement. The use of prospective event recordings in diaries will certainly help advance our knowledge and understanding of important triggers behind recurrent migraine and tension-type headaches in children and adolescents but also provide more solid grounds in evaluating treatment approaches focusing on coping strategies to improve headaches in these age groups. (PsycINFO Database Record (c) 2011 APA, all rights reserved)

Lassalle-Lagadec, Saioa; Catheline, Gwenaelle; Mayo, Willy; Dilharreguy, Bixente; Renou, Pauline; Fleury, Olivier et al. (2013):

Cerebellum involvement in post-stroke mood: A combined ecological and MRI study.

In: *Psychiatry Research: Neuroimaging* 212 (2), S. 158–160. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-15482-004%26site%3dehost-live;igor.sibon@chu-bordeaux.fr.

Abstract:

This study evaluated a new approach combining magnetic resonance imaging and the experience sampling method in the understanding of post-stroke mood pathophysiology. Findings revealed that emotional cognition after stroke may be related to phenotypic characteristics such as cerebellar volume, thereby suggesting that this combined approach could provide new insights into the pathophysiology of post-stroke mood disorders as well as other forms of comorbidity. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Lataster, T.; Collip, D.; Lardinois, M.; van Os, J.; Myin-Germeys, I. (2010):

Evidence for a familial correlation between increased reactivity to stress and positive psychotic symptoms.

In: *Acta Psychiatrica Scandinavica* 122 (5), S. 395–404.

Abstract:

OBJECTIVE:

This study tested the hypothesis that stress-reactivity may represent an intermediary phenotype underlying positive psychotic symptoms. It was examined whether: (i) stress-reactivity clusters within families of psychotic patients and (ii) stress-reactivity in relatives cosegregates with positive symptoms in patients.

METHOD:

The sample consisted of 40 patients and 47 siblings of these patients. The Experience Sampling Method (ESM - a structured diary technique) was used to measure stress-reactivity. Positive symptoms in patients were measured with the Comprehensive Assessment of Symptoms and History.

RESULTS:

Within-trait, cross-sib associations showed a significant association between stress-reactivity in the patient and stress-reactivity in their siblings. Significant cross-trait, cross-sib associations were established showing a significant association between positive psychotic symptoms in the patient and stress-reactivity in the sibling.

CONCLUSION:

The findings show familial clustering of increased stress-reactivity, suggesting common aetiological influences, probably both genetic and environmental, underlying stress-reactivity in the siblings and patients. In addition, the results underscore the hypothesis that increased stress-reactivity is an unconfounded mechanism of risk underlying the positive symptoms of psychotic disorders.

Lataster, T.; Valmaggia, L.; Lardinois, M.; Van, Os J.; Myin-Germeys, I. (2012):

Increased stress reactivity: a mechanism specifically associated with the positive symptoms of psychotic disorder.

In: *Psychol.Med.* (0033-2917 (Linking)), S. 1–12. DOI: 10.1017/S0033291712002279.

Abstract:

BACKGROUND: An increased reactivity to stress in the context of daily life is suggested to be an independent risk factor underlying the positive symptoms of psychotic disorder. The aim of this study was to investigate whether positive symptoms moderate the association between everyday stressful events and negative affect (NA), known as stress reactivity. This hypothesis was put to the test in patients with a diagnosis of psychotic disorder. Method The Comprehensive Assessment of Symptoms and History (CASH) and the Positive and Negative Syndrome Scale (PANSS) were used to assess positive and negative symptoms. The experience sampling method (ESM), a structured diary technique, was used to measure stress reactivity and psychotic symptoms in daily life. RESULTS: Higher levels of positive symptoms (CASH: B = 0.14, p = 0.005; PANSS: B = 0.05, p = 0.000; ESM: B = 0.03, p = 0.000) and lower levels of negative symptoms (PANSS: B = - 0.05, p = 0.001) significantly moderate the association between unpleasant events and NA. No significant moderating effect was found for CASH negative symptoms. Moreover, the moderating effect of lifetime and current symptoms on the stress-NA association was significantly larger for those patients with predominantly positive symptoms (CASH: B = 0.09, p = 0.000; PANSS: B = 0.08, p = 0.000; ESM: B = 0.13, p = 0.000). CONCLUSIONS: Patients with a 'psychotic syndrome' with high levels of positive symptoms and low levels of negative symptoms show increased reactivity to stress in daily life, indicating that stress reactivity is a possible risk factor underlying this syndrome

Lau, Hong-Yin; Tong, Kai-Yu; Zhu, Hailong (2009):

Support vector machine for classification of walking conditions of persons after stroke with dropped foot.

In: *Hum Mov Sci* 28 (4), S. 504–514. DOI: 10.1016/j.humov.2008.12.003.

Abstract:

Walking with dropped foot represents a major gait disorder, which is observed in hemiparetic persons after stroke. This study explores the use of support vector machine (SVMs) to classify different walking conditions for hemiparetic subjects. Seven participants with dropped foot (category 4 of functional ambulatory category) walked in five different conditions: level ground, stair ascent, stair descent, upslope, and downslope. The kinematic data were measured by two portable sensor units, each comprising an accelerometer and gyroscope attached to the lower limb on the shank and foot segments. The overall classification accuracy of stair ascent, stair descent, and other walking conditions was 92.9% using input features from the sensor attached to the shank. It was further improved to 97.5% by adding two more inputs from the sensor attached to the foot. Stair ascent was also classified by the inputs from the foot sensor unit with 96% accuracy. The performance of an SVM was shown to be superior to that of other machine learning methods using artificial neural networks (ANN) and radial basis function neural networks (RBF). The results suggested that the SVM classification method could be applied as a tool for pathological gait analysis, pattern recognition, control signals in functional electrical stimulation (FES) and rehabilitation robot, as well as activity monitoring during rehabilitation of daily activities.

Laurenceau, Jean-Philippe; Hayes, Adele M.; Feldman, Greg C. (2007):

Some methodological and statistical issues in the study of change processes in psychotherapy.

In: *Clinical Psychology Review* 27 (6), S. 682–695.

Abstract:

As the number of psychotherapies with demonstrated efficacy accumulates, an important task is to identify principles and processes of change. This information can guide treatment refinement, integration, and future development. However, the standard randomized control trial (RCT) design can limit the questions that can be asked and the statistical analyses that can be conducted. We discuss the importance of examining the shape of change, in addition to the importance of identifying mediators and moderators of change. We suggest methodological considerations for longitudinal data collection that can improve the kinds of therapy process questions that can be examined. We also review some data analytic approaches that are being used in other areas of psychology that have the potential to capture the complexity and dynamics of change in psychotherapy.

Laursen, Brett; Little, Todd D.; Card, Noel A. (Hg.) (2012):

Handbook of developmental research methods.

New York, NY US: Guilford Press.

Lauszus, Finn Friis; Rosgaard, Anni; Lousen, Thea; Rasmussen, Ole W.; Klebe, Thomas M.; Klebe, Joachim G. (2009):

Night/day ratio as predictor of preeclampsia in normoalbuminuric, diabetic women: early signs of blood pressure disorders.

In: *Archives of gynecology and obstetrics* 279 (6), S. 829–834. DOI: 10.1007/s00404-008-0840-z.

Abstract:

PURPOSE\r\nDay/night ratio from diurnal ambulatory blood pressure (AMBP) in pregnant women with type 1 diabetes mellitus (T1DM) and in non-diabetic women was evaluated for its association with preeclampsia, retinopathy, HbA1c, and birth weight.\r\nMETHODS\r\nOne hundred and sixty-one women were recruited for AMBP performed with a Spacelab 90207 monitor. The pregnant women were 50 non-diabetic women and 111 T1DM women with normoalbuminuria and no hypertension. ANOVA, regression, and ROC curves analysis were applied.\r\nRESULTS\r\nWomen with simplex retinopathy had higher night/day ratio and lower birth weight than those without retinopathy. Women who developed preeclampsia had night/day ratio similar to those with simplex retinopathy. In first trimester they had higher blood pressure than those who did not develop preeclampsia.\r\nCONCLUSIONS\r\nSimplex retinopathy and preeclampsia are associated with a reduced night/day ratio even with normal blood pressure but night/day ratio provides no better prediction of preeclampsia than the absolute values.

Lavender, J. M.; Wonderlich, S. A.; Crosby, R. D.; Engel, S. G.; Mitchell, J. E.; Crow, S. et al. (2013):

A naturalistic examination of body checking and dietary restriction in women with anorexia nervosa.

In: *Behav.Res Ther.* 51 (8), S. 507–511. DOI: 10.1016/j.brat.2013.05.004.

Abstract:

Body checking has been conceptualized as a behavioral manifestation of the core overvaluation of eating, shape, and weight concerns underlying eating disorder psychopathology. Cognitive-behavioral theories suggest that body checking behaviors may function to maintain dietary restriction. The current study examined the association between body checking frequency and dietary restriction among women with anorexia nervosa (AN) in the natural environment. Women (N = 118) with full or partial AN completed baseline clinical interviews and a two-week ecological momentary assessment protocol, during which they reported on body checking behaviors (i.e., checking whether one's thighs touch; checking joints/bones for fat) and dietary restriction (i.e., 8 waking hours without eating; consuming less than 1200 calories per day). Average daily body checking frequency was positively associated with baseline eating disorder symptoms and body mass index. Daily body checking frequency was associated with both forms of dietary restriction on the same day, as well as the following day. Results support the theorized association between body checking and overvaluation of shape and weight, and suggest that targeting such behaviors in treatment may have utility in reducing dietary restriction

Lavender, J. M.; Wonderlich, S. A.; Crosby, R. D.; Engel, S. G.; Mitchell, J. E.; Crow, S. J. et al. (2013):

Personality-based subtypes of anorexia nervosa: Examining validity and utility using baseline clinical variables and ecological momentary assessment.

In: *Behav.Res Ther.* 51 (8), S. 512–517. DOI: 10.1016/j.brat.2013.05.007.

Abstract:

OBJECTIVE: This study sought to empirically derive and validate clinically relevant personality-based subtypes of anorexia nervosa (AN). METHODS: Women (N = 116) with full or subthreshold AN completed baseline measures of personality, clinical variables, and eating disorder (ED) symptoms, followed by two weeks of ecological momentary assessment (EMA). A latent profile analysis was conducted to identify personality subtypes, which were compared on baseline clinical variables and EMA variables. RESULTS: The best-fitting model supported three subtypes: underregulated, overregulated, and low psychopathology. The underregulated subtype (characterized by high Stimulus Seeking, Self-Harm, and Oppositionality) displayed greater baseline ED symptoms, as well as lower positive affect and greater negative affect, self-discrepancy, and binge eating in the natural environment. The overregulated subtype (characterized by high Compulsivity and low Stimulus Seeking) was more likely to have a lifetime obsessive-compulsive disorder diagnosis and exhibited greater perfectionism; levels of negative affect, positive affect, and self-discrepancy in this group were intermediate between the other subtypes. The low psychopathology subtype (characterized by normative personality) displayed the lowest levels of baseline ED symptoms, co-occurring disorders, and ED behaviors measured via EMA. CONCLUSIONS: Findings support the validity of these personality-based subtypes, suggesting the potential utility of addressing within-diagnosis heterogeneity in the treatment of AN

Lavender, Jason M.; Young, Kyle P.; Wonderlich, Stephen A.; Crosby, Ross D.; Engel, Scott G.; Mitchell, James E. et al. (2013):

Daily Patterns of Anxiety in Anorexia Nervosa: Associations With Eating Disorder Behaviors in the Natural Environment.

In: *Journal of Abnormal Psychology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-15420-001%26site%3dehost-live.

Abstract:

The role of anxiety has been emphasized in etiological/maintenance models of anorexia nervosa. This study identified daily patterns of anxiety in anorexia nervosa and examined the likelihood of the occurrence of eating disorder behaviors in each trajectory, the daily temporal distribution of eating disorder behaviors in each trajectory, and the extent to which the tendency to exhibit particular anxiety trajectories was associated with baseline diagnostic and trait-level personality variables. Women with full or subthreshold anorexia nervosa (N = 118) completed a 2-week ecological momentary assessment (EMA) protocol during which they reported on a variety of behavioral and affective variables, including anxiety and eating disorder behaviors. Using latent growth mixture modeling to classify EMA days (N = 1,526) based on anxiety ratings, we identified 7 distinct daily anxiety trajectories. Overall differences between trajectories were found for rates of binge eating, self-induced vomiting, body checking, skipping meals, and dietary restriction. Furthermore, distinct daily temporal distributions of eating disorder behaviors were found across the trajectories, with peaks in the probability of behaviors frequently coinciding with high levels of anxiety. Finally, traits of personality pathology (affective lability, self-harm, social avoidance, and oppositionality) and the presence of a co-occurring mood disorder were found to be associated with the tendency to experience particular daily anxiety trajectories (e.g., stable high anxiety). Findings support the presence of within-person variability in daily anxiety patterns in anorexia nervosa and also provide evidence for an association between these anxiety patterns and eating disorder behaviors. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Lawman, Hannah G.; Wilson, Dawn K.; van Horn, M. Lee; Resnicow, Ken; Kitzman-Ulrich, Heather (2011):

The relationship between psychosocial correlates and physical activity in underserved adolescent boys and girls in the ACT trial.

In: *J Phys Act Health* 8 (2), S. 253.

Abstract:

BACKGROUND:

Previous research suggests motivation, enjoyment, and self-efficacy may be important psychosocial factors for understanding physical activity (PA) in youth. While previous studies have shown mixed results, emerging evidence indicates relationships between psychosocial factors and PA may be stronger in boys than girls. This study expands on previous research by examining

the effects of motivation, enjoyment and self-efficacy on PA in underserved adolescent (low income, ethnic minorities) boys and girls. Based on previous literature, it was hypothesized the effects of motivation, enjoyment and self-efficacy on moderate-to-vigorous PA (MVPA) would be stronger in boys than in girls.

METHODS:

Baseline cross-sectional data were obtained from a randomized, school-based trial (Active by Choice Today; ACT) in underserved 6th graders (N=771 girls, 651 boys). Intrapersonal variables for PA were assessed via self-report and confirmatory factor analyses were conducted for each predictor. MVPA was assessed with 7-day accelerometry estimates.

RESULTS:

Multivariate regression analyses stratified by sex demonstrated a significant positive main effect of self-efficacy and motivation on MVPA for girls. Boys also showed a positive trend for the effect of motivation on MVPA.

CONCLUSIONS:

The results from this study suggest motivation and self-efficacy should be better integrated to facilitate the development of more effective interventions for increasing PA in underserved adolescents.

Layne, Charles S.; Mama, Scherezade K.; Banda, Jorge A.; Lee, Rebecca E. (2011):

Development of an ecologically valid approach to assess moderate physical activity using accelerometry in community dwelling women of color: A cross-sectional study.

In: *Int J Behav Nutr Phys Act* 8 (1), S. 21.

Abstract:

BACKGROUND:

Women of color report the lowest levels of physical activity and highest rates of overweight and obesity in the US. The purpose of this study was to develop an individualized, ecologically valid, field based method to assess physical activity over seven days for community dwelling women of color using accelerometers.

METHODS:

Accelerometer-measured physical activity, Borg perceived exertion, demographics, blood pressure, heart rate, and anthropometric measures were collected from African American and Hispanic or Latina women (N = 209). A threshold for increased physical activity was determined for each participant by calculating the average count per minute (plus one standard deviation) for each participant collected during a self-selected pace that corresponded to a 'recreational' walk about their neighborhood. The threshold was then used to calculate the amount of time spent doing increased intensity physical activity during a typical week.

RESULTS:

Women were middle-aged and obese (M BMI = 34.3 ± 9.3). The average individual activity counts per day ranged from 482-1368 in African American women and 470-1302 in Hispanic or Latina women. On average, African American women spent significantly more time doing what was labeled 'increased' physical activity than Hispanic and Latino women. However neither group approached recommended physical activity levels, as African American women, averaged 1.73% and Hispanic and Latino women averaged 0.83% of their day engaged in increased physical activity ($p < 0.05$).

CONCLUSIONS:

This study presents a simple field-based method for developing accelerometer thresholds that identify personalized thresholds of moderate intensity physical activity that can be used by in community-based settings. Findings highlight a need for physical activity programs whose starting points are based upon the individual's typical baseline physical activity level, which is likely to be well below the minimum recommended published guidelines.

Lazarescu, A.; Sifrim, D. (2008):

Ambulatory monitoring of GERD: current technology.

In: *Gastroenterology clinics of North America* 37 (4), S. 793-805, viii. DOI: 10.1016/j.gtc.2008.09.006.

Abstract:

Various techniques have been devised to diagnose, characterize, and classify gastroesophageal reflux (GER). Stationary techniques, such as fluoroscopy and scintigraphy, provide interesting anatomic and functional information related to GER but

are not sensitive enough and are usually performed in nonphysiologic conditions. Ambulatory techniques for GER monitoring have been developed and used since 1974. The current available techniques include catheter and wireless pH-metry, Bilitec, and impedance-pH monitoring. Prolonged wireless pH monitoring can be useful to evaluate patients off and on proton pump inhibitor (PPI) treatment. Impedance-pH monitoring is being used increasingly in patients who have persistent symptoms on PPI therapy because it can establish an association between symptoms and weakly acidic or nonacid reflux. Bilitec is performed in patients suspected to have increased duodenogastroesophageal reflux (DGER). This article discusses the technical details, clinical indications, and applications of these diagnostic techniques.

Le, Grange D.; Crosby, R. D.; Engel, S. G.; Cao, L.; Ndungu, A.; Crow, S. J. et al. (2012):

DSM-IV-Defined Anorexia Nervosa Versus Subthreshold Anorexia Nervosa (EDNOS-AN).

In: *Eur.Eat.Disord.Rev.* (1072-4133 (Linking)). DOI: 10.1002/erv.2192.

Abstract:

OBJECTIVES: Eating disorder not otherwise specified (EDNOS) is the most prevalent eating disorder, yet its heterogeneity begs less reliance on this broad diagnostic category. The purpose of this study was to compare women with anorexia nervosa (AN) and EDNOS, AN type (EDNOS-AN) from a multisite study on eating-related and general psychopathology measures. METHODS: One hundred eighteen participants (n = 59 with DSM-IV AN, n = 59 with EDNOS-AN) completed structured interviews, questionnaires and a physical examination at baseline. In addition, participants carried a handheld palm pilot computer for 2 weeks to provide ecological momentary assessment (EMA) information about mood and eating disorder behaviours. RESULTS: No significant differences between AN and EDNOS-AN were found on the self-report and interview measures, or on the EMA mood assessments. The only differences to emerge were that participants with AN reported higher rates of binge eating and purging on EMA compared with those with EDNOS-AN, whereas EDNOS-AN reported higher rates of checking thighs and joints on EMA compared with those with AN. For the physiological parameters, AN presented with lower white blood cell counts compared with EDNOS-AN. CONCLUSIONS: Findings highlight the clinical significance of EDNOS-AN and support a closer look at the definition of AN as proposed by the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition. Copyright (c) 2012 John Wiley & Sons, Ltd and Eating Disorders Association

Le, S.; Shafer, P. O.; Bartfeld, E.; Fisher, R. S. (2011):

An online diary for tracking epilepsy.

In: *Epilepsy Behav* 22 (4), S. 705–709. DOI: 10.1016/j.yebeh.2011.08.035.

Abstract:

My Epilepsy Diary is a free Web-based application on the public website epilepsy.com, available for patients to track epilepsy and to aid clinicians with data-based, individualized management. The first aim of this descriptive study was to outline electronic diary functions. Second, the study retrospectively profiled a large cohort of 2010 calendar year diary users including demographics, seizure types, temporal distribution of seizures, triggers, and use and side effects of antiepileptic drugs (AEDs). A total of 1944 users provided demographic information and 1877 recorded seizure data. Most (64%) users were women. Average age was 29.9+/-16.0years. A total of 70,990 seizure entries and 15,630 AED entries were logged. Events were apportioned as 79% seizures and 21% seizure clusters. Specific AEDs were detailed in 7331 entries: monotherapy was used in 18% and polytherapy in 82%. Mood-related side effects were most commonly reported in 19% of 1027 users

Leahey, Tricia M.; Crane, Melissa M.; Pinto, Angela Marinilli; Weinberg, Brad; Kumar, Rajiv; Wing, Rena R. (2010):

Effect of teammates on changes in physical activity in a statewide campaign.

In: *Prev Med* 51 (1), S. 45–49. DOI: 10.1016/j.ypmed.2010.04.004.

Abstract:

OBJECTIVE\r\nMost Americans do not meet physical activity recommendations. Statewide campaigns can effectively increase activity levels. Reported herein are physical activity outcomes from Shape Up Rhode Island (SURI) 2007, a statewide campaign to increase steps through team-based competition. Given the importance of social networks in behavior change, this paper focused on the effects of team and team characteristics on activity outcomes.\r\nMETHOD\r\nFor 16weeks, 5333 adults comprising 652 teams wore pedometers and reported their steps online.\r\nRESULTS\r\nParticipants' daily steps increased from 7029(3915) at baseline to 9393(5976) at SURI end (p<0.001). There was a significant intraclass correlation for step change among team members (ICC=0.09); thus, an individual's change in steps was influenced by what team they were on. Moreover, baseline team

characteristics predicted individual step change; being on a more active team was associated with greater increases in activity for individual members (p<0.001), whereas being on a team with a broad range of steps was associated with smaller changes in activity for individual members (p=0.02).\r\nCONCLUSION\r\nThese findings are the first to suggest that team members influence individual activity outcomes in team-based statewide campaigns. Future research should explore ways to use social network factors to enhance team-based physical activity programs.

Leahey, Tricia M.; Crowther, Janis H. (2008):

An ecological momentary assessment of comparison target as a moderator of the effects of appearance-focused social comparisons.

In: *Body Image* 5 (3), S. 307–311.

Abstract:

This research examined whether comparison target moderates the effects of naturally occurring appearance-focused social comparisons on women's affect, appearance esteem, and dieting thoughts. During daily activities, body-satisfied (BS) women and body-dissatisfied (BD) women recorded their comparison targets and reactions to comparison information. For BS women, upward comparisons with peers were associated with more positive affect (PA) and appearance esteem and less guilt than upward comparisons with media images and downward comparisons with peers were associated with less PA than downward comparisons with media images. For BD women, upward comparisons with peers were associated with more appearance esteem and diet thoughts than upward comparisons with media images and downward comparisons with peers were associated with less PA, appearance esteem, and diet thoughts and more guilt than downward comparisons with media images.

Leahey, Tricia M.; Crowther, Janis H.; Ciesla, Jeffrey A. (2011):

An ecological momentary assessment of the effects of weight and shape social comparisons on women with eating pathology, high body dissatisfaction, and low body dissatisfaction.

In: *Behav Ther* 42 (2), S. 197–210.

Abstract:

This research examined the effects of naturally occurring appearance comparisons on women's affect, body satisfaction, and compensatory cognitions and behaviors. Using ecological momentary assessment, women with high body dissatisfaction and eating pathology (EPHB), high body dissatisfaction (HB), or low body dissatisfaction (LB) recorded their reactions to appearance-focused social comparisons. EPHB and HB women made more upward appearance comparisons than LB women. All women experienced negative emotions and cognitions after upward comparisons, including increased guilt, body dissatisfaction, and thoughts of dieting. EPHB women were most negatively affected by comparisons; they experienced more intense negative emotions, more thoughts of dieting/exercising, and an increase in eating-disordered behavior after upward comparisons. HB women experienced more negative affective consequences and thoughts of dieting than LB women. Results are consistent with social comparison theory and provide important information that may be used to inform eating disorder treatment and prevention efforts.

Leblanc, A. G.; Janssen, I. (2010):

Difference between self-reported and accelerometer measured moderate-to-vigorous physical activity in youth.

In: *Pediatric Exercise Science* 22, S. 523–534.

Abstract:

We examined differences between objective (accelerometer) and subjective (self-report) measures of moderate-to-vigorous physical activity (MVPA) in youth. Participants included 2761 youth aged 12–19 years. Within each sex and race group, objective and self-reported measures of MVPA were poorly correlated (R2 = .01–.10). Self-reported MVPA values were higher than objective values (median: 42.4 vs. 15.0 min/d). 65.4% of participants over-reported their MVPA by >/=5 min/d. The difference between self-reported and objective measures was not influenced by sex, age, or race. There was, however, a systematic difference such that inactive participants over-reported their MVPA to the greatest extent.

Leclerc, Jocelyne; Rahn, Michelle; Linden, Wolfgang (2006):

Does personality predict blood pressure over a 10-year period?

In: *Personality and Individual Differences* 40 (6), S. 1313–1321.

Abstract:

We posited that if personality traits were to influence disease development, then there would have to exist a stable link between personality and certain indicators of health status. This hypothesis was evaluated by measuring the stability of blood pressure (BP)–personality associations over a 10-year interval.

One hundred and twelve participants completed ambulatory blood pressure monitoring (ABPM) and personality questionnaires twice, over a 10-year time interval. Stability coefficients (r) for measures of depression, hostility, self-deception and impression management were 0.35, 0.55, 0.26 and 0.41, respectively. BP was also fairly stable (r = .44 and r = .59 for systolic/diastolic BP). Associations between personality indicators and BP were noted for depression, hostility, and impression management at baseline. Hostility additionally correlated with diastolic BP 10 years later. Further analyses revealed differential results for men and women, as well as a more pronounced linkage in individuals with a positive family history of hypertension. Multiple regression analyses were utilized to assess gender differences. High self-deception was found to predict significant variance in 10-year BP. Higher age and low hostility were both independent predictors of 10-year BP in women. These results support the hypothesis that personality traits can play a role in disease development.

Lee, P. H. (2013):

Data imputation for accelerometer-measured physical activity: the combined approach.

In: *Am J Clin.Nutr.* 97 (5), S. 965–971. DOI: 10.3945/ajcn.112.052738.

Abstract:

BACKGROUND: Accelerometers are gaining popularity for the assessment of the physical activity level; however, compliance is a problem that results in missing data. Data from study days in which the accelerometer is not worn for a number of hours that are sufficient to reach a predetermined cutoff value are considered invalid and discarded. The problem of missing data is commonly handled by imputation; however, all traditional imputation methods ignore the available information from invalid days. OBJECTIVE: In this study, I propose a new approach to the imputation of missing accelerometer data that takes into account the data available from invalid days. DESIGN: A total of 4069 participants in NHANES waves 2003-2004 and 2005-2006 who provided 7 d of valid accelerometer data were used to illustrate this new approach. The method of imputation was a combined approach that combined the available data from valid days and invalid days to impute missing values. Simulation studies were carried out to compare this new combined approach with the traditional imputation method for 1) accuracy and 2) effect-size estimation of the sex-physical activity relation by using the root mean squared error (RMSE). RESULTS: The combined approach performed significantly better than traditional imputation method (all t tests $P < 0.001$), with the percentage reduction of the RMSE for accuracy and effect-size estimation that ranged from 12.4% to 17.3% and 19.8% to 32.9%, respectively. CONCLUSION: The combined approach significantly outperforms the traditional imputation algorithm

Lee, Heyoung; Ahn, Heejune; Choi, Samwook; Choi, Wanbok (2014):

The SAMS: Smartphone Addiction Management System and Verification.

In: *J Med Syst* 38 (1), S. 1. DOI: 10.1007/s10916-013-0001-1.

Abstract:

While the popularity of smartphones has given enormous convenience to our lives, their pathological use has created a new mental health concern among the community. Hence, intensive research is being conducted on the etiology and treatment of the condition. However, the traditional clinical approach based surveys and interviews has serious limitations: health professionals cannot perform continual assessment and intervention for the affected group and the subjectivity of assessment is questionable. To cope with these limitations, a comprehensive ICT (Information and Communications Technology) system called SAMS (Smartphone Addiction Management System) is developed for objective assessment and intervention. The SAMS system consists of an Android smartphone application and a web application server. The SAMS client monitors the user's application usage together with GPS location and Internet access location, and transmits the data to the SAMS server. The SAMS server stores the usage data and performs key statistical data analysis and usage intervention according to the clinicians' decision. To verify the reliability and efficacy of the developed system, a comparison study with survey-based screening with the K-SAS (Korean Smartphone Addiction Scale) as well as self-field trials is performed. The comparison study is done using usage data from 14 users who are 19 to 50 year old adults that left at least 1 week usage logs and completed the survey questionnaires. The field trial fully verified the accuracy of the time, location, and Internet access information in the usage measurement and the

reliability of the system operation over more than 2 weeks. The comparison study showed that daily use count has a strong correlation with K-SAS scores, whereas daily use times do not strongly correlate for potentially addicted users. The correlation coefficients of count and times with total K-SAS score are CC = 0.62 and CC =0.07, respectively, and the t-test analysis for the contrast group of potential addicts and the values for the non-addicts were p = 0.047 and p = 0.507, respectively.

Lee, Jung-Ah; Cho, Sang-Hyun; Lee, Young-Jae; Yang, Heui-Kyung; Lee, Jeong-Whan (2010):

Portable activity monitoring system for temporal parameters of gait cycles.

In: *J Med Syst* 34 (5), S. 959–966.

Abstract:

A portable and wireless activity monitoring system was developed for the estimation of temporal gait parameters. The new system was built using three-axis accelerometers to automatically detect walking steps with various walking speeds. The accuracy of walking step-peak detection algorithm was assessed by using a running machine with variable speeds. To assess the consistency of gait parameter analysis system, estimated parameters, such as heel-contact and toe-off time based on accelerometers and footswitches were compared for consecutive 20 steps from 19 individual healthy subjects. Accelerometers and footswitches had high consistency in the temporal gait parameters. The stance, swing, single-limb support, and double-limb support time of gait cycle revealed ICCs values of 0.95, 0.93, 0.86, and 0.75 on the right and 0.96, 0.86, 0.93, 0.84 on the left, respectively. And the walking step-peak detection accuracy was 99.15% (±0.007) for the proposed method compared to 87.48% (±0.033) for a pedometer. Therefore, the proposed activity monitoring system proved to be a reliable and useful tool for identification of temporal gait parameters and walking pattern classification.

Lee, B. G.; Chung, W. Y. (2012):

A smartphone-based driver safety monitoring system using data fusion.

In: *Sensors.(Basel)* 12 (12), S. 17536–17552. DOI: 10.3390/s121217536.

Abstract:

This paper proposes a method for monitoring driver safety levels using a data fusion approach based on several discrete data types: eye features, bio-signal variation, in-vehicle temperature, and vehicle speed. The driver safety monitoring system was developed in practice in the form of an application for an Android-based smartphone device, where measuring safety-related data requires no extra monetary expenditure or equipment. Moreover, the system provides high resolution and flexibility. The safety monitoring process involves the fusion of attributes gathered from different sensors, including video, electrocardiography, photoplethysmography, temperature, and a three-axis accelerometer, that are assigned as input variables to an inference analysis framework. A Fuzzy Bayesian framework is designed to indicate the driver's capability level and is updated continuously in real-time. The sensory data are transmitted via Bluetooth communication to the smartphone device. A fake incoming call warning service alerts the driver if his or her safety level is suspiciously compromised. Realistic testing of the system demonstrates the practical benefits of multiple features and their fusion in providing a more authentic and effective driver safety monitoring

Lee, Jong-Hyuk; Jung, Han-Kil; Lee, Gang-Geun; Kim, Han-Young; Park, Sun-Gyoo; Woo, Seong-Chang (2013):

Effect of behavioral intervention using smartphone application for preoperative anxiety in pediatric patients.

In: *Korean J Anesthesiol* 65 (6), S. 508–518. DOI: 10.4097/kjae.2013.65.6.508.

Abstract:

BACKGROUND: Children and parents experience significant anxiety and distress during the preoperative period. This is important because preoperative anxiety in children is associated with adverse postoperative outcome. So we suggest behaviorally oriented preoperative anxiety intervention program based on the anesthesia and psychology with smartphone application, world-widely used. METHODS: A total 120 patients (aged 1-10 years old) who were scheduled for elective surgery under general anesthesia was included in this randomized controlled trial. We randomized the patients into three groups, with using intravenous (IV) midazolam sedation (M group), with using smartphone application program (S group), and with using low dose IV midazolam plus smartphone application program (SM group). And the child anxiety was assessed using the modified Yale Preoperative Anxiety Scale (mYPAS) at holding area, 5 min after intervention, entrance to operating room. RESULTS: In all three groups, mYPAS after intervention were lower than the preoperative holding area (M group 52.8 +/- 11.8 vs 41.0 +/- 7.0, S

group 59.2 +/- 17.6 vs 36.4 +/- 7.3, SM group 58.3 +/- 17.5 vs 26.0 +/- 3.4). A comparison of mYPAS scores between each group showed that the S group reduced anxiety lower than M group (P < 0.01), and the SM group exhibited significantly lower anxiety than the two other groups (P < 0.01). CONCLUSIONS: The preoperative preparation program using smartphone application is simple and customized by individual development that effective in the reduction of preoperative anxiety.

Lee, Ga-Young; Kim, Jeonghun; Kim, Ju Han; Kim, Kiwoong; Seong, Joon-Kyung (2014):

Online Learning for Classification of Alzheimer Disease based on Cortical Thickness and Hippocampal Shape Analysis.

In: *Healthc Inform Res* 20 (1), S. 61–68. DOI: 10.4258/hir.2014.20.1.61.

Abstract:

OBJECTIVES: Mobile healthcare applications are becoming a growing trend. Also, the prevalence of dementia in modern society is showing a steady growing trend. Among degenerative brain diseases that cause dementia, Alzheimer disease (AD) is the most common. The purpose of this study was to identify AD patients using magnetic resonance imaging in the mobile environment. METHODS: We propose an incremental classification for mobile healthcare systems. Our classification method is based on incremental learning for AD diagnosis and AD prediction using the cortical thickness data and hippocampus shape. We constructed a classifier based on principal component analysis and linear discriminant analysis. We performed initial learning and mobile subject classification. Initial learning is the group learning part in our server. Our smartphone agent implements the mobile classification and shows various results. RESULTS: With use of cortical thickness data analysis alone, the discrimination accuracy was 87.33% (sensitivity 96.49% and specificity 64.33%). When cortical thickness data and hippocampal shape were analyzed together, the achieved accuracy was 87.52% (sensitivity 96.79% and specificity 63.24%). CONCLUSIONS: In this paper, we presented a classification method based on online learning for AD diagnosis by employing both cortical thickness data and hippocampal shape analysis data. Our method was implemented on smartphone devices and discriminated AD patients for normal group.

Lee, Rebecca E.; Mama, Scherezade K.; Adamus-Leach, Heather J.; Soltero, Erica G. (2014):

Contribution of Neighborhood Income and Access to Quality Physical Activity Resources to Physical Activity in Ethnic Minority Women Over Time.

In: *Am J Health Promot. DOI:* 10.4278/ajhp.130403-QUAN-148.

Abstract:

Abstract Purpose . To create and test an index to indicate both availability and quality of physical activity (PA) resources (PARs), to examine associations between access to quality PARs and changes in PA, and to determine whether this association differed in lower- and higher-income neighborhoods. Design . Longitudinal, 6-month intervention. Setting . Houston and Austin, Texas. Subjects . African-American and Hispanic or Latina women. Measures . Women (N = 410) completed a questionnaire and accelerometry to measure PA. Neighborhoods (N = 163) were classified as lower- or higher-income by median household income at the census-tract level. PARs were audited using the PARA (physical activity resource assessment). Access to quality PARs was determined by a composite index (QPAR) of features, amenities, and incivilities. Analysis . Repeated measures analyses of variance were used to examine changes in PA by (1) neighborhood income (lower/higher) and QPAR (lower/higher) groups, and (2) neighborhood income (lower/higher) and number of PARs (lower/higher) groups, adjusting for ethnicity, household income, and body mass index. Results . Women in neighborhoods with lower QPAR scores had small increases in self-reported vigorous PA (M Delta = 327.8 metabolic equivalent of task [MET]-min/wk) and decreases in accelerometer PA (M = -3.4 min/d), compared to those with higher QPAR scores who had larger increases in self-reported vigorous PA (M Delta = 709.8 MET-min/wk) and increased accelerometer PA (M = 3.9 min/d). There was a significant interaction between changes in leisure-time PA, QPAR score, and number of PARs (p = .049). Women with both more PARs and higher QPAR scores reported greater increases in leisure-time PA than women with fewer PARs and lower QPAR scores. Conclusion . Access to higher-quality PARs can help increase or maintain PA over time regardless of neighborhood income. PAR quality is a separate and distinct, important determinant of PA in ethnic minority women.

Lee, J.; Matsumura, K.; Yamakoshi, T.; Rolfe, P.; Tanaka, N.; Kim, K.; Yamakoshi, K. (2013):

Validation of normalized pulse volume in the outer ear as a simple measure of sympathetic activity using warm and cold pressor tests: towards applications in ambulatory monitoring.

In: *Physiol Meas* 34 (3), S. 359–375. DOI: 10.1088/0967-3334/34/3/359.

Abstract:

Normalized pulse volume (NPV) derived from the ear has the potential to be a practical index for monitoring daily life stress. However, ear NPV has not yet been validated. Therefore, we compared NPV derived from an index finger using transmission photoplethysmography as a reference, with NPV derived from a middle finger and four sites of the ear using reflection photoplethysmography during baseline and while performing cold and warm water immersion in ten young and six middle-aged subjects. The results showed that logarithmically-transformed NPV (lnNPV) during cold water immersion as compared with baseline values was significantly lower, only at the index finger, the middle finger and the bottom of the ear-canal. Furthermore, lnNPV reactivities (DeltalnNPV; the difference between baseline and test values) from an index finger were significantly related to DeltalnNPV from the middle finger and the bottom of the ear-canal (young: r = 0.90 and 0.62, middle-aged: r = 0.80 and 0.58, respectively). In conclusion, these findings show that reflection and transmission photoplethysmography are comparable methods to derive NPV in accordance with our theoretical prediction. NPV derived from the bottom of the ear-canal is a valid approach, which could be useful for evaluating daily life stress

Lee, Matthew R.; Okazaki, Sumie; Yoo, Hyung Chol (2006):

Frequency and intensity of social anxiety in Asian Americans and European Americans.

In: *Cultural Diversity and Ethnic Minority Psychology* 12 (2), S. 291.

Abstract:

Asian American students have typically reported greater levels of social anxiety than European American students on self-report measures (e.g., Okazaki, 1997; Norasakkunkit & Kalick, 2002). This study employed an event-contingent experience sampling methodology to examine whether Asian American university students experienced social anxiety more often and more intensely than European Americans in their daily lives. Forty-five Asian American and 38 European American students participated in a two-week diary study. The results showed that on average, Asian Americans and European Americans reported a similar number of events that evoked anxiety in social situations, but Asian Americans reported more negative emotions on average in social situations than did European Americans.

Lee, Seoho; Oncescu, Vlad; Mancuso, Matt; Mehta, Saurabh; Erickson, David (2014):

A smartphone platform for the quantification of vitamin D levels.

In: *Lab Chip* 14 (8), S. 1437–1442. DOI: 10.1039/c3lc51375k.

Abstract:

Vitamin D deficiency has been linked to a number of diseases and adverse outcomes including: osteoporosis, infections, diabetes, cardiovascular diseases, and even cancer. At present the vast majority of vitamin D testing is performed in large-scale laboratories at the request of a physician as part of an annual panel of blood tests. Here we present a system for rapid quantification of vitamin D levels on a smartphone. The system consists of a smartphone accessory, an app, and a test strip that allows the colorimetric detection of 25-hydroxyvitamin D using a novel gold nanoparticle-based immunoassay. We show that the system can be used to accurately measure physiological levels of 25-hydroxyvitamin D with accuracy better than 15 nM and a precision of 10 nM. We compare our system with well-established ELISA test kits for serum samples of unknown concentration and demonstrate equivalency of the results. We envision this as the first step towards the development of the NutriPhone, a comprehensive system for the analysis of multiple vitamins and micronutrients on a smartphone.

Lee, Christine M.; Patrick, Megan E.; Neighbors, Clayton; Lewis, Melissa A.; Tollison, Sean J.; Larimer, Mary E. (2010):

Exploring the role of positive and negative consequences in understanding perceptions and evaluations of individual drinking events.

In: *Addict Behav* 35 (8), S. 764–770. DOI: 10.1016/j.addbeh.2010.03.003.

Abstract:

While research has established that drinking more alcohol is associated with experiencing more positive and negative alcohol-related consequences, less is known about how college students evaluate their drinking experiences. Evaluations of drinking events may vary with factors such as how much one drinks, which consequences one experiences, and the context (i.e., where and with whom) one drinks on a given occasion. This research used daily data (Level 2: N=166 students, 61% female; Level 1: N=848 person drinking days) to explore the relationship between quantity of alcohol consumed and experience of specific domains of positive and negative consequences and to examine how the experience of specific consequences related to overall evaluation of the drinking experience. Drinking on a given day was positively associated with experiencing more negative (social and personal) and more positive (image, fun/social, and relaxation) consequences. With respect to the formation of overall impressions, negative (social and personal) consequences were associated with less favorable evaluations whereas positive (image, fun/social, and relaxation) consequences were associated with more favorable evaluations of the drinking experience. Indirect effects analyses suggested that consequences (negative personal, negative social, positive fun/social, and positive relaxation) significantly mediated the relationship between drinking and overall evaluation at the daily level. These results underscore the importance of considering both positive and negative consequences in understanding students' choices to drink and how they evaluate their experiences.

Lee, Joon; Steele, Catriona M.; Chau, Tom (2009):

Swallow segmentation with artificial neural networks and multi-sensor fusion.

In: *Med Eng Phys* 31 (9), S. 1049–1055. DOI: 10.1016/j.medengphy.2009.07.001.

Abstract:

Swallow segmentation is a critical precursory step to the analysis of swallowing signal characteristics. In an effort to automatically segment swallows, we investigated artificial neural networks (ANN) with information from cervical dual-axis accelerometry, submental MMG, and nasal airflow. Our objectives were (1) to investigate the relationship between segmentation performance and the number of signal sources and (2) to identify the signals or signal combinations most useful for swallow segmentation. Signals were acquired from 17 healthy adults in both discrete and continuous swallowing tasks using five stimuli. Training and test feature vectors were constructed with variances from single or multiple signals, estimated within 200 ms moving windows with 50% overlap. Corresponding binary target labels (swallow or non-swallow) were derived by manual segmentation. A separate 3-layer ANN was trained for each participant-signal combination, and all possible signal combinations were investigated. As more signal sources were included, segmentation performance improved in terms of sensitivity, specificity, accuracy, and adjusted accuracy. The combination of all four signal sources achieved the highest mean accuracy and adjusted accuracy of 88.5% and 89.6%, respectively. A-P accelerometry proved to be the most discriminatory source, while the inclusion of MMG or nasal airflow resulted in the least performance improvement. These findings suggest that an ANN, multi-sensor fusion approach to segmentation is worthy of further investigation in swallowing studies.

Lee, Hopin; Sullivan, S. John; Schneiders, Anthony G.; Ahmed, Osman Hassan; Balasundaram, Arun Prasad; Williams, David et al. (2014):

Smartphone and tablet apps for concussion road warriors (team clinicians): a systematic review for practical users.

In: *Br J Sports Med. DOI:* 10.1136/bjsports-2013-092930.

Abstract:

BACKGROUND: Mobile technologies are steadily replacing traditional assessment approaches for the recognition and assessment of a sports concussion. Their ease of access, while facilitating the early identification of a concussion, also raises issues regarding the content of the applications (apps) and their suitability for different user groups. AIM: To locate and review apps that assist in the recognition and assessment of a sports concussion and to assess their content with respect to that of internationally accepted best-practice instruments. METHODS: A search of international app stores and of the web using key terms such as 'concussion', 'sports concussion' and variants was conducted. For those apps meeting the inclusion criteria, data were extracted on the platform, intended users and price. The content of each app was benchmarked to the Sport Concussion Assessment Tool 2 (SCAT2) and Pocket SCAT2 using a custom scoring scheme to generate a percentage compliance statistic.

RESULTS: 18 of the 155 apps identified met the inclusion criteria. Almost all (16/18) were available on an iOS platform and only five required a payment to purchase. The apps were marketed for a wide range of intended users from medical professionals to the general public. The content of the apps varied from 0% to 100% compliance with the selected standard, and 'symptom evaluation' components demonstrated the highest level of compliance. CONCLUSIONS: The surge in availability of apps in an unregulated market raises concerns as to the appropriateness of their content for different groups of end users. The consolidation of best-practice concussion instruments now provides a framework to inform the development of future apps.

Lee, Jwy; Yan, Sj; Chan, Hck; Yau, Qkc; Shyung, P.; Chan, Km (2014):

A novel mobile device based hamstring strength test result can predict isokinetic hamstring strength in professional football players: a study of reliability and validity.

In: *Br J Sports Med* 48 (7), S. 623–624. DOI: 10.1136/bjsports-2014-093494.172.

Abstract:

BACKGROUND: Isokinetic hamstring strength test is considered as a golden standard for identifying players with increased risk of hamstring strain injuries. However, those testing protocols were time consuming and inconvenient. OBJECTIVE: The aim of this study is to examine the reliability and validity of a novel mobile device based hamstring strength test in soccer players. It is hypothesized that a greater forward flexion angle is associated a greater isokinetic hamstring strength. DESIGN: Cross-sectional study. SETTING: A physical test of hamstring strength in clinical setting. PARTICIPANTS: 30 first team players were recruited from professional football clubs. MAIN OUTCOME MEASUREMENTS: In the CUHK hamstring strength test (CUHK test), a smartphone was attached on subject's lower back. Subjects were instructed to lower the upper body from a kneeling position until the point he cannot sustain. Trunk forward flexion angle and angular velocity were recorded by the device. In the isokinetic hamstring strength test, it examined subjects' concentric and eccentric hamstring peak torque. Pearson Correlation, linear regression and intra-class correlation coefficient (ICC) were used to examine the validity and reliability. RESULTS: Result shown that the reliability was good, R=0.845. The CUHK strength test result was highly correlated with isokinetic hamstring peak torque at ecc. 30 degree/second, con. 60 degree/second, con. 240 degree/second respectively, i.e. R=0.81, 0.73 and 0.66. Linear regression analysis shown that the CUHK test was the best to predict isokinetic eccentric hamstring performance at 30 degree/second, R(2)=0.81, P<.001). CONCLUSIONS: CUHK hamstring strength test is a reliable and valid tool to examine athletes' hamstring muscle performance. Clinician and sports coaches may adopt this test for screening and monitoring athletes or patients during rehabilitation or preseason period. Individualized rehabilitation or strength training recommendation could be made based on the test result.

Lee-Flynn, Sharon C.; Pomaki, Georgia; Delongis, Anita; Biesanz, Jeremy C.; Puterman, Eli (2011):

Daily cognitive appraisals, daily affect, and long-term depressive symptoms: The role of self-esteem and self-concept clarity in the stress process.

In: *Pers Soc Psychol Bull* 37 (2), S. 255–268.

Abstract:

The current study investigated how self-esteem and self-concept clarity are implicated in the stress process both in the short and long term. Initial and 2-year follow-up interviews were completed by 178 participants from stepfamily unions. In twice-daily structured diaries over 7 days, participants reported their main family stressor, cognitive appraisals (perceived stressor threat and stressor controllability), and negative affect. Results of multilevel modeling indicated that high self-esteem ameliorated the effect of daily negative cognitive appraisals on daily negative affect. Self-concept clarity also buffered the effect of low self-self-esteem on depressive symptoms 2 years later. Our findings point to the vulnerability of those having low self-esteem or low self-concept clarity in terms of both short- and long-term adaptation to stress. They indicate the need for the consideration of such individual differences in designing stress management interventions.

Lehman, Barbara J.; Cane, Arianna C.; Tallon, Shannon J.; Smith, Stephanie F. (2014):

Physiological and Emotional Responses to Subjective Social Evaluative Threat in Daily Life.

In: *Anxiety Stress Coping*, S. 1–31. DOI: 10.1080/10615806.2014.968563.

Abstract:

Background and Objectives. This study examined concurrent and delayed emotional and cardiovascular correlates of naturally occurring experiences with subjective social evaluative threat (SSET), and tested whether individual differences in social interaction anxiety moderated those associations. Methods. Sixty-eight participants wore ambulatory blood pressure monitors for three days. Following each blood pressure reading participants reported on SSET and negative emotions, yielding 1,770 momentary measures. Results. Multilevel modeling suggested that reports of greater SSET uniquely predicted elevations in anxiety and embarrassment, with elevations in anxiety, embarrassment, and shame extending to the hour following SSET. Reports of concurrent and previous-hour SSET also predicted cardiovascular elevations. Linkages between SSET and anxiety and shame, but not cardiovascular measures, were moderated by social interaction anxiety. Those higher in social interaction anxiety showed especially strong associations between SSET and both concurrent and delayed anxiety and greater delayed shame. Conclusions. This research suggests an important role for anxiety, embarrassment, and shame as emotional consequences of naturally occurring evaluative threat, especially for those who are more socially anxious. Further, this work replicates other naturalistic studies that have documented increased blood pressure at times of SSET, and extends that work by documenting cardiovascular responses into the following hour.

Lehmiller, Justin J.; Ioerger, Michael (2014):

Social networking smartphone applications and sexual health outcomes among men who have sex with men.

In: *PLoS One* 9 (1), S. e86603. DOI: 10.1371/journal.pone.0086603.

Abstract:

Several smartphone applications (apps) designed to help men who have sex with men (MSM) find casual sexual partners have appeared on the market recently. Apps of this nature have the potential to impact sexual health and behavior by providing constant access to a large supply of available partners. In this study, the sexual health history, behavior, and personality of MSM who use these apps was compared to MSM who meet partners in other ways. A sample of 110 adult MSM was recruited online to complete a cross-sectional survey. All participants were either single or involved in a non-exclusive romantic relationship. There were no statistically significant differences between app users and non-users in frequency of insertive or receptive anal sex without a condom. However, app users reported significantly more sexual partners and had a higher prevalence of ever being diagnosed with an STI than did non-users. App users did not differ from non-users on any demographic or personality variables (including erotophilia, sensation seeking, and self-control); however, when adjusting lifetime total sex partners for those met specifically through apps, app users still had significantly more partners. This pattern of results suggests that app users may be more sexually active in general. More work is needed to fully understand the association between this emerging technology and potential sexual health risks.

Leoncini, Giovanna; Ratto, Elena; Viazzi, Francesca; Vaccaro, Valentina; Parodi, Angelica; Falqui, Valeria et al. (2006):

Increased ambulatory arterial stiffness index is associated with target organ damage in primary hypertension.

In: *Hypertension* 48 (3), S. 397–403. DOI: 10.1161/01.HYP.0000236599.91051.1e.

Abstract:

Increased arterial stiffness has been shown to predict cardiovascular mortality in patients with primary hypertension. Asymptomatic organ damage is known to precede cardiovascular events. We investigated the relationship between a recently proposed index of stiffness derived from ambulatory blood pressure (BP) and target organ damage in 188 untreated patients with primary hypertension. Ambulatory arterial stiffness index was defined as 1 minus the regression slope of diastolic over systolic BP readings obtained from 24-hour recordings. Albuminuria was measured as the albumin:creatinine ratio, left ventricular mass index was assessed by echocardiography, and carotid abnormalities were evaluated by ultrasonography. The prevalence of microalbuminuria, left ventricular hypertrophy (LVH), and carotid abnormalities was 12%, 38%, and 19%, respectively. Ambulatory arterial stiffness index was positively related to age, triglycerides, office and 24-hour systolic BP, 24-hour pulse pressure, urinary albumin excretion, and carotid intima-media thickness. Patients with microalbuminuria, carotid abnormalities, or LVH showed higher ambulatory arterial stiffness index as compared with those without it. After adjusting for confounding factors, each SD increase in ambulatory arterial stiffness index entails an &2 times higher risk of microalbuminuria, carotid abnormalities, and LVH and doubles the risk of the occurrence of >or=1 sign of organ damage. Ambulatory arterial stiffness index is associated with organ damage in patients with primary hypertension. These data strengthen the role of this index as a marker of risk and help to explain the high cardiovascular mortality reported in patients with high ambulatory arterial stiffness index.

Lepage, Marie L.; Price, Matthew; O Neil, Patrick; Crowther, Janis H. (2012):

The effect of exercise absence on affect and body dissatisfaction as moderated by obligatory exercise beliefs and eating disordered beliefs and behaviors.

In: *Psychology of Sport and Exercise* 13 (4), S. 500–508. DOI: 10.1037/t01067-000;

Abstract:

Aim: Research suggests that exercise absence is frequently associated with greater guilt and negative affect, particularly when obligatory exercise beliefs and eating disordered psychopathology are considered. Two separate studies used ecological momentary assessment (EMA) to examine differences in mood on exercise and non-exercise days and the moderating impact of obligatory exercise beliefs and eating disordered beliefs and behaviors. Method: Both studies recruited female university students who endorsed frequent exercise behavior and study two also recruited based on level of eating disordered psychopathology. Participants completed the Obligatory Exercise Questionnaire at baseline and EMA measures of affect and exercise behavior for approximately one week. Study two participants also completed measures of body dissatisfaction and cognitions. Results: Results of study one suggest that obligation to exercise appears to have a greater impact on general level of affect than does exercise absence or the interaction of these two. In addition, in study two, eating disorder symptomatology was significantly associated with affect and cognition while exercise absence and obligatory exercise beliefs were not. Conclusions: The present studies suggest that the absence of exercise is not associated with significant changes in affect or cognitions. However, obligation to exercise and eating disorder symptomatology do impact affect and cognitions. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Lewandowski, Lawrence; Rieger, Brian; Smyth, Joshua; Perry, Lorraine; Gathje, Rebecca (2009):

Measuring post-concussion symptoms in adolescents: feasibility of ecological momentary assessment.

In: *Archives of clinical neuropsychology : the official journal of the National Academy of Neuropsychologists* 24 (8), S. 791–796. DOI: 10.1093/arclin/acp087.

Abstract:

Although there is a large literature examining head trauma in general, several areas remain understudied. Notably, little is known about symptom expression over the course of a day for adolescents recovering from concussion. Furthermore, intra-individual symptom variability has not been well characterized. This pilot study examined the feasibility of a momentary data-gathering method, as well as the sensitivity of the assessment to the subtle and dynamic changes in symptoms of concussion. Six adolescents, three of whom suffered a concussion and three non-injured controls, provided symptom ratings five times per day for 5 days. This ecological momentary assessment (EMA) was conducted on a personal digital assistant to capture variability in symptom reports while in the natural environment. Preliminary results indicated that the EMA method showed great promise as a research tool in natural settings (e.g., school and home). Adolescents were able to comply with all tasks with little interference in their daily activities. Students with concussion showed generally higher symptom ratings across physical, cognitive, and affective domains, and temporal and diurnal patterns for symptoms emerged. Implications for future research and patient care are discussed.

Li, X.; Hedeker, D. (2012):

A three-level mixed-effects location scale model with an application to ecological momentary assessment data.

In: *Stat.Med.* (0277-6715 (Linking)). DOI: 10.1002/sim.5393.

Abstract:

In studies using ecological momentary assessment (EMA), or other intensive longitudinal data collection methods, interest frequently centers on changes in the variances, both within-subjects and between-subjects. For this, Hedeker et al. (Biometrics 2008; 64: 627-634) developed an extended two-level mixed-effects model that treats observations as being nested within subjects and allows covariates to influence both the within-subjects and between-subjects variance, beyond their influence on means. However, in EMA studies, subjects often provide many responses within and across days. To account for the possible systematic day-to-day variation, we developed a more flexible three-level mixed-effects location scale model that treats observations within days within subjects, and allows covariates to influence the variance at the subject, day, and observation level (over and above their usual effects on means) using a log-linear representation throughout. We provide details of a maximum likelihood solution and demonstrate how SAS PROC NLMIXED can be used to achieve maximum likelihood estimates

in an alternative parameterization of our proposed three-level model. The accuracy of this approach using NLMIXED was verified by a series of simulation studies. Data from an adolescent mood study using EMA were analyzed to demonstrate this approach. The analyses clearly show the benefit of the proposed three-level model over the existing two-level approach. The proposed model has useful applications in many studies with three-level structures where interest centers on the joint modeling of the mean and variance structure. Copyright (c) 2012 John Wiley & Sons, Ltd

Li, Haocheng; Staudenmayer, John; Carroll, Raymond J. (2014):

Hierarchical functional data with mixed continuous and binary measurements.

In: *Biometrics. DOI:* 10.1111/biom.12211.

Abstract:

Motivated by objective measurements of physical activity, we take a functional data approach to longitudinal data with simultaneous measurement of a continuous and a binary outcomes. The regression structures are specified as smooth curves measured at various time-points with random effects that have a hierarchical correlation structure. The random effect curves for each variable are summarized using a few important principal components, and the association of the two longitudinal variables is modeled through the association of the principal component scores. We use penalized splines to model the mean curves and the principal component curves, and cast the proposed model into a mixed effects model framework for model fitting, prediction and inference. Via a quasilikelihood type approximation for the binary component, we develop an algorithm to fit the model. Data-based transformation of the continuous variable and selection of the number of principal components are incorporated into the algorithm. The method is applied to the motivating physical activity data and is evaluated empirically by a simulation study. Extensions for different types of outcomes are also discussed.

Li, Y.; Thijs, L.; Hansen, T. W.; Kikuya, M.; Boggia, J.; Richart, T. et al. (2010):

International database on ambulatory blood pressure monitoring in relation to cardiovascular outcomes investigators prognostic value of the morning blood pressure surge in 5645 subjects from 8 populations.

In: *Hypertension* 55 (4), S. 1040–1048.

Abstract:

Previous studies on the prognostic significance of the morning blood pressure surge (MS) produced inconsistent results. Using the International Database on Ambulatory Blood Pressure in Relation to Cardiovascular Outcome, we analyzed 5645 subjects (mean age: 53.0 years; 54.0% women) randomly recruited in 8 countries. The sleep-through and the preawakening MS were the differences in the morning blood pressure with the lowest nighttime blood pressure and the preawakening blood pressure, respectively. We computed multivariable-adjusted hazard ratios comparing the risk in ethnic- and sex-specific deciles of the MS relative to the average risk in the whole study population. During follow-up (median: 11.4 years), 785 deaths and 611 fatal and nonfatal cardiovascular events occurred. While accounting for covariables and the night:day ratio of systolic pressure, the hazard ratio of all-cause mortality was 1.32 (95% CI: 1.09 to 1.59; P=0.004) in the top decile of the systolic sleep-through MS (>or=37.0 mm Hg). For cardiovascular and noncardiovascular death, these hazard ratios were 1.18 (95% CI: 0.87 to 1.61; P=0.30) and 1.42 (95% CI: 1.11 to 1.80; P=0.005). For all cardiovascular, cardiac, coronary, and cerebrovascular events, the hazard ratios in the top decile of the systolic sleep-through MS were 1.30 (95% CI: 1.06 to 1.60; P=0.01), 1.52 (95% CI: 1.15 to 2.00; P=0.004), 1.45 (95% CI: 1.04 to 2.03; P=0.03), and 0.95 (95% CI: 0.68 to 1.32; P=0.74), respectively. Analysis of the preawakening systolic MS and the diastolic MS generated consistent results. In conclusion, a MS above the 90th percentile significantly and independently predicted cardiovascular outcome and might contribute to risk stratification by ambulatory blood pressure monitoring.

Li, Yan; Thijs, Lutgarde; Boggia, Jose; Asayama, Kei; Hansen, Tine W.; Kikuya, Masahiro et al. (2014):

Blood Pressure Load Does Not Add to Ambulatory Blood Pressure Level for Cardiovascular Risk Stratification.

In: *Hypertension. DOI:* 10.1161/HYPERTENSIONAHA.113.02780.

Abstract:

Experts proposed blood pressure (BP) load derived from 24-hour ambulatory BP recordings as a more accurate predictor of outcome than level, in particular in normotensive people. We analyzed 8711 subjects (mean age, 54.8 years; 47.0% women)

randomly recruited from 10 populations. We expressed BP load as percentage (%) of systolic/diastolic readings >/=135/>/=85 mm Hg and >/=120/>/=70 mm Hg during day and night, respectively, or as the area under the BP curve (mm Hgxh) using the same ceiling values. During a period of 10.7 years (median), 1284 participants died and 1109 experienced a fatal or nonfatal cardiovascular end point. In multivariable-adjusted models, the risk of cardiovascular complications gradually increased across deciles of BP level and load (P<0.001), but BP load did not substantially refine risk prediction based on 24-hour systolic or diastolic BP level (generalized R2 statistic </=0.294%; net reclassification improvement </=0.28%; integrated discrimination improvement </=0.001%). Systolic/diastolic BP load of 40.0/42.3% or 91.8/73.6 mm Hgxh conferred a 10-year risk of a composite cardiovascular end point similar to a 24-hour systolic/diastolic BP of 130/80 mm Hg. In analyses dichotomized according to these thresholds, increased BP load did not refine risk prediction in the whole study population (R2</=0.051) or in untreated participants with 24-hour ambulatory normotension (R2</=0.034). In conclusion, BP load does not improve risk stratification based on 24-hour BP level. This also applies to subjects with normal 24-hour BP for whom BP load was proposed to be particularly useful in risk stratification.

Liao, Y.; Intille, S.; Wolch, J.; Pentz, M. A.; Dunton, G. F. (2013):

Understanding the Physical and Social Contexts of Children's Non-School Sedentary Behavior: An Ecological Momentary Assessment Study.

In: *J Phys.Act.Health* (1543-3080 (Linking)). Online verfügbar unter PM:23493261.

Abstract:

BACKGROUND: Research on children's sedentary behavior has relied on recall-based self-report or accelerometer methods, which do not assess the context of such behavior. PURPOSE: This study used Ecological Momentary Assessment (EMA) to determine where and with whom children's sedentary behavior occurs during their non-school time. METHODS: Children (N = 120) ages 9-13 years (51% male, 33% Hispanic) wore mobile phones that prompted surveys (20 total) for four days. Surveys measured current activity (e.g., exercise, watching TV), physical location (e.g., home, outdoors), and social company (e.g., family, friends). RESULTS: Children engaged in a greater percentage of leisure-oriented (e.g., watching TV) than productive (e.g., reading, doing homework) sedentary behavior (70% vs. 30%, respectively). Most of children's sedentary activity occurred at home (85%). Children's sedentary activity took place most often with family members (58%). Differences in physical context of sedentary behavior were found for older vs. younger children (p < .05). Type of sedentary behavior differed by gender, racial/ethnic group, and social context (p's < .05). CONCLUSION: Children may prefer or have greater opportunities to be sedentary in some contexts than others. Research demonstrates the potential for using EMA to capture real-time information about children's sedentary behavior during their non-school time

Liao, Yue; Intille, Stephen S.; Dunton, Genevieve F. (2014):

Using Ecological Momentary Assessment to Understand Where and With Whom Adults' Physical and Sedentary Activity Occur.

In: *Int J Behav Med. DOI:* 10.1007/s12529-014-9400-z.

Abstract:

PURPOSE: This study used Ecological Momentary Assessment (EMA), a real-time self-report strategy, to describe the physical and social contexts of adults' physical activity and sedentary activity during their everyday lives and to determine whether these patterns and relationships differ for men and women. METHODS: Data from 114 adults were collected through mobile phones across 4 days. Eight electronic EMA surveys were randomly prompted each day asking about current activities (e.g., physical or sedentary activity), physical and social contexts, and perceived outdoor environmental features (e.g., greenness/vegetation, safety, and traffic). All participants also wore accelerometers during this period to objectively measure moderate-to-vigorous physical activity (MVPA) and sedentary activity. RESULTS: Home was the most common physical context for EMA-reported physical and sedentary activity. Most of these activities occurred when participants were alone. When alone, the most commonly EMA-reported physical activity and sedentary activity was walking and reading/using computer, respectively. When in outdoor home locations (e.g., yard and driveway) women demonstrated higher levels of MVPA, whereas men demonstrated higher levels of MVPA when in outdoor park settings (ps < .05). Men but not women demonstrated higher levels of MVPA in settings with a greater degree of perceived greenness and vegetation (p < .05). CONCLUSIONS: The current study shows how EMA via mobile phones and accelerometers can be combined to offer an innovative approach to assess the contexts of adults' daily physical and sedentary activity. Future studies could consider utilizing this method in more representative samples to gather context-specific information to inform the development of physical activity interventions.

Licskai, C.; Sands, T. W.; Ferrone, M. (2013):

Development and pilot testing of a mobile health solution for asthma self-management: asthma action plan smartphone application pilot study.

In: *Can.Respir.J* 20 (4), S. 301–306. Online verfügbar unter PM:23936890.

Abstract:

BACKGROUND: Collaborative self-management is a core recommendation of national asthma guidelines; the written action plan is the knowledge tool that supports this objective. Mobile health technologies have the potential to enhance the effectiveness of the action plan as a knowledge translation tool. OBJECTIVE: To design, develop and pilot a mobile health system to support asthma self-management. METHODS: The present study was a prospective, single-centre, nonrandomized, pilot preintervention-postintervention analysis. System design and development were guided by an expert steering committee. The network included an agnostic web browser-based asthma action plan smartphone application (SPA). Subjects securely transmitted symptoms and peak flow data daily, and received automated control assessment, treatment advice and environmental alerts. RESULTS: Twenty-two adult subjects (mean age 47 years, 82% women) completed the study. Biophysical data were received on 84% of subject days (subject day = 1 subject x 1 day). Subjects viewed their action plan current zone of control on 54% and current air quality on 61% of subject days, 86% followed self-management advice and 50% acted to reduce exposure risks. A large majority affirmed ease of use, clarity and timeliness, and 95% desired SPA use after the study. At baseline, 91% had at least one symptom criterion for uncontrolled asthma and 64% had >/=2, compared with 45% (P=0.006) and 27% (P=0.022) at study close. Mean Asthma Quality of Life Questionnaire score improved from 4.3 to 4.8 (P=0.047). CONCLUSIONS: A dynamic, real-time, interactive, mobile health system with an integrated asthma action plan SPA can support knowledge translation at the patient and provider levels

Lien, René; Neijts, Melanie; Willemsen, Gonneke; Geus, Eco J. C. (2014):

Ambulatory measurement of the ecg t-wave amplitude.

In: *Psychophysiology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-34204-001%26site%3dehost-live.

Abstract:

Abstract Ambulatory recording of the preejection period (PEP) can be used to measure changes in cardiac sympathetic nervous system (SNS) activity under naturalistic conditions. Here, we test the ECG T-wave amplitude (TWA) as an alternative measure, using 24-h ambulatory monitoring of PEP and TWA in a sample of 564 healthy adults. The TWA showed a decrease in response to mental stress and a monotonic decrease from nighttime sleep to daytime sitting and more physically active behaviors. Within-participant changes in TWA were correlated with changes in the PEP across the standardized stressors (r = .42) and the unstandardized naturalistic conditions (mean r = .35). Partialling out changes in heart rate and vagal effects attenuated these correlations, but they remained significant. Ambulatory TWA cannot replace PEP, but simultaneous recording of TWA and PEP provides a more comprehensive picture of changes in cardiac SNS activity in real-life settings. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Lin, Chin-Teng; Chen, Yu-Chieh; Huang, Teng-Yi; Chiu, Tien-Ting; Ko, Li-Wei; Liang, Sheng-Fu et al. (2008):

Development of wireless brain computer interface with embedded multitask scheduling and its application on real-time driver's drowsiness detection and warning.

In: *Biomedical Engineering, IEEE Transactions on* 55 (5), S. 1582–1591.

Abstract:

Biomedical signal monitoring systems have been rapidly advanced with electronic and information technologies in recent years. However, most of the existing physiological signal monitoring systems can only record the signals without the capability of automatic analysis. In this paper, we proposed a novel brain-computer interface (BCI) system that can acquire and analyze electroencephalogram (EEG) signals in real-time to monitor human physiological as well as cognitive states, and, in turn, provide warning signals to the users when needed. The BCI system consists of a four-channel biosignal acquisition/amplification module, a wireless transmission module, a dual-core signal processing unit, and a host system for display and storage. The embedded dual-core processing system with multitask scheduling capability was proposed to acquire and process the input EEG signals in real time. In addition, the wireless transmission module, which eliminates the inconvenience of wiring, can be switched between radio frequency (RF) and Bluetooth according to the transmission distance. Finally, the real-time EEG-based drowsiness monitoring and warning algorithms were implemented and integrated into the system to close the loop of the BCI system. The

practical online testing demonstrates the feasibility of using the proposed system with the ability of real-time processing, automatic analysis, and online warning feedback in real-world operation and living environments.

Lin, B. A.; Thomas, P.; Spiezia, F.; Loppini, M.; Maffulli, N. (2012):

Changes in daily physical activity before and after total hip arthroplasty. A pilot study using accelerometry.

In: *Surgeon* (1479-666X (Linking)). DOI: 10.1016/j.surge.2012.04.006.

Abstract:

The present single-centre prospective follow-up study assessed the objective changes in physical activity undertaken before and after total hip arthroplasty (THA) using accelerometry. We enrolled 12 female patients who underwent home-based accelerometry assessment one month before and six months after the THA procedure. We assessed the daily amount of physical activity and energy expenditure related to physical activities. We also recorded the intensity of the physical activity, and pre- and post-operative clinical evaluation with the Harris Hip Score (HHS). At 6 months after surgery, we found a statistically significant increase of the total energy cost of physical activity (DA) (P=0.02), without significant increase of activity time (P>0.05). The energy cost of moderate/vigorous activity was statistically significant increased after surgery (P=0.008). Finally, HHS improved form 53.9+/-15.3 pre-operatively to 78.1+/-12.2 post-operatively (P=0.03). In our patients, the improvement was significant only for the total energy cost of daily activity. Thus, although patients did not exhibit a more active lifestyle, as shown by the slight increase of the activity time, they significantly increased the amount of moderate or vigorous activities performed after surgery

Linas, Beth S.; Latkin, Carl; Westergaard, Ryan P.; Chang, Larry W.; Bollinger, Robert C.; Genz, Andrew; Kirk, Gregory D. (2014):

Capturing illicit drug use where and when it happens: an ecological momentary assessment of the social, physical and activity environment of using versus craving illicit drugs.

In: *Addiction. DOI:* 10.1111/add.12768.

Abstract:

AIMS: To understand the environmental and contextual influences of illicit cocaine and heroin use and craving using mobile health (mHealth) methods. DESIGN: Interactive mHealth methods of ecological momentary assessment (EMA) were utilized in the Exposure Assessment in Current Time (EXACT) study to assess drug use and craving among urban drug users in real time. Participants were provided with mobile devices and asked to self-report every time they either craved (without using) or used heroin or cocaine for 30 days from November 2008 through May 2013. SETTING: Baltimore, MD, USA. PARTICIPANTS: A total of 109 participants from the AIDS Linked to the IntraVenous Experience (ALIVE) study. MEASUREMENTS: For each drug use or craving event, participants answered questions concerning their drug use, current mood and their social, physical and activity environments. Odds ratios (OR) of drug use versus craving were obtained from logistic regression models with generalized estimating equations of all reported events. FINDINGS: Participants were a median of 48.5 years old, 90% African American, 52% male and 59% HIV-infected. Participants were significantly more likely to report use rather than craving drugs if they were with someone who was using drugs [adjusted odds ratio (aOR) = 1.45, 95% confidence interval (CI) = 1.13, 1.86), in an abandoned space (aOR = 6.65, 95% CI = 1.78, 24.84) or walking/wandering (aOR = 1.68, 95% CI = 1.11, 2.54). Craving drugs was associated with being with a child (aOR = 0.26, 95% CI = 0.12, 0.59), eating (aOR = 0.54, 95% CI = 0.34, 0.85) or being at the doctor's office (aOR = 0.31, 95% CI = 0.12, 0.80). CONCLUSIONS: There are distinct drug using and craving environments among urban drug users, which may provide a framework for developing real-time context-sensitive interventions.

Lindamer, Laurie A.; McKibbin, Christine; Norman, Gregory J.; Jordan, Leslie; Harrison, Kelly; Abeyesinhe, Suranee; Patrick, Kevin (2008):

Assessment of physical activity in middle-aged and older adults with schizophrenia.

In: *Schizophrenia Research* 104 (1), S. 294–301.

Abstract:

BACKGROUND:

Regular physical activity (PA) decreases morbidity in the general population; yet, information about the amount and effects of PA in persons with schizophrenia is scant. To develop interventions to increase PA and to assess its potential benefits in this group, accurate measurement of PA is needed. The purpose of this study was to characterize PA and determine the test-retest reliability and concurrent validity of the Yale Physical Activity Scale (YPAS), a self-report measure, in persons with schizophrenia.

METHODS:

PA was assessed with the YPAS, a scale of motivational readiness for PA, and accelerometry in middle-aged and older persons with a diagnosis of schizophrenia (n=54) and in a comparison group with no known psychiatric diagnosis (n=27).

RESULTS:

On the YPAS measures, persons with schizophrenia reported on average 11 h per week of PA, whereas the non-psychiatric comparison group reported about 32 h per week. Only about 30% of schizophrenia subjects were classified as being regularly active relative to 62% of the comparison group on PA motivational stages of readiness. On the accelerometry measures, the schizophrenia group had lower levels of light activity than the comparison group, but there were no differences in moderate and vigorous activity or sedentary behavior. Only in the comparison group were there significant associations between YPAS and accelerometer variables. Several YPAS scores demonstrated high test-retest reliability in both groups, and concurrent validity was supported between the YPAS and PA motivational stages of readiness.

CONCLUSIONS:

We found that the YPAS is a reliable measure of PA in schizophrenia for some indices. Although the YPAS demonstrated concurrent validity with other self-report measures, it did not demonstrate concurrent validity when compared to PA measured by accelerometry in persons with schizophrenia. Use of multiple measures, both subjective and objective, is recommended when assessing PA in schizophrenia.

Lipton, Richard B.; Buse, Dawn C.; Hall, Charles B.; Tennen, Howard; Defreitas, Tiffani A.; Borkowski, Thomas M. et al. (2014):

Reduction in perceived stress as a migraine trigger: Testing the "let-down headache" hypothesis.

In: *Neurology. DOI:* 10.1212/WNL.0000000000000332.

Abstract:

OBJECTIVE: To test whether level of perceived stress and reductions in levels of perceived stress (i.e., "let-down") are associated with the onset of migraine attacks in persons with migraine. METHODS: Patients with migraine from a tertiary headache center were invited to participate in a 3-month electronic diary study. Participants entered data daily regarding migraine attack experience, subjective stress ratings, and other data. Stress was assessed using 2 measures: the Perceived Stress Scale and the Self-Reported Stress Scale. Logit-normal, random-effects models were used to estimate the odds ratio for migraine occurrence as a function of level of stress over several time frames. RESULTS: Of 22 enrolled participants, 17 (median age 43.8 years) completed >30 days of diaries, yielding 2,011 diary entries including 110 eligible migraine attacks (median 5 attacks per person). Level of stress was not generally associated with migraine occurrence. However, decline in stress from one evening diary to the next was associated with increased migraine onset over the subsequent 6, 12, and 18 hours, with odds ratios ranging from 1.5 to 1.9 (all p values < 0.05) for the Perceived Stress Scale. Decline in stress was associated with migraine onset after controlling for level of stress for all time points. Findings were similar using the Self-Reported Stress Scale. CONCLUSIONS: Reduction in stress from one day to the next is associated with migraine onset the next day. Decline in stress may be a marker for an impending migraine attack and may create opportunities for preemptive pharmacologic or behavioral interventions.

Lischetzke, Tanja; Angelova, Rozalina; Eid, Michael (2011):

Validating an indirect measure of clarity of feelings: Evidence from laboratory and naturalistic settings.

In: *Psychological Assessment* 23 (2), S. 447.

Abstract:

This study analyzed the reliability and validity of an indirect measure of clarity of feelings that is based on response latencies (RTs) of mood ratings. Fifty-two participants completed a laboratory session and an experience-sampling week with 6 measurement occasions per day. Shorter RT of mood ratings measured in the laboratory (but not self-reported dispositional clarity) predicted higher overall mood regulation success during the experience-sampling week. As a new indirect ambulatory measure of clarity, RTs of mood ratings were measured on handheld devices during the experience-sampling week. The new ambulatory RT measure of clarity demonstrated good psychometric properties. Within-occasions reliability (internal consistency)

was satisfactory, and between-occasions reliability (consistency of aggregated scores) was high. Ambulatory RT of mood ratings demonstrated moderate to high convergence with RT of mood ratings measured in the laboratory session. Both RT measures were unrelated to self-reported dispositional clarity of feelings. However, momentary RT converged with a self-report measure of momentary clarity on the within-persons level: Participants were faster to rate those mood items that they were more certain about. Evidence for the predictive validity of the new ambulatory RT measure was provided by the finding that on the within-persons level, shorter RT (but not self-reported momentary clarity) predicted higher mood regulation success and better mood at subsequent measurement occasions. The results suggest that RT of mood ratings can be used as a reliable and valid indicator of an individual's clarity of feelings in laboratory and experience-sampling studies.

Lischetzke, Tanja; Pfeifer, Henriette; Crayen, Claudia; Eid, Michael (2012):

Motivation to regulate mood as a mediator between state extraversion and pleasant-unpleasant mood.

In: *Journal of Research in Personality* 46 (4), S. 414–422. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-15637-002%26site%3dehost-live;lischetzke@uni-landau.de.

Abstract:

This experience sampling study investigated whether state extraversion (i.e., momentary extraverted behavior) is positively associated with pleasant affect within persons and whether mood regulation motivation mediates this relationship. Seven times per day for one week, 162 participants reported on their state extraversion, pleasant–unpleasant mood, and mood regulation intention. Higher state extraversion was related to more pleasant mood, and this within-persons relationship held for 89% of individuals. Analyses with lagged predictors revealed that state extraversion predicted an increase in pleasant mood from one occasion to the next. Dispositional extraversion did not moderate the within-persons relationship. Hedonic mood regulation intention mediated the relation between state extraversion and pleasant–unpleasant mood. The findings support a self-regulation explanation of the extraversion–pleasant affect link. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Litmanen, Topi; Lonka, Kirsti; Inkinen, Mikko; Lipponen, Lasse; Hakkarainen, Kai (2012):

Capturing teacher students' emotional experiences in context: Does inquiry-based learning make a difference?

In: *Instructional Science* 40 (6), S. 1083–1101. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-28705-011%26site%3dehost-live;topi.litmanen@helsinki.fi.

Abstract:

In the present study teacher students' contextual learning experiences were examined longitudinally in authentic study environments using the contextual activity sampling system, a means of mobile-supported experience sampling. The students' (n = 9) experiences were first recorded during a 2 week period in their first year of study. The same measurements were repeated again for a 2 week follow-up in the second year, accompanied by interviews before and after the follow-up. The first year of study consisted mostly of lectures and ordinary small-group work, whereas the second measurement period ran parallel to the completion of an intensive inquiry-based project, which was the focus of the present study. A multivariate analysis of variance revealed that studying during the inquiry-based period produced stronger experiences of being challenged as well as negative affects than the teacher-centered period. The participants' experiences of competence, commitment and positive affects did not differ during the two periods. However, interview data indicated that the participants enjoyed the inquiry-based period and that the work was intensive. Contextual data and interviews were also used to describe students' experiences during one particular study session during the inquiry-based project. The results suggest that negative affects may be an essential part of the process of gradually learning to take responsibility for both individual and collaborative learning processes. Possibilities for using experience-sampling methods to analyze collaborative learning are also discussed. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Little, Todd D. (Hg.) (2013):

The Oxford handbook of quantitative methods (Vol 2): Statistical analysis.

New York, NY US: Oxford University Press (Oxford library of psychology).

Litwin, Mieczysław; Simonetti, Giacomo D.; Niemirska, Anna; Ruzicka, Marcel; Wühl, Elke; Schaefer, Franz; Feber, Janusz (2010):

Altered cardiovascular rhythmicity in children with white coat and ambulatory hypertension.

In: *Pediatr Res* 67 (4), S. 419–423. DOI: 10.1203/PDR.0b013e3181d00b5b.

Abstract:

Adults with ambulatory hypertension or white coat hypertension (WCH) display abnormal cardiovascular rhythms. We studied cardiovascular rhythms by Fourier analysis of 24-h ambulatory blood pressure (BP) measurement profiles in 129 hypertensive children, 54 children with WCH, and 146 age-, height-, and gender-matched healthy subjects. The day/night mean arterial pressure ratio was lower in hypertensive and patients with WCH compared with controls (1.13 versus 1.16 versus 1.21, respectively; $p < 0.0001$). Eighty-five percent of controls were dippers compared with 74% of WCH (n.s.) and 64% of patients with ambulatory hypertension ($p < 0.0001$). The prevalence of 24-h rhythms was similar among the groups, but prevalence of 12-h BP rhythms was increased in hypertensive (67%) and WCH (72%) compared with controls (51%, $p < 0.0001$). The amplitudes of the 24-, 8-, and 6-h BP rhythms were reduced in hypertensive and WCH compared with controls ($p < 0.05$). Hypertensive and patients with WCH displayed delayed 24-, 12-, 8-, 6-h acrophases in comparison with controls ($p < 0.05$). In conclusion, hypertensive children exhibit abnormal cardiovascular rhythmicity compared with controls, especially a higher prevalence of nondipping compared with normotensive children. Abnormalities in patients with WCH are intermediate between healthy children and patients with ambulatory hypertension.

Liu, Kun; Liu, Tao; Shibata, Kyoko; Inoue, Yoshio; Zheng, Rencheng (2009):

Novel approach to ambulatory assessment of human segmental orientation on a wearable sensor system.

In: *Journal of biomechanics* 42 (16), S. 2747–2752. DOI: 10.1016/j.jbiomech.2009.08.008.

Abstract:

A new method using a double-sensor difference based algorithm for analyzing human segment rotational angles in two directions for segmental orientation analysis in the three-dimensional (3D) space was presented. A wearable sensor system based only on triaxial accelerometers was developed to obtain the pitch and yaw angles of thigh segment with an accelerometer approximating translational acceleration of the hip joint and two accelerometers measuring the actual accelerations on the thigh. To evaluate the method, the system was first tested on a 2 degrees of freedom mechanical arm assembled out of rigid segments and encoders. Then, to estimate the human segmental orientation, the wearable sensor system was tested on the thighs of eight volunteer subjects, who walked in a straight forward line in the work space of an optical motion analysis system at three self-selected speeds: slow, normal and fast. In the experiment, the subject was assumed to walk in a straight forward way with very little trunk sway, skin artifacts and no significant internal/external rotation of the leg. The root mean square (RMS) errors of the thigh segment orientation measurement were between 2.4 degrees and 4.9 degrees during normal gait that had a 45 degrees flexion/extension range of motion. Measurement error was observed to increase with increasing walking speed probably because of the result of increased trunk sway, axial rotation and skin artifacts. The results show that, without integration and switching between different sensors, using only one kind of sensor, the wearable sensor system is suitable for ambulatory analysis of normal gait orientation of thigh and shank in two directions of the segment-fixed local coordinate system in 3D space. It can then be applied to assess spatio-temporal gait parameters and monitoring the gait function of patients in clinical settings.

Liu, X.; Xu, W.; Wang, Y.; Williams, J. M.; Geng, Y.; Zhang, Q. (2013):

Can Inner Peace be Improved by Mindfulness Training: A Randomized Controlled Trial.

In: *Stress.Health* (1532-3005 (Linking)). DOI: 10.1002/smi.2551.

Abstract:

This article reports a randomized controlled trial to investigate whether mindfulness training can successfully improve inner peace in participants with no known mental disorder. Fifty-seven participants were randomized to either mindfulness training (n = 29) or wait-list control (n = 28). The experience sampling method was used to measure the fleeting momentary experience of inner peace in participants. In addition, we used an experimental approach to assessing ability to focus attention: the Meditation Breath Attention Score, as well as the self-report Five-Facet Mindfulness Questionnaire (FFMQ). Compared with the wait-list control group, mindfulness training led to an increase in scores of inner peace, Meditation Breath Attention Score and FFMQ, using analysis of repeated measures analysis of variance. Change in inner peace was not, however, mediated by changes in self-rated mindfulness (FFMQ) nor by increased attentional focus. The findings provide first evidence suggesting that using mindfulness training improves the participants' inner peace. The focus here was on the immediate effects and future studies need to use follow-up. (c) 2013 The Authors. Stress and Health published by John Wiley & Sons Ltd

Liu, Weiying; Yue, Hongmei; Zhang, Jiabin; Pu, Jiayuan; Yu, Qin (2014):

Effects of plasma ghrelin, obestatin, and ghrelin/obestatin ratio on blood pressure circadian rhythms in patients with obstructive sleep apnea syndrome.

In: *Chin Med J (Engl)* 127 (5), S. 850–855.

Abstract:

BACKGROUND: Obstructive sleep apnea syndrome (OSAS) is strongly associated with obesity and with cardiovascular disease. Ghrelin and obestatin are two peptides from the same source but have opposite roles. Both of them can affect feeding and regulate vascular tune. The aim of this study was to investigate the relationship between plasma ghrelin, obestatin, the ratio of ghrelin and obestatin (G/O) and sleep parameters and blood pressure circadian rhythms in patients with OSAS. METHODS: This study enrolled 95 newly diagnosed over-weight OSAS patients (OSAS group), 30 body mass index (BMI)-match non-OSAS adults (over-weight group) and 30 non-OSAS normal weight adults (control group). Polysomnography (PSG) was performed in the OSAS group and over-weight group. Blood pressure of all subjects was monitored by means of 24-hour ambulatory blood pressure monitoring. The concentration of plasma ghrelin and obestatin was detected by enzyme-linked immunosorbent assay (ELISA). RESULTS: Plasma ghrelin levels in the OSAS group and over-weight group were significantly lower than that of the control group ($P < 0.05$). Plasma obestatin levels were lower in the over-weight group and OSAS group, but there was no significant difference among the three groups. The blood pressure in OSAS patients was higher, and there was a significant difference in all blood pressure parameters compared to the control group, and in the daytime average diastolic blood pressure (DBP), nocturnal average systolic blood pressure (SBP) and DBP, DBP variability values as compared to over-weight subjects. Furthermore, there were significantly more non-dipper patterns of blood pressure (including hypertension and normotension) in the OSAS group than in the other two groups ($P < 0.01$). Correlation analysis showed that ghrelin levels had a significant correlation with BMI and nocturnal average DBP but not with PSG parameters. In contrast, the G/O ratio had a negative correlation with apnea-hypopnea index (AHI) ($P < 0.05$), as well as a strong positive correlation with the blood pressure variability values ($P < 0.01$). In multivariate analyses, AHI ($P < 0.05$) and G/O ($P < 0.05$) were independently related to SBP variability changes, while AHI ($P < 0.05$), G/O ($P < 0.01$) and BMI ($P < 0.05$) were independently related to DBP variability changes. CONCLUSIONS: Our data show plasma ghrelin and obestatin levels were related to obesity in OSAS. Sleep apnea in OSAS patients could have led to an imbalance in G/O in the basis of obesity. Moreover, the imbalance may promote nighttime blood pressure elevation and affect blood pressure circadian disorder.

Liu, Y.; Zhu, S. H.; Wang, G. H.; Ye, F.; Li, P. Z. (2013):

Validity and reliability of multiparameter physiological measurements recorded by the equivital lifemonitor during activities of various intensities.

In: *J Occup.Environ.Hyg.* 10 (2), S. 78–85. DOI: 10.1080/15459624.2012.747404.

Abstract:

The Equivital LifeMonitor EQ02 is a multiparameter body-worn system capable of logging and transmitting physiological data describing a wearer's cardiorespiratory and thermal status. A number of vital signs can be acquired by the system, including electrocardiography, respiratory inductance plethysmography, posture/activity, multipoint skin temperature, and core temperature. The validity and reliability of the multiparameter physiological data recorded by the EQ02 were assessed. Participants performed resting, low-, and moderate intensity activities and wore the EQ02 and other calibrated laboratory physiological monitoring devices simultaneously. Heart rate, respiratory rate, multipoint skin temperature, and core temperature recorded by the EQ02 were compared with measurements recorded by standard devices. Results show that the validity error scores for HR and RR for all three activities were not significantly different from zero, and the CV, 95% LOA, and r were all clinically accepted. The validity error score for MT(SK) (0.59 degrees C) falls outside the limits of 0.5 degrees C, but the

differences were parallel, r remained high (0.96), and 95% LOA remained narrow (+/-0.88 degrees C). The validity error score for T(C) (-0.1 degrees C) was similar in direction and magnitude to other studies, and r (0.98) and 95% LOA (+/-0.22 degrees C) showed acceptable agreement between devices. The reliability error scores for HR, RR, MT(SK), and T(C) between trials were significantly different from zero. The 95% LOA, CV, and ICC for the EQ02 were similar to standard devices and were all clinically accepted. These findings demonstrate the validity and reliability of the EQ02 for ambulatory monitoring of multiple physiological parameters and suggest that the system could be used to provide a complete human physiological monitoring platform for the study of occupational health, environmental hygiene, and other application fields requiring ambulatory monitoring of multiparameter physiological status

Lo, Shih-Hsiang; Liau, Chiau-Suong; Hwang, Jing-Shiang; Wang, Jung-Der (2008):

Dynamic blood pressure changes and recovery under different work shifts in young women.

In: *Am J Hypertens* 21 (7), S. 759–764.

Abstract:

BACKGROUND:

Some studies have reported that shift work can affect blood pressure (BP), but few have studied recovery from BP changes occurring during different shifts.

METHODS:

We recruited 16 young female nurses working rotating shifts and six working the regular day shift. All received repeated ambulatory BP monitoring (ABPM) during their workdays and following day off.

RESULTS:

Our linear mixed-effect model showed that both systolic and diastolic BPs were significantly decreased during sleeping period and significantly increased while on working period, on a work day, but increased during sleeping period after a night shift or evening shift. BP measurements that changed after evening shift usually returned to baseline on consecutive off-duty day after day shift, but they did not completely return to baseline after a night shift ($P < 0.05$). We also found 69% of those working rotating shifts had at least changed once in dipper/nondipper status. The rates of change in dipper/nondipper status between work day and off-duty day were 33, 44, 50, and 38% for nurses worked in outpatient clinic, night shift, evening shift, and day shift, respectively.

CONCLUSION:

Shift work is significantly associated with BP and possibly dipper/nondipper status in young female nurses. Except for those working night shifts, BP levels returned to baseline the off-duty day after day shift. We recommend that potential influence of shift work be considered when evaluating a person's BP.

Lo, Shih-Hsiang; Lin, Lian-Yu; Hwang, Jing-Shiang; Chang, Yu-Yin; Liau, Chiau-Suong; Wang, Jung-Der (2010):

Working the night shift causes increased vascular stress and delayed recovery in young women.

In: *Chronobiology International* 27 (7), S. 1454–1468. DOI: 10.3109/07420528.2010.498067.

Abstract:

Shiftwork has been associated with elevated blood pressure (BP) and decreased heart-rate variability (HRV), factors that may increase the long-term risk of cardiovascular-related mortality and morbidity. This study explored the effect of shiftwork on dynamic changes in autonomic control of HRV (cardiac stress), systolic BP and diastolic BP, i.e., SBP and DBP (vascular stress), and recovery in the same subjects working different shifts. By studying the same subjects, the authors could reduce the effect of possible contribution of between-subject variation from genetic predisposition and environmental factors. The authors recruited 16 young female nurses working rotating shifts--day (08:00-16:00 h), evening (16:00-00:00 h), and night (00:00-08:00 h)--and 6 others working the regular day shift. Each nurse received simultaneous and repeated 48-h ambulatory electrocardiography and BP monitoring during their work day and the following off-duty day. Using a linear mixed-effect model to adjust for day shift, the results of the repeated-measurements and self-comparisons found significant shift differences in vascular stress. While working the night shift, the nurses showed significant increases in vascular stress, with increased SBP of 9.7 mm Hg. The changes of SBP and DBP seemed to peak during waking time at the same time on the day off as they did on the working day. Whereas HRV profiles usually returned to baseline level after each shift, the SBP and DBP of night-shift workers did not completely return to baseline levels the following off-duty day ($p < .001$). The authors concluded that although the nurses may recover from

cardiac stress the first day off following a night shift, they do not completely recover from increases in vascular stress on that day.

London, Bonita; Rosenthal, Lisa; Gonzalez, Angel (2011):

Assessing the role of gender rejection sensitivity, identity, and support on the academic engagement of women in nontraditional fields using experience sampling methods.

In: *Journal of Social Issues* 67 (3), S. 510–530. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-21044-006&site=ehost-live;bonita.london@stonybrook.edu.

Abstract:

Efforts to understand and alleviate the pervasive underrepresentation of women in science, technology, engineering, and mathematics (STEM) fields may benefit from the utilization of research methodologies that can model STEM engagement from multiple levels of analysis. We discuss the utility of experience sampling methodology (ESM) in capturing this broad range of factors that contribute to women's success and engagement in STEM fields—as well as other fields in which women have historically been underrepresented—with special focus on the importance of identity, social support, and gender-based rejection. We propose that the use of ESM may provide fine-grained details of women's STEM experiences, and thus model the challenges they face in STEM fields. The advantages of using ESM for capturing repeated measures of affect and behavior, the use of electronic methods of data collection, and the use of ESM to administer interventions are discussed. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Long, Anna C.; Palermo, Tonya M.; Manees, Anne M. (2008):

Brief report: using actigraphy to compare physical activity levels in adolescents with chronic pain and healthy adolescents.

In: *Journal of Pediatric Psychology* 33 (6), S. 660–665.

Abstract:

OBJECTIVES:

This study compared activity levels of adolescents with chronic pain and healthy adolescents, and investigated relations between actigraphy and subjective measures of activity limitations and depression.

METHODS:

Forty adolescents (n = 20 with chronic pain, n = 20 otherwise healthy; 12-17 years; 72.5% females) participated. Adolescents completed questionnaires regarding pain, activity limitations, and depression. Activity levels were assessed for 7 days using the Actiwatch 64 device, yielding mean and peak activity levels, and time spent in moderate and sedentary activity.

RESULTS:

Physical activity was lower in adolescents with chronic pain than in healthy peers. Adolescents with chronic pain reported significantly higher levels of activity limitations and depression. Age and gender were related to activity. Higher activity was inversely correlated with pain frequency and depression. Peak activity was also significantly inversely related to self-reported pain intensity and activity limitations.

CONCLUSIONS:

Actigraphy may be useful for examining physical activity outcomes in adolescents with chronic pain.

Lopes, Vítor P.; Vasques, Catarina; Maia, José A. R.; Ferreira, J. C. V. (2007):

Habitual physical activity levels in childhood and adolescence assessed with accelerometry.

Abstract:

AIM:

The purposes of this study were: 1) to evaluate age and gender differences in physical activity (PA) of children and adolescents; 2) to find out if children and adolescents fulfill the PA recommendations of 60 min x day(-1) of moderate (MPA) to vigorous PA (VPA).

METHODS:

PA was assessed in 265 female and 238 male subjects, ranging from 6 to 18 years of age, grouped in 4 age groups, with MTI ActiGraph model 7164, during 7 consecutive days. The MTI actigraph data was reduced to bouts (30-, 20-, 10-, and 5-min) and minutes spent in MPA, VPA, and very VPA (VVPA).

RESULTS:

The oldest boys and girls revealed a lower number of PA bouts than the younger ones. Significant gender differences were found in daily VPA, $F(1, 492)=37.67$, $P<0.001$; and VVPA $F(1, 494)=24.11$, $P<0.001$. Boys were more active than girls. Significant age group differences were also found in MPA, $F(3, 494)=87.4$, $P<0.001$; VPA, $F(3, 492)=78.15$, $P<0.001$; and VVPA, $F(3, 454)=54.89$, $P<0.001$. In both genders MPA, VPA and VVPA decreased with age. Till the age of 14, children had means between 79.6+/-30.6 and 144.1+/-76.9 min*day(-1) of PA. After this age, there was a decrease to 44.1+/-19.9 min*day(-1) in girls and to 56.3+/-31.9 min*day(-1) in boys.

CONCLUSION:

Boys had more minutes a day of VPA and VVPA than girls. PA decreased with age. The subjects of this study, aged 6 to 15, fulfilled the recommendations of 60 min x day(-1) of MPA to VPA.

Lopez, Veronica; Ahumada, Luis; Galdames, Sergio; Madrid, Romina (2012):

School principals at their lonely work: Recording workday practices through ESM logs.

In: *Computers & Education* 58 (1), S. 413–422. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-27203-039&site=ehost-live;rominamadrid@gmail.com;sergiogaldames@gmail.com;lahumada@ucv.cl;veronica.lopez@ucv.cl.

Abstract:

This study used portable technology based on Experience Sampling Methodology (ESM log) to register workday practices of school principals and heads from Chilean schools who were implementing school improvement plans aimed at developing a culture of organizational learning. For a week, Smartphone devices which beeped seven times a day were given to School Principals and Heads of Technical-Pedagogical Units, who then answered closed questions about their current agenda. Six municipal schools in a district of the V Region of Chile participated in the study. The main results support the notion that, at the time of data collection, most school Principals and Heads of Technical-Pedagogical Units were working alone, and if they were interacting with other people, they were always in command. Following underlying assumed roles, most school principals reported performing administrative tasks, while Heads of Technical-Pedagogical Units mainly addressed instructional issues, fostering a rigid framework for the assignment of tasks. Follow-up semi-structured interviews confirmed that participants were not working as a team but rather alone on important issues and urgent matters. Participants regarded the use of the device as a very practical and useful tool to analyze their daily practices. Results are discussed focusing on the use of portable technology to address methodological issues faced when approaching research on educational leadership from a distributed leadership perspective. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Lopez, Richard B.; Hofmann, Wilhelm; Wagner, Dylan D.; Kelley, William M.; Heatherton, Todd F. (2014):

Neural Predictors of Giving in to Temptation in Daily Life.

In: *Psychol Sci. DOI:* 10.1177/0956797614531492.

Abstract:

The ability to control desires, whether for food, sex, or drugs, enables people to function successfully within society. Yet, in tempting situations, strong impulses often result in self-control failure. Although many triggers of self-control failure have been identified, the question remains as to why some individuals are more likely than others to give in to temptation. In this study, we combined functional neuroimaging and experience sampling to determine if there are brain markers that predict whether people act on their food desires in daily life. We examined food-cue-related activity in the nucleus accumbens (NAcc), as well as activity associated with response inhibition in the inferior frontal gyrus (IFG). Greater NAcc activity was associated with greater likelihood of self-control failures, whereas IFG activity supported successful resistance to temptations. These findings demonstrate an important role for the neural mechanisms underlying desire and self-control in people's real-world experiences of temptations.

Loprinzi, Paul D.; Brosky, Joseph A. (2014):

Objectively-Measured Physical Activity and Balance Among U.S. Adults.

In: *J Strength Cond Res. DOI:* 10.1519/JSC.0000000000000402.

Abstract:

The purpose of this study was to examine the association between objectively-measured physical activity (PA) and balance in a nationally representative sample of U.S. adults 40 years of age and older. Data from the 2003-2004 NHANES were used. PA was measured over a 7-day period using accelerometry, and balance was assessed using the Romberg test. Participants completed a questionnaire regarding their subjective views on difficulty with falling in the past 12 months. For every 60-minute increase in light-intensity PA, participants were 10% (p = 0.04) more likely to have functional balance. Similarly, for every 1-minute increase in log-transformed MVPA, participants were 23% (p = 0.04) more likely to have functional balance. Regular PA, regardless of intensity, may have health benefits for older adults and is associated with functional balance.

Loprinzi, P. D.; Cardinal, B.; Crespo, C. J.; Brodowicz, G. R.; Andersen, R. E.; Smit, E. (2012):

Differences in Demographic, Behavioral, and Biological Variables Between those with Valid and Invalid Accelerometry Data: Implications for Generalizability.

In: *J.Phys.Act.Health* (1543-3080 (Linking)). Online verfügbar unter PM:22398390.

Abstract:

BACKGROUND: The exclusion of participants with invalid accelerometry data (IAD) may lead to biased results and/or lack of generalizability in large population studies. The purpose of this study was to investigate whether demographic, behavioral, and biological differences occur between those with IAD and valid accelerometry data (VAD) among adults using a representative sample of the civilian non-institutionalized U.S. population. METHODS: Ambulatory participants from NHANES (2003-2004) who were 20-85 years of age were included in the present study and wore an ActiGraph 7164 accelerometer for 7 days. A "valid person" was defined as those with 4 or more days of at least 10+ hrs of monitoring per day. Among adults (20-85 yrs), 3,088 participants provided VAD, and 987 providing IAD. Demographic, behavioral, and biological information was obtained from the household interview or from data obtained in a mobile examination center. RESULTS: Differences were observed in age, BMI, ethnicity, education, smoking status, marital status, use of street drugs, current health status, HDL-cholesterol, C-reactive protein, self-reported vigorous physical activity, and plasma glucose levels between those with VAD and IAD. CONCLUSIONS: Investigators should take into consideration the potential cut-off bias in interpreting results based on data that excludes IAD participants

Loprinzi, Paul D.; Lee, Hyo (2014):

Rationale for promoting physical activity among cancer survivors: literature review and epidemiologic examination.

In: *Oncol Nurs Forum* 41 (2), S. 117–125. DOI: 10.1188/14.ONF.117-125.

Abstract:

Purpose/Objectives: To review the extant literature on the link between physical activity and health outcomes among cancer survivors; identify evidence-based strategies to promote physical activity among this population; and conduct an epidemiologic study based on gaps from the literature review, examining the association between physical activity and various biologic markers.Data Sources: The authors used PubMed and Google Scholar up to July 2013, as well as data from the 2003-2006 National Health and Nutrition Examination Survey for the empirical study.Data Synthesis: Studies were examined through a systematic review process. In the epidemiologic study, 227 adult cancer survivors wore an accelerometer for four days or longer, with biologic markers (e.g., cholesterol) assessed from a blood sample.Conclusions: The review study demonstrated that cancer survivors are relatively inactive, but physical activity may help to reduce the risk of cancer recurrence and cancer-related mortality, increase cancer treatment rates, reduce pain and other side effects associated with cancer treatment, and improve physical and mental health. The epidemiologic study showed that physical activity was associated with several understudied biomarkers (e.g., neutrophils, white blood cells) that are linked with cancer recurrence, cancer-related mortality, and other chronic diseases.Implications for Nursing: Nurses are encouraged to promote physical activity in cancer survivors.

Loprinzi, Paul D.; Lee, Hyo; Cardinal, Bradley J. (2014):

Daily movement patterns and biological markers among adults in the United States.

In: *Prev Med* 60, S. 128–130. DOI: 10.1016/j.ypmed.2013.12.017.

Abstract:

OBJECTIVE: To examine the combined effects of sedentary (SED), light (LPA) and moderate-to-vigorous physical activity (MVPA) on biological markers among a nationally representative sample of U.S. adults. METHODS: Data from the 2003-2006 NHANES study was used, with 5580 adults (>/=20years) included in the study. Participants wore an ActiGraph 7164 accelerometer with accelerometry data used to create four movement pattern groups: >/=150min/week of MVPA and LPA>/=SED; >/=150min/week of MVPA and LPA<SED; <150min/week of MVPA but LPA>/=SED; and <150min/week of MVPA and LPA<SED. Blood samples were taken to assess various biological parameters (e.g., cholesterol). RESULTS: 47.2% (SE: 1.2) of Americans engaged in <150min/week of MVPA and had a negative LPA-SED balance. In general, participants who engaged in >/=150min/week of MVPA, regardless of LPA-SED balance, had more favorable biological levels; however, there was evidence showing that even if individuals engaged in <150min/week of MVPA, but if their LPA exceeded SED, they had more favorable levels of triglycerides and insulin. CONCLUSIONS: Programs are needed to increase American's engagement in MVPA, and also ensure that LPA exceeds SED behavior.

Loprinzi, Paul D.; Trost, Stewart G. (2010):

Parental influences on physical activity behavior in preschool children.

In: *Prev Med* 50 (3), S. 129–133.

Abstract:

OBJECTIVE:

To evaluate a conceptual model linking parent physical activity (PA) orientations, parental support for PA, and PA behavior in preschool children.

METHODS:

Participants were 156 parent-child dyads from 13 child care centers in Queensland, Australia. Parents completed a questionnaire measuring parental PA, parental enjoyment of PA, perceived importance of PA, parental support for PA, parents' perceptions of competence, and child PA at home. MVPA while attending child care was measured via accelerometry. Data were collected between May and August of 2003. The relationships between the study variables and child PA were tested using observed variable path analysis.

RESULTS:

Parental PA and parents' perceptions of competence were positively associated with parental support for PA (beta=0.23 and 0.18, respectively, $p<0.05$). Parental support, in turn, was positively associated with child PA at home (beta=0.16, $p<0.05$), but not at child care (beta=0.01, $p=0.94$). Parents' perceptions of competence was positively associated with both home-based and child care PA (beta=0.20 and 0.28, respectively, $p<0.05$).

CONCLUSIONS:

Family-based interventions targeting preschoolers should include strategies to increase parental support for PA. Parents who perceive their child to have low physical competence should be encouraged to provide adequate support for PA.

Losa-Iglesias, Marta Elena; Becerro-De-Bengoa-Vallejo, Ricardo; Becerro-De-Bengoa-Losa, Klark Ricardo (2014):

Reliability and concurrent validity of a peripheral pulse oximeter and health-app system for the quantification of heart rate in healthy adults.

In: *Health Informatics J. DOI:* 10.1177/1460458214540909.

Abstract:

There are downloadable applications (Apps) for cell phones that can measure heart rate in a simple and painless manner. The aim of this study was to assess the reliability of this type of App for a Smartphone using an Android system, compared to the radial pulse and a portable pulse oximeter. We performed a pilot observational study of diagnostic accuracy, randomized in 46 healthy volunteers. The patients' demographic data and cardiac pulse were collected. Radial pulse was measured by palpation of the radial artery with three fingers at the wrist over the radius; a low-cost portable, liquid crystal display finger pulse oximeter; and a Heart Rate Plus for Samsung Galaxy Note(R). This study demonstrated high reliability and consistency between systems

with respect to the heart rate parameter of healthy adults using three systems. For all parameters, ICC was > 0.93, indicating excellent reliability. Moreover, CVME values for all parameters were between 1.66-4.06 %. We found significant correlation coefficients and no systematic differences between radial pulse palpation and pulse oximeter and a high precision. Low-cost pulse oximeter and App systems can serve as valid instruments for the assessment of heart rate in healthy adults.

Louro, Maria J.; Pieters, Rik; Zeelenberg, Marcel (2007):

Dynamics of multiple-goal pursuit.

In: *Journal of Personality and Social Psychology* 93 (2), S. 174.

Abstract:

The authors propose and test a model of multiple-goal pursuit that specifies how individuals allocate effort among multiple goals over time. The model predicts that whether individuals decide to step up effort, coast, abandon the current goal, or switch to pursue another goal is determined jointly by the emotions that flow from prior goal progress and the proximity to future goal attainment, and proximally determined by changes in expectancies about goal attainment. Results from a longitudinal diary study and 2 experiments show that positive and negative goal-related emotions can have diametrically opposing effects on goal-directed behavior, depending on the individual's proximity to goal attainment. The findings resolve contrasting predictions about the influence of positive and negative emotions in volitional behavior, critically amend the goal gradient hypothesis, and provide new insights into the dynamics and determinants of multiple-goal pursuit. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Luckmann, Roger; Vidal, Amin (2010):

Design of a handheld electronic pain, treatment and activity diary.

In: *J Biomed Inform* 43 (5), S. S32-S36.

Abstract:

Effective tools for recording and analyzing data on patients' pain experience, use of pain treatments, and physical function are needed to improve communication between providers and patients with noncancer chronic pain. A handheld electronic diary (HED) that can be used throughout the day may provide more useful and accurate information about pain, treatments, and function than available paper and on-line diaries that are designed to be used once daily, weekly or less often. Based on user-specified requirements we designed and built a prototype HED with 7 modules. Diary queries are followed by multiple choice responses customized to the patients' expected responses. Usability testing confirmed user comprehension and acceptability of the queries, response sets, and interface.

Luczak, Susan E.; Rosen, I. Gary (2014):

Estimating BrAC from transdermal alcohol concentration data using the BrAC estimator software program.

In: *Alcohol Clin Exp Res* 38 (8), S. 2243–2252. DOI: 10.1111/acer.12478.

Abstract:

BACKGROUND: Transdermal alcohol sensor (TAS) devices have the potential to allow researchers and clinicians to unobtrusively collect naturalistic drinking data for weeks at a time, but the transdermal alcohol concentration (TAC) data these devices produce do not consistently correspond with breath alcohol concentration (BrAC) data. We present and test the BrAC Estimator software, a program designed to produce individualized estimates of BrAC from TAC data by fitting mathematical models to a specific person wearing a specific TAS device. METHODS: Two TAS devices were worn simultaneously by 1 participant for 18 days. The trial began with a laboratory alcohol session to calibrate the model and was followed by a field trial with 10 drinking episodes. Model parameter estimates and fit indices were compared across drinking episodes to examine the calibration phase of the software. Software-generated estimates of peak BrAC, time of peak BrAC, and area under the BrAC curve were compared with breath analyzer data to examine the estimation phase of the software. RESULTS: In this single-subject design with breath analyzer peak BrAC scores ranging from 0.013 to 0.057, the software created consistent models for the 2 TAS devices, despite differences in raw TAC data, and was able to compensate for the attenuation of peak BrAC and latency of the time of peak BrAC that are typically observed in TAC data. CONCLUSIONS: This software program represents an important initial step for making it possible for non mathematician researchers and clinicians to obtain estimates of BrAC from TAC data in naturalistic drinking environments. Future research with more participants and greater variation in alcohol consumption levels and patterns, as well

as examination of gain scheduling calibration procedures and nonlinear models of diffusion, will help to determine how precise these software models can become.

Luecken, Linda J.; Kraft, Amy; Appelhans, Bradley M.; Enders, Craig (2009):

Emotional and cardiovascular sensitization to daily stress following childhood parental loss.

In: *Developmental Psychology* 45 (1), S. 296–302. DOI: 10.1037/a0013888.

Abstract:

Adverse childhood events can influence the development of emotional and physiological self-regulatory abilities, with significant consequences for vulnerability to psychological and physical illness. This study evaluated stress sensitization and inoculation models of the impact of early parental death on stress exposure and reactivity in late adolescence/young adulthood. Ambulatory blood pressure (BP) and diary reports of minor stress were collected every 30 min during waking hours over a 24-hr period from 91 late adolescents/young adults (43 early bereaved, 48 nonbereaved). Across the sample, minor stressors were associated with elevated BP and negative affect. The bereaved group had lower BP than did the nonbereaved group. Within the bereaved group, higher perceived caring from the surviving parent was associated with fewer reports of minor stress and lower stress-related negative affect. Higher perceived parental caring during childhood was associated with lower BP across the sample and more frequent hassles in the nonbereaved group. Findings support both the stress inoculation and sensitization models, suggesting that childhood parental loss and parental caring exert important influences on children's development of stress sensitivity.

Lukas, S. E.; Penetar, D.; Su, Z.; Geaghan, T.; Maywalt, M.; Tracy, M. et al. (2012):

A standardized kudzu extract (NPI-031) reduces alcohol consumption in nontreatment-seeking male heavy drinkers.

In: *Psychopharmacology (Berl)* (0033-3158 (Linking)). DOI: 10.1007/s00213-012-2884-9.

Abstract:

OBJECTIVE: We previously demonstrated that short-term treatment with a standardized kudzu extract (NPI-031) reduced alcohol drinking by men and women in a natural setting. The present study was conducted in nontreatment-seeking heavy drinkers to assess the safety and efficacy of 4 weeks of kudzu extract in an outpatient setting. METHOD: This randomized between-subject, double-blind, placebo-controlled study involved 2 weeks of baseline, 4 weeks of treatment, and 2 weeks of follow-up. Seventeen men (21-33 years) who reported drinking 27.6 +/- 6.5 drinks/week with a diagnosis of alcohol abuse/dependence took either kudzu extract (250 mg isoflavones, t.i.d.) or matched placebo on a daily basis. They reported alcohol consumption and desire to use alcohol using a wrist actigraphy device; twice weekly laboratory visits were scheduled to monitor medication adherence and adverse events. RESULTS: Medication adherence was excellent and there were no adverse events and changes in vital signs, blood chemistry, and renal or liver function. There was no effect on alcohol craving, but kudzu extract significantly reduced the number of drinks consumed each week by 34-57 %, reduced the number of heavy drinking days, and significantly increased the percent of days abstinent and the number of consecutive days of abstinence. CONCLUSIONS: A standardized formulation of kudzu extract produced minimal side effects, was well-tolerated, and resulted in a modest reduction in alcohol consumption in young nontreatment-seeking heavy drinkers. Additional studies using treatment-seeking alcohol-dependent persons will be necessary to determine the usefulness of this herbal preparation in reducing alcohol use in other populations

Lukasiewicz, M.; Fareng, M.; Benyamina, A.; Blecha, L.; Reynaud, M.; Falissard, B. (2007):

Ecological momentary assessment in addiction.

Abstract:

Numerous symptoms in psychiatry are subjective (e.g., sadness, anxiety, craving or fatigue), fluctuate and are environment dependent. Accurate measurement of these phenomena requires repeated measures, and ideally needs to be performed in the patient's natural environment rather than in an artificial laboratory environment or a protected hospital environment. The usual paper and pencil questionnaires do not meet these two conditions for reasons of logistics. A recently developed method, ecological momentary assessment (EMA), made it possible to implement these field assessments via ingenious use of various devices (most frequently an electronic diary) coupling an auditory signal with computerized data capture. The subject carries the device with him/her at all times, and data is recorded in vivo in real time. The programming of repeated measures in the form of a Likert scale or pull-down menu is easily achieved. A recall alarm system can help increase compliance. Compared with classical

self-report, EMA improves the validity of the assessment of certain symptoms, which are the main evaluation criteria in clinical trials concerning certain pathologies (e.g., craving and treatment of addiction), where measurement was previously liable to bias. This article sets out to present this method, its advantages and disadvantages, and the interest it presents in psychiatry, in particular via three original applications developed by the authors including: measurement of reaction time without the knowledge of the subject in order to test certain cognitive models; use of a graphic solution for the data recorded for functional analysis of disorders; and the use of data collection via mobile phone and text messages, which also enables therapeutic interventions in real time by text messages, personalized on the basis of the situational data collected (e.g., in the case of craving, the associated mood, solitary or group consumption or concomitant occupations).

Luo, Shanhong; Zhang, Guangjian (2009):

What leads to romantic attraction: similarity, reciprocity, security, or beauty? Evidence from a speed-dating study.

In: *J Personality* 77 (4), S. 933–964. DOI: 10.1111/j.1467-6494.2009.00570.x.

Abstract:

Years of attraction research have established several \"principles\" of attraction with robust evidence. However, a major limitation of previous attraction studies is that they have almost exclusively relied on well-controlled experiments, which are often criticized for lacking ecological validity. The current research was designed to examine initial attraction in a real-life setting-speed-dating. Social Relations Model analyses demonstrated that initial attraction was a function of the actor, the partner, and the unique dyadic relationship between these two. Meta-analyses showed intriguing sex differences and similarities. Self characteristics better predicted women's attraction than they did for men, whereas partner characteristics predicted men's attraction far better than they did for women. The strongest predictor of attraction for both sexes was partners' physical attractiveness. Finally, there was some support for the reciprocity principle but no evidence for the similarity principle.

Luque, Rafael; Casilari, Eduardo; Moron, Maria-Jose; Redondo, Gema (2014):

Comparison and characterization of Android-based fall detection systems.

In: *Sensors (Basel)* 14 (10), S. 18543–18574. DOI: 10.3390/s141018543.

Abstract:

Falls are a foremost source of injuries and hospitalization for seniors. The adoption of automatic fall detection mechanisms can noticeably reduce the response time of the medical staff or caregivers when a fall takes place. Smartphones are being increasingly proposed as wearable, cost-effective and not-intrusive systems for fall detection. The exploitation of smartphones' potential (and in particular, the Android Operating System) can benefit from the wide implantation, the growing computational capabilities and the diversity of communication interfaces and embedded sensors of these personal devices. After revising the state-of-the-art on this matter, this study develops an experimental testbed to assess the performance of different fall detection algorithms that ground their decisions on the analysis of the inertial data registered by the accelerometer of the smartphone. Results obtained in a real testbed with diverse individuals indicate that the accuracy of the accelerometry-based techniques to identify the falls depends strongly on the fall pattern. The performed tests also show the difficulty to set detection acceleration thresholds that allow achieving a good trade-off between false negatives (falls that remain unnoticed) and false positives (conventional movements that are erroneously classified as falls). In any case, the study of the evolution of the battery drain reveals that the extra power consumption introduced by the Android monitoring applications cannot be neglected when evaluating the autonomy and even the viability of fall detection systems.

Lurbe, Empar; Redon, Josep (2008):

Discrepancies in office and ambulatory blood pressure in adolescents: help or hindrance?

In: *Pediatr Nephrol* 23 (3), S. 341–345.

Abstract:

The goal of this commentary is to review the most relevant topics concerning the clinical utility of ambulatory blood pressure (BP) monitoring, such as the state of the art "reference BP values", the importance of the discrepant situations between office and ambulatory BP (white-coat and masked hypertension) and those of the recommended clinical indications to now. From a small number of studies, operational thresholds to define hypertension have been established. They are useful tools even though more studies are necessary to create strong reference values. Ambulatory BP measurement is increasingly recognized as

being indispensable to the diagnosis and management of hypertension, and it has contributed significantly to our understanding of hypertension by revealing or "unmasking" BP phenomena that were not readily apparent using traditional techniques of measurement in clinical practice. Ambulatory BP monitoring should be performed in adolescents with either office mild essential hypertension before starting antihypertensive drug treatment or a strong family history of hypertension or an early cardiovascular event. Obese children with normal office BP values will also benefit from ambulatory BP monitoring. Other indications are the assessment of refractory hypertension or drug-induced hypotension. Finally, additional BP information in chronic renal failure, diabetes, and autonomic neuropathy can be obtained by using ambulatory BP monitoring.

Ly, Kien Hoa; Truschel, Anna; Jarl, Linnea; Magnusson, Susanna; Windahl, Tove; Johansson, Robert et al. (2014):

Behavioural activation versus mindfulness-based guided self-help treatment administered through a smartphone application: a randomised controlled trial.

In: *BMJ Open* 4 (1), S. e003440. DOI: 10.1136/bmjopen-2013-003440.

Abstract:

OBJECTIVES: Evaluating and comparing the effectiveness of two smartphone-delivered treatments: one based on behavioural activation (BA) and other on mindfulness. DESIGN: Parallel randomised controlled, open, trial. Participants were allocated using an online randomisation tool, handled by an independent person who was separate from the staff conducting the study. SETTING: General community, with recruitment nationally through mass media and advertisements. PARTICIPANTS: 40 participants diagnosed with major depressive disorder received a BA treatment, and 41 participants received a mindfulness treatment. 9 participants were lost at the post-treatment. INTERVENTION BA: An 8-week long behaviour programme administered via a smartphone application. Mindfulness: An 8-week long mindfulness programme, administered via a smartphone application. MAIN OUTCOME MEASURES: The Beck Depression Inventory-II (BDI-II) and the nine-item Patient Health Questionnaire Depression Scale (PHQ-9). RESULTS: 81 participants were randomised (mean age 36.0 years (SD=10.8)) and analysed. Results showed no significant interaction effects of group and time on any of the outcome measures either from pretreatment to post-treatment or from pretreatment to the 6-month follow-up. Subgroup analyses showed that the BA treatment was more effective than the mindfulness treatment among participants with higher initial severity of depression from pretreatment to the 6-month follow-up (PHQ-9: F (1, 362.1)=5.2, p<0.05). In contrast, the mindfulness treatment worked better than the BA treatment among participants with lower initial severity from pretreatment to the 6-month follow-up (PHQ-9: F (1, 69.3)=7.7, p<0.01); BDI-II: (F(1, 53.60)=6.25, p<0.05). CONCLUSIONS: The two interventions did not differ significantly from one another. For participants with higher severity of depression, the treatment based on BA was superior to the treatment based on mindfulness. For participants with lower initial severity, the treatment based on mindfulness worked significantly better than the treatment based on BA. TRIAL REGISTRATION: Clinical Trials NCT01463020.

Lyden, K.; Kozey Keadle, S. L.; Staudenmayer, J. W.; Freedson, P. S. (2012):

Validity of two wearable monitors to estimate breaks from sedentary time.

In: *Med.Sci.Sports Exerc.* 44 (11), S. 2243–2252. DOI: 10.1249/MSS.0b013e318260c477.

Abstract:

Investigations using wearable monitors have begun to examine how sedentary time behaviors influence health. PURPOSE: The objective of this study is to demonstrate the use of a measure of sedentary behavior and to validate the activPAL (PAL Technologies Ltd., Glasgow, Scotland) and ActiGraph GT3X (Actigraph, Pensacola, FL) for estimating measures of sedentary behavior: absolute number of breaks and break rate. METHODS: Thirteen participants completed two 10-h conditions. During the baseline condition, participants performed normal daily activity, and during the treatment condition, participants were asked to reduce and break up their sedentary time. In each condition, participants wore two ActiGraph GT3X monitors and one activPAL. The ActiGraph was tested using the low-frequency extension filter (AG-LFE) and the normal filter (AG-Norm). For both ActiGraph monitors, two count cut points to estimate sedentary time were examined: 100 and 150 counts per minute. Direct observation served as the criterion measure of total sedentary time, absolute number of breaks from sedentary time, and break rate (number of breaks per sedentary hour (brk.sed-h)). RESULTS: Break rate was the only metric sensitive to changes in behavior between baseline (5.1 [3.3-6.8] brk.sed-h) and treatment conditions (7.3 [4.7-9.8] brk.sed-h) (mean (95% confidence interval)). The activPAL produced valid estimates of all sedentary behavior measures and was sensitive to changes in break rate between conditions (baseline, 5.1 [2.8-7.1] brk.sed-h; treatment, 8.0 [5.8-10.2] brk.sed-h). In general, the AG-LFE and AG-Norm were not accurate in estimating break rate or the absolute number of breaks and were not sensitive to changes between conditions. CONCLUSION: This study demonstrates the use of expressing breaks from sedentary time as a rate per sedentary hour, a metric specifically relevant to free-living behavior, and provides further evidence that the activPAL is a valid tool to measure components of sedentary behavior in free-living environments

MacDonell, K.; Gibson-Scipio, W.; Lam, P.; Naar-King, S.; Chen, X. (2012):

Text Messaging to Measure Asthma Medication Use and Symptoms in Urban African American Emerging Adults: A Feasibility Study.

In: *J Asthma* (0277-0903 (Linking)). DOI: 10.3109/02770903.2012.733993.

Abstract:

Objective. Urban African American adolescents and young adults face disproportionate risk of asthma morbidity and mortality. This study was the first to assess the feasibility of Ecological Momentary Assessment via text messaging to measure asthma medication use and symptoms in African Americans aged 18-25 years. Methods. This study used automated text messaging with N = 16 participants for 14 consecutive days. Participants sent event-based messages whenever they experienced asthma symptoms or took asthma rescue or controller medications. They also received time-based messages daily that prompted for a response about asthma medications or symptoms. Results. Feasibility was assessed using response rates and participant feedback. Rates of event-based messages were relatively low (M = 0.85 messages sent per participant/day), but participants were very responsive to time-based messages (78.5%). All participants expressed positive feedback about the program, though 40.0% reported confusion with event-based messages and most preferred time-based messages. The assessment found low medication adherence rates and reasons for missing medication consistent with previous research with youth with asthma. Conclusion. Text messaging may be a useful method to measure medication use and symptoms in "real time," particularly using time-based prompts. Results could be used to provide personalized feedback on adherence as part of a tailored intervention

MacDonell, Karen E.; Naar-King, Sylvie; Murphy, Debra A.; Parsons, Jeffrey T.; Huszti, Heather (2011):

Situational temptation for HIV medication adherence in high-risk youth.

In: *AIDS patient care and STDs* 25 (1), S. 47–52.

Abstract:

Abstract This study explored the role of situational temptation, a component of self-efficacy, in adolescent and young adult (ages 16-24) HIV medication adherence by assessing participants' perceptions of their temptation to miss medications in various situations (e.g., when medication causes physical side effects, when there is fear of disclosure of HIV status). Youth (n = 186; 83% African American) were participants in a multisite clinical trial examining the efficacy of a motivational intervention. Data were collected using computer-assisted personal interviewing. Youth believed the most tempting reasons or situations that might lead them to miss their HIV medications to be symptoms (if the medicine caused you to have other physical symptoms) and sick (if the medicine made you sick to your stomach or made you throw up or if it tasted bad), but these were not significantly associated with nonadherence. This suggests disconnection between youths' expectations of temptation and actual tempting situations associated with nonadherence. Situational temptations associated with nonadherence included lack of social support, needing a break from medications, and not seeing a need for medications. Interventions to improve adherence should consider perceptions of HIV medications, particularly the benefits of taking medications and expectations of physical symptoms. Interventionists and clinicians should consider situations that may tempt youth to miss doses of medication and help youth gain insight into these temptations. Emerging methods, such as Ecological Momentary Assessment (e.g., daily diaries, cell phone text messaging), may be useful in gaining insight into the day-to-day experience of youth living with HIV.

MacE, C. J.; Maddison, R.; Olds, T.; Kerse, N. (2013):

Validation of a Computerised Use of Time Recall for Activity Measurement in Advanced Aged Adults.

In: *J Aging Phys.Act.* (1063-8652 (Linking)). Online verfügbar unter PM:23752221.

Abstract:

BACKGROUND: The Multimedia Activity Recall for Children and Adults (MARCA) is a computerised recall instrument recording use of time during 24-hours the previous day that has been developed to address limitations of current self-report physical activity measures for those in advanced age. METHODS: Test-retest reliability and convergent validity of the adult MARCA were assessed in a sample of 45 advanced aged adults (aged 84.9 SD+/-1.62 y) as a subsample of the Life and Living in Advanced Age Cohort Study New Zealand (LiLACS NZ). Test-retest methods required participants to recall the previous day's activity using the MARCA twice within the same day. Convergent validity was assessed against accelerometry. RESULTS: Test-retest reliability was high, with ICCs greater than 0.99 for moderate to vigorous physical activity (MVPA) and physical activity level (PAL). Compared to accelerometry, the MARCA demonstrated validity comparable to other self-report instruments with Spearman's coefficients of 0.34 and 0.59 for time spent in non-sedentary physical activity and PAL. CONCLUSION: The MARCA is a valid and reliable self-report tool for physical activity behaviours in advanced aged adults

MacFarlane, Duncan J.; Lee, Cherry C. Y.; Ho, Edmond Y. K.; Chan, K. L.; Chan, Dionise (2006):

Convergent validity of six methods to assess physical activity in daily life.

In: *Journal of applied physiology (Bethesda, Md. : 1985)* 101 (5), S. 1328–1334. DOI: 10.1152/japplphysiol.00336.2006.

Abstract:

The purpose was to examine the agreement (convergent validity) between six common measures of habitual physical activity to estimate durations of light, moderate, vigorous, and total activity in a range of free-living individuals. Over 7 consecutive days, 49 ethnic Chinese (30 men, 19 women), aged 15-55 yr, wore a Polar heart rate monitor, a uniaxial MTI, and triaxial Tritrac accelerometer, plus a Yamax pedometer for > or = 600 min/day. They also completed a daily physical activity log and on day 8 a Chinese version of the 7-day International Physical Activity Questionnaire. At each level of activity, there was good agreement between the two questionnaire-derived instruments and the two accelerometry-derived instruments, but wide variation across different instruments, with two- to fourfold differences in mean durations often seen. The heart rate monitor overestimated light activity and underestimated moderate activity compared with all other measures. Spearman correlation coefficients were low to moderate (0.2-0.5) across most measures of activity, with the pedometer showing correlations with total activity that were often superior to the other movement sensors. We conclude that, with the use of commonly accepted cut points for defining light, moderate, vigorous, and total activity, little convergent validity across the instruments was evident, suggesting these measures are sampling different levels of habitual physical activity and care is needed when comparing their results. To provide a more stable comparison of activity among different people, across studies, or against accepted physical activity promotion guidelines, further work is needed to fine tune the different cut points across a range of common activity monitors to provide more consistent results during free-living conditions.

MacHado-Rodrigues, A. M.; Figueiredo, A. J.; Mota, J.; Cumming, S. P.; Eisenmann, J. C.; Malina, R. M.; Coelho-E-Silva, M. J. (2012):

Concurrent validation of estimated activity energy expenditure using a 3-day diary and accelerometry in adolescents.

In: *Scandinavian Journal of Medicine & Science in Sports* 22 (2), S. 259–264. DOI: 10.1111/j.1600-0838.2010.01155.x.

Abstract:

Estimates of daily energy expenditure are important to studies of physical activity and energy balance. Objective measures are not always feasible and further research is needed to validate survey instruments and diaries. The study validates estimated activity energy expenditure (AEE) based on a 3-day diary protocol relative to AEE derived from uniaxial accelerometry in adolescents, 265 girls and 227 boys (12.5-16.4 years). Participants completed the diary and wore a GT1M Actigraph accelerometer on the same days. Height and weight were measured. Correlations between protocols were significant ($P<0.001$) but moderate, $r=0.65$ in males and $r=0.69$ in females. The highest correlation occurred among males on Friday, $r=0.74$ ($P<0.01$). Controlling for body mass, partial correlations between protocols decreased to 0.44 and 0.35 in males and females, respectively. About 97% of the cases fell within the limits of agreement in a Bland-Altman plot. The criterion of inclusion for the accelerometer excluded 18% of the initial sample. In summary, the 3-day diary was completed without any major problems and provided a reasonably valid alternative for assessing AEE. Concordance between methods was slightly lower for individuals with higher values of AEE.

MacKinnon, Sean P.; Battista, Susan R.; Sherry, Simon B.; Stewart, Sherry H. (2013):

Perfectionistic self-presentation predicts social anxiety using daily diary methods.

In: *Personality and Individual Differences*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-34177-001%26site%3dehost-live.

Abstract:

Perfectionistic self-presentation is thought to confer risk for social anxiety. Although this relationship is thought to occur dynamically from moment-to-moment, no research has yet tested this relationship using experience sampling methods. The present study stringently tested whether perfectionistic self-presentation predicted social anxiety beyond several important covariates using a 21-day experience sampling design. A sample of 165 undergraduates (75.6% women) completed a series of questionnaires each day for 21days using palm pilots. Generalizability theory and multilevel factor analyses suggested daily measures of perfectionistic self-presentation, social anxiety, perfectionism cognitions, and depressed mood evidence within-subjects and between-subjects variability, can be measured reliably, and represent distinct factors, allowing hypothesis testing. Multilevel regressions showed perfectionistic self-presentation predicted social anxiety at the between-subjects and within-subjects levels, even when controlling for socially prescribed perfectionism, perfectionism cognitions, and depressed mood.

Overall, perfectionistic self-presentation emerged as a robust predictor of daily social anxiety, clearly extending prior cross-sectional research on this topic. By understanding how perfectionism operates from day-to-day, we can better understand the processes that give rise to social anxiety, and ultimately how to devise more effective ways to help people suffering from social anxiety. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

MacKinnon, S. P.; Sherry, S. B.; Antony, M. M.; Stewart, S. H.; Sherry, D. L.; Hartling, N. (2012):

Caught in a Bad Romance: Perfectionism, Conflict, and Depression in Romantic Relationships.

In: *J.Fam.Psychol.* (0893-3200 (Linking)). DOI: 10.1037/a0027402.

Abstract:

According to the social disconnection model, perfectionistic concerns (i.e., harsh self-scrutiny, extreme concern over mistakes and others' evaluations, and excessive reactions to perceived failures) confer vulnerability to depressive symptoms indirectly through interpersonal problems. This study tested the social disconnection model in 226 heterosexual romantic dyads using a mixed longitudinal and experience sampling design. Perfectionistic concerns were measured using three partner-specific self-report questionnaires. Conflict was measured as a dyadic variable, incorporating reports from both partners. Depressive symptoms were measured using a self-report questionnaire. Perfectionistic concerns and depressive symptoms were measured at Day 1 and Day 28. Aggregated dyadic conflict was measured with daily online questionnaires from Days 2 to 15. Data were analyzed using structural equation modeling. There were four primary findings: (a) Dyadic conflict mediated the link between perfectionistic concerns and depressive symptoms, even when controlling for baseline depressive symptoms; (b) depressive symptoms were both an antecedent and a consequence of dyadic conflict; (c) perfectionistic concerns incrementally predicted dyadic conflict and depressive symptoms beyond neuroticism (i.e., a tendency to experience negative emotions) and other-oriented perfectionism (i.e., rigidly demanding perfection from one's partner); and (d) the relationships among variables did not differ based on gender. As the most rigorous test of the social disconnection model to date, this study provides strong support for this emerging model. Results also clarify the characterological and the interpersonal context within which depressive symptoms are likely to occur. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

MacReady, Anna L.; George, Trevor W.; Chong, Mary F.; Alimbetov, Dauren S.; Jin, Yannan; Vidal, Alberto et al. (2014):

Flavonoid-rich fruit and vegetables improve microvascular reactivity and inflammatory status in men at risk of cardiovascular disease--FLAVURS: a randomized controlled trial.

In: *Am J Clin Nutr* 99 (3), S. 479–489. DOI: 10.3945/ajcn.113.074237.

Abstract:

BACKGROUND: Observed associations between increased fruit and vegetable (F&V) consumption, particularly those F&Vs that are rich in flavonoids, and vascular health improvements require confirmation in adequately powered randomized controlled trials. OBJECTIVE: This study was designed to measure the dose-response relation between high-flavonoid (HF), low-flavonoid (LF), and habitual F&V intakes and vascular function and other cardiovascular disease (CVD) risk indicators. DESIGN: A single-blind, dose-dependent, parallel randomized controlled dietary intervention study was conducted. Male and female low-F&V consumers who had a >/= 1.5-fold increased risk of CVD (n = 174) were randomly assigned to receive an HF F&V, an LF F&V, or a habitual diet, with HF and LF F&V amounts sequentially increasing by 2, 4, and 6 (+2, +4, and +6) portions/d every 6 wk over habitual intakes. Microvascular reactivity (laser Doppler imaging with iontophoresis), arterial stiffness [pulse wave velocity, pulse wave analysis (PWA)], 24-h ambulatory blood pressure, and biomarkers of nitric oxide (NO), vascular function, and inflammation were determined at baseline and at 6, 12, and 18 wk. RESULTS: In men, the HF F&V diet increased endothelium-dependent microvascular reactivity (P = 0.017) with +2 portions/d (at 6 wk) and reduced C-reactive protein (P = 0.001), E-selectin (P = 0.0005), and vascular cell adhesion molecule (P = 0.0468) with +4 portions/d (at 12 wk). HF F&Vs increased plasma NO (P = 0.0243) with +4 portions/d (at 12 wk) in the group as a whole. An increase in F&Vs, regardless of flavonoid content in the groups as a whole, mitigated increases in vascular stiffness measured by PWA (P = 0.0065) and reductions in NO (P = 0.0299) in the control group. CONCLUSION: These data support recommendations to increase F&V intake to >/= 6 portions daily, with additional benefit from F&Vs that are rich in flavonoids, particularly in men with an increased risk of CVD. This trial was registered at www.controlled-trials.com as ISRCTN47748735.

Maddern-Leserer, Daniela (2012):

Stopping the downward spiral: Real-time monitoring of stress with cell phones as a self-help tool for relapse prevention.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (8-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99040-327&site=ehost-live.

Abstract:

This study investigated the relationship between awareness of stress-as a result of monitoring stress levels multiple times a day-and its impact on relapse to addiction. The sample included 17 participants enrolled in an outpatient drug rehabilitation clinic. Participants recorded their stress levels with their cell phones four times a day for a 3-week period. Three month post-participation relapse rates of individuals who voluntarily opted to participate in the study were compared to those who did not participate to determine whether participation in the study would confer differential success in the rehabilitation program. This study used a methodology similar to the Ecological Momentary Assessment (EMA). Results of this study showed that participants were twice as likely to remain in treatment compared to nonparticipants. Data analysis showed that participants' actual moment-to-moment stress remained fairly constant, however, participants reported a decrease in the perception of their stress. Furthermore, participants reported that they found it useful to participate and 100% of the participants reported that they would use this form of data collection again. The results of this study mirror the results of a study conducted by this researcher with a non-clinical sample. Reporting one's stress 4 times a day might help participants to become more mindful of their experience, thus becoming more tolerant of their affective states over time. Using cell phones to record stress levels multiple times a day may be a highly cost effective way to increase mindfulness, awareness, self-control as well as social support, and might increase the likelihood of program completion. These results are consistent with the literature on mindfulness training, suggesting that mindfulness may disrupt the spiral of stress precipitated by alcohol relapse, and thus, enhance clinical outcomes in substance-abusing populations. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Magnan, R. E.; Koblitz, A. R.; McCaul, K. D.; Dillard, A. J. (2012):

Self-Monitoring Effects of Ecological Momentary Assessment on Smokers' Perceived Risk and Worry.

In: *Psychol.Assess.* (1040-3590 (Linking)). DOI: 10.1037/a0031232.

Abstract:

Using ecological momentary assessment (EMA), we sought to determine whether differences in reporting would exist for smokers who self-monitored their smoking-related negative thoughts five times daily in comparison to a non-EMA control group. One hundred seventeen smokers were randomly assigned to two conditions. Eighty-eight smokers carried personal digital assistants (PDAs) for 2 weeks and monitored negative thoughts each day, and 29 smokers did not self-monitor their negative thoughts. All smokers completed pretest and posttest assessments reporting their perceived risk and worry associated with smoking consequences. The data revealed evidence of self-monitoring effects, as smokers in the EMA condition reported less worry after 2 weeks of self-monitoring compared to smokers in the control condition. The two conditions did not differ in their reports of perceived risk of smoking consequences. These data suggest that EMA procedures asking respondents to self-monitor their thoughts about smoking may influence feelings about their smoking behavior. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Maher, Carol; Crettenden, Angela; Evans, Kerry; Thiessen, Myra; Toohey, Monica; Dollman, Jim (2014):

A pedometer based physical activity self-management program for children and adolescents with physical disability - design and methods of the StepUp study.

In: *BMC Pediatr* 14, S. 31. DOI: 10.1186/1471-2431-14-31.

Abstract:

BACKGROUND: Physical activity affords a wide range of physiological and psychological benefits for children and adolescents, yet many children with physical disabilities are insufficiently active to achieve these benefits. The StepUp program is a newly developed 6-week pedometer-based self-management program for children and adolescents with physical disability. Participants use a pedometer to undertake a 6-week physical activity challenge, with personalised daily step count goals set in consultation with a physiotherapist. The study aims to evaluate the effectiveness of the StepUp program, using a randomised control trial design. METHODS/DESIGN: A target sample of 70 young people with physical disabilities (aged 8-17 years, ambulant with or without aid, residing in Adelaide) will be recruited. Participants will be randomly allocated to either

intervention or control following completion of baseline assessments. Assessments are repeated at 8 weeks (immediately post intervention) and 20 weeks (12 weeks post intervention). The primary outcome is objective physical activity determined from 7 day accelerometry, and the secondary outcomes are exercise intention, physical self-worth, quality of life and fatigue. Analyses will be undertaken on an intention-to-treat basis using random effects mixed modelling. DISCUSSION: This study will provide information about the potential of a low-touch and low-cost physical activity intervention for children and adolescents with cerebral palsy. TRIAL REGISTRATION: Australian New Zealand Clinical Trials Registry (ANZCTR): ACTRN12613000023752.

Maher, Carol; Olds, Tim; Mire, Emily; Katzmarzyk, Peter T. (2014):

Reconsidering the sedentary behaviour paradigm.

In: *PLoS One* 9 (1), S. e86403. DOI: 10.1371/journal.pone.0086403.

Abstract:

AIMS: Recent literature has posed sedentary behaviour as an independent entity to physical inactivity. This study investigated whether associations between sedentary behaviour and cardio-metabolic biomarkers remain when analyses are adjusted for total physical activity. METHODS: Cross-sectional analyses were undertaken on 4,618 adults from the 2003/04 and 2005/06 U.S. National Health and Nutrition Examination Survey. Minutes of sedentary behaviour and moderate-to-vigorous physical activity (MVPA), and total physical activity (total daily accelerometer counts minus counts accrued during sedentary minutes) were determined from accelerometry. Associations between sedentary behaviour and cardio-metabolic biomarkers were examined using linear regression. RESULTS: Results showed that sedentary behaviour was detrimentally associated with 8/11 cardio-metabolic biomarkers when adjusted for MVPA. However, when adjusted for total physical activity, the associations effectively disappeared, except for C-reactive protein, which showed a very small, favourable association (beta = -0.06) and triglycerides, which showed a very small, detrimental association (beta = 0.04). Standardised betas suggested that total physical activity was consistently, favourably associated with cardio-metabolic biomarkers (9/11 biomarkers, standardized beta = 0.08-0.30) while sedentary behaviour was detrimentally associated with just 1 biomarker (standardized beta = 0.12). CONCLUSION: There is virtually no association between sedentary behaviour and cardio-metabolic biomarkers once analyses are adjusted for total physical activity. This suggests that sedentary behaviour may not have health effects independent of physical activity.

Mahlberg, Richard; Walther, S. (2007):

Actigraphy in agitated patients with dementia.

In: *Zeitschrift für Gerontologie und Geriatrie* 40 (3), S. 178–184.

Abstract:

Especially in pharmacotherapeutic research, a variety of methods to monitor behavioural and psychological symptoms of dementia (BPSD) are currently being discussed. To date, the most frequently used of these are clinical scales, which, however, are subjective and highly dependent on personnel resources. In our study, we tested the usefulness of actigraphy as a more direct and objective way to measure day-night rhythm disturbances and agitated behaviour. After a baseline assessment, 24 patients with probable dementia of the Alzheimer type (NINCDS-ADRDA) and agitated behaviour received either 3 mg melatonin (n=7), 2.5 mg dronabinol (n=7), or placebo (n=10) for two weeks. In addition, 10 young and 10 elderly healthy subjects were examined as a control group. Motor activity levels were assessed using an actigraph worn continuously on the wrist of the non-dominant hand. At the beginning and the end of the study, patients' Neuropsychiatric Inventory (NPI) scores were also assessed. In the verum group, actigraphic nocturnal activity (P=0.001), NPI total score (P=0.043), and NPI agitation subscale score (P=0.032) showed significant reductions compared to baseline. The treatment-baseline ratio of nocturnal activity (P=0.021) and treatment-baseline difference of the nocturnal portion of 24 h activity (P=0.012) were reduced. Patients' baseline activity levels were similar to those seen in healthy elderly subjects. Younger healthy subjects exhibited higher motor activity even at night. There was no correlation between actigraphy and NPI. Both actigraphic measures and the gold standard clinical scale were able to distinguish between the verum and placebo groups. However, because they did not correlate with each other, they clearly represent different aspects of BPSD, each of which reacts differently to therapy. As a result, actigraphy may well come to play an important role in monitoring treatment success in BPSD.

Mahler, Anja; Steiniger, Jochen; Endres, Matthias; Paul, Friedemann; Boschmann, Michael; Doss, Sarah (2014):

Increased Catabolic State in Spinocerebellar Ataxia Type 1 Patients.

In: *Cerebellum. DOI:* 10.1007/s12311-014-0555-6.

Abstract:

Autosomal dominant spinocerebellar ataxia type 1 (SCA1) is a genetic movement disorder with neuronal loss in the cerebellum, brainstem, and other cerebral regions. The course of SCA1 is accompanied with progressive weight loss and amyotrophia-the causes for that remain, however, unclear. We tested the hypothesis that an imbalance between energy intake and expenditure contributes to weight loss in SCA1 patients. Anthropometric measures, energy intake (food records), and resting (calorimetry) and free-living (accelerometry) energy expenditure were determined in 10 patients with genetically proven SCA1 and 10 healthy controls closely matched for age, sex, and body composition. At rest, energy expenditure per kilogram fat-free mass was 22 % and fat oxidation rate 28 % higher in patients vs. controls indicating an increased catabolic state. Under free-living conditions, total energy expenditure and daily step counts were significantly lower in patients vs. controls. However, most patients were able to maintain energy intake and expenditure in a balanced state. Resting energy expenditure, fat oxidation, and activity energy expenditure per step count are higher, whereas 24-h total energy expenditure is lower in SCA1 patients vs. healthy controls. An altered autonomic nervous system activity, gait ataxia, and a decreased physical activity might contribute to this outcome.

Maina, Giovanni; Bovenzi, Massimo; Palmas, Antonio; Prodi, Andrea; Filon, Francesca Larese (2011):

Job strain, effort-reward imbalance and ambulatory blood pressure: results of a cross-sectional study in call handler operators.

In: *International archives of occupational and environmental health* 84 (4), S. 383–391. DOI: 10.1007/s00420-010-0576-5.

Abstract:

OBJECTIVES\r\nTo examine the association between two job stress models-the job strain (JDC) and the effort-reward imbalance (ERI) model-and ambulatory blood pressure monitoring in call handler operators.\r\nMETHODS\r\nParticipants included 74 women (age, 34.9 ± 9.9 years) and 26 men (age 36.0 ± 10.8 years) who were monitored on 2 workdays for ambulatory blood pressure. Measures of both job stress models were related to blood pressure by the generalized estimating equations (GEE) method while adjusting for potential confounders (gender, age, cigarette smoking, alcohol consumption, educational level, marital status, time of day, and work schedule).\r\nRESULTS\r\nWorkshifts were associated with an increase of 3-4 and 14 mmHg in mean arterial pressure (MAP) compared with diurnal activities out of work and sleeping period, respectively ($P < 0.001$). Ambulatory blood pressure was also significantly related with work schedule preference: unpleasant work schedule was associated with an increase of 2 mmHg in MAP compared with pleasant work schedule ($P = 0.013$). In the ERI model, subjects scoring high in work stress have higher ambulatory blood pressure at work, at home, and during sleep. Work stress by time interaction was not longer significant when controlling for potential confounders: generalized estimating equations revealed that MAP was influenced by BMI (>25 vs. <25: 0.7 (0.2-1.1) mmHg), workshift preference (unpleasant vs. pleasant: 2 (0.4-3.6) mmHg), and time of day. Weak not significant relation was found between ABP and psychosocial factors evaluated by the JDC and ERI models.\r\nCONCLUSION\r\nThese results do not support work stress as a significant factor influencing ABP in a homogeneous group of call-handlers. Complementary information independently obtained from the two work stress models could provide more exhaustive explanations on the stress-related effects on blood pressure.

Mak, T. N.; Prynne, C. J.; Cole, D.; Fitt, E.; Roberts, C.; Bates, B.; Stephen, A. M. (2012):

Assessing eating context and fruit and vegetable consumption in children: new methods using food diaries in the UK National Diet and Nutrition Survey Rolling Programme.

In: *Int.J Behav.Nutr.Phys.Act.* 9 (1479-5868 (Linking)), S. 126. DOI: 10.1186/1479-5868-9-126.

Abstract:

BACKGROUND: Eating context is the immediate environment of each eating occasion (EO). There is limited knowledge on the effects of the eating context on food consumption in children, due to the difficulty in measuring the multiple eating contexts children experience throughout the day. This study applied ecological momentary assessment using food diaries to explore the relationships between eating context and fruit and vegetable consumption in UK children. METHODS: Using 4 d unweighed food diaries, data were collected for 642 children aged 1.5-10y in two years of the UK National Diet and Nutrition Survey (2008-2010). Participants recorded all foods and drinks consumed at each EO, where and with whom the food was consumed, whether the TV was on and if eaten at a table. Mixed logistic regression and mixed multinomial logistic regression were used to calculate associations between eating contexts and fruit and vegetables (FV) consumed by quartiles. RESULTS: Of 16,840 EOs, 73% took place at home and 31% with parents only. Frequency of eating alone and with friends increased with age. Compared to eating at home, children aged 1.5-3y were more likely to consume fruit at care outside home (>10-50g OR:2.39; >50-100g OR:2.12); children aged 4-6y were more likely to consume fruit (>50-100g OR:3.53; >100g OR:1.88) and vegetables at school (>30-60g OR:3.56). Compared to eating with parents only, children aged 1.5-3y were more likely to consume fruit with friends (>10-50g OR:2.69; >50-100g OR:3.49), and with carer and other children/others (>10-50g OR:2.25); children aged 4-6y were more likely to consume fruit (>50-100g OR:1.96) and vegetables with friends (>30-60g OR:3.56). Children of all ages were more likely to eat

vegetables when the TV was off than on and at a table than not at table. CONCLUSIONS: The use of food diaries to capture multiple eating contexts and detailed fruit and vegetable consumption data was demonstrated at a population level. Higher odds of FV consumption were seen from structured settings such as school and care outside home than at home, as well as when eating at a table and the TV off. This study highlights eating contexts where provision of fruit and vegetables could be improved, especially at home. Future research should take eating context into consideration when planning interventions to target children's food consumption and eating behaviour

Malik, Aiysha; Goodwin, Guy M.; Holmes, Emily A. (2012):

Contemporary approaches to frequent mood monitoring in bipolar disorder.

In: *Journal of Experimental Psychopathology* 3 (4), S. 572–581. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-27687-005%26site%3dehost-live;emily.holmes@psych.ox.ac.uk.

Abstract:

Mood fluctuations are problematic in bipolar disorder. Current approaches to frequent monitoring of mood in bipolar disorder are paper diaries and electronic handheld devices. These approaches are limited in several ways, notably in the reliability of the data being collected which is often retrospectively reported. The experience sampling method offers a research paradigm which could be modified for use in clinical settings, to real time frequent mood monitoring. Mobile phone technology has also recently been developed to monitor weekly mood in a bipolar sample, demonstrating successful compliance rates. We propose the use of mobile phone technology as a novel method for frequently monitoring mood in bipolar disorder. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Maloney, Ann E.; Bethea, T. Carter; Kelsey, Kristine S.; Marks, Julie T.; Paez, Sadye; Rosenberg, Angela M. et al. (2008):

A pilot of a video game (DDR) to promote physical activity and decrease sedentary screen time.

In: *Obesity* 16 (9), S. 2074–2080.

Abstract:

OBJECTIVE:

We examined the feasibility of Dance Dance Revolution (DDR), a dance video game, in participants' homes, to increase physical activity (PA) and to decrease sedentary screen time (SST).

METHODS AND PROCEDURES:

Sixty children (7.5 +/- 0.5 years) were randomized in a 2:1 ratio to DDR or to wait-list control (10-week delay). DDR use was logged, PA was measured objectively by accelerometry. SST was self-reported at weeks 0 and 10. At week 28, after both groups had access to DDR, accelerometry and SST were repeated.

RESULTS:

Mean use of DDR was 89 +/- 82 (range 0-660 min) min per week (mpw). The DDR group showed increased vigorous PA and a reduction in light PA; the control group showed no increase in moderate and/or vigorous PA (MVPA) although they also had a reduction in light PA. Differences between the groups were not observed. The DDR group also reported a decrease in SST of -1.2 +/- 3.7 h per week (hpw) ($P < 0.05$), whereas the controls reported an increase of +3.0 +/- 7.7 hpw (nonsignificant). The difference in SST between the groups was significant, with less SST in the DDR group. Between weeks 10 and 28, numeric reductions in SST were reported in both groups. In the DDR group, SST at week 28 (8.8 +/- 6.0 hpw) was lower than baseline (10.5 +/- 5.5 hpw; $P < 0.03$).

DISCUSSION:

This pilot study suggests that DDR reduces SST and may facilitate slight increases in vigorous PA. Further study is needed to better characterize children and contexts in which DDR may promote a healthy lifestyle.

Mancia, Giuseppe; Bombelli, Michele; Facchetti, Rita; Madotto, Fabiana; Corrao, Giovanni; Trevano, Fosca Quarti et al. (2007):

Long-Term Prognostic Value of Blood Pressure Variability in the General Population Results of the Pressioni Arteriose Monitorate e Loro Associazioni Study.

In: *Hypertension* 49 (6), S. 1265–1270.

Abstract:

The hypothesis has been advanced that cardiovascular prognosis is related not only to 24-hour mean blood pressure but also to blood pressure variability. Data, however, are inconsistent, and no long-term prognostic study is available. In 2012 individuals randomly selected from the population of Monza (Milan), 24-hour ambulatory blood pressure (Spacelabs 90207) was measured via readings spaced by 20 minutes. Systolic and diastolic blood pressure variability was obtained by calculating the following: (1) the SD of 24-hour, day, and night mean values; (2) the day-night blood pressure difference; and (3) the residual or erratic blood pressure variability (Fourier spectral analysis). Fatal cardiovascular and noncardiovascular events were registered for 148 months. When adjusted for age, sex, 24-hour mean blood pressure, and other risk factors, there was no relationship between the risk of death and 24-hour, day, and night blood pressure SDs. In contrast, the adjusted risk of cardiovascular death was inversely related to day-night diastolic BP difference (beta coefficient=-0.040; P<0.02) and showed a significant positive relationship with residual diastolic blood pressure variability (beta coefficient=0.175; P<0.002). Twenty-four-hour mean blood pressure attenuation of nocturnal hypotension and erratic diastolic blood pressure variability all independently predicted the mortality risk, with the erratic variability being the most important factor. Our data show that the relationship of blood pressure to prognosis is complex and that phenomena other than 24-hour mean values are involved. They also provide the first evidence that short-term erratic components of blood pressure variability play a prognostic role, with their increase being accompanied by an increased cardiovascular risk.

Mancia, Giuseppe; Facchetti, Rita; Bombelli, Michele; Grassi, Guido; Sega, Roberto (2006):

Long-term risk of mortality associated with selective and combined elevation in office, home, and ambulatory blood pressure.

In: *Hypertension* 47 (5), S. 846–853. DOI: 10.1161/01.HYP.0000215363.69793.bb.

Abstract:

In the Pressioni Arteriose Monitorate e Loro Associazioni (PAMELA) study, office, home, and ambulatory blood pressure (BP) values were measured contemporaneously between 1990 and 1993 in a large population sample (n=2051). Cardiovascular (CV) and non-CV death certificates were collected over the next 148 months, which allowed us to assess the prognostic value of selective and combined elevation in these 3 BPs over a long follow-up. There were 69 CV and 233 all-cause deaths. Compared with subjects with normal office and 24-hour BP, the hazard ratio for CV death showed a progressive increase in those with a selective office BP elevation (white-coat hypertension), a selective 24-hour BP elevation (masked hypertension), and elevation in both office and 24-hour BP. This was the case also when the above conditions were identified by office versus home BP values. Selective elevation in home versus ambulatory BP or vice versa also carried an increased risk. There was indeed a progressive increase in both CV and all-cause mortality risk from subjects in whom office, home, and ambulatory BP were all normal to those in whom 1, 2, or all 3 BPs were elevated, regardless of which BP was considered. The trends remained significant after adjustment for age and gender, as well as, in most instances, after further adjustment for other cardiovascular risk factors. Thus, white-coat hypertension and masked hypertension, both when identified by office and ambulatory or by office and home BPs, are not prognostically innocent. Indeed, each BP elevation (office, home, or ambulatory) carries an increase in risk mortality that adds to that of the other BP elevations.

Mancini, M.; Zampieri, C.; Carlson-Kuhta, P.; Chiari, L.; Horak, F. B. (2009):

Anticipatory postural adjustments prior to step initiation are hypometric in untreated Parkinson's disease: an accelerometer-based approach.

In: *European journal of neurology : the official journal of the European Federation of Neurological Societies* 16 (9), S. 1028–1034. DOI: 10.1111/j.1468-1331.2009.02641.x.

Abstract:

BACKGROUND AND PURPOSE\r\nAnticipatory postural adjustments (APAs), prior to step initiation, are bradykinetic in advanced Parkinson's disease (PD) and may be one of the factors associated with 'start hesitation'. However, little is known about APAs in the early stage of PD. In this study, we determined whether body-worn accelerometers could be used to characterize step initiation deficits in subjects with early-to-moderate, untreated PD.\r\nMETHODS\r\nEleven PD and 12 healthy control subjects

were asked to take two steps. Postural adjustments were compared from center of pressure (COP) and from acceleration of the trunk at the center of mass level (L5).\r\nRESULTS\r\nOur findings show that APAs measured from the peak COP displacement toward the swing leg and the peak trunk acceleration toward the stance leg were smaller in untreated PD compared with control subjects. The magnitude of APAs measured from peak COP displacements and accelerations were correlated.\r\nCONCLUSION\r\nThese results suggest that quantitative analysis of step initiation from one accelerometer on the trunk could provide useful information for the characterization of patients in early stages of PD, when clinical evidence of start hesitation may not be detectable. Ambulatory monitoring of step initiation is also promising for monitoring patient progression in the home environment, and eventually providing feedback for preventing freezing of gait episodes.

Mangera, A.; Marzo, A.; Heron, N.; Fernando, D.; Hameed, K.; Soliman, A. H. et al. (2013):

Development of two electronic bladder diaries: A patient and healthcare professionals pilot study.

In: *Neurourol.Urodyn.* (0733-2467 (Linking)). DOI: 10.1002/nau.22469.

Abstract:

AIMS: Assess patients' preferences in a pilot crossover study of two different electronic voiding diaries against a standard paper diary. Assess urological health professional (HP) opinions on the electronic bladder diary reporting system. METHODS: Two different electronic diaries were developed: (1) electronically read diary-a card with predefined slots read by a card reader and (2) e-diary-a handheld touch screen device. Data uploaded from either electronic diary produced an electronic report. We recruited 22 patients split into two cohorts for each electronic diary, 11 completed each type of electronic diary for 3 days either preceded or followed by a standard paper diary for 3 days. Both diaries were completed on the 7th day. Patients' perceptions of both diaries were recorded using a standardized questionnaire. A HP study recruited 22 urologists who were given the paper diary and the electronic reports. Time taken for analysis was recorded along with accuracy and HP preferences. RESULTS: The majority of patients (82%) preferred the e-diary and only 1/11 found it difficult to use. Patients had the same preference for the electronically read diary as the paper diary. The paper diary took 66% longer to analyze than the electronic report ($P < 0.001$) and was analyzed with an accuracy of 58% compared to 100%. Slightly more HP (9%) preferred the electronic report to the paper diary. CONCLUSIONS: This proposed e-diary with its intuitive interface has overcome previous deficiencies in electronic diaries with most patients finding the format user-friendly. Electronic reports make analysis and interpretation by HP quicker and more accurate. Neurourol. Urodynam. (c) 2013 Wiley Periodicals, Inc

Manikonda, J. P.; Störk, S.; Tögel, S.; Lobmüller, A.; Grünberg, I.; Bedel, S. et al. (2008):

Contemplative meditation reduces ambulatory blood pressure and stress-induced hypertension: a randomized pilot trial.

In: *J Hum Hypertens* 22 (2), S. 138–140.

Abstract:

A total of 52 pharmacologically untreated subjects with essential hypertension were randomly allocated to either 8 weeks of contemplative meditation combined with breathing techniques (CMBT) or no intervention in this observer-blind controlled pilot trial. CMBT induced clinically relevant and consistent decreases in heart rate, systolic and diastolic blood pressure if measured during office readings, 24-h ambulatory monitoring and mental stress test. Longer-term studies should evaluate CMBT as an antihypertensive strategy.

Manios, Efstathios D.; Koroboki, Eleni A.; Tsivgoulis, Georgios K.; Spengos, Konstantinos M.; Spiliopoulou, Ioanna K.; Brodie, Fiona G. et al. (2008):

Factors influencing white-coat effect.

In: *Am J Hypertens* 21 (2), S. 153–158.

Abstract:

BACKGROUND:

The transient blood pressure (BP) rise during clinical visits is usually referred to as white-coat effect (WCE). The aim of the present study was to investigate factors that may influence the WCE.

METHODS:

A total of 2004 subjects underwent office BP measurements and 24-h ambulatory BP monitoring (ABPM) on the same day. The WCE was estimated as the difference between office and average daytime ambulatory BP (ABP). According to the office and daytime BP values, the study population was divided into normotensives (NTs), white-coat hypertensives (WCHs), masked hypertensives (MHTs), and sustained hypertensives (SHTs). Statistical analyses were performed using one-way analysis of variance and multiple linear regression models.

RESULTS:

The mean systolic and diastolic WCE was 9 +/- 16 and 7 +/- 12 mm Hg, respectively. In the entire group of patients, multiple linear regression models revealed independent determinants of systolic WCE in the following rank order: office systolic BP (SBP) (beta = 0.727; P < 0.001), female gender (beta = 0.166; P < 0.001), daytime SBP variability (beta = 0.128; P < 0.001), age (beta = 0.039, P = 0.020), and smoking (beta = 0.031, P = 0.048). A 1.0 mm Hg increase in daytime SBP variability correlated with an increment of 0.589 mm Hg (95% confidence intervals, 0.437-0.741) in the systolic WCE. The regression analyses for diastolic WCE revealed the same factors as independent determinants. A 1.0 mm Hg increase in daytime diastolic BP (DBP) variability was independently associated with an increment of 0.418 mm Hg (95% confidence intervals, 0.121-0.715) in the diastolic WCE.

CONCLUSIONS:

Factors such as gender, age, smoking, office BPV and daytime BPV may exert an important influence on the magnitude of the WCE.

Mann, Eleanor; Hunter, Myra S. (2011):

Concordance between self-reported and sternal skin conductance measures of hot flushes in symptomatic perimenopausal and postmenopausal women: a systematic review.

In: *Menopause* 18 (6), S. 709–722.

Abstract:

OBJECTIVE:

Sternal skin conductance is considered the gold standard in hot flush and night sweat measurement, but results sometimes differ from women's own self-reports. To date, there has been no systematic review of concordance between sternal skin conductance and self-report measures. An exploratory meta-analysis was conducted to quantify concordance between these measures and to explore the reasons for discordance between them.

METHODS:

A search of Medline, EMBASE, Web of Science, and PsychInfo from inception to December 2009 was conducted. Studies that measured self-reported hot flushes and/or night sweats and sternal skin conductance concurrently in symptomatic perimenopausal and postmenopausal women were retained for data extraction. Studies were included if data on concordance between the two measures were available.

RESULTS:

Concordance rates overall were 29%, but variability between studies was too broad to identify a single typical concordance rate. However, concordance rates for ambulatory monitoring were more homogeneous and also had a 29% concordance rate. Nonambulatory studies tended to result in more concordant hot flushes (54%) than ambulatory studies did, and night sweats tended to be under-reported more often than over-reported (46% and 22%, respectively).

CONCLUSIONS:

Concordance rates were typically lower than early reports of sternal skin conductance measures but were highly variable between studies. Possible measurement error and study conditions might partly explain the discordance and variation in study findings, but further exploration of the effects of symptom perception is warranted. Use of both measures concurrently is likely to achieve more reliable and valid measurement of hot flushes and night sweats than either measure alone.

Marcano Belisario, J. S.; Huckvale, K.; Greenfield, G.; Car, J.; Gunn, L. H. (2013):

Smartphone and tablet self management apps for asthma.

In: *Cochrane.Database.Syst.Rev.* 11 (1361-6137 (Linking)), S. CD010013. DOI: 10.1002/14651858.CD010013.pub2.

Abstract:

BACKGROUND: Asthma is one of the most common long-term conditions worldwide, which places considerable pressure on patients, communities and health systems. The major international clinical guidelines now recommend the inclusion of self management programmes in the routine management of patients with asthma. These programmes have been associated with improved outcomes in patients with asthma. However, the implementation of self management programmes in clinical practice, and their uptake by patients, is still poor. Recent developments in mobile technology, such as smartphone and tablet computer apps, could help develop a platform for the delivery of self management interventions that are highly customisable, low-cost and easily accessible. OBJECTIVES: To assess the effectiveness, cost-effectiveness and feasibility of using smartphone and tablet apps to facilitate the self management of individuals with asthma. SEARCH METHODS: We searched the Cochrane Airways Group Register (CAGR), the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, PsycINFO, CINAHL, Global Health Library, Compendex/Inspec/Referex, IEEEXplore, ACM Digital Library, CiteSeer(x) and CAB abstracts via Web of Knowledge. We also searched registers of current and ongoing trials and the grey literature. We checked the reference lists of all primary studies and review articles for additional references. We searched for studies published from 2000 onwards. The latest search was run in June 2013. SELECTION CRITERIA: We included parallel randomised controlled trials (RCTs) that compared self management interventions for patients with clinician-diagnosed asthma delivered via smartphone apps to self management interventions delivered via traditional methods (e.g. paper-based asthma diaries). DATA COLLECTION AND ANALYSIS: We used standard methods expected by the Cochrane Collaboration. Our primary outcomes were symptom scores; frequency of healthcare visits due to asthma exacerbations or complications and health-related quality of life. MAIN RESULTS: We included two RCTs with a total of 408 participants. We found no cluster RCTs, controlled before and after studies or interrupted time series studies that met the inclusion criteria for this systematic review. Both RCTs evaluated the effect of a mobile phone-based asthma self management intervention on asthma control by comparing it to traditional, paper-based asthma self management. One study allowed participants to keep daily entries of their asthma symptoms, asthma medication usage, peak flow readings and peak flow variability on their mobile phone, from which their level of asthma control was calculated remotely and displayed together with the corresponding asthma self management recommendations. In the other study, participants recorded the same readings twice daily, and they received immediate self management feedback in the form of a three-colour traffic light display on their phones. Participants falling into the amber zone of their action plan twice, or into the red zone once, received a phone call from an asthma nurse who enquired about the reasons for their uncontrolled asthma.We did not conduct a meta-analysis of the data extracted due to the considerable degree of heterogeneity between these studies. Instead we adopted a narrative synthesis approach. Overall, the results were inconclusive and we judged the evidence to have a GRADE rating of low quality because further evidence is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. In addition, there was not enough information in one of the included studies to assess the risk of bias for the majority of the domains. Although the other included study was methodologically rigorous, it was not possible to blind participants or personnel in the study. Moreover, there are concerns in both studies in relation to attrition bias and other sources of bias.One study showed that the use of a smartphone app for the delivery of an asthma self management programme had no statistically significant effect on asthma symptom scores (mean difference (MD) 0.01, 95% confidence interval (CI) -0.23 to 0.25), asthma-related quality of life (MD of mean scores 0.02, 95% CI -0.35 to 0.39), unscheduled visits to the emergency department (OR 7.20, 95% CI 0.37 to 140.76) or frequency of hospital admissions (odds ratio (OR) 3.07, 95% CI 0.32 to 29.83). The other included study found that the use of a smartphone app resulted in higher asthma-related quality of life scores at six-month follow-up (MD 5.50, 95% CI 1.48 to 9.52 for the physical component score of the SF-12 questionnaire; MD 6.00, 95% CI 2.51 to 9.49 for the mental component score of the SF-12 questionnaire), improved lung function (PEFR) at four (MD 27.80, 95% CI 4.51 to 51.09), five (MD 31.40, 95% CI 8.51 to 54.29) and six months (MD 39.20, 95% CI 16.58 to 61.82), and reduced visits to the emergency department due to asthma-related complications (OR 0.20, 95% CI 0.04 to 0.99). Both studies failed to find any statistical differences in terms of adherence to the intervention and occurrence of other asthma-related complications. AUTHORS' CONCLUSIONS: The current evidence base is not sufficient to advise clinical practitioners, policy-makers and the general public with regards to the use of smartphone and tablet computer apps for the delivery of asthma self management programmes. In order to understand the efficacy of apps as standalone interventions, future research should attempt to minimise the differential clinical management of patients between control and intervention groups. Those studies evaluating apps as part of complex, multicomponent interventions, should attempt to tease out the relative contribution of each intervention component. Consideration of the theoretical constructs used to inform the development of the intervention would help to achieve this goal. Finally, researchers should also take into account: the role of ancillary components in moderating the observed effects, the seasonal nature of asthma and long-term adherence to self management practices

Marceau, Lisa D.; Link, Carol; Jamison, Robert N.; Carolan, Sarah (2007):

Electronic diaries as a tool to improve pain management: is there any evidence?

In: *Pain Medicine* 8 (s3), S. S101-S109.

Abstract:

OBJECTIVE:

Chronic pain is a common and costly syndrome which affects approximately one in three US adults. Factors such as shortened length of the medical visit, increased availability of technological approaches to care, and a more informed patient all suggest

that a new paradigm is required for chronic pain management. Although much has been written about the use of electronic diaries in clinical trials, little has been presented about the use of these diaries in clinic practice and their potential for changing pain behavior. The intent of this preliminary study is to measure accessibility and usability of a software program designed for use on a personal digital assistant and to discuss how the software program may impact clinic practice and patient behavior.

METHODS:

We present the results of a preliminary, randomized, comparison, crossover trial of 36 chronic pain patients who were asked to monitor their pain, mood, activity interference, medication use, and pain location on either a paper or electronic diary for 2 weeks. Patients in the electronic diary condition were able to observe changes in their ratings over time and view them on a secure web site.

RESULTS:

No differences were found between paper and electronic tracking on pain descriptors, pain interference, mood, or helpfulness of medication. Similar to past findings, patients found the electronic diary easier to use ($P < 0.0001$) and would continue using it ($P < 0.05$) over paper if given the choice. Importantly, patients using the electronic diary reported more frequently that a provider suggested medication change ($P < 0.05$) based on feedback from the electronic diary. One trend requiring further investigation is that electronic diary users reported that the diary enabled them and their doctor to make care adjustments according to changes in pain status.

CONCLUSION:

This study goes beyond previous research on preference and data quality to investigate how the information provided may affect patient and physician perspectives toward pain management. Although not the initial intent of this study, findings indicate that electronic tracking may provide information which can affect management decisions. A follow-up study is ongoing to investigate these initial results. If found to be true, electronic monitoring may have broad implications for health care, policy, and improvement in quality of care for chronic pain sufferers in the future.

Marceau, Lisa D.; Link, Carol L.; Smith, Lauren D.; Carolan, Sarah J.; Jamison, Robert N. (2010):

In-clinic use of electronic pain diaries: barriers of implementation among pain physicians.

In: *Journal of pain and symptom management* 40 (3), S. 391–404. DOI: 10.1016/j.jpainsymman.2009.12.021.

Abstract:

OBJECTIVES\r\nThe aim of this study was to examine barriers to the use of electronic diaries within the clinic setting and determine outcome differences between patients who used electronic diaries to monitor their progress with summary data feedback and patients who monitored their progress with paper diaries without summary data feedback.\r\nMETHODS\r\nOne hundred thirty-four (n=134) chronic pain patients were asked to monitor their pain, mood, activity interference, medication use, and pain location on either a paper or electronic diary immediately before each monthly clinic visit for 10 months. Patients and their treating physicians in the electronic diary group (n=67) were able to observe changes in their ratings whereas patients using the paper diaries (n=67) had no feedback about their data entry.\r\nRESULTS\r\nMost participants believed that completing pain diaries was beneficial; yet, only 23% of patients in the experimental condition felt that the data from the electronic diaries improved their care and less than 15% believed that their doctor made a change in their treatment based on the summary diary information.\r\nCONCLUSION\r\nIn general, treating physicians were positive about the use of electronic diaries, although they admitted that they did not regularly incorporate the summary data in their treatment decision making because either they forgot or they were too busy. Future studies in understanding barriers to physicians' and patients' use of diary data to impact treatment outcome are needed to improve care for persons with chronic pain.

Marhe, R.; Waters, A. J.; van de Wetering, B. J.; Franken, I. H. (2012):

Implicit and Explicit Drug-Related Cognitions During Detoxification Treatment Are Associated With Drug Relapse: An Ecological Momentary Assessment Study.

In: *J Consult Clin.Psychol.* (0022-006X (Linking)). DOI: 10.1037/a0030754.

Abstract:

Objective: Relapse is a major problem in drug addiction treatment. Both drug craving and drug-related cognitions (e.g., attentional bias and implicit attitudes to drugs) may contribute to relapse. Using ecological momentary assessments, we examined whether craving and cognitions assessed during drug detoxification treatment were associated with relapse. Method: Participants were 68 heroin-dependent inpatients undergoing clinical detoxification at an addiction treatment center. Participants carried around a personal digital assistant for 1 week. Participants completed up to 4 random assessments (RAs) per day. They also completed an assessment when they experienced a temptation to use drugs (TA). At each assessment,

participants reported their craving and attitudes to drugs. Implicit cognitions were assessed with a drug Stroop task (attentional bias) and an Implicit Association Test (implicit attitudes). Results: Individuals who relapsed during the study week exhibited a larger attentional bias and more positive implicit attitudes to drugs than did nonrelapsers at TAs (but not RAs). In addition, compared to nonrelapsers, relapsers reported higher levels of craving and more positive explicit attitudes to drugs at TAs than at RAs. Additional within-subject analyses revealed that attentional bias for drugs at TAs increased before relapse. Conclusions: Drug-related cognitive processes assessed with ecological momentary assessments were associated with relapse during drug detoxification. Real-time assessment of craving and cognitions may help to identify which individuals are at risk of relapse and when they are at risk of relapse. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Markowetz, Alexander; Blaszkiewicz, Konrad; Montag, Christian; Switala, Christina; Schlaepfer, Thomas E. (2014):

Psycho-Informatics: Big Data shaping modern psychometrics.

In: *Med Hypotheses* 82 (4), S. 405–411. DOI: 10.1016/j.mehy.2013.11.030.

Abstract:

For the first time in history, it is possible to study human behavior on great scale and in fine detail simultaneously. Online services and ubiquitous computational devices, such as smartphones and modern cars, record our everyday activity. The resulting Big Data offers unprecedented opportunities for tracking and analyzing behavior. This paper hypothesizes the applicability and impact of Big Data technologies in the context of psychometrics both for research and clinical applications. It first outlines the state of the art, including the severe shortcomings with respect to quality and quantity of the resulting data. It then presents a technological vision, comprised of (i) numerous data sources such as mobile devices and sensors, (ii) a central data store, and (iii) an analytical platform, employing techniques from data mining and machine learning. To further illustrate the dramatic benefits of the proposed methodologies, the paper then outlines two current projects, logging and analyzing smartphone usage. One such study attempts to thereby quantify severity of major depression dynamically; the other investigates (mobile) Internet Addiction. Finally, the paper addresses some of the ethical issues inherent to Big Data technologies. In summary, the proposed approach is about to induce the single biggest methodological shift since the beginning of psychology or psychiatry. The resulting range of applications will dramatically shape the daily routines of researches and medical practitioners alike. Indeed, transferring techniques from computer science to psychiatry and psychology is about to establish Psycho-Informatics, an entire research direction of its own.

Marsden, Paul A.; Smith, Jaclyn A.; Kelsall, Angela A.; Owen, Emily; Naylor, Jonathan R.; Webster, Deborah et al. (2008):

A comparison of objective and subjective measures of cough in asthma.

In: *The Journal of allergy and clinical immunology* 122 (5), S. 903–907. DOI: 10.1016/j.jaci.2008.08.029.

Abstract:

BACKGROUND\r\nCough is widely recognized as a key symptom in the diagnosis and the monitoring of asthma, but little is known about how best to assess cough in asthma.\r\nOBJECTIVE\r\nTo determine how objective cough rates correlate with subjective measures of cough in asthma.\r\nMETHODS\r\nWe studied 56 subjects, median age 42.0 years (range, 28.5-71), 34 (60.7%) female, with asthma. Subjects performed cough reflex sensitivity testing (concentration of citric acid causing 2 and 5 coughs [C2 and C5]), 24-hour fully ambulatory cough recordings, subjectively scored the severity of their cough (visual analog scales and 0-5 score) and completed a cough-related quality of life questionnaire (Leicester Cough Questionnaire). Ambulatory cough recordings were manually counted and reported in cough seconds per hour (cs/h).\r\nRESULTS\r\nThe median time spent coughing was 2.6 cs/h (range, 0.0-14.2), with subjects spending more time coughing by day (median, 3.9 cs/h [0.0-18.5]) than by night (median, 0.3 cs/h [0.0-8.7]; P < .001). A weak inverse relationship was seen between day cough rates and log(10)C2 (r = -0.39; P = .03) but not log(10)C5 (r = -0.08; P = .65). Objective time spent coughing was also weak-moderately associated with subjective cough scores and visual analog scales, and most strongly correlated with cough-related quality of life (r = -0.54; P < .001).\r\nCONCLUSION\r\nSubjective measures of cough and cough reflex sensitivity are poor surrogates for objective cough frequency in asthma. When designing studies to assess interventions for cough in asthma, we advocate a combination of both objective measures of cough and cough-related quality of life.

Marszalek, Jolanta; Morgulec-Adamowicz, Natalia; Rutkowska, Izabela; Kosmol, Andrzej (2014):

Using ecological momentary assessment to evaluate current physical activity.

In: *Biomed Res Int* 2014, S. 915172. DOI: 10.1155/2014/915172.

Abstract:

OBJECTIVE: The purpose of this study was to assess the value of ecological momentary assessment in evaluating physical activity among children, adolescents, and adults. It also determines whether ecological momentary assessment fulfills the criteria of validity, reliability, objectivity, norms, and standardization applied to the tools used for the evaluation of physical activity. METHODS: The EBSCO-CINHAL, Medline, PsycINFO, PubMed, and SPORTDiscuss databases were reviewed in December 2012 for articles associated with EMA. RESULTS: Of the 20 articles examined, half (10) used electronic methods for data collection, although various methods were used, ranging from pen and paper to smartphone applications. Ten studies used objective monitoring equipment. Nineteen studies were performed over 4 days. While the validity of the EMA method was discussed in 18 studies, only four found it to be objective. In all cases, the EMA procedures were precisely documented and confirmed to be feasible. CONCLUSIONS: Ecological momentary assessment is a valid, reliable, and feasible approach to evaluate activity and sedentary behavior. Researchers should be aware that while ecological momentary assessment offers many benefits, it simultaneously imposes many limitations which should be considered when studying physical activity.

Martikainen, Silja; Pesonen, Anu-Katriina; Lahti, Jari; Heinonen, Kati; Pyhala, Riikka; Tammelin, Tuija et al. (2014):

Physical activity and hypothalamic-pituitary-adrenocortical axis function in adolescents.

In: *Psychoneuroendocrinology* 49, S. 96–105. DOI: 10.1016/j.psyneuen.2014.06.023.

Abstract:

Little is known about the associations between physical activity (PA) and hypothalamic-pituitary-adrenocortical axis (HPAA) activity in adolescents. This knowledge could offer insight into the links between PA and well-being in youth. We studied whether objectively-measured PA is associated with diurnal salivary cortisol responses and morning salivary cortisol responses after a low-dose overnight dexamethasone suppression test (DST) in adolescent girls and boys. We conducted a cross-sectional birth cohort study in Helsinki, Finland. At a mean age of 12.4 (SD=0.5) years, 150 girls and 133 boys wore wrist-worn accelerometers over at least 4 days to measure PA. Their salivary cortisol was measured across 1 day and upon awakening after a low-dose overnight DST (3mug/kg of weight). Girls with higher overall PA and vigorous PA (VPA), and less sedentary time had lower salivary cortisol upon awakening and/or after (decreases between |0.17| and |0.25| SDs per SD increase in overall PA, VPA and decrease in sedentary time; P-values<0.039). Boys with higher overall PA, and less sedentary time had greater suppression of salivary cortisol following overnight DST (suppression between |0.24| and |0.27| SDs per SD increase in overall PA and decrease in sedentary time; P-values<0.012). Overall PA, VPA and sedentary time did not associate with DST suppression in girls or with diurnal salivary cortisol in boys. These results show that PA is associated with altered HPAA function in early adolescents, and that the associations are sex specific.

Martin, C. K.; Nicklas, T.; Gunturk, B.; Correa, J. B.; Allen, H. R.; Champagne, C. (2013):

Measuring food intake with digital photography.

In: *J Hum.Nutr.Diet.* (0952-3871 (Linking)). DOI: 10.1111/jhn.12014.

Abstract:

The Digital Photography of Foods Method accurately estimates the food intake of adults and children in cafeterias. When using this method, images of food selection and leftovers are quickly captured in the cafeteria. These images are later compared with images of 'standard' portions of food using computer software. The amount of food selected and discarded is estimated based upon this comparison, and the application automatically calculates energy and nutrient intake. In the present review, we describe this method, as well as a related method called the Remote Food Photography Method (RFPM), which relies on smartphones to estimate food intake in near real-time in free-living conditions. When using the RFPM, participants capture images of food selection and leftovers using a smartphone and these images are wirelessly transmitted in near real-time to a server for analysis. Because data are transferred and analysed in near real-time, the RFPM provides a platform for participants to quickly receive feedback about their food intake behaviour and to receive dietary recommendations for achieving weight loss and health promotion goals. The reliability and validity of measuring food intake with the RFPM in adults and children is also reviewed. In sum, the body of research reviewed demonstrates that digital imaging accurately estimates food intake in many environments and it has many advantages over other methods, including reduced participant burden, elimination of the need for participants to estimate portion size, and the incorporation of computer automation to improve the accuracy, efficiency and cost-effectiveness of the method

Martinez, Sylvia; Guzman, Stephanie (2013):

Gender and racial/ethnic differences in self-reported levels of engagement in high school math and science courses.

In: *Hispanic Journal of Behavioral Sciences* 35 (3), S. 407–427. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-26122-007%26site%3dehost-live;symartin@indiana.edu.

Abstract:

While gender and racial/ethnic performance gaps in math and science have been well documented, we know little about how students feel while they are in these courses. Using a sample of 793 high school students who participated in the Experience Sampling Method of the Study of Youth and Social Development, this study examines the gender and racial/ethnic differences in self-reported levels of challenge, a measure of student engagement, while students are in math and science courses. Results from multivariate regression analyses indicate that boys report similar levels of engagement while in math and science classes, but girls do not. While Black female students report lower levels of challenge in math classes, Latina girls report lower levels of challenge while in science class in comparison to other racial/ethnic groups. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Martin-Martinez, D.; Casaseca-De-La-Higuera, P.; Alberola-Lopez, S.; Andres-De-Llano, J.; Lopez-Villalobos, J. A.; Ardura-Fernandez, J.; Alberola-Lopez, C. (2012):

Nonlinear analysis of actigraphic signals for the assessment of the attention-deficit/hyperactivity disorder (ADHD).

In: *Med.Eng Phys.* (1350-4533 (Linking)). DOI: 10.1016/j.medengphy.2011.12.023.

Abstract:

Attention-deficit/hyperactivity disorder (ADHD) is the most common neurobehavioral disorder in children and adolescents; however, its etiology is still unknown, which hinders the existence of reliable, fast and inexpensive standard diagnostic methods. In this paper, we propose a novel methodology for automatic diagnosis of the combined type of ADHD based on nonlinear signal processing of 24h-long actigraphic registries. Since it relies on actigraphy measurements, it constitutes an inexpensive and non-invasive objective diagnostic method. Our results on real data reach 96.77% sensitivity and 84.38% specificity by means of multidimensional classifiers driven by combined features from different time intervals. Our analysis also reveals that, if features from a single time interval are used, the whole 24-h interval is the only one that yields classification figures with practical diagnostic capabilities. Overall, our figures overcome those obtained by actigraphy-based methods reported and are comparable with others based on more expensive (and not so convenient) adquisition methods

Martino, S. C.; Scharf, D. M.; Setodji, C. M.; Shadel, W. G. (2011):

Measuring Exposure to Protobacco Marketing and Media: A Field Study Using Ecological Momentary Assessment.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntr223.

Abstract:

INTRODUCTION: The aims of this study were to validate ecological momentary assessment (EMA) as a method for measuring exposure to tobacco-related marketing and media and to use this method to provide detailed descriptive data on college students' exposure to protobacco marketing and media. METHODS: College students (n = 134; ages 18-24 years) recorded their exposures to protobacco marketing and media on handheld devices for 21 consecutive days. Participants also recalled exposures to various types of protobacco marketing and media at the end of the study period. RESULTS: Retrospectively recalled and EMA-based estimates of protobacco marketing exposure captured different information. The correlation between retrospectively recalled and EMA-logged exposures to tobacco marketing and media was moderate (r = .37, p < .001), and EMA-logged exposures were marginally associated with the intention to smoke at the end of the study, whereas retrospective recall of exposure was not. EMA data showed that college students were exposed to protobacco marketing through multiple channels in a relatively short period: Exposures (M = 8.24, SD = 7.85) occurred primarily in the afternoon (42%), on weekends (35%), and at point-of-purchase locations (68%) or in movies/TV (20%), and exposures to Marlboro, Newport, and Camel represented 56% of all exposures combined and 70% of branded exposures.Conclusions:Findings support the validity of EMA as a method for capturing detailed information about youth exposure to protobacco marketing and media that are not captured through other

existing methods. Such data have the potential to highlight areas for policy change and prevention in order to reduce the impact of tobacco marketing on youth

Martire, L. M.; Keefe, F. J.; Schulz, R.; Parris Stephens, M. A.; Mogle, J. A. (2013):

The impact of daily arthritis pain on spouse sleep.

In: *Pain* 154 (9), S. 1725–1731. DOI: 10.1016/j.pain.2013.05.020.

Abstract:

Although chronic pain has been linked to poorer psychosocial well-being in the spouse, the extent to which patient pain affects spouse sleep is unknown. The aim of the present study was to test the hypothesis that greater daily knee pain would be associated with poorer sleep for the spouse that evening. We also tested the hypothesis that this pain contagion is exacerbated in couples who have a close relationship. A total of 138 knee osteoarthritis (OA) patients and their spouses completed baseline interviews and a 22-day diary assessment. Multilevel lagged models indicated that greater knee OA pain at the end of the day was associated with spouses' poorer overall sleep quality that night and feeling less refreshed after sleep. In contrast, there was no evidence that spouse sleep was related to greater patient pain the next day. The effects of patient pain on spouse sleep were not due to disturbances in patient sleep and were also independent of spouse sex, depressive symptoms, and physical comorbidities; both partners' negative affect; and the quality of marital interactions throughout the day. As predicted, we also found that patient pain was more strongly related to less refreshing sleep for spouses who were in a close relationship. Findings illustrate that chronic pain may place the spouse's health at risk and suggest an important target for couple-oriented interventions

Martire, Lynn M.; Stephens, Mary Ann Parris; Mogle, Jacqueline; Schulz, Richard; Brach, Jennifer; Keefe, Francis J. (2013):

Daily spousal influence on physical activity in knee osteoarthritis.

In: *Annals of Behavioral Medicine* 45 (2), S. 213–223. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-09593-011%26site%3dehost-live;lmm51@psu.edu.

Abstract:

Background: Physical activity is critical for the management of knee osteoarthritis, and the spouse may play a role in encouraging or discouraging physical activity. Purpose: The purpose of this study was to examine four types of spousal influence—spouses' daily activity, autonomy support, pressure, and persuasion—on the daily physical activity of adults living with knee osteoarthritis. Methods: A total of 141 couples reported their daily experiences for 22 days using a handheld computer and wore an accelerometer to measure moderate activity and steps. Results: Spouses' autonomy support for patient physical activity, as well as their own level of activity, was concurrently associated with patients' greater daily moderate activity and steps. In addition, on days when male patients perceived that spouses exerted more pressure to be active, they spent less time in moderate activity. Conclusions: Couple-oriented interventions for knee osteoarthritis should target physical activity in both partners and spousal strategies for helping patients stay active. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Maselli, M.; Giantin, V.; Franchin, A.; Zanatta, F.; Sarti, S.; Corradin, M. L. et al. (2014):

Detection of blood pressure increments in active elderly individuals: The role of ambulatory blood pressure monitoring.

In: *Nutr Metab Cardiovasc Dis. DOI:* 10.1016/j.numecd.2014.01.003.

Abstract:

BACKGROUND AND AIMS: Physiological aging can lead to an increase in blood pressure (BP) over time even in regularly exercising elders. Office BP measurements (OBPM) might be unable to detect these BP variations. The aim of this study was to analyze BP changes over 3.5 years in active elders using ABPM. METHODS AND RESULTS: The study involved 80 active subjects >/=65 years old who exercised regularly. At baseline and again 3.5 years later, all subjects had lab tests, weight, body mass index (BMI), body composition, resting energy expenditure (REE) recorded; they underwent OBPM, ABPM and physical activity assessment. Over 3.5 years, our sample's mean weight, BMI, body composition, REE, albumin, and physical activity levels, did not change significantly. The prevalence of hypertension detected by OBPM dropped from 68.8% to 61.3%. ABPM revealed an increase in mean 24-h BP (Deltasystolic: 5.3 +/- 13.6 mmHg; p = 0.001; Deltadiastolic: 1.8 +/- 6.7 mmHg; p = 0.018) and mean

daytime BP (Deltasystolic: 5.8 +/- 13.5 mmHg; p = 0.001; Deltadiastolic: 1.9 +/- 7.1 mmHg; p = 0.022); the prevalence of hypertension detected by ABPM increased from 50% to 65%, also due to an increase (from 8.8% to 16.3%) in masked hypertension. There was no correlation between BP changes and changes in body composition and REE. CONCLUSION: BP tends to increase over time in active elders, regardless of changes in body composition or level of physical activity. ABPM is an appropriate method for detecting these BP variations in active elders and to reveal cases of masked hypertension that might otherwise escape detection by OBPM.

Mastrototaro, John; Shin, John; Marcus, Alan; Sulur, Giri (2008):

The accuracy and efficacy of real-time continuous glucose monitoring sensor in patients with type 1 diabetes.

In: *Diabetes technology & therapeutics* 10 (5), S. 385–390. DOI: 10.1089/dia.2007.0291.

Abstract:

BACKGROUND\r\nThe accuracy and efficacy of the Medtronic Diabetes (Northridge, CA) Real-Time (RT)-Continuous Glucose Monitoring (CGM) sensor were analyzed in 72 subjects with type 1 diabetes.\r\nMETHODS\r\nThis was a retrospective analysis of 60,050 temporally paired data points (sensor and glucose meter values) obtained during the course of an outpatient ambulatory study evaluating the efficacy of a sensor-augmented pump system in adults and adolescents. Subjects uploaded sensor values and self-monitoring blood glucose data to the CareLink Clinical Application (Medtronic Diabetes) via the Internet, every 2 weeks during the course of the study.\r\nRESULTS\r\nThe overall percentage of sensor readings within +/-20% or +/-30% agreement of reference glucose readings was 75.6% and 86.8%, respectively. The highest rate of agreement occurred in the 240-400 mg/dL range, where 79.9% of sensor readings were within +/-20% of meter values and 91.5% of sensor readings were within 30% of meter values. The mean absolute relative difference for all subjects was 15.8%, and the median absolute relative difference was 10.9%. The bias was -2.13 mg/dL. Paired glucose measurements from the RT-CGM and meter demonstrated that 95.9% of paired points in the overall subject population fell in zones A and B of the Clarke Error Grid. Consensus Error Grid Analysis established that 99.2% of paired data points were in zones A and B.\r\nCONCLUSIONS\r\nThis study reports the accuracy of a continuous glucose sensor with a large number of paired data points (60,050). RT-CGM is safe and well tolerated and provides readings that are in close agreement with glucose meter values.

Mathers, Megan; Canterford, Louise; Olds, Tim; Hesketh, Kylie; Ridley, Kate; Wake, Melissa (2009):

Electronic media use and adolescent health and well-being: cross-sectional community study.

In: *Academic pediatrics* 9 (5), S. 307–314. DOI: 10.1016/j.acap.2009.04.003.

Abstract:

OBJECTIVE\r\nTo describe time adolescents spend using electronic media (television, computer, video games, and telephone); and to examine associations between self-reported health/well-being and daily time spent using electronic media overall and each type of electronic media.\r\nMETHODS\r\nDesign-Cross-sectional data from the third (2005) wave of the Health of Young Victorians Study, an Australian school-based population study. Outcome Measures-Global health, health-related quality of life (HRQoL; KIDSCREEN), health status (Pediatric Quality of Life Inventory 4.0; PedsQL), depression/anxiety (Kessler-10), and behavior problems (Strengths and Difficulties Questionnaire). Exposure Measures-Duration of electronic media use averaged over 1 to 4 days recalled with the Multimedia Activity Recall for Children and Adolescents (MARCA) computerized time-use diary. Analysis-Linear and logistic regression; adjusted for demographic variables and body mass index z score.\r\nRESULTS\r\nA total of 925 adolescents (mean +/- standard deviation age, 16.1+/-1.2 years) spent, on average, 3 hours 16 minutes per day using electronic media (television, 128 minutes per day; video games, 35; computers, 19; telephone, 13). High overall electronic media use was associated with poorer behavior, health status, and HRQoL. Associations with duration of specific media exposures were mixed; there was a favorable association between computer use (typing/Internet) and psychological distress, whereas high video game use was associated with poorer health status, HRQoL, global health, and depression/anxiety. Television and telephone durations were not associated with any outcome measure.\r\nCONCLUSIONS\r\nDespite television's associations with obesity, time spent in other forms of media use appear more strongly related to adolescent health and well-being. This study supports efforts to reduce high video game use and further exploration of the role of computers in health enhancement.

Matias, Gabriela P.; Nicolson, Nancy A.; Freire, Teresa (2011):

Solitude and cortisol: Associations with state and trait affect in daily life.

In: *Biol Psychol* 86 (3), S. 314–319.

Abstract:

The social context can impact psychological and physiological functioning. Being alone, in particular, is experienced as more negative on average than being with others, in both normative and pathological populations. This study investigates whether daily solitude is associated with changes in cortisol and, if so, whether momentary and trait affect can explain this relationship. Forty-four female college students used the Experience Sampling Method during a week, completing questionnaires and collecting saliva 8 times daily. Effects of current solitude, affect, and trait affectivity on cortisol were tested with multilevel regression. Cortisol levels were significantly higher when individuals were alone. Although momentary affective states changed during solitude and were also associated with cortisol, they did not fully explain the effects of solitude on cortisol. Trait affectivity moderated the association between solitude and cortisol. Findings may help clarify how daily experience may heighten risk of depression or other negative health outcomes in vulnerable individuals.

Matic, Aleksandar; Osmani, Venet; Mayora, Oscar (Hg.) (2012):

Speech activity detection using accelerometer.

Engineering in Medicine and Biology Society (EMBC), 2012 Annual International Conference of the IEEE: IEEE.

Abstract:

The level of social activity is linked to the overall wellbeing and to various disorders, including stress. In this regard, a myriad of automatic solutions for monitoring social interactions have been proposed, usually including audio data analysis. Such approaches often face legal and ethical issues and they may also raise privacy concerns in monitored subjects thus affecting their natural behaviour. In this paper we present an accelerometer-based speech detection which does not require capturing sensitive data while being an easily applicable and a cost-effective solution.

Matos, Sergio; Birring, Surinder S.; Pavord, Ian D.; Evans, David H. (2007):

An automated system for 24-h monitoring of cough frequency: the leicester cough monitor.

In: *Biomedical Engineering, IEEE Transactions on* 54 (8), S. 1472–1479.

Abstract:

The objective monitoring of cough for extended periods of time has long been recognized as an important step towards a better understanding of this symptom, and a better management of chronic cough patients. In this paper, we present a system for the automatic analysis of 24-h, continuous, ambulatory recordings of cough. The system uses audio recordings from a miniature microphone and the detection algorithm is based on statistical models of the time-spectral characteristics of cough sounds. We validated the system against manual counts obtained by a trained observer on 40 ambulatory recordings and our results show a median sensitivity value of 85.7%, median positive predictive value of 94.7% and median false positive rate of 0.8 events/h. An analysis application was developed, with a graphical user interface, allowing the use of the system in clinical settings by technical or medical staff. The result of the analysis of a recording session is presented as a concise, graphical-based report. The modular nature of the system interface facilitates its enhancement with the integration of further modules.

Matsumura, Kenta; Rolfe, Peter; Lee, Jihyoung; Yamakoshi, Takehiro (2014):

iPhone 4s Photoplethysmography: Which Light Color Yields the Most Accurate Heart Rate and Normalized Pulse Volume Using the iPhysioMeter Application in the Presence of Motion Artifact?

In: *PLoS One* 9 (3), S. e91205. DOI: 10.1371/journal.pone.0091205.

Abstract:

Recent progress in information and communication technologies has made it possible to measure heart rate (HR) and normalized pulse volume (NPV), which are important physiological indices, using only a smartphone. This has been achieved with reflection mode photoplethysmography (PPG), by using a smartphone's embedded flash as a light source and the camera as a light sensor. Despite its widespread use, the method of PPG is susceptible to motion artifacts as physical displacements influence photon propagation phenomena and, thereby, the effective optical path length. Further, it is known that the wavelength of light used for PPG influences the photon penetration depth and we therefore hypothesized that influences of motion artifact could be wavelength-dependant. To test this hypothesis, we made measurements in 12 healthy volunteers of HR and NPV derived from reflection mode plethysmograms recorded simultaneously at three different spectral regions (red, green and blue) at the same physical location with a smartphone. We then assessed the accuracy of the HR and NPV measurements under the influence of motion artifacts. The analyses revealed that the accuracy of HR was acceptably high with all three wavelengths (all rs > 0.996, fixed biases: -0.12 to 0.10 beats per minute, proportional biases: r = -0.29 to 0.03), but that of NPV was the best with green light (r = 0.791, fixed biases: -0.01 arbitrary units, proportional bias: r = 0.11). Moreover, the signal-to-noise ratio obtained with green and blue light PPG was higher than that of red light PPG. These findings suggest that green is the most suitable color for measuring HR and NPV from the reflection mode photoplethysmogram under motion artifact conditions. We conclude that the use of green light PPG could be of particular benefit in ambulatory monitoring where motion artifacts are a significant issue.

Matt, Alissa Anne Haedt (2013):

Ecological Momentary Assessment of Purging Disorder.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 74 (2-B(E)). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-99161-020%26site%3dehost-live.

Abstract:

Purging Disorder (PD) is characterized by purging after normal or small amounts of food among individuals who are not underweight. Several studies indicate that PD is associated with distress and impairment, underscoring the need for intervention. However, little is known about factors that trigger and maintain purging in PD. This study examined antecedents and consequences of purging using Ecological Momentary Assessment (EMA), a design that involved repeated assessments of current psychological states in participants' natural environments. Women with PD (N = 24) were recruited from the community to make multiple daily ratings of affect, shape/weight concerns, violation of dietary rules, and stomach discomfort using random-, interval-, and event-contingent recordings over a two-week period. Multilevel model analyses were used to examine between-day differences (purge versus non-purge day) and within-day changes in psychological variables relative to purging behavior. Results supported study hypotheses that negative affect and shape/weight concerns would be higher and positive affect would be lower on days when participants purged compared to days they did not purge. In addition, antecedent analyses supported within-day increases in negative affect, shape/weight concerns, and stomach discomfort prior to purging; however, only changes in positive affect and shape/weight concerns on purge days differed from naturally-occurring changes observed on non-purge days. For consequence analyses, negative affect, shape/weight concerns, and stomach discomfort decreased following purging on purge days, and trajectories of change were significantly different from non-purge days. Finally, exploratory analyses suggested that lower levels of impulsivity enhanced associations between antecedent affect and purging. These data are crucial to understand why women with PD purge after consuming normal or small amounts of food and may point to specific targets for the development of effective interventions. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Mattocks, Calum; Leary, S. A. M.; Ness, Andy; Deere, Kevin; Saunders, Joanne; Kirkby, Joanne et al. (2007):

Intraindividual variation of objectively measured physical activity in children.

In: *Med Sci Sports Exerc* 39 (4), S. 622–629.

Abstract:

PURPOSE:

This study examined the seasonal and intraindividual variation in objectively measured physical activity in 11- to 12-yr-olds.

METHODS:

Children were asked to wear a uniaxial accelerometer for 7 d four times throughout the course of about a year. A random-intercepts model was used to separate the inter- and intraindividual components of physical activity. Gender, age, body mass index (BMI), height, and month of measurement were fitted to the model as potential confounders.

RESULTS:

A total of 315 children had valid data for at least two measurement occasions, and 244 had data for all four measurement occasions. The unadjusted intraclass correlation coefficient (ICC) for total activity (counts per minute) was 0.54; 0.49 after adjusting for gender, age, and BMI; and 0.53 after adjusting for gender, age, BMI, and month. Further adjustment for pubertal status at baseline had no effect on the ICC. Restricting the analysis to only those with data for all four measurement occasions (N=244), or to measurements taken on school days only, had no effect on the ICC. The fully adjusted ICC was 0.51 for weekdays only and 0.39 for weekend days only. For minutes of moderate to vigorous physical activity, minutes of vigorous activity, minutes of sedentary behavior, and number of 30-min blocks of sedentary behavior, the fully adjusted ICC were 0.45, 0.37, 0.59, and 0.39, respectively. The analysis was repeated for boys and girls separately, but the differences in ICC were small.

CONCLUSION:

There was substantial intraindividual variation in the objectively measured physical activity of these children. Studies using single a measurement occasion where physical activity is the exposure should take this into account to adjust for regression dilution.

Matzek, Brett A.; Fivecoat, Phillip T.; Ritz, Reis B. (2014):

Novel approach to the diagnosis of fractures in an austere environment using a stethoscope and a cellular phone.

In: *Wilderness Environ Med* 25 (1), S. 99–102. DOI: 10.1016/j.wem.2013.09.011.

Abstract:

BACKGROUND: Fracture diagnosis in the austere environment where radiographic tests are not available can be a challenge. In the past, a diagnostic technique has been described using a tuning fork and stethoscope to assess decreased sound conduction in the fractured extremity. In this study, we evaluate the use of a cellular phone's vibrate function and a stethoscope to limit equipment carried by expeditionary practitioners. OBJECTIVE: The purpose of this study was to evaluate the accuracy of fracture diagnosis using a cellular phone and stethoscope. METHODS: This is a pilot study to assess the usefulness of the above technique before clinical implementation. In 3 cadavers, we created fractures of the humerus and femur. Twenty-seven emergency medicine residents and an attending physician performed the diagnostic technique. RESULTS: Overall, the use of the cellular phone and stethoscope resulted in a sensitivity of 73% (95% confidence interval [CI]: 0.64 to 0.81) and a specificity of 83% (95% CI: 0.77 to 0.88), with a positive predicted value of 68% (95% CI: 0.59 to 0.77) and a negative predicted value of 86% (95% CI: 0.81 to 0.90). Positive likelihood ratio was 4.3, and negative likelihood ratio was 0.32. CONCLUSIONS: The use of a cellular phone and stethoscope may be a useful tool for the diagnosis of fractures in the austere environment. However, further study is needed to validate these findings in the clinical environment.

Mazze, Roger; Strock, Ellie; Morgan, Blaine; Wesley, David; Bergenstal, Richard; Cuddihy, Robert (2009):

Diurnal glucose patterns of exenatide once weekly: a 1-year study using continuous glucose monitoring with ambulatory glucose profile analysis.

In: *Endocrine practice : official journal of the American College of Endocrinology and the American Association of Clinical Endocrinologists* 15 (4), S. 326–334. DOI: 10.4158/EP09046.ORR.

Abstract:

OBJECTIVE\r\nTo use continuous glucose monitoring (CGM) to characterize diurnal glucose patterns produced by a novel formulation of exenatide consisting of biodegradable polymeric microspheres that entrap exenatide and provide extended release enabling once-weekly administration.\r\nMETHODS\r\nWe performed a subgroup analysis of patients with type 2 diabetes who participated in a multicenter trial (DURATION-1: Effects of Exenatide Long-Acting Release on Glucose Control and Safety in Subjects With Type 2 Diabetes Mellitus) comparing once-weekly with twice-daily formulations of exenatide. We are the only center to use CGM with ambulatory glucose profile (AGP) analysis to characterize glucose exposure, variability, and stability in participants assigned to exenatide once weekly.\r\nRESULTS\r\nSeven of the 303 patients in the larger study population were included in the subgroup analysis. Mean age (57.6 +/- 7 years), weight (102 +/- 17 kg), body mass index (34 +/- 3 kg/m2), and duration of diabetes (5 +/- 2 years) were comparable to characteristics of the larger study population. At 30 weeks and 52 weeks, participants treated with exenatide once weekly had a mean reduction in hemoglobin A1c level of 1.3 +/- 0.3% and 1.0 +/- 0.3%, respectively (P<.05). CGM analysis revealed a significant (P<.01) decrease in diurnal glucose exposure for 4 participants during nocturnal and daytime periods. Excess glucose exposure (compared with reference values) decreased in 6 of 7 participants, as did glucose variability. Glucose stability improved in 5 participants. The percentage of glucose values less than 70 mg/dL initially increased during the first half of the study then decreased to baseline levels by study end.\r\nCONCLUSIONS\r\nIndividual glucose profiles revealed that changes in hemoglobin A1c did not consistently parallel

alterations in glucose exposure, variability, and stability. AGPs provided a visual representation of improved glucose responses to exenatide once weekly.

McAuliff, Bradley D.; Kovera, Margaret Bull; Nunez, Gabriel (2009):

Can jurors recognize missing control groups, confounds, and experimenter bias in psychological science?

In: *Law and human behavior* 33 (3), S. 247–257. DOI: 10.1007/s10979-008-9133-0.

Abstract:

This study examined the ability of jury-eligible community members (N = 248) to detect internal validity threats in psychological science presented during a trial. Participants read a case summary in which an expert testified about a study that varied in internal validity (valid, missing control group, confound, and experimenter bias) and ecological validity (high, low). Ratings of expert evidence quality and expert credibility were higher for the valid versus missing control group versions only. Internal validity did not influence verdict or ratings of plaintiff credibility and no differences emerged as a function of ecological validity. Expert evidence quality, expert credibility, and plaintiff credibility were positively correlated with verdict. Implications for the scientific reasoning literature and for trials containing psychological science are discussed.

McCabe, K. O.; Fleeson, W. (2012):

What is extraversion for? Integrating trait and motivational perspectives and identifying the purpose of extraversion.

In: *Psychol.Sci.* 23 (12), S. 1498–1505. DOI: 10.1177/0956797612444904.

Abstract:

The purpose of this study was to determine whether the manifestation of extraversion (i.e., acting and being extraverted) in everyday behavior can be explained by intentional (functional) constructs, namely, goals. By using a model in which personality states serve as an outcome of specific, momentary goal pursuit, we were able to identify the function of extraversion states in everyday behavior. Using experience-sampling methodology, we asked participants to describe their state extraversion, goal pursuit, and state affect over 10 days. Results show that 18 selected goals predicted 74% of the variance in state extraversion; both within-person and between-person fluctuations in state extraversion were strongly associated with changes in momentary goal pursuit. We extended findings relating state extraversion and state positive affect, showing that the relationship between goals and positive affect was partially mediated by state extraversion

McCabe, Kira O.; MacK, Lori; Fleeson, William (2012):

A guide for data cleaning in experience sampling studies. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 321–338. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-018%26site%3dehost-live.

Abstract:

(from the chapter) The purpose of this chapter is to recommend strategies for preventing and identifying problems in personal digital assistant (PDA) data. We provide a guide for data cleaning procedures, which may promote and facilitate PDA usage in studies that employ experience sampling methodology (ESM). The literature lacks a clear discussion and standardization of how to detect errors in PDA data and how to prepare the data for analysis. It is important to clean PDA data properly for at least three reasons. First, careful cleaning ensures that PDA studies adhere to the rigorous standardization that is fundamental to psychological research. Second, proper data cleaning enhances the reliability, validity, and power of the data. Third, data cleaning prevents data errors from being compounded and exacerbated when conducting analyses, particularly analyses of individual differences in within-person effects. We are assuming that readers are familiar with ESM and other daily measures. However, for completeness, by ESM we denote a method that allows for repeated measurement of behavior states within the context of individuals' everyday lives. The cleaning step is sometimes the most difficult step in the whole process of conducting an ESM study, but researchers should not allow complexity of the data to prevent them from upholding rigorous scientific standards. In this chapter, we present several problems we have found when cleaning our own data, along with our

recommendations for identifying and solving these problems. Our approach in this chapter presumes use of certain kinds of technology; specifically, we use Palm Z22 PDAs with the Experience Sampling Program (ESP; Barrett & Feldman Barrett, 2000), which interfaces with the Palm OS platform. However, the techniques are generalizable across technologies, with adaptation. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

McCance, Andrea Silke (2012):

Emotional labor in intercultural service encounters: An experience sampling study.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (7-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99020-432&site=ehost-live.

Abstract:

The body of literature surrounding emotional labor, defined as service employees' effort to manage their emotions to meet organizational goals (Hochschild, 1983; Morris & Feldman, 1996), exhibits a severe lack of studies examining intercultural service encounters (i.e., service episodes in which a provider from culture A delivers a service to a customer from culture B; Stauss & Mang, 1999). This dissertation posits an intrapersonal model of emotional labor in intercultural service encounters. Central to this model is the construct of cultural competence (Earley & Ang, 2003), which is defined as the ability to adapt effectively and flexibly in culturally diverse settings. Using experience sampling methodology with a hospitality industry sample, I found that cultural competence was associated with deep acting and performance. Openness to experience predicted cultural competence through active seeking of multicultural experience (i.e., multicultural personality). Implications for the selection (based on openness) and training (for deep acting and cultural competence) of service providers in an increasingly globalized service industry are discussed. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

McCarthy, Danielle E.; Piasecki, Thomas M.; Fiore, Michael C.; Baker, Timothy B. (2006):

Life before and after quitting smoking: an electronic diary study.

In: *Journal of Abnormal Psychology* 115 (3), S. 454–466. DOI: 10.1037/0021-843X.115.3.454.

Abstract:

This article describes a multidimensional, multivariate, and multilevel approach to the assessment of nicotine withdrawal. In this prospective study, 70 adult smokers assigned to an active or placebo nicotine patch condition completed multiple daily assessments using an electronic diary. Average and individual growth curves were estimated for affective and nonaffective withdrawal symptoms. All symptoms but hunger increased significantly on the quit day and remained elevated for three weeks. Variability in symptom experiences across individuals increased from pre- to post-quit. Relations between symptom reports (e.g., negative affect or craving) and episodic events (e.g., stressful events or seeing someone smoke) changed from pre-quit to post-quit. Pre-quit increases in negative affect and quit-day increases in craving were inversely related to abstinence three months after the quit day, suggesting that anticipatory and immediate reactions to quitting influence success.

McCarthy, Danielle E.; Piasecki, Thomas M.; Lawrence, Daniel L.; Jorenby, Douglas E.; Shiffman, Saul; Baker, Timothy B. (2008):

Psychological mediators of bupropion sustained-release treatment for smoking cessation.

In: *Addiction* 103 (9), S. 1521–1533.

Abstract:

AIM:

The study aimed to test simultaneously our understanding of the effects of bupropion sustained-release (SR) treatment on putative mediators and our understanding of determinants of post-quit abstinence, including withdrawal distress, cigarette craving, positive affect and subjective reactions to cigarettes smoked during a lapse. The specificity of bupropion SR effects was also tested in exploratory analyses.

DESIGN:

Data from a randomized, placebo-controlled clinical trial of bupropion SR were submitted to mediation analyses.

SETTING:

Center for Tobacco Research and Intervention, Madison, WI, USA.

PARTICIPANTS:

A total of 403 adult, daily smokers without contraindications to bupropion SR use.

INTERVENTION:

Participants were assigned randomly to receive a 9-week course of bupropion SR or placebo pill and to receive eight brief individual counseling sessions or no counseling.

MEASUREMENTS:

Ecological momentary assessment ratings of smoking behavior and putative mediators were collected pre- and post-quit.

FINDINGS:

Results of structural equation and hierarchical linear models did not support the hypothesis that bupropion SR treatment improves short-term abstinence by reducing withdrawal distress or affecting the subjective effects of a lapse cigarette, but provided partial support for mediation by cigarette craving reduction and enhanced positive affect. Bupropion SR effects on point-prevalence abstinence at 1 month post-quit were also mediated partially by enhanced motivation to quit and self-efficacy.

CONCLUSIONS:

Results provided some support for models of bupropion SR treatment and relapse and suggested that motivational processes may partially account for bupropion SR efficacy.

McClain, James J.; Sisson, Susan B.; Washington, Tracy L.; Craig, Cora L.; Tudor-Locke, Catrine (2007):

Comparison of Kenz Lifecorder EX and ActiGraph accelerometers in 10-yr-old children.

In: *Med Sci Sports Exerc* 39 (4), S. 630.

Abstract:

A new accelerometer, the Kenz Lifecorder EX (LC; Suzuken Co. Ltd, Nagoya, Japan), offers promise as a feasible monitor alternative to the commonly used Actigraph (AG: Actigraph LLC, Fort Walton Beach, FL).

PURPOSE:

This study compared the LC and AG accelerometers and the Yamax SW-200 pedometer (DW) under free-living conditions with regard to children's steps taken and time in light-intensity physical activity (PA) and moderate to vigorous PA (MVPA).

METHODS:

Participants (N=31, age=10.2 +/- 0.4 yr) wore LC, AG, and DW monitors from arrival at school (7:45 a.m.) until they went to bed. Time in light and MVPA intensities were calculated using two separate intensity classifications for the LC (LC_4 and LC_5) and four classifications for the AG (AG_Treuth, AG_Puyau, AG_Trost, and AG_Freedson). Both accelerometers provided steps as outputs. DW steps were self-recorded. Repeated-measures ANOVA was used to assess overlapping monitor outputs.

RESULTS:

There was no difference between DW and LC steps (Delta=200 steps), but a nonsignificant trend was observed in the pairwise comparison between DW and AG steps (Delta=1001 steps, P=0.058). AG detected significantly greater steps than the LC (Delta=801 steps, P=0.001). Estimates of light-intensity activity minutes ranged from a low of 75.6 +/- 18.4 min (LC_4) to a high of 309 +/- 69.2 min (AG_Treuth). Estimates of MVPA minutes ranged from a low of 25.9 +/- 9.4 min (LC_5) to a high of 112.2 +/- 34.5 min (AG_Freedson). No significant differences in MVPA were seen between LC_5 and AG_Treuth (Delta=4.9 min) or AG_Puyau (Delta=1.7 min).

CONCLUSION:

The LC detected a comparable number of steps as the DW but significantly fewer steps than the AG in children. Current results indicate that the LC_5 and either AG_Treuth or AG_Puyau intensity derivations provide similar mean estimates of time in MVPA during-free living activity in 10-yr-old children.

McClatchley, Kirstie; Shorter, Gillian W.; Chalmers, Jenny (2014):

Deconstructing alcohol use on a night out in england: Promotions, preloading and consumption.

In: *Drug and Alcohol Review*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-19277-001%26site%3dehost-live.

Abstract:

Abstract Introduction and Aims To examine alcohol consumed during a drinking event (a single drinking occasion) by those attending public house/on-trade establishments on nights with standard pricing and nights with promotional prices. Design and Methods Data (n = 425) were collected in an ecological momentary assessment over eight nights in two locations (Midlands and London) on both promotional and standard (Saturday) nights. Multiple regression was used to predict event alcohol consumption by sex, age, type of night, alcohol preloading behaviour, marital and employment status, education, Alcohol Use Disorders Identification Test alcohol consumption questions separately or total AUDIT-C and social group size. Results Mean (UK) units consumed were 11.8 (London) and 14.4 (Midlands). In London, consumption was similar on promotional and standard nights, but in the Midlands, standard night consumption was three units higher. Preloading was reported by 30%; more common on standard nights. Regression analyses revealed being male, preloading and past-year total AUDIT-C were associated with higher event consumption. However, when AUDIT-C questions were added separately, being a standard night was associated with increased event consumption and different AUDIT-C questions were significantly associated with event consumption in each location. Discussion and Conclusions Event consumption reflected heavy episodic drinking and was influenced by price. Promotional night consumption either matched standard Saturday night consumption or was slightly lower. In London, there was a significant preference for drinking at least one promotional beverage on promotional nights. On standard nights, consumption was over a wider range of venues, and preloading with off-trade alcohol was more likely. [McClatchley K, Shorter GW, Chalmers J. Deconstructing alcohol use on a night out in England: Promotions, preloading and consumption. Drug Alcohol Rev 2014] (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

McClernon, F. J.; Roy, Choudhury R. (2013):

I Am Your Smartphone and I Know You Are About to Smoke: The Application of Mobile Sensing and Computing Approaches to Smoking Research and Treatment.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt054.

Abstract:

Much is known about the immediate and predictive antecedents of smoking lapse, which include situations (e.g., presence of other smokers), activities (e.g., alcohol consumption), and contexts (e.g., outside). This commentary suggests smartphone-based systems could be used to infer these predictive antecedents in real time and provide the smoker with just-in-time intervention. The smartphone of today is equipped with an array of sensors, including GPS, cameras, light sensors, barometers, accelerometers, and so forth, that provide information regarding physical location, human movement, ambient sounds, and visual imagery. We propose that libraries of algorithms to infer these antecedents can be developed and then incorporated into diverse mobile research and personalized treatment applications. While a number of challenges to the development and implementation of such applications are recognized, our field benefits from a database of known antecedents to a problem behavior, and further research and development in this exciting area are warranted

McClung, Holly L.; Sigrist, Lori D.; Smith, Tracey J.; Karl, J. Philip; Rood, Jennifer C.; Young, Andrew J.; Bathalon, Gaston P. (2009):

Monitoring energy intake: a hand-held personal digital assistant provides accuracy comparable to written records.

In: *Journal of the American Dietetic Association* 109 (7), S. 1241–1245. DOI: 10.1016/j.jada.2009.04.015.

Abstract:

New approaches to assess energy intake (EI) may have advantages over traditional written methods, but validity of these emerging methodologies must be demonstrated. This exploratory study compared EI obtained using a hand-held personal digital assistant (PDA) and traditional written records with total energy expenditure measured by doubly labeled water (TEE(DLW)). Twenty-six volunteers (aged 23+/-4 years, body mass index [calculated as kg/m(2)] 24+/-2) participated in a randomized (either PDA or written record group) and matched (for sex, age, and body mass index) study for 7 consecutive days between June 2005 and April 2006 to record EI. Group comparisons were made with t and Mann-Whitney U tests. Bland-Altman

plots were used to compare limits of agreement between methods. Volunteers remained weight stable during the study period (0.2+/-0.8 kg; P>0.05). Reported EI by written record and PDA were similar to TEE(DLW); 105% vs 92% of TEE(DLW), respectively (P>0.05). There was a significant relationship between reported EI by PDA and TEE(DLW) (r=0.60, P<0.05), but not for written record (r=0.45, P>0.05). Limits of agreement indicated both written record and PDA had large variability (range 1,394 to -1,472 kcal/day). Findings suggest the bias in using a PDA is similar to that observed when using a written record for estimation of EI in weight-stable volunteers.

McClure, Erin A.; Gray, Kevin M. (2013):

The Remote Monitoring of Smoking in Adolescents.

In: *Adolesc Psychiatry (Hilversum)* 3 (2), S. 156–162. DOI: 10.2174/2210676611303020006.

Abstract:

BACKGROUND/OBJECTIVES: Cigarette smoking remains the leading cause of preventable death in the United States with the vast majority of adult smokers starting prior to the age of 18. Despite the public health relevance and implications of studying smoking in adolescents, little is known about the initiation of quit attempts, the process of relapse, and the most efficacious treatment interventions in this high-risk and underserved population. Issues such as retention in research studies and accuracy of self-reports have prompted investigators to explore innovative technology-based systems to integrate into treatment studies and services delivery. METHODS: This paper will review the remote monitoring of smoking through means of ecological momentary assessment, biochemical verification of smoking verified through video capture, physiological monitoring, and mobile-delivered interventions using self-reported smoking outcomes in adolescents, when applicable. RESULTS: Use of remote monitoring methods in adolescent smokers has been limited thus far, though monitoring technology in adults has shown promise for understanding relapse and delivering treatment interventions. CONCLUSIONS: Comprehensive technology-based systems that do not rely primarily on self-report to monitor smoking would be a highly fruitful and innovative avenue to explore with adolescent smokers. Technology integration holds great promise to improve health-related research, treatment delivery, cost-effectiveness, and just-in-time interventions, but its novelty comes with unique problems and concerns to be carefully considered.

McCormick, Bryan P.; Frey, Georgia; Lee, Chien-Tsung; Chun, Sanghee; Sibthorp, Jim; Gajic, Tomislav et al. (2008):

Predicting transitory mood from physical activity level among people with severe mental illness in two cultures.

In: *The International journal of social psychiatry* 54 (6), S. 527–538. DOI: 10.1177/0020764008091423.

Abstract:

BACKGROUND\r\nPrevious studies have indicated that physical activity (PA) is positively related to health-related quality of life and well-being among people with severe mental illness (SMI). Physical activity is broadly defined in this research as any skeletal muscle movement resulting in energy expenditure, including common daily activities such as housework and gardening, as well as walking for transportation and formal exercise. Although the physical health benefits of PA are well documented, evidence suggests that PA provides psychological benefits as well.\r\nAIMS\r\nThe purpose of this study was to identify if PA level was associated with transitory mood in the everyday lives of people with SMI across two cultures.\r\nMETHODS\r\nSubjects were drawn through mental health centres in Serbia (n = 12) and the USA (n = 11). Data were collected using both experience sampling methodology and accelerometry. Data were analyzed using hierarchical linear modelling.\r\nRESULTS\r\nSubjects demonstrated low levels of PA, which did not differ significantly between groups. Hierarchical analysis indicated that PA remained significantly positively associated with mood after accounting for individual variation, and this was consistent across groups.\r\nCONCLUSIONS\r\nThis study reinforces previous findings that people with SMI demonstrate low PA levels generally. It also supports the consideration of physical activity interventions as a regular part of psychiatric rehabilitation. It appears that increased PA may have the potential to affect both physical health and mood among people with SMI.

McCormick, B. P.; Frey, G. C.; Lee, C-T; Gajic, T.; Stamatovic-Gajic, B.; Maksimovic, M. (2009):

A pilot examination of social context and everyday physical activity among adults receiving Community Mental Health Services.

In: *Acta Psychiatrica Scandinavica* 119 (3), S. 243–247. DOI: 10.1111/j.1600-0447.2008.01331.x.

Abstract:

OBJECTIVE\r\nCommunity mental health center (CMHC) clients include a variety of people with moderate to severe mental illnesses who also report a number of physical health problems. Physical activity (PA) has been identified as one intervention to improve health among this population; however, little is known about the role of social context in PA. The purpose of this study was to examine the role of social context in everyday PA among CMHC clients.\r\nMETHOD\r\nData were collected from CMHC clients in two cultures using accelerometery and experience sampling methods. Data were analyzed using hierarchical linear modeling.\r\nRESULTS\r\nIndependence in housing nor culture was significantly associated with levels of PA. Being alone was significantly negatively related to PA level.\r\nCONCLUSION\r\nSocial isolation appears to be negatively related to PA at the level of everyday life. Physical activity interventions with this population should consider including social components as a part of PA.

McCrae, C. S.; Vatthauer, K. E.; Dzierzewski, J. M.; Marsiske, M. (2012):

Habitual Sleep, Reasoning, and Processing Speed in Older Adults with Sleep Complaints.

In: *Cognit.Ther.Res* 36 (2), S. 156–164. DOI: 10.1007/s10608-011-9425-4.

Abstract:

The relationship between habitual sleep and cognition in older adults with sleep complaints is poorly understood, because research has focused on younger adults, used experimental or retrospective quasi-experimental designs, and generally produced equivocal results. Prospective studies using sleep diaries are rare, but may provide important insights into this relationship as they offer greater ecological validity and allow for examination of the impact of night-to-night variability in sleep (an often overlooked aspect of sleep) on cognitive performance. Seventy-two older adults (M(age) = 70.18 years, SD(age) = 7.09 years) completed fourteen consecutive days of sleep diaries and paper/pencil self-administered cognitive tasks, including measures of processing speed (Symbol Digit) and reasoning (Letter Series). Regression analyses revealed increased average total wake time (TWT) during the night was associated with higher Symbol Digit scores, beta = 0.45, P < 0.05. Night-to-night variability in either total sleep time (TST) or TWT was not associated with either cognitive measure. Implications and potential explanations for these initially counterintuitive findings are discussed

McCrorie, Paul Rw; Fenton, Candida; Ellaway, Anne (2014):

Combining GPS, GIS, and accelerometry to explore the physical activity and environment relationship in children and young people - a review.

In: *Int J Behav Nutr Phys Act* 11 (1), S. 93. DOI: 10.1186/s12966-014-0093-0.

Abstract:

The environment has long been associated with physical activity engagement, and recent developments in technology have resulted in the ability to objectively quantify activity behaviours and activity context. This paper reviews studies that have combined Global Positioning Systems (GPS), Geographic Information Systems (GIS) and accelerometry to investigate the PA-environment relationship in children and young people (5-18 years old). Literature searches of the following bibliographic databases were undertaken: Sportdiscus, Medline, Embase, CINAHL, Psychinfo and Applied Social Sciences Index and Abstracts (ASSIA). Fourteen studies met the inclusion criteria, and covered topics including greenspace use, general land use, active travel, and the built environment. Studies were largely cross-sectional and took place across developed countries (UK, USA, Canada, New Zealand, and Australia). Findings suggest that roads and streets, school grounds, and the home location are important locations for total PA, and moderate to vigorous PA (MVPA). The relationship between greenspace was positive, however, multiple definitions and outcome measures add complexity to the results. MVPA was more likely in those exposed to higher levels of greenspace compared to sedentary individuals. Total MVPA time in greenspace is low, but when framed as a proportion of the total can be quite high. Domestic gardens may be an important area for higher intensity activity.Researchers are encouraged to show transparency in their methods. As a relatively new area of research, with ever-evolving technology, future work is best placed in developing novel, but robust, methods to investigate the PA and environment relationship. Further descriptive work is encouraged to build on a small but increasing knowledge base; however, longitudinal studies incorporating seasonal/weather variation would also be extremely beneficial to elicit some of the nuances associated with land use. A greater understanding of geographic variation (i.e. within and between countries), as well as urban/suburban and rural dwelling is welcomed, and future work should also include the investigation of psycho-social health as an outcome, as well as differences in socio-economic status, sex and adiposity.

McDermott, Mary M.; Ades, Philip A.; Dyer, Alan; Guralnik, Jack M.; Kibbe, Melina; Criqui, Michael H. (2008):

Corridor-based functional performance measures correlate better with physical activity during daily life than treadmill measures in persons with peripheral arterial disease.

In: *Journal of vascular surgery* 48 (5), S. 1231-7, 1237.e1. DOI: 10.1016/j.jvs.2008.06.050.

Abstract:

OBJECTIVE\r\nTo compare associations of physical activity during daily life with treadmill walking performance and corridor-based functional performance measures in persons with lower extremity peripheral arterial disease (PAD).\r\nSTUDY DESIGN\r\nCross-sectional.\r\nSUBJECTS\r\nOne hundred fifty-six men and women with PAD who completed baseline measurements and were randomized into the study to improve leg circulation (SILC) exercise clinical trial.\r\nMAIN OUTCOME MEASURES\r\nParticipants completed a Gardner-Skinner treadmill protocol. Corridor-based functional performance measures were the 6-minute walk, walking velocity over four meters at usual and fastest pace, and the short physical performance battery (SPPB) (0-12 scale, 12 = best). Physical activity during daily life was measured continuously over 7 days with a Caltrac (Muscle Dynamics Fitness Network, Inc, Torrence, Calif) accelerometer.\r\nRESULTS\r\nAdjusting for age, gender, and race, higher levels of physical activity during daily life were associated with greater distance achieved in the 6-minute walk (P trend = .001), faster fast-paced four-meter walking velocity (P trend < .001), faster usual-paced four-meter walking speed (P trend = .027) and a higher SPPB (P trend = .005). The association of physical activity level with maximum treadmill walking distance did not reach statistical significance (P trend = .083). There were no associations of physical activity with treadmill distance to onset of leg symptoms (P trend = .795).\r\nCONCLUSION\r\nFunctional performance measures are more strongly associated with physical activity levels during daily life than treadmill walking measures.

McDoniel, Scott O.; Wolskee, Patricia; Shen, Jeff (2010):

Treating obesity with a novel hand-held device, computer software program, and Internet technology in primary care: the SMART motivational trial.

In: *Patient education and counseling* 79 (2), S. 185–191. DOI: 10.1016/j.pec.2009.07.034.

Abstract:

OBJECTIVE\r\nThe purpose of this study was to evaluate the short-term motivational effect of a technology-based weight reduction program for obese adults.\r\nMETHODS\r\nOne hundred and eleven obese (37.0+/-5.8 kg/m(2)) middle aged (45.5+/-10.8 years) adults (62% female) were randomly assigned to a usual care or experimental (SMART: self-monitoring and resting metabolic rate technology) group. The usual care group received a standard nutritional program in accordance to national guidelines. All participants received a comprehensive weight management program consisting of motivational interviewing (MI) sessions and automated e-mail behavioral newsletters. Bodyweight, arterial blood pressure, and psychobehavioral constructs were assessed over 12 weeks.\r\nRESULTS\r\nCompleter analysis (n=80) indicated a significant improvement in bodyweight (-3.9%), systolic arterial pressure (-4 mmHg), and all motivational constructs following the 12-week study (p<or=.05). However, there were no significant differences between groups at any time period.\r\nCONCLUSION\r\nBased on these data, a 12-week comprehensive weight reduction program consisting of MI and automated e-mail behavioral newsletters with or without SMART is efficacious in treating obese adults.\r\nPRACTICE IMPLICATIONS\r\nAlthough both treatment programs were equally effective, clinicians should consider a treatment program that meets the need of the patient. This study was registered at ClinicalTrails.gov NCT00750022.

McFetridge-Durdle, Judith A.; Routledge, Faye S.; Parry, Monica J. E.; Dean, C. R. T.; Tucker, B. (2008):

Ambulatory impedance cardiography in hypertension: a validation study.

In: *Eur J Cardiovasc Nurs* 7 (3), S. 204–213.

Abstract:

The management of hypertension is improved by knowledge of the hemodynamics underlying blood pressure. Impedance Cardiography (ICG) provides data on a range of hemodynamic variables that affect blood pressure. However, ICG captures only fixed descriptions of hemodynamic characteristics. Improvements in ambulatory technology have led to the development of the Ambulatory Impedance Monitor (AIM) which records hemodynamic data during the activities of daily living. The purpose of this study was to evaluate the sensitivity of the AIM to detect hemodynamic changes associated with postural shift in persons with hypertension. Using a repeated measures cross-over design, sitting and standing hemodynamic measures were taken in seventeen persons with hypertension while wearing the AIM-BpTRU system designed for standard office use and the AIM-Spacelabs system designed for ambulatory monitoring. Both AIM-blood pressure monitoring systems detected significant changes from sitting to standing posture in heart rate (p=0.03), stroke volume (p=0.002), left ventricular ejection time (p<0.001),

systemic vascular resistance (p=0.03) and diastolic blood pressure (p<0.001). Additionally, both systems generated measures of cardiac function that were positively correlated (p<0.001) and not significantly different (p>0.05). Our findings support previous work and demonstrate that the AIM provides valid and reliable estimates of cardiac function in persons with hypertension.

McGarty, Arlene M.; Penpraze, Victoria; Melville, Craig A. (2014):

Accelerometer use during field-based physical activity research in children and adolescents with intellectual disabilities: A systematic review.

In: *Res Dev Disabil* 35 (5), S. 973–981. DOI: 10.1016/j.ridd.2014.02.009.

Abstract:

Many methodological questions and issues surround the use of accelerometers as a measure of physical activity during field-based research. To ensure overall research quality and the accuracy of results, methodological decisions should be based on study research questions. This paper aims to systematically review accelerometer use during field-based research in children and adolescents with intellectual disabilities. Medline, Embase, Cochrane Library, Web of Knowledge, PsycINFO, PubMed, and a thesis database (up to May 2013) were searched to identify relevant articles. Articles which used accelerometry-based monitors, quantified activity levels, and included ambulatory children and adolescents (</=18 years) with intellectual disabilities were included. Based on best practice guidelines, a form was developed to extract data based on 17 research components of accelerometer use. The search identified 429 articles. Ten full-text articles met the criteria and were included in the review. Many shortcomings in accelerometer use were identified, with the percentage of review criteria met ranging from 12% to 47%. Various methods of accelerometer use were reported, with most use decisions not based on population-specific research. However, a lack of measurement research, e.g., calibration/validation, for children and adolescents with intellectual disabilities is limiting the ability of field-based researchers to make to the most appropriate accelerometer use decisions. The methods of accelerometer use employed can have significant effects on the quality and validity of results produced, which researchers should be more aware of. To allow informed use decisions, there should be a greater focus on measurement research related to children and adolescents with intellectual disabilities.

McGillicuddy, J. W.; Gregoski, M. J.; Weiland, A. K.; Rock, R. A.; Brunner-Jackson, B. M.; Patel, S. K. et al. (2013):

Mobile Health Medication Adherence and Blood Pressure Control in Renal Transplant Recipients: A Proof-of-Concept Randomized Controlled Trial.

In: *JMIR.Res Protoc.* 2 (2), S. e32. DOI: 10.2196/resprot.2633.

Abstract:

BACKGROUND: Mobile phone based programs for kidney transplant recipients are promising tools for improving long-term graft outcomes and better managing comorbidities (eg, hypertension, diabetes). These tools provide an easy to use self-management framework allowing optimal medication adherence that is guided by the patients' physiological data. This technology is also relatively inexpensive, has an intuitive interface, and provides the capability for real-time personalized feedback to help motivate patient self-efficacy. Automated summary reports of patients' adherence and blood pressure can easily be uploaded to providers' networks helping reduce clinical inertia by reducing regimen alteration time. OBJECTIVE: The aim of this study was to assess the feasibility, acceptability, and preliminary outcomes of a prototype mobile health (mHealth) medication and blood pressure (BP) self-management system for kidney transplant patients with uncontrolled hypertension. METHODS: A smartphone enabled medication adherence and BP self-management system was developed using a patient and provider centered design. The development framework utilized self-determination theory with iterative stages that were guided and refined based on patient/provider feedback. A 3-month proof-of-concept randomized controlled trial was conducted in 20 hypertensive kidney transplant patients identified as non-adherent to their current medication regimen based on a month long screening using an electronic medication tray. Participants randomized to the mHealth intervention had the reminder functions of their electronic medication tray enabled and received a bluetooth capable BP monitor and a smartphone that received and transmitted encrypted physiological data and delivered reminders to measure BP using text messaging. Controls received standard of care and their adherence continued to be monitored with the medication tray reminders turned off. Providers received weekly summary reports of patient medication adherence and BP readings. RESULTS: Participation and retention rates were 41/55 (75%) and 31/34 (91%), respectively. The prototype system appears to be safe, highly acceptable, and useful to patients and providers. Compared to the standard care control group (SC), the mHealth intervention group exhibited significant improvements in medication adherence and significant reductions in clinic-measured systolic blood pressures across the monthly evaluations. Physicians made more anti-hypertensive medication adjustments in the mHealth group versus the standard care group (7 adjustments in 5 patients versus 3 adjustments in 3 patients) during the 3-month trial based on the information provided in the weekly reports. CONCLUSIONS: These data support the acceptability and feasibility of the prototype mHealth system. Further trials with larger sample sizes and additional biomarkers (eg, whole blood medication levels) are needed to

examine efficacy and effectiveness of the system for improving medication adherence and blood pressure control after kidney transplantation over longer time periods. TRIAL REGISTRATION: Clinicaltrials.gov NCT01859273; http://clinicaltrials.gov/ct2/show/NCT01859273 (Archived by WebCite at http://www.webcitation.org/6IqfCa3A3)

McGowan, Neil J.; Gough, Kathleen; Padfield, Paul L. (2009):

Nocturnal dipping is reproducible in the long term.

In: *Blood Press Monit* 14 (5), S. 185–189. DOI: 10.1097/MBP.0b013e32832ff4e1.

Abstract:

OBJECTIVE\r\nTo examine the long-term reproducibility of nocturnal dipping as a dichotomous and continuous variable.\r\nMETHODS\r\nRetrospective review of an ambulatory blood pressure monitor (ABPM) database of approximately 15 000 patients. Reproducibility of ABPM was assessed by repeatability coefficient. Kappa (kappa) statistic and intraclass correlation coefficient were used to quantify dipping as a dichotomous and continuous variable, respectively.\r\nRESULTS\r\nThere were 512 never-treated patients with two ABPM assessments, a mean of 29 (+/-19) months apart. Blood pressure was 2/0 mmHg (awake) and 2/1 mmHg (asleep) higher on the second ABPM. The repeatability coefficient for awake systolic and awake diastolic pressure was 5.9 and 6.2%, respectively. When the dipper/non-dipper (dichotomous) classification was applied to both ABPMs, dipping status was unchanged in 76% of patients, kappa = 0.29. When nocturnal dip was expressed as a continuous variable, the mean nocturnal dip was 14% and the median absolute change between assessments was 3.8%, intraclass correlation coefficient = 0.60. The time interval between assessments was subdivided into (i) within 6 months, (ii) 6 months to 1 year, (iii) 1-2 years, (iv) 2-3 years and (v) more than 3 years. There was remarkable consistency independent of time interval for dipping expressed as a continuous variable but not as dipper/non-dipper.\r\nCONCLUSION\r\nThese findings show that in the long term, nocturnal dip is more stable when expressed as a continuous variable. As recent evidence show cardiovascular risk to be inversely related to nocturnal blood pressure in a continuous manner, surely it makes more sense to express nocturnal dip in a similar way to aid stratification of overall cardiovascular risk.

McGregor, Stephen J.; Busa, Michael A.; Skufca, Joseph; Yaggie, James A.; Bollt, Erik M. (2009):

Control entropy identifies differential changes in complexity of walking and running gait patterns with increasing speed in highly trained runners.

In: *Chaos (Woodbury, N.Y.)* 19 (2), S. 26109. DOI: 10.1063/1.3147423.

Abstract:

Regularity statistics have been previously applied to walking gait measures in the hope of gaining insight into the complexity of gait under different conditions and in different populations. Traditional regularity statistics are subject to the requirement of stationarity, a limitation for examining changes in complexity under dynamic conditions such as exhaustive exercise. Using a novel measure, control entropy (CE), applied to triaxial continuous accelerometry, we report changes in complexity of walking and running during increasing speeds up to exhaustion in highly trained runners. We further apply Karhunen-Loeve analysis in a new and novel way to the patterns of CE responses in each of the three axes to identify dominant modes of CE responses in the vertical, mediolateral, and anterior/posterior planes. The differential CE responses observed between the different axes in this select population provide insight into the constraints of walking and running in those who may have optimized locomotion. Future comparisons between athletes, healthy untrained, and clinical populations using this approach may help elucidate differences between optimized and diseased locomotor control.

McKee, Heather C.; Ntoumanis, Nikos; Taylor, Ian M. (2014):

An Ecological Momentary Assessment of Lapse Occurrences in Dieters.

In: *Ann Behav Med. DOI:* 10.1007/s12160-014-9594-y.

Abstract:

PURPOSE: The aim of this study is to investigate the factors related to dietary lapse occurrence in a community sample of dieters. METHODS: An ecological momentary assessment (EMA) methodology, via mobile phone-based diaries, was employed to record dietary lapse occurrences in a group of dieters (N = 80; M age = 41.21 +/- 15.60 years; M BMI = 30.78 +/- 7.26) over 7 days. RESULTS: Analyses indicated that lapses were positively associated with the strength of dietary temptation, presence of others, coping responses, and the environment (exposure to food cues) in which the dieters were in; lapses were more likely to occur in the evening and were negatively associated with the use of coping mechanisms. Additionally, lapse occurrence was

found to mediate the relationships among the above predictors of lapse and the self-efficacy to resist future dietary temptations. CONCLUSIONS: Results provide an insight into the occurrence of lapses in dieters and have implications for interventions focusing on weight loss maintenance and relapse prevention.

McKee, Stephanie; Smith, Heather J.; Koch, Aubrey; Balzarini, Rhonda; Georges, Marissa; Callahan, Matthew Paolucci (2013):

Looking up and seeing green: Women's everyday experiences with physical appearance comparisons.

In: *Psychology of Women Quarterly* 37 (3), S. 351–365. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-27656-006%26site%3dehost-live;heather.smith@sonoma.edu.

Abstract:

Psychological research documents the extent to which physical appearance comparisons are associated with negative emotional experiences, but researchers typically study physical appearance comparisons isolated from other comparison experiences. As part of a signal-contingent experience sampling design, 87 female undergraduate students recorded whether they had made any comparison about any topic after they received a text message at three randomly chosen times a day for 7 days. In contrast to other comparisons, physical appearance comparisons were more likely to be upward contrasts to dissimilar targets associated with increased envy, less inspiration, less pride, and less anxiety. Women who reported more demographically similar close friends reported more envy following physical appearance comparisons in contrast to women who reported more demographically diverse close friends. Women who associated their body with a better quality of life reported more inspiration and less envy following physical appearance comparisons. More demographically diverse close friends and a more positive body image may protect women from the negative emotional consequences associated with physical appearance comparisons. These data indicate that the positive benefits for interpersonal judgments associated with close cross-group friends extend to intrapersonal reactions to physical appearance comparisons. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

McKibbin, Christine L.; Patterson, Thomas L.; Norman, Gregory; Patrick, Kevin; Jin, Hua; Roesch, Scott et al. (2006):

A lifestyle intervention for older schizophrenia patients with diabetes mellitus: a randomized controlled trial.

In: *Schizophrenia Research* 86 (1), S. 36–44.

Abstract:

PURPOSE:

We tested the feasibility and preliminary efficacy of a lifestyle intervention for middle-aged and older patients with schizophrenia and type-2 diabetes mellitus, using a randomized pre-test, post-test control group design.

METHOD:

Individuals with a diagnosis of schizophrenia or schizoaffective disorder over the age of 40 were randomly assigned to 24-week Diabetes Awareness and Rehabilitation Training (DART; n=32) groups or Usual Care plus Information (UCI; n=32) comparison groups. Participants were recruited from board-and-care facilities and day treatment programs. Fifty-seven patients completed baseline and 6-month assessments consisting of an interview, measures of body mass index, blood pressure, fasting blood chemistry, and accelerometry. A mixed-model analysis of variance was used to analyze the data.

RESULTS:

A significant group x time interaction was found for body weight, with patients in the DART group losing a mean of 5 lb and those in the UCI gaining a mean 6 lb. Significant group x time interactions were also found for triglycerides, diabetes knowledge, diabetes self-efficacy, and self-reported physical activity, but not for fasting plasma glucose or glycosylated hemoglobin.

CONCLUSIONS:

Group-based lifestyle interventions are feasible and produce positive health changes in middle-aged and older patients with schizophrenia and diabetes mellitus.

McKinstry, B.; Hanley, J.; Wild, S.; Pagliari, C.; Paterson, M.; Lewis, S. et al. (2013):

Telemonitoring based service redesign for the management of uncontrolled hypertension: multicentre randomised controlled trial.

In: *BMJ* 346 (0959-535X (Linking)), S. f3030. Online verfügbar unter PM:23709583.

Abstract:

OBJECTIVE: To determine if an intervention consisting of telemonitoring and supervision by usual primary care clinicians of home self measured blood pressure and optional patient decision support leads to clinically important reductions in daytime systolic and diastolic ambulatory blood pressure in patients with uncontrolled blood pressure. DESIGN: Multicentre randomised controlled trial. SETTING: 20 primary care practices in south east Scotland. PARTICIPANTS: 401 people aged 29-95 years with uncontrolled blood pressure (mean daytime ambulatory measurement >/=135/85 mm Hg but </=210/135 mm Hg). INTERVENTION: Self measurement and transmission of blood pressure readings to a secure website for review by the attending nurse or doctor and participant, with optional automated patient decision support by text or email for six months. MAIN OUTCOME MEASURES: Blinded assessment of mean daytime systolic ambulatory blood pressure six months after randomisation. RESULTS: 200 participants were randomised to the intervention and 201 to usual care; primary outcome data were available for 90% of participants (182 and 177, respectively). The mean difference in daytime systolic ambulatory blood pressure adjusted for baseline and minimisation factors between intervention and usual care was 4.3 mm Hg (95% confidence interval 2.0 to 6.5; P=0.0002) and for daytime diastolic ambulatory blood pressure was 2.3 mm Hg (0.9 to 3.6; P=0.001), with higher values in the usual care group. The intervention was associated with a mean increase of one general practitioner (95% confidence interval 0.5 to 1.6; P=0.0002) and 0.6 (0.1 to 1.0; P=0.01) practice nurse consultations during the course of the study. CONCLUSIONS: Supported self monitoring by telemonitoring is an effective method for achieving clinically important reductions in blood pressure in patients with uncontrolled hypertension in primary care settings. However, it was associated with increase in use of National Health Service resources. Further research is required to determine if the reduction in blood pressure is maintained in the longer term and if the intervention is cost effective. TRIAL REGISTRATION: Current Controlled Trials ISRCTN72614272

McLellan, C. P.; Lovell, D. I. (2012):

Neuromuscular responses to impact and collision during elite rugby league match play.

In: *J Strength.Cond.Res* 26 (5), S. 1431–1440. DOI: 10.1519/JSC.0b013e318231a627.

Abstract:

The purpose of this study was to investigate the relationship between the prematch and short-term postmatch neuromuscular responses to the intensity, number, and distribution of impacts associated with collisions during elite Rugby League match play. Twenty-two elite male Rugby League players were monitored during 8 regular season competition matches using portable global positioning system (GPS) technology. The intensity, number, and distribution of impact forces experienced by players during match play were recorded using integrated accelerometry. Peak rate of force development (PRFD), peak power (PP), and peak force (PF) were measured during a countermovement jump on a force plate 24 hours prematch, 30 minutes prematch, 30 minutes postmatch and then at 24-hour intervals for a period of 5 days postmatch. The change in the dependent variables at each sample collection time was compared with that at 24 hours prematch and 30-minute prematch measures. There were significant ($p < 0.05$) decreases in PRFD and PP up to 24 hours postmatch with PF significantly ($p < 0.05$) being decreased 30 minutes postmatch. Significant ($p < 0.05$) correlations were found between the total number of impacts and PRFD and PP 30 minutes postmatch. Impact zones 4 (7.1-8.0 G), 5 (>8.1-10.0 G), and 6 (>10.1 G) were significantly ($p < 0.05$) correlated to PRFD and PP 30 minutes postmatch with the number of zone 5 and 6 impacts significantly ($p < 0.05$) correlated to PRFD and PP 24 hours postmatch. Elite Rugby League match play resulted in significant neuromuscular fatigue and was highly dependent on the number of heavy collisions >7.1G. Results demonstrate that neuromuscular function is compromised for up to 48 hours postmatch indicating that at least 2 days of modified activity is required to achieve full neuromuscular recovery after elite Rugby League match play. Position-specific demands on energy systems and the influence of repeated blunt force trauma during collisions during elite Rugby League match play should be considered when planning postmatch recovery protocols and training activities to optimize subsequent performance

McLure, S. A.; Summerbell, C. D.; Reilly, J. J. (2009):

Objectively measured habitual physical activity in a highly obesogenic environment.

In: *Child: care, health and development* 35 (3), S. 369–375. DOI: 10.1111/j.1365-2214.2009.00946.x.

Abstract:

BACKGROUND\r\nWhile the prevalence of overweight and obesity among children continues to grow nationally, prevalence in the North-East of England is among the highest in the UK. The objective of this study was to investigate the habitual physical activity levels in a particularly obesogenic environment in the North-East of England.\r\nMETHODS\r\nEight primary schools were selected using a stratified random sampling frame ranking average deprivation levels. Participating children (n = 246, mean age 10 years) wore an accelerometer (Actigraph, GT-256) over five consecutive days (weekend plus three weekdays). Total daily moderate-to-vigorous intensity physical activity was calculated using thresholds by Puyau and colleagues.\r\nRESULTS\r\nOnly 7% (17/246) of children were sufficiently active. Boys were more physically active than girls (766 +/- 268 vs. 641 +/- 202 counts/min, 95% CI for the difference 63-186 cpm.). Total physical activity was not influenced significantly by deprivation levels or weight status, and there were no significant differences in physical activity between school or weekend days.\r\nCONCLUSIONS\r\nThe North-East of England is a recognized 'hot spot' for paediatric obesity and the present study shows that low levels of habitual physical activity are typical. Choice of accelerometry threshold affects both the apparent amount of physical activity and the ability to detect groups with particularly low levels of physical activity.

McMahon, E. J.; Bauer, J. D.; Hawley, C. M.; Isbel, N. M.; Stowasser, M.; Johnson, D. W. et al. (2012):

The effect of lowering salt intake on ambulatory blood pressure to reduce cardiovascular risk in chronic kidney disease (LowSALT CKD study): protocol of a randomized trial.

In: *BMC Nephrol* 13 (1471-2369 (Linking)), S. 137. DOI: 10.1186/1471-2369-13-137.

Abstract:

ABSTRACT: BACKGROUND: Despite evidence implicating dietary sodium in the pathogenesis of cardiovascular disease (CVD) in chronic kidney disease (CKD), quality intervention trials in CKD patients are lacking. This study aims to investigate the effect of reducing sodium intake on blood pressure, risk factors for progression of CKD and other cardiovascular risk factors in CKD. METHODS/DESIGN: The LowSALT CKD study is a six week randomized-crossover trial assessing the effect of a moderate (180 mmol/day) compared with a low (60 mmol/day) sodium intake on cardiovascular risk factors and risk factors for kidney function decline in mild-moderate CKD (stage III-IV). The primary outcome of interest is 24-hour ambulatory blood pressure, with secondary outcomes including arterial stiffness (pulse wave velocity), proteinuria and fluid status. The randomized crossover trial (Phase 1) is supported by an ancillary trial (Phase 2) of longitudinal-observational design to assess the longer term effectiveness of sodium restriction. Phase 2 will continue measurement of outcomes as per Phase 1, with the addition of patient-centered outcomes, such as dietary adherence to sodium restriction (degree of adherence and barriers/enablers), quality of life and taste assessment. DISCUSSION: The LowSALT CKD study is an investigator-initiated study specifically designed to assess the proof-of-concept and efficacy of sodium restriction in patients with established CKD. Phase 2 will assess the longer term effectiveness of sodium restriction in the same participants, enhancing the translation of Phase 1 results into practice. This trial will provide much-needed insight into sodium restriction as a treatment option to reduce risk of CVD and CKD progression in CKD patients. TRIAL REGISTRATION: Universal Trial Number: U1111-1125-2149. Australian New Zealand Clinical Trials Registry Number: ACTRN12611001097932

McManus, D. D.; Lee, J.; Maitas, O.; Esa, N.; Pidikiti, R.; Carlucci, A. et al. (2012):

A novel application for the detection of an irregular pulse using an iPhone 4S in patients with atrial fibrillation.

In: *Heart Rhythm* (1547-5271 (Linking)). DOI: 10.1016/j.hrthm.2012.12.001.

Abstract:

BACKGROUND: Atrial fibrillation (AF) is common and associated with adverse health outcomes. Timely detection of AF can be challenging using traditional diagnostic tools. Smartphone use is increasing and may provide an inexpensive and user-friendly means to diagnose AF. OBJECTIVE: To test the hypothesis that a smartphone-based application could detect an irregular pulse from AF. METHODS: Seventy-six adults with persistent AF were consented for participation in our study. We obtained pulsatile time series recordings before and after cardioversion using an iPhone 4S camera. A novel smartphone application conducted real-time pulse analysis using 2 statistical methods: root mean square of successive RR difference (RMSSD/mean) and Shannon entropy (ShE). We examined the sensitivity, specificity, and predictive accuracy of both algorithms using the 12-lead electrocardiogram as the gold standard. RESULTS: RMSDD/mean and ShE were higher in participants in AF than in those with sinus rhythm. The 2 methods were inversely related to AF in regression models adjusting for key factors including heart rate and blood pressure (beta coefficients per SD increment in RMSDD/mean and ShE were-0.20 and-0.35; P<.001). An algorithm combining the 2 statistical methods demonstrated excellent sensitivity (0.962), specificity (0.975), and accuracy (0.968) for beat-to-beat discrimination of an irregular pulse during AF from sinus rhythm. CONCLUSIONS: In a prospectively recruited cohort of 76 participants undergoing cardioversion for AF, we found that a novel algorithm analyzing signals recorded using an iPhone 4S

accurately distinguished pulse recordings during AF from sinus rhythm. Data are needed to explore the performance and acceptability of smartphone-based applications for AF detection

McMinn, David; Oreskovic, Nicolas M.; Aitkenhead, Matt J.; Johnston, Derek W.; Murtagh, Shemane; Rowe, David A. (2014):

The physical environment and health-enhancing activity during the school commute: global positioning system, geographical information systems and accelerometry.

In: *Geospat Health* 8 (2), S. 569–572.

Abstract:

Active school travel is in decline. An understanding of the potential determinants of health-enhancing physical activity during the school commute may help to inform interventions aimed at reversing these trends. The purpose of this study was to identify the physical environmental factors associated with health-enhancing physical activity during the school commute. Data were collected in 2009 on 166 children commuting home from school in Scotland. Data on location and physical activity were measured using global positioning systems (GPS) and accelerometers, and mapped using geographical information systems (GIS). Multi-level logistic regression models accounting for repeated observations within participants were used to test for associations between each land-use category (road/track/path, other man-made, greenspace, other natural) and moderate-to-vigorous physical activity (MVPA). Thirty-nine children provided 2,782 matched data points. Over one third (37.1%) of children's school commute time was spent in MVPA. Children commuted approximately equal amounts of time via natural and man-made land-uses (50.2% and 49.8% respectively). Commuting via road/track/path was associated with increased likelihood of MVPA (Exp(B)=1.23, P <0.05), but this association was not seen for commuting via other manmade land-uses. No association was noted between greenspace use and MVPA, but travelling via other natural land-uses was associated with lower odds of MVPA (Exp(B)=0.32, P <0.05). Children spend equal amounts of time commuting to school via man-made and natural land-uses, yet man-made transportation route infrastructure appears to provide greater opportunities for achieving health-enhancing physical activity levels.

McMurdo, M. E.; Argo, I.; Crombie, I. K.; Feng, Z.; Sniehotta, F. F.; Vadiveloo, T. et al. (2012):

Social, environmental and psychological factors associated with objective physical activity levels in the over 65s.

In: *PLoS One* 7 (2), S. e31878. DOI: 10.1371/journal.pone.0031878.

Abstract:

OBJECTIVE: To assess physical activity levels objectively using accelerometers in community dwelling over 65 s and to examine associations with health, social, environmental and psychological factors. DESIGN: Cross sectional survey. SETTING: 17 general practices in Scotland, United Kingdom. PARTICIPANTS: Random sampling of over 65 s registered with the practices in four strata young-old (65-80 years), old-old (over 80 years), more affluent and less affluent groups. MAIN OUTCOME MEASURES: Accelerometry counts of activity per day. Associations between activity and Theory of Planned Behaviour variables, the physical environment, health, wellbeing and demographic variables were examined with multiple regression analysis and multilevel modelling. RESULTS: 547 older people (mean (SD) age 79(8) years, 54% female) were analysed representing 94% of those surveyed. Accelerometry counts were highest in the affluent younger group, followed by the deprived younger group, with lowest levels in the deprived over 80 s group. Multiple regression analysis showed that lower age, higher perceived behavioural control, the physical function subscale of SF-36, and having someone nearby to turn to were all independently associated with higher physical activity levels (R(2) = 0.32). In addition, hours of sunshine were independently significantly associated with greater physical activity in a multilevel model. CONCLUSIONS: Other than age and hours of sunlight, the variables identified are modifiable, and provide a strong basis for the future development of novel multidimensional interventions aimed at increasing activity participation in later life

McMurdo, Marion E. T.; Sugden, Jacqui; Argo, Ishbel; Boyle, Paul; Johnston, Derek W.; Sniehotta, Falko F.; Donnan, Peter T. (2010):

Do pedometers increase physical activity in sedentary older women? A randomized controlled trial.

In: *J Am Geriatr Soc* 58 (11), S. 2099–2106.

Abstract:

OBJECTIVES:

To determine the effectiveness of a behavior change intervention (BCI) with or without a pedometer in increasing physical activity in sedentary older women.

DESIGN:

Prospective randomized controlled trial.

SETTING:

Primary care, City of Dundee, Scotland.

PARTICIPANTS:

Two hundred four sedentary women aged 70 and older.

INTERVENTIONS:

Six months of BCI, BCI plus pedometer (pedometer plus), or usual care.

MEASUREMENTS:

PRIMARY OUTCOME:

change in daily activity counts measured by accelerometry.

SECONDARY OUTCOMES:

Short Physical Performance Battery, health-related quality of life, depression and anxiety, falls, and National Health Service resource use.

RESULTS:

One hundred seventy-nine of 204 (88%) women completed the 6-month trial. Withdrawals were highest from the BCI group (15/68) followed by the pedometer plus group (8/68) and then the control group (2/64). After adjustment for baseline differences, accelerometry counts increased significantly more in the BCI group at 3 months than in the control group (P = .002) and the pedometer plus group (P = .04). By 6 months, accelerometry counts in both intervention groups had fallen to levels that were no longer statistically significantly different from baseline. There were no significant changes in the secondary outcomes.

CONCLUSION:

The BCI was effective in objectively increasing physical activity in sedentary older women. Provision of a pedometer yielded no additional benefit in physical activity, but may have motivated participants to remain in the trial.

McMurray, Robert G.; Ward, Dianne S.; Elder, John P.; Lytle, Leslie A.; Strikmiller, Patricia K.; Baggett, Christopher D.; Young, Deborah R. (2008):

Do overweight girls overreport physical activity?

In: *American Journal of Health Behavior* 32 (5), S. 538.

Abstract:

OBJECTIVE:

To determine if overweight adolescent girls are more likely to overreport physical activity compared to normal-weight girls.

METHODS:

Participation in physical activities and perceived intensity of activities were assessed from the previous day physical activity recall (PDPAR) in 1021 girls aged 11-14 years old (37% overweight). Daily minutes of moderate to vigorous physical activity (MVPA) were measured using accelerometry.

RESULTS:

Girls in the "at-risk for overweight" and "overweight" categories had 17.7% and 19.4% fewer minutes of MVPA per block reported on the PDPAR compared to normal-weight girls ($P<0.05$).

CONCLUSIONS:

Overweight adolescent girls tend to overreport their total amount of physical activity.

McParlin, Catherine; Robson, Stephen C.; Tennant, Peter W. G.; Besson, Hervé; Rankin, Judith; Adamson, Ashley J. et al. (2010):

Objectively measured physical activity during pregnancy: a study in obese and overweight women.

In: *BMC pregnancy and childbirth* 10 (1), S. 76.

Abstract:

BACKGROUND:

Obese and overweight women may benefit from increased physical activity (PA) during pregnancy. There is limited published data describing objectively measured PA in such women.

METHODS:

A longitudinal observational study of PA intensity, type and duration using objective and subjective measurement methods. Fifty five pregnant women with booking body mass index (BMI) ≥ 25 kg/m2 were recruited from a hospital ultrasound clinic in North East England. 26 (47%) were nulliparous and 22 (40%) were obese (BMI ≥ 30 kg/m2). PA was measured by accelerometry and self report questionnaire at 13 weeks, 26 weeks and/or 36 weeks gestation. Outcome measures were daily duration of light, moderate or vigorous activity assessed by accelerometry; calculated overall PA energy expenditure, (PAEE), and PAEE within four domains of activity based on self report.

RESULTS:

At median 13 weeks gestation, women recorded a median 125 mins/day light activity and 35 mins/day moderate or vigorous activity (MVPA). 65% achieved the minimum recommended 30 mins/day MVPA. This proportion was maintained at 26 weeks (62%) and 36 weeks (71%). Women achieving more than 30 mins/day MVPA in the first trimester showed a significant reduction in duration of MVPA by the third trimester (11 mins/day, p = 0.003). Walking, swimming and floor exercises were the most commonly reported recreational activities but their contribution to estimated energy expenditure was small.

CONCLUSION:

Overweight and obese pregnant women can achieve and maintain recommended levels of PA throughout pregnancy. Interventions to promote PA should target changes in habitual activities at work and at home, and in particular walking.

McTavish, Fiona M.; Chih, Ming Yuan; Shah, Dhavan; Gustafson, David H. (2012):

How patients recovering from alcoholism use a smartphone intervention.

In: *Journal of Dual Diagnosis* 8 (4), S. 294–304. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31918-006%26site%3dehost-live;fmctavish@chess.wisc.edu.

Abstract:

Objective: Mobile technology has the potential to radically improve addiction treatment and continuing care by offering emotional and instrumental support anywhere and just in time. This is particularly important in addiction because timing is critical to preventing relapse. Although most experts consider alcoholism to be a chronic disease, providers do not typically offer ongoing support for relapse prevention after patients complete treatment, even though a central characteristic of alcoholism and other addictive behaviors is their chronically relapsing nature. A-CHESS is a smartphone-based system for preventing relapse to heavy drinking among people leaving active alcohol dependence treatment. A-CHESS is designed to improve competence, social relatedness, and motivation, the three tenets of self-determination theory. This paper reports on the relative impact and use of A-CHESS 4 months after patients entered the study and discusses implications of the results on treating addiction and chronic diseases generally. Methods: A total of 349 individuals with alcohol dependence leaving residential treatment were randomly assigned to either receive A-CHESS + Treatment as usual or treatment as usual (standard aftercare). Patients came from two treatment agencies, one in the Midwest and one in the Northeast. Patients assigned to A-CHESS received a smartphone for 8 months and were followed for 12. The authors analyzed use patterns during the first 4 months of use by those receiving A-CHESS. Results: Participants used A-CHESS heavily and sustained their use over time. Ninety-four percent of A-CHESS participants used the application during the first week after residential treatment. At week 16, almost 80% continued to access A-CHESS. Participants with alcohol and drug dependence showed higher levels of system use than those with alcohol dependence only. Participants with a mental health diagnosis had slightly lower levels of use at the end of the intervention period (week 16), although more than 70% still accessed the system. Conclusions: These findings illustrate that patients with alcohol dependence, alcohol and drug dependence, and mental health issues will use smartphone applications such as A-CHESS for ongoing support, resources, and information, thus extending patient care if given the opportunity. Further analysis is needed to determine whether sustained A-CHESS use improves outcomes. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Meegan, Sean P.; Goedereis, Eric A. (2006):

Life task appraisals, spouse involvement in strategies, and daily affect among short- and long-term married couples.

In: *Journal of Family Psychology* 20 (2), S. 319–327. DOI: 10.1037/0893-3200.20.2.319.

Abstract:

The purpose of this study was to examine predictors and consequences of spouses' involvement in each others' strategies for pursuing important personal goals called life tasks. Husbands and wives within 39 short- and long-term marriages described five life tasks and provided appraisals of whether each was shared with their spouse. Participants later completed 14 consecutive diary entries recording daily life task pursuit strategies, the extent of spouse involvement in each, and measures of positive and negative affect. Results indicated that interdependence in life task appraisals prospectively predicted greater spouse involvement, and greater spouse involvement was associated with more positive affect for that day. Life task appraisals may provide avenues for understanding couples' strategies for dealing with goals or stressors and how those strategies affect mood.

Meeus, Mira; van Eupen, Inge; Willems, Joke; Kos, Daphne; Nijs, Jo (2011):

Is the International Physical Activity Questionnaire-Short Form (IPAQ-SF) valid for assessing physical activity in chronic fatigue syndrome?

In: *Disability and rehabilitation* 33 (1), S. 9–16.

Abstract:

PURPOSE:

To evaluate the criterion validity and internal consistency of the International Physical Activity Questionnaire-short form (IPAQ-sf) in Chronic Fatigue Syndrome (CFS) patients.

METHOD:

Fifty-six CFS patients completed the IPAQ-sf after they wore a tri-axial accelerometer and filled out activity diaries during 1 week. Spearman rank correlation coefficients and Cronbach's Alpha were calculated.

RESULTS:

The IPAQ-sf correlated significantly with the energy expenditure and Metabolic Equivalents (METs) minutes spent moderately to vigorously active following the activity diary and accelerometer. These correlation coefficients were however low (r varying between 0.282 and 0.426) and rather irrelevant, since CFS patients hardly reach moderate or vigorous activity levels. Internal consistency between the three subitems used for the total score of the IPAQ-sf was 0.337.

CONCLUSION:

The observed associations between the IPAQ-sf data and the data obtained from the accelerometer (gold standard) and the diaries were too low to be in support of the use of the IPAQ-sf in patients with CFS. The IPAQ-sf does not seem an appropriate tool to assess physical activity in CFS patients. Further study is required to seek for a valid, practical and affordable tool.

Mehl, Matthias R.; Conner, Tamlin S. (2012):

Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-000%26site%3dehost-live.

Abstract:

(from the jacket) Laboratory-based experimental methods historically have been the strength and pride of psychology and related disciplines. Yet a comprehensive science of behavior also requires the study of humans in real life. Bringing together leading investigators, this book reviews the breadth of current approaches for studying how people think, feel, and behave in everyday environments. The Handbook is organized in four parts. Part I covers the theoretical and methodological foundations of conducting daily life research. Part II provides guidance for designing a high-quality study and selecting and implementing appropriate methods. The chapters describe experience sampling methods, diary methods, ambulatory physiological measures, and other tools—including recording technologies and computerized approaches—that allow repeated, real-time measurement in natural settings. Part III focuses on techniques for analyzing intensive data from daily life, featuring practical discussions of

power analysis, psychometrics, data cleaning, multilevel modeling, time series analysis, and other topics. Part IV reviews how methods for studying daily life have been employed in different subfields and research areas, such as the study of emotion, close relationships, personality, health, development, psychopathology, and mental health treatment. Specific advantages and challenges inherent to using the methods in each area are discussed. Timely and authoritative, this handbook meets a key need for research psychologists and for graduate students in social/personality, health, developmental, industrial/organizational, and clinical psychology. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (jacket)

Mehl, Matthias R.; Gosling, Samuel D.; Pennebaker, James W. (2006):

Personality in its natural habitat: manifestations and implicit folk theories of personality in daily life.

In: *Journal of Personality and Social Psychology* 90 (5), S. 862–877. DOI: 10.1037/0022-3514.90.5.862.

Abstract:

To examine the expression of personality in its natural habitat, the authors tracked 96 participants over 2 days using the Electronically Activated Recorder (EAR), which samples snippets of ambient sounds in participants' immediate environments. Participants' Big Five scores were correlated with EAR-derived information on their daily social interactions, locations, activities, moods, and language use; these quotidian manifestations were generally consistent with the trait definitions and (except for Openness) often gender specific. To identify implicit folk theories about daily manifestations of personality, the authors correlated the EAR-derived information with impressions of participants based on their EAR sounds; judges' implicit folk theories were generally accurate (especially for Extraversion) and also partially gender specific. The findings point to the importance of naturalistic observation studies on how personality is expressed and perceived in the natural stream of everyday behavior.

Mehl, Matthias R.; Robbins, Megan L. (2012):

Naturalistic observation sampling: The Electronically Activated Recorder (EAR). In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 176–192. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-010%26site%3dehost-live.

Abstract:

(from the chapter) The Electronically Activated Recorder (EAR) is a portable audio recorder that is set to record periodically brief snippets of ambient sounds. Participants attach it to their belts or carry it in a purse-like bag while going about their daily lives. In tracking moment-to-moment ambient sounds around the participants, the EAR yields acoustic logs of their days as they naturally unfold. In sampling only a fraction of the time, instead of recording continuously, it makes large-scale naturalistic observation studies feasible. Our purpose in this chapter is to provide a review and discussion of this still relatively young naturalistic observational sampling method. Within the research methods for studying daily life, the EAR clearly occupies a methodological niche; it is not for everyone and everything. It is highly labor-intensive and thus requires careful deliberation as to when it should be used instead of more economic methods (e.g., experience sampling, daily diaries). However, in providing ecological behavioral measures that are independent of self-report and often beyond what self-report can capture, it can yield valuable findings that are difficult to obtain otherwise and support the field in the mission gradually to "put a bit more behavior back into the science of behavior" (Baumeister, Vohs, & Funder, 2007). (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Meininger, Janet C.; Gallagher, Martina R.; Eissa, Mona A.; Nguyen, Thong Q.; Chan, Wenyaw (2014):

Sleep Duration and Its Association With Ambulatory Blood Pressure in a School-Based, Diverse Sample of Adolescents.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpt297.

Abstract:

BACKGROUND: Evidence is accumulating that sleep duration is related to blood pressure (BP) and hypertensive status, but the strength of the association varies by age, and findings are inconsistent for adolescents. This cross-sectional study tested the hypothesis that sleep duration, both during the night and during naps, would be negatively associated with ambulatory systolic BP (SBP) and diastolic BP (DBP) measured over 24 hours in adolescents. METHODS: In this ethnically diverse (37% non-Hispanic black, 31% Hispanic, 29% non-Hispanic white, 3% other), school-based sample of 366 adolescents aged 11-16 years, ambulatory BP was measured every 30 minutes for 24 hours on a school day; actigraphy was used to measure sleep duration. Covariables included demographic factors, anthropometric indices, physical activity, and position and location at the time of each BP measurement. Mixed models were used to test day and night sleep duration as predictors of 24-hour SBP and DBP, controlling for covariables. RESULTS: The mean sleep duration was 6.83 (SD = 1.36) hours at night, and 7.23 (SD = 1.67) hours over 24 hours. Controlling for duration of sleep during the day and covariables, each additional hour of nighttime sleep was associated with lower SBP (-0.57; P < 0.0001); controlling for nighttime sleep duration and covariables, each additional hour of daytime sleep was associated with lower SBP (-0.73; P < 0.001) and lower DBP (-0.50; P < 0.001). CONCLUSIONS: Longer sleep duration was significantly associated with lower ambulatory SBP and DBP in adolescents. The findings have potential implications for cardiovascular health in this age group.

Mellone, S.; Tacconi, C.; Schwickert, L.; Klenk, J.; Becker, C.; Chiari, L. (2012):

Smartphone-based solutions for fall detection and prevention: the FARSEEING approach.

In: *Z.Gerontol.Geriatr.* 45 (8), S. 722–727. DOI: 10.1007/s00391-012-0404-5.

Abstract:

Falls are not an inevitable consequence of aging. The risk and rate of falls can be reduced. Recent improvements in smartphone technology enable implementation of a wide variety of services and applications, thus making the smartphone more of a digital companion than simply a communication tool. This paper presents the results obtained by the FARSEEING project where smartphones are one example of intervention in a population-based scenario. The applications developed take advantage of the smartphone-embedded inertial sensors and require that subjects wear the smartphone by means of a waist belt. The uFall Android application has been developed for monitoring the user's motor activities at home. The application does not require any direct interaction with the user and it is also capable of running a real-time fall-detection algorithm. uTUG is a stand-alone application for instrumenting the Timed Up and Go test, which is a test often included in fall risk assessment protocols. The application acts like a pocket-sized motion laboratory, since it is capable not only of recording the trial but also of processing the data and immediately displaying the results. uTUG is designed to be self-administrable at home

Melton, Bridget F.; Bigham, Lauren E.; Bland, Helen W. (2013):

The feasibility of using video journaling to collect ecological momentary assessment data: Application to health behavior change interventions.

In: *Journal of Computing in Higher Education*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-02888-001%26site%3dehost-live;bmelton@georgiasouthern.edu.

Abstract:

The purpose of this research was to evaluate the feasibility of an ecological momentary assessment (EMA) technique in a health behavior change intervention offered within university general health courses. A six-week health behavior change project was used with two groups: video journaling and traditional (pencil and paper) group. Research methodology employed was a quantitative, quasi-experimental, control and experimental group posttest comparison design. Stage of change data and program satisfaction surveys were collected from participants at a midsized southeastern university (n = 72; 36 video and 36 traditional). Participants were selected through non-probability, purposive sampling. Upon completion of the behavior change intervention 88.9 % (N = 32) of video journaling participants reported being in either the action or maintenance stage of change compared to 63.9 % (N = 23) of the traditional group. Significant difference was found between the video journaling and traditional groups in levels of satisfaction with the program (M = 3.96, SE = 0.79; M = 3.53, SE = .53 respectively; t = −2.74, p < 0.05). EMA techniques using video journaling to aid behavior change interventions among late adolescence showed promise with further research needed to focus on long-term effects of such interventions.

Memari, A. H.; Ghaheri, B.; Ziaee, V.; Kordi, R.; Hafizi, S.; Moshayedi, P. (2012):

Physical activity in children and adolescents with autism assessed by triaxial accelerometry.

In: *Pediatr.Obes.* (2047-6302 (Linking)). DOI: 10.1111/j.2047-6310.2012.00101.x.

Abstract:

What is already known about this subject Individuals with disabilities are more likely to be sedentary compared to the general population. Individuals with ASD show several impairments in motor and physical functioning. Lack of opportunity is the primary factor that brings minimal physical activity to children with ASD. What this study adds There was a substantial reduction in level of PA across the adolescent years in ASD. A decline in PA level and opportunities at school can contribute to a reduction in individual's total PA in ASD. Household structure, sedentary activities, comorbidities and obesity are associated with PA level in children and adolescents with ASD. OBJECTIVE: This study aimed to examine physical activity (PA) patterns in children with autism spectrum disorder (ASD) as well as to address PA determinant factors by employing triaxial accelerometry. METHODS: In a school-based cross-sectional study of 80 children and adolescents with ASD (mean = 9.6, standard deviation = 1.8), we investigated demographics, children's behavioural and clinical profile, and their PA data as objectively measured using an Actigraph GT3X on the right hip for seven consecutive days. All activity measures were expressed as counts per minute (c.p.m.). RESULTS: There was a substantial reduction in activity across the adolescent years in ASD. Girls were significantly less active than boys with ASD. Participants were remarkably less active in school compared to after-school, and there was a PA decline during weekdays compared to weekends, which was not significant. Household structure, sedentary pursuits, comorbidities and obesity were identified as other determinants of PA in children with ASD. CONCLUSIONS: Given the limited objective assessment of PA in children with ASD, our findings stressed the need for improving PA programmes, particularly for girls and older children with ASD. This study also provided important information for counselling clinicians, families and school policy-makers about health issues in ASD

Mena, L. J.; Maestre, G. E.; Hansen, T. W.; Thijs, L.; Liu, Y.; Boggia, J. et al. (2013):

How Many Measurements Are Needed to Estimate Blood Pressure Variability Without Loss of Prognostic Information?

In: *Am J Hypertens* (0895-7061 (Linking)). DOI: 10.1093/ajh/hpt142.

Abstract:

BACKGROUND: Average real variability (ARV) is a recently proposed index for short-term blood pressure (BP) variability. We aimed to determine the minimum number of BP readings required to compute ARV without loss of prognostic information. METHODS: ARV was calculated from a discovery dataset that included 24-hour ambulatory BP measurements for 1,254 residents (mean age = 56.6 years; 43.5% women) of Copenhagen, Denmark. Concordance between ARV from full (>/=80 BP readings) and randomly reduced 24-hour BP recordings was examined, as was prognostic accuracy. A test dataset that included 5,353 subjects (mean age = 54.0 years; 45.6% women) with at least 48 BP measurements from 11 randomly recruited population cohorts was used to validate the results. RESULTS: In the discovery dataset, a minimum of 48 BP readings allowed an accurate assessment of the association between cardiovascular risk and ARV. In the test dataset, over 10.2 years (median), 806 participants died (335 cardiovascular deaths, 206 cardiac deaths) and 696 experienced a major fatal or nonfatal cardiovascular event. Standardized multivariable-adjusted hazard ratios (HRs) were computed for associations between outcome and BP variability. Higher diastolic ARV in 24-hour ambulatory BP recordings predicted ($P < 0.01$) total (HR = 1.12), cardiovascular (HR = 1.19), and cardiac (HR = 1.19) mortality and fatal combined with nonfatal cerebrovascular events (HR = 1.16). Higher systolic ARV in 24-hour ambulatory BP recordings predicted ($P < 0.01$) total (HR = 1.12), cardiovascular (HR = 1.17), and cardiac (HR = 1.24) mortality. CONCLUSIONS: Forty-eight BP readings over 24 hours were observed to be adequate to compute ARV without meaningful loss of prognostic information

Mendoza, J. A.; McLeod, J.; Chen, T. A.; Nicklas, T. A.; Baranowski, T. (2012):

Convergent Validity of Preschool Children's Television Viewing Measures among Low-Income Latino Families: A Cross-Sectional Study.

In: *Child Obes* (2153-2168 (Linking)). DOI: 10.1089/chi.2012.0116.

Abstract:

Abstract Background: Television viewing is an important modifiable risk factor for childhood obesity. However, valid methods for measuring children's TV viewing are sparse and few studies have included Latinos, a population disproportionately affected by

obesity. The goal of this study was to test the reliability and convergent validity of four TV viewing measures among low-income Latino preschool children in the United States. Methods: Latino children (n=96) ages 3-5 years old were recruited from four Head Start centers in Houston, Texas (January, 2009, to June, 2010). TV viewing was measured concurrently over 7 days by four methods: (1) TV diaries (parent reported), (2) sedentary time (accelerometry), (3) TV Allowance (an electronic TV power meter), and (4) Ecological Momentary Assessment (EMA) on personal digital assistants (parent reported). This 7-day procedure was repeated 3-4 weeks later. Test-retest reliability was determined by intraclass correlations (ICC). Spearman correlations (due to nonnormal distributions) were used to determine convergent validity compared to the TV diary. Results: The TV diary had the highest test-retest reliability (ICC=0.82, p<0.001), followed by the TV Allowance (ICC=0.69, p<0.001), EMA (ICC=0.46, p<0.001), and accelerometry (ICC=0.36-0.38, p<0.01). The TV Allowance (r=0.45-0.55, p<0.001) and EMA (r=0.47-0.51, p<0.001) methods were significantly correlated with TV diaries. Accelerometer-determined sedentary minutes were not correlated with TV diaries. The TV Allowance and EMA methods were significantly correlated with each other (r=0.48-0.53, p<0.001). Conclusions: The TV diary is feasible and is the most reliable method for measuring US Latino preschool children's TV viewing

Mendozzi, Laura; Tronci, Federica; Garegnani, Massimo; Pugnetti, Luigi (2010):

Sleep disturbance and fatigue in mild relapsing remitting multiple sclerosis patients on chronic immunomodulant therapy: an actigraphic study.

In: *Multiple sclerosis (Houndmills, Basingstoke, England)* 16 (2), S. 238–247. DOI: 10.1177/1352458509354551.

Abstract:

BACKGROUND\r\nPoor sleep is common in MS and it contributes to fatigue. The beta interferons produce systemic effects which may not adapt and may induce fatigue.\r\nOBJECTIVE\r\nTo verify whether subjective poor sleep and fatigue during chronic therapy correspond to reduced sleep efficiency obtained by actigraphy at home.\r\nMETHODS\r\n42 ambulatory relapsing remitting MS patients with mild disability were monitored for at least 7 nights. Habitual sleep quality and fatigue were assessed with the MOS sleep measure and the Fatigue Severity Scale. Sleep logs provided daily sleep quality assessments during actigraphy at home. Patients were grouped according to their current treatment: no therapy, glatiramer acetate, IFNbeta 3 times a week, and IFNbeta once a week.\r\nRESULTS AND CONCLUSION\r\nSleep efficiency was reduced by an average of 5% in 2/3 of the nights following IFNbeta injections compared to the other nights, and daily sleep ratings correlated with actigraphy. Patients on glatiramer acetate also showed a lower sleep efficiency than patients without therapy. Actigraphy data were only modestly correlated with MOSsm scores, not with fatigue. Long term adaptation of sleep effects of immunomodulant agents is incomplete and needs to be considered in treatment planning and assessment of sleep in MS.

Meredith, Steven E.; Robinson, Andrew; Erb, Philip; Spieler, Claire A.; Klugman, Noah; Dutta, Prabal; Dallery, Jesse (2014):

A mobile-phone-based breath carbon monoxide meter to detect cigarette smoking.

In: *Nicotine Tob Res. DOI:* 10.1093/ntr/ntt275.

Abstract:

INTRODUCTION: Mobile phones hold considerable promise for delivering evidence-based smoking cessation interventions that require frequent and objective assessment of smoking status via breath carbon monoxide (Breath CO) measurement. However, there are currently no commercially available mobile-phone-based Breath CO meters. We developed a mobile-phone-based Breath CO meter prototype that attaches to and communicates with a smartphone through an audio port. The purpose of the current study was to evaluate the reliability and validity of Breath CO measures collected with the mobile meter prototype and assess the usability and acceptability of the meter. METHODS: Participants included 20 regular smokers (>/=10 cigarettes/day), 20 light smokers (<10 cigarettes/day), and 20 nonsmokers. Expired air samples were collected 4 times from each participant: twice with the mobile meter and twice with a commercially available Breath CO meter. RESULTS: Measures calculated by the mobile meter correlated strongly with measures calculated by the commercial meter (r = .96, p < .001). In addition, the mobile meter accurately distinguished between smokers and nonsmokers. The area under the receiver-operating characteristic curve for the mobile meter was 94.7%, and the meter had a combined sensitivity and specificity of 1.86 at an abstinence threshold of </=6 ppm. Responses on an acceptability survey indicated that smokers liked the meter and would be interested in using it during a quit attempt. CONCLUSIONS: The results of the current study suggest that a mobile-phone-based Breath CO meter is a reliable, valid, and acceptable device for distinguishing between smokers and nonsmokers.

Mermelstein, Robin; Hedeker, Donald; Weinstein, Sally (2010):

Ecological momentary assessment of mood-smoking relationships in adolescent smokers.

Abstract:

Experimentation with cigarette smoking remains a common phenomenon among adolescents, with 46.2% of high school seniors having tried smoking in 2007 (Johnston, O'Malley, Bachman, & Schulenberg, 2008). Not all adolescents who try cigarette smoking continue to smoke, however. In 2007, 12.3% of high school seniors smoked daily (Johnston et al., 2008). Although these prevalence rates represent a noticeable decline from peak lifetime prevalence rates of greater than 75% in the mid-1970s and 28.8% for daily smoking in 1977, they are still a cause of concern, considering both the enormous health consequences of smoking (U.S. Department of Health and Human Services, 1994) and the difficulty most adolescents have in stopping smoking once they escalate to more frequent levels (Mermelstein, 2003). A critical step in reducing the toll from smoking is preventing or interrupting the progression from those first cigarettes to continued use. Unfortunately, we know relatively little about the trajectories from first cigarette to more established smoking or about the factors that may influence this progression. Factors that influence progression may be quite distinct from those that influence first trials with cigarettes (Flay, Hu, & Richardson, 1998; Turner, Mermelstein, & Flay, 2004). For example, whereas social influence processes are well established predictors of initial experimentation, mood or emotional factors may play more of a role in progression beyond initial trials with smoking (Eissenberg & Balster, 2000; Turner et al., 2004). The goal of this chapter is to provide a more in-depth examination of the relationship between mood and smoking among adolescents who have initiated smoking. Toward this end, we highlight some essential methodological issues in understanding the mood-smoking relationship among adolescents, with a focus on the unique opportunities available to examine these relationships using ecological momentary assessment (EMA). (PsycINFO Database Record (c) 2015 APA, all rights reserved)

Merrilees, Christine E.; Goeke-Morey, Marcie; Cummings, E. Mark (2008):

Do event-contingent diaries about marital conflict change marital interactions?

In: *Behav Res Ther* 46 (2), S. 253–262.

Abstract:

Recent increase in the use of diary measures has prompted questions about the effect completing diaries has on participants. After extensive training, married couples completed event-contingent diaries about their couple disagreements for 15 days, focusing on emotional and behavioral aspects of marital conflict. Serving as a control for placebo effects of participation, the diary group (n=110) and a non-randomized control group (n=57) also completed brief daily checklists, with minimal training, over the reporting period. Before and after the reporting period, couples engaged in videotaped conflict-resolution tasks that were coded for conflict behaviors and emotions expressed. ANOVAs comparing groups indicated that completing event-contingent diaries for 15 days had no apparent effects on observed husbands' and wives' expressed emotions and behaviors during marital interactions. Parental reports on the brief daily diaries indicated minimal differences between the groups in global measures of marital functioning. At the same time, husbands' self-reports in the home indicated decreasing perceptions of marital quality over the recording period. Thus, although no differences in conflict tactics emerged based on observed marital interactions in the laboratory, certain self-reports of responding suggested potential reactivity effects.

Metcalf, Brad; Henley, William; Wilkin, Terence (2012):

Effectiveness of intervention on physical activity of children: Systematic review and meta-analysis of controlled trials with objectively measured outcomes (EarlyBird 54).

In: *BMJ: British Medical Journal* 345 (7876), S. 1–11. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-27786-001%26site%3dehost-live;brad.metcalf@nhs.net.

Abstract:

Objective: To determine whether, and to what extent, physical activity interventions affect the overall activity levels of children. Design: Systematic review and meta-analysis. Data sources: Electronic databases (Embase, Medline, PsycINFO, SPORTDiscus) and reference lists of included studies and of relevant review articles. Study selection: Design: randomised controlled trials or controlled clinical trials (cluster and individual) published in peer reviewed journals. Intervention: incorporated a component designed to increase the physical activity of children/adolescents and was at least four weeks in duration. Outcomes: measured whole day physical activity objectively with accelerometers either before or immediately after the end of the intervention period. Data analysis: Intervention effects (standardised mean differences) were calculated for total physical activity, time spent in

moderate or vigorous physical activity, or both for each study and pooled using a weighted random effects model. Meta-regression explored the heterogeneity of intervention effects in relation to study participants, design, intervention type, and methodological quality. Results: Thirty studies (involving 14 326 participants; 6153 with accelerometer measured physical activity) met the inclusion criteria and all were eligible for meta-analysis/meta-regression. The pooled intervention effect across all studies was small to negligible for total physical activity (standardised mean difference 0.12, 95% confidence interval 0.04 to 0.20; P < 0.01) and small for moderate or vigorous activity (0.16, 0.08 to 0.24; P < 0.001). Meta-regression indicated that the pooled intervention effect did not differ significantly between any of the subgroups (for example, for total physical activity, standardised mean differences were 0.07 for age < 10 years and 0.16 for ≥10 years, P = 0.19; 0.07 for body mass index across the entire range and 0.22 for exclusively overweight/obese children, P = 0.07; 0.12 for study duration ≤ 6 months and 0.09 for > 6 months, P = 0.71; 0.15 for home/family based intervention and 0.10 for school based intervention, P = 0.53; and 0.09 for higher quality studies and 0.14 for lower quality studies, P = 0.52). Conclusions: This review provides strong evidence that physical activity interventions have had only a small effect (approximately 4 minutes more walking or running per day) on children's overall activity levels. This finding may explain, in part, why such interventions have had limited success in reducing the body mass index or body fat of children. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Meuret, Alicia E.; Rosenfield, David; Wilhelm, Frank H.; Zhou, Enlu; Conrad, Ansgar; Ritz, Thomas; Roth, Walton T. (2011):

Do unexpected panic attacks occur spontaneously?

In: *Biological Psychiatry* 70 (10), S. 985–991. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-24621-016&site=ehost-live;ameuret@smu.edu.

Abstract:

Background: Spontaneous or unexpected panic attacks, per definition, occur "out of the blue," in the absence of cues or triggers. Accordingly, physiological arousal or instability should occur at the onset of, or during, the attack, but not preceding it. To test this hypothesis, we examined if points of significant autonomic changes preceded the onset of spontaneous panic attacks. Methods: Forty-three panic disorder patients underwent repeated 24-hour ambulatory monitoring. Thirteen natural panic attacks were recorded during 1960 hours of monitoring. Minute-by-minute epochs beginning 60 minutes before and continuing to 10 minutes after the onset of individual attacks were examined for respiration, heart rate, and skin conductance level. Measures were controlled for physical activity and vocalization and compared with time matched control periods within the same person. Results: Significant patterns of instability across a number of autonomic and respiratory variables were detected as early as 47 minutes before panic onset. The final minutes before onset were dominated by respiratory changes, with significant decreases in tidal volume followed by abrupt carbon dioxide partial pressure increases. Panic attack onset was characterized by heart rate and tidal volume increases and a drop in carbon dioxide partial pressure. Symptom report was consistent with these changes. Skin conductance levels were generally elevated in the hour before, and during, the attacks. Changes in the matched control periods were largely absent. Conclusions: Significant autonomic irregularities preceded the onset of attacks that were reported as abrupt and unexpected. The findings invite reconsideration of the current diagnostic distinction between uncued and cued panic attacks. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Meyer, Ursina; Schindler, Christian; Zahner, Lukas; Ernst, Dominique; Hebestreit, Helge; van Mechelen, Willem et al. (2014):

Long-term effect of a school-based physical activity program (KISS) on fitness and adiposity in children: a cluster-randomized controlled trial.

In: *PLoS One* 9 (2), S. e87929. DOI: 10.1371/journal.pone.0087929.

Abstract:

BACKGROUND: School-based intervention studies promoting a healthy lifestyle have shown favorable immediate health effects. However, there is a striking paucity on long-term follow-ups. The aim of this study was therefore to assess the 3 yr-follow-up of a cluster-randomized controlled school-based physical activity program over nine month with beneficial immediate effects on body fat, aerobic fitness and physical activity. METHODS AND FINDINGS: Initially, 28 classes from 15 elementary schools in Switzerland were grouped into an intervention (16 classes from 9 schools, n = 297 children) and a control arm (12 classes from 6 schools, n = 205 children) after stratification for grade (1st and 5th graders). Three years after the end of the multi-component physical activity program of nine months including daily physical education (i.e. two additional lessons per week on top of three regular lessons), short physical activity breaks during academic lessons, and daily physical activity homework, 289 (58%) participated in the follow-up. Primary outcome measures included body fat (sum of four skinfolds), aerobic fitness (shuttle run test), physical activity (accelerometry), and quality of life (questionnaires). After adjustment for grade, gender, baseline value and clustering within classes, children in the intervention arm compared with controls had a significantly higher average level of aerobic fitness at follow-up (0.373 z-score units [95%-CI: 0.157 to 0.59, p = 0.001] corresponding to a shift from the 50th to the 65th percentile between baseline and follow-up), while the immediate beneficial effects on the other primary outcomes were not

sustained. CONCLUSIONS: Apart from aerobic fitness, beneficial effects seen after one year were not maintained when the intervention was stopped. A continuous intervention seems necessary to maintain overall beneficial health effects as reached at the end of the intervention. TRIAL REGISTRATION: ControlledTrials.com ISRCTN15360785.

Meyer, Jotie; Tallir, Isabel B.; Soenens, Bart; Vansteenkiste, Maarten; Aelterman, Nathalie; van Den Berghe, Lynn et al. (2013):

Does Observed Controlling Teaching Behavior Relate to Students' Motivation in Physical Education?

In: *Journal of Educational Psychology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-34345-001%26site%3dehost-live.

Abstract:

Self-determination theory (SDT) has served as a theoretical framework for considerable research on teaching behavior and student motivation. The majority of studies have focused on need-supportive teaching behavior at the expense of need-thwarting teaching behavior (i.e., the "dark side" of teaching). The goal of the present study was to examine motivational dynamics involved in controlling teaching behavior in the context of physical education (PE). The majority of studies on observed teaching behavior were conducted in the laboratory. To augment the ecological validity in the present study, the behavior of PE teachers was videotaped to rate their controlling teaching behavior in a real-life setting. In a sample of 56 teachers and 702 secondary school students, controlling teaching behavior during a specific PE class, as observed by external raters, was related positively to students' perceived controlling teaching behavior and, through these perceptions, to controlled motivation and amotivation. These associations were obtained in spite of the low incidence of controlling teaching behaviors, suggesting that students may be quite sensitive to controlling teaching behaviors. No associations were found between observed controlling behavior and student autonomous motivation and students' perceptions of autonomy-supportive teaching. Practical implications and recommendations for PE teachers' professional development training are included. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Mezick, Elizabeth J.; Matthews, Karen A.; Hall, Martica; Kamarck, Thomas W.; Strollo, Patrick J.; Buysse, Daniel J. et al. (2010):

Low life purpose and high hostility are related to an attenuated decline in nocturnal blood pressure.

In: *Health Psychol* 29 (2), S. 196.

Abstract:

OBJECTIVE:

An attenuation of the nighttime decline in blood pressure (BP) predicts cardiovascular disease and cardiovascular-related mortality, beyond daytime BP levels. We investigated whether positive and negative psychological attributes were associated with sleep-wake BP ratios and examined sleep parameters as potential mediators of these relationships.

DESIGN:

Two hundred twenty-four participants (50% men; 43% Black; mean age = 60 years) underwent ambulatory BP monitoring for 2 days and nights. Self-reports of positive and negative psychological attributes were collected. In-home polysomnography was conducted for 2 nights, and a wrist actigraph was worn for 9 nights.

MAIN OUTCOME MEASURES:

Sleep-wake mean arterial pressure (MAP) ratios.

RESULTS:

After adjustment for demographics, body mass index, and hypertensive status, low life purpose and high hostility were associated with high sleep-wake MAP ratios. Depression, anxiety, and optimism were not related to MAP ratios. Sleep latency, fragmentation, architecture, and the apnea-hypopnea index were examined as potential mediators between psychological attributes and MAP ratios; only long sleep latency mediated the relationship between hostility and MAP ratios.

CONCLUSION:

Low life purpose and high hostility are associated with high sleep-wake BP ratios in Black and White adults, and these relationships are largely independent of sleep.

Michel, Gisela (2006):

A multi-level decomposition of variance in somatic symptom reporting in families with adolescent children.

In: *British Journal of Health Psychology* 11 (Pt 2), S. 345–355. DOI: 10.1348/135910705X53506.

Abstract:

OBJECTIVES\r\nThis paper examines four different levels of possible variation in symptom reporting: occasion, day, person and family.\r\nDESIGN\r\nIn order to rule out effects of retrospection, concurrent symptom reporting was assessed prospectively using a computer-assisted self-report method.\r\nMETHODS\r\nA decomposition of variance in symptom reporting was conducted using diary data from families with adolescent children. We used palmtop computers to assess concurrent somatic complaints from parents and children six times a day for seven consecutive days. In two separate studies, 314 and 254 participants from 96 and 77 families, respectively, participated. A generalized multilevel linear models approach was used to analyze the data. Symptom reports were modelled using a logistic response function, and random effects were allowed at the family, person and day level, with extra-binomial variation allowed for on the occasion level.\r\nRESULTS\r\nSubstantial variability was observed at the person, day and occasion level but not at the family level.\r\nCONCLUSIONS\r\nTo explain symptom reporting in normally healthy individuals, situational as well as person characteristics should be taken into account. Family characteristics, however, would not help to clarify symptom reporting in all family members.

Michielsen, M. E.; Selles, R. W.; Stam, H. J.; Ribbers, G. M.; Bussmann, J. B. (2012):

Quantifying Nonuse in Chronic Stroke Patients: A Study Into Paretic, Nonparetic, and Bimanual Upper-Limb Use in Daily Life.

In: *Arch.Phys.Med.Rehabil.* (0003-9993 (Linking)). DOI: 10.1016/j.apmr.2012.03.016.

Abstract:

Michielsen ME, Selles RW, Stam HJ, Ribbers GM, Bussmann JB. Quantifying nonuse in chronic stroke patients: a study into paretic, nonparetic, and bimanual upper-limb use in daily life. OBJECTIVE: To quantify uni- and bimanual upper-limb use in patients with chronic stroke in daily life compared with healthy controls. DESIGN: Cross-sectional observational study. SETTING: Outpatient rehabilitation center. PARTICIPANTS: Patients with chronic stroke (n=38) and healthy controls (n=18). INTERVENTION: Not applicable. MAIN OUTCOME MEASURES: Upper-limb use in daily life was measured with an accelerometry-based upper-limb activity monitor, an accelerometer based measurement device. Unimanual use of the paretic and the nonparetic side and bimanual upper-limb use were measured for a period of 24 hours. Outcomes were expressed in terms of both duration and intensity. RESULTS: Patients used their unaffected limb much more than their affected limb (5.3h vs 2.4h), while controls used both limbs a more equal amount of time (5.4h vs 5.1h). Patients used their paretic side less than controls used their nondominant side and their nonparetic side more than controls their dominant side. The intensity with which patients used their paretic side was lower than that with which controls used their nondominant side, while that of the nonparetic side was higher than that of the dominant side of controls. Finally, patients used their paretic side almost exclusively in bimanual activities. During bimanual activities, the intensity with which they used their affected side was much lower than that of the nonaffected side. CONCLUSION: Our data show considerable nonuse of the paretic side, both in duration and in intensity, and both during unimanual and bimanual activities in patients with chronic stroke. Patients do compensate for this with increased use of the nonparetic side

Middelweerd, Anouk; Mollee, Julia S.; van der Wal, C.; Brug, Johannes; Te Velde, Saskia J. (2014):

Apps to promote physical activity among adults: a review and content analysis.

In: *Int J Behav Nutr Phys Act* 11 (1), S. 97. DOI: 10.1186/s12966-014-0097-9.

Abstract:

BackgroundIn May 2013, the iTunes and Google Play stores contained 23,490 and 17,756 smartphone applications (apps) categorized as Health and Fitness, respectively. The quality of these apps, in terms of applying established health behavior change techniques, remains unclear.MethodsThe study sample was identified through systematic searches in iTunes and Google Play. Search terms were based on Boolean logic and included AND combinations for physical activity, healthy lifestyle, exercise, fitness, coach, assistant, motivation, and support. Sixty-four apps were downloaded, reviewed, and rated based on the taxonomy of behavior change techniques used in the interventions. Mean and ranges were calculated for the number of observed behavior change techniques. Using nonparametric tests, we compared the number of techniques observed in free and paid apps and in iTunes and Google Play.ResultsOn average, the reviewed apps included 5 behavior change techniques (range 2 inverted question mark8). Techniques such as self-monitoring, providing feedback on performance, and goal-setting were used most

frequently, whereas some techniques such as motivational interviewing, stress management, relapse prevention, self-talk, role models, and prompted barrier identification were not. No differences in the number of behavior change techniques between free and paid apps, or between the app stores were found.ConclusionsThe present study demonstrated that apps promoting physical activity applied an average of 5 out of 23 possible behavior change techniques. This number was not different for paid and free apps or between app stores. The most frequently used behavior change techniques in apps were similar to those most frequently used in other types of physical activity promotion interventions.

Miller, G. D.; Jakicic, J. M.; Rejeski, W. J.; Whit-Glover, M. C.; Lang, W.; Walkup, M. P.; Hodges, M. L. (2012):

Effect of Varying Accelerometry Criteria on Physical Activity: The Look AHEAD Study.

In: *Obesity (Silver.Spring)* (1930-7381 (Linking)). DOI: 10.1038/oby.2012.118.

Abstract:

The importance of physical activity in weight management is widely documented. Although accelerometers offer an objective measure of activity that provide a valuable tool for intervention research, considerations for processing these data need further development. This study tests the effects of using different criteria for accelerometry data reduction. Data were obtained from 2,240 overweight and obese individuals with type 2 diabetes mellitus (T2DM) from the Look AHEAD study, with 2,177 baseline accelerometer files used for analysis. Number, duration, and intensity of moderate (>/=3 metabolic equivalents (METS)) and vigorous (>/=6 METS) activity bouts were compared using various data reduction criteria. Daily wear time was identified as 1,440 min/day minus non-wear time. Comparisons of physical activity patterns for non-wear time (using either 20, 30, or 60 min of continuous zeros), minimal daily wear time (8, 10, and 12 h), number of days with available data (4, 5, and 6 days), weekdays vs. weekends, and 1- or 2-min time interruptions in an activity bout were performed. In this mostly obese population with T2DM (BMI = 36.4 kg/m(2); mean age = 59.0 years), there were minimal differences in physical activity patterns using the different methods of data reduction. Altering criteria led to differences in the number of available data (sample size) meeting specific criteria. Although our results are likely directly applicable only to obese individuals with T2DM, an understudied population with regards to physical activity, the systematic analysis for data reduction employed can be more generalizable and provide guidance in this area in the absence of standard procedures

Miller, Megan A.; Rothenberger, Scott D.; Hasler, Brant P.; Donofry, Shannon D.; Wong, Patricia M.; Manuck, Stephen B. et al. (2014):

Chronotype predicts positive affect rhythms measured by ecological momentary assessment.

In: *Chronobiol Int*, S. 1–9. DOI: 10.3109/07420528.2014.983602.

Abstract:

Evening chronotype, a correlate of delayed circadian rhythms, is associated with depression. Altered positive affect (PA) rhythms may mediate the association between evening chronotype and depression severity. Consequently, a better understanding of the relationship between chronotype and PA may aid in understanding the etiology of depression. Recent studies have found that individuals with evening chronotype show delayed and blunted PA rhythms, although these studies are relatively limited in sample size, representativeness and number of daily affect measures. Further, published studies have not included how sleep timing changes on workday and non-workdays, or social jet lag (SJL) may contribute to the chronotype-PA rhythm link. Healthy non-depressed adults (n = 408) completed self-report affect and chronotype questionnaires. Subsequently, positive and negative affects were measured hourly while awake for at least two workdays and one non-workday by ecological momentary assessment (EMA). Sleep variables were collected via actigraphy and compared across chronotype groups. A cosinor variant of multilevel modeling was used to model individual and chronotype group rhythms and to calculate two variables: (1) amplitude of PA, or the absolute amount of daily variation from peak to trough during one period of the rhythm and (2) acrophase, or the time at which the peak amplitude of affect rhythms occurred. On workdays, individuals with evening chronotype had significantly lower PA amplitudes and later workday acrophase times than their morning type counterparts. In contrast to predictions, SJL was not found to be a mediator in the relationship between chronotype and PA rhythms. The association of chronotype and PA rhythms in healthy adults may suggest the importance of daily measurement of PA in depressed individuals and would be consistent with the hypothesis that evening chronotype may create vulnerability to depression via delayed and blunted PA rhythms.

Miller, Drew J.; Vachon, David D.; Lynam, Donald R. (2009):

Neuroticism, Negative Affect, and Negative Affect Instability: Establishing Convergent and Discriminant Validity Using Ecological Momentary Assessment.

In: *Personality and Individual Differences* 47 (8), S. 873–877. DOI: 10.1016/j.paid.2009.07.007.

Abstract:

Few investigations have examined the role of affective instability within a broad model of general personality functioning. The present study employed self-report and ecological momentary assessments (EMA) to examine the relations between self-reported Five-Factor Model Neuroticism, EMA average negative affect, and EMA negative affect instability. Results suggest that Neuroticism and negative affect instability are related yet distinct constructs, and that Neuroticism better represents average negative affect across time. Results also suggest that negative affect instability is related to low Agreeableness and specific externalizing facets of Neuroticism, such as Angry Hostility and Impulsiveness. The implications of these findings and potential areas for future research are discussed.

Mills, Jacqueline; Fuller-Tyszkiewicz, Matthew; Holmes, Millicent (2014):

State body dissatisfaction and social interactions: An experience sampling study.

In: *Psychology of Women Quarterly* 38 (4), S. 551–562. DOI: 10.1037/t06423-000;

Abstract:

To date, there has been limited empirical scrutiny of the correlates and consequences of day-to-day state body dissatisfaction fluctuations within naturalistic contexts. We used ecological momentary assessment (a form of naturalistic observation) to evaluate whether state body dissatisfaction was concurrently and/or prospectively associated with occurrence and quality of social interactions. Women (N = 121), aged 18 to 40, completed a brief trait-based survey and then nominated a 7-day period within which to receive seven text messages daily, at random intervals, prompting them to complete measures of body dissatisfaction at that moment. If they were currently or had recently engaged in social interactions, they were also asked to fill out questions rating the quality of these interactions (operationalized in terms of enjoyment of, and control in, the interaction). Findings suggest that the relationship between state body dissatisfaction and aspects of social interactions is complex and may vary over time. Cross-sectionally, state body dissatisfaction and social interaction quality were negatively associated. Prospectively, however, body dissatisfaction predicted subsequent avoidance of social interactions. Interestingly, when women chose to avoid social interactions, their body dissatisfaction worsened, yet when they did engage in social interactions, they reported improved body satisfaction. Importantly, the links between state body dissatisfaction and social interactions may be moderated by body mass index and trait body satisfaction levels. Potential mechanisms underlying the association between state body dissatisfaction and quality and quantity of social interactions are discussed, and future research avenues are proposed to further understand their inter-relation. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Mimura, Koki; Kishino, Hirohisa; Karino, Genta; Nitta, Etsuko; Senoo, Aya; Ikegami, Kentaro et al. (2014):

Potential of a smartphone as a stress-free sensor of daily human behaviour.

In: *Behav Brain Res. DOI:* 10.1016/j.bbr.2014.06.007.

Abstract:

Behaviour is one of the most powerful objective signals that connotes psychological functions regulated by neuronal network systems. This study searched for simple behaviours using smartphone sensors with three axes for measuring acceleration, angular speed and direction. We used quantitative analytic methodology of pattern recognition for work contexts, individual workers and seasonal effects in our own longitudinally recorded data. Our 13 laboratory members were involved in the care of common marmosets and domestic chicks, which lived in separate rooms. They attached a smartphone to their front waist-belts during feeding and cleaning in five care tasks. Behavioural characteristics such as speed, acceleration and azimuth, pitch, and roll angles were monitored. Afterwards, participants noted subjective scores of warmth sensation and work efficiency. The multivariate time series data were characterized by the subjective scores and environmental factors such as room temperature, season, and humidity, using the linear mixed model. In contrast to high-precision but stress-inducing sensors, the mobile sensors measuring daily behaviours allowed us to quantify the effects of the psychological states and environmental factors on the behavioural traits.

Min, Yul Ha; Lee, Jong Won; Shin, Yong-Wook; Jo, Min-Woo; Sohn, Guiyun; Lee, Jae-Ho et al. (2014):

Daily collection of self-reporting sleep disturbance data via a smartphone app in breast cancer patients receiving chemotherapy: a feasibility study.

In: *J Med Internet Res* 16 (5), S. e135. DOI: 10.2196/jmir.3421.

Abstract:

BACKGROUND: Improvements in mobile telecommunication technologies have enabled clinicians to collect patient-reported outcome (PRO) data more frequently, but there is as yet limited evidence regarding the frequency with which PRO data can be collected via smartphone applications (apps) in breast cancer patients receiving chemotherapy. OBJECTIVE: The primary objective of this study was to determine the feasibility of an app for sleep disturbance-related data collection from breast cancer patients receiving chemotherapy. A secondary objective was to identify the variables associated with better compliance in order to identify the optimal subgroups to include in future studies of smartphone-based interventions. METHODS: Between March 2013 and July 2013, patients who planned to receive neoadjuvant chemotherapy for breast cancer at Asan Medical Center who had access to a smartphone app were enrolled just before the start of their chemotherapy and asked to self-report their sleep patterns, anxiety severity, and mood status via a smartphone app on a daily basis during the 90-day study period. Push notifications were sent to participants daily at 9 am and 7 pm. Data regarding the patients' demographics, interval from enrollment to first self-report, baseline Beck's Depression Inventory (BDI) score, and health-related quality of life score (as assessed using the EuroQol Five Dimensional [EQ5D-3L] questionnaire) were collected to ascertain the factors associated with compliance with the self-reporting process. RESULTS: A total of 30 participants (mean age 45 years, SD 6; range 35-65 years) were analyzed in this study. In total, 2700 daily push notifications were sent to these 30 participants over the 90-day study period via their smartphones, resulting in the collection of 1215 self-reporting sleep-disturbance data items (overall compliance rate=45.0%, 1215/2700). The median value of individual patient-level reporting rates was 41.1% (range 6.7-95.6%). The longitudinal day-level compliance curve fell to 50.0% at day 34 and reached a nadir of 13.3% at day 90. The cumulative longitudinal compliance curve exhibited a steady decrease by about 50% at day 70 and continued to fall to 45% on day 90. Women without any form of employment exhibited the higher compliance rate. There was no association between any of the other patient characteristics (ie, demographics, and BDI and EQ5D-3L scores) and compliance. The mean individual patient-level reporting rate was higher for the subgroup with a 1-day lag time, defined as starting to self-report on the day immediately after enrollment, than for those with a lag of 2 or more days (51.6%, SD 24.0 and 29.6%, SD 25.3, respectively; P=.03). CONCLUSIONS: The 90-day longitudinal collection of daily self-reporting sleep-disturbance data via a smartphone app was found to be feasible. Further research should focus on how to sustain compliance with this self-reporting for a longer time and select subpopulations with higher rates of compliance for mobile health care.

Minami, Haruka (2013):

Relations among affect, abstinence motivation and confidence, and daily lapse risk among smokers trying to quit.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 74 (5-B(E)). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-99220-543%26site%3dehost-live.

Abstract:

Aims: This study prospectively tested the hypothesis that changes in momentary affect, abstinence motivation, and confidence would predict lapse risk over the next 12-48 hours using Ecological Momentary Assessment (EMA) data from smokers attempting to quit smoking. The moderating effects of high-risk contexts on relations between cognitions (motivation and confidence) and lapse risk were also tested. Method: 79 adult, daily smokers recorded their momentary affect, motivation to quit, abstinence confidence, and smoking behaviors in near real time with multiple EMA reports using electronic diaries post-quit. Results: Multilevel models indicated that increases in negative affect predicted greater lapse risk up to 12 hours, but not 24 hours later. Neither positive nor negative affect had significant effects on subsequent cognitions. High levels of motivation appeared to reduce increases in lapse risk that occur over hours. Momentary increases in confidence predicted greater lapse risk over 12 hours in high-risk situations, but not in the absence of potent smoking triggers. Conclusion: Momentary changes in negative affect, motivation, and confidence, during a quit attempt all had short-term effects on smoking lapse. Negative affect had short-lived effects on lapse risk, whereas high levels of motivation protected against the risk of lapsing that accumulates over hours. Contrary to expectations, an acute increase in confidence may increase vulnerability to lapse in the context of potent smoking triggers. Relations observed among affect, cognitions, and lapse seem to depend critically on the timing of assessments and the contexts in which the assessments occur. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Minami, Haruka; Tran, Lisa T.; McCarthy, Danielle E. (2014):

Using Ecological Measures of Smoking Trigger Exposure to Predict Smoking Cessation Milestones.

In: *Psychol Addict Behav. DOI:* 10.1037/adb0000017.

Abstract:

This study used ecological momentary assessment data from adult daily smokers attempting to quit smoking to assess relations between exposure to contextual risk factors and cessation failure, latency to a first smoking lapse, or progression from lapse to relapse (smoking 7 days in a row). Participants were adult, daily smokers enrolled in a randomized controlled clinical trial of bupropion SR and individual counseling who were followed to 1 year postquit. Participants reported exposure to high-risk contexts and behaviors, including being where cigarettes were available or smoking was permitted, being around others smoking in prospective, real-time assessment for 2 weeks pre- and 4 weeks postquit. Results showed that greater exposure to contextual risk factors during the prequit did not predict cessation failure. However, Cox regression survival analyses revealed that spending a greater proportion of time where cigarettes were easily available following at least 1 day of abstinence predicted shorter latency to a first lapse, even after controlling for baseline risk factors such as gender, nicotine dependence, depressive symptoms, and living with a smoker. Greater cigarette availability following a lapse was not associated with progression from lapse to relapse with or without baseline risk factors in the model. This suggests that postquit environmental risk factors, such as cigarette availability, increase lapse risk, and stable risk factors, such as living with smokers and higher baseline carbon monoxide level or depressive symptoms, remain potent predictors of progression to relapse. Real-time contextual risk assessments postquit predict lapse above and beyond stable, baseline risk factors. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Minami, Haruka; Yeh, Vivian M.; Bold, Krysten W.; Chapman, Gretchen B.; McCarthy, Danielle E. (2014):

Relations among affect, abstinence motivation and confidence, and daily smoking lapse risk.

In: *Psychol Addict Behav* 28 (2), S. 376–388. DOI: 10.1037/a0034445.

Abstract:

This study tested the hypothesis that changes in momentary affect, abstinence motivation, and confidence would predict lapse risk over the next 12-24 hr using Ecological Momentary Assessment (EMA) data from smokers attempting to quit smoking. One hundred and three adult, daily, treatment-seeking smokers recorded their momentary affect, motivation to quit, abstinence confidence, and smoking behaviors in near real time with multiple EMA reports per day using electronic diaries postquit. Multilevel models indicated that initial levels of negative affect were associated with smoking, even after controlling for earlier smoking status, and that short-term increases in negative affect predicted lapses up to 12, but not 24, hr later. Positive affect had significant effects on subsequent abstinence confidence, but not motivation to quit. High levels of motivation appeared to reduce increases in lapse risk that occur over hours although momentary changes in confidence did not predict lapse risk over 12 hr. Negative affect had short-lived effects on lapse risk, whereas higher levels of motivation protected against the risk of lapsing that accumulates over hours. An increase in positive affect was associated with greater confidence to quit, but such changes in confidence did not reduce short-term lapse risk, contrary to expectations. Relations observed among affect, cognitions, and lapse seem to depend critically on the timing of assessments. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Minassian, Arpi; Henry, Brook L.; Geyer, Mark A.; Paulus, Martin P.; Young, Jared W.; Perry, William (2010):

The quantitative assessment of motor activity in mania and schizophrenia.

In: *J Affect Disord* 120 (1-3), S. 200–206. DOI: 10.1016/j.jad.2009.04.018.

Abstract:

BACKGROUND\r\nIncreased motor activity is a cardinal feature of the mania of Bipolar Disorder (BD), and is thought to reflect dopaminergic dysregulation. Motor activity in BD has been studied almost exclusively with self-report and observer-rated scales, limiting the ability to objectively quantify this behavior. We used an ambulatory monitoring device to quantify motor activity in BD and schizophrenia (SCZ) patients in a novel exploratory paradigm, the human Behavioral Pattern Monitor (BPM).\r\nMETHOD\r\n28 patients in the manic phase of BD, 17 SCZ patients, and 21 nonpatient (NC) subjects were tested in the BPM, an unfamiliar room containing novel objects. Motor activity was measured with a wearable ambulatory monitoring device (LifeShirt).\r\nRESULTS\r\nManic BD patients exhibited higher levels of motor activity when exploring the novel environment than SCZ and NC groups. Motor activity showed some modest relationships with symptom ratings of mania and

psychosis and was not related to smoking or body mass index.\r\nLIMITATIONS\r\nAlthough motor activity did not appear to be impacted significantly by antipsychotic or mood-stabilizing medications, this was a naturalistic study and medications were not controlled, thus limiting conclusions about potential medication effects on motor activity.\r\nCONCLUSION\r\nManic BD patients exhibit a unique signature of motoric overactivity in a novel exploratory environment. The use of an objective method to quantify exploration and motor activity may help characterize the unique aspects of BD and, because it is amenable to translational research, may further the study of the biological and genetic bases of the disease.

Miner, Andrew G.; Glomb, Theresa M. (2010):

State mood, task performance, and behavior at work: A within-persons approach.

In: *Organizational Behavior and Human Decision Processes* 112 (1), S. 43–57.

Abstract:

We examine the intra-individual relationships between state mood and the primary components of the individual-level criterion space (task performance, organizational citizenship behavior, and work withdrawal) as they vary within the stream of work. Using experience-sampling methods, 67 individuals in a call center responded to surveys on palmtop computers at random intervals 4–5 times each day for 3 weeks (total N = 2329). These data were matched to objective task performance obtained from organizational call records (total N = 1191). Within-persons, periods of positive mood were associated with periods of improved task performance (as evidenced by shorter call time) and engaging in work withdrawal. Trait meta-mood moderated these relationships. Specifically, individuals who attended to their moods had a stronger relationship between mood and speed of task performance (call time) and individuals able to repair their mood cognitively evidenced a weaker relationship between mood and withdrawal. Implications and the use of within-persons designs are discussed.

Minutolo, Roberto; Borrelli, Silvio; Scigliano, Raffaele; Bellizzi, Vincenzo; Chiodini, Paolo; Cianciaruso, Bruno et al. (2007):

Prevalence and clinical correlates of white coat hypertension in chronic kidney disease.

In: *Nephrol Dial Transplant* 22 (8), S. 2217–2223.

Abstract:

BACKGROUND:

The role of white coat hypertension (WCH) in the poor control of blood pressure (BP) in chronic kidney disease (CKD) is ill defined.

METHODS:

We measured systolic clinical (CBP) and ambulatory blood pressure (ABP) in 290 consecutive patients with non-dialysis CKD [glomerular filtration rate (GFR) <60 ml/min/1.73 m(2)]. We defined normotension (NOR) if CBP and daytime ABP <130 mmHg, sustained hypertension (SH) when both BP >or=130 mmHg, WCH if only daytime ABP <130 mmHg, and masked hypertension (MH) when only CBP <130 mmHg.

RESULTS:

NOR patients were 15.5%, WCH 31.7%, SH 46.9% and MH 5.9%. Due to the high prevalence of WCH, achievement of BP target (<130 mmHg) was more than doubled by daytime ABP than CBP (47.2 vs 21.4%). WCH was characterized by prevalence of diabetes (31.5%), left ventricular hypertrophy (LVH; 50.0%) and CBP values (146 +/- 12 mmHg) lower than in SH (41.9%, 71.3% and 158 +/- 18 mmHg) but greater than in NOR (17.8%, 37.8% and 118 +/- 7 mmHg). Among patients with CBP >or=130 mmHg, the independent risk of having SH rather than WCH increased in the presence of higher CBP [Odds ration (OR) 1.61, 95% confidence intervals (CI) 1.29-2.02], LVH (OR 1.94, 95% CI 1.03-3.63) and proteinuria (OR 3.12, 95% CI 1.31-7.43). In the WCH group, 24 h, daytime and nighttime ABP were 118 +/- 7/68 +/- 8, 120 +/- 7/71 +/- 8 and 112 +/- 12/63 +/- 9 mmHg, respectively.

CONCLUSIONS:

In CKD, WCH is highly prevalent and can be predicted in the absence of higher CBP, LVH and proteinuria. In these patients, pursuing a low BP target may not be safe because of the risk of cardio-renal hypoperfusion especially at nighttime.

Miranda, Robert; MacKillop, James; Treloar, Hayley; Blanchard, Alexander; Tidey, Jennifer W.; Swift, Robert M. et al. (2014):

Biobehavioral mechanisms of topiramate's effects on alcohol use: an investigation pairing laboratory and ecological momentary assessments.

In: *Addict Biol. DOI:* 10.1111/adb.12192.

Abstract:

Topiramate reduces drinking, but little is known about the mechanisms that precipitate this effect. This double-blind randomized placebo-controlled study assessed the putative mechanisms by which topiramate reduces alcohol use among 96 adult non-treatment-seeking heavy drinkers in a laboratory-based alcohol cue reactivity assessment and in the natural environment using ecological momentary assessment methods. Topiramate reduced the quantity of alcohol heavy drinkers consumed on drinking days and reduced craving while participants were drinking but did not affect craving outside of drinking episodes in either the laboratory or in the natural environment. Topiramate did not alter the stimulant or sedative effects of alcohol ingestion during the ascending limb of the blood alcohol curve. A direct test of putative mechanisms of action using multilevel structural equation mediation models showed that topiramate reduced drinking indirectly by blunting alcohol-induced craving. These findings provide the first real-time prospective evidence that topiramate reduces drinking by reducing alcohol's priming effects on craving and highlight the importance of craving as an important treatment target of pharmacotherapy for alcoholism.

Miranda, Robert; Monti, Peter M.; Ray, Lara; Treloar, Hayley R.; Reynolds, Elizabeth K.; Ramirez, Jason et al. (2014):

Characterizing subjective responses to alcohol among adolescent problem drinkers.

In: *J Abnorm Psychol* 123 (1), S. 117–129. DOI: 10.1037/a0035328.

Abstract:

Theoretical models of alcoholism emphasize the acute reinforcing properties of alcohol as chief determinants of drinking, and animal research suggests adolescents are uniquely sensitive to these effects. Human studies of these phenomena, however, are virtually nonexistent. We used ecological momentary assessment methods to capture adolescents' subjective responses to alcohol in real time in their natural environments. Adolescent participants were 22 problem drinkers, ages 15 to 19 years (M = 18.3, SD = 0.09; 55% female; 55% alcohol dependent). Participants consumed alcohol on 38% of days during a 1-week monitoring period, with an average of 5 drinks per occasion. Momentary data revealed that adolescents experience decreased stimulation and increased sedation and "high" across the ascending limb of the blood alcohol curve. Notably, greater craving predicted higher volumes of subsequent alcohol consumption during the episode, whereas greater "high" attenuated use. To test for developmental differences in these effects, we pooled these data with data from a similarly ascertained sample of 36 adult heavy drinkers, ages 24 to 64 years (M = 38.1, SD = 11.8; 50% female; 61% alcohol dependent). Adolescents were more sensitive to the stimulant effects of alcohol than adults. This study provides novel data on how adolescent problem drinkers experience alcohol in their natural contexts and illustrates how these effects, which appear to differ from adult problem drinkers, confer liability for future drinking. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Miranda, R.; Ray, L.; Blanchard, A.; Reynolds, E. K.; Monti, P. M.; Chun, T. et al. (2013):

Effects of naltrexone on adolescent alcohol cue reactivity and sensitivity: an initial randomized trial.

In: *Addict.Biol.* (1355-6215 (Linking)). DOI: 10.1111/adb.12050.

Abstract:

Adolescent alcohol use is associated with myriad adverse consequences and contributes to the leading causes of mortality among youth. Despite the magnitude of this public health problem, evidenced-based treatment initiatives for alcohol use disorders in youth remain inadequate. Identifying promising pharmacological approaches may improve treatment options. Naltrexone is an opiate receptor antagonist that is efficacious for reducing drinking in adults by attenuating craving and the rewarding effects of alcohol. Implications of these findings for adolescents are unclear; however, given that randomized trials of naltrexone with youth are non-existent. We conducted a randomized, double-blinded, placebo-controlled cross-over study, comparing naltrexone (50 mg/daily) and placebo in 22 adolescent problem drinkers aged 15-19 years (M = 18.36, standard deviation = 0.95; 12 women). The primary outcome measures were alcohol use, subjective responses to alcohol consumption, and alcohol-cue-elicited craving assessed in the natural environment using ecological momentary assessment methods, and craving and physiological reactivity assessed using standard alcohol cue reactivity procedures. Results showed that naltrexone reduced the likelihood of drinking and heavy drinking (P's </= 0.03), blunted craving in the laboratory and in the natural environment (P's </= 0.04), and altered subjective responses to alcohol consumption (P's </= 0.01). Naltrexone was generally well tolerated by participants. This study provides the first experimentally controlled evidence that naltrexone reduces drinking

and craving, and alters subjective responses to alcohol in a sample of adolescent problem drinkers, and suggests larger clinical trials with long-term follow-ups are warranted

Mirani, Marco; Berra, Cesare; Finazzi, Silvia; Calvetta, Albania; Radaelli, Maria Grazia; Favareto, Flavia et al. (2010):

Inter-day glycemic variability assessed by continuous glucose monitoring in insulin-treated type 2 diabetes patients on hemodialysis.

In: *Diabetes technology & therapeutics* 12 (10), S. 749–753.

Abstract:

BACKGROUND:

Type 2 diabetes patients on chronic hemodialysis have a high prevalence of cardiovascular complications and often show a poor glycemic control. Single-spot glycemic measurements are not always meaningful, and the hemoglobin A1c (HbA1c) value does not reflect short-term variations in glucose metabolism in this patient category. Therefore, to better understand their metabolic balance, we studied a group of diabetes patients on hemodialysis by a continuous glucose monitoring (CGM) system.

METHODS:

Twelve insulin-treated type 2 diabetes patients on hemodialysis were studied by a microdialysis-based subcutaneous glucose sensor over a period of 2 days, including the dialysis day (HD) and the following inter-dialytic period ("free" day [FD]).

RESULTS:

The mean 24-h glycemic value, the mean amplitude of glucose excursions, and the SD of mean glucose were significantly higher in the HD than the FD (186 ± 50 vs. 154 ± 25 mg/dL, $P<0.05$; 75 ± 22 vs. 56 ± 15 mg/dL, $P<0.05$; and 57 ± 6 vs. 35 ± 11 mg/dL, $P<0.05$, respectively). Considering the 48-h recording, there was a direct correlation between the mean glucose concentration and the HbA1c ($r=0.47$, $P<0.05$), whereas no association was observed between the measures of glucose variability and HbA1c.

CONCLUSIONS:

Insulin-treated diabetes patients on hemodialysis showed different glucose profiles between the HD and the FD. In particular, in the HD they have had an increased glycemic variability, which may represent an adjunctive risk factor for cardiovascular complications. Therefore the use of a CGM system, as a means of assessing the measures of glycemic variability, could improve the management of insulin therapy in these patients.

Mitchell, John T.; Dennis, Michelle F.; English, Joseph S.; Dennis, Paul A.; Brightwood, Amy; Beckham, Jean C.; Kollins, Scott H. (2014):

Ecological Momentary Assessment of Antecedents and Consequences of Smoking in Adults with Attention-Deficit/Hyperactivity Disorder.

In: *Subst Use Misuse. DOI:* 10.3109/10826084.2014.912229.

Abstract:

The current study assessed antecedents and consequences of ad lib cigarette smoking in smokers diagnosed with attention-deficit/hyperactivity disorder (ADHD) using ecological momentary assessment (EMA). Adult smokers with ADHD (n = 17) completed 870 smoking and 622 nonsmoking electronic diary entries over a 7-day observation period of their naturalistic smoking behavior. Data collection occurred from 2011 to 2012. Generalized estimating equations indicated that ADHD smokers were more likely to smoke when urge to smoke, negative affect, boredom, stress, worry, and restlessness were elevated. In addition, participants were more likely to smoke in situations that elicited higher levels of nervousness and frustration. ADHD symptoms, in general, did not differ between smoking and nonsmoking contexts, though hyperactive-impulsive ADHD symptoms were elevated prior to smoking in frustrating situations. Additional situational antecedent variables were associated with smoking, including being in the presence of others smoking, being in a bar or restaurant, while outside, and while consuming caffeinated or alcoholic beverages. Participants also reported a significant improvement in urge to smoke, negative affect, stress, hunger, and ADHD symptoms after smoking a cigarette. Findings suggest certain contextual factors that may maintain ad lib cigarette smoking in smokers with ADHD and identify potential treatment targets in smoking cessation interventions for this at-risk group. Clinical implications and future research directions are discussed. Funding for this study was provided by the National Institute on Drug Abuse.

Mitchell, Katy; Gutierrez, Simran Bakshi; Sutton, Stacy; Morton, Stephanie; Morgenthaler, Andrea (2014):

Reliability and validity of goniometric iPhone applications for the assessment of active shoulder external rotation.

In: *Physiother Theory Pract. DOI:* 10.3109/09593985.2014.900593.

Abstract:

ABSTRACT Purpose/hypothesis: The purpose of this study was to determine the reliability and validity of two smartphone applications: (1) GetMyROM - inclinometery-based and (2) DrGoniometry - photo-based in the measurement of active shoulder external rotation (ER) as compared to standard goniometry (SG). Participants: Ninety-four Texas Woman's University Doctor of Physical Therapy students from the School of Physical Therapy - Houston campus, were recruited to participate in this study. Materials/methods: Two iPhone applications were compared to SG using both novice and experienced raters. Active shoulder ER range of motion was measured over two time periods in random order by blinded novice and experienced raters. Results: Intra-rater reliability using novice raters for the two applications ranged from an intraclass correlation coefficient (ICC) of 0.79 to 0.81 with SG at 0.82. Inter-rater reliability (novice/expert) for the two applications ranged from an ICC of 0.92 to 0.94 with SG at 0.91. Concurrent validity (when compared to SG) ranged from 0.93 to 0.94. There were no significant differences between the novice and experienced raters. Conclusion: Both applications were found to be reliable and comparable to SG. A photo-based application potentially offers a superior method of measurement as visualizing the landmarks may be simplified in this format and it provides a record of measurement. Clinical relevance: Further study using patient populations may find the two studied applications are useful as an adjunct for clinical practice.

Mitchell, E.; Monaghan, D.; O'Connor, N. E. (2013):

Classification of sporting activities using smartphone accelerometers.

In: *Sensors.(Basel)* 13 (4), S. 5317–5337. DOI: 10.3390/s130405317.

Abstract:

In this paper we present a framework that allows for the automatic identification of sporting activities using commonly available smartphones. We extract discriminative informational features from smartphone accelerometers using the Discrete Wavelet Transform (DWT). Despite the poor quality of their accelerometers, smartphones were used as capture devices due to their prevalence in today's society. Successful classification on this basis potentially makes the technology accessible to both elite and non-elite athletes. Extracted features are used to train different categories of classifiers. No one classifier family has a reportable direct advantage in activity classification problems to date; thus we examine classifiers from each of the most widely used classifier families. We investigate three classification approaches; a commonly used SVM-based approach, an optimized classification model and a fusion of classifiers. We also investigate the effect of changing several of the DWT input parameters, including mother wavelets, window lengths and DWT decomposition levels. During the course of this work we created a challenging sports activity analysis dataset, comprised of soccer and field-hockey activities. The average maximum F-measure accuracy of 87% was achieved using a fusion of classifiers, which was 6% better than a single classifier model and 23% better than a standard SVM approach

Mitoma, Hiroshi; Yoneyama, Mitsuru; Orimo, Satoshi (2010):

24-hour recording of parkinsonian gait using a portable gait rhythmogram.

In: *Internal Medicine* 49 (22), S. 2401–2408.

Abstract:

OBJECTIVE:

In the advanced stage of Parkinson's disease (PD), motor fluctuation is a frequent and a disabling problem. Despite its importance, motor fluctuation has received little scientific analysis probably due to limitation in objective assessment. Here, we focused on gait disorders to estimate motor fluctuation in daily activities.

PATIENTS AND METHODS:

Using a new device, the portable gait rhythmogram, we recorded gait rhythm continuously over 24 hours in 22 patients with PD and in 11 normal controls, for quantitative evaluation of motor fluctuation. The duration of one gait cycle was measured.

RESULTS:

Continuous 24-hour recording identified changes in gait rhythm, which correlated with fluctuation of PD symptoms. Different motor fluctuations were observed; a shift to a faster gait cycle was noted in patients with short-step walking, festination or freezing of gait, whereas a shift to a slower gait cycle was observed in patients with bradykinesia or instability.

CONCLUSION:

Characterization of motor fluctuation using this device could help in the selection of appropriate anti-PD medications.

Mitre, Naim; Lanningham-Foster, Lorraine; Foster, Randal; Levine, James A. (2009):

Pedometer accuracy for children: can we recommend them for our obese population?

In: *Pediatrics* 123 (1), S. e127-31. DOI: 10.1542/peds.2008-1908.

Abstract:

OBJECTIVE\r\nIn this study, we investigated the accuracy of measuring walking steps with commercially available pedometers and an accelerometer-based step-counter in normal and overweight children. Our primary hypothesis was that commercially available pedometers are not an accurate measure of walking steps in normal and overweight children while walking. Our secondary hypothesis was that the accelerometer-based step-counter provides an accurate measure of walking steps in normal and overweight children.\r\nMETHODS\r\nThirteen boys (11 +/- 1 years) and 14 girls (11 +/- 1 years) who ranged in BMI from 15 to 27 kg/m(2) (16 normal and 11 overweight or obese) were recruited. Each child wore 4 pedometers at the waist and 1 accelerometer-based step-counter on each ankle. Steps were manually counted and energy expenditure was measured while the child walked on the treadmill at 0.5, 1.0, 1.5, and 2.0 mph, each for 5 minutes. The step-counting devices were also validated while children walked on level ground at a self-selected pace.\r\nRESULTS\r\nFor the commercially available pedometers at the lowest speed of 0.5 mph, the percentage error approximated 100% for both of the pedometers. At the fastest speed of 2.0 mph, the percentage error approximated 60%. Conversely the accelerometer-based step-counter showed a percentage error of 24% +/- 22% (mean +/- SD) at 0.5 mph; however, as walking speed increased, the error declined to 5% +/- 8% at 1.0 mph, 4% +/- 5% at 1.5 mph, and 2% +/- 2% at 2.0 mph. The relationship between steps counted and walking energy expenditure showed good linear correlation.\r\nCONCLUSIONS\r\nCommercially available pedometers are less accurate for measuring walking and require discretion in their use for children. The accuracy of the accelerometer-based step-counter enables it to be used as a tool to assess and potentially promote physical activity in normal and overweight children.

Mizuike, Chihiro; Ohgi, Shohei; Morita, Satoru (2009):

Analysis of stroke patient walking dynamics using a tri-axial accelerometer.

In: *Gait Posture* 30 (1), S. 60–64. DOI: 10.1016/j.gaitpost.2009.02.017.

Abstract:

The purpose of this study was to describe the characteristics of stroke patient gait using the acceleration signals which were obtained during walking. Sixty-three stroke hemiplegic patients and 21 age-matched healthy elderly individuals took part in this study. A wireless tri-axial accelerometer, fixed to a belt at the level of the L3 spinous process, was used to measure trunk acceleration. Subjects were instructed to walk at a self-selected, comfortable walking speed. The acceleration signal was sampled at the rate of 200 Hz. Gait parameters and functional recovery tests were also evaluated. We analyzed the correlation between the gait parameters, functional recovery and acceleration. Acceleration was utilized as the root mean square (RMS), normalized RMS by velocity and average step length, as a measure of gait smoothness, and autocorrelation (AC) as a measure of stride similarity and regularity. The raw RMS and AC values of the stroke were significantly lower than the matched healthy elderly ($p<0.01$) in all axes. In contrast, the stroke patients' normalized RMS values were higher than the controls ($p<0.05$) in all axes. These results suggest that accelerometry gait parameters can discriminate between the stroke patients and the control group. The values of normalized RMS correlated with the smoothness or dynamics of the walking pattern, which reflects motor recovery and gait abilities. This study suggests that normalized RMS of accelerometer recordings from the trunk is valid in objectively measuring walking movements as an index of treatment outcome for patients in rehabilitation.

Mizumori, Takahiro; Inano, Shinji; Sumiya, Masakazu; Kobayashi, Yasuyoshi; Watamoto, Takao; Yatani, Hirofumi (2009):

Ambulatory bruxism recording system with sleep-stage analyzing function.

In: *Journal of prosthodontic research* 53 (3), S. 150–154. DOI: 10.1016/j.jpor.2009.01.001.

Abstract:

PURPOSE\r\nThe aim of this study was to develop an ambulatory bruxism recording system capable of sleep-stage analysis.\r\nMETHODS\r\nA portable EMG system was used to record masseter muscle activity. An EMG sensor was attached onto the masseter muscle belly at either side. EMG data were stored on a notebook type personal computer. A sound level meter was used to assess the sound level of bruxism. Sound level (dB) readings were taken every second and recorded on the same computer. A prototype of sleep sensor, a wristwatch-style biological signal sensor-recorder device, recorded and stored pulse wave, acceleration and temperature on a memory card. All stored data were transferred to a personal computer and analyzed.\r\nRESULTS\r\nThe whole system was transportable within a protective case and weighed approximately 5kg. Raw EMG signals were processed to derive integrated EMG data. TOSHIBA Sleep Analysis Program classified sleep-stages as awake, shallow sleep, deep sleep and REM based on the activity of the autonomic nervous system that was estimated from the fluctuations of pulse intervals. An EMG, sound level and sleep-stage analysis program was developed to analyze all data simultaneously. Using this program, the masseter muscle activity, sound level and sleep-stage could be quantified and correlated.\r\nCONCLUSION\r\nWe developed an ambulatory bruxism recording system that analyzes sleep-stage. We expect that this system will enable us to measure sleep bruxism activity in each sleep-stage on an electromyographical and auditory basis at the subject's home.

Modesti, P. A. (2013):

Season, temperature and blood pressure: A complex interaction.

In: *Eur.J Intern.Med* 24 (7), S. 604–607. DOI: 10.1016/j.ejim.2013.08.002.

Abstract:

An increase in blood pressure values measured during winter either in the office, at home, or at ambulatory blood pressure monitoring was consistently observed. Besides potentially contributing to increase the risk for cardiovascular events during the cold season, long term blood pressure variations can influence results of clinical trials, epidemiological surveys, and require personalized management of antihypertensive medications in the single patient. Those variations are often considered as an effect of climate, due to the close correlation observed in various countries and in different settings between temperature and blood pressure among children, adults, and specially the elderly. However, obtaining true measurements of exposition is a main problem when investigating the effects of climate on human health especially when the aim is to disentangle the effects of climate from those of seasonality. The aim of the present note is not to provide a complete review of the literature demonstrating the implications of seasonal blood pressure changes in the clinical and experimental setting; rather it is to consider methodological aspects useful to investigate the interaction between seasonality and temperature on blood pressure and to make health care providers aware of the implications of environmental factors on blood pressure in clinical and research settings

Moeller, Niels C.; Korsholm, Lars; Kristensen, Peter L.; Andersen, Lars B.; Wedderkopp, Niels; Froberg, Karsten (2008):

Unit-specific calibration of Actigraph accelerometers in a mechanical setup–Is it worth the effort? The effect on random output variation caused by technical inter-instrument variability in the laboratory and in the field.

In: *BMC medical research methodology* 8 (1), S. 19.

Abstract:

Background

Potentially, unit-specific in-vitro calibration of accelerometers could increase field data quality and study power. However, reduced inter-unit variability would only be important if random instrument variability contributes considerably to the total variation in field data. Therefore, the primary aim of this study was to calculate and apply unit-specific calibration factors in multiple accelerometers in order to examine the impact on random output variation caused by inter-instrument variability.

Methods

Instrument-specific calibration factors were estimated in 25 MTI- and 53 CSA accelerometers in a mechanical setup using four different settings varying in frequencies and/or amplitudes. Calibration effect was analysed by comparing raw and calibrated data after applying unit-specific calibration factors to data obtained during quality checks in a mechanical setup and to data collected during free living conditions.

Results

Calibration reduced inter-instrument variability considerably in the mechanical setup, both in the MTI instruments (raw SDbetween units = 195 counts*min-1 vs. calibrated SDbetween units = 65 counts*min-1) and in the CSA instruments (raw SDbetween units = 343 counts*min-1 vs. calibrated SDbetween units = 67 counts*min-1). However, the effect of applying the derived calibration to children's and adolescents' free living physical activity data did not alter the coefficient of variation (CV) (children: CVraw = 30.2% vs. CVcalibrated = 30.4%, adolescents: CVraw = 36.3% vs. CVcalibrated = 35.7%). High correlations (r = 0.99 & r = 0.98, respectively) were observed between raw and calibrated field data, and the proportion of the total variation caused by the MTI- and CSA monitor was estimated to be only 1.1% and 4.2%, respectively. Compared to the CSA instruments, a significantly increased (9.95%) mean acceleration response was observed post hoc in the batch of MTI instruments, in which a significantly reduced inter-instrumental reliability was observed over time.

Conclusion

The application of unit-specific calibration factors to data collected during free living conditions had no apparent effect on inter-instrument variability. In all probability, the effect of technical calibration was primarily attenuated in the field by other more dominant sources of variation. However, routine technical assessments are still very important for determining the acceleration responses in the batch of instruments being used and, if performed after every field use, for preventing decidedly broken instruments from being returned into the field repeatedly.

Moe-Nilssen, Rolf; Aaslund, Mona Kristin; Hodt-Billington, Caroline; Helbostad, Jorunn L. (2010):

Gait variability measures may represent different constructs.

In: *Gait Posture* 32 (1), S. 98–101. DOI: 10.1016/j.gaitpost.2010.03.019.

Abstract:

Many measures of gait variability have been reported, but the degree to which such measures are associated and thus represent a common construct is inconclusive. The purpose of this paper is to establish construct validity of commonly used spatio-temporal footfall variability and trunk variability measures taking into account the effect of measurement error. Twenty-three older individuals, aged 80+/-5 years performed four repeated walks at preferred speed, 0.97+/-0.16m/s. Gait data were obtained by an electronic walkway and by trunk accelerometry. Of initially 13 variability measures, five satisfied a reliability criterion of ICC> or =0.80 and were included in a subsequent construct validity analysis. Of these, step length variability and step time variability did not correlate significantly, while step length variability correlated closely with anteroposterior interstep trunk variability, and step time variability with vertical interstep trunk variability. Mediolateral interstep trunk variability did not correlate significantly with any of the other measures. This finding supports the notion that this measure may represent still a different aspect of variability. Different gait variability measures representing different constructs should be included in gait analysis to enhance our understanding of variability in gait.

Mogle, Jacqueline (2012):

Development of a daily diary method for the assessment of everyday cognitive failures.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (7-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99020-471&site=ehost-live.

Abstract:

Assessing how well an individual can meet real world cognitive demands is an important clinical outcome, particularly for older adults. Research examining real world cognitive functioning has used both lab-based tasks as well as questionnaires. However, these assessments were limited for a number of reasons. Lab-based tasks lack personal relevance which may affect the strategies and amount of effort individuals apply, reducing their ecological validity. Questionnaires are considered more ecologically valid but require individuals to recall cognitive failures over weeks and months depending on an individual's fallible cognitive ability to remember their mistakes over long periods of time. More recent research has attempted to develop methods for the daily reporting of cognitive failures but focus primarily on memory failures and ignore more general types of cognitive failures. These daily diary studies also failed to assess the impact of cognitive failures on daily functioning. The current study built on this previous research and introduced a set of assessment tools designed to capture missed activities, memory failures, and difficulties with attention and concentration that individuals experience on a daily basis as well as the impact of these events on daily functioning. One hundred thirty-one participants, 20 to 80 years old completed these assessments once each day for a period of seven days as well as a series of lab-based cognitive tasks. These data revealed that participants reported missing the most activities due to overload (e.g., running out of time) but found missing activities due to somatic complaints as the most bothersome. With regard to daily memory failures, participants reported equal numbers of retrospective and prospective memory failures but reported expecting more future consequences from prospective memory failures. Older participants reported experiencing more missed activities and memory failures but rated these events as less bothersome, less interfering, and as less likely to bring about future consequences compared with younger adults. Daily failures of attention and

concentration were captured using a Likert-style scale that assesses cognitive interference. This questionnaire exhibited adequate reliability and factor structure both between- and within-persons and tapped a construct separable from negative affect. Finally, there was evidence of weak relationships among self-reported cognitive failures and objective cognitive performance. Findings are discussed relative to previous research on self-reported cognitive failures, the importance of assessing other daily processes and their effects on daily cognitive failures, and the continued lack of relationship between self-reported cognitive failures and objective cognitive performance. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Mohr, Cynthia; Armeli, Stephen; Tennen, Howard; Todd, Michael (2010):

The complexities of modeling mood-drinking relationships: Lessons learned from daily process research.

Abstract:

Motivational models of alcohol consumption posit that adults drink to enhance positive experiences and to reduce the effects of negative experiences (Cooper, Frone, Russell, & Mudar, 1995; Cox & Klinger, 1988). The latter, referred to as drinking to cope (DTC) or tension-reduction drinking, is associated with alcohol-related problems (Cooper et al., 1995). Identifying and understanding DTC patterns is an important step in assessing and then preventing alcohol abuse. Although numerous cross-sectional or multiwave longitudinal studies have examined DTC, most have examined between-person associations of negative affect and drinking or have relied on individuals' recall of their motivations, the reliability of which is questionable (e.g., Ptacek, Smith, Espe, & Raffety, 1994; Todd, Armeli, Tennen, Carney, & Affleck, 2003). Yet implicit in DTC theory is a dynamic process whereby negative events and emotions rapidly unfold and yield bidirectional influences with alcohol consumption, such that negative experiences increase alcohol consumption, which in turn increases negative experiences. Daily process designs in which events, emotions, and consumption are assessed close to the time they occur are uniquely suited to capturing these processes. Specifically, such studies address the question, Do individuals drink relatively more (or less) when they experience increases in stress and negative moods? Daily process studies have documented within-person negative mood-drinking associations in adult and college student populations, although results are often contradictory across studies. In this chapter, we briefly review daily process methodology and research findings from these studies related to tension-reduction drinking. We further explore the complexities of mood-drinking relationships by probing alternative analytical approaches, along with a consideration of within- and between-person moderators that may explicate when and for whom negative moods enhance alcohol consumption. We conclude with a discussion of the benefits and limitations of daily process methodology in assessing negative mood-related drinking (NMRD). (PsycINFO Database Record (c) 2015 APA, all rights reserved)

Mojza, Eva J.; Lorenz, Christian; Sonnentag, Sabine; Binnewies, Carmen (2010):

Daily recovery experiences: the role of volunteer work during leisure time.

In: *Journal of Occupational Health Psychology* 15 (1), S. 60–74. DOI: 10.1037/a0017983.

Abstract:

This study focused on the role of volunteer work for daily recovery from work. In a 1-week diary study with 166 employees, we assessed the amount of time spent on volunteer work during leisure time, and the recovery facets of psychological detachment from work (i.e., mentally switching off from work), mastery experiences (i.e., pursuing challenging activities), and community experiences (i.e., cultivating relationships) every day before participants went to bed. Results from hierarchical linear modeling (n = 529 days) showed volunteer work during leisure time to be positively related to mastery experiences and community experiences suggesting volunteer work to contribute to successful recovery by creating new resources.

Moliner-Urdiales, D.; Ruiz, J. R.; Ortega, F. B.; Rey-Lopez, J. P.; Vicente-Rodriguez, G.; España-Romero, V. et al. (2009):

Association of objectively assessed physical activity with total and central body fat in Spanish adolescents; the HELENA Study.

In: *International journal of obesity (2005)* 33 (10), S. 1126–1135. DOI: 10.1038/ijo.2009.139.

Abstract:

OBJECTIVES\r\nTo examine the association of objectively assessed physical activity (PA) with markers of total and central body fat in adolescents, and to determine whether meeting the current PA recommendations (> or = 60 min day(-1) of at least moderate intensity PA) is associated with reduced levels of total and central body fat.\r\nSUBJECTS/METHODS\r\nA total of 365 Spanish adolescents aged 12.5-17.5 years participated in this cross-sectional study. PA was assessed by accelerometry and

expressed as average PA (counts per minute), and min day(-1) of light, moderate, moderate to vigorous (MVPA) and vigorous PA. MVPA was dichotomized into < 60 min day(-1) and > or = 60. Total body fat was measured by DXA, BodPod and the sum of six skinfolds. Central body fat was measured by DXA at three regions (R1, R2 and R3), and waist circumference.\r\nRESULTS\r\nAll markers of central body fat were negatively associated with vigorous PA (P < 0.01) after controlling for sex, age and pubertal status. Abdominal adiposity measured at R1, R2 and R3 was also negatively associated with MVPA (P < or = 0.001), and with average PA (P < 0.01). All markers of total body fat were negatively associated with vigorous PA (P < 0.01), MVPA (P < 0.01) and average PA (P < 0.05). Adolescents engaged on at least 60 min day(-1) MVPA presented lower levels of total (P < 0.05) and central body fat (P < or = 0.01).\r\nCONCLUSIONS\r\nThe results suggest that vigorous PA may have a greater effect on preventing obesity in adolescents than does PA of lower intensity, whereas both average PA and at least moderate PA may have an impact on total and central body fat in youth.

Mondorf, W.; Siegmund, B.; Mahnel, R.; Richter, H.; Westfeld, M.; Galler, A.; Pollmann, H. (2009):

Haemoassist--a hand-held electronic patient diary for haemophilia home care.

In: *Haemophilia* 15 (2), S. 464–472. DOI: 10.1111/j.1365-2516.2008.01941.x.

Abstract:

On-demand or prophylactic home-treatment is currently the treatment of choice for haemophilia patients. To allow physicians to monitor the amount of factor concentrates administered, the patients document each factor injection in a paper-diary. Nevertheless, because of the fact that most patients visit their physicians only two to four times a year, there could be considerable delay in detecting medication problems. The aim of this pilot study was to assess whether an electronic documentation tool could successfully replace traditional paper-diaries for haemophilia A patients and enable the physician to have a timely overview of the patient's treatment. An electronic, hand-held documentation tool, Haemoassist, was developed. In this study, patients using prophylaxis and on-demand therapies documented their factor consumption both electronically and on paper-diaries. Documentations were compared and descriptively evaluated. Patients also completed a survey to evaluate the feasibility and gather their opinions on the Haemoassist system. Ten patients from two haemophilia treatment centres in Germany submitted a total of 548 records via hand-held device during the observation period, from March 2006 to February 2007. Comparison of electronic and paper-based records showed differing responses among patients with some patients entering more electronic and some others more paper-based documentations. In the questionnaires on feasibility and usefulness of Haemoassist, three patients preferred the electronic tool, two patients wanted to continue using paper-based diaries, and one had no preference. The study shows that an electronic documentation system is feasible for haemophilia patients and provides the physician with the opportunity to more closely monitor patients. However, not all patients seem to be qualified for using an electronic tool, and the tool has to run reliably without major errors for ensuring reliability and acceptability. In the future, Haemoassist might support quality assurance in haemophilia treatment and improve guidance in the home-care setting.

Monk, Rebecca L.; Heim, Derek (2014):

A real-time examination of context effects on alcohol cognitions.

In: *Alcohol Clin Exp Res* 38 (9), S. 2454–2459. DOI: 10.1111/acer.12504.

Abstract:

BACKGROUND: This research used context aware experiential sampling to investigate the effect of contexts on in vivo alcohol-related outcome expectancies. METHODS: A time-stratified random sampling strategy was adopted to assess 72 students and young professionals at 5 daily intervals over the course of a week using a specifically designed smartphone application. This application recorded respondents' present situational and social contexts, alcohol consumption, and alcohol-related cognitions in real-time. RESULTS: In vivo social and environmental contexts and current alcohol consumption accounted for a significant proportion of variance in outcome expectancies. For instance, prompts which occurred while participants were situated in a pub, bar, or club and in a social group of friends were associated with heightened outcome expectancies in comparison with other settings. CONCLUSIONS: Alcohol-related expectancies do not appear to be static but instead demonstrate variation across social and environmental contexts. Modern technology can be usefully employed to provide a more ecologically valid means of measuring such beliefs.

Mönkemüller, K.; Neumann, H.; Fry, L. C.; Kolfenbach, S.; Malfertheiner, P. (2009):

Katheterfreie pH-Metrie mittels Bravo-Kapsel versus Standard-pH-Metrie bei Patienten mit nicht erosiver Refluxkrankheit (NERD).

In: *Zeitschrift für Gastroenterologie* 47 (4), S. 351–356. DOI: 10.1055/s-2008-1027945.

Abstract:

BACKGROUND\r\npH-monitoring is considered the gold standard for the detection of acid reflux in patients with non-erosive reflux disease (NERD). Preliminary pH studies performed over periods longer than 24 hours have shown that in up to one-third of subjects abnormal pH exposure is detected only on the second day of monitoring. Therefore, pH-monitoring during 48 hours may yield more information about pathological acid reflux in patients being investigated for NERD.\r\nAIM\r\nThe aim of this study was to compare conventional 24-hour pH-monitoring with the new wireless 48-hour Bravo pH-monitoring in patients with NERD.\r\nPATIENTS AND METHODS\r\nPatients with typical reflux symptoms, a positive reflux disease questionnaire and negative endoscopy (NERD) and without any form of acid suppressive therapy were included in this prospective study. The patients were divided into two groups: group A for conventional 24-hour pH-monitoring and group B for wireless 48-h Bravo pH-monitoring.\r\nRESULTS\r\n76 patients with a diagnosis of NERD based on a positive RDQ questionnaire and negative endoscopy were included. (47 woman, 29 men, median age: 49 years). 54 underwent conventional pH-monitoring and 22 underwent 48-h pH-monitoring with the new wireless BRAVO system. The overall incidence of acid reflux was 55 % in patients with NERD. Acid reflux was detected less frequently when using Bravo as compared to conventional pH-monitoring. In addition, the Bravo pH-metry showed a large day-to-day variability.\r\nCONCLUSIONS\r\nProlonged pH-monitoring over a period longer than 24 hours did not improve the detection of acid reflux in patients with NERD. Thus, it appears that the Bravo pH-metry does not offer an advantage over standard pH-metry in the daily clinical practice.

Moody, William E.; Tomlinson, Laurie A.; Ferro, Charles J.; Steeds, Richard P.; Mark, Patrick B.; Zehnder, Daniel et al. (2014):

Effect of A Reduction in glomerular filtration rate after NEphrectomy on arterial STiffness and central hemodynamics: rationale and design of the EARNEST study.

In: *Am Heart J* 167 (2), S. 141-149.e2. DOI: 10.1016/j.ahj.2013.10.024.

Abstract:

BACKGROUND: There is strong evidence of an association between chronic kidney disease (CKD) and cardiovascular disease. To date, however, proof that a reduction in glomerular filtration rate (GFR) is a causative factor in cardiovascular disease is lacking. Kidney donors comprise a highly screened population without risk factors such as diabetes and inflammation, which invariably confound the association between CKD and cardiovascular disease. There is strong evidence that increased arterial stiffness and left ventricular hypertrophy and fibrosis, rather than atherosclerotic disease, mediate the adverse cardiovascular effects of CKD. The expanding practice of live kidney donation provides a unique opportunity to study the cardiovascular effects of an isolated reduction in GFR in a prospective fashion. At the same time, the proposed study will address ongoing safety concerns that persist because most longitudinal outcome studies have been undertaken at single centers and compared donor cohorts with an inappropriately selected control group. HYPOTHESES: The reduction in GFR accompanying uninephrectomy causes (1) a pressure-independent increase in aortic stiffness (aortic pulse wave velocity) and (2) an increase in peripheral and central blood pressure. METHODS: This is a prospective, multicenter, longitudinal, parallel group study of 440 living kidney donors and 440 healthy controls. All controls will be eligible for living kidney donation using current UK transplant criteria. Investigations will be performed at baseline and repeated at 12 months in the first instance. These include measurement of arterial stiffness using applanation tonometry to determine pulse wave velocity and pulse wave analysis, office blood pressure, 24-hour ambulatory blood pressure monitoring, and a series of biomarkers for cardiovascular and bone mineral disease. CONCLUSIONS: These data will prove valuable by characterizing the direction of causality between cardiovascular and renal disease. This should help inform whether targeting reduced GFR alongside more traditional cardiovascular risk factors is warranted. In addition, this study will contribute important safety data on living kidney donors by providing a longitudinal assessment of well-validated surrogate markers of cardiovascular disease, namely, blood pressure and arterial stiffness. If any adverse effects are detected, these may be potentially reversed with the early introduction of targeted therapy. This should ensure that kidney donors do not come to long-term harm and thereby preserve the ongoing expansion of the living donor transplant program (NCT01769924).

Moon, Jun Hyung; Lee, Mee Yon; Moon, Nam Ju (2014):

Association between video display terminal use and dry eye disease in school children.

In: *J Pediatr Ophthalmol Strabismus* 51 (2), S. 87–92. DOI: 10.3928/01913913-20140128-01.

Abstract:

PURPOSE: To evaluate the risk factors of dry eye disease in school children associated with video display terminal use. METHODS: Two-hundred eighty-eight children were classified in either a dry eye disease group or control group according to the diagnostic criteria of dry eye disease. The results of ocular examinations, including best-corrected visual acuity, slit-lamp examination, and tear break-up time, were compared between groups. The results of questionnaires concerning video display terminal use and ocular symptoms were also compared. RESULTS: Twenty-eight children were included in the dry eye disease group and 260 children were included in the control group. Gender and best-corrected visual acuity were not significantly different between the two groups. Smartphone use was more common in the dry eye disease group (71%) than the control group (50%) (P = .036). The daily duration of smartphone use and total daily duration of video display terminal use were associated with increased risk of dry eye disease (P = .027 and .001, respectively), but the daily duration of computer and television use did not increase the risk of dry eye disease (P = .677 and .052, respectively). CONCLUSIONS: The results showed that smartphone use is an important dry eye disease risk factor in children. Close observation and caution regarding video display terminal use, especially smartphones, are needed for children. [J Pediatr Ophthalmol Strabismus 2014;51(2):87-92.].

Moore, Helen J.; Ells, Louisa J.; McLure, Sally A.; Crooks, Sean; Cumbor, David; Summerbell, Carolyn D.; Batterham, Alan M. (2008):

The development and evaluation of a novel computer program to assess previous-day dietary and physical activity behaviours in school children: The Synchronised Nutrition and Activity Program TM (SNAP TM).

In: *British Journal of Nutrition* 99 (06), S. 1266–1274.

Abstract:

Self-report recall questionnaires used to measure physical activity and dietary intake in children can be labour intensive and monotonous and tend to focus on either dietary intake or physical activity. The web-based software, Synchronised Nutrition and Activity ProgramTM (SNAPTM), was developed to produce a novel, simple, quick and engaging method of assessing energy balance-related behaviours at a population level, combining principles from new and existing 24 h recall methodologies, set within a user-friendly interface. Dietary intake was measured using counts for twenty-one food groups and physical activity levels were measured in min of moderate to vigorous physical activity (MVPA). A combination of the mean difference between methods, type II regression and non-parametric limits of agreement techniques were used to examine the accuracy and precision of SNAPTM. Method comparison analyses demonstrated a good agreement for both dietary intake and physical activity behaviours. For dietary variables, accuracy of SNAPTM (mean difference) was within ± 1 count for the majority of food groups. The proportion of the sample with between-method agreement within ± 1 count ranged from 0·40 to 0·99. For min of MVPA, there was no substantial fixed or proportional bias, and a mean difference between methods (SNAPTM – accelerometry) of − 9 min. SNAPTM provides a quick, accurate, low-burden, cost-effective and engaging method of assessing energy balance behaviours at a population level. Tools such as SNAPTM, which exploit the popularity, privacy and engagement of the computer interface, and linkages with other datasets, could make a substantial contribution to future public health monitoring and research.

Moore, Steven T.; MacDougall, Hamish G.; Ondo, William G. (2008):

Ambulatory monitoring of freezing of gait in Parkinson's disease.

In: *J Neurosci Methods* 167 (2), S. 340–348.

Abstract:

Freezing of gait (FOG) is common in advanced Parkinson's disease (PD), is resistant to treatment and negatively impacts quality of life. In this study an ambulatory FOG monitor was validated in 11 PD patients. The vertical linear acceleration of the left shank was acquired using an ankle-mounted sensor array that transmitted data wirelessly to a pocket PC at a rate of 100 Hz. Power analysis showed high-frequency components of leg movement during FOG in the 3-8 Hz band that were not apparent during volitional standing, and power in this 'freeze' band was higher (p=0.00003) during FOG preceded by walking (turning or obstacles) than FOG preceded by rest (gait initiation). A freeze index (FI) was defined as the power in the 'freeze' band divided by the power in the 'locomotor' band (0.5-3 Hz) and a threshold chosen such that FI values above this limit were designated as FOG. A global threshold detected 78% of FOG events and 20% of stand events were incorrectly labeled as FOG. Individual calibration of the freeze threshold improved accuracy and sensitivity of the device to 89% for detection of FOG with 10% false positives. Ambulatory monitoring may significantly improve clinical management of FOG.

Moore, Todd M.; Seavey, Amanda; Ritter, Kathrin; McNulty, James K.; Gordon, Kristina C.; Stuart, Gregory L. (2013):

Ecological Momentary Assessment of the Effects of Craving and Affect on Risk for Relapse During Substance Abuse Treatment.

In: *Psychology of Addictive Behaviors*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-36063-001%26site%3dehost-live.

Abstract:

The primary goals of this study were to use ecological momentary assessment (EMA) to examine the extent to which proximal factors (cravings and affect) were temporally associated with relapse, and to assess the role of distal factors (e.g., coping styles) in moderating these associations. We also examined whether using EMA procedures impacted relapse rates. A sample of 100 male (n = 66) and female (n = 34) patients entering outpatient treatment for substance abuse completed a baseline assessment of substance dependence, stress, social support, coping styles, family history of substance abuse, and self-efficacy. Half of the participants were randomly assigned to receive training in using a handheld computer to respond to 3 random prompts each day for 4 months regarding cravings, affect, and substance use. All participants completed 2- and 4-month follow-up assessments of substance use. Results showed that using EMA procedures did not influence relapse rates. Hierarchical linear modeling showed that individuals who reported an increase in cravings on a given prompt were 14 times more likely to report relapse on the subsequent prompt than individuals who did not experience an increase in cravings. In addition, women, older individuals, and individuals who use distraction and disengagement as coping styles were at increased risk for relapse when experiencing an increase in cravings. Individuals who use acceptance as a coping style were at decreased risk for relapse when experiencing an increase in cravings. The study highlights the importance of tailoring treatments to address the needs of particular individuals and risk factors. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Mor, Nilly; Doane, Leah D.; Adam, Emma K.; Mineka, Susan; Zinbarg, Richard E.; Griffith, James W. et al. (2010):

Within-person variations in self-focused attention and negative affect in depression and anxiety: A diary study.

In: *Cognition and Emotion* 24 (1), S. 48–62.

Abstract:

This study examined within-person co-occurrence of self-focus, negative affect, and stress in a community sample of adolescents with or without emotional disorders. As part of a larger study, 278 adolescents were interviewed about emotional disorders. Later, they completed diary measures over three days, six times a day, reporting their current thoughts, affect, and levels of stress. Negative affect was independently related to both concurrent stress and self-focus. Importantly, the association between negative affect and self-focus was stronger among participants with a recent unipolar mood disorder, compared to those with an anxiety disorder, comorbid anxiety and depression, or those without an emotional disorder. The implications of these findings to theories of self-focus and its role in emotional disorders are discussed.

Moran, Andrew; Palmas, Walter; Pickering, Thomas G.; Schwartz, Joseph E.; Field, Lesley; Weinstock, Ruth S.; Shea, Steven (2006):

Office and ambulatory blood pressure are independently associated with albuminuria in older subjects with type 2 diabetes.

In: *Hypertension* 47 (5), S. 955–961. DOI: 10.1161/01.HYP.0000216634.73504.7d.

Abstract:

Blood pressure strongly predicts microalbuminuria and later progression to renal failure in people with diabetes. Ambulatory blood pressure monitoring seems to be superior to office blood pressure in predicting progression to microalbuminuria in type 1 diabetes. The associations of ambulatory blood pressure with office blood pressure and microalbuminuria in type 2 diabetes remain unclear. We studied the association of office blood pressure taken with an automated device and ambulatory blood pressure with spot urine albumin:creatinine ratio in 1180 older people with type 2 diabetes participating in the Informatics for Diabetes Education and Telemedicine Study. Office and awake systolic blood pressure were independently associated with albuminuria ($P<0.001$ for both) in a multivariate linear regression analysis that adjusted for age, gender, duration of diabetes, hemoglobin A1c, number of antihypertensive medications, and use of an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker. Twelve percent of participants had well-controlled office blood pressure but not ambulatory blood pressure, whereas 14% had well-controlled ambulatory but not office blood pressure. The prevalence of microalbuminuria and macroalbuminuria in these subgroups was intermediate between those with well-controlled or uncontrolled blood pressure by

both methods. We found, in a multiethnic group of older subjects with type 2 diabetes, that office systolic blood pressure and awake systolic ambulatory blood pressure exhibited independent associations with degree of albuminuria.

Moreira, A.; Delgado, L.; Haahtela, T.; Fonseca, J.; Moreira, P.; Lopes, C. et al. (2008):

Physical training does not increase allergic inflammation in asthmatic children.

In: *European respiratory journal* 32 (6), S. 1570–1575.

Abstract:

The effects of a 3-month physical training programme on airway inflammation and clinical outcomes were studied in school-aged children with asthma. Subjects with persistent allergic asthma (aged 12.7+/-3.4 yrs; n = 34) were randomly allocated into training and control groups. Exercise consisted of twice-weekly 50-min sessions for 12 weeks. Inflammation was assessed by levels of exhaled nitric oxide, blood eosinophils, eosinophil cationic protein, C-reactive protein, and total and mite-specific immunoglobulin (Ig)E. Lung volumes and bronchial responsiveness to methacholine were determined. The Paediatric Asthma Quality of Life Questionnaire and Paediatric Asthma Caregiver's Quality of Life Questionnaire were used to evaluate activity restrictions, symptoms and emotional stress. The efficacy of the training was assessed by accelerometry. Following the programme, the exercise group spent twice as much time as the controls undertaking moderate-to-vigorous activities. No differences in changes were seen between groups for asthma outcomes. However, total IgE decreased more in the exercise group, as did mite-specific IgE. Training did not increase inflammation in children with persistent asthma, and may have decreased both total and allergen-specific immunoglobulin E levels. It is concluded that there is no reason to discourage asthmatic children with controlled disease to exercise.

Moreno, Megan A.; Jelenchick, Lauren; Koff, Rosalind; Eickhoff, Jens (2012):

Depression and internet use among older adolescents: An experience sampling approach.

In: *Psychology* 3 (9A), S. 743–748. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-13996-001%26site%3dehost-live;mamoreno@pediatrics.wisc.edu.

Abstract:

Background: Depression is common and consequential among adolescents. Previous work has found varied relationships between depression and internet use. The purpose of this study was to examine internet use and depression by applying a rigorous assessment tool: experience sampling method (ESM). Methods: Older adolescents between the ages of 18 and 23 years were recruited from a large state university. Participants received 6 text message surveys randomly each day during a 7-day ESM campaign. Survey questions assessed whether they were currently online and for how long. Participants also completed the PHQ-9 depression survey. Calculation of internet use time included multilevel modeling and probability modeling. Analysis of covariance (ANCOVA) assessed the association between internet use and depression. Results: Among our 189 participants, the mean age was 18.9 (SD=.9), 58.8% were female and most were Caucasian (90.5%). Total daily internet use time was calculated as 66 minutes by ESM summary, 55 minutes by ESM modeling and 65 minutes by probability modeling. We found a difference in PHQ-9 scores when comparing low daily internet use (<30 minutes), regular use (30 minutes to 3 hours) and high use (>3 hours) (p=.01) with a significant U-shaped association (p=.004). The high use group had a mean PHQ-9 score of 7.3 (SD=5.1) compared to the regular use group score of 4.9 (SD=3.9) (p=.02). Conclusions: Results suggest a U shaped association between internet use and depression. These findings may present statistical differences that lack clinical significance. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Moreno, Megan A.; Jelenchick, Lauren; Koff, Rosalind; Eikoff, Jens; Diermyer, Cheryl; Christakis, Dimitri A. (2012):

Internet use and multitasking among older adolescents: An experience sampling approach.

In: *Computers in Human Behavior*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-04501-001&site=ehost-live.

Abstract:

Internet use is challenging for individuals to quantify and describe. Previous internet use studies have relied on self-report measures, which may be subject to recall bias. This studied aimed to assess college student internet use using a real-time methodology, experience sampling method (ESM). Undergraduate students participated in a 7-day ESM campaign using text message surveys sent at 6 random times each day. Survey questions evaluated current internet use time and activities. Analyses included hierarchical clustering analysis, multilevel and probability modeling. Among the 189 participants, mean age was 18.9 (SD=0.9), 58.8% were female and most were Caucasian (90.5%). The modeled average total amount of daily internet time was 56min, 95% CI [51, 62]. The correlation between self-reported internet use time and ESM data was 0.31 ($p<0.001$). Over half of the time participants were on the internet they reported multitasking (56.5%, 95% CI [52.7%, 60.4%]). Study findings suggest that multitasking is frequent among college students, which may explain over-reported internet use. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Moron, Maria Jose; Luque, Rafael; Casilari, Eduardo (2014):

On the capability of smartphones to perform as communication gateways in medical wireless personal area networks.

In: *Sensors (Basel)* 14 (1), S. 575–594. DOI: 10.3390/s140100575.

Abstract:

This paper evaluates and characterizes the technical performance of medical wireless personal area networks (WPANs) that are based on smartphones. For this purpose,a prototype of a health telemonitoring system is presented. The prototype incorporates a commercial Android smartphone, which acts as a relay point, or "gateway", between a set of wireless medical sensors and a data server. Additionally, the paper investigates if the conventional capabilities of current commercial smartphones can be affected by their use as gateways or "Holters" in health monitoring applications. Specifically, the profiling has focused on the CPU and power consumption of the mobile devices. These metrics have been measured under several test conditions modifying the smartphone model, the type of sensors connected to the WPAN, the employed Bluetooth profile (SPP (serial port profile) orHDP (health device profile)), the use of other peripherals, such as a GPS receiver, the impact of the use of the Wi-Fi interface or the employed method to encode and forward the data that are collected from the sensors.

Morotti, Elena; Battaglia, Bruno; Fabbri, Raffaella; Paradisi, Roberto; Venturoli, Stefano; Battaglia, Cesare (2014):

Cigarette smoking and cardiovascular risk in young women with polycystic ovary syndrome.

In: *Int J Fertil Steril* 7 (4), S. 301–312.

Abstract:

BACKGROUND: To verify if in lean polycystic ovary syndrome (PCOS) patients, the smok- ing habitude might increase the risk of cardiovascular (CV) disease. MATERIALS AND METHODS: In this prospective observational study, eighty-one women were divided into the following three groups: group I with 27 non-smokers, group II with 26 light-smokers (1-10 cigarettes/day), and group III with 28 heavy smokers (>10 cigarettes/ day). They were submitted to fasting blood sampling; blood measurement of nitrites/ni- trates (NO_2-/ NO_3), biochemical and hormonal parameters; ovarian ultrasonographic (US) analysis; doppler evaluation of uterine and ophthalmic arteries; brachial artery flow-medi- ated vasodilatation; 24-hour ambulatory blood pressure monitoring; and oral glucose toler- ance test (OGTT). RESULTS: Doppler analysis revealed higher uterine and ophthalmic arteries pulsatility in- dex (PI) and ophthalmic artery back pressure in group III compared with group I. The brachial artery diameter and PI, at baseline, was similar among all groups. After the re- active hyperemia, a more intense vasodilatation was observed in group I in comparison with group III. The 24-hour blood pressure demonstrated that, in group III patients, the 24-hour, day- and night-time diastolic blood pressure (DBP), was higher in comparison with non-smokers. The atherogenic index of plasma (AIP) was higher in heavy smokers than in non-smokers. The leukocytes and homocysteine (HCY) values were increased in group III. The NO_2-/ NO_3- plasma levels were reduced in heavy smokers in compari- son with non-smokers. The insulin, glucose and C-peptide plasma values were higher in group III than in other groups. In heavy smokers, the estimates of insulin sensitivity (ISI) and pancreatic beta-cell function (HOMA-B) were higher compared to the other groups. CONCLUSION: Smoking habitude in lean PCOS patients may increase the soft markers of CV risk.

Morren, Mattijn; Dulmen, Sandra; Ouwerkerk, Jessika; Bensing, Jozien (2009):

Compliance with momentary pain measurement using electronic diaries: a systematic review.

In: *Eur J Pain* 13 (4), S. 354–365.

Abstract:

Electronic diaries are increasingly used to assess daily pain in many different forms and populations. This systematic review aims to survey the characteristics of studies using electronic pain diaries and to examine how these characteristics affect compliance. A literature search of 11 electronic databases was conducted. Studies were evaluated on the basis of predetermined inclusion criteria by two independent reviewers. Study characteristics were grouped into four categories: general, population, electronic diary, and sampling procedure (i.e., response, attrition, and compliance rates) including strategies to enhance compliance. The 62 included publications reported from 43 different datasets. Papers were usually written in English and published as from 2000. Samples mostly consisted of female chronic pain patients aged 19–65 years from western countries. Most diaries held less than 20 items and were completed up to 6 times daily at fixed or prompted times for 1 month at most. Less than 25% of the studies reported both response and attrition rates; however, a majority reported compliance. Compliance was generally high, and positively associated with shorter diaries, age, having a user's manual, financial compensation and using an alarm. It is important that the various study characteristics are catalogued carefully, especially response and attrition rates, because they can affect compliance. Measures of momentary pain are often developed for the purpose of a certain study; standardisation and validation of these measures is recommended. Finally, authors should mention whether they report on data that has also been used in previous studies.

Morren, Mattijn; van Dulmen, Sandra; Ouwerkerk, Jessika; Bensing, Jozien (2009):

Compliance with momentary pain measurement using electronic diaries: a systematic review.

In: *Eur J Pain* 13 (4), S. 354–365. DOI: 10.1016/j.ejpain.2008.05.010.

Abstract:

Electronic diaries are increasingly used to assess daily pain in many different forms and populations. This systematic review aims to survey the characteristics of studies using electronic pain diaries and to examine how these characteristics affect compliance. A literature search of 11 electronic databases was conducted. Studies were evaluated on the basis of predetermined inclusion criteria by two independent reviewers. Study characteristics were grouped into four categories: general, population, electronic diary, and sampling procedure (i.e., response, attrition, and compliance rates) including strategies to enhance compliance. The 62 included publications reported from 43 different datasets. Papers were usually written in English and published as from 2000. Samples mostly consisted of female chronic pain patients aged 19-65 years from western countries. Most diaries held less than 20 items and were completed up to 6 times daily at fixed or prompted times for 1 month at most. Less than 25% of the studies reported both response and attrition rates; however, a majority reported compliance. Compliance was generally high, and positively associated with shorter diaries, age, having a user's manual, financial compensation and using an alarm. It is important that the various study characteristics are catalogued carefully, especially response and attrition rates, because they can affect compliance. Measures of momentary pain are often developed for the purpose of a certain study; standardisation and validation of these measures is recommended. Finally, authors should mention whether they report on data that has also been used in previous studies.

Morris, T. R.; Cho, C.; Dilda, V.; Shine, J. M.; Naismith, S. L.; Lewis, S. J.; Moore, S. T. (2012):

A comparison of clinical and objective measures of freezing of gait in Parkinson's disease.

In: *Parkinsonism Relat Disord* (1353-8020 (Linking)). DOI: 10.1016/j.parkreldis.2012.03.001.

Abstract:

Freezing of gait, a paroxysmal motor block, is common in the latter stages of Parkinson's disease. The current 'gold standard' of assessing the severity of freezing is based on clinical identification (by up to 3 raters) of the number of episodes from video. The aims of this study were to systematically assess this 'gold standard' across multiple Parkinson's disease centers, and to compare these clinical ratings with objective measures derived from lower limb acceleration data. Video recordings were acquired during a timed up-and-go task from 10 Parkinson's disease patients (with a clinical history of freezing) in the 'off' state. Patients were instrumented with accelerometers on the lateral aspect of each shank. Ten experienced clinicians were recruited from four

Parkinson's disease centers to independently assess the videos for number and duration of freezing events. The reliability of clinical video assessment for number of freezing events was moderate (intraclass correlation coefficient 0.63). Percent time frozen (cumulative duration of freezing episodes/total duration of the walking task) demonstrated stronger agreement between raters (0.73). Agreement of accelerometry-derived measures of freezing severity with mean clinician ratings was strong for number of episodes (0.78) and very strong for percent time frozen (0.93). The results demonstrate the viability of objective measures of freezing, and that percent time frozen is a more reliable metric of severity than number of freezing events for both clinical and objective measures. The large variability between clinicians suggests that caution should be used when comparing subjective ratings across centers

Morris, Margaret E.; Kathawala, Qusai; Leen, Todd K.; Gorenstein, Ethan E.; Guilak, Farzin; Labhard, Michael; Deleeuw, William (2010):

Mobile therapy: Case study evaluations of a cell phone application for emotional self-awareness.

In: *J Med Internet Res* 12 (2), S. 33–50. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-05856-003&site=ehost-live;margaret.morris@intel.com.

Abstract:

Background: Emotional awareness and self-regulation are important skills for improving mental health and reducing the risk of cardiovascular disease. Cognitive behavioral therapy can teach these skills but is not widely available. Objective: This exploratory study examined the potential of mobile phone technologies to broaden access to cognitive behavioral therapy techniques and to provide in-the-moment support. Methods: We developed a mobile phone application with touch screen scales for mood reporting and therapeutic exercises for cognitive reappraisal (ie, examination of maladaptive interpretations) and physical relaxation. The application was deployed in a one-month field study with eight individuals who had reported significant stress during an employee health assessment. Participants were prompted via their mobile phones to report their moods several times a day on a Mood Map-a translation of the circumplex model of emotion-and a series of single-dimension mood scales. Using the prototype, participants could also activate mobile therapies as needed. During weekly open-ended interviews, participants discussed their use of the device and responded to longitudinal views of their data. Analyses included a thematic review of interview narratives, assessment of mood changes over the course of the study and the diurnal cycle, and interrogation of this mobile data based on stressful incidents reported in interviews. Results: Five case studies illustrate participants' use of the mobile phone application to increase self-awareness and to cope with stress. One example is a participant who had been coping with longstanding marital conflict. After reflecting on his mood data, particularly a drop in energy each evening, the participant began practicing relaxation therapies on the phone before entering his house, applying cognitive reappraisal techniques to cope with stressful family interactions, and talking more openly with his wife. His mean anger, anxiety and sadness ratings all were lower in the second half of the field study than in the first (P ? .01 for all three scales). Similar changes were observed among other participants as they used the application to negotiate bureaucratic frustrations, work tensions and personal relationships. Participants appeared to understand the mood scales developed for this experience sampling application and responded to them in a way that was generally consistent with self-reflection in weekly interviews. Interview accounts of mood changes, associated with diurnal cycles, personal improvement over the course of the study, and stressful episodes, could be seen in the experience sampling data. Discrepancies between interview and experience-sampling data highlighted the ways that individuals responded to the two forms of inquiry and how they calibrated mood ratings over the course of the study. Conclusions: Participants quickly grasped the Mood Mapping and therapeutic concepts, and applied them creatively in order to help themselves and empathize with others. Applications developed for mobile phones hold promise for delivering state-of-the-art psychotherapies in a nonstigmatizing fashion to many people who otherwise would not have access to therapy. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Morrison, Leanne G.; Hargood, Charlie; Lin, Sharon Xiaowen; Dennison, Laura; Joseph, Judith; Hughes, Stephanie et al. (2014):

Understanding usage of a hybrid website and smartphone app for weight management: a mixed-methods study.

In: *J Med Internet Res* 16 (10), S. e201. DOI: 10.2196/jmir.3579.

Abstract:

BACKGROUND: Advancements in mobile phone technology offer huge potential for enhancing the timely delivery of health behavior change interventions. The development of smartphone-based health interventions (apps) is a rapidly growing field of research, yet there have been few longitudinal examinations of how people experience and use these apps within their day-to-day routines, particularly within the context of a hybrid Web- and app-based intervention. OBJECTIVE: This study used an in-

depth mixed-methods design to examine individual variation in (1) impact on self-reported goal engagement (ie, motivation, self-efficacy, awareness, effort, achievement) of access to a weight management app (POWeR Tracker) when provided alongside a Web-based weight management intervention (POWeR) and (2) usage and views of POWeR Tracker. METHODS: Thirteen adults were provided access to POWeR and were monitored over a 4-week period. Access to POWeR Tracker was provided in 2 alternate weeks (ie, weeks 1 and 3 or weeks 2 and 4). Participants' goal engagement was measured daily via self-report. Mixed effects models were used to examine change in goal engagement between the weeks when POWeR Tracker was and was not available and whether the extent of change in goal engagement varied between individual participants. Usage of POWeR and POWeR Tracker was automatically recorded for each participant. Telephone interviews were conducted and analyzed using inductive thematic analysis to further explore participants' experiences using POWeR and POWeR Tracker. RESULTS: Access to POWeR Tracker was associated with a significant increase in participants' awareness of their eating (beta1=0.31, P=.04) and physical activity goals (beta1=0.28, P=.03). The level of increase varied between individual participants. Usage data showed that participants used the POWeR website for similar amounts of time during the weeks when POWeR Tracker was (mean 29 minutes, SD 31 minutes) and was not available (mean 27 minutes, SD 33 minutes). POWeR Tracker was mostly accessed in short bursts (mean 3 minutes, SD 2 minutes) during convenient moments or moments when participants deemed the intervention content most relevant. The qualitative data indicated that nearly all participants agreed that it was more convenient to access information on-the-go via their mobiles compared to a computer. However, participants varied in their views and usage of the Web- versus app-based components and the informational versus tracking tools provided by POWeR Tracker. CONCLUSIONS: This study provides evidence that smartphones have the potential to improve individuals' engagement with their health-related goals when used as a supplement to an existing online intervention. The perceived convenience of mobile access to information does not appear to deter use of Web-based interventions or strengthen the impact of app access on goal engagement. A mixed-methods design enabled exploration of individual variation in daily usage of the app-based tools.

Morrison, Ryan; Penpraze, Victoria; Greening, Ruth; Underwood, Tom; Reilly, John J.; Yam, Philippa S. (2014):

Correlates of objectively measured physical activity in dogs.

In: *Vet J* 199 (2), S. 263–267. DOI: 10.1016/j.tvjl.2013.11.023.

Abstract:

To increase physical activity (PA) levels in dogs and to better evaluate their energy requirements, there is a need to understand which factors or correlates are associated with PA and/or sedentary behaviour. Improving our understanding of these correlates also has implications for prescribed energy requirements in dogs. PA was measured using accelerometry in 62 dogs from two common breeds (Labrador retrievers and Cocker spaniels). Five potential correlates (age, sex, breed, neuter status, body condition score) were tested for associations with total volume of PA, light-moderate intensity PA, vigorous intensity PA and sedentary behaviour. Age and breed were associated with total volume of PA, light-moderate intensity PA and sedentary behaviour in the final models. Age was associated with vigorous intensity PA. The final models explained 60%, 40%, 63% and 44% of variance in total volume of PA, light-moderate intensity PA, vigorous intensity PA and sedentary behaviour, respectively. These results should improve understanding of the variation in energy requirements of dogs, as well as the development of age and breed-specific diets and the prevention and treatment of canine obesity.

Moses Passini, Christina; Pihet, Sandrine; Favez, Nicolas (2014):

Assessing specific discipline techniques: A mixed-methods approach.

In: *Journal of Child and Family Studies* 23 (8), S. 1389–1402. DOI: 10.1037/t00815-000.

Abstract:

This study explored, in a community sample of mothers of toddlers, parenting beliefs and values, to gain insight into the parent–child relationship. Acceptance of specific discipline techniques (DTs), and their actual use in daily life were examined. A mixed-methods approach comprising three different methods was used: (1) parenting beliefs and values were explored with Q-methodology; (2) acceptance of the DTs was assessed with the questionnaire Dimensions of Discipline Inventory; and (3) actual use of those DTs in daily-life incidents of discipline was documented using ecological momentary assessment for ten consecutive days. The results showed the mothers' parenting beliefs and values reflected a warm parent–child relationship. The mothers rated explaining rules, timeout, removal of privileges, and social reinforcement as moderately to highly acceptable. However, planned ignoring received a low acceptance rating. Mothers' high acceptability ratings of the DTs contrasted with moderate use when they were faced with their misbehaving child, with the exception of explaining rules, which was always manifested. Yelling and spanking received the lowest acceptance ratings. Nonetheless, in daily life, yelling was employed as often as timeout. These findings suggest the need for more attention to be paid to both acceptance and daily use of specific DTs in order to highlight DTs which parents may have difficulty implementing. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Moses, Passini C.; Pihet, S.; Favez, N.; Schoebi, D. (2013):

Assessment of Parental Discipline in Daily Life.

In: *J Fam.Psychol.* (0893-3200 (Linking)). DOI: 10.1037/a0031504.

Abstract:

The use of ecological momentary assessment (EMA) for studying parenting has been rare. We examined the psychometric properties and structural validity of an EMA Parenting Scale based on 32 mothers' reports of their parenting over a period of 10 consecutive days, and explored the acceptance of the scale and compliance with the procedure. The results suggested that the EMA Parenting Scale was well accepted for the assessment of daily parenting, and that it consistently captured the overreactive and lax dimensions of parenting across different episodes of child misbehavior. Moreover, multilevel analyses suggested that the scale was sensitive to change across different parenting episodes, and that it reliably assessed the dimensions at both the personal and situational levels. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Moskowitz, D. S.; Russell, Jennifer J.; Sadikaj, Gentiana; Sutton, Rachel (2009):

Measuring people intensively.

In: *Canadian Psychology/Psychologie Canadienne* 50 (3), S. 131.

Abstract:

An overview is provided of measures that are administered repeatedly in daily life. Variations of this methodology have been referred to as ecological momentary assessment, diary methods, daily process measures, and most broadly as intensive repeated measures in naturalistic settings (IRM-NS). Contrasts are drawn between IRM-NS methods on the basis of different sampling strategies, such as time-contingent recording, signal-contingent recording, and event-contingent recording. Common threats to the internal validity, construct validity, and external validity of IRM-NS measures are reviewed, along with ways to reduce these threats. The statistical analysis of IRM-NS data is considered, with a particular focus on the investigation of intraindividual variability. An extended example is provided of an IRM-NS measure, an event-contingent recording method for the assessment of interpersonal behaviour. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Motl, Robert W.; Learmonth, Yvonne C.; Pilutti, Lara A.; Dlugonski, Deirdre; Klaren, Rachel (2014):

Validity of minimal clinically important difference values for the multiple sclerosis walking scale-12?

In: *Eur Neurol* 71 (3-4), S. 196–202. DOI: 10.1159/000356116.

Abstract:

Background and Objective: Minimal clinically important difference (MCID) values of 4 and 6 points have been proposed for interpreting meaningful change in Multiple Sclerosis Walking Scale-12 (MSWS-12) scores. This study examined the validity of those MCID values based on capturing corresponding changes in other walking outcomes in persons with multiple sclerosis (MS). Methods: On 2 occasions separated by 6 months, 82 persons with MS completed the MSWS-12, timed 25-ft walk (T25FW), 6-min walk (6MW), and gait analysis, and then wore an accelerometer over a 7-day period. We generated change scores for the MSWS-12 and formed groups of stable, worsened, and improved perceived walking based on both 4- and 6-point changes. The groups were compared for corresponding changes in other walking measures over time using mixed-model ANOVAs. Results: The mixed-model ANOVAs did not identify statistically significant group-by-time interactions on the T25FW ($p = 0.98$ and $p = 0.67$), the 6MW ($p = 0.89$ and $p = 0.72$), gait ($p = 0.54$ and $p = 0.21$), or accelerometry ($p = 0.40$ and $p = 0.68$) for MCID values of 4- or 6-point changes in MSWS-12 scores. Conclusions: We did not confirm that MCID values of 4 and 6 points for the MSWS-12 correspond with changes in performance, gait, and free-living assessments of walking in MS. (c) 2014 S. Karger AG, Basel.

Motl, Robert W.; McAuley, Edward; Dlugonski, Deirdre (2011):

Reactivity in baseline accelerometer data from a physical activity behavioral intervention.

In: *Health Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-24250-001&site=ehost-live.

Abstract:

Objective: This brief report describes the possibility of reactivity in the baseline assessment of physical activity using accelerometry from two separate randomized controlled trials of a behavior intervention for increasing physical activity in persons with multiple sclerosis (MS). Method: The samples included 18 persons with multiple sclerosis (MS) from Study 1 and 20 from Study 2 who were randomized into treatment arms of the intervention. The participants initially wore an accelerometer over a 7-day period for collection of baseline data, and one week later wore a pedometer over a 7-day period for collection of data for self-monitoring and goal setting in week 1 of the 12-week intervention. The accelerometer and pedometer data were both expressed in average steps per day over a 7-day period. Results: There was a moderate (d = .56), statistically significant (p = .03) difference of 1,822 steps per day between baseline and week 1 of the intervention in Study 1. There was a large (d = 1.36), statistically significant (p = .0001) difference of 2,338 steps per day in Study 2. Conclusion: We are unaware of other research describing a significant change in physical activity between baseline and the first week of a behavioral intervention and believe that this change reflects reactivity in the baseline assessment using accelerometry. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Motl, R. W.; Pilutti, L.; Sandroff, B. M.; Dlugonski, D.; Sosnoff, J. J.; Pula, J. H. (2012):

Accelerometry as a measure of walking behavior in multiple sclerosis.

In: *Acta Neurol.Scand.* (0001-6314 (Linking)). DOI: 10.1111/ane.12036.

Abstract:

OBJECTIVE: Accelerometry has been identified as a possible ecologically valid and objective approach for measuring community ambulation in multiple sclerosis (MS). This study provides a validation of accelerometer output based on associations with Expanded Disability Status Scale (EDSS), Patient Determined Disease Steps (PDDS) Scale, and Multiple Sclerosis Walking Scale-12 (MSWS-12) scores, timed 25-foot walk (T25FW) and 6-min walk (6MW) performance, oxygen cost (O(2) cost) of walking, and spatial and temporal parameters of gait. MATERIALS AND METHODS: 256 persons with MS completed the PDDS and MSWS-12, underwent an examination for the generation of an EDSS score, undertook two T25FW tests and a 6MW while wearing a portable metabolic unit for measuring the O(2) cost of walking, completed two trials of comfortable walking on a GAITRite electronic walkway for measuring spatial and temporal parameters of gait, and then wore an Actigraph accelerometer during the waking hours of a 7-day period. RESULTS: The accelerometer output was significantly correlated with EDSS (rho = -0.522), PDDS (rho = -0.551), and MSWS-12 (rho = -0.617) scores, T25FW (rho = -0.595) and 6MW (rho = 0.630) performance, and O(2) cost of walking (rho = -0.457). Regarding gait parameters, the accelerometer output was significantly correlated with velocity (rho = 0.420), cadence (rho = 0.349), step time (rho = -0.353), step length (rho = 0.395), double support (rho = -0.424), and single support (rho = 0.400). CONCLUSION: We provide comprehensive evidence from a large sample of persons with MS that further supports accelerometry as a measure of walking behavior

Motl, R. W.; Sandroff, B. M.; Sosnoff, J. J. (2012):

Commercially available accelerometry as an ecologically valid measure of ambulation in individuals with multiple sclerosis.

In: *Expert.Rev.Neurother.* 12 (9), S. 1079–1088. DOI: 10.1586/ern.12.74.

Abstract:

Ambulatory impairment is a prevalent consequence of multiple sclerosis (MS) that is often measured in controlled contexts using performance tests that lack ecological validity. This underscores the importance of considering alternative, ecologically valid approaches, such as commercially available accelerometers, for measuring community ambulation in individuals with MS. This consideration is warranted based on problems with existing measures of ambulation in MS (e.g., poor responsiveness and patient-clinician discordance); conceptual associations among MS pathology, impairment and gait function with relevance for the signal detected by accelerometers; assumptions that are empirically supported for the application of commercially available accelerometers as a measure of community ambulation; and evidence supporting the output of commercially available accelerometers as a measure of ambulation. Collectively, the authors believe the time is ripe for the application of commercially available accelerometers as an outcome measure of community ambulation in MS. Such an application has the potential to maximize the understanding of ambulatory impairments in real-world conditions for clinical research and practice involving individuals with MS

Motl, Robert W.; Sandroff, Brian M.; Suh, Yoojin; Sosnoff, Jacob J. (2012):

Energy cost of walking and its association with gait parameters, daily activity, and fatigue in persons with mild multiple sclerosis.

In: *Neurorehabilitation and Neural Repair* 26 (8), S. 1015–1021. DOI: 10.1037/t12541-000;

Abstract:

Background: Energy cost of walking (Cw) is elevated in persons with multiple sclerosis (MS), perhaps because of gait impairment, and may impact daily activity and fatigue. Objective: The authors examined for associations between C[sub]w[/sub], spatiotemporal gait parameters, daily activity, and perceived fatigue in persons with mild MS. Methods: Forty-four participants completed 4 trials of walking on a GAITRite mat and one 6-minute trial of walking on a treadmill at a constant, controlled speed of 54 m min−1 while expired gases were analyzed for oxygen consumption. Participants also completed the Fatigue Severity Scale (FSS) and wore a waist-mounted accelerometer for 7 days. Results. C[sub]w[/sub] was significantly and inversely associated with gait speed (r = −.25) and stride length (r = −.32) and positively associated with double limb support (r = .27). C[sub]w[/sub] was significantly and inversely associated with daily accelerometer activity counts (r = −.35) and positively associated with FSS scores (ρ = .31). Conclusion: The results support the development and application of rehabilitation strategies to address impaired gait parameters as an approach to improve C[sub]w[/sub], daily activities, and fatigue. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Motl, Robert W.; Snook, Erin M.; Agiovlasitis, Stamatis (2011):

Does an accelerometer accurately measure steps taken under controlled conditions in adults with mild multiple sclerosis?

In: *Disabil Health J* 4 (1), S. 52–57.

Abstract:

BACKGROUND:

Accurate measurement is required by researchers and clinicians who are interested in the physical activity behavior of individuals with multiple sclerosis (MS). Advances in technology have resulted in an increased number of motion sensors such as pedometers and accelerometers that are worn on the body and that measure bodily movement. Accelerometers are becoming less expensive and more user-friendly, but there is limited evidence regarding the accuracy of measurement in persons with MS.

OBJECTIVE:

The present study examined the accuracy of an ActiGraph accelerometer for measuring steps taken during controlled conditions in persons with MS compared with a sample of individuals without MS.

METHODS:

The participants were 24 adults with mild MS and 24 adults without MS who undertook three 6-minute periods of walking at 54, 80, and 107 m·min(-1) on a motor-driven treadmill. We measured steps taken through observation and an ActiGraph model 7164 accelerometer worn around the waist above the right hip.

RESULTS:

The accelerometer accurately measured steps during moderate (80 m·min(-1)) and fast (107 m·min(-1)) walking in both persons with MS and control subjects. There was a small degree of underestimation of step counts (≈4% error) for the accelerometer during slower walking (54 m·min(-1)) in both persons with MS and control subjects.

CONCLUSIONS:

Such findings support the accuracy of a waist worn ActiGraph accelerometer for the measurement of steps in persons with MS and control subjects.

Moullec, Grégory; Maïano, Christophe; Morin, Alexandre J. S.; Monthuy-Blanc, Johana; Rosello, Lisa; Ninot, Grégory (2011):

A very short visual analog form of the Center for Epidemiologic Studies Depression Scale (CES-D) for the idiographic measurement of depression.

In: *J Affect Disord* 128 (3), S. 220–234.

Abstract:

BACKGROUND:

The experience sampling method, also referred to as ecological momentary assessment (ESM-EMA) has recently gained popularity in the study of depression. However, no psychometrically sound multidimensional depression questionnaires specifically designed for the ESM-EMA context are currently available.

AIMS:

The main objective of the present study was to develop and validate a very short visual analog scale of the Center for Epidemiologic Studies Depression Scales (CES-D-VAS-VS) specifically designed for the ESM-EMA context. To this end, the full French version of the CES-D was adapted for the ESM-EMA context. From this full-length adapted version a very short version was then extracted from this longer instrument and validated.

STUDY DESIGN:

A sample comprising 163 patients with a major depressive episode (MDE) and 306 participants without mental disorders was involved in this study.

RESULTS:

The obtained results provided support for the factor validity, strong measurement invariance (invariance of the loadings and intercepts of the measurement model) across sex and clinical status groups, reliability and convergent validity of the CES-D-VAS-VS. This instrument comprises 4 items measuring positive affect, depressive affect, somatic complaints and disturbed interpersonal relationships.

CONCLUSION:

The present results provide preliminary evidence regarding the construct validity of the CES-D-VAS-VS among patients and community adults sample but also underline the need to rely on latent variables methods in the use of this instrument to account for the differential levels of measurement errors (uniquenessess) that were observed across groups.

Moullec, Grégory; Maïano, Christophe; Morin, Alexandre J. S.; Monthuy-Blanc, Johana; Rosello, Lisa; Ninot, Grégory (2011):

A very short visual analog form of the Center for Epidemiologic Studies Depression Scale (CES-D) for the idiographic measurement of depression.

In: *J Affect Disord* 128 (3), S. 220–234. DOI: 10.1016/j.jad.2010.06.006.

Abstract:

BACKGROUND\r\nThe experience sampling method, also referred to as ecological momentary assessment (ESM-EMA) has recently gained popularity in the study of depression. However, no psychometrically sound multidimensional depression questionnaires specifically designed for the ESM-EMA context are currently available.\r\nAIMS\r\nThe main objective of the present study was to develop and validate a very short visual analog scale of the Center for Epidemiologic Studies Depression Scales (CES-D-VAS-VS) specifically designed for the ESM-EMA context. To this end, the full French version of the CES-D was adapted for the ESM-EMA context. From this full-length adapted version a very short version was then extracted from this longer instrument and validated.\r\nSTUDY DESIGN\r\nA sample comprising 163 patients with a major depressive episode (MDE) and 306 participants without mental disorders was involved in this study.\r\nRESULTS\r\nThe obtained results provided support for the factor validity, strong measurement invariance (invariance of the loadings and intercepts of the measurement model) across sex and clinical status groups, reliability and convergent validity of the CES-D-VAS-VS. This instrument comprises 4 items measuring positive affect, depressive affect, somatic complaints and disturbed interpersonal relationships.\r\nCONCLUSION\r\nThe present results provide preliminary evidence regarding the construct validity of the CES-D-VAS-VS among patients and community adults sample but also underline the need to rely on latent variables methods in the use of this instrument to account for the differential levels of measurement errors (uniquenessess) that were observed across groups.

Mourcou, Q.; Fleury, A.; Dupuy, P.; Diot, B.; Franco, C.; Vuillerme, N. (2013):

Wegoto: A Smartphone-based approach to assess and improve accessibility for wheelchair users.

In: *Conf.Proc.IEEE Eng Med.Biol.Soc.* 2013 (1557-170X (Linking)), S. 1194–1197. DOI: 10.1109/EMBC.2013.6609720.

Abstract:

This paper proposes a description of a Smartphone-based approach to assess and improve accessibility for wheelchair users. The developed system employs a dedicated Smartphone application that records various complementary sensor measurements (acceleration, deceleration, inclination, orientation, speed, GPS position) and permits obstacle denunciation. Then, accessibility information are reported on maps in a Geographic Information System which can calculate the most accessible route for wheelchair users taking into account their profiles and capabilities. A case study involving a wheelchair-dependent paraplegic was performed to preliminary assess the feasibility of our Smartphone-based approach to provide an accessibility index for wheelchair users. Although preliminary, our results do suggest that the Wegoto system could be used as an innovative assistive navigation system for wheelchair users and ultimately could help to improve their autonomy and quality of life

Muehlenkamp, Jennifer J.; Engel, Scott G.; Wadeson, Andrea; Crosby, Ross D.; Wonderlich, Stephen A.; Simonich, Heather; Mitchell, James E. (2009):

Emotional states preceding and following acts of non-suicidal self-injury in bulimia nervosa patients.

In: *Behav Res Ther* 47 (1), S. 83–87.

Abstract:

Bulimia nervosa and non-suicidal self-injury (NSSI) co-occur at high rates, and both have been conceptualized as maladaptive emotion regulation strategies. Treatments focusing on emotion regulation have been designed for both problem behaviors, yet, there exists very little research examining the temporal emotional states surrounding acts of NSSI. Using ecological momentary assessment (EMA) methodology, the current study examined the temporal association between positive and negative emotional states prior to and consequent to acts of NSSI within a subset of bulimia nervosa patients. Results indicate significant increases in negative affect, and decreases in positive affect, prior to an NSSI act. Post-NSSI, positive affect significantly increased while negative affect remained unchanged. The findings offer partial support for an emotion regulation paradigm to understanding NSSI within bulimic populations and implications for treatment are discussed.

Mulè, Giuseppe; Nardi, Emilio; Cottone, Santina; Cusimano, Paola; Incalcaterra, Francesca; Palermo, Alessandro et al. (2007):

Metabolic syndrome in subjects with white-coat hypertension: impact on left ventricular structure and function.

In: *J Hum Hypertens* 21 (11), S. 854–860.

Abstract:

Some reports have suggested that white-coat hypertension (WCH) is associated with some features of the metabolic syndrome (MetS). These metabolic disturbances, instead of WCH per se, may potentially explain the greater extent of end-organ damage sometimes observed in WCH subjects (WCHs) when compared to normotensive individuals (NTs). The aim of the present cross-sectional study was to compare left ventricular (LV) structure and function in three groups of subjects: WCHs with MetS, WCHs without MetS and NTs. A total of 145 WCHs, 35% of whom had MetS, were enrolled. As controls, 35 NTs were also studied. In all subjects, routine blood chemistry, echocardiographic examination and 24-h ambulatory blood pressure monitoring were performed. When compared with WCHs without MetS, those with MetS showed higher LV mass indexed by height elevated by a power of 2.7 (LVMH(2.7)) (49.6+/-14.8 vs 38.9+/-9.8 g/m(2.7); P<0.0001). The same parameter was greater in WCHs without MetS than in NTs (32+/-8 g/m(2.7); P=0.004). Moreover, the E-wave deceleration time was longer in WCHs with MetS than in those without it (236.2+/-66.4 vs 200.5+/-30.8 ms; P<0.0001). The relationship of MetS with LVMH(2.7) was confirmed in multivariate regression models. Our results seem to suggest that MetS may have a deleterious influence on LV structure and function in WCH. However, WCH, being associated with an increased LV mass, also in subjects without MetS, may not be considered as an innocuous phenomenon.

Muller, A.; Mitchell, J. E.; Crosby, R. D.; Cao, L.; Johnson, J.; Claes, L.; De, Zwaan M. (2012):

Mood states preceding and following compulsive buying episodes: an ecological momentary assessment study.

In: *Psychiatry Res* (0165-1781 (Linking)). DOI: 10.1016/j.psychres.2012.04.015.

Abstract:

This study examined the extent to which patterns of mood and daily stress experienced by individuals with compulsive buying (CB) are associated with CB episodes by using Ecological Momentary Assessment. The comparison of mood and the impact of daily stress on days on which CB occurred to those days on which CB episodes did not occur did not reveal any significant differences. Within-day analysis indicated that negative affect increased significantly and positive affect decreased significantly prior to a CB episode. There was also evidence of a significant decrease in negative affect following a CB episode. Positive affect did not change significantly after a CB episode. The findings suggest that CB episodes hold negative reinforcing properties for individuals with CB. Treatment of patients with CB should focus on functional assessment of the affective antecedents and consequences of CB episodes and the identification of alternative, more functional behaviors to deal with these affective states

Muller, C.; Winter, C.; Boos, J.; Gosheger, G.; Hardes, J.; Vieth, V.; Rosenbaum, D. (2014):

Effects of an Exercise Intervention on Bone Mass in Pediatric Bone Tumor Patients.

In: *Int J Sports Med. DOI:* 10.1055/s-0033-1358475.

Abstract:

The aim was to evaluate the effects of additional exercises during inpatient stays on bone mass in pediatric bone tumor patients. 21 patients were non-randomly allocated either to the exercise group (n=10) or the control group (n=11). DXA of the lumbar spine, the non-affected femur and both calcanei was performed after completion of neoadjuvant chemotherapy (baseline), as well as 6 and 12 months after baseline. Bone mineral content (BMC), bone mineral density (BMD) and height-corrected lumbar spine Z-scores were determined. Group changes after 6 and 12 months were compared by covariance analyses. Additionally, daily physical activities (PA) were assessed by means of accelerometry. After adjusting for initial age, height and weight, mean reductions in lumbar spine and femoral BMC were lower in the exercise group (not significant). Effect sizes during the observational period for lumbar spine and femur BMC were generally small (partial eta(2)=0.03). The exercise group demonstrated substantially higher PA levels in terms of gait cycles per day, per hour and moderate PA (activities above 40 gait cycles per minute). Additional exercises for bone tumor patients are feasible during hospitalization. Though the intervention did not influence BMC, it appeared beneficial regarding PA promotion with respect to volume and intensity.

Mullins, Morell E.; Devendorf, Shelba A. (2007):

Assessing goal-directed attention as an indicator of self-regulation: A comparison of two approaches.

In: *North American Journal of Psychology* 9 (2), S. 229.

Abstract:

Research on self-regulation has continually expanded our understanding of psychological processes in a variety of contexts. A number of theories of self-regulation exist, many of which include goals and goal-directed attention as critical components. One under-researched aspect of the topic, however, is its measurement (Zeidner, Boekaerts, & Pintrich, 2000). We suggest that Likert-type scales may be inadequate to assess the goal-focused aspect of self-regulation, and that a diary assessment may be superior. A model centered around self-regulation in a laboratory training context is presented and tested using both a Likert-type scale and a diary measure of the construct. Regression analyses indicate that the diary performed more consistently with research-based expectations for self-regulation. Implications and future research directions are discussed.

Mulvaney, S. A.; Ho, Y. X.; Cala, C. M.; Chen, Q.; Nian, H.; Patterson, B. L.; Johnson, K. B. (2013):

Assessing adolescent asthma symptoms and adherence using mobile phones.

In: *J Med Internet Res* 15 (7), S. e141. DOI: 10.2196/jmir.2413.

Abstract:

BACKGROUND: Self-report is the most common method of measuring medication adherence but is influenced by recall error and response bias, and it typically does not provide insight into the causes of poor adherence. Ecological momentary assessment (EMA) of health behaviors using mobile phones offers a promising alternative to assessing adherence and collecting related data that can be clinically useful for adherence problem solving. OBJECTIVE: To determine the feasibility of using EMA via mobile phones to assess adolescent asthma medication adherence and identify contextual characteristics of adherence decision making. METHODS: We utilized a descriptive and correlational study design to explore a mobile method of symptom and

adherence assessment using an interactive voice response system. Adolescents aged 12-18 years with a diagnosis of asthma and prescribed inhalers were recruited from an academic medical center. A survey including barriers to mobile phone use, the Illness Management Survey, and the Pediatric Asthma Quality of Life Questionnaire were administered at baseline. Quantitative and qualitative assessment of asthma symptoms and adherence were conducted with daily calls to mobile phones for 1 month. The Asthma Control Test (ACT) was administered at 2 study time points: baseline and 1 month after baseline. RESULTS: The sample consisted of 53 adolescents who were primarily African American (34/53, 64%) and female (31/53, 58%) with incomes US$40K/year or lower (29/53, 55%). The majority of adolescents (37/53, 70%) reported that they carried their phones with them everywhere, but only 47% (25/53) were able to use their mobile phone at school. Adolescents responded to an average of 20.1 (SD 8.1) of the 30 daily calls received (67%). Response frequency declined during the last week of the month (b=-0.29, P<.001) and was related to EMA-reported levels of rescue inhaler adherence (r= 0.33, P=.035). Using EMA, adolescents reported an average of 0.63 (SD 1.2) asthma symptoms per day and used a rescue inhaler an average of 70% of the time (SD 35%) when they experienced symptoms. About half (26/49, 53%) of the instances of nonadherence took place in the presence of friends. The EMA-measured adherence to rescue inhaler use correlated appropriately with asthma control as measured by the ACT (r=-0.33, P=.034). CONCLUSIONS: Mobile phones provided a feasible method to assess asthma symptoms and adherence in adolescents. The EMA method was consistent with the ACT, a widely established measure of asthma control, and results provided valuable insights regarding the context of adherence decision making that could be used clinically for problem solving or as feedback to adolescents in a mobile or Web-based support system

Mulvaney, S. A.; Rothman, R. L.; Dietrich, M. S.; Wallston, K. A.; Grove, E.; Elasy, T. A.; Johnson, K. B. (2011):

Using mobile phones to measure adolescent diabetes adherence.

In: *Health Psychol* (0278-6133 (Linking)). DOI: 10.1037/a0025543.

Abstract:

Objectives: 1) describe and determine the feasibility of using cell-phone-based ecological momentary assessment (EMA) to measure blood glucose monitoring and insulin administration in adolescent Type 1 diabetes, 2) relate EMA to traditional self-report and glycemic control, and 3) identify patterns of adherence by time of day and over time using EMA. Method: Adolescents with Type 1 diabetes (n = 96) completed baseline measures of cell phone use and adherence. Glycemic control (measured by levels of HbA1c) was obtained from medical records. A subgroup of adolescents (n = 50) completed 10 days of EMA to assess blood glucose monitoring frequency, timing of glucose monitoring, insulin administration, and insulin dosing. One third of adolescents were not allowed to use their cell phones for diabetes at school. Parental restrictions on cell phone use at home were not prevalent. Results: The EMA response rate (59%) remained stable over the 10-day calling period. Morning time was associated with worse monitoring and insulin administration, accounting for 59-74% of missed self-care tasks. EMA-reported missed glucose checks and missed insulin doses were correlated to traditional self-report data, but not to HbA1c levels. Trajectory analyses identified two subgroups: one with consistently adequate adherence, and one with more variable, and worse, adherence. The latter adherence style showed worse glycemic control. Conclusion: Mobile phones provide a feasible method to measure glucose monitoring and insulin administration in adolescents, given a limited assessment duration. The method provided novel insights regarding patterns of adherence and should be explored in clinical settings for targeting or tailoring interventions.

Munsch, S.; Meyer, A. H.; Quartier, V.; Wilhelm, F. H. (2012):

Binge eating in binge eating disorder: a breakdown of emotion regulatory process?

In: *Psychiatry Res* 195 (3), S. 118–124. DOI: 10.1016/j.psychres.2011.07.016.

Abstract:

Current explanatory models for binge eating in binge eating disorder (BED) mostly rely on models for bulimia nervosa (BN), although research indicates different antecedents for binge eating in BED. This study investigates antecedents and maintaining factors in terms of positive mood, negative mood and tension in a sample of 22 women with BED using ecological momentary assessment over a 1-week. Values for negative mood were higher and those for positive mood lower during binge days compared with non-binge days. During binge days, negative mood and tension both strongly and significantly increased and positive mood strongly and significantly decreased at the first binge episode, followed by a slight though significant, and longer lasting decrease (negative mood, tension) or increase (positive mood) during a 4-h observation period following binge eating. Binge eating in BED seems to be triggered by an immediate breakdown of emotion regulation. There are no indications of an accumulation of negative mood triggering binge eating followed by immediate reinforcing mechanisms in terms of substantial and stable improvement of mood as observed in BN. These differences implicate a further specification of etiological models and could serve as a basis for developing new treatment approaches for BED

Murakami, Haruka; Iemitsu, Motoyuki; Fuku, Noriyuki; Sanada, Kiyoshi; Gando, Yuko; Kawakami, Ryoko; Miyachi, Motohiko (2014):

The Q223R polymorphism in the leptin receptor associates with objectively measured light physical activity in free-living Japanese.

In: *Physiol Behav* 129C, S. 199–204. DOI: 10.1016/j.physbeh.2014.02.053.

Abstract:

Physical activity (PA) is associated with reductions in the risk of all-cause mortality and in the prevalence of cardiovascular disease and stroke. Nevertheless, a large proportion of the general population may not be sufficiently active. PA level has been reported to be influenced by genetic factors, and we investigated whether Q223R polymorphism in the leptin receptor (LEPR) gene was associated with PA level. A total of 556 Japanese adults aged 24-65years old participated in this cross-sectional study. The duration and intensity of PA were objectively evaluated by triaxial accelerometry. Q223R polymorphism was determined by the TaqMan method. The distribution of Q223R polymorphism was: QQ 0.7%, QR 22.6%, and RR 76.6%. The relation between the LEPR genotype and PA level was analyzed by ANCOVA with age and sex as covariates in the Q dominant genetic model. There were significant differences between LEPR genotypes and the time spent in light PA or inactive time. The subjects with RR genotype showed significantly shorter time spent in light PA (RR genotype: 559.4+/-102.9min/day, QQ/QR genotype: 579.9+/-103.1min/day) and longer inactive time (RR genotype: 815.5+/-107.5min/day, QQ/QR genotype: 792.3+/-107.7min/day) than the subjects with QQ/QR genotype (P<0.05). There were no such differences in the time spent in moderate or vigorous PA. These results suggest that the variety of PA level, especially spontaneous PA in humans, is partly caused by diversity in the LEPR gene.

Murbach, Manuel; Neufeld, Esra; Christopoulou, Maria; Achermann, Peter; Kuster, Niels (2014):

Modeling of EEG electrode artifacts and thermal ripples in human radiofrequency exposure studies.

In: *Bioelectromagnetics* 35 (4), S. 273–283. DOI: 10.1002/bem.21837.

Abstract:

The effects of radiofrequency (RF) exposure on wake and sleep electroencephalogram (EEG) have been in focus since mobile phone usage became pervasive. It has been hypothesized that effects may be explained by (1) enhanced induced fields due to RF coupling with the electrode assembly, (2) the subsequent temperature increase around the electrodes, or (3) RF induced thermal pulsing caused by localized exposure in the head. We evaluated these three hypotheses by means of both numerical and experimental assessments made with appropriate phantoms and anatomical human models. Typical and worst-case electrode placements were examined at 900 and 2140 MHz. Our results indicate that hypothesis 1 can be rejected, as the induced fields cause <20% increase in the 10 g-averaged specific absorption rate (SAR). Simulations with an anatomical model indicate that hypothesis 2 is also not supported, as the realistic worst-case electrode placement results in a maximum skin temperature increase of 0.31 degrees C while brain temperature elevations remained <0.1 degrees C. These local short-term temperature elevations are unlikely to change brain physiology during the time period from minutes to several hours after exposure. The maximum observed temperature ripple due to RF pulses is <0.001 degrees C for GSM-like signals and <0.004 degrees C for 20-fold higher pulse energy, and offers no support for hypothesis 3. Thus, the mechanism of interaction between RF and changes in the EEG power spectrum remains unknown. Bioelectromagnetics. 35:273-283, 2014. (c) 2014 Wiley Periodicals, Inc.

Murphy, S. L.; Kratz, A. L.; Williams, D. A.; Geisser, M. E. (2012):

The Association between Symptoms, Pain Coping Strategies, and Physical Activity Among People with Symptomatic Knee and Hip Osteoarthritis.

In: *Front Psychol* 3 (1664-1078 (Electronic)), S. 326. DOI: 10.3389/fpsyg.2012.00326.

Abstract:

Effective use of coping strategies by people with chronic pain conditions is associated with better functioning and adjustment to chronic disease. Although the effects of coping on pain have been well studied, less is known about how specific coping strategies relate to actual physical activity patterns in daily life. The purpose of this study was to evaluate how different coping strategies relate to symptoms and physical activity patterns in a sample of adults with knee and hip osteoarthritis (OA; N = 44). Physical activity was assessed by wrist-worn accelerometry; coping strategy use was assessed by the Chronic Pain Coping Inventory. We hypothesized that the use of coping strategies that reflect approach behaviors (e.g., Task Persistence), would be associated with higher average levels of physical activity, whereas avoidance coping behaviors (e.g., Resting, Asking for

Assistance, Guarding) and Pacing would be associated with lower average levels of physical activity. We also evaluated whether coping strategies moderated the association between momentary symptoms (pain and fatigue) and activity. We hypothesized that higher levels of approach coping would be associated with a weaker association between symptoms and activity compared to lower levels of this type of coping. Multilevel modeling was used to analyze the momentary association between coping and physical activity. We found that higher body mass index, fatigue, and the use of Guarding were significantly related to lower activity levels, whereas Asking for Assistance was significantly related to higher activity levels. Only Resting moderated the association between pain and activity. Guarding, Resting, Task Persistence, and Pacing moderated the association between fatigue and activity. This study provides an initial understanding of how people with OA cope with symptoms as they engage in daily life activities using ecological momentary assessment and objective physical activity measurement

Murphy, Susan L.; Smith, Dylan M. (2010):

Ecological measurement of fatigue and fatigability in older adults with osteoarthritis.

In: *The journals of gerontology. Series A, Biological sciences and medical sciences* 65 (2), S. 184–189. DOI: 10.1093/gerona/glp137.

Abstract:

BACKGROUND\r\nFatigue is associated with loss of independence in older adults; however, little is known about optimal treatment or how fatigue manifests in daily life activities. \"Fatigability\" was recently proposed to clarify the fatigue-activity relationship. The purpose of this study was to present a new measurement method of fatigability and begin to test its validity.\r\nMETHODS\r\nOur sample included 40 adults with knee or hip osteoarthritis (OA) and 20 healthy controls. Fatigue was measured by ecological momentary assessment several times a day along with continuous measurement of physical activity using a wrist-worn accelerometer. Fatigability was measured as the fatigue increase after a period of high activity.\r\nRESULTS\r\nCompared with controls, participants with OA were approximately four times more likely to have an increase in fatigue after a high activity interval (37.0% vs 9.8%). Among people with OA, average fatigue and fatigability were not highly related (r = .13). Fatigue was most strongly associated with reported physical function, pain, and vitality, whereas fatigability was most strongly associated with body mass index, OA severity, and knee strength.\r\nCONCLUSIONS\r\nAlthough fatigue among people with OA was more associated with subjective reports of physical function and symptoms, pairing fatigue reports with physical activity tapped objective factors that may be related to the biomechanical demands of daily life activities. Thus, fatigability measurement may help discern how symptoms relate to daily life function and help to refine treatment approaches in OA.

Murphy, Susan L.; Smith, Dylan M.; Clauw, Daniel J.; Alexander, Neil B. (2008):

The impact of momentary pain and fatigue on physical activity in women with osteoarthritis.

In: *Arthritis Care & Research* 59 (6), S. 849–856.

Abstract:

OBJECTIVE:

To examine the daily life patterns of both pain and fatigue symptoms and objective physical activity (using ambulatory monitoring) in women with symptomatic lower extremity osteoarthritis (OA), and to evaluate how momentary symptoms impact physical activity levels.

METHODS:

Sixty women age >or=55 years (40 with knee or hip OA and 20 matched controls) participated in an observational study involving 2 laboratory visits and a 5-day home data collection period. During the home period physical activity levels were assessed continuously, and symptoms were inputted 6 times a day into an enhanced accelerometer at prespecified time points.

RESULTS:

In the OA group as compared with the control group over the 5-day period, average physical activity was significantly lower (P = 0.02) and peak physical activity tended to be lower (P = 0.06). Although pain and fatigue overall were of moderate severity in this cohort, fatigue escalated throughout each day. In a hierarchical linear model, fatigue was most strongly associated with physical activity (beta = -30.1, P < 0.0001). Pain was more weakly associated with physical activity and in the direction opposite to what was hypothesized (beta = 16.9, P = 0.04).

CONCLUSION:

Momentary reports of fatigue negatively predicted physical activity levels and were much more strongly related to physical activity than momentary pain. In order to help women with knee or hip OA manage symptoms and become more physically active, it may be important to emphasize fatigue management.

Murphy, Susan L.; Strasburg, Debra M.; Lyden, Angela K.; Smith, Dylan M.; Koliba, Jessica F.; Dadabhoy, Dina P.; Wallis, Susan M. (2008):

Effects of activity strategy training on pain and physical activity in older adults with knee or hip osteoarthritis: a pilot study.

In: *Arthritis Care & Research* 59 (10), S. 1480–1487.

Abstract:

OBJECTIVE:

To examine effects of activity strategy training (AST), a structured rehabilitation program taught by occupational therapists and designed to teach adaptive strategies for symptom control and engagement in physical activity (PA).

METHODS:

A randomized controlled pilot trial was conducted at 4 sites (3 senior housing facilities and 1 senior center) in southeastern, lower Michigan. Fifty-four older adults with hip or knee osteoarthritis (mean +/- SD age 75.3+/-7.1 years) participated. At each site, older adults were randomly assigned to 1 of 2 programs: exercise plus AST (Ex + AST) or exercise plus health education (Ex + Ed). The programs involved 8 sessions over 4 weeks with 2 followup sessions over a 6-month period, and were conducted concurrently within each site. Pain, total PA and PA intensity (measured objectively by actigraphy and subjectively by the Community Healthy Activities Model Program for Seniors questionnaire), arthritis self-efficacy, and physical function were assessed at baseline and posttest.

RESULTS:

At posttest, participants who received Ex + AST had significantly higher levels of objective peak PA (P=0.02) compared with participants who received Ex + Ed. Although not statistically significant, participants in Ex + AST tended to have larger pain decreases, increased total objective and subjective PA, and increased physical function. No effects were found for arthritis self-efficacy.

CONCLUSION:

Although participants were involved in identical exercise programs, participants who received AST tended to have larger increases in PA at posttest compared with participants who received health education. Future studies will be needed to examine larger samples and long-term effects of AST.

Murray, Greg (2007):

Diurnal mood variation in depression: A signal of disturbed circadian function?

In: *J Affect Disord* 102 (1), S. 47–53.

Abstract:

BACKGROUND:

Diurnal variation in mood is a prominent symptom of depression, and is typically experienced as positive mood variation (PMV - mood being worse upon waking and better in the evening). The present study sought to advance understanding of PMV by measuring daily mood variation in non-clinical individuals with varying levels of depressed mood. Based on research into normative variation in mood and evidence that circadian amplitudes may be decreased in depression, it was hypothesised that compared to those with low levels of depression, individuals meeting Centre for Epidemiological Studies-Depression Scale (CES-D) cut-off for probable depression would exhibit an attenuated circadian component in diurnal variation of Positive Affect (PA).

METHOD:

Ninety-nine young healthy women (mean age=21.5, SD=3.0) living on a normal sleep-wake schedule provided mood reports every two hours between 0800 h and 2200 h for 7 days.

RESULTS:

The high depression group (CES-D > or = 23, n=22) exhibited a pattern of diurnal variation consistent with PMV (increased PA in the evening relative to the morning). As predicted, evidence was also found that the high depression group was characterized by a decreased circadian component to diurnal variation in PA relative to the low depression group (CES-D < 23, n=77).

CONCLUSIONS:

It is provisionally concluded that diurnal mood variation in depression can usefully be understood from the perspective of weakened circadian function. Findings are discussed in terms of limitations of the study's naturalistic design and future research avenues identified.

Murray, Caroline Sian (2011):

Are subjective accounts of itch to be relied on? The lack of relation between visual analogue itch scores and actigraphic measures of scratch.

In: *Acta dermato-venereologica* 91 (1), S. 18.

Abstract:

There is a widespread belief that subjective accounts of disease are key components of measures of disease severity and quality of life. In the present study we have set out to test this hypothesis using visual analogue scales (VAS) for itch, as a subjective measure, and actigraphy as an objective measure. One-hundred and seventeen itchy children and adults (and 25 controls) were studied for clusters of nights (total number 1,654) and actigraphy scores and VAS itch taken daily. Fifty-six percent of the night-to-night variation in actigraphy scores occurred between different individuals, while 44% was intra-subject. Neither age nor sex (children's or adults') predicted actigraphy scores, and the only significant predictor of actigraphy score was disease type ($p = 0.001$, $r^2 = 0.51$). In a multivariate model VAS itch score was not a significant determinant of actigraphy scores for either children or adults ($p = 0.26$). In order to see if there was a relation between VAS itch and actigraphy within the same patients (rather than between patients), 20 eczema patients wore the actigraph and scored VAS itch nightly for 42 nights. Little relationship was found between the actigraphy score and the VAS itch. Empirical autocorrelation analysis of VAS itch and actigraphy score reveal a clear autocorrelation for subjective VAS scores that was not found for the objective actigraphy score. Our data suggest a dissociation between scratch and perceived or recalled itch. One explanation is that VAS itch scores suffer from considerable anchoring, and context bias, and that their use in measures of disease severity is problematic.

Mutschler, J.; Von, Zitzewitz F.; Rossler, W.; Grosshans, M. (2012):

Application of electronic diaries in patients with schizophrenia and bipolar disorders.

In: *Psychiatr.Danub.* 24 (2), S. 206–210. Online verfügbar unter PM:22706420.

Abstract:

BACKGROUND: Despite the dissemination of second generation antipsychotics for schizophrenia and bipolar disorder, outcomes remain suboptimal, largely due to poor treatment and drug adherence. The primary aim of the current study was to assess the tolerability, validity and feasibility of the pocket-sized electronic diary Medicus(R). SUBJECTS AND METHODS: Our case observations attempted to evaluate eighteen patients suffering from schizophrenia and bipolar disorder. All of the patients were treated with the second generation antipsychotic quetiapine. We followed them up in two German medical centers over two years. RESULTS: The present results display an improvement of mood-stability in all patients treated with quetiapine. All patients were in regular contact to their psychiatrist over a period of 24 months. A complete description of the coherences between the symptoms was essential for estimation, which was conducted by Medicus(R). Moreover, Medicus(R) seem to be useful for improving compliance within a medication regimen. CONCLUSIONS: Although uncontrolled case observations can only be interpreted with caution, Medicus(R) seems to deserve further investigation and may hold the potential to optimize treatment and drug adherence in patients suffering from schizophrenia and bipolar disorders

Myers, Marting. (2008):

Recent advances in automated blood pressure measurement.

In: *Current Science Inc* 10 (5), S. 355–358. DOI: 10.1007/s11906-008-0067-1.

Abstract:

During the past 15 years, clinical outcome studies have consistently reported that home and 24-hour ambulatory blood pressure recordings provide a significantly better measure of cardiovascular risk than do manual blood pressure readings taken in the office or clinic. The advent of automated sphygmomanometers that record blood pressure with the patient alone in the examining room will be the next major change in our approach to recording blood pressure. These automated devices virtually eliminate the white coat response and their readings correlate significantly better with the ambulatory blood pressure compared

with manual office blood pressure readings. The principal finding from recent research into automated blood pressure measurement is that the presence of an observer during the actual reading in itself provokes the white coat response.

Myers, Martin G.; Valdivieso, Miguel; Kiss, Alexander (2008):

Optimum frequency of office blood pressure measurement using an automated sphygmomanometer.

In: *Blood Press Monit* 13 (6), S. 333–338.

Abstract:

OBJECTIVE:

To determine the optimum interval between serial blood pressure measurements using an automated BpTRU sphygmomanometer.

METHODS:

Two groups of 200 patients each had automated office measurements taken using the BpTRU device at either 1-min or 2-min intervals from the start of one reading to the start of the next reading with a 24-h ambulatory blood pressure (ABP) recording being performed. Another series of 50 patients had BpTRU readings taken at 1-min and 2-min intervals before and after 24-h ABP monitoring. The difference between the mean awake ABP and the mean automated office BP readings were compared for recordings taken at 1-min versus 2-min intervals.

RESULTS:

In the between-patient comparison (n=400), mean awake ABP was similar to automated BP recordings in the examining room at either 1-min or 2-min intervals except for a slightly lower (-4 mmHg) diastolic BP with the 1-min interval (P<0.01 vs. ABP). In the within-patient comparison (n=50), there was no consistent difference between automated BP readings taken in the examining room at 1-min versus 2-min intervals. Overall, the mean automated BP values tended to be slightly lower than the mean awake ABP.

CONCLUSION:

Automated measurement of BP in the office setting with devices such as the BpTRU can be taken as frequently as every 1 min without affecting the accuracy of the reading. Small differences in BP between the 1 and 2-min settings and between the automated BpTRU and ABP readings were within accepted clinical standards for validation criteria.

Myers, Martin G.; Valdivieso, Miguel; Kiss, Alexander (2009):

Use of automated office blood pressure measurement to reduce the white coat response.

In: *J Hypertens* 27 (2), S. 280–286. DOI: 10.1097/HJH.0b013e32831b9e6b.

Abstract:

OBJECTIVE\r\nTo examine the possibility of reducing the white coat response using an automated sphygmomanometer designed for office use, the BpTRU. Consecutive patients referred from physicians in the community to an ambulatory blood pressure (ABP) monitoring unit in an academic hospital were included in the study.\r\nPARTICIPANTS AND METHODS\r\nA total of 309 patients referred for diagnosis or management of hypertension were studied. Differences between mean awake ABP and BP readings taken by the patient's own physician using a manual sphygmomanometer or the automated BpTRU device with the patient resting alone in the ABP monitoring unit were compared.\r\nRESULTS\r\nBP recorded in the examining room using an automated device (132 +/- 19/75 +/- 12) was similar to the mean awake ABP (134 +/- 12/77 +/- 10) with both values being lower (P < 0.001) than the BP recorded on a routine visit to the patient's own family physician (152 +/- 18/87 +/- 11). The coefficient of correlation between the systolic/diastolic ABP and the automated office BP (r = 0.62/0.72) was higher (P < 0.001) than with the family physician's manual BP (r = 0.32/0.48). The prevalence of white coat hypertension in untreated patients (n = 146) was significantly (P < 0.001) lower with automated office BP (16%) compared with the routine family physician BP (55%).\r\nCONCLUSION\r\nThe white coat response associated with office BP measurements can be virtually eliminated by recording BP with the automated BpTRU device with patients resting alone in a quiet examining room.

Myin-Germeys, Inez (2012):

Psychiatry. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 636–650. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-036%26site%3dehost-live.

Abstract:

(from the chapter) The essence of psychiatric symptoms is that they are natural experiences emerging in the realm of normal daily life, often in interaction with contextual features. This central characteristic, however, is often overlooked. With increasingly sophisticated methods to investigate brain functions, genetic mechanisms, or neuropsychological performance, we know disappointingly little about the expression of psychopathological symptoms in daily life and the dynamic interplay between the person and his or her environment in psychiatry. Fortunately, there is a growing awareness that the study of psychiatric patients in the context of normal daily life may provide a powerful and necessary addition to more conventional and cross-sectional research strategies. A growing body of studies is using techniques such as experience sampling methods (ESM) or ecological momentary assessment (EMA) to study psychopathology in real life. This chapter consists of practical guidelines for ESM relevant to studying psychiatric patients, as well as an overview of topics in psychiatry for which daily life studies may be particularly relevant. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Myin-Germeys, I.; Oorschot, M.; Collip, D.; Lataster, J.; Delespaul, P.; van Os, J. (2009):

Experience sampling research in psychopathology: opening the black box of daily life.

In: *Psychological Medicine* 39 (9), S. 1533–1547. DOI: 10.1017/S0033291708004947.

Abstract:

A growing body of research suggests that momentary assessment technologies that sample experiences in the context of daily life constitute a useful and productive approach in the study of behavioural phenotypes and a powerful addition to mainstream cross-sectional research paradigms. Momentary assessment strategies for psychopathology are described, together with a comprehensive review of research findings illustrating the added value of daily life research for the study of (1) phenomenology, (2) aetiology, (3) psychological models, (4) biological mechanisms, (5) treatment and (6) gene-environment interactions in psychopathology. Overall, this review shows that variability over time and dynamic patterns of reactivity to the environment are essential features of psychopathological experiences that need to be captured for a better understanding of their phenomenology and underlying mechanisms. The Experience Sampling Method (ESM) allows us to capture the film rather than a snapshot of daily life reality of patients, fuelling new research into the gene-environment-experience interplay underlying psychopathology and its treatment.

Myin-Germeys, Inez; van Os, Jim (2007):

Stress-reactivity in psychosis: evidence for an affective pathway to psychosis.

In: *Clinical Psychology Review* 27 (4), S. 409–424.

Abstract:

This paper will review a series of studies using the Experience Sampling Method that suggest that altered sensitivity to stress is an endophenotype for psychosis. The Experience Sampling Method is a structured diary technique allowing the assessment of emotional reactivity to stressors occurring in normal daily life. Elevated emotional reactivity to stress was found in subjects vulnerable to psychosis, suggesting that affective responses to stressors in the flow of daily life are an indicator of genetic and/or environmental liability to psychosis. Indeed, the small stressors in daily life associated with affective responses also predict more intense moment-to-moment variation of subtle positive psychotic experiences. Increased emotional reactivity was found to be independent from cognitive impairments, and argued to constitute evidence of an affective pathway to psychosis that may underlie a more episodic, reactive, good-outcome type of psychosis. Evidence for this hypothesis was found in data suggesting that the experience of stressful life events and early trauma were associated with increased stress-sensitivity, and that women were more likely to display elevated stress-reactivity. These findings are discussed in the light of recent biological and psychological mechanisms.

Nadell, Melanie J.; Mermelstein, Robin J.; Hedeker, Donald; Marquez, David X. (2014):

Work and Non-Work Physical Activity Predict Real-Time Smoking Level and Urges in Young Adults.

In: *Nicotine Tob Res. DOI:* 10.1093/ntr/ntu244.

Abstract:

INTRODUCTION: Physical activity (PA) and smoking are inversely related. However, evidence suggests that some types of PA, namely work-related PA, may show an opposite effect. Despite growing knowledge, there remains a paucity of studies examining the context of these behaviors in naturalistic settings or in young adults, a high-risk group for escalation. METHODS: Participants were 188 young adults (mean age = 21.32; 53.2% female; 91% current smokers) who participated in an electronic diary week to assess daily smoking and urges and a PA recall to examine daily PA. PA was coded into non-work-related and work-related activity to examine differential effects. We considered both participants' weekly average PA and their daily deviations from their average. RESULTS: Mixed-effects regression models revealed that higher weekly average non-work PA was associated with lower smoking level and urges. Daily deviations in non-work PA did not predict urges; however, increased daily non-work PA relative to participants' weekly average was associated with lower smoking for females but higher levels for males. Regarding work PA, only higher weekly average work PA was associated with higher smoking level for both genders; work PA did not predict urges. CONCLUSIONS: Results extend previous literature by documenting differential associations between non-work and work PA and young adult smoking and suggest that young adults engaged in work PA should be considered a high-risk group for escalation. Findings provide theoretical and clinical implications for the use of PA in intervention and highlight the necessity of considering PA as a multidimensional construct when examining its links to health behavior.

Nagata, Kohei; Osada, Naohiko; Shimazaki, Minako; Kida, Keisuke; Yoneyama, Kihei; Tsuchiya, Ayako et al. (2008):

Diurnal blood pressure variation in patients with sleep apnea syndrome.

In: *Hypertens Res* 31 (2), S. 185–191.

Abstract:

Sleep apnea syndrome (SAS) is an important risk factor for hypertension and cardiovascular diseases. Diurnal blood pressure (BP) changes are evaluated by 24 h ambulatory blood pressure monitoring (ABPM). The purpose of this study was to clarify the relationship between diurnal BP variation and SAS severity, as well as the impact of antihypertensive therapy on diurnal BP variation. Patients seen at our clinic between April and September 2006 with excessive daytime sleepiness or apnea were enrolled. All patients had polysomnography and ABPM. Mean 24 h BP and nighttime BPs were significantly higher in the SAS group than in the non-SAS group. No significant differences were observed in daytime BPs between the two groups. SAS patients had a high mean 24-h BP and an elevated nighttime BP, both of which increased as SAS severity increased. Nighttime BPs were significantly higher in the moderate SAS group than in the non-SAS group. Nighttime BP and morning BP were significantly higher in the severe SAS group than in the non-SAS group. With respect to antihypertensive agents' effects on diurnal BP changes, there were no significant differences between the SAS and non-SAS groups. In conclusion, compared with non-SAS patients, patients with SAS had a higher 24-h BP, especially nighttime BP. Patients with moderate SAS tended to have elevated nighttime BP. In patients with severe SAS, elevated BP was sustained during the night despite the use of antihypertensive agents.

Nakae, Takuro; Kataoka, Hiroharu; Kuwata, Shigeki; Iihara, Koji (2014):

Smartphone-Assisted Prehospital Medical Information System for Analyzing Data on Prehospital Stroke Care.

In: *Stroke. DOI:* 10.1161/STROKEAHA.114.004872.

Abstract:

BACKGROUND AND PURPOSE: Optimizing prehospital stroke care is important because effective treatments for acute stroke require a narrow therapeutic time window. We developed a smartphone-assisted prehospital medical information system (SPMIS) to facilitate research on prehospital stroke care. METHODS: Prehospital medical information was input into the SPMIS application installed on smartphones by emergency medical staff, sent to a server through the Internet, and connected with in-hospital information. Using SPMIS, we analyzed data on 914 patients transferred to our institution by ambulance between April 2012 and March 2013. RESULTS: The data analyzed were the sensitivity and specificity of the prehospital diagnosis and prehospital stroke scale and the relationship between prehospital vital signs and forms of stroke. These analyses could be performed semiautomatically in a few hours. CONCLUSIONS: SPMIS enabled us to analyze the prehospital information of

patients with stroke in a short time with little effort. More large-scale studies on prehospital stroke care will become feasible using SPMIS, which may lead to advances in stroke treatment.

Nakano, Hiroshi; Hirayama, Kenji; Sadamitsu, Yumiko; Toshimitsu, Ayaka; Fujita, Hisayuki; Shin, Shizue; Tanigawa, Takeshi (2014):

Monitoring sound to quantify snoring and sleep apnea severity using a smartphone: proof of concept.

In: *J Clin Sleep Med* 10 (1), S. 73–78. DOI: 10.5664/jcsm.3364.

Abstract:

STUDY OBJECTIVES: Habitual snoring is a prevalent condition that is not only a marker of obstructive sleep apnea (OSA) but can also lead to vascular risk. However, it is not easy to check snoring status at home. We attempted to develop a snoring sound monitor consisting of a smartphone alone, which is aimed to quantify snoring and OSA severity. METHODS: The subjects included 50 patients who underwent diagnostic polysomnography (PSG), of which the data of 10 patients were used for developing the program and that of 40 patients were used for validating the program. A smartphone was attached to the anterior chest wall over the sternum. It acquired ambient sound from the built-in microphone and analyzed it using a fast Fourier transform on a real-time basis. RESULTS: Snoring time measured by the smartphone highly correlated with snoring time measured by PSG (r = 0.93). The top 1 percentile value of sound pressure level (L1) determined by the smartphone correlated with the ambient sound L1 during sleep determined by PSG (r = 0.92). Moreover, the respiratory disturbance index estimated by the smartphone (smart-RDI) highly correlated with the apnea-hypopnea index (AHI) obtained by PSG (r = 0.94). The diagnostic sensitivity and specificity of the smart-RDI for diagnosing OSA (AHI >/= 15) were 0.70 and 0.94, respectively. CONCLUSIONS: A smartphone can be used for effectively monitoring snoring and OSA in a controlled laboratory setting. Use of this technology in a noisy home environment remains unproven, and further investigation is needed.

Nakano, Hiroshi; Tanigawa, Takeshi; Ohnishi, Yoshinobu; Uemori, Hidekazu; Senzaki, Kaoru; Furukawa, T.; Nishima, Sankei (2008):

Validation of a single-channel airflow monitor for screening of sleep-disordered breathing.

In: *European respiratory journal* 32 (4), S. 1060–1067.

Abstract:

A simple screening method for sleep-disordered breathing (SDB) is desirable for primary care practices. In the present study, a simple monitor, which utilises a new type of flow sensor and a novel algorithm, was prospectively validated. Home recording for 2 nights with the monitor only, followed by in-laboratory recording with the monitor together with polysomnography, were carried out in consecutive patients (n = 100) suspected of SDB. A subjective sleep log was also recorded. The signal was analysed using power spectral analysis, which yielded the flow respiratory disturbance index (flow-RDI). There was no recording failure at home. The reproducibility of the flow-RDI between the 2 nights at home was high (intraclass correlation coefficient = 0.92). The sensitivity and specificity of the in-laboratory flow-RDI to diagnose SDB were 0.96 and 0.82, 0.91 and 0.82, and 0.89 and 0.96, for apnoea/hypopnoea index (AHI) > or =5, > or =15 and > or =30 events x h(-1), respectively. The diagnostic ability in low-severity subgroups (female, normal weight, AHI <15 events x h(-1)) was almost comparable to that in the entire group. Excluding subjective waking time on the sleep log from the recording time had no significant effect on the flow-RDI. The single-channel monitor is considered feasible for ambulatory sleep disordered breathing monitoring because of its easy applicability, high reproducibility and relatively high agreement with polysomnography results.

Nakonezny, Paul A.; Byerly, Matthew J.; Rush, A. John (2008):

Electronic monitoring of antipsychotic medication adherence in outpatients with schizophrenia or schizoaffective disorder: an empirical evaluation of its reliability and predictive validity.

In: *Psychiatry Res* 157 (1), S. 259–263.

Abstract:

This study examined the reliability and predictive validity of electronic monitoring (EM) in assessing the oral antipsychotic medication adherence of outpatients with schizophrenia or schizoaffective disorder. Sixty-one adult outpatients with

schizophrenia or schizoaffective disorder who took a single oral antipsychotic medication were assessed monthly over a 6-month study period with EM of medication bottle opening. Symptom severity, as measured by the Positive and Negative Syndrome Scale (PANSS) total score, was assessed monthly over the 6-month study period. Cronbach's coefficient alpha revealed very high internal reliability (alpha=0.94). A high degree of test-retest reliability was found (beta ranged from 0.75 to 1.19 and r ranged from 0.63 to 0.90). As for predictive validity, greater mean EM adherence was significantly related to lower mean symptom severity.

Napolitano, Melissa A.; Borradaile, Kelley E.; Lewis, Beth A.; Whiteley, Jessica A.; Longval, Jaime L.; Parisi, Alfred F. et al. (2010):

Accelerometer use in a physical activity intervention trial.

In: *Contemporary clinical trials* 31 (6), S. 514–523. DOI: 10.1016/j.cct.2010.08.004.

Abstract:

This paper describes the application of best practice recommendations for using accelerometers in a physical activity (PA) intervention trial, and the concordance of different methods for measuring PA. A subsample (n = 63; 26%) of the 239 healthy, sedentary adults participating in a PA trial (mean age = 47.5; 82% women) wore the ActiGraph monitor at all 3 assessment time points. ActiGraph data were compared with self-report (i.e., PA weekly recall and monthly log) and fitness variables. Correlations between the PA recall and ActiGraph for moderate intensity activity ranged from 0.16-0.48 and from 0.28-0.42 for vigorous intensity activity. ActiGraph and fitness [estimated VO(2)(ml/kg/min)] had correlations of 0.15-0.45. The ActiGraph and weekly self-report were significantly correlated at all time points (correlations ranged from 0.23 to 0.44). In terms of detecting intervention effects, intervention groups recorded more minutes of at least moderate-intensity PA on the ActiGraph than the control group at 6 months (min = 46.47, 95% CI = 14.36-78.58), but not at 12 months. Limitations of the study include a small sample size and only 3 days of ActiGraph monitoring. To obtain optimal results with accelerometers in clinical trials, the authors recommend following best practice recommendations: detailed protocols for monitor use, calibration of monitors and validation of data quality, and use of validated equations for analysis. The ActiGraph has modest concordance with other assessment tools and is sensitive to change over time. However, until more information validating the use of accelerometry in clinical trials becomes available, properly administered self-report measures of PA should remain part of the assessment battery.

Naslund, John A.; Aschbrenner, Kelly A.; Barre, Laura K.; Bartels, Stephen J. (2014):

Feasibility of Popular m-Health Technologies for Activity Tracking Among Individuals with Serious Mental Illness.

In: *Telemed J E Health. DOI:* 10.1089/tmj.2014.0105.

Abstract:

Abstract Obesity prevalence is nearly double among individuals with serious mental illness (SMI), including schizophrenia spectrum disorders, bipolar disorder, or major depressive disorder, compared with the general population. Emerging mobile health (m-health) technologies are increasingly available and offer the potential to support lifestyle interventions targeting weight loss, yet the practical feasibility of using these technologies in this high-risk group has not been established. We evaluated the feasibility and acceptability of popular m-health technologies for activity tracking among overweight and obese individuals with SMI. We provided wearable activity monitoring devices (FitBit [San Francisco, CA] Zip or Nike Inc. [Beaverton, OR] FuelBand) and smartphones (Apple [Cupertino, CA] iPhone(R) 4S) for accessing the smartphone application for each device to participants with SMI enrolled in a weight loss program. Feasibility of these devices was measured by the frequency of use over time. Acceptability was measured through qualitative follow-up interviews with participants. Ten participants with SMI wore the devices for a mean of 89% (standard deviation=13%) of the days in the study. Five participants wore the devices 100% of the time. Participants reported high satisfaction, stating the devices were easy to use, helpful for setting goals, motivational, and useful for self-monitoring. Several participants liked the social connectivity feature of the devices where they could see each other's progress on the smartphone application, noting that "friendly" competition increased motivation to be more physically active. This study supports using popular m-health technologies for activity tracking among individuals with SMI. These findings can inform the design of weight loss interventions targeting this vulnerable patient population.

Nast, Daniel R.; Speer, William S.; Le Prell, Colleen G. (2014):

Sound level measurements using smartphone "apps": Useful or inaccurate?

In: *Noise Health* 16 (72), S. 251–256. DOI: 10.4103/1463-1741.140495.

Abstract:

Many recreational activities are accompanied by loud concurrent sounds and decisions regarding the hearing hazards associated with these activities depend on accurate sound measurements. Sound level meters (SLMs) are designed for this purpose, but these are technical instruments that are not typically available in recreational settings and require training to use properly. Mobile technology has made such sound level measurements more feasible for even inexperienced users. Here, we assessed the accuracy of sound level measurements made using five mobile phone applications or "apps" on an Apple iPhone 4S, one of the most widely used mobile phones. Accuracy was assessed by comparing application-based measurements to measurements made using a calibrated SLM. Whereas most apps erred by reporting higher sound levels, one application measured levels within 5 dB of a calibrated SLM across all frequencies tested.

Navarro, José; Arrieta, Carlos (2010):

Chaos in human behavior: The case of work motivation.

In: *The Spanish Journal of Psychology* 13 (01), S. 244–256.

Abstract:

This study considers the complex dynamics of work motivation. Forty-eight employees completed a work-motivation diary several times per day over a period of four weeks. The obtained time series were analysed using different methodologies derived from chaos theory (i.e. recurrence plots, Lyapunov exponents, correlation dimension and surrogate data). Results showed chaotic dynamics in 75% of cases. The findings confirm the universality of chaotic behavior within human behavior, challenge some of the underlying assumptions on which work motivation theories are based, and suggest that chaos theory may offer useful and relevant information on how this process is managed within organizations.

Nedios, Sotirios; Romero, Inaki; Gerds-Li, Jin-Hong; Fleck, Eckard; Kriatselis, Charalampos (2014):

Precordial electrode placement for optimal ECG monitoring: Implications for ambulatory monitor devices and event recorders.

In: *J Electrocardiol. DOI:* 10.1016/j.jelectrocard.2014.04.003.

Abstract:

INTRODUCTION: Detection of QRS complexes, P-waves and atrial fibrillation f-waves in electrocardiographic (ECG) signals is critical for the correct diagnosis of arrhythmias. We aimed to find the best bipolar lead (BL) with the highest signal amplitude and shortest inter-electrode spacing. METHODS: ECG signals (120seconds) were recorded in 36 patients with 16 precordial electrodes placed in a standardized pattern. An average signal was analysed for each of 120 possible BLs obtained by calculating the difference between pairs of unipolar leads. Peak-to-peak amplitudes of QRS waves (50ms around R-peak) and P waves (270-70ms before R-peak) were calculated. For patients with atrial fibrillation, power of the fibrillatory (f) wave was used instead. Maximum values at each distance were considered and differentiation analysis was performed based on incremental changes (amplitude to distance). RESULTS: There was a significant correlation between distance and QRS-amplitude ($r=0.78$, $p<0.001$), P-wave amplitude ($r=0.60$, $p<0.01$) and f-wave power ($r=0.79$, $p<0.001$). The range of values was: QRS-amplitude 0.7-2.33mV, P-wave amplitude 0.07-0.18mV, and f-wave power 0.55-2.12mV2/s. The maximum value for the shortest distance was on a heart-aligned axis over the left ventricle for the QRS complex (1.9mV at 8.7cm) and over the atria for the P-wave (0.98mV) and f-waves (1.45mV2/s at 8cm, respectively). CONCLUSION: There is a strong positive correlation between electrode distance and ECG signal-amplitude. Distance of 8cm on a heart-aligned axis and over the relevant heart-chamber provides the highest signal amplitude for the shortest distance. These findings are essential for the design and use of ambulatory monitoring devices.

Nett, Ulrike E.; Goetz, Thomas; Hall, Nathan C. (2011):

Coping with boredom in school: An experience sampling perspective.

In: *Contemporary Educational Psychology* 36 (1), S. 49–59.

Abstract:

The present study explored students' use of boredom-related coping strategies at trait and state levels. Two trait-based dimensions of coping relevant to boredom were considered, namely approach – versus avoidance-oriented and cognitively – versus behaviorally-oriented coping strategies. The two dimensions were assessed in a self-report questionnaire administered to 537 grade 11 students (55.3% female, Mage = 17.15 years). Additionally, 79 of these participants completed state-based

boredom-related coping measures over a 2-week period using an experience sampling method. Analyses of the trait measures suggested that two contrasting, broad approaches characterized participants' strategies for coping with boredom, namely a cognitive-approach orientation and a behavioral-avoidance orientation. In both the trait- and state-based analyses, the cognitive-approach orientation was associated with lower levels of boredom. Implications for interventions promoting the use of cognitive-approach strategies for dealing with boredom in the classroom are discussed.

Nettlefold, L.; McKay, H. A.; Warburton, D. E. R.; McGuire, K. A.; Bredin, S. S. D.; Naylor, P. J. (2011):

The challenge of low physical activity during the school day: at recess, lunch and in physical education.

In: *British Journal of Sports Medicine* 45 (10), S. 813–819. DOI: 10.1136/bjsm.2009.068072.

Abstract:

PURPOSE\r\nTo describe physical activity (PA) intensity across a school day and assess the percentage of girls and boys achieving recommended guidelines.\r\nMETHODS\r\nThe authors measured PA via accelerometry in 380 children (8-11 years) and examined data representing (1) the whole school day, (2) regular class time, (3) recess, (4) lunch and (5) scheduled physical education (PE). Activity was categorised as sedentary (SED), light physical activity (LPA) or moderate to vigorous physical activity (MVPA) using age-specific thresholds. They examined sex differences across PA intensities during each time period and compliance with recommended guidelines.\r\nRESULTS\r\nGirls accumulated less MVPA and more SED than boys throughout the school day (MVPA -10.6 min; SED +13.9 min) recess (MVPA -1.6 min; SED +1.7 min) and lunch (MVPA -3.1 min; SED +2.9 min). Girls accumulated less MVPA (-6.2 min), less LPA (-2.5 min) and more SED (+9.4 min) than boys during regular class time. Fewer girls than boys achieved PA guidelines during school (90.9% vs 96.2%), recess (15.7% vs 34.1%) and lunch (16.7% vs 37.4%). During PE, only 1.8% of girls and 2.9% of boys achieved the PA guidelines. Girls and boys accumulated similar amounts of MVPA, LPA and SED.\r\nCONCLUSION\r\nThe MVPA deficit in girls was due to their sedentary behaviour as opposed to LPA. Physical activity strategies that target girls are essential to overcome this deficit. Only a very small percentage of children met physical activity guidelines during PE. There is a great need for additional training and emphasis on PA during PE. In addition schools should complement PE with PA models that increase PA opportunities across the school day.

Neustifter, B.; Rathbun, S. L.; Shiffman, S. (2012):

Mixed-Poisson Point Process with Partially-Observed Covariates: Ecological Momentary Assessment of Smoking.

In: *J Appl.Stat.* 39 (4), S. 883–899. DOI: 10.1080/02664763.2011.626848.

Abstract:

Ecological Momentary Assessment is an emerging method of data collection in behavioral research that may be used to capture the times of repeated behavioral events on electronic devices, and information on subjects' psychological states through the electronic administration of questionnaires at times selected from a probability-based design as well as the event times. A method for fitting a mixed Poisson point process model is proposed for the impact of partially-observed, time-varying covariates on the timing of repeated behavioral events. A random frailty is included in the point-process intensity to describe variation among subjects in baseline rates of event occurrence. Covariate coefficients are estimated using estimating equations constructed by replacing the integrated intensity in the Poisson score equations with a design-unbiased estimator. An estimator is also proposed for the variance of the random frailties. Our estimators are robust in the sense that no model assumptions are made regarding the distribution of the time-varying covariates or the distribution of the random effects. However, subject effects are estimated under gamma frailties using an approximate hierarchical likelihood. The proposed approach is illustrated using smoking data

Newton, Julia L.; Gibson, G. John; Tomlinson, Mark; Wilton, Katharine; Jones, David (2006):

Fatigue in primary biliary cirrhosis is associated with excessive daytime somnolence.

In: *Hepatology* 44 (1), S. 91–98.

Abstract:

A significant proportion of patients with primary biliary cirrhosis (PBC) suffer from severe fatigue. The aim of this study was to characterize patterns of daytime sleep in patients with PBC (using both objective and subjective assessment approaches) and to

study the association between sleep abnormality and fatigue severity. Fatigue severity was assessed in 48 female subjects with PBC (using a disease-specific quality of life instrument (the PBC-40) and a generic fatigue measure (Fatigue Impact Scale [FIS]) as well as 48 case-matched normal controls. All participants also completed the Pittsburgh Sleep Quality Index (PSQI) and the Epworth Sleepiness Scale (ESS, which assesses daytime hypersomnolence). Objective sleep assessment was performed using accelerometry over 7 days. Global sleep quality assessed by the PSQI was significantly lower in the PBC group compared to controls (P < .0001). ESS scores were significantly higher in patients with PBC than controls (P = .0001), suggesting significantly greater daytime somnolence in the patients with PBC. Objective sleep assessment confirmed that subjects with PBC were sleeping on average almost twice as long as controls during the daytime. Both degree of daytime somnolence (ESS) and actual daytime sleep activity (accelerometry) correlated strongly with fatigue severity in the patient group (r2 = 0.5, P < .0001 and r2 = 0.2, P < .01, respectively). In conclusion, Sleep abnormality, in the form of excessive daytime somnolence, is present in a significant proportion of patients with PBC, with the degree of daytime somnolence correlating strongly with the degree of fatigue. Existing agents effective at reducing daytime somnolence (such as modafinil) hold potential for the treatment of fatigue in PBC.

Newton, Julia L.; Sheth, Amish; Shin, Jane; Pairman, Jessie; Wilton, Katharine; Burt, Jennifer A.; Jones, David E. J. (2009):

Lower ambulatory blood pressure in chronic fatigue syndrome.

In: *Psychosomatic Medicine* 71 (3), S. 361–365. DOI: 10.1097/PSY.0b013e31819ccd2a.

Abstract:

OBJECTIVE\r\nTo examine blood pressure circadian rhythm in subjects with chronic fatigue syndrome (CFS) and appropriate normal and fatigued controls to correlate parameters of blood pressure regulation with perception of fatigue in an observational cohort study. The cause of CFS remains unknown and there are no effective treatments.\r\nMETHODS\r\nTo address whether inactivity was a confounder, we performed a 24-hour ambulatory blood pressure monitoring in the following three subject groups: 1) CFS patients (Fukuda Diagnostic criteria) (n = 38); 2) normal controls (n = 120); and 3) a fatigue comparison group (n = 47) with the autoimmune liver disease primary biliary cirrhosis (PBC). All patients completed a measure of fatigue severity (Fatigue Impact Scale). In view of the different demographics between the patient groups, patients were age- and sex-matched on a case-by-case basis to normal controls and blood pressure parameters were compared.\r\nRESULTS\r\nCompared with the control population, the CFS group had significantly lower systolic blood pressure (p < .0001) and mean arterial blood pressure (p = .0002) and exaggerated diurnal variation (p = .009). There was a significant inverse relationship between increasing fatigue and diurnal variation of blood pressure in both the CFS and PBC groups (p < .05).\r\nCONCLUSION\r\nLower blood pressure and abnormal diurnal blood pressure regulation occur in patients with CFS. We would suggest the need for a randomized, placebo-controlled trial of agents to increase blood pressure such as midodrine in CFS patients with an autonomic phenotype.

Nezlek, John B. (2007):

A multilevel framework for understanding relationships among traits, states, situations and behaviours.

In: *European Journal of Personality* 21 (6), S. 789–810.

Abstract:

A conceptual and analytic framework for understanding relationships among traits, states, situations, and behaviours is presented. The framework assumes that such relationships can be understood in terms of four questions. (1) What are the relationships between trait and state level constructs, which include psychological states, the situations people experience and behaviour? (2) What are the relationships between psychological states, between states and situations and between states and behaviours? (3) How do such state level relationships vary as a function of trait level individual differences? (4) How do the relationships that are the focus of questions 1, 2, and 3 change across time? This article describes how to use multilevel random coefficient modelling (MRCM) to examine such relationships. The framework can accommodate different definitions of traits and dispositions (Allportian, processing styles, profiles, etc.) and different ways of conceptualising relationships between states and traits (aggregationist, interactionist, etc.).

Nezlek, John B. (2007):

Reactions to daily events as a function of familiarity with an environment.

In: *European Journal of Personality* 21 (6), S. 811–822.

Abstract:

Undergraduate participants provided measures of their psychological well-being and described the positive and negative events that occurred each day, once during the first and second semesters of an academic year. For four of the five measures of daily well-being, reactivity to negative events decreased from the first to second semester, whereas for four of the five measures of well-being, reactivity to positive events did not change over the year. These results suggest that familiarity with an environment moderates reactivity to negative daily events. As people become more familiar with an environment, negative events may elicit smaller decreases in well-being. In contrast, increases in well-being elicited by positive events appear to be unrelated to familiarity with the environment. More broadly, these differences suggest that the reactivity to positive and negative events reflect the operation of different processes. Copyright © 2007 John Wiley & Sons, Ltd.

Nezlek, John B. (2008):

An introduction to multilevel modeling for social and personality psychology.

In: *Social and Personality Psychology Compass* 2 (2), S. 842–860.

Abstract:

Multilevel modeling is a technique that has numerous potential applications for social and personality psychology. To help realize this potential, this article provides an introduction to multilevel modeling with an emphasis on some of its applications in social and personality psychology. This introduction includes a description of multilevel modeling, a rationale for this technique, and a discussion of applications of multilevel modeling in social and personality psychological research. Some of the subtleties of setting up multilevel analyses and interpreting results are presented, and software options are discussed.

Nezlek, John B. (2012):

Multilevel modeling analyses of diary-style data. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 357–383. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-020%26site%3dehost-live.

Abstract:

(from the chapter) Researchers who use ambulatory assessment methods and various types of diaries are increasingly (almost invariably) using some type of multilevel technique to analyze their data. This reflects the fact that the data collected in such studies are inherently multilevel. A sample of individuals provides data on a repeated basis, creating a multilevel data structure in which people constitute one level of analysis and the repeated measures they provide constitute another level, or levels, of analysis. In this chapter I discuss multilevel random coefficient modeling (MLM), the technique that is currently thought to be the best way to analyze such multilevel data structures. I introduce MLM and present ways of using MLM that are well suited for analyzing data generated in ambulatory assessment and diary studies. When writing this chapter, I tried to address the needs of two audiences: researchers who are quire familiar with MLM to analyze data collected using ambulatory assessment and other intensive repeated measures, and scholars (both new and established) who are not at all familiar with such applications. To address the needs of these different audiences I have provided sufficient introductory material to allow those who are unfamiliar to understand the basic principles involved, while describing more sophisticated applications for the benefit of those who are already familiar. Consequently, those who are familiar with MLM analyses of diary data may wish to skip or skim introductory sections and focus on sections dealing with specific topics or applications. I discuss MLM in terms of the types of multilevel data that are frequently collected in ambulatory assessment and diary research, although much of what I discuss can be applied to other types of data. Moreover, to illustrate certain points, I often refer to my own research. I have done this not because I am the only the person who has used MLM to analyze these types of data (quite the opposite; there are many experienced and knowledgeable scholars who have published MLM-based studies in this area); rather, I am more familiar with my own studies than I am with the work of others. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Nezlek, John B.; Kafetsios, Konstantinos; Smith, C. Veronica (2008):

Emotions in Everyday Social Encounters Correspondence Between Culture and Self-Construal.

In: *Journal of Cross-Cultural Psychology* 39 (4), S. 366–372.

Abstract:

Relationships between self-construal and emotion experiences in social interactions were examined in two countries. Participants in Greece (a more collectivist culture) and the United Kingdom (a more individualist culture) described the social interactions they had each day for 7 days using a variant of the Rochester Interaction Record. For UK participants, independent self-construal was positively related to positive affect, whereas for Greek participants, independent self-construal was negatively related to positive affect. There were few relationships between interdependent self-construal and affect in either study. The results point to the interplay of cultural values and individual differences in self-construal and their relationships to people's affective experiences.

Ng, C. M.; Yiu, S. F.; Choi, K. L.; Choi, C. H.; Ng, Y. W.; Tiu, S. C. (2008):

Prevalence and significance of white-coat hypertension and masked hypertension in type 2 diabetics.

In: *Hong Kong medical journal= Xianggang yi xue za zhi/Hong Kong Academy of Medicine* 14 (6), S. 437–443.

Abstract:

OBJECTIVES:

To explore the prevalence of various categories of hypertension in diabetic patients, and assess any corresponding associations with end-organ complications.

DESIGN:

Cross-sectional study.

SETTING:

Tertiary centre of a regional hospital in Hong Kong.

PATIENTS:

All ambulatory type 2 diabetic patients attending our clinics from January 2002 to November 2004 were invited to participate in the protocol.

RESULTS:

A total of 133 diabetic patients were included; 82 had normal clinic blood pressures, 15 (18%) of whom had masked hypertension, the remaining 67 (82%) had 'normotension'. The remaining 51 patients had high clinic blood pressures, of whom 28 (55%) had white-coat hypertension and 23 (45%) had sustained hypertension. Urinary albumin excretion rate was higher in patients with masked hypertension (10 mg/day; range, 7-580 mg/day) and sustained hypertension (7 mg/day; 7-3360 mg/day) in comparison to those with white-coat hypertension (7 mg/day; 7-109 mg/day) or 'normotension' (7 mg/day; 7-181 mg/day) [P<0.01]. Likewise, the prevalence of albuminuria was significantly higher in patients with masked hypertension (40%) and sustained hypertension (26%) than in those with 'normotension' (6%) and white-coat hypertension (11%) [P<0.01]. The prevalence of left ventricular hypertrophy was significantly higher in subjects with masked hypertension (38%) and sustained hypertension (26%) compared to patients with 'normotension' (8%) or white-coat hypertension (11%) [P<0.01]. Left ventricular diastolic dysfunction was more prevalent in patients with masked hypertension (46%), sustained hypertension (48%), and white-coat hypertension (43%) in comparison to subjects with 'normotension' (18%) [P=0.01].

CONCLUSION:

Masked hypertension is associated with a higher prevalence of albuminuria, left ventricular diastolic dysfunction, and hypertrophy. White-coat hypertension carries a more benign prognosis than sustained hypertension and masked hypertension. Our cross-sectional study supports the recommendation to performing ambulatory blood pressure measurements in type 2 diabetic patients.

Nguyen, D. M.; Lecoultre, V.; Sunami, Y.; Schutz, Y. (2012):

Assessment of Physical Activity and Energy Expenditure by GPS Combined With Accelerometry in Real-Life Conditions.

In: *J Phys.Act.Health* 10 (6), S. 880–888. Online verfügbar unter PM:23978833.

Abstract:

Background: Physical activity (PA) and related energy expenditure (EE) is often assessed by means of a single technique. Because of inherent limitations, single techniques may not allow for an accurate assessment both PA and related EE. The aim of this study was to develop a model to accurately assess common PA types and durations and thus EE in free-living conditions, combining data from global positioning system (GPS) and 2 accelerometers. Methods: Forty-one volunteers participated in the study. First, a model was developed and adjusted to measured EE with a first group of subjects (Protocol I, n = 12) who performed 6 structured and supervised PA. Then, the model was validated over 2 experimental phases with 2 groups (n = 12 and n = 17) performing scheduled (Protocol I) and spontaneous common activities in real-life condition (Protocol II). Predicted EE was compared with actual EE as measured by portable indirect calorimetry. Results: In protocol I, performed PA types could be recognized with little error. The duration of each PA type could be predicted with an accuracy below 1 minute. Measured and predicted EE were strongly associated (r = .97, P < .001). Conclusion: Combining GPS and 2 accelerometers allows for an accurate assessment of PA and EE in free-living situations

Nguyen, Thanh; Obeid, Joyce; Walker, Rachel G.; Krause, Matthew P.; Hawke, Thomas J.; McAssey, Karen et al. (2014):

Fitness and physical activity in youth with type 1 diabetes mellitus in good or poor glycemic control.

In: *Pediatr Diabetes. DOI:* 10.1111/pedi.12117.

Abstract:

BACKGROUND: Patients with type 1 diabetes mellitus (T1DM) may experience poor muscle health as a result of chronic hyperglycemia. Despite this, muscle function in children with T1DM with good or poor glycemic control has yet to be examined in detail. OBJECTIVE: To assess differences in muscle-related fitness variables in children with T1DM with good glycemic control (T1DM-G), as well as those with poor glycemic control (T1DM-P), and non-diabetic, healthy controls. SUBJECTS: Eight children with T1DM-G [glycosylated hemoglobin (HbA1c) </= 7.5% for 9 months], eight children with T1DM-P (HbA1c >/= 9.0% for 9 months), and eight healthy controls completed one exercise session. METHODS: Anaerobic and aerobic muscle functions were assessed with a maximal isometric grip strength test, a Wingate test, and an incremental continuous cycling test until exhaustion. Blood samples were collected at rest to determine HbA1c at the time of testing. Physical activity was monitored over 7 d using accelerometry. RESULTS: Children with T1DM-P displayed lower peak oxygen consumption (VO2peak) values (mL/kg/min) compared to healthy controls (T1DM-P: 33.2 +/- 5.6, controls: 43.5 +/- 6.3, p < 0.01), while T1DM-G (43.5 +/- 6.3) had values similar to controls and T1DM-P. There was a negative relationship between VO2peak and HbA1c% (r = -0.54, p < 0.01). All groups were similar in all other fitness variables. There were no group differences in physical activity variables. CONCLUSION: Children with T1DM-G did not display signs of impaired muscle function, while children with T1DM-P have signs of altered aerobic muscle capacity.

Nica, Elena Irina; Links, Paul S. (2009):

Affective instability in borderline personality disorder: Experience sampling findings.

In: *Current Psychiatry Reports* 11 (1), S. 74–81.

Abstract:

Affective instability, defined as repeated, rapid, and abrupt shifts in mood, is considered the core pathology in borderline personality disorder. The temporal pattern of affective instability can be best captured with the experience sampling method-longitudinal assessment of people's affective states as they occur in real time and in their natural environment. A review of the experience sampling studies published to date for borderline personality disorder suggests the following mood variability pattern: intense negative mood, more frequent and abrupt mood changes than healthy controls and patients with major depression, and partial triggering of affect by external events. The method also has great potential to investigate the links between affective instability and other psychological and behavioral correlates of the disorder, such as suicide, lack of self-esteem, and erratic behaviors. However, the method requires systematic study to determine best data collection designs and mathematical models of mood variability.

Nicaise, Virginie; Marshall, Simon; Ainsworth, Barbara E. (2011):

Domain-specific physical activity and self-report bias among low-income Latinas living in San Diego County.

In: *J Phys Act Health* 8 (7), S. 881–890. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-19336-001&site=ehost-live.

Abstract:

BACKGROUND:

Evidence suggests that Latina women appear to be less physically active than women of other racial/ethnic groups. This study evaluated how different domains of physical activity (PA) contributed to overall levels of PA among low-income Latinas, the validity of Latinas' self-reported PA, and potential moderators of self-report bias in PA.

METHODS:

A community sample of 105 Latinas (mean age = 35.9 ± 9.0 years; mean body mass index = 31.6 ± 7.2) completed the long form Spanish-language version of the International Physical Activity Questionnaire (IPAQ), wore an accelerometer for seven days, and completed self-reported measures of acculturation and socioeconomic status.

RESULTS:

Ninety-six percent of IPAQ-reported moderate-intensity PA (MPA) was accrued during household activities, with only 4% accrued during leisure time. Seventy-two percent of participants met national recommendations for PA using IPAQ data, but only 20% met recommendations when measured by accelerometer. When bouts of MPA lasting >10 min were included, 0% met recommendations. Age appeared to moderate self-report bias of vigorous PA, and there were nonsignificant trends for acculturation and income to moderate MPA and vigorous-intensity PA, respectively.

CONCLUSIONS:

Data suggest that it is important to measure household activity of Latinas, and that the IPAQ yield overestimates of self-report PA.

Nichols, Jeanne F.; Aralis, Hilary; García Merino, Sonia; Barrack, Michelle T.; Stalker-Fader, Lindsay; Rauh, Mitchell J. (2010):

Utility of the actiheart accelerometer for estimating exercise energy expenditure in female adolescent runners.

Abstract:

There is a growing need to accurately assess exercise energy expenditure (EEE) in athletic populations that may be at risk for health disorders because of an imbalance between energy intake and energy expenditure. The Actiheart combines heart rate and uniaxial accelerometry to estimate energy expenditure above rest. The authors' purpose was to determine the utility of the Actiheart for predicting EEE in female adolescent runners (N = 39, age 15.7 ± 1.1 yr). EEE was measured by indirect calorimetry and predicted by the Actiheart during three 8-min stages of treadmill running at individualized velocities corresponding to each runner's training, including recovery, tempo, and 5-km-race pace. Repeated-measures ANOVA with Bonferroni post hoc comparisons across the 3 running stages indicated that the Actiheart was sensitive to changes in intensity ($p < .01$), but accelerometer output tended to plateau at race pace. Pairwise comparisons of the mean difference between Actiheart- and criterion-measured EEE yielded values of 0.0436, 0.0539, and 0.0753 kcal × kg-1 × min-1 during recovery, tempo, and race pace, respectively ($p < .0001$). Bland-Altman plots indicated that the Actiheart consistently underestimated EEE except in 1 runner's recovery bout. A linear mixed-model regression analysis with height as a covariate provided an improved EEE prediction model, with the overall standard error of the estimate for the 3 speeds reduced to 0.0101 kcal × kg-1 × min-1. Using the manufacturer's equation that combines heart rate and uniaxial motion, the Actiheart may have limited use in accurately assessing EEE, and therefore energy availability, in young, female competitive runners.

Nicolaï, Saskia P. A.; Teijink, Joep A. W.; Prins, Martin H. (2010):

Multicenter randomized clinical trial of supervised exercise therapy with or without feedback versus walking advice for intermittent claudication.

In: *Journal of vascular surgery* 52 (2), S. 348–355. DOI: 10.1016/j.jvs.2010.02.022.

Abstract:

OBJECTIVE\r\nThe initial treatment for intermittent claudication is supervised exercise therapy (SET). Owing to limited capacity and patient transports costs of clinic-based SET, a concept of SET provided by local physiotherapists was developed. We hypothesized that provision of daily feedback with an accelerometer in addition to SET would further increase walking distance.\r\nMETHODS\r\nThis multicenter randomized trial was set in vascular surgery outpatient clinics and included 304 patients with intermittent claudication. Patients were randomized to exercise therapy in the form of \"go home and walk\" advice (WA), SET, or SET with feedback. Local physiotherapists provided SET. The primary outcome measure was the change in absolute claudication distance. Secondary outcomes were the change in functional claudication distance and results on the Walking Impairment Questionnaire (WIQ) and Short-Form 36 (SF-36) Health Survey after 12 months.\r\nRESULTS\r\nIn 11 centers, 102, 109, and 93 patients were included, respectively, in the WA, SET, and SET with feedback groups, and data for 83, 93, and 76, respectively, could be analyzed. The median (interquartile range) change in walking distance between 12 months and baseline in meters was 110 (0-300) in the WA group, 310 (145-995) in the SET group, and 360 (173-697) in the SET with feedback group (P < .001 WA vs SET). WIQ scores and relevant domains of the SF-36 improved statistically significantly in the SET groups.\r\nCONCLUSIONS\r\nSET is more effective than WA in improving walking distance, WIQ scores, and quality of life for patients with intermittent claudication. Additional feedback with an accelerometer did not result in further improvement. SET programs should be made available for all patients with intermittent claudication.

Nielsen, Glen; Bugge, Anna; Hermansen, Bianca; Svensson, Jesper; Andersen, Lars Bo (2012):

School playground facilities as a determinant of children's daily activity: A cross-sectional study of Danish primary school children.

In: *J Phys Act Health* 9 (1), S. 104–114. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-00272-012&site=ehost-live.

Abstract:

BACKGROUND:

This study investigates the influence of school playground facilities on children's daily physical activity.

METHODS:

Participants were 594 school children measured at preschool (age 6 to 7 years) and 3 years later in third grade (518 children age 9 to 10 years) from 18 schools in 2 suburban municipalities in Denmark. Physical activity data were obtained using accelerometers. These were related to the number of permanent play facilities in school grounds and the school playground area (m2).

RESULTS:

The number of play facilities in the school grounds was positively associated with all measures of children's activity. In preschool every 10 additional play facilities the children had access to was associated with an increase in the average accelerometer counts of 14% (r = .273, P < .001) in school time and 6.9% (r = .195, P < .001) overall. For the children in third grade, access to 10 additional play facilities was associated with an increase in school time activity level of 26% (r = .364, P < .001) and an increase in overall activity level of 9.4% (r = .211, P < .001). School playground area did not affect activity levels independently of the number of permanent play facilities.

CONCLUSION:

Increasing the number of play facilities in primary school playgrounds may increase the level of children's daily physical activity.

Nielsen, Karina; Cleal, Bryan (2010):

Predicting flow at work: investigating the activities and job characteristics that predict flow states at work.

In: *Journal of Occupational Health Psychology* 15 (2), S. 180–190. DOI: 10.1037/a0018893.

Abstract:

Flow (a state of consciousness where people become totally immersed in an activity and enjoy it intensely) has been identified as a desirable state with positive effects for employee well-being and innovation at work. Flow has been studied using both questionnaires and Experience Sampling Method (ESM). In this study, we used a newly developed 9-item flow scale in an ESM study combined with a questionnaire to examine the predictors of flow at two levels: the activities (brainstorming, planning, problem solving and evaluation) associated with transient flow states and the more stable job characteristics (role clarity,

influence and cognitive demands). Participants were 58 line managers from two companies in Denmark; a private accountancy firm and a public elder care organization. We found that line managers in elder care experienced flow more often than accountancy line managers, and activities such as planning, problem solving, and evaluation predicted transient flow states. The more stable job characteristics included in this study were not, however, found to predict flow at work.

Niiranen, Teemu J.; Maki, Juhani; Puukka, Pauli; Karanko, Hannu; Jula, Antti M. (2014):

Office, Home, and Ambulatory Blood Pressures as Predictors of Cardiovascular Risk.

In: *Hypertension. DOI:* 10.1161/HYPERTENSIONAHA.114.03292.

Abstract:

Ambulatory blood pressure (BP) is considered as the gold standard of BP measurement although it has not been shown to be more strongly associated with cardiovascular risk than is home BP. Our objective was to compare the prognostic value of office, home, and ambulatory BP for cardiovascular risk in 502 participants examined in 1992 to 1996. The end point was a composite of cardiovascular mortality, myocardial infarction, stroke, heart failure hospitalization, and coronary intervention. We assessed the prognostic value of each BP in multivariable-adjusted Cox models. The likelihood chi2 ratio value was used to test whether the addition of a BP variable improved the model's goodness of fit. After a follow-up of 16.1+/-3.9 years, 70 participants (13.9%) had experienced >/=1 cardiovascular event. Office (systolic/diastolic hazard ratio per 1/1 mm Hg increase in BP, 1.024/1.018; systolic/diastolic 95% confidence interval, 1.009-1.040/0.994-1.043), home (hazard ratio, 1.029/1.028; 95% confidence interval, 1.013-1.045/1.005-1.052), and 24-hour ambulatory BP (hazard ratio, 1.033/1.049; 95% confidence interval, 1.019-1.047/1.023-1.077) were predictive of cardiovascular events. When all 3 BP variables were included in the model simultaneously, only systolic/diastolic ambulatory BP was a significant predictor of cardiovascular events (P=0.002/<0.001). Home systolic/diastolic BP improved the fit of the model only marginally when added to a model including office BP (chi2=3.0/4.0, P=0.09/0.047). Ambulatory BP, however, improved the fit of model more clearly when added to office and home BP (chi2=9.0/12.3, P=0.001/<0.001). Our findings suggest that ambulatory BP is prognostically superior to office and home BP.

Nijsen, Tamara M. E.; Aarts, Ronald M.; Cluitmans, Pierre J. M.; Griep, Paul A. M. (2010):

Time-frequency analysis of accelerometry data for detection of myoclonic seizures.

In: *IEEE transactions on information technology in biomedicine : a publication of the IEEE Engineering in Medicine and Biology Society* 14 (5), S. 1197–1203. DOI: 10.1109/TITB.2010.2058123.

Abstract:

Four time-frequency and time-scale methods are studied for their ability of detecting myoclonic seizures from accelerometric data. Methods that are used are: the short-time Fourier transform (STFT), the Wigner distribution (WD), the continuous wavelet transform (CWT) using a Daubechies wavelet, and a newly introduced model-based matched wavelet transform (MOD). Real patient data are analyzed using these four time-frequency and time-scale methods. To obtain quantitative results, all four methods are evaluated in a linear classification setup. Data from 15 patients are used for training and data from 21 patients for testing. Using features based on the CWT and MOD, the success rate of the classifier was 80%. Using STFT or WD-based features, the classification success is reduced. Analysis of the false positives revealed that they were either clonic seizures, the onset of tonic seizures, or sharp peaks in \"normal\" movements indicating that the patient was making a jerky movement. All these movements are considered clinically important to detect. Thus, the results show that both CWT and MOD are useful for the detection of myoclonic seizures. On top of that, MOD has the advantage that it consists of parameters that are related to seizure duration and intensity that are physiologically meaningful. Furthermore, in future work, the model can also be useful for the detection of other motor seizure types.

Nijsen, Tamara M. E.; Cluitmans, Pierre J. M.; Arends, Johan Bam; Am Griep, Paul (2007):

Detection of subtle nocturnal motor activity from 3-D accelerometry recordings in epilepsy patients.

In: *Biomedical Engineering, IEEE Transactions on* 54 (11), S. 2073–2081.

Abstract:

This paper presents a first step towards reliable detection of nocturnal epileptic seizures based on 3-D accelerometry (ACM) recordings. The main goal is to distinguish between data with and without subtle nocturnal motor activity, thus reducing the amount of data that needs further (more complex) analysis for seizure detection. From 15 ACM signals (measured on five

positions on the body), two features are computed, the variance and the jerk. In the resulting 2-D feature space, a linear threshold function is used for classification. For training and testing, the algorithm ACM data along with video data is used from nocturnal registrations in seven mentally retarded patients with severe epilepsy. Per patient, the algorithm detected 100% of the periods of motor activity that are marked in video recordings and the ACM signals by experts. From all the detections, 43%-89% was correct (mean =65%). We were able to reduce the amount of data that need to be analyzed considerably. The results show that our approach can be used for detection of subtle nocturnal motor activity. Furthermore, our results indicate that our algorithm is robust for fluctuations across patients. Consequently, there is no need for training the algorithm for each new patient.

Nisenbaum, Rosane; Links, Paul S.; Eynan, Rahel; Heisel, Marnin J. (2010):

Variability and predictors of negative mood intensity in patients with borderline personality disorder and recurrent suicidal behavior: multilevel analyses applied to experience sampling methodology.

In: *Journal of Abnormal Psychology* 119 (2), S. 433–439. DOI: 10.1037/a0018696.

Abstract:

Variability in mood swings is a characteristic of borderline personality disorder (BPD) and is associated with suicidal behavior. This study investigated patterns of mood variability and whether such patterns could be predicted from demographic and suicide-related psychological risk factors. Eighty-two adults with BPD and histories of recurrent suicidal behavior were recruited from 3 outpatient psychiatric programs in Canada. Experience sampling methodology (ESM) was used to assess negative mood intensity ratings on a visual analogue scale, 6 random times daily, for 21 days. Three-level models estimated variability between times (52.8%), days (22.2%), and patients (25.1%) and supported a quadratic pattern of daily mood variability. Depression scores predicted variability between patients' initial rating of the day. Average daily mood patterns depended on levels of hopelessness, suicide ideation, and sexual abuse history. Patients reporting moderate to severe sexual abuse and elevated suicide ideation were characterized by worsening moods from early morning up through evening, with little or no relief; patients reporting mild sexual abuse and low suicide ideation reported improved mood throughout the day. These patterns, if replicated in larger ESM studies, may potentially assist the clinician in determining which patients require close monitoring.

Nishiguchi, Shu; Ito, Hiromu; Yamada, Minoru; Yoshitomi, Hiroyuki; Furu, Moritoshi; Ito, Tatsuaki et al. (2014):

Self-assessment tool of disease activity of rheumatoid arthritis by using a smartphone application.

In: *Telemed J E Health* 20 (3), S. 235–240. DOI: 10.1089/tmj.2013.0162.

Abstract:

Abstract Objectives: The disease activities of rheumatoid arthritis (RA) tend to fluctuate between visits to doctors, and a self-assessment tool can help patients accommodate to their current status at home. The aim of the present study was to develop a novel modality to assess the disease activity of RA by a smartphone without the need to visit a doctor. Subjects and Methods: This study included 65 patients with RA, 63.1+/-11.9 years of age. The 28-joint disease activity score (DAS28) was measured for all participants at each clinic visit. The patients assessed their status with the modified Health Assessment Questionnaire (mHAQ), a self-assessed tender joint count (sTJC), and a self-assessed swollen joint count (sSJC) in a smartphone application. The patients' trunk acceleration while walking was also measured with a smartphone application. The peak frequency, autocorrelation (AC) peak, and coefficient of variance of the acceleration peak intervals were calculated as the gait parameters. Results: Univariate analyses showed that the DAS28 was associated with mHAQ, sTJC, sSJC, and AC ($p<0.05$). In a stepwise linear regression analysis, mHAQ (beta=0.264, $p<0.05$), sTJC (beta=0.581, $p<0.001$), and AC (beta=-0.157, $p<0.05$) were significantly associated with DAS28 in the final model, and the predictive model explained 67% of the DAS28 variance. Conclusions: The results suggest that noninvasive self-assessment of a combination of joint symptoms, limitations of daily activities, and walking ability can adequately predict disease activity of RA with a smartphone application.

Nishiguchi, Shu; Yamada, Minoru; Nagai, Koutatsu; Mori, Shuhei; Kajiwara, Yuu; Sonoda, Takuya et al. (2012):

Reliability and validity of gait analysis by Android-based smartphone.

In: *Telemedicine and e-Health* 18 (4), S. 292–296. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-12413-005&site=ehost-live;shu.n@ks2.ecs.kyoto-u.ac.jp.

Abstract:

Smartphones are very common devices in daily life that have a built-in tri-axial accelerometer. Similar to previously developed accelerometers, smartphones can be used to assess gait patterns. However, few gait analyses have been performed using smartphones, and their reliability and validity have not been evaluated yet. The purpose of this study was to evaluate the reliability and validity of a smartphone accelerometer. Thirty healthy young adults participated in this study. They walked 20m at their preferred speeds, and their trunk accelerations were measured using a smartphone and a tri-axial accelerometer that was secured over the L3 spinous process. We developed a gait analysis application and installed it in the smartphone to measure the acceleration. After signal processing, we calculated the gait parameters of each measurement terminal: peak frequency (PF), root mean square (RMS), autocorrelation peak (AC), and coefficient of variance (CV) of the acceleration peak intervals. Remarkable consistency was observed in the test–retest reliability of all the gait parameter results obtained by the smartphone ($p < 0.001$). All the gait parameter results obtained by the smartphone showed statistically significant and considerable correlations with the same parameter results obtained by the tri-axial accelerometer (PF $r = 0.99$, RMS $r = 0.89$, AC $r = 0.85$, CV $r = 0.82$; $p < 0.01$). Our study indicates that the smartphone with gait analysis application used in this study has the capacity to quantify gait parameters with a degree of accuracy that is comparable to that of the tri-axial accelerometer. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Nock, Matthew K.; Prinstein, Mitchell J.; Sterba, Sonya K. (2009):

Revealing the form and function of self-injurious thoughts and behaviors: A real-time ecological assessment study among adolescents and young adults.

In: *Journal of Abnormal Psychology* 118 (4), S. 816–827. DOI: 10.1037/a0016948.

Abstract:

Self-injurious behaviors are among the leading causes of death worldwide. However, the basic nature of self-injurious thoughts and behaviors (SITBs) is not well understood because prior studies have relied on long-term, retrospective, aggregate, self-report assessment methods. The authors used ecological momentary assessment methods to measure suicidal and nonsuicidal SITBs as they naturally occur in real time. Participants were 30 adolescents and young adults with a recent history of self-injury who completed signal- and event-contingent assessments on handheld computers over a 14-day period, resulting in the collection of data on 1,262 thought and behavior episodes. Participants reported an average of 5.0 thoughts of nonsuicidal self-injury (NSSI) per week, most often of moderate intensity and short duration (1-30 min), and 1.6 episodes of NSSI per week. Suicidal thoughts occurred less frequently (1.1 per week), were of longer duration, and led to self-injurious behavior (i.e., suicide attempts) less often. Details are reported about the contexts in which SITBs most often occur (e.g., what participants were doing, who they were with, and what they were feeling before and after each episode). This study provides a first glimpse of how SITBs are experienced in everyday life and has significant implications for scientific and clinical work on self-injurious behaviors.

Nolan, M.; Mitchell, J. R.; Doyle-Baker, P. K. (2013):

Validity of the Apple iPhone/iPod Touch(R) as an Accelerometer-Based Physical Activity Monitor: A Proof-of-Concept Study.

In: *J Phys.Act.Health* (1543-3080 (Linking)). Online verfügbar unter PM:23575387.

Abstract:

BACKGROUND: The popularity of smartphones has led researchers to ask if they can replace traditional tools for assessing free-living physical activity. Our purpose was to establish proof-of-concept that a smartphone could record acceleration during physical activity, and those data could be modeled to predict activity type (walking or running), speed (km.h-1), and energy expenditure (METs). METHODS: An application to record and email accelerations was developed for the Apple iPhone/iPod Touch(R). Twenty-five healthy adults performed treadmill walking (4.0 km.h-1 to 7.2 km.h-1) and running (8.1 km.h-1 to 11.3 km .h-1) wearing the device. Criterion energy expenditure measurements were collected via metabolic cart. RESULTS: Activity type was classified with 99% accuracy. Speed was predicted with a bias of 0.02 km h-1 (SEE: 0.57 km.h-1) for walking, -0.03 km.h-1 (SEE: 1.02 km.h-1) for running. Energy expenditure was predicted with a bias of 0.35 METs (SEE: 0.75 METs) for walking, -0.43 METs (SEE: 1.24 METs) for running. CONCLUSION: Our results suggest that an iPhone/iPod Touch(R) can predict aspects of

locomotion with accuracy similar to other accelerometer-based tools. Future studies may leverage this and the additional features of smartphones to improve data collection and compliance

Nooijen, C. F.; De, Groot S.; Postma, K.; Bergen, M. P.; Stam, H. J.; Bussmann, J. B.; Van Den Berg-Emons Rj (2012):

A more active lifestyle in persons with a recent spinal cord injury benefits physical fitness and health.

In: *Spinal Cord* 50 (4), S. 320–323. DOI: 10.1038/sc.2011.152.

Abstract:

STUDY DESIGN: A prospective cohort study. OBJECTIVES: To study the longitudinal relationship between objectively measured everyday physical activity level, and physical fitness and lipid profile in persons with a recent spinal cord injury (SCI). SETTING: A rehabilitation centre in the Netherlands and the participant's home environment. METHODS: Data of 30 persons with a recent SCI were collected at the start of active rehabilitation, 3 months later, at discharge from inpatient rehabilitation, and 1 year after discharge. Physical activity level (duration of dynamic activities as % of 24 h) was measured with an accelerometry-based activity monitor. Regarding physical fitness, peak oxygen uptake (VO(2)peak) and peak power output (POpeak) were determined with a maximal wheelchair exercise test, and upper extremity muscle strength was measured with a handheld dynamometer. Fasting blood samples were taken to determine the lipid profile. RESULTS: An increase in physical activity level was significantly related to an increase in VO(2)peak and POpeak, and an increase in physical activity level favourably affected the lipid profile. A nonsignificant relation was found with muscle strength. CONCLUSION: Everyday physical activity seems to have an important role in the fitness and health of persons with a recent SCI. An increase in physical activity level was associated with an increase in physical fitness and with a lower risk of cardiovascular disease

Noonan, Michael J.; Markham, Andrew; Newman, Chris; Trigoni, Niki; Buesching, Christina D.; Ellwood, Stephen A.; MacDonald, David W. (2014):

Climate and the individual: inter-annual variation in the autumnal activity of the European badger (Meles meles).

In: *PLoS One* 9 (1), S. e83156. DOI: 10.1371/journal.pone.0083156.

Abstract:

We establish intra-individual and inter-annual variability in European badger (Meles meles) autumnal nightly activity in relation to fine-scale climatic variables, using tri-axial accelerometry. This contributes further to understanding of causality in the established interaction between weather conditions and population dynamics in this species. Modelling found that measures of daylight, rain/humidity, and soil temperature were the most supported predictors of ACTIVITY, in both years studied. In 2010, the drier year, the most supported model included the SOLAR*RH interaction, RAIN, and 30cmTEMP (w = 0.557), while in 2012, a wetter year, the most supported model included the SOLAR*RH interaction, and the RAIN*10cmTEMP (w = 0.999). ACTIVITY also differed significantly between individuals. In the 2012 autumn study period, badgers with the longest per noctem activity subsequently exhibited higher Body Condition Indices (BCI) when recaptured. In contrast, under drier 2010 conditions, badgers in good BCI engaged in less per noctem activity, while badgers with poor BCI were the most active. When compared on the same calendar dates, to control for night length, duration of mean badger nightly activity was longer (9.5 hrs +/-3.3 SE) in 2010 than in 2012 (8.3 hrs +/-1.9 SE). In the wetter year, increasing nightly activity was associated with net-positive energetic gains (from BCI), likely due to better foraging conditions. In a drier year, with greater potential for net-negative energy returns, individual nutritional state proved crucial in modifying activity regimes; thus we emphasise how a 'one size fits all' approach should not be applied to ecological responses.

Nosen, Elizabeth; Woody, Sheila R. (2013):

Brief psycho-education affects circadian variability in nicotine craving during cessation.

In: *Drug Alcohol Depend*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-08847-001%26site%3dehost-live.

Abstract:

BACKGROUND: Nicotine cravings are a key target of smoking cessation interventions. Cravings demonstrate circadian variation during abstinence, often peaking during the morning and evening hours. Although some research has also shown diurnal variation in the efficacy of nicotine replacement medications, little research has examined how brief psychosocial interventions affect temporal patterns of craving during abstinence. The present study examined the impact of two brief psycho-education interventions on circadian variations in cravings during a 24-h period. METHOD: 176 adult smokers interested in quitting participated in two lab sessions. During the first session, participants received (a) mindfulness psycho-education that encouraged acceptance of cravings as a normal, tolerable part of quitting that people should not expect to perfectly control, (b) standard cessation psycho-education, or (c) no psycho-education. Half the sample initiated a cessation attempt the following day. Dependent variables were assessed using ecological momentary assessment (24-h of monitoring, immediately after first lab session) and questionnaires four days later. RESULTS: Partially consistent with hypotheses, both forms of psycho-education were associated with differential diurnal variation in cravings during cessation. Relative to those receiving no psycho-education, standard smoking cessation psycho-education decreased morning cravings. Psycho-education encouraging acceptance of cravings was associated with lower craving in both the morning and evening, albeit only among successfully abstinent smokers. CONCLUSIONS: Results demonstrate that brief non-pharmacological interventions can affect circadian craving patterns during smoking cessation. Further investigation of mechanisms of change and of the impact of psycho-education on cessation outcomes is warranted. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Nusbaum, Emily C.; Silvia, Paul J.; Beaty, Roger E.; Burgin, Chris J.; Hodges, Donald A.; Kwapil, Thomas R. (2013):

Listening Between the Notes: Aesthetic Chills in Everyday Music Listening.

In: *Psychology of Aesthetics, Creativity, and the Arts*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-44712-001%26site%3dehost-live.

Abstract:

Who gets chills—a pleasurable feeling of goose bumps—in response to music, and why? The current study used experience sampling to examine within-person variability in aesthetic chills. For one week, 106 undergraduate participants responded to 10 daily surveys, delivered via their cell phones, about their momentary activities, emotions, and environment, with an emphasis on whether they were listening to music and were experiencing chills. At the within-person level, music listening context and emotional states during music listening influenced whether or not people got chills. Chills were more likely when people listened to music that they chose and that they were listening to closely. Chills were also more likely when people were listening to music while happy or while sad, but not while worried. Overall, the study illustrates how music listening context and other within-person differences contribute to aesthetic chills in people's everyday environments. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Nyan, M. N.; Tay, F. E. H.; Tan, A. W. Y.; Seah, K. H. W. (2006):

Distinguishing fall activities from normal activities by angular rate characteristics and high-speed camera characterization.

In: *Med Eng Phys* 28 (8), S. 842–849. DOI: 10.1016/j.medengphy.2005.11.008.

Abstract:

Distinguishing sideways and backward falls from normal activities of daily living using angular rate sensors (gyroscopes) was explored in this paper. Gyroscopes were secured on a shirt at the positions of sternum (S), front of the waist (FW) and right underarm (RU) to measure angular rate in lateral and sagittal planes of the body during falls and normal activities. Moreover, the motions of the fall incidents were captured by a high-speed camera at a frame rate of 250 frames per second (fps) to study the body configuration during fall. The high-speed camera and the sensor data capture system were activated simultaneously to synchronize the picture frame of high-speed camera and the sensor data. The threshold level for each sensor was set to distinguish fall activities from normal activities. Lead time of fall activities (time after threshold value is surpassed to the time when the hip hits the ground) and relative angle of body configuration (angle beta between the vertical line and the line from the center point of the foot or the center point between the two legs to that of the waist) at the threshold level were studied. For sideways falls, lead times of sensors at positions FW and S were about 200-220ms and 135-182ms, respectively. The lead time of the slippery backward fall (about 98ms) from the sensor at position RU was shorter than that of the sideways falls from the sensors at positions FW and S. The relative angle of body configuration at threshold level for sideways and backward falls were about 40-43 degrees for the sensor at position FW, about 43-52 degrees for the sensor at position S and about 54 degrees for the sensor at position RU, respectively. This is the first study that investigates fall dynamics in detection of fall before the person hits the ground using angular rate sensors (gyroscopes).

Nyberg, Gisela A.; Nordenfelt, Anja M.; Ekelund, Ulf; Marcus, Claude (2009):

Physical activity patterns measured by accelerometry in 6- to 10-yr-old children.

In: *Med Sci Sports Exerc* 41 (10), S. 1842–1848. DOI: 10.1249/MSS.0b013e3181a48ee6.

Abstract:

PURPOSE\r\nTo examine differences in patterns of objectively measured physical activity (PA) among weekdays and weekend days and across different time blocks during the day in relation to age and gender. This knowledge is important when planning preventive initiatives aimed at increasing levels of PA in children.\r\nMETHODS\r\nThis is a cross-sectional analysis in 653 girls and 640 boys (6-10 yr) measured during 1 wk with accelerometry. Periods of the day were divided into school time (8:00 a.m. to 1:30 p.m.), after school care time (1:30-4:00 p.m.), and evening time (4:00-9:00 p.m.). Multivariate ANOVA was used to analyze mean PA.\r\nRESULTS\r\nMean daily PA differed significantly across age groups (6-10 yr) in both boys and girls (P < 0.001). Mean (SE) daily PA was significantly lower during weekends compared with weekdays in all age groups (girls 782 (6.7) vs 681 (7.7) counts per min (CPM), P < 0.001; boys 853 (7.1) vs 729 (8.0) CPM, P < 0.001). This decline was similar across low, medium, and highly active children. Mean PA was highest during after school care time on weekdays (girls 879 (9.8) and boys 990 (10.0) CPM) compared with all other periods. The difference in mean PA between boys and girls was highest during school time (P < 0.001) and after school care time (P < 0.001).\r\nCONCLUSIONS\r\nThe decline in PA in children may start already at the age of 6 yr. The school setting may be an important arena for targeting activity levels in girls because the difference in PA levels between girls and boys is most pronounced during school time. In both girls and boys, PA levels are disproportionally low during weekends and might be important targets for interventions aimed to increase PA.

Nyholm, D.; Constantinescu, R.; Holmberg, B.; Dizdar, N.; Askmark, H. (2009):

Comparison of apomorphine and levodopa infusions in four patients with Parkinson's disease with symptom fluctuations.

In: *Acta neurologica Scandinavica* 119 (5), S. 345–348. DOI: 10.1111/j.1600-0404.2008.01104.x.

Abstract:

BACKGROUND\r\nMotor fluctuations in patients with advanced Parkinson's disease may be successfully treated with subcutaneous apomorphine infusion or intraduodenal levodopa/carbidopa infusion. No comparative trials of these two alternatives were performed.\r\nAIMS OF THE STUDY\r\nWe present a subanalysis from a randomized crossover clinical trial where levodopa infusion as monotherapy was compared with any other combination of pharmacotherapy in fluctuating patients. Four patients used apomorphine infusion and oral levodopa in the comparator arm. The results of these four patients are presented in detail.\r\nMETHODS\r\nThe duration of the trial was 3 + 3 weeks. Patients were video-recorded half-hourly on two non-consecutive days of both treatment arms. Blinded video ratings were used. Patient self-assessments of motor function and quality-of-life (QoL) parameters were captured using an electronic diary.\r\nRESULTS\r\nRatings in moderate to severe \"off\" state ranged 0-44% on apomorphine infusion and 0-6% on levodopa infusion. Moderate to severe dyskinesias were not recorded in any of the treatments. QoL was reported to be improved in all patients on duodenal levodopa infusion.\r\nCONCLUSIONS\r\nMonotherapy with duodenal infusion of levodopa was more efficacious and brought greater QoL than combination therapy with apomorphine infusion in these fluctuating patients.

Nyklíček, Ivan; Vingerhoets, Ad; Zeelenberg, Marcel (Hg.) (2011):

Emotion Regulation and Well-Being.

New York, NY: Springer New York.

Oakes, J. Michael; Forsyth, Ann; Schmitz, Kathryn H. (2007):

The effects of neighborhood density and street connectivity on walking behavior: the Twin Cities walking study.

In: *Epidemiologic Perspectives & Innovations* 4 (1), S. 16.

Abstract:

A growing body of health and policy research suggests residential neighborhood density and street connectivity affect walking and total physical activity, both of which are important risk factors for obesity and related chronic diseases. The authors report

results from their methodologically novel Twin Cities Walking Study; a multilevel study which examined the relationship between built environments, walking behavior and total physical activity. In order to maximize neighborhood-level variation while maintaining the exchangeability of resident-subjects, investigators sampled 716 adult persons nested in 36 randomly selected neighborhoods across four strata defined on density and street-connectivity - a matched sampling design. Outcome measures include two types of self-reported walking (from surveys and diaries) and so-called objective 7-day accelerometry measures. While crude differences are evident across all outcomes, adjusted effects show increased odds of travel walking in higher-density areas and increased odds of leisure walking in low-connectivity areas, but neither density nor street connectivity are meaningfully related to overall mean miles walked per day or increased total physical activity. Contrary to prior research, the authors conclude that the effects of density and block size on total walking and physical activity are modest to non-existent, if not contrapositive to hypotheses. Divergent findings are attributed to this study's sampling design, which tends to mitigate residual confounding by socioeconomic status.

Ochoa-Angrino, Solanlly (2013):

Factors related to students' engaged reading in high school science classrooms.

In: *Dissertation Abstracts International Section A: Humanities and Social Sciences* 73 (11-A(E)). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-99090-374%26site%3dehost-live.

Abstract:

Using emergent motivation theory, this study analyzes the relationships between high school students' perceptions of their reading skills, task challenge, and personal control over assigned reading activities and their reading engagement (i.e., interest, enjoyment, and concentration) during science instruction. The study also examines how these relationships differ between struggling and proficient readers. Further, the study examines the association between students' experiences of conditions of anxiety, apathy, boredom or relaxation and flow on their reading engagement during science instruction. Finally, the study investigates the relationship between reading engagement and science achievement. The experience sampling method (ESM) was used with a sample of 244 high school students in grades 9–12 to measure students' perceptions of skill, challenge, and control, and their reading engagement during science instruction. Hierarchical linear modeling (HLM) was employed with repeated-measures analysis of students' momentary experiences of skill, challenge, control, and engagement during reading. Results show that when students perceive having both high reading skills and high control, they exhibit deeper reading engagement than when they perceive having both low reading skills and low control. These feelings of control were noticeably important for struggling readers as compared to proficient readers. It was also found that students experience deeper reading engagement during flow (i.e., when students perceive they have high reading skills and the reading task is highly challenging), but reading engagement decreases significantly whenever students experience conditions of anxiety or apathy when reading science materials. Finally, reading engagement was positively related to science achievement. Educational implications of the results are presented. Limitations of the study are discussed and suggestions for future research are described. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Ockendon, M.; Gilbert, R. E. (2012):

Validation of a novel smartphone accelerometer-based knee goniometer.

In: *J Knee.Surg.* 25 (4), S. 341–345. DOI: 10.1055/s-0031-1299669.

Abstract:

Loss of full knee extension following anterior cruciate ligament surgery has been shown to impair knee function. However, there can be significant difficulties in accurately and reproducibly measuring a fixed flexion of the knee. We studied the interobserver and the intraobserver reliabilities of a novel, smartphone accelerometer-based, knee goniometer and compared it with a long-armed conventional goniometer for the assessment of fixed flexion knee deformity. Five healthy male volunteers (age range 30 to 40 years) were studied. Measurements of knee flexion angle were made with a telescopic-armed goniometer (Lafayette Instrument, Lafayette, IN) and compared with measurements using the smartphone (iPhone 3GS, Apple Inc., Cupertino, CA) knee goniometer using a novel trigonometric technique based on tibial inclination. Bland-Altman analysis of validity and reliability including statistical analysis of correlation by Pearson's method was undertaken. The iPhone goniometer had an interobserver correlation (r) of 0.994 compared with 0.952 for the Lafayette. The intraobserver correlation was r = 0.982 for the iPhone (compared with 0.927). The datasets from the two instruments correlate closely (r = 0.947) are proportional and have mean difference of only -0.4 degrees (SD 3.86 degrees). The Lafayette goniometer had an intraobserver reliability +/- 9.6 degrees. The interobserver reliability was +/- 8.4 degrees. By comparison the iPhone had an interobserver reliability +/- 2.7 degrees and an intraobserver reliability +/- 4.6 degrees. We found the iPhone goniometer to be a reliable tool for the measurement of subtle knee flexion in the clinic setting

O'Connell, Kathleen A.; Hosein, Vanessa L.; Schwartz, Joseph E.; Leibowitz, Ruth Q. (2007):

How does coping help people resist lapses during smoking cessation?

In: *Health Psychol* 26 (1), S. 77.

Abstract:

OBJECTIVES:

To determine whether types of coping strategies have differential effects on preventing lapses and lowering urge levels and to investigate mechanisms by which coping strategies prevent lapses during smoking cessation.

DESIGN:

Sixty-one respondents performed ecological momentary assessment using palm-top computers and tape recorders to report their coping strategies and urge levels before and after temptations to smoke. Multilevel linear regression models were used to compare the effects of individual strategy types with the average strategy.

MAIN OUTCOME MEASURES:

Lapses versus resisted temptations and changes in urge levels.

RESULTS:

Number of strategies significantly predicted resisting smoking and change in urge levels. Compared with the effect of the average strategy, movement/exercise was marginally worse at preventing lapses, and food/drink was marginally related to higher postcoping urge levels.

CONCLUSION:

Although using multiple coping strategies helps people resist the urge to smoke, no particular coping strategy works better than any other. Coping strategies prevent lapses by reducing high urge levels during temptations.

O'Connell, Kathleen A.; Schwartz, Joseph E.; Shiffman, Saul (2008):

Do resisted temptations during smoking cessation deplete or augment self-control resources?

In: *Psychol Addict Behav* 22 (4), S. 486–495. DOI: 10.1037/0893-164X.22.4.486.

Abstract:

A resource depletion model of self-control posits that for some period following performance of a task requiring self-control, self-control will be reduced and thus less available for use in a subsequent task. Using 2 substantial data sets collected in real time from individuals who were trying to quit smoking (1,660 and 9,516 temptation episodes collected from 61 and 248 individuals, respectively), we evaluated this model by testing the hypotheses that the number and length of resisted temptations and the intensity of the most recently reported urge during the prior 4 hr predict decreased self-control and increased likelihood of lapsing. Survival and multilevel regression modeling showed that contrary to the hypothesis, the number of recently resisted temptations predicted a lower risk of lapsing in both samples. Duration of resisted temptations had no significant effect in either sample. Intensity of most recently reported urge predicted lapsing in 1 data set but not in the other. Overall, there was little support for the resource depletion model. The protective effect of successfully resisting temptations was an unexpected but provocative finding.

O'Driscoll, Denise M.; Foster, Alison M.; Davey, Margot J.; Nixon, Gillian M.; Horne, Rosemary S. C. (2010):

Can actigraphy measure sleep fragmentation in children?

In: *Archives of disease in childhood* 95 (12), S. 1031–1033.

Abstract:

OBJECTIVE:

The gold standard assessment for sleep quality is polysomnography (PSG). However, actigraphy has gained popularity as an ambulatory monitor. We aimed to assess the value of actigraphy in measuring sleep fragmentation in children.

METHODS:

130 children aged 2-18 years referred for assessment for sleep disordered breathing (SDB) were recruited. The arousal index (AI) scored from PSG was compared to the actigraphic fragmentation index (FI) and number of wake bouts/h.

RESULTS:

The ability of actigraphic measures to correctly classify a child as having an AI>10 events/h rated as fair for the FI and poor for wake bouts/h (area under the receiver operator characteristic curve, 0.73 and 0.67, respectively).

CONCLUSION:

Actigraphy provides only a fair indication of the level of arousal from sleep in children. While the limitations of actigraphy prevent it from being a diagnostic tool for SDB, it still has a role in evaluating sleep/wake schedules in children.

Offer, Shira (2013):

Family time activities and adolescents' emotional well-being.

In: *J Marriage and Family* 75 (1), S. 26–41. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-01775-004%26site%3dehost-live;shira.offer@biu.ac.il.

Abstract:

The literature is divided on the issue of what matters for adolescents' well-being, with one approach focusing on quality and the other on routine family time. Using the experience sampling method, a unique form of time diary, and survey data drawn from the 500 Family Study (N = 237 adolescents with 8,122 observations), this study examined the association between family time and adolescents' emotional well-being as a function of the type of activities family members engaged in during their time together. Hierarchical linear model analyses revealed that eating meals together was beneficial to adolescents' emotional well-being, especially when fathers were present. Family leisure was also beneficial to teens' well-being. By contrast, productive family time (e.g., homework) was associated with lower emotional well-being, as was maintenance family time (e.g., household chores), but only when adolescents engaged in it with both parents. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Offer, Shira (2014):

The costs of thinking about work and family: Mental labor, work–family spillover, and gender inequality among parents in dual-earner families.

In: *Sociological Forum* 29 (4), S. 916–936. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-52537-008%26site%3dehost-live.

Abstract:

One of the aspects unaccounted for in previous assessments of employed parents 'distribution of time is the mental dimension of tasks and demands. This aspect, referred to as mental labor, is conceptualized as the planning, organization, and management of everyday activities. Using the experience sampling method, a unique form of time diary, and survey data from the 500 Family Study (N = 402 mothers with 16,451 signals and 291 fathers with 11,322 signals), this study examined the prevalence, context, and emotional correlates of mental labor among parents in dual-earner families. Results show that fathers reported thinking more frequently about job-related matters than mothers but these concerns did not spill over into unpaid work. By contrast, mothers' job-related thoughts tended to spill over into unpaid work and free-time activities. When engaging in mental labor, mothers and fathers were equally likely to think about family matters, but these thoughts were only detrimental to emotional well-being in mothers. Among both mothers and fathers, paid work was relatively insulated from thoughts about family matters. Overall, findings highlight mothers' double burden and suggest that mental labor may contribute to mothers' emotional stress and gender inequality among dual-earner families. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Offer, Shira (2014):

Time with children and employed parents' emotional well-being.

In: *Soc Sci Res* 47, S. 192–203. DOI: 10.1016/j.ssresearch.2014.05.003.

Abstract:

Using the experience sampling method and survey data from the 500 Family Study this study examined how parents feel when they spend time with their children and whether their emotional experiences differ by type of activity and the parent's gender. I found that mothers spent more time in childcare than fathers but this disparity was primarily due to mothers' more frequent engagement in activities that were not child-centered (i.e., non-focused and passive childcare). Multilevel models further showed that engagement in these activities was related to higher positive affect. Shared meals and leisure activities were particularly beneficial to parents' emotional well-being and the likelihood of engaging in them was not affected by parents' paid work hours. By contrast, routine childcare was associated with increased stress and lower engagement but only among mothers. Mothers were also less likely to provide childcare in conjunction with their spouse. These findings reveal the subtle dimensions of the unequal division of childcare by gender.

Ogedegbe, Gbenga; Pickering, Thomas G.; Clemow, Lynn; Chaplin, William; Spruill, Tanya M.; Albanese, Gabrielle M. et al. (2008):

The misdiagnosis of hypertension: the role of patient anxiety.

In: *Archives of internal medicine* 168 (22), S. 2459–2465. DOI: 10.1001/archinte.168.22.2459.

Abstract:

BACKGROUND\r\nThe white coat effect (defined as the difference between blood pressure [BP] measurements taken at the physician's office and those taken outside the office) is an important determinant of misdiagnosis of hypertension, but little is known about the mechanisms underlying this phenomenon. We tested the hypothesis that the white coat effect may be a conditioned response as opposed to a manifestation of general anxiety.\r\nMETHODS\r\nA total of 238 patients in a hypertension clinic wore ambulatory blood pressure monitors on 3 separate days 1 month apart. At each clinic visit, BP readings were manually triggered in the waiting area and the examination room (in the presence and absence of the physician) and were compared with the mercury sphygmomanometer readings taken by the physician in the examination room. Patients completed trait and state anxiety measures before and after each BP assessment.\r\nRESULTS\r\nA total of 35% of the sample was normotensive, and 9%, 37%, and 19% had white coat, sustained, and masked hypertension, respectively. The diagnostic category was associated with the state anxiety measure ($F(3,237) = 6.4$, $P < .001$) but not with the trait anxiety measure. Patients with white coat hypertension had significantly higher state anxiety scores ($t = 2.67$, $P < .01$), with the greatest difference reported during the physician measurement. The same pattern was observed for BP changes, which generally paralleled the changes in state anxiety ($t = 4.86$, $P < .002$ for systolic BP; $t = 3.51$, $P < .002$ for diastolic BP).\r\nCONCLUSIONS\r\nThese findings support our hypothesis that the white coat effect is a conditioned response. The BP measurements taken by physicians appear to exacerbate the white coat effect more than other means. This problem could be addressed with uniform use of automated BP devices in office settings.

Ohira, Tetsuya; Tanigawa, Takeshi; Tabata, Minako; Imano, Hironori; Kitamura, Akihiko; Kiyama, Masahiko et al. (2009):

Effects of habitual alcohol intake on ambulatory blood pressure, heart rate, and its variability among Japanese men.

In: *Hypertension* 53 (1), S. 13–19. DOI: 10.1161/HYPERTENSIONAHA.108.114835.

Abstract:

We sought to examine effects of habitual alcohol intake on ambulatory blood pressure (BP), heart rate (HR), and HR variability among Japanese men. Subjects were 539 men aged 35 to 65 years from rural and urban communities. Ambulatory BP and HR were monitored with an automated, portable, noninvasive multibiomedical recorder. Power spectral analysis of the RR intervals on the ECG was performed every 5 minutes. Compared with nondrinkers, moderate drinkers (alcohol intake 23 to 45 g/d) and heavy drinkers (alcohol intake >or=46 g/d) showed higher age- and field-adjusted mean values of systolic and diastolic BPs during the morning and while awake, but there were no differences in BPs over 24-hour periods and while asleep among the alcohol intake categories. Alcohol intake was positively associated with mean values of sleep-morning differences and daytime variability in BPs, HRs while awake and asleep, and low frequency:high frequency ratio while asleep. The results were virtually unchanged after adjustment for body mass index, smoking, and diabetes mellitus. Compared with the nondrinkers, age- and field-adjusted odds ratios of the morning BP surge (excess elevation of BP in the morning: morning systolic BP minus sleep systolic BP >or=37 mm Hg) for light (alcohol intake 0 to 22 g/d), moderate, and heavy drinkers were 0.96 (95% CI: 0.34 to 2.78), 1.68 (95% CI: 0.64 to 4.38), and 2.73 (95% CI: 1.12 to 6.67), respectively. Habitual alcohol intake was associated with increased BP in the morning, HR while awake and asleep, and sympathetic activity while asleep, which may explain some of the mechanisms of the relationship between heavy alcohol intake and risk of cardiovascular diseases.

Ojiambo R; Cuthill R, Budd H.; Konstabel, K.; Casajús, J. A.; González-Agüero A; Anjila, E. et al. (2011):

Impact of methodological decisions on accelerometer outcome variables in young children.

In: *International Journal of Obesity* 35 (Suppl 1), S. S98-S103. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-18468-011&site=ehost-live;Yannis.Pitsiladis@glasgow.ac.uk.

Abstract:

BACKGROUND:

The impact of accelerometer-related methodological decisions relating to the assessment of physical activity and sedentary time has not been conclusively determined in young children.

OBJECTIVES:

To determine the effects of epoch and cutoff points on the assessment of physical activity and sedentary time and to determine the accelerometer wear time required to achieve reliable accelerometer data in children.

DESIGN:

Children were recruited from centres at Ghent, Glasgow, Gothenburg and Zaragoza.

METHODS:

Physical activity was assessed for 1 week in 86 children (41 girls, 45 boys; mean age 7±2 years) by uniaxial accelerometry. The epoch was set at 15 s and reintegrated to 30 and 60 s. Time spent sedentary and in moderate and vigorous physical activity (MVPA) was assessed using a range of cutoff points. Number of days required to achieve 80% reliability was predicted using the Spearman-Brown Prophecy formula.

RESULTS:

The Reilly cutoff points (<1100 counts per min (CPM)) indicated less sedentary time per day when comparing 15 vs 30 s and 15 vs 60 s epochs: 570±91 vs 579±93 min and 570±91 vs 579±94 min, respectively; P<0.05. Pate cutoff points (>420 counts per 15 s) reported more MVPA time per day compared with Sirard (890 counts per 15 s) and Puyau cutoff points (>3200 counts per min) using 15 s epoch: 78 (4-197) min (median (range) vs 18 (1-80) min and 24 (1-100) min, respectively; P<0.001. Compliance with guidelines of at least 60 min MVPA was 84, 78 and 73% for Pate cutoff points using 15, 30 and 60 s epochs, respectively, but 0% for Sirard and Puyau cutoff points across epochs. The number of days required to achieve 80% reliability for CPM, sedentary and MVPA time was 7.4-8.5 days.

CONCLUSION:

Choice of epoch and cutoff point significantly influenced the classification of sedentary and MVPA time and observed compliance to the MVPA guidelines.

Ojiambo, R.; Konstabel, K.; Veidebaum, T.; Reilly, J.; Verbestel, V.; Huybrechts, I. et al. (2012):

Validity of uni-axial versus tri-axial accelerometers in the assessment of free-living energy expenditure in young children: The IDEFICS Validation Study.

In: *J Appl.Physiol* (0161-7567 (Linking)). DOI: 10.1152/japplphysiol.01290.2011.

Abstract:

One of the aims of Identification and Prevention of Dietary- and Lifestyle-Induced Health Effects in Children and Infants (IDEFICS) validation study is to validate field measures of physical activity (PA) and Energy expenditure (EE) in young children. This study compared the validity of uni-axial accelerometry with heart-rate (HR) monitoring vs. tri-axial accelerometry against doubly labeled water (DLW) criterion method for assessment of free-living EE in young children. 49 European children (25 female, 24 male) aged 4-10 years (mean age 7 +/- 2 years) were assessed by uni-axial ActiTrainer with HR, uni-axial 3DNX and tri-axial 3DNX accelerometry. Total energy expenditure (TEE) was estimated using DLW over a 1 week period. The longitudinal axis of both devices and tri-axial 3DNX counts per minute (CPM) were significantly (P<0.05) associated with physical activity level (PAL) (r = 0.51 ActiTrainer, r = 0.49 uni-axial-3DNX and r = 0.42 tri-axial summation operator3DNX). 86% of the variance in TEE could be predicted by a model combining body mass (Partial r(2) = 71%; P<0.05), CPM-ActiTrainer (Partial r(2) = 11%; P<0.05) and difference between HR at moderate and sedentary activities (ModHR - SedHR; Partial r(2) = 4%; P<0.05) The standard error (S.E) of TEE estimate for ActiTrainer and 3DNX models ranged from 0.44-0.74 MJ/d or approximately 7-11% of the average TEE. The S.E of activity-induced energy expenditure (AEE) model estimates ranged from 0.38-0.57 MJ/d or 24-26% of the average AEE. It is concluded that the comparative validity of hip-mounted uni-axial and tri-axial accelerometers for assessing PA and EE is similar

Okifuji, Akiko; Bradshaw, David H.; Donaldson, Gary W.; Turk, Dennis C. (2011):

Sequential analyses of daily symptoms in women with fibromyalgia syndrome.

In: *J Pain* 12 (1), S. 84–93. DOI: 10.1016/j.jpain.2010.05.003.

Abstract:

UNLABELLED\r\nFibromyalgia syndrome (FMS) is a chronic musculoskeletal pain disorder characterized by generalized pain, chronic fatigue, sleep disturbance, and a range of other symptoms having no definitive pathology. Consequently, patient evaluations rely on self-report. Ecological Momentary Assessment (EMA) allows frequent real-time collection of self-report measures, removing recall bias and increasing external validity. We studied 81 females with FMS aged 18 to 42 years. Participants carried EMA devices (Palm Pilot M100) programmed to request ratings to 8 FMS symptoms/conditions 3 times daily for 30 days. Completeness of response rates varied across participants and over time. Controlling for immediately previous fatigue (ie, fatigue rating from the immediately preceding rating), unit increases in immediately previous pain and immediately previous emotional distress predicted 9 and 7% increases, respectively, in current fatigue. Controlling for immediately previous emotional distress, a unit increase in immediately previous pain predicted 7% increase in current emotional distress. Controlled for immediately previous pain, a unit increase in immediately previous fatigue predicted a 7% increase in current pain, enhanced by prior diurnal effects; immediately previous emotional distress was not significant. Collectively these results suggest an asymmetry in which emotional stress and pain may increase fatigue, fatigue but not emotional distress may increase pain, and pain but not fatigue may increase emotional distress. Despite small effects and person-to-person variability, these findings suggest that longitudinal data collection by EMA may reveal sequential or causal explanatory patterns with important clinical implications.\r\nPERSPECTIVE\r\nUnderstanding how multiple symptoms covary in FMS is essential for optimal treatment planning. Our results show small but significant temporal relations among pain, fatigue, and emotional distress. Our results also provide support for the use of EMA as a viable data collection method that allows longitudinal, real-time assessment of multiple FMS symptoms.

Olesen, Line Gronholt; Kristensen, Peter Lund; Ried-Larsen, Mathias; Grontved, Anders; Froberg, Karsten (2014):

Physical activity and motor skills in children attending 43 preschools: a cross-sectional study.

In: *BMC Pediatr* 14 (1), S. 229. DOI: 10.1186/1471-2431-14-229.

Abstract:

BACKGROUND: Little is known about health characteristics and the physical activity (PA) patterns in children attending preschools. The objective of this study was to describe the gender differences in relation to body mass index (BMI), motor skills (MS) and PA, including PA patterns by the day type and time of day. Additionally, the between-preschool variation in mean PA was estimated using the intraclass correlation. METHODS: We invited 627 children 5-6 years of age attending 43 randomly selected preschools in Odense, Denmark. Aiming and catching MS was assessed using subtests of the Movement Assessment Battery for Children (Second Edition) and motor coordination MS was assessed by the Kiphard-Schilling body coordination test, Korperkoordination Test fur Kinder. PA was measured using accelerometry. The PA patterns were analysed using mixed models. RESULTS: No gender differences in the BMI or norm-referenced MS risk classification, or the average weekly PA level or patterns of PA were observed. However, boys performed better in the aiming and catching score ($p < 0.01$) and in the motor coordination score ($p < 0.05$) on average. Girls performed better in the balance subtest ($p < 0.001$). Relative to the norm-referenced classification of MS, the Danish sample distribution was significantly well for aiming and catching but poorer for the motor coordination test.The total sample and the least active children were most active on weekdays, during preschool time and in the late afternoon at the weekend. However, a relatively larger decrease in PA from preschool to weekday leisure time was observed in children in the lowest PA quartile compared to children in the highest PA quartile. Finally, the preschool accounted for 19% of the total variance in PA, with significant gender differences. CONCLUSIONS: Results of this study could provide a valuable reference material for studies monitoring future trends in obesity, MS and PA behaviour in Denmark and other countries.Knowledge about sources of variation in PA among preschool children is scarce and our findings need to be replicated in future studies. A potentially important finding is the large between-preschool variation in PA, indicating that especially girls are very susceptible to the environment offered for PA during preschool attendance.

Olino, T. M.; McMakin, D. L.; Morgan, J. K.; Silk, J. S.; Birmaher, B.; Axelson, D. A. et al. (2013):

Reduced reward anticipation in youth at high-risk for unipolar depression: A preliminary study.

In: *Dev.Cogn Neurosci.* (1878-9293 (Linking)). DOI: 10.1016/j.dcn.2013.11.005.

Abstract:

Offspring of depressed parents are at risk for depression and recent evidence suggests that reduced positive affect (PA) may be a marker of risk. We investigated whether self-reports of PA and fMRI-measured striatal response to reward, a neural correlate of PA, are reduced in adolescent youth at high familial risk for depression (HR) relative to youth at low familial risk for depression (LR). Functional magnetic resonance imaging assessments were conducted with 14 HR and 12 LR youth. All youth completed an ecological momentary assessment protocol to measure PA in natural settings and a self-report measure of depression symptomatology. Analyses found that HR youth demonstrated lower striatal response than LR youth during both reward anticipation and outcome. However, after controlling for youth self-reports of depression, HR youth demonstrated lower striatal response than LR youth only during reward anticipation. No significant differences were found between HR and LR youth on subjective ratings of PA or depressive symptoms. Results are consistent with previous findings that reduced reward response is a marker of risk for depression, particularly during reward anticipation, even in the absence of (or accounting for) disrupted subjective mood. Further examinations of prospective associations between reward response and depression onset are needed

Oliver, Melody; Schluter, Philip J.; Schofield, Grant M.; Paterson, Janis (2011):

Factors related to accelerometer-derived physical activity in Pacific children aged 6 years.

In: *Asia-Pacific Journal of Public Health* 23 (1), S. 44–56.

Abstract:

The objective of this study was to investigate potential factors related to Pacific children's moderate-to-vigorous physical activity (MVPA). A total of 393 Pacific children aged 6 years and their mothers were invited to participate. Participants wore accelerometers over 8 days; height, weight, and waist circumference were measured, and mothers reported on individual, social, and perceived environmental factors. Generalized estimation equation models were used to identify associates of children's daily MVPA. In all, 135 children and 91 mothers were included in analyses. Children spent 24% of time in MVPA; 99% of days had ≥60 minutes of MVPA. Higher maternal MVPA, male sex, longer sunlight hours, and rain-free days were associated with children's MVPA. Approaches for improving activity in Pacific children may be most efficacious if strategies for inclement weather and the encouragement of activity in mothers and, in particular, their daughters are included. Also, 60 minutes of daily MVPA may be insufficient to protect Pacific children from increased body size.

Oliver, Melody; Schofield, Grant M.; Badland, Hannah M.; Shepherd, Janine (2010):

Utility of accelerometer thresholds for classifying sitting in office workers.

In: *Prev Med* 51 (5), S. 357–360.

Abstract:

OBJECTIVE:

To investigate the utility of a variety of Actical accelerometer count thresholds for determining sitting time in a sample of office workers.

METHODS:

Data were collected from 21 participants in Auckland, New Zealand, between December 2009 and January 2010. Participants wore a hip-mounted Actical accelerometer and thigh-mounted activPAL inclinometer (criterion) for a 48-h period. Raw inclinometer and accelerometer data for each 15s epoch of wear time were matched by date and time. Candidate accelerometer count thresholds for sitting classification were compared with the criterion measure using receiver operating characteristic analyses. Agreement in sitting time classification was determined using Bland-Altman methodology.

RESULTS:

Significant differences in area under the curve (AUC) values by threshold criteria were found ($p<0.001$). A threshold of 0 counts provided the highest combined sensitivity and specificity (AUC 0.759, 95%CI 0.756, 0.761). The 95% limits of agreement for time spent sitting were wide, at 328min (range -30.8, 297.5).

CONCLUSION:

A threshold of 0 counts/15s epoch with Actical accelerometers is likely to yield the most accurate quantification of sitting in office-based workers, however the wide limits of agreement found indicate limited utility of this threshold to accurately distinguish sitting time in office-based workers.

Olsen, Lene Kjaer; Kamper, Anne-Lise; Svendsen, Jesper Hastrup; Bang, Lia Evi; Frimodt-Moller, Marie; Kelbaek, Henning et al. (2014):

High incidence of secondary hypertension in patients referred for renal denervation - the Copenhagen experience.

In: *Blood Press. DOI:* 10.3109/08037051.2013.867655.

Abstract:

Percutaneous renal denervation is a new treatment option for patients with resistant hypertension and little is known about the eligibility of patients referred. 100 consecutive patients were referred for renal denervation from March 2011 through September 2012. Clinical data were prospectively extracted from letters and documents from referring clinics and from our physical examination. Of the 100 patients included, 68 were men and the mean age was 60 (+/- 12) years. Office blood pressure was 176 (+/- 28)/99 (+/- 19) mmHg and 24-h ambulatory blood pressure 156 (+/- 20)/88 (+/- 13) mmHg. The mean number of antihypertensive agents was 4.0 (+/- 1.6). Nearly four-fifths (82%) of the patients were categorized as having resistant hypertension based on the criteria stated by The American Heart Association's stated criteria. Nine patients declined interest in renal denervation before completing the clinical workup program. Thus, 91 patients were screened, and of those 51 were found to be candidates for renal denervation. Forty patients were not candidates, of which secondary hypertension was the most common cause (n = 10). Only 51% of patients referred for renal denervation were eligible for treatment. The prevalence of secondary hypertension was 10% of the referred population. Secondary hypertension should therefore be considered in the evaluation of candidates for renal denervation.

O'Malley, Grace; Clarke, Mike; Burls, Amanda; Murphy, Sinead; Murphy, Nuala; Perry, Ivan J. (2014):

A smartphone intervention for adolescent obesity: study protocol for a randomised controlled non-inferiority trial.

In: *Trials* 15, S. 43. DOI: 10.1186/1745-6215-15-43.

Abstract:

BACKGROUND: There are few evidence-based mobile health solutions for treating adolescent obesity. The primary aim of this parallel non-inferiority trial is to assess the effectiveness of an experimental smartphone application in reducing obesity at 12 months, compared to the Temple Street W82GO Healthy Lifestyles intervention. METHODS/DESIGN: The primary outcome measure is change in body mass index standardised deviation score at 12 months. The secondary aim is to compare the effect of treatment on secondary outcomes, including waist circumference, insulin sensitivity, quality of life, physical activity and psychosocial health. Adolescents with a body mass index at or above the 98th percentile (12 to 17 years) will be recruited from the Obesity clinic at Temple Street Children's University Hospital in Dublin, Ireland. W82GO is a family-based lifestyle change intervention delivered in two phases over 12 months. In the current study, participants will be randomised for phase two of treatment to either usual care or care delivered via smartphone application. One hundred and thirty-four participants will be randomised between the two study arms. An intention-to-treat analysis will be used to compare treatment differences between the groups at 12 months. DISCUSSION: The results of this study will be disseminated via open access publication and will provide important information for clinicians, patients and policy makers regarding the use of mobile health interventions in the management of adolescent obesity. TRIAL REGISTRATION: Clinicaltrials.gov NCT01804855.

Omigie, Diana; M�Llensiefen, Daniel; Stewart, Lauren (2012):

The experience of music in congenital amusia.

In: *Music Perception* 30 (1), S. 1–18. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-24024-001%26site%3dehost-live;d.omigie@gold.ac.uk.

Abstract:

Individuals with congenital amusia have difficulty recognizing and discriminating melodies. While much research has focused on the perceptual deficits of congenital amusics, the extent to which these deficits have an impact on the ability to engage with and appreciate music remains unexplored. The current study used experience sampling methodology to identify distinct patterns of music-related behavior in individuals with amusia and matched controls. Cluster analysis was used to group individuals according to the similarity of their behavior, regardless of their status as amusic or control. This yielded a two-cluster solution: one cluster comprising 59% of the amusic sample and 6% of controls and the other comprising 41% of the amusic sample and 94% of controls. Comparisons of the two clusters in terms of specific aspects of music listening behavior revealed differences in levels of music engagement and appreciation. Further comparisons provided support for the existence of amusic subgroups

showing distinct attitudes toward music. The findings are discussed in relation to social, contextual, and demographic factors. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Ono, Kanako; Yamasue, Kotaro; Tochikubo, Osamu; Terauchi, Yasuo; Mizushima, Shunsaku (2014):

Lifestyle monitoring with the use of an earphone-type thermometer, an ambulatory blood pressure monitoring and a new wristwatch-type pulsimeter with accelerometer.

In: *Clin Exp Hypertens* 36 (2), S. 97–102. DOI: 10.3109/10641963.2014.892120.

Abstract:

Abstract We investigated the relationship among 24-h blood pressure (BP), pulse rate (PR) and core temperature by using an ambulatory BP monitoring, a new wristwatch-type pulsimeter with accelerometer (WPA) and an ear thermometer simultaneously. Our results suggest that the ear temperature which reflects the core body temperature was lowest at base PR during sleep and 75% of normotensives and 54% of subjects without hypertensive medication had a significant correlation between BP and PR. Diabetic subjects showed a significantly higher PR during sleep than non-diabetic subjects. Three types of equipments, especially a new WPA, are expected to be useful for daily lifestyle monitoring to evaluate risk of complications of hypertension and diabetes.

Oorschot, Margreet; Kwapil, Thomas; Delespaul, Philippe; Myin-Germeys, Inez (2009):

Momentary assessment research in psychosis.

In: *Psychological Assessment* 21 (4), S. 498–505. DOI: 10.1037/a0017077.

Abstract:

There is an expanding interest to study psychosis in the realm of daily life. The study of the person in the context of daily life may provide a powerful addition to more conventional and cross-sectional research strategies in the study of psychosis. This article first discusses the nature of experience sampling research in psychosis and demonstrates the feasibility and validity of studies using the experience sampling method (ESM) in this patient group. Second, the article presents a review of all ESM research in psychosis with a special focus on (a) the phenomenology, (b) the etiology, and (c) psychological models of psychosis. Variability over time and the dynamic interplay with the environment were found to be essential features of the positive symptoms of psychosis, whereas behavioral patterns as well as self-reported affect in daily life reality might be essential when studying negative symptomatology. ESM contributes to a better understanding of the interplay between psychotic experiences and environmental features, such as stress or cannabis exposure. Finally, the study of symptomatic variability may fuel new research into psychological models and treatment of psychosis and the study of the person-environment interplay may foster new Gene x Environment interaction studies.

Oorschot, M.; Lataster, T.; Thewissen, V.; Lardinois, M.; van Os, J.; Delespaul, P. A. E. G.; Myin-Germeys, I. (2012):

Symptomatic remission in psychosis and real-life functioning.

In: *The British Journal of Psychiatry* 201 (3), S. 215–220. DOI: 10.1037/t16410-000;

Abstract:

Background: In 2005 Andreasen proposed criteria for remission in schizophrenia. It is unclear whether these criteria reflect symptom reduction and improved social functioning in daily life. Aims: To investigate whether criteria for symptomatic remission reflect symptom reduction and improved functioning in real life, comparing patients meeting remission criteria, patients not meeting these criteria and healthy controls. Method: The Experience Sampling Method (ESM), a structured diary technique, was used to explore real-life symptoms and functioning in 177 patients with (remitted and non-remitted) schizophrenia spectrum disorders and 148 controls. Results: Of 177 patients, 70 met criteria for symptomatic remission. These patients reported significantly fewer positive and negative symptoms and better mood states compared with patients not in remission. Furthermore, patients in remission spent more time in goal-directed activities and had less preference for being alone when they were with others. However, the patient groups did not differ on time spent in social company and doing nothing, and both the remission and non-remission groups had lower scores on functional outcome measures compared with the control group. Conclusions: The study provides an ecological validation for the symptomatic remission criteria, showing that patients who met the criteria reported fewer positive symptoms, better mood states and partial recovery of reward experience compared with those not in remission. However, remission status was not related to functional recovery, suggesting that the current focus on

symptomatic remission may reflect an overly restricted goal. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Oravecz, Zita; Tuerlinckx, Francis (2011):

The linear mixed model and the hierarchical Ornstein–Uhlenbeck model: Some equivalences and differences.

In: *British Journal of Mathematical and Statistical Psychology* 64 (1), S. 134–160.

Abstract:

We focus on comparing different modelling approaches for intensive longitudinal designs. Two methods are scrutinized, namely the widely used linear mixed model (LMM) and the relatively unexplored Ornstein-Uhlenbeck (OU) process based state-space model. On the one hand, we show that given certain conditions they result in equivalent outcomes. On the other hand, we consider it important to emphasize that their perspectives are different and that one framework might better address certain types of research questions than the other. We show that, compared to a LMM, an OU process based approach can cope with modelling inter-individual differences in aspects that are more substantively interesting. However, the estimation of the LMM is faster and the model is more straightforward to implement. The models are illustrated through an experience sampling study.

Oreskovic, Nicolas M.; Goodman, Elizabeth; Robinson, Alyssa I.; Perrin, Eliana M.; Perrin, James M. (2014):

Adolescent Report of Lifestyle Counseling.

In: *Child Obes. DOI:* 10.1089/chi.2013.0131.

Abstract:

Abstract Background: Physician counseling on lifestyle factors has been recommended as one way to help combat the obesity epidemic in the United States. The aim of this study was to examine the frequency of lifestyle counseling among healthy weight, overweight, and obese adolescents and determine the contributions of adolescent weight and physical activity. Methods: Self-reported surveys on dietary and physical activity counseling, along with measured height, weight, and physical activity data by accelerometry were collected on 76 adolescents ages 11-14 years. General linear models tested for associations of reported lifestyle counseling by weight category, adjusting for physical activity, age, gender, race/ethnicity, and parent education. Results: Half (47%) of the subjects were overweight or obese. Frequency of lifestyle counseling varied by weight category, with obese adolescents reporting greater amounts of lifestyle counseling across all topics than their peers. Obese adolescents received more dietary (beta=0.88; standard error [SE]=0.25; p=0.001) and physical activity (beta=0.80; SE=0.28; p=0.006) counseling than healthy weight youth, as well as being told to increase their physical activity more often (beta=0.96; SE=0.29; p=0.001). There were no differences in lifestyle counseling between overweight and healthy weight subjects. Adolescents with greater daily moderate-to-vigorous physical activity reported less physical activity counseling (beta=-0.02; SE=0.008; p=0.05). Conclusions: Despite universal recommendations to counsel adolescents on lifestyle, only obese adolescents consistently report receiving such counseling. Given known difficulties in reversing obesity after onset, efforts should ensure that all adolescents receive lifestyle counseling.

Orloff, Natalia C.; Hormes, Julia M. (2014):

Pickles and ice cream! Food cravings in pregnancy: hypotheses, preliminary evidence, and directions for future research.

In: *Front Psychol* 5, S. 1076. DOI: 10.3389/fpsyg.2014.01076.

Abstract:

Women in the United States experience an increase in food cravings at two specific times during their life, (1) perimenstrually and (2) prenatally. The prevalence of excess gestational weight gain (GWG) is a growing concern due to its association with adverse health outcomes in both mothers and children. To the extent that prenatal food cravings may be a determinant of energy intake in pregnancy, a better understanding of craving etiology could be crucial in addressing the issue of excessive GWG. This paper reviews the available literature to corroborate and/or dispute some of the most commonly accepted hypotheses regarding the causes of food cravings during pregnancy, including a role of (1) hormonal changes, (2) nutritional deficits, (3) pharmacologically active ingredients in the desired foods, and (4) cultural and psychosocial factors. An existing model of perimenstrual chocolate craving etiology serves to structure the discussion of these hypotheses. The main hypotheses

discussed receive little support, with the notable exception of a postulated role of cultural and psychosocial factors. The presence of cravings during pregnancy is a common phenomenon across different cultures, but the types of foods desired and the adverse impact of cravings on health may be culture-specific. Various psychosocial factors appear to correlate with excess GWG, including the presence of restrained eating. Findings strongly suggest that more research be conducted in this area. We propose that future investigations fall into one of the four following categories: (1) validation of food craving and eating-related measures specifically in pregnant populations, (2) use of ecological momentary assessment to obtain real time data on cravings during pregnancy, (3) implementation of longitudinal studies to address causality between eating disorder symptoms, food cravings, and GWG, and (4) development of interventions to ensure proper prenatal nutrition and prevent excess GWG.

Orme, Mark; Wijndaele, Katrien; Sharp, Stephen J.; Westgate, Kate; Ekelund, Ulf; Brage, Soren (2014):

Combined influence of epoch length, cut-point and bout duration on accelerometry-derived physical activity.

In: *Int J Behav Nutr Phys Act* 11 (1), S. 34. DOI: 10.1186/1479-5868-11-34.

Abstract:

BACKGROUND: It is difficult to compare accelerometer-derived estimates of moderate-to-vigorous physical activity (MVPA) between studies due to differences in data processing procedures. We aimed to evaluate the effects of accelerometer processing options on total and bout-accumulated time spent in MVPA in adults. METHODS: 267 participants from the ProActive Trial provided 1236 days of valid physical activity (PA) data, collected using a 5-s epoch with ActiGraph GT1M accelerometers. We integrated data over 5-s to 60-s epoch lengths (EL) and applied two-level mixed effects regression models to MVPA time, defined using 1500 to 2500 counts/minute (cpm) cut-points (CP) and bout durations (BD) from 1 to 15 min. RESULTS: Total MVPA time was lower on longer EL and higher CP (47 vs 26 min/day and 26 vs 5 min/day on 1500 vs 2500 cpm on 5-s and 60-s epoch, respectively); this could be approximated as MVPA = exp[2.197 + 0.279*log(CP) + 6.120*log(EL) - 0.869*log(CP)*log(EL)] with an 800 min/day wear-time. In contrast, EL was positively associated with time spent in bout-accumulated MVPA; the approximating equation being MVPA = exp[54.679 - 6.268*log(CP) + 6.387*log(EL) - 10.000*log(BD) - 0.162*log(EL)*log(BD) - 0.626*log(CP)*log(EL) + 1.033*log(CP)*log(BD)]. BD and CP were inversely associated with MVPA, with higher values attenuating the influence of EL. CONCLUSIONS: EL, CP and BD interact to influence estimates of accelerometer-determined MVPA. In general, higher CP and longer BD result in lower MVPA but the direction of association for EL depends on BD. Reporting scaling coefficients for these key parameters across their frequently used ranges would facilitate comparisons of population-level accelerometry estimates of MVPA.

Orrell, Alison; Doherty, Patrick; Coulton, Simon; Miles, Jeremy; Stamatakis, Emmanuel; Lewin, Robert (2007):

Failure to validate the Health Survey for England physical activity module in a cardiac population.

In: *Health Policy* 84 (2), S. 262–268.

Abstract:

OBJECTIVES:

The Health Survey for England physical activity module interview, although not validated, is used as a performance indicator to see if people are achieving current physical activity targets and is the primary source of information for physical activity related policy making. The aim of this study was to assess the validity of the Health Survey for England physical activity module as a measure of physical activity in older adults with coronary heart disease.

METHODS:

Seventy-two older adults who had experienced a cardiac event completed the Health Survey for England physical activity interview and wore an accelerometer for seven consecutive days. Physical activity classification levels were derived from accelerometry and from the Health Survey for England physical activity interview, together with the number of episodes in which participants were moderately active for 30 min or more.

RESULTS:

The Health Survey for England physical activity interview exhibited high sensitivity (1.0) and specificity (0.76) for people engaged in high levels of physical activity, moderate sensitivity (0.40) and specificity (0.56) for people engaged in medium levels of physical activity and low sensitivity (0.35) and high specificity (0.92) for people engaged in low levels of physical activity. Compared with the accelerometer, the survey misclassified 63% of participants.

CONCLUSIONS:

The Health Survey for England physical activity interview misclassified true activity levels in older adults with heart disease by overestimating actual activity in the less active participants. Similar biases on self-report physical activity measures have been demonstrated in the general population, suggesting that the Health Survey for England physical activity module interview may be providing inaccurate information on national activity levels.

Ortega, Francisco B.; Ruiz, Jonatan R.; Sjöström, Michael (2007):

Physical activity, overweight and central adiposity in Swedish children and adolescents: the European Youth Heart Study.

In: *Int J Behav Nutr Phys Act* 4 (1), S. 61.

Abstract:

Background

The aim of this work was to study the associations of physical activity (PA) and other factors predisposing to overweight, with overweight and central adiposity in children and adolescents.

Methods

A total of 557 Swedish children (9.5 ± 0.3 y) and 517 adolescents (15.6 ± 0.4 y) from the European Youth Heart Study participated in this study. Logistic regression analyses were used to examine the associations of PA, as measured by accelerometry, and other determinants (i.e. television viewing, birth weight, maternal educational level and parental overweight) with total and central adiposity. Body mass index and waist circumference cut-off values proposed by the IOTF and the Bogalusa Heart Study (i.e. waist measures for predicting risk factors clustering, hereinafter called high-risk waist circumference), respectively, were used. Fatness was estimated from skinfold thicknesses and dichotomized using the 85th sex- and age-specific percentile (high/low).

Results

Children and adolescents who had a low level (first tertile) of vigorous PA, were more likely to be overweight (including obesity) and to have a high-risk waist circumference, than those with a high level (third tertile) of vigorous PA. Similarly, those subjects who had a low or middle level (second tertile) of total PA were more likely to be overweight than those who had a high level of total PA. Among the PA variables, only vigorous PA was associated with high total fatness. Birth weight and television viewing, were also associated with higher odds of having a high-risk waist circumference, but these associations were attenuated once either total or vigorous PA variable was included in the model. Those subjects who had two overweight parents were more likely to be overweight and to have a high-risk waist circumference independently of PA variables, compared to those whose parents were not overweight.

Conclusion

Low levels of total PA and especially vigorous PA may play an important role in the development of overweight and excess of central adiposity in children and adolescents, independently of a number of factors such as television viewing and birth weight. In addition, the data suggest that the association between television viewing and central fat deposition could be attenuated if enough vigorous PA is accumulated. Longitudinal and intervention studies are needed to confirm these findings.

Ortega, Francisco B.; Ruiz, Jonatan R.; Hurtig-Wennlöf, Anita; Vicente-Rodriguez, Germán; Rizzo, Nico S.; Castillo, Manuel J.; Sjöström, Michael (2010):

Cardiovascular fitness modifies the associations between physical activity and abdominal adiposity in children and adolescents: the European Youth Heart Study.

In: *British Journal of Sports Medicine* 44 (4), S. 256–262.

Abstract:

OBJECTIVE:

To examine the associations between physical activity (PA) and abdominal adiposity, as measured by waist circumference, in children and adolescents, and to test whether cardiovascular fitness (CVF) modifies these associations.

METHODS:

PA components were measured by accelerometry in 1075 individuals aged 9 or 15 years old. CVF was measured by a maximal cycling test. Self-reported maternal educational level, body mass index, children's birth weight and television viewing were used as confounders.

RESULTS:

Linear regression did not show any association between the PA variables and waist circumference, after controlling for sex, age and height. When stratifying by CVF level (low/high), time spent at vigorous PA was inversely associated with waist circumference (p < or = 0.05) in the low CVF group. Unexpectedly, in the high CVF group, the PA variables were positively associated with waist circumference (p < or = 0.05). In both groups, the results were unchanged after controlling for the confounders. CVF was inversely associated with waist circumference, after controlling for all PA variables (p < or = 0.01) and confounders (p < or = 0.01).

CONCLUSION:

CVF is inversely associated with abdominal adiposity and seems to modify the associations between PA and abdominal adiposity. In low-fit children and adolescents, time spent in vigorous PA seems to be the key component linked to abdominal adiposity. This finding should be considered in further development of lifestyle intervention strategies. The results found in the high-fit group need to be confirmed.

Ortega, Francisco B.; Ruiz, Jonatan R.; Labayen, Idoia; Martinez-Gomez, David; Vicente-Rodriguez, German; Cuenca-Garcia, Magdalena et al. (2014):

Health inequalities in urban adolescents: role of physical activity, diet, and genetics.

In: *Pediatrics* 133 (4), S. e884-95. DOI: 10.1542/peds.2013-1665.

Abstract:

OBJECTIVE: Coordinated European projects relying on standardized methods are needed to identify health inequalities across Europe. This study aimed to compare fitness, fatness, and cardiometabolic risk between urban adolescents from the south and center-north of Europe and to explore whether physical activity (PA) and other factors might explain these differences. METHODS: The Healthy Lifestyle in Europe by Nutrition in Adolescence cross-sectional project comprised 3528 adolescents from the south (4 cities) and central-north (6 cities) of Europe, 1089 of whom provided blood samples for analysis. Fitness (strength, speed-agility, and cardiorespiratory fitness), total and abdominal fatness (anthropometry and bioelectrical impedance), and cardiometabolic risk (z scores including fitness, fatness, blood lipids, insulin resistance, and blood pressure) were assessed. The analyses were adjusted for socioeconomic factors, objectively measured PA (accelerometry), total energy intake and diet quality, and genetic variants of the FTO rs9939609 polymorphism. RESULTS: Adolescents from southern Europe were less fit and fatter according to all markers (P < .001). Differences in cardiometabolic risk scores were not consistent. Adolescents from the south were less active and this would largely explain the differences observed in speed-agility and cardiorespiratory fitness. Differences in total and abdominal fatness could not be explained by PA, energy intake, diet quality, or FTO rs9939609 polymorphism. CONCLUSIONS: Fitness and fatness levels indicate that urban adolescents from the south are less healthy than those from central-northern Europe. Our data suggest that differences in PA might explain differences in important health-related fitness components, yet factors explaining the differences in fatness encountered remain unknown.

Ortiz-Tudela, Elisabet; Iurisci, Ida; Beau, Jacques; Karaboue, Abdoulaye; Moreau, Thierry; Rol, Maria Angeles et al. (2014):

The circadian rest-activity rhythm, a potential safety pharmacology endpoint of cancer chemotherapy.

In: *Int J Cancer* 134 (11), S. 2717–2725. DOI: 10.1002/ijc.28587.

Abstract:

The robustness of the circadian timing system (CTS) was correlated to quality of life and predicted for improved survival in cancer patients. However, chemotherapy disrupted the CTS according to dose and circadian timing in mice. A continuous and repeated measures longitudinal design was implemented here to characterize CTS dynamics in patients receiving a fixed circadian-based chemotherapy protocol. The rest-activity rhythm of 49 patients with advanced cancer was monitored using a wrist actigraph for 13 days split into four consecutive spans of 3-4 days each, i.e., before, during, right after and late after a fixed chronotherapy course. The relative amount of activity in bed vs. out of bed (I<O, main endpoint), the autocorrelation coefficient r24, the relative 24-hr amplitude (Amp), interdaily stability (IS) and intradaily variability (IV) were compared according to study span. Circadian disruption (I<O </= 97.5%) resulted from the administration of the fixed chronotherapy protocols, with all five rest-activity rhythm parameters being worsened in the whole group of patients (p < 0.05). Mean parameter values subsequently recovered to near baseline values. The occurrence of circadian disruption on chemotherapy was associated with a higher risk of clinically relevant fatigue (p = 0.028) or body weight loss (p = 0.05). Four CTS dynamic patterns characterized treatment response including no change (9.5% of the patients); improvement (14.3%); alteration and complete recovery (31%) or sustained deterioration (45%), possibly due to inadequate chronotherapy dosing and/or timing. Improved clinical tolerability could result from the minimization of circadian disruption through the personalization of chronotherapy delivery.

Ortiz-Tudela, Elisabet; Martinez-Nicolas, Antonio; Diaz-Mardomingo, Carmen; Garcia-Herranz, Sara; Pereda-Perez, Inmaculada; Valencia, Azucena et al. (2014):

The characterization of biological rhythms in mild cognitive impairment.

In: *Biomed Res Int* 2014, S. 524971. DOI: 10.1155/2014/524971.

Abstract:

INTRODUCTION: Patients with dementia, especially Alzheimer's disease, present several circadian impairments related to an accelerated perturbation of their biological clock that is caused by the illness itself and not merely age-related. Thus, the objective of this work was to elucidate whether these circadian system alterations were already present in patients with mild cognitive impairment (MCI), as compared to healthy age-matched subjects. METHODS: 40 subjects (21 patients diagnosed with MCI, 74.1 +/- 1.5 y.o., and 19 healthy subjects, 71.7 +/- 1.4 y.o.) were subjected to ambulatory monitoring, recording wrist skin temperature, motor activity, body position, and the integrated variable TAP (including temperature, activity, and position) for one week. Nonparametrical analyses were then applied. RESULTS: MCI patients exhibited a significant phase advance with respect to the healthy group for the following phase markers: temperature M5 (mean +/- SEM: 04:20 +/- 00:21 versus 02:52 +/- 00:21) and L10 (14:35 +/- 00:27 versus 13:24 +/- 00:16) and TAP L5 (04:18 +/- 00:14 versus 02:55 +/- 00:30) and M10 (14:30 +/- 00:18 versus 13:28 +/- 00:23). CONCLUSIONS: These results suggest that significant advances in the biological clock begin to occur in MCI patients, evidenced by an accelerated aging of the circadian clock, as compared to a healthy population of the same age.

Ortlieb, Sandra; Dias, Andre; Gorzelniak, Lukas; Nowak, Dennis; Karrasch, Stefan; Peters, Annette et al. (2014):

Exploring patterns of accelerometry-assessed physical activity in elderly people.

In: *Int J Behav Nutr Phys Act* 11 (1), S. 28. DOI: 10.1186/1479-5868-11-28.

Abstract:

BACKGROUND: Elderly people obtain significant health benefits from physical activity (PA), but the role of activity patterns has scarcely been researched. The present study aims to describe the patterns of PA among different intensities of activity in elderly people. We assess how patterns differ between more and less active groups ('rare', 'average', and 'frequent'), and explore whether and how various PA parameters are associated with functional exercise capacity (FEC). METHODS: PA was measured in 168 subjects (78 males; 65-89 years of age), using a triaxial GT3X accelerometer for ten consecutive days. Subjects were divided into three groups by activity and the groups were compared. A multiple linear regression model was used to predict FEC. RESULTS: Participants greater than or equal to 80 years are most prone to being sedentary for long periods, while women and the obese are the groups most likely to spend insufficient time in moderate to vigorous PA (MVPA). Rarely active elderly people had a decreased proportion of long bouts of MVPA and light PA and of short bouts in sedentary behavior than frequently active subjects did ($p < 0.001$). As predictors of FEC, younger age, lower BMI, male sex, better lung function, absence of multimorbidity, longer times and longer bouts of MVPA emerged as significant parameters ($r2 = 0.54$). Patterns of MVPA explained most of the variance. CONCLUSIONS: PA patterns provide information beyond reports of activity alone. MVPA in elderly people may be increased by increasing the proportion of long bouts, in order to increase FEC as well as average PA. However, health conditions may limit PA. In rarely active people (often with reduced FEC, worse lung function, and diagnosis of multimorbidity or disability), longer periods of time in light PA may be sufficient to increase the overall level of activity.

Ortlieb, S.; Gorzelniak, L.; Dias, A.; Schulz, H.; Horsch, A. (2013):

Recommendations for collecting and processing accelerometry data in elderly people.

In: *Stud.Health Technol.Inform.* 192 (0926-9630 (Linking)), S. 1175. Online verfügbar unter PM:23920949.

Abstract:

Due to the large variety of methods for collecting and analyzing accelerometer data to assess physical activity, it is difficult to compare results from different studies. Therefore, this work aims to provide recommendations for the collection and processing of such data in older people, focusing on the assessment of wearing time and intensity levels

Osse, Robert Jan; Tulen, Joke H. M.; Hengeveld, Michiel W.; Bogers, Ad J J C (2009):

Screening methods for delirium: early diagnosis by means of objective quantification of motor activity patterns using wrist-actigraphy.

In: *Interactive cardiovascular and thoracic surgery* 8 (3), S. 344-8; discussion 348. DOI: 10.1510/icvts.2008.192278.

Abstract:

Delirium after cardiac surgery is a risk factor for adverse outcome and even death. Disturbance of motor activity is a core feature of delirium, but hypoactive delirium often remains unrecognized. We explored wrist-actigraphy as a tool to objectively quantify postoperative recovery of 24-h rest-activity patterns to improve the early recognition of delirium after surgery. Motor activity was recorded by wrist-actigraphy after cardiac surgery in 88 patients over 65 years of age. Patients were assessed daily by using the CAM-ICU. Our final analyses were based on 32 non-delirious patients and 38 patients who were delirious on the first day after surgery. The delirious patients showed lower mean activity levels during the first postoperative night ($P<0.05$), reduced restlessness during the first day ($P<0.05$), and a lower mean activity of the 5 h with lowest activity within the first 24 h ($P=0.01$), as compared to the non-delirious patients. Already at a very early stage after cardiac surgery, a difference in motor activity was observed between patients with and without a delirium. As an unobtrusive method, actigraphy has the potential to be a screening method that may lead to early diagnosis and treatment of delirium.

O'Toole, Joanne E.; Sinclair, Martha I.; Leder, Karin (2009):

Collecting household water usage data: telephone questionnaire or diary?

In: *BMC medical research methodology* 9 (1), S. 72.

Abstract:

Background

Quantitative Microbial Risk Assessment (QMRA), a modelling approach, is used to assess health risks. Inputs into the QMRA process include data that characterise the intensity, frequency and duration of exposure to risk(s). Data gaps for water exposure assessment include the duration and frequency of urban non-potable (non-drinking) water use. The primary objective of this study was to compare household water usage results obtained using two data collection tools, a computer assisted telephone interview (CATI) and a 7-day water activity diary, in order to assess the effect of different methodological survey approaches on derived exposure estimates. Costs and logistical aspects of each data collection tool were also examined.

Methods

A total of 232 households in an Australian dual reticulation scheme (where households are supplied with two grades of water through separate pipe networks) were surveyed about their water usage using both a CATI and a 7-day diary. Householders were questioned about their use of recycled water for toilet flushing, garden watering and other outdoor activities. Householders were also questioned about their water use in the laundry. Agreement between reported CATI and diary water usage responses was assessed.

Results

Results of this study showed that the level of agreement between CATI and diary responses was greater for more frequent water-related activities except toilet flushing and for those activities where standard durations or settings were employed. In addition, this study showed that the unit cost of diary administration was greater than for the CATI, excluding consideration of the initial selection and recruitment steps.

Conclusion

This study showed that it is possible to successfully 'remotely' coordinate diary completion providing that adequate instructions are given and that diary recording forms are well designed. In addition, good diary return rates can be achieved using a monetary incentive and the diary format allows for collective recording, rather than an individual's estimation, of household water usage. Accordingly, there is merit in further exploring the use of diaries for collection of water usage information either in combination with a mail out for recruitment, or potentially in the future with Internet-based recruitment (as household Internet uptake increases).

Otsuki, Michiko; Tinsley, Barbara J.; Chao, Ruth K.; Unger, Jennifer B. (2008):

An ecological perspective on smoking among Asian American college students: the roles of social smoking and smoking motives.

In: *Psychol Addict Behav* 22 (4), S. 514–523. DOI: 10.1037/a0012964.

Abstract:

Using electronic diaries, the present study examined the roles of social smoking and smoking motives in relation to cigarette use patterns among Asian American college smokers. Multilevel modeling results showed that participants smoked more cigarettes when smoking with peers than when smoking alone. Participants' coping (but not social) motives moderated the within-person associations between smoking with peers and the cigarettes smoked during a smoking episode. The findings support the utility of an ecological perspective in examining the dynamic interaction between smoking motives and the social settings of cigarette use, and call for further research on the social smoking behaviors in diverse populations.

Ottaviani, C.; Couyoumdjian, A. (2013):

Pros and cons of a wandering mind: a prospective study.

In: *Front Psychol* 4 (1664-1078 (Electronic)), S. 524. DOI: 10.3389/fpsyg.2013.00524.

Abstract:

Mind wandering (MW) has recently been associated with both adaptive (e.g., creativity enhancement) and maladaptive (e.g., mood worsening) consequences. This study aimed at investigating whether proneness to MW was prospectively associated with negative health outcomes. At time 0, 21 women, 19 men; mean age = 24.5 (4.9) underwent a 5-min baseline electrocardiogram (ECG), a 20-min laboratory tracking task with thought probes, and personality questionnaires. At time 1 (1 year follow-up), the same participants underwent a 24-h Ecological Momentary Assessment characterized by ambulatory ECG recording and electronic diaries. First, we examined if the likelihood of being a "mind wanderer" was associated with specific personality dispositions. Then, we tested if the occurrence of episodes of MW in the lab would be correlated with frequency of MW in daily life. Finally, multiple regression models were used to test if MW longitudinally acted as a risk factor for health, accounting for the effects of biobehavioral variables. Among dispositional traits, the frequency of MW episodes in daily life was inversely associated with the capacity of being mindful (i.e., aware of the present moment and non-judging). There was a positive correlation between frequency of MW in the lab and in daily life, suggesting that it is a stable disposition of the individual. When differentiated from perseverative cognition (i.e., rumination and worry), MW did not predict the presence of health risk factors 1 year later, however, a higher occurrence of episodes of MW was associated with short-term adverse consequences, such as increased 24-h heart rate (HR) on the same day and difficulty falling asleep the subsequent night. Present findings suggest that MW may be associated with short term "side effects" but argue against a long term dysfunctional view of this cognitive process

Ottaviani, Cristina; Shapiro, David; Goldstein, Iris B.; Mills, Paul J. (2007):

Vascular profile, delayed recovery, inflammatory process, and ambulatory blood pressure: Laboratory-to-life generalizability.

In: *International Journal of Psychophysiology* 66 (1), S. 56–65.

Abstract:

Impaired recovery and plasma concentration of intercellular adhesion molecule-1 (sICAM-1) were both highlighted as plausible and more established markers of cardiovascular disease, respectively. Hemodynamic patterns during recovery and their link with circulating levels of sICAM-1 were examined as predictors of 24-h blood pressure (ABP). Impedance cardiography measures and beat-to-beat BP were recorded in 45 healthy subjects during a 10-min baseline, four tasks, and four 10-min recovery periods. sICAM-1 levels at rest were determined by ELISA. ABP measures were obtained combining data from a work and an off day. Hierarchical regressions showed that patterns of compensatory changes in cardiac output and total peripheral resistance during recovery improved the prediction of ABP above and beyond resting and recovery BP, or reactivity hemodynamic patterns. Stress-induced recovery was essentially vascular in nature and a more vascular profile was associated with higher ABP and higher circulating levels of sICAM-1. The results suggest a link between recovery hemodynamics and cardiovascular risk.

Ottevaere, Charlene; Huybrechts, Inge; Meester, Femke; Bourdeaudhuij, Ilse; Cuenca-Garcia, Magdalena; Henauw, Stefaan (2011):

The use of accelerometry in adolescents and its implementation with non-wear time activity diaries in free-living conditions.

In: *Journal of Sports Sciences* 29 (1), S. 103–113.

Abstract:

The aim of this study was to evaluate the use of a non-wearing time activity diary (hereafter non-wear activity diary) when using accelerometry in adolescents to provide insight into their physical activity levels. In total, 213 Belgian adolescents (89 boys, 124 girls) were eligible for this study. Adolescents wore an accelerometer for seven consecutive days and kept a non-wear activity diary. On the last day, they completed the International Physical Activity Questionnaire for Adolescents. The differences between the accelerometer data with and without use of the non-wear activity diary were significant for all physical activity intensities according to the Wilcoxon signed rank test. Bland-Altman plots showed that with more time spent in any physical activity intensity, the difference between including and not including the non-wear activity diary increased. The correlation coefficient between the International Physical Activity Questionnaire for Adolescents and the accelerometer data increased when the non-wear activity diary was included. Differences in the percentage of adolescents reaching the physical activity recommendations between the accelerometer data only and the accelerometer with the non-wear activity diary were significant. We conclude that if the non-wear activity diary data are not included, some adolescents could be misclassified as not being physically active according to the physical activity recommendations. It is therefore recommended to use a non-wear activity diary for gaining insight into the physical activity levels of individuals.

Overall, Nickola C.; Sibley, Chris G. (2010):

Convergent and discriminant validity of the Accommodation Scale: Evidence from three diary studies.

In: *Personality and Individual Differences* 48 (3), S. 299–304.

Abstract:

Three independent diary studies supported the convergent and discriminant validity of the Accommodation Scale (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991) by testing whether questionnaire-measured accommodation predicted individual differences in accommodation during naturally-occurring relationship interactions. First, across the three samples, questionnaire-measured accommodation predicted levels of diary-reported accommodation within – and only within – interactions in which participants were experiencing conflict. Second, questionnaire-measured accommodation within family relationships predicted accommodation within interactions with family members but not within interactions with friends. Third, the effects were evident controlling for global self and relationship evaluations. This research highlights the utility of diary methodology to test whether questionnaires capture the specific situation-behavior linkages they are designed to measure.

Owen, N. (2012):

Ambulatory monitoring and sedentary behaviour: a population-health perspective.

In: *Physiol Meas* 33 (11), S. 1801–1810. DOI: 10.1088/0967-3334/33/11/1801.

Abstract:

Opportunities for sedentary-behaviour research using device-based measures are proposed, addressing four main topics: first, there is an explanation of how sedentary behaviours can most usefully be understood, emphasizing how they are distinct from lack of moderate-to-vigorous physical activity (the major focus of current national and international public-health guidelines), together with an account of the evidence on the relationships of sedentary behaviour with risk biomarkers and health outcomes; this highlights how device-based measurement is leading to rapid research advances. Second, the case is made for the utility of a behavioural epidemiology framework and an ecological model of sedentary behaviour to guide measurement-development initiatives. Third, the main elements of such a research agenda and the logic of their interrelationships are described. Fourth, and in conclusion, novel research opportunities arising within this perspective and likely future benefits are outlined

Paez, Sadye; Maloney, Ann; Kelsey, Kristine; Wiesen, Chris; Rosenberg, Angela (2009):

Parental and environmental factors associated with physical activity among children participating in an active video game.

In: *Pediatric Physical Therapy* 21 (3), S. 245–253.

Abstract:

PURPOSE:

Parental and intervention-specific environmental supports were examined as potential reinforcers for physical activity and use of a video game, Dance Dance Revolution (DDR), among a cohort of 7- to 8-year-old children.

METHODS:

Sixty children were randomized to an intervention (n = 40) or a control (n = 20) group. Physical activity was measured with accelerometry and DDR logs. Parental support for their child's physical activity was assessed via a questionnaire. DDR-specific environmental supports were captured on an environmental home screen and the DDR log.

RESULTS:

At baseline, the absence of other video games and parent DDR participation was associated with child participation in DDR. At follow-up, DDR participation of siblings and friends was associated with child participation in DDR.

CONCLUSION:

The primary findings of this study suggest that parental and peer participation in DDR may play a role in children's initial and sustained participation in DDR.

Page, Eric; Cazeau, Serge; Ritter, Philippe; Galley, Daniel; Casset, Cyrille (2007):

Physiological approach to monitor patients in congestive heart failure: application of a new implantable device-based system to monitor daily life activity and ventilation.

In: *EP Europace*.

Abstract:

AIMS:

We examine an expert system designed to permanently monitor patients with congestive heart failure (CHF) using data of a dual-sensor pacemaker and to allow warning of significant changes in physiological indices.

METHODS AND RESULTS:

This study included 67 implanted patients divided into two groups: a control group without history of CHF (n = 19) who had received DDDR pacemakers (DDD group) and a test group (n = 48) who had received cardiac resynchronization therapy systems (CRT group) for severe CHF (NYHA III or IV, LVEF <40%). The embedded monitoring system measures minute ventilation (MV) and activity (ACT) at rest and at exercise. All devices collect data, and all adverse medical events were recorded. Data are stored daily for up to 3 months. The mean ACT was similar for both groups. Mean rest and exercise MV were significantly higher in CRT group. On 195 periods of 1-month follow-up in the CRT group, 31 events were suspected, 22 were true positive, 9 were false-positive, and 3 clinical adverse events were not predicted (sensitivity: 88%, specificity: 94.7%, positive predictive value: 71%, negative predictive value: 98.2%)

CONCLUSION:

A new diagnostic expert system that holds promise for the long-term ambulatory monitoring of CHF was developed.

Page, Angie S.; Cooper, Ashley R.; Griew, Pippa; Davis, Laura; Hillsdon, Melvyn (2009):

Independent mobility in relation to weekday and weekend physical activity in children aged 10-11 years: The PEACH Project.

In: *Int J Behav Nutr Phys Act* 6. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-30448-001%26site%3dehost-live;m.hillsdon@bris.ac.uk;laura.davis@bris.ac.uk;pippa.griew@bris.ac.uk;ashley.cooper@bris.ac.uk;a.s.page@bris.ac.uk.

Abstract:

Background: Children's independent mobility has fallen in recent years and may in part explain reported declines in physical activity in young people. This cross-sectional study investigated whether independent mobility in boys and girls was related to objectively measured physical activity. Methods: Thirteen hundred and seven 10–11 year old boys and girls from 23 schools in a large UK city took part. Measures included objectively recorded physical activity (accelerometer (Actigraph GT1M)), height (m) and weight (kg), a newly developed scale for local (Local-IM) and area independent mobility (Area-IM), minutes of daylight after school, level of neighborhood deprivation and pubertal status. Results: Boys had greater Local-IM, Area-IM and physical activity (average weekday and weekend counts per minute) compared to girls. In linear regression analyses (adjusting for minutes of daylight after school, neighborhood deprivation, pubertal status and body mass index) higher scores for Local-IM and Area-IM were significantly ($p < 0.01$) related to higher levels of physical activity on weekdays for boys and girls. For weekend physical activity, only Local-IM in girls remained significant ($p < 0.05$) in the model. Conclusion: Independent mobility appears to be an important independent correlate of weekday physical activity for both boys and girls. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Pagels, Peter; Boldemann, Cecilia; Raustorp, Anders (2011):

Comparison of pedometer and accelerometer measures of physical activity during preschool time on 3-to 5-year-old children.

In: *Acta Paediatr* 100 (1), S. 116–120.

Abstract:

AIMS:

To compare pedometer steps with accelerometer counts and to analyse minutes of engagement in light, moderate and vigorous physical activity in 3- to 5-year-old children during preschool time.

METHODS:

Physical activity was recorded during preschool time for five consecutive days in 55 three- to five-year-old children. The children wore a Yamax SW200 pedometer and an Actigraph GTIM Monitor.

RESULTS:

The average time spent at preschool was 7.22 h/day with an average step of 7313 (±3042). Steps during preschool time increased with increasing age. The overall correlation between mean step counts and mean accelerometer counts ($r = 0.67$, $p < 0.001$), as well as time in light to vigorous activity ($r = 0.76$, $p < 0.001$), were moderately high. Step counts and moderate to vigorous physical activity minutes were poorly correlated in 3 years old ($r = 0.19$, $p < 0.191$) and moderately correlated ($r = 0.50$, $p < 0.001$) for children 4 to 5 years old.

CONCLUSION:

Correlation between the preschool children's pedometer-determined step counts and total engagement in physical activity during preschool time was moderately high. Children's step counts at preschool were low, and the time spent in moderate and vigorous physical activity at preschool was very short.

Palatini, Paolo (2008):

Heart rate as predictor of outcome.

In: *Blood Press Monit* 13 (3), S. 167–168.

Abstract:

Reduced heart rate recovery (HRR) after exercise is associated with increased mortality in cardiac and pulmonary diseases. We sought to evaluate the association between HRR after the 6-minute walk test (6MWT) and outcomes in patients with connective tissue disease-associated pulmonary hypertension (CTD-PH). Data were obtained by review of the medical records. HRR was defined as the difference in heart rate at the end of the 6MWT and after 1 minute (HRR1), 2 minutes (HRR2), and 3 minutes (HRR3) of rest. All patients with pulmonary hypertension and a diagnosis of systemic sclerosis, systemic lupus erythematosus, or mixed connective tissue disease who underwent the 6MWT between August 1, 2009, and October 30, 2011, were included ($n = 66$). By Kaplan-Meier analysis, HRR1, HRR2, and HRR3 at different cutoff points were all good predictors, with HRR1 of <16 being the best predictor of time to clinical worsening (log-rank $P < 0.0001$), hospitalization (log-rank $P = 0.0001$), and survival (log-rank $P < 0.003$). By proportional hazards regression, patients with HRR1 of <16 were at increased risk of clinical worsening (hazard ratio [HR]: 6.4 [95% confidence interval (CI): 2.6-19.2]; $P < 0.0001$], hospitalization (HR: 6.6 [95% CI: 2.4-23]; $P < 0.0001$), and death (HR: 4.5 [95% CI: 1.6-15.7]; $P = 0.003$). Patients in the highest tercile (HRR1 of ≥19) were unlikely to have a clinical

worsening event (HR: 0.1 [95% CI: 0.04-0.5]; P = 0.001], to be hospitalized (HR: 0.1 [95% CI: 0.02-0.5]; P = 0.001), or to die (HR: 0.3 [95% CI: 0.07-0.9]; P = 0.04]. In conclusion, in patients with CTD-PH, abnormal HRR1 (defined as HRR1 of <16) after the 6MWT is a strong predictor of clinical worsening, time to clinical worsening, survival, and hospitalization.

Palatini, Paolo (2014):

How Should We Manage a Patient with Masked Hypertension?

In: *High Blood Press Cardiovasc Prev. DOI:* 10.1007/s40292-014-0044-5.

Abstract:

A number of studies have shown that masked hypertension (MH) confers an increased risk of target organ damage and of cardiovascular events suggesting that patients with MH would benefit from antihypertensive treatment. However, there is no general agreement about how this condition should be diagnosed. Although ambulatory blood pressure monitoring (ABPM) and self blood pressure measurement (SBPM) provide different and complementary clinical information, the recently published ESH/ESC guidelines for the management of arterial hypertension suggest that for initial assessment of the patient, SBPM may be more suitable in primary care and ABPM in specialist care. If SBPM provides borderline values it is advisable to confirm the diagnosis of MH with ABPM. As the prevalence of MH declines with repeated ABPMs the diagnosis of MH should be based on at least two ABPMs. Patients with MH should undergo a careful diagnostic work-up to assess the existence of additional risk factors including a worsened metabolic profile and the presence of target organ involvement. Treatment of the patient with MH should initially be addressed to improve the patient's lifestyle in order to decrease out-of-office blood pressure and to ameliorate metabolic data. If non-pharmacological measures are insufficient to normalize blood pressure, MH may benefit from pharmacological treatment but no clinical trial has been implemented as yet with the specific purpose of testing this hypothesis. Despite this lack of evidence, the 2013 ESH/ESC guidelines have recommended that in patients with MH also drug treatment should be considered because in patients with MH the risk of adverse outcome is very close to that in sustained hypertension. When ambulatory blood pressure is measured, pharmacological treatment may be modulated according to whether blood pressure is elevated during daytime hours or during sleep.

Palatini, P.; Saladini, F.; Mos, L.; Benetti, E.; Bortolazzi, A.; Cozzio, S.; Casiglia, E. (2012):

Obesity is a strong determinant of hypertensive target organ damage in young-to-middle-age patients.

In: *Int.J.Obes.(Lond)* (0307-0565 (Linking)). DOI: 10.1038/ijo.2012.32.

Abstract:

OBJECTIVE:To examine the impact of overweight and obesity on development of target organ damage in the early stage of hypertension.SUBJECTS:Participants were 727 young-to-middle-age subjects screened for stage 1 hypertension and followed for 8 years.MEASUREMENTS:Ambulatory blood pressure (BP), albumin excretion rate and echocardiographic data were obtained at entry, every 5 years and/or before starting antihypertensive treatment.RESULTS:During the follow-up, hypertension needing treatment was developed by 54.7% of the subjects with normal weight, 66.6% of those with overweight and 73.0% of those with obesity (P<0.001). Kaplan-Meier curves showed that patients with obesity or overweight progressed to sustained hypertension earlier than those with normal weight (P<0.001). At study end, rate of organ damage was 10.7% in the normal weight, 16.4% in the overweight and 30.1% in the obese subjects (P<0.001). In a multivariable logistic regression analysis, overweight (P=0.008) and obesity (P<0.001) were significant predictors of final organ damage. Inclusion of changes in 24-h BP and body mass index, and of baseline organ damage did not virtually modify these associations (P=0.002 and <0.001, respectively). Obesity was a significant predictor of both left ventricular hypertrophy (P<0.001) and microalbuminuria (P=0.015) with an odds ratio (95% confidence interval) of 8.5 (2.7-26.8) and 3.5 (1.3-9.6), respectively.CONCLUSION:These data indicate that in hypertensive subjects obesity has deleterious effects on the cardiovascular system already at an early age. Preventive strategies addressed to achieve weight reduction should be implemented at a very early stage in young people with excess adiposity and high BP.International Journal of Obesity advance online publication, 6 March 2012; doi:10.1038/ijo.2012.32

Pallin, Michael; O'Hare, Emer; Zaffaroni, Alberto; Boyle, Patricia; Fagan, Ciara; Kent, Brian et al. (2014):

Comparison of a novel non-contact biomotion sensor with wrist actigraphy in estimating sleep quality in patients with obstructive sleep apnoea.

In: *J Sleep Res. DOI:* 10.1111/jsr.12126.

Abstract:

Ambulatory monitoring is of major clinical interest in the diagnosis of obstructive sleep apnoea syndrome. We compared a novel non-contact biomotion sensor, which provides an estimate of both sleep time and sleep-disordered breathing, with wrist actigraphy in the assessment of total sleep time in adult humans suspected of obstructive sleep apnoea syndrome. Both systems were simultaneously evaluated against polysomnography in 103 patients undergoing assessment for obstructive sleep apnoea syndrome in a hospital-based sleep laboratory (84 male, aged 55 +/- 14 years and apnoea-hypopnoea index 21 +/- 23). The biomotion sensor demonstrated similar accuracy to wrist actigraphy for sleep/wake determination (77.3%: biomotion; 76.5%: actigraphy), and the biomotion sensor demonstrated higher specificity (52%: biomotion; 34%: actigraphy) and lower sensitivity (86%: biomotion; 94%: actigraphy). Notably, total sleep time estimation by the biomotion sensor was superior to actigraphy (average overestimate of 10 versus 57 min), especially at a higher apnoea-hypopnoea index. In post hoc analyses, we assessed the improved apnoea-hypopnoea index accuracy gained by combining respiratory measurements from polysomnography for total recording time (equivalent to respiratory polygraphy) with total sleep time derived from actigraphy or the biomotion sensor. Here, the number of misclassifications of obstructive sleep apnoea severity compared with full polysomnography was reduced from 10/103 (for total respiratory recording time alone) to 7/103 and 4/103 (for actigraphy and biomotion sensor total sleep time estimate, respectively). We conclude that the biomotion sensor provides a viable alternative to actigraphy for sleep estimation in the assessment of obstructive sleep apnoea syndrome. As a non-contact device, it is suited to longitudinal assessment of sleep, which could also be combined with polygraphy in ambulatory studies.

Palmas, Walter; Moran, Andrew; Pickering, Thomas; Eimicke, Joseph P.; Teresi, Jeanne; Schwartz, Joseph E. et al. (2006):

Ambulatory pulse pressure and progression of urinary albumin excretion in older patients with type 2 diabetes mellitus.

In: *Hypertension* 48 (2), S. 301–308.

Abstract:

We studied whether ambulatory blood pressure monitoring added to office blood pressure in predicting progression of urine albumin excretion over 2 years of follow-up in a multiethnic cohort of older people with type-2 diabetes mellitus. Participants in the Informatics for Diabetes Education and Telemedicine study underwent a baseline evaluation that included office and 24-hour ambulatory blood pressure measurement and a spot urine measurement of albumin-to-creatinine ratio (ACR). Measurements of albumin-to-creatinine ratio were repeated 1 and 2 years later. In bivariate analyses, ambulatory 24-hour pulse pressure was the blood pressure variable most strongly associated with follow-up ACR. Repeated-measures mixed linear models (n = 1040) were built adjusting for baseline ACR ratio, clustered randomization, time to follow-up, and multiple covariates. When both were entered into the model, ambulatory 24-hour pulse pressure and office pulse pressure were independently associated with follow-up ACR (beta [SE] = 0.010 [0.002], P < 0.001, and 0.004 [0.001], P = 0.002, respectively). Cox proportional hazards models examined associations with progression of albuminuria in 954 participants without macroalbuminuria at baseline, adjusting for all of the covariates independently associated with follow-up ACR in mixed linear models. Ambulatory 24-hour pulse pressure, but not office pulse pressure, was independently associated with progression of albuminuria (P = 0.015 and 0.052, respectively). The adjusted hazards ratio (95% CI) per each 10-mm Hg increment in ambulatory pulse pressure was 1.23 (1.04 to 1.42). In conclusion, ambulatory pulse pressure may provide additional information to predict progression of albuminuria in elderly diabetic subjects above and beyond office blood pressure.

Palmas, Walter; Pickering, Thomas; Eimicke, Joseph P.; Moran, Andrew; Teresi, Jeanne; Schwartz, Joseph E. et al. (2007):

Value of ambulatory arterial stiffness index and 24-h pulse pressure to predict progression of albuminuria in elderly people with diabetes mellitus.

In: *Am J Hypertens* 20 (5), S. 493–500.

Abstract:

BACKGROUND:

Ambulatory 24-h pulse pressure predicts progression of albuminuria in people with diabetes mellitus. It is not known whether the ambulatory arterial stiffness index (AASI) may add to that prediction.

METHODS:

We compared the multivariate-adjusted association of AASI and 24-h pulse pressure with progression of urine albumin excretion during follow-up in a multiethnic cohort of older people with type-2 diabetes mellitus. The baseline evaluation included office and 24-h ambulatory blood pressure (BP) measurements, and a spot urine measurement of albumin-to-creatinine ratio (ACR). The ACR measurements were repeated annually during 3 years.

RESULTS:

The AASI was >or=0.55 units in 47% of those exhibiting progression of albuminuria, and in 37% of those without progression (P = .004), whereas 24-h pulse pressure was >or=65 mm Hg in 50% and 38% of those with and without progression, respectively (P = .001). In repeated measures mixed linear model (n = 1043), after adjustment for several covariates including office pulse pressure, AASI in the fourth quartile was independently associated with higher follow-up ACR (P = .024). However, that association did not persist after adjusting for 24-h pulse pressure, which was an independent predictor (P < .001). Cox proportional hazards models examined progression of albuminuria in 957 participants without macroalbuminuria at baseline. The hazard ratio (95% CI) for AASI >or=0.55 units was 1.37 (1.02-1.83) after multivariable adjustment, including office pulse pressure. But AASI was not an independent predictor after adjustment for ambulatory pulse pressure, which was again an independent predictor (P = .033).

CONCLUSIONS:

Ambulatory 24-h pulse pressure outperformed AASI in predicting progression of albuminuria in elderly people with type 2 diabetes

Palmier Claus, J. E.; Dunn, G.; Taylor, H.; Morrison, A. P.; Lewis, S. W. (2013):

Cognitive self consciousness and metacognitive beliefs: Stress sensitization in individuals at ultra-high risk of developing psychosis.

In: *British Journal of Clinical Psychology* 52 (1), S. 26–41. DOI: 10.1037/t15492-000;

Abstract:

Objective: Metacognitive beliefs (MCB) may guide information and attention processes, increasing affective and symptomatic reactions to stressful events. Cognitive self-consciousness (CSC; i.e., a preoccupation with one s thoughts) may increase awareness of MCB, potentially triggering the onset of psychotic symptoms. This study tested the hypotheses that (1), MCB would moderate affective and symptomatic reactions to stress in individuals at ultra-high risk (UHR) of developing psychosis, and (2), greater CSC would precede worsening in psychotic symptoms in individuals with strong MCB. Method: Twenty-seven individuals at UHR of developing psychosis completed a self-report diary when prompted by an electronic wristwatch several times each day for 6 days (experience sampling). Results: MCB moderated the association between affective, but not symptomatic, responses to social stress. CSC preceded the subsequent occurrence of hallucinations in individuals who reported strong beliefs about the need to control their thoughts. Conclusions: The data suggest that MCB sensitize an individual to social stressors. CSC may represent times where an individual is aware that their thoughts are uncontrollable, and therefore contradicting their MCB, motivating them to make an external attribution. The findings have implications for improving the effectiveness of interventions for people experiencing hallucinations. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Palmier-Claus, J. E.; Ainsworth, J.; MacHin, M.; Barrowclough, C.; Dunn, G.; Barkus, E. et al. (2012):

The feasibility and validity of ambulatory self-report of psychotic symptoms using a smartphone software application.

In: *BMC Psychiatry* 12 (1471-244X (Linking)), S. 172. DOI: 10.1186/1471-244X-12-172.

Abstract:

BACKGROUND: Semi-structured interview scales for psychosis are the gold standard approach to assessing psychotic and other symptoms. However, such assessments have limitations such as recall bias, averaging, insensitivity to change and variable interrater reliability. Ambulant, real-time self-report assessment devices may hold advantages over interview measures, but it needs to be shown that the data thus collected are valid, and the collection method is acceptable, feasible and safe. We report on a monitoring system for the assessment of psychosis using smartphone technology. The primary aims were to: i) assess validity through correlations of item responses with those on widely accepted interview assessments of psychosis, and ii) examine compliance to the procedure in individuals with psychosis of varying severity. METHODS: A total of 44 participants (acute or remitted DSM-4 schizophrenia and related disorders, and prodromal) completed 14 branching self-report items concerning key psychotic symptoms on a touch-screen mobile phone when prompted by an alarm at six pseudo-random times, each day, for one week. Face to face PANSS and CDS interviews were conducted before and after the assessment period blind to the ambulant data. RESULTS: Compliance as defined by completion of at least 33% of all possible data-points over seven days was 82%. In the 36 compliant participants, 5 items (delusions, hallucinations, suspiciousness, anxiety, hopelessness) showed moderate to strong (rho 0.6-0.8) associations with corresponding items from interview rating scales. Four items showed no significant correlation with rating scales: each was an item based on observable behaviour. Ambulant ratings showed excellent test-retest reliability and sensitivity to change. CONCLUSIONS: Ambulatory monitoring of symptoms several times daily using

smartphone software applications represents a feasible and valid way of assessing psychotic phenomena for research and clinical management purposes. Further evaluation required over longer assessment periods, in clinical trials and service settings

Palmier-Claus, J. E.; Dunn, G.; Lewis, S. W. (2012):

Emotional and symptomatic reactivity to stress in individuals at ultra-high risk of developing psychosis.

In: *Psychological Medicine* 42 (5), S. 1003–1012. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-08848-011&site=ehost-live;Jasper.Palmier-Claus@manchester.ac.uk.

Abstract:

Background: The stress-vulnerability model of psychosis continues to be influential. The aim of this study was to compare emotional and symptomatic responses to stress in individuals at ultra-high risk (UHR) of developing psychosis, in age- and gender-matched healthy controls, and in patients with non-affective psychosis. Method: A total of 27 UHR, 27 psychotic and 27 healthy individuals completed the experience sampling method, an ambulant diary technique, where they were required to fill in self-assessment questions about their emotions, symptoms and perceived stress at semi-random times of the day for 6 days. Questionnaire and interview assessments were also completed. Results: Multilevel regression analyses showed that individuals at UHR of developing psychosis reported greater negative emotions in response to stress than the healthy individuals. Against the initial hypotheses, the UHR individuals also experienced greater emotional reactivity to stress when compared with the patient group. No significant differences were observed between the patients and the non-clinical sample. Stress measures significantly predicted the intensity of psychotic symptoms in UHR individuals and patients, but the extent of this did not significantly differ between the groups. Conclusions: Individuals at UHR of developing psychosis may be particularly sensitive to everyday stressors. This effect may diminish after transition to psychosis is made and in periods of stability. Subtle increases in psychotic phenomena occur in response to stressful events across the continuum of psychosis. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Palmier-Claus, J. E.; Dunn, G.; Taylor, H.; Morrison, A. P.; Lewis, S. W. (2013):

Cognitive-self consciousness and metacognitive beliefs: Stress sensitization in individuals at ultra-high risk of developing psychosis.

In: *Br.J Clin.Psychol.* 52 (1), S. 26–41. DOI: 10.1111/j.2044-8260.2012.02043.x.

Abstract:

Objective: Metacognitive beliefs (MCB) may guide information and attention processes, increasing affective and symptomatic reactions to stressful events. Cognitive self-consciousness (CSC; i.e., a preoccupation with one's thoughts) may increase awareness of MCB, potentially triggering the onset of psychotic symptoms. This study tested the hypotheses that (1), MCB would moderate affective and symptomatic reactions to stress in individuals at ultra-high risk (UHR) of developing psychosis, and (2), greater CSC would precede worsening in psychotic symptoms in individuals with strong MCB. METHOD: Twenty-seven individuals at UHR of developing psychosis completed a self-report diary when prompted by an electronic wristwatch several times each day for 6 days (experience sampling). RESULTS: MCB moderated the association between affective, but not symptomatic, responses to social stress. CSC preceded the subsequent occurrence of hallucinations in individuals who reported strong beliefs about the need to control their thoughts. CONCLUSIONS: The data suggest that MCB sensitize an individual to social stressors. CSC may represent times where an individual is aware that their thoughts are uncontrollable, and therefore contradicting their MCB, motivating them to make an external attribution. The findings have implications for improving the effectiveness of interventions for people experiencing hallucinations

Palmier-Claus, J. E.; Taylor, P. J.; Gooding, P.; Dunn, G.; Lewis, S. W. (2012):

Affective variability predicts suicidal ideation in individuals at ultra-high risk of developing psychosis: an experience sampling study.

In: *Br.J.Clin.Psychol.* 51 (1), S. 72–83. DOI: 10.1111/j.2044-8260.2011.02013.x.

Abstract:

OBJECTIVE: There is a suggestion in the literature that more variable affect increases suicidal ideation through the repeated re-activation of latent suicidal cognitions. The hypothesis that affective variability would be a better predictor of suicidal ideation and related behaviour than affect level was tested in individuals at ultra-high risk of developing psychosis. This study also examined the prediction that affective variability is a suicide-specific mechanism and would not predict levels of attenuated psychotic phenomena. METHOD: Twenty-seven ultra-high risk individuals were required to complete ambulant ratings of their affect when prompted by an electronic wristwatch for six days (the experience sampling method). In the debriefing session, participants were assessed with a semi-structured interview (the Comprehensive Assessment of At-Risk Mental State), which assessed the severity and frequency of suicidality and psychosis-related phenomena. RESULTS: The variability of negative and positive affect was predictive of the frequency of suicidal thoughts and behaviour. More variable negative, but not positive affect, was also associated with more severe suicidal ideation and related behaviour. Affect variability was not significantly related to the severity of attenuated psychotic phenomena. CONCLUSION: Affective variability appears to be a specific risk factor for suicidal ideation in individuals at ultra-high risk of developing psychosis. Early intervention should focus on providing individuals with skills for regulating their own affect

Pan, W.; Kwak, S.; Li, F.; Wu, C.; Chen, Y.; Yamamoto, Y.; Cai, D. (2013):

Actigraphy monitoring of symptoms in patients with Parkinson's disease.

In: *Physiol Behav* (0031-9384 (Linking)). DOI: 10.1016/j.physbeh.2013.05.044.

Abstract:

Although the Unified Parkinson's Disease Rating Scale (UPDRS) is the "gold-standard" tool in assessing the severity of symptoms in patients with Parkinson's disease (PD), not all activity-related disease symptoms can be accurately captured by the well-established clinical rating scale. Using an alternative approach, this study examined the level of physical activity measured by actigraphy over time and whether change in physical activity was associated with disease severity assessed by UPDRS. We used a longitudinal design in which physical activity and disease severity were assessed repeatedly during a 4-month interval, over a 3-year observational period, in a sample of 61 patients with idiopathic PD and a control group of 32 neurologically intact individuals. Physical activity data during awake-time were analyzed using the power-law exponent (PLE) method. Correlational relationships between changes in maxima values of PLE and scores of total UPDRS, UPDRS-part II (Activities of Daily Living), and UPDRS-part III (Motor Examination) in patients with PD were examined. Results show an increase in maxima values of PLE and the UPDRS total score in PD patients and that there is a positive association between changes in maxima values and total UPDRS score ($r=0.746$, $p=0.032$), UPDRS-part II score ($r=0.687$, $p=0.027$), and UPDRS-part III score ($r=0.893$, $p=0.018$). There was no significant change in the level of physical activity over time for the controls. Findings from this study indicate that change in physical activity, as captured by actigraphy, is associated with increased severity in patients' clinical symptoms of PD over time. Thus, these data suggest that, when used in conjunction with the conventional UPDRS measure, an actigraphic measure of physical activity may provide clinicians an adjunct measurement approach to monitor patients' activity-based disease progression or responses to treatment in outpatient clinic settings

Papp, Lauren M.; Pendry, Patricia; Adam, Emma K. (2009):

Mother-adolescent physiological synchrony in naturalistic settings: within-family cortisol associations and moderators.

In: *Journal of Family Psychology* 23 (6), S. 882–894. DOI: 10.1037/a0017147.

Abstract:

In this study, the authors examined parent-adolescent cortisol associations in 45 families with adolescent children (24 girls; M age = 15.78 years, SD = 1.44 years). Family members' salivary cortisol levels were measured seven times a day on 2 typical weekdays. Family members provided reports of demographic and health variables, and adolescents rated parent-child relationship characteristics. After accounting for the effects of time of day and relevant demographic and health control variables on cortisol levels, hierarchical linear models indicated the presence of significant covariation over time in mother-adolescent cortisol (i.e., physiological synchrony). Furthermore, moderating tests revealed that mother-adolescent cortisol synchrony was strengthened among dyads characterized by mothers and adolescents spending more time together, and in families rated higher on levels of parent-youth shared activities and parental monitoring or supervision. Analysis of momentary characteristics indicated that maternal presence at the time of cortisol sampling lowered adolescent cortisol levels but did not account for mother-adolescent cortisol synchrony. Within-family physiological synchrony was amplified in momentary contexts of elevated maternal negative affect and elevated adolescent negative affect.

Parati, Gianfranco; Schumacher, Helmut; Bilo, Grzegorz; Mancia, Giuseppe (2010):

Evaluating 24-h antihypertensive efficacy by the smoothness index: a meta-analysis of an ambulatory blood pressure monitoring database.

In: *J Hypertens* 28 (11), S. 2177–2183. DOI: 10.1097/HJH.0b013e32833e1150.

Abstract:

OBJECTIVE\r\nThe aim of this meta-analysis was to compare the 24-h antihypertensive efficacy of different treatments using the smoothness index.\r\nMETHODS\r\nData were taken from the telmisartan ambulatory blood pressure monitoring (ABPM) clinical programme. Eleven clinical trials that randomized mild-to-moderate hypertensive patients to treatment with telmisartan 40/80 mg, losartan 50 mg, valsartan 80/160 mg, ramipril 10 mg, amlodipine 5 mg monotherapy, or with an angiotensin receptor blocker (ARB) and hydrochlorothiazide (HCTZ) 12.5/25 mg, were included. Treatment duration ranged from 4 to 14 weeks. The smoothness index was calculated according to the published formula.\r\nRESULTS\r\nAltogether, 5188 patients were included (65% men; 52% were using telmisartan as monotherapy or in combination with HCTZ). Telmisartan 80 mg had a higher smoothness index than losartan, valsartan or ramipril (P < 0.05), and was comparable with amlodipine. All combination therapies had a higher smoothness index than monotherapy; the largest value was observed with telmisartan 80 mg and HCTZ 12.5 mg. Overall, the smoothness index was lower in men, older patients, black patients, smokers and in those with lower baseline blood pressure (P < 0.05).\r\nCONCLUSION\r\nThe smoothness index was affected by age, race, sex, behavioural and haemodynamic factors. It was also able to differentiate the 24-h blood pressure effects of antihypertensive drugs, with telmisartan and amlodipine achieving the highest values, possibly because of their long plasma half-lives. All combination therapies had a higher smoothness index than monotherapy. An understanding of the relative effects of different antihypertensives on the smoothness index may help to differentiate their effectiveness in reducing blood pressure-related cardiovascular risk.

Park, Min-Jeong; Kim, Hee-Seung; Kim, Kyung-Soo (2009):

Cellular phone and Internet-based individual intervention on blood pressure and obesity in obese patients with hypertension.

In: *International journal of medical informatics* 78 (10), S. 704–710. DOI: 10.1016/j.ijmedinf.2009.06.004.

Abstract:

PURPOSE\r\nThe present study evaluated whether an intervention using a short message service (SMS) by cellular phone and Internet would improve blood pressure, weight control, and serum lipids of obese patients with hypertension during 8 weeks.\r\nMETHODS\r\nThis is a quasi-experimental design with pre- and follow-up tests. Participants were recruited from the family medicine outpatient department of tertiary care hospital located in an urban city of South Korea. Twenty-eight patients were assigned to an intervention group and 21 to a control group. The goal of intervention was to bring blood pressure, body weight, and serum lipids levels close to normal ranges. Patients in the intervention group were requested to record their blood pressure and body weight in a weekly web based diary through the Internet or by cellular phones. The researchers sent optimal recommendations as an intervention to each patient, by both cellular phone and Internet weekly. The intervention was applied for 8 weeks.\r\nRESULTS\r\nSystolic (SBP) and diastolic blood pressures (DBP) significantly decreased by 9.1 and 7.2 mmHg respectively at 8 weeks from the baseline in the intervention group (p<0.05). However, after 8 weeks from the baseline both SBP and DBP in the control group had not changed significantly. Yet, There were significant mean decreases in body weight and waist circumference by 1.6 kg (p<0.05) and 2.8 cm (p<0.05) in the intervention group, respectively. In the control group increases in body weight and waist circumference (p<0.05) mean changes were also significant. High density lipoprotein cholesterol (HDL-C) significantly increased, with a mean change of 3.7 mg/dl at 8 weeks from baseline in the intervention group (p<0.05). The mean change of HDL-C in the control group was, however, not significant.\r\nCONCLUSION\r\nDuring 8 weeks using this web-based intervention by way of cellular phone and Internet SMS improved blood pressure, body weight, waist circumference, and HDL-C in patients with obese hypertension.

Park, Yu Rang; Yoon, Young Jo; Jang, Tae Hun; Seo, Hwa Jeong; Kim, Ju Han (2014):

CCR+: Metadata Based Extended Personal Health Record Data Model Interoperable with the ASTM CCR Standard.

In: *Healthc Inform Res* 20 (1), S. 39–44. DOI: 10.4258/hir.2014.20.1.39.

Abstract:

OBJECTIVES: Extension of the standard model while retaining compliance with it is a challenging issue because there is currently no method for semantically or syntactically verifying an extended data model. A metadata-based extended model, named CCR+,

was designed and implemented to achieve interoperability between standard and extended models. METHODS: Furthermore, a multilayered validation method was devised to validate the standard and extended models. The American Society for Testing and Materials (ASTM) Community Care Record (CCR) standard was selected to evaluate the CCR+ model; two CCR and one CCR+ XML files were evaluated. RESULTS: In total, 188 metadata were extracted from the ASTM CCR standard; these metadata are semantically interconnected and registered in the metadata registry. An extended-data-model-specific validation file was generated from these metadata. This file can be used in a smartphone application (Health Avatar CCR+) as a part of a multilayered validation. The new CCR+ model was successfully evaluated via a patient-centric exchange scenario involving multiple hospitals, with the results supporting both syntactic and semantic interoperability between the standard CCR and extended, CCR+, model. CONCLUSIONS: A feasible method for delivering an extended model that complies with the standard model is presented herein. There is a great need to extend static standard models such as the ASTM CCR in various domains: the methods presented here represent an important reference for achieving interoperability between standard and extended models.

Parke, Michael R.; Seo, Myeong-Gu; Sherf, Elad N. (2014):

Regulating and Facilitating: The Role of Emotional Intelligence in Maintaining and Using Positive Affect for Creativity.

In: *J Appl Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-56222-001%26site%3dehost-live.

Abstract:

Although past research has identified the effects of emotional intelligence on numerous employee outcomes, the relationship between emotional intelligence and creativity has not been well established. We draw upon affective information processing theory to explain how two facets of emotional intelligence—emotion regulation and emotion facilitation—shape employee creativity. Specifically, we propose that emotion regulation ability enables employees to maintain higher positive affect (PA) when faced with unique knowledge processing requirements, while emotion facilitation ability enables employees to use their PA to enhance their creativity. We find support for our hypotheses using a multimethod (ability test, experience sampling, survey) and multisource (archival, self-reported, supervisor-reported) research design of early career managers across a wide range of jobs. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Parker, Kathy P.; Bliwise, Donald L.; Ribeiro, Maria; Jain, Sanjay R.; Vena, Catherine I.; Kohles-Baker, Mary Kay et al. (2008):

Sleep/wake patterns of individuals with advanced cancer measured by ambulatory polysomnography.

In: *Journal of Clinical Oncology* 26 (15), S. 2464–2472.

Abstract:

PURPOSE:

Sleep/wake disturbances are prevalent in patients with advanced cancer, but 24-hour polysomnography (PSG) examinations of these patterns have not been undertaken. The purpose of this study was to describe these sleep/wake patterns using continuous PSG and to explore relationships with selected demographic and clinical variables.

PATIENTS AND METHODS:

The sample included patients with advanced cancer (solid tumors); those with neurologic disorders or psychosis, substance abuse, or brain metastasis were excluded. The final sample included 114 participants with a mean age of 51.1 years (+/- 9.1 years). Participants underwent continuous, ambulatory PSG for 42 hours in their home environments. Standard PSG measures were calculated. Analysis included data from 2 nights and the intervening day. Descriptive statistics were used to summarize sleep/wake parameters of the average of the 2 nights and the intervening day. Nonparametric analyses were used to detect differences and relationships among the variables.

RESULTS:

Compared with normative data, participants had reduced quantity and quality of nocturnal sleep and episodes of sleep scattered throughout the day. Increased daytime sleep was negatively associated with several key parameters of nocturnal sleep quantity and quality. Women, whites, and those who were married/partnered and had more education had better nocturnal sleep. Cancer type and selected medications may be risk factors for disturbed sleep and waking.

CONCLUSION:

Participants experienced severe difficulty with "state maintenance", or the ability to maintain both the sleep and waking states. Research designed to identify the etiology of these problems is needed to develop effective interventions.

Parkinson, Brian; Simons, Gwenda (2009):

Affecting others: social appraisal and emotion contagion in everyday decision making.

In: *Pers Soc Psychol Bull* 35 (8), S. 1071–1084. DOI: 10.1177/0146167209336611.

Abstract:

In a diary study of interpersonal affect transfer, 41 participants reported on decisions involving other people over 3 weeks. Reported anxiety and excitement were reliably related to the perceived anxiety and excitement of another person who was present during decision making. Risk and importance appraisals partially mediated effects of other's anxiety on own anxiety as predicted by social appraisal theory. However, other's emotion remained a significant independent predictor of own emotion after controlling for appraisals, supporting the additional impact of more direct forms of affect transfer such as emotion contagion. Significant affect-transfer effects remained even after controlling for participants' perceptions of the other's emotion in addition to all measured appraisals, confirming that affect transfer does not require explicit registration of someone else's feelings. This research provides some of the clearest evidence for the operation of both social appraisal and automatic affect transfer in everyday social life.

Parrish, Brendt P.; Zautra, Alex J.; Davis, Mary C. (2008):

The role of positive and negative interpersonal events on daily fatigue in women with fibromyalgia, rheumatoid arthritis, and osteoarthritis.

In: *Health Psychol* 27 (6), S. 694–702. DOI: 10.1037/0278-6133.27.6.694.

Abstract:

OBJECTIVE\r\nThe current study tested whether daily interpersonal events predicted fatigue from one day to the next among female chronic pain patients.\r\nDESIGN\r\nSelf-reported fatigue, daily events, pain, sleep quality, depressive symptoms, and functional health across 30 days were assessed in women with rheumatoid arthritis (RA: n = 89), Osteoarthritis (OA: n = 76), and Fibromyalgia syndrome (FM: n = 90).\r\nMAIN OUTCOME MEASURES\r\nSelf-report fatigue measured on a 0 to 100 scale and fatigue affect from PANAS-X (Watson & Clark, 1994).\r\nRESULTS\r\nMultilevel analyses showed that both higher average levels of and daily increases in negative events predicted more fatigue, whereas daily increases in positive events predicted less fatigue. Across all pain conditions, increases in negative events continued to predict higher fatigue on the following day. Moreover, for participants with FM or RA, increases in positive events also predicted increased fatigue the following day. Daily increases in fatigue, in turn, predicted poorer functional health on both the same day and the next day.\r\nCONCLUSION\r\nThese results indicate that both on average and on a daily basis, interpersonal events influence levels of fatigue beyond common physical and psychological correlates of chronic pain and highlight differences between chronic pain groups.

Parry, Monica J. E.; McFetridge-Durdle, Judith (2006):

Ambulatory impedance cardiography: a systematic review.

In: *Nursing research* 55 (4), S. 283–291.

Abstract:

BACKGROUND:

Standard noninvasive impedance cardiography has been used to examine the cardiovascular responses of individuals to a wide range of stimuli in critical care and laboratory settings. It has been shown to be a reliable alternative to invasive thermodilution techniques and an acceptable alternative to the use of a pulmonary artery catheter. Ambulatory impedance cardiography provides a similar assessment of cardiac function to standard noninvasive impedance cardiography, but it does so while individuals engage in activities of daily living. It offers portability and the option of managing complex patients in outpatient settings.

OBJECTIVE:

To critically examine through a literature analysis the validity, reliability, and sensitivity of ambulatory impedance cardiography for the assessment of cardiac performance during activities of daily living.

METHODS:

The Cochrane Database of Systematic Reviews (CDSR), The Cochrane Database of Methodology Reviews (CDMR), The Cochrane Central Register of Controlled Trials (CENTRAL), Database of Abstracts of Reviews of Effects (DARE), National Health Service Economic Evaluation Database (NHS EED), Health Technology Assessment (HTA), and The Cochrane Methodology Register (CMR; 1966-2005); MEDLINE (1950-2005); and CINAHL (1982-2005) were searched using the following terms: ambulatory cardiac performance, impedance cardiac performance, AIM cardiac performance monitor, thoracic electrical bio-impedance, impedance cardiography, ambulatory impedance monitor, bio-impedance technology, ambulatory impedance cardiography, bio-electric impedance; also included were reference lists of retrieved articles. Studies were selected if they used an ambulatory impedance monitor to examine one or more of the following cardiovascular responses: pre-ejection period (PEP), left ventricular ejection time (LVET), stroke volume (SV), or a combination of these.

RESULTS:

Studies have been predominantly descriptive and have been focused on a young, male population with a normal body mass index (BMI; 25-29 kg/m). Inconsistencies in determining specific markers of cardiac function (e.g., PEP and SV) across studies necessitated that results be reported by outcome for each study separately.

DISCUSSION:

Ambulatory impedance monitors are valid and reliable instruments used for the physiologic measurement of cardiac performance. Sensitivity is established utilizing within-individual measurements of relative change. This is especially important in light of an aging population and technical advances in healthcare. Further research is warranted using nursing interventions that focus on an older, female population who have a BMI greater than 30 kg/m. Availability of noninvasive ambulatory measures of cardiac function has the potential to improve care for a variety of patient populations, including those with hypertension, heart failure, pain, anxiety, and depressive symptoms.

Pasipanodya, E. C.; Parrish, B. P.; Laurenceau, J. P.; Cohen, L. H.; Siegel, S. D.; Graber, E. C.; Belcher, A. J. (2012):

Social Constraints on Disclosure Predict Daily Well-Being in Couples Coping With Early-Stage Breast Cancer.

In: *J Fam.Psychol.* (0893-3200 (Linking)). DOI: 10.1037/a0028655.

Abstract:

According to the social-cognitive processing model (Lepore, 2001), social constraints on disclosure can limit an individual's ability to communicate openly with others and consequently have negative effects on psychological adjustment, especially in the context of stressful experiences such as the diagnosis and treatment of cancer. The goal of the present study was to examine the influence of social constraints on daily event sharing, individual well-being, and relationship well-being in couples coping with breast cancer. Forty-five patients recently diagnosed and treated for early stage breast cancer and their spouses reported perceptions of spousal constraints on patient disclosure and completed a 7-day electronic diary. Analyses revealed that patient-reported social constraints, independent of the spouse's report, were linked to reduced patient sharing of both cancer-related and other important daily events. Patient and spouse perceptions of social constraints, independent of their shared consensus, predicted reduced daily individual well-being indexed by self-esteem and negative affect, as well as reduced daily relationship well-being indexed by relationship happiness and intimacy. Moreover, many of the aforementioned effects on daily well-being remained after controlling for global marital quality. Overall, these findings reveal that individual perceptions of social constraints have a negative influence on both patient and spouse daily well-being outcomes. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Pasyugina, Irina; Koval, Peter; Leersnyder, Jozefien; Mesquita, Batja; Kuppens, Peter (2014):

Distinguishing between level and impact of rumination as predictors of depressive symptoms: An experience sampling study.

In: *Cogn Emot*, S. 1–11. DOI: 10.1080/02699931.2014.932755.

Abstract:

Rumination-repetitively thinking about one's emotional state, its causes and consequences-exacerbates negative mood and plays an important role in the aetiology and maintenance of depression. Yet, it is unclear whether increased vulnerability to depression is associated with simply how much a person ruminates, or the short-term impact rumination has on a person's

negative mood. In the current study, we distinguish between the level versus the impact of rumination, and we examine how each uniquely predicts changes in depressive symptoms over time in an undergraduate sample. Using experience sampling, we assessed students' (N = 101) subjective experiences of positive and negative affect and their use of rumination and distraction in daily life for seven days. Participants also reported their depressive symptoms before and after the experience sampling. Increases in depressive symptoms over the week were predicted by how much people ruminated, but not by its impact on negative mood.

Patel, Kushang V.; Dansie, Elizabeth J.; Turk, Dennis C. (2013):

Impact of chronic musculoskeletal pain on objectively measured daily physical activity: a review of current findings.

In: *Pain Manag* 3 (6), S. 467–474. DOI: 10.2217/pmt.13.46.

Abstract:

SUMMARY Chronic pain affects a wide range of outcomes that are typically assessed using self-reported methodologies, which are susceptible to recall biases, current mood and pain intensity. Physical activity (PA) is an important component of the pain experience that can be objectively assessed with accelerometers, which are small, lightweight devices that measure the duration, frequency and intensity of PA over time. Accelerometry provides opportunities to compare actual and perceived PA, to design individually customized treatments, to monitor treatment progress, and to evaluate treatment efficacy. Thus, this technology can provide a more refined understanding of the relationships among symptoms, perceptions, mood, environmental circumstances and PA. The current paper examines patterns of PA in chronic musculoskeletal pain conditions and identifies potential clinical applications for accelerometry.

Patnode, Carrie D.; Lytle, Leslie A.; Erickson, Darin J.; Sirard, John R.; Barr-Anderson, Daheia J.; Story, Mary (2011):

Physical activity and sedentary activity patterns among children and adolescents: A latent class analysis approach.

In: *J Phys Act Health* 8 (4), S. 457–467. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-09108-001&site=ehost-live.

Abstract:

Background: While much is known about the overall levels of physical activity and sedentary activity among youth, few studies have attempted to define clusters of such behaviors. The purpose of this study was to identify and describe unique classes of youth based on their participation in a variety of physical activity and sedentary behaviors. Methods: Latent class analysis was used to characterize segments of youth based on patterns of self-reported and accelerometer-measured participation in 12 behaviors. Children and adolescents (N = 720) from 6th-11th grade were included in the analysis. Differences in class membership were examined using multinomial logistic regression. Results: Three distinct classes emerged for boys and girls. Among boys, the 3 classes were characterized as “Active” (42.1%), “Sedentary” (24.9%), and “Low Media/Moderate Activity” (33.0%). For girls, classes were “Active” (18.7%), “Sedentary” (47.6%), and “Low Media/Functional Activity” (33.7%). Significant differences were found between the classes for a number of demographic indicators including the proportion in each class who were classified as overweight or obese. Conclusions: The behavioral profiles of the classes identified in this study can be used to suggest possible audience segments for intervention and to tailor strategies appropriately. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Paul, David R.; Kramer, Matthew; Stote, Kim S.; Spears, Karen E.; Moshfegh, Alanna J.; Baer, David J.; Rumpler, William V. (2008):

Estimates of adherence and error analysis of physical activity data collected via accelerometry in a large study of free-living adults.

In: *BMC medical research methodology* 8 (1), S. 38.

Abstract:

Background

Activity monitors (AM) are small, electronic devices used to quantify the amount and intensity of physical activity (PA). Unfortunately, it has been demonstrated that data loss that occurs when AMs are not worn by subjects (removals during

sleeping and waking hours) tend to result in biased estimates of PA and total energy expenditure (TEE). No study has reported the degree of data loss in a large study of adults, and/or the degree to which the estimates of PA and TEE are affected. Also, no study in adults has proposed a methodology to minimize the effects of AM removals.

Methods

Adherence estimates were generated from a pool of 524 women and men that wore AMs for 13 – 15 consecutive days. To simulate the effect of data loss due to AM removal, a reference dataset was first compiled from a subset consisting of 35 highly adherent subjects (24 HR; minimum of 20 hrs/day for seven consecutive days). AM removals were then simulated during sleep and between one and ten waking hours using this 24 HR dataset. Differences in the mean values for PA and TEE between the 24 HR reference dataset and the different simulations were compared using paired t-tests and/or coefficients of variation.

Results

The estimated average adherence of the pool of 524 subjects was 15.8 ± 3.4 hrs/day for approximately 11.7 ± 2.0 days. Simulated data loss due to AM removals during sleeping hours in the 24 HR database ($n = 35$), resulted in biased estimates of PA ($p < 0.05$), but not TEE. Losing as little as one hour of data from the 24 HR dataset during waking hours results in significant biases ($p < 0.0001$) and variability (coefficients of variation between 7 and 21%) in the estimates of PA. Inserting a constant value for sleep and imputing estimates for missing data during waking hours significantly improved the estimates of PA.

Conclusion

Although estimated adherence was good, measurements of PA can be improved by relatively simple imputation of missing AM data.

Pavlickova, Hana; Turnbull, Oliver H.; Myin-Germeys, Inez; Bentall, Richard P. (2014):

The inter-relationship between mood, self-esteem and response styles in adolescent offspring of bipolar parents: An experience sampling study.

In: *Psychiatry Res. DOI:* 10.1016/j.psychres.2014.11.046.

Abstract:

The response styles theory of depression (Nolen-Hoeksema, 1991) proposes three main strategies individuals employ in response to low mood: rumination, active coping (distraction and problem-solving) and risk taking. Although recent research has suggested this theory has utility in understanding the symptoms of bipolar disorder (BD), the role of these processes in conferring vulnerability to the condition is poorly understood. Twenty-three adolescent children of patients with BD and 25 offspring of well parents completed the Experience Sampling Method (ESM; Csikszentmihalyi and Larson, 1987) diary for six days. Longitudinal analyses were carried out to examine inter-relationships between mood, self-esteem and response styles. Increased negative as well as positive mood resulted in greater rumination in both groups. Low self-esteem triggered greater risk-taking at the subsequent time point in the at-risk group, while negative affect instigated increased active coping in the control group. In both groups, engagement in risk-taking improved mood at the subsequent time point, whilst rumination dampened self-esteem. Differential longitudinal associations between mood, self-esteem and response styles between at-risk and control children suggest early psychological vulnerability in the offspring of BD parents, with important indications for early intervention.

Pavlovic, Jelena M.; Buse, Dawn C.; Sollars, C. Mark; Haut, Sheryl; Lipton, Richard B. (2014):

Trigger factors and premonitory features of migraine attacks: summary of studies.

In: *Headache* 54 (10), S. 1670–1679. DOI: 10.1111/head.12468.

Abstract:

OBJECTIVE: In this second of a 2-part series, we review the available literature on trigger factors and premonitory features in migraine. BACKGROUND: In the absence of biological markers of preceding attacks of migraine, trigger factors and premonitory symptoms are valuable though methodologically challenging phenomena to study. DESIGN/METHODS: We focus on selected studies of retrospective surveys, diary studies, and clinical trials. We review the heterogeneity of selected studies and their conclusions performed to date and highlight that prospective electronic diary studies provide most reliable information that can be used for future development of preemptive therapy. CONCLUSION: We conclude that trigger factors and premonitory symptoms are very common, but that the frequency estimates vary widely based on the study approach and population. We recommend that multimodal approaches are necessary for the comprehensive study of predictive biophenotypes as determined by triggers and premonitory symptoms, including retrospective and prospective cohort studies and case-crossover studies.

Payne, Karl Fb; Weeks, Lucy; Dunning, Paul (2014):

A mixed methods pilot study to investigate the impact of a hospital-specific iPhone application (iTreat) within a British junior doctor cohort.

In: *Health Informatics J* 20 (1), S. 59–73. DOI: 10.1177/1460458213478812.

Abstract:

We present a pilot study to investigate the impact of introducing a hospital-specific smartphone application into a cohort of British junior doctors. We created the iPhone application 'iTreat' that contained disease management and antibiotic dosing guidelines specific to our hospital, together with a postgraduate education department really simple syndication feed, a contact number phonebook and a favourites section. This intervention was trialled in a group of 39 foundation grade junior doctors, in a UK hospital, for a time period of 4 months. Mixed methods data capture, utilising survey and semi-structured interviews, was used to evaluate application usage patterns and potential barriers to endorsement of smartphone technology in the hospital setting. Sixty eight per cent of participants felt the application saved them time during clinical activities, with a decrease in the frequency of participants not referring to hospital clinical guidelines. The findings from this pilot study point towards the internal hospital environment as having a major impact upon smartphone usage. Participants viewed smartphone use as unprofessional in the ward-based setting, with a perceived negative attitude from other healthcare staff. An understanding of how healthcare staff choose to utilise smartphones in the clinical environment is crucial to enable the successful assimilation of smartphone technology into the hospital setting. This pilot study provides experience and parameters for future substantive studies being carried out by this group.

Pe, Madeline Lee; Raes, Filip; Koval, Peter; Brans, Karen; Verduyn, Philippe; Kuppens, Peter (2013):

Interference resolution moderates the impact of rumination and reappraisal on affective experiences in daily life.

In: *Cognition and Emotion* 27 (3), S. 492–501. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-10381-010%26site%3dehost-live;madeline.pe@ppw.kuleuven.be.

Abstract:

Research has shown that cognitive control processes play a central role in emotion regulation. While most research has examined whether individual differences in such processes are related to the use of these strategies, a crucial next step involves examining whether such differences influence their impact on people's feelings, especially in normal daily life. The present study examined whether impairments in cognitive control (measured using an affective interference resolution task) moderate the impact of using rumination and reappraisal on affective experiences in everyday life (assessed using experience sampling methods). Multilevel analyses revealed that difficulties removing previously relevant negative information from working memory were associated with a larger increase in negative affect following rumination, and smaller increase and decrease in positive and negative affect, respectively, following reappraisal. These findings show that impaired interference resolution for negative information aggravates the deleterious effects of rumination and curbs the benefits of reappraisal in daily life. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Peck, J. L.; Stanton, M.; Reynolds, G. E. (2012):

Smartphone Preventive Health Care: Parental Use of an Immunization Reminder System.

In: *J Pediatr.Health Care* (0891-5245 (Linking)). DOI: 10.1016/j.pedhc.2012.09.005.

Abstract:

INTRODUCTION: This study examined the feasibility of using a smartphone application recall/reminder system for immunizations given in pediatric primary care. METHOD: The study used a typical descriptive study design. A convenience sample of parents and caregivers was recruited from a primary care pediatric office in a middle-class suburban area. Participants used an Android smartphone application ("Call the Shots") that served as a reminder/recall system for vaccinations and offered an embedded tool kit to obtain reliable information about vaccines. RESULTS: A total of 262 persons accessed the application's Web site. The application was downloaded and used by 45 of those persons during the study; six persons completed the survey. DISCUSSION: Data are insufficient to fully evaluate the usefulness of the "Call the Shots" smartphone application. However, initial results and feedback have been positive, and the application should be launched in Apple's platform to reach a wider test audience

Pellegrini, C. A.; Duncan, J. M.; Moller, A. C.; Buscemi, J.; Sularz, A.; Demott, A. et al. (2012):

A smartphone-supported weight loss program: design of the ENGAGED randomized controlled trial.

In: *BMC Public Health* 12 (1471-2458 (Linking)), S. 1041. DOI: 10.1186/1471-2458-12-1041.

Abstract:

ABSTRACT: BACKGROUND: Obesity remains a major public health challenge, demanding cost-effective and scalable weight management programs. Delivering key treatment components via mobile technology offers a potential way to reduce expensive in-person contact, thereby lowering the cost and burden of intensive weight loss programs. The ENGAGED study is a theory-guided, randomized controlled trial designed to examine the feasibility and efficacy of an abbreviated smartphone-supported weight loss program. METHODS/DESIGN: Ninety-six obese adults (BMI 30-39.9 kg/m2) will be randomized to one of three treatment conditions: (1) standard behavioral weight loss (STND), (2) technology-supported behavioral weight loss (TECH); or (3) self-guided behavioral weight loss (SELF). All groups will aim to achieve a 7% weight loss goal by reducing calorie and fat intake and progressively increasing moderate intensity physical activity to 175 minutes/week. STND and TECH will attend 8 group sessions and receive regular coaching calls during the first 6 months of the intervention; SELF will receive the Group Lifestyle Balance Program DVD's and will not receive coaching calls. During months 1-6, TECH will use a specially designed smartphone application to monitor dietary intake, body weight, and objectively measured physical activity (obtained from a Blue-tooth enabled accelerometer). STND and SELF will self-monitor on paper diaries. Linear mixed modeling will be used to examine group differences on weight loss at months 3, 6, and 12. Self-monitoring adherence and diet and activity goal attainment will be tested as mediators. DISCUSSION: ENGAGED is an innovative weight loss intervention that integrates theory with emerging mobile technologies. We hypothesize that TECH, as compared to STND and SELF, will result in greater weight loss by virtue of improved behavioral adherence and goal achievement. TRIAL REGISTRATION: NCT01051713

Persaud, Navindra (2008):

How can I tell how I think till I see what I say?

In: *Conscious Cogn* 17 (4), S. 1375; discussion 1376-7. DOI: 10.1016/j.concog.2008.05.005.

Abstract:

Descriptive Experience Sampling is a clever method for determining the form of everyday thoughts. Results using this method show that people report that some of their thoughts are unsymbolic. Here I ask three questions: (1) Does this merely show that people know what they are thinking about but not what they are thinking? (2) Why do people have difficulty determining the form of their thoughts? (3) How does the act of reporting the form of thoughts affect the recall of those thoughts?

Peter, P.; Martin, U.; Sharma, A.; Dunne, F. (2006):

Effect of treatment with nebivolol on parameters of oxidative stress in type 2 diabetics with mild to moderate hypertension.

In: *Journal of clinical pharmacy and therapeutics* 31 (2), S. 153–159. DOI: 10.1111/j.1365-2710.2006.00718.x.

Abstract:

AIM\r\nThe aim of this study was to examine the effect of the cadioselective B(1)-adrenoceptor blocker nebivolol on glycaemic control, lipid profile and markers of oxidative stress in patients with type 2 diabetes over a 6-month period.\r\nMETHODS\r\nTwenty-six patients with mild to moderate hypertension (140-160 mmHg systolic, 90-105 mmHg diastolic) confirmed on 24-h blood pressure monitoring, were treated with nebivolol 5 mg daily for 6 months. Total serum cholesterol, triglycerides, high-density lipoprotein (HDL) cholesterol and low-density lipoprotein (LDL) subfractions, lipid hydroperoxides (LHPs) and total antioxidant capacity (TAC) were measured before and after 6 months of treatment.\r\nRESULTS\r\nNebivolol, as expected, reduced mean daytime systolic and diastolic pressures on ambulatory monitoring (149 +/- 9 to 140 +/- 13 mmHg, P = 0.02 and 84 +/- 7 to 77 +/- 9 mmHg, P < 0.001). There were no significant changes in serum cholesterol or triglycerides following treatment but a significant increase in HDL cholesterol was noted (1.12 +/- 0.19 to 1.25 +/- 0.36 mmol/L, P = 0.008). Patients showed a highly significant reduction in TAC from 501 +/- 57 to 422 +/- 29 trolox equivalent (P < 0.001). Baseline LHPs were very high and showed no significant change over the 6-month period (18.7 +/- 7.4 and 18.7 +/- 10.9 micromol/L). The LDL score increased significantly from 1.7 +/- 0.7 to 2.3 +/- 0.7 (P = 0.0002) at 6 months suggesting a change to a more atherogenic lipid profile. Neither weight nor glycaemic control changed during treatment.\r\nCONCLUSION\r\nNebivolol appears to be lipid neutral and may even have a positive effect on HDL cholesterol. Despite this it may promote the formation of potentially atherogenic LDL subfractions possibly as a result of reduced antioxidant defences. Further studies are needed to clarify the changes observed in parameters of oxidative stress.

Peters, Madelon L.; Crombez, Geert (2007):

Assessment of attention to pain using handheld computer diaries.

In: *Pain Medicine* 8 (s3), S. S110-S120.

Abstract:

Electronic diary assessment of pain and disability has become increasingly popular in adult chronic pain research but use of this methodology with children has received limited attention. The aim of this study was to compare two formats of a prospective daily diary (handheld computer=e-diary; paper diary=p-diary) on children's compliance, accuracy, and acceptability ratings. Sixty children, ages 8-16 (M=12.3) with headaches or juvenile idiopathic arthritis, were randomized to receive either e-diaries administered via home visits (n=30) or p-diaries (n=30) handed out during clinic visits for return by mail. Results demonstrated significant mean differences in diary entries completed between groups, with children with e-diaries completing more days (M=6.6) compared to children with p-diaries (M=3.8), P<0.001. Diaries returned by children in the p-diary group contained significantly more errors and omissions compared to diaries returned by children in the e-diary group (which contained none), P<0.001. Children rated both diary formats as highly acceptable and easy to use. A significant gender x diary format interaction (P<0.01) was found for compliance where boys demonstrated greater compliance with the e-diary format. Findings demonstrated that the e-diary was feasible to use with children and showed significantly greater compliance and accuracy in diary recording compared to traditional paper diaries in a population of children with recurrent pain.

Peters, E.; Lataster, T.; Greenwood, K.; Kuipers, E.; Scott, J.; Williams, S. et al. (2012):

Appraisals, psychotic symptoms and affect in daily life.

In: *Psychol.Med.* 42 (5), S. 1013–1023. DOI: 10.1017/S0033291711001802.

Abstract:

BACKGROUND: Psychological models of psychosis were examined using Experience Sampling Methods (ESM) to explore relationships between dimensions and appraisals of key symptoms and affect. METHOD: Individuals were signalled to complete ESM booklets 10 times per day for six consecutive days; 534 data points were obtained from 12 out-patients with psychosis. RESULTS: Although only 3.6% of spontaneous thoughts were psychosis related, these predicted more negative and less positive affect. Delusions and hallucinations, when present, were rated at a moderate level of intensity, and intensity was associated with distress, interference and preoccupation. Symptom dimensions were related to each other, with weaker associations with delusional conviction, which, it is hypothesized, may represent a separate factor. Conviction and appraisals relating to insight and decentring ('my problems are something to do with the way my mind works') were highly variable. Decentring appraisals of delusions, but not insight, were associated with less distress. Appraisals about the power of voices were strong predictors of negative affect and symptom distress. CONCLUSIONS: This study demonstrates that ESM is a useful methodology to capture 'online' variability in psychotic phenomenology and provides evidence supporting cognitive models, which posit that psychotic symptoms are multi-dimensional phenomena, shaped by appraisals that, in turn, predict their emotional and behavioural sequelae

Peterson, Kristina M. (2012):

An ecological momentary investigation of spousal interactions and affect in couples with Chronic Low Back Pain.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (12-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99120-039&site=ehost-live.

Abstract:

Supportive relationships enhance mood and patient adjustment (Stanton, Revenson, & Tennen, 2007). However, unsupportive or critical relationships lead to relapse and poor outcomes in both mental and physical disorders (Wearden et al., 2000). The converse is also true. Patient adjustment, specifically patient mood, influences the amount of support or criticism given by spouses (Gotlib & Beach, 1995; Revenson, 1994). Both spouses in couples with Chronic Low Back Pain (CLBP) have higher than average rates of depression (Schwartz & Ehde, 2000) and marital discord (Leonard, Cano, & Johansen, 2006). Therefore, relational models describing how depression and unsupportive behavior develop in both spouses are necessary for understanding problems that these couples face. We examined bidirectional relationships between spousal affect and behavior in a sample of 105 married couples with one spouse experiencing CLBP. Ecological momentary assessment (EMA; Shiffman, Stone, & Hufford, 2008) with electronic diaries was used to obtain reports of patient and spouse affect as well as criticism and support for five times a day over 2 weeks. Hierarchical linear modeling was used to investigate both concurrent and lagged associations between behavior (criticism and support) and depressed affect. As hypothesized, both within- and cross-spouse

associations between criticism and depressed affect were significant when both criticism and depressed affect were measured at the same time point. Contrary to expectations, only some within- and cross-spouse associations between support and depressed affect were significant at the same time point. Results from lagged models of criticism and depressed affect suggested that there are bidirectional relationships between spouse criticism and spouse depressed affect; as well, they highlighted the role of spouse depressed affect in predicting patient criticism. Lagged models of support were similar to those for criticism. These results highlight the implications of being critical and providing support as well as the role of spouse affect in generating marital conflict. Results also call for the importance of expanding theory and interventions to address not only patient affect but also spouse depressed affect as it may be a stress generating vehicle leading to both spouse and patient criticism and support.

Peterson, M. S.; Lawman, H. G.; Wilson, D. K.; Fairchild, A.; van Horn, M. L. (2012):

The Association of Self-Efficacy and Parent Social Support on Physical Activity in Male and Female Adolescents.

In: *Health Psychol* (0278-6133 (Linking)). DOI: 10.1037/a0029129.

Abstract:

Objective: Previous research has shown that cognitive factors may account for the relationship between interpersonal factors and health behaviors. Given these findings, the current study sought to further explore the direct and indirect relationship between parental social support and adolescent physical activity (PA). Method: Data were collected from 1,421 sixth graders (73% Black, 54% females, 71% on free or reduced lunch) in South Carolina. Measures for emotional social support, instrumental social support, and adolescent self-efficacy (SE) were assessed and PA was assessed via accelerometry. Results: Parent instrumental social support was directly related to girls' PA and parent emotional social support was inversely related to girls' PA. Parent instrumental social support was indirectly related to boys' PA through boys' SE. The covaried association of SE with PA was significant for boys and marginal for girls. Conclusions: SE for overcoming barriers may be an important construct for understanding the relationship between parent instrumental social support and boys' PA in underserved populations. The mechanisms for engaging in PA may be different for adolescent girls and boys.

Petrini, P.; Rylander, C. (2009):

Clinical safety surveillance study of the safety and efficacy of long-term home treatment with ReFacto® utilizing a computer-aided diary: a Nordic multicentre study.

In: *Haemophilia* 15 (1), S. 175–183.

Abstract:

A Nordic multicentre, open-label, non-interventional postmarketing surveillance study was carried out during a period of 24 months evaluating safety and efficacy of ReFacto as prophylactic or on-demand replacement therapy in patients with haemophilia A treated by self-medication. Fifty-seven patients were enrolled and studied for safety; efficacy was evaluated in 39 patients who received ReFacto for 24 months and recorded sufficient diary data on a hand-held computer. The compliance of using the device was good in small children, variable in adults and poor in teenagers. The fact that the overall compliance was low constituted a limitation of the number of patients with reliable diary data. Overall safety was rated as excellent or good by the clinicians for all patients at all visits and overall efficacy at 24 months evaluated to be excellent (74%) or good (26%). It was noticed that >/=50% of patients/parents reported no absences from school or work owing to bleeding episodes during the study period. Among patients on regular prophylaxis, 6 of the 30 patients (20%) receiving ReFacto experienced no bleeding episodes. A median of four bleeding episodes occurred during the 24-month study period, and 93% of the episodes were resolved with </=2 ReFacto infusions. In the 7 on-demand patients, there was a median of 18 bleeding episodes, 87% of which resolved with </=2 ReFacto infusions. Interestingly, 42% of the ReFacto infusions taken by the patients classified to the on-demand group were registered as prophylactic treatment. In conclusion, ReFacto demonstrated good safety and efficacy in prophylaxis as well as treatment of bleeding episodes.

Petryayeva, Eleonora; Algar, W. Russ (2014):

Multiplexed homogeneous assays of proteolytic activity using a smartphone and quantum dots.

In: *Anal Chem* 86 (6), S. 3195–3202. DOI: 10.1021/ac500131r.

Abstract:

Semiconductor quantum dot (QD) bioconjugates, with their unique and highly advantageous physicochemical and optical properties, have been extensively utilized as probes for bioanalysis and continue to generate widespread interest for these applications. An important consideration for expanding the utility of QDs and making their use routine is to make assays with QDs more accessible for laboratories that do not specialize in nanomaterials. Here, we show that digital color imaging of QD photoluminescence (PL) with a smartphone camera is a viable, easily accessible readout platform for quantitative, multiplexed, and real-time bioanalyses. Red-, green-, and blue-emitting CdSeS/ZnS QDs were conjugated with peptides that were labeled with a deep-red fluorescent dye, Alexa Fluor 647, and the dark quenchers, QSY9 and QSY35, respectively, to generate Forster resonance energy transfer (FRET) pairs sensitive to proteolytic activity. Changes in QD PL caused by the activity of picomolar to nanomolar concentrations of protease were detected as changes in the red-green-blue (RGB) channel intensities in digital color images. Importantly, measurements of replicate samples made with smartphone imaging and a sophisticated fluorescence plate reader yielded the same quantitative results, including initial proteolytic rates and specificity constants. Homogeneous two-plex and three-plex assays for the activity of trypsin, chymotrypsin, and enterokinase were demonstrated with RGB imaging. Given the ubiquity of smartphones, this work largely removes any instrumental impediments to the adoption of QDs as routine tools for bioanalysis in research laboratories and is a critical step toward the use of QDs for point-of-care diagnostics. This work also adds to the growing utility of smartphones in analytical methods by enabling multiplexed fluorimetric assays within a single sample volume and across multiple samples in parallel.

Pfaltz, Monique C.; Grossman, Paul; Michael, Tanja; Margraf, Jürgen; Wilhelm, Frank H. (2010):

Physical activity and respiratory behavior in daily life of patients with panic disorder and healthy controls.

In: *International journal of psychophysiology : official journal of the International Organization of Psychophysiology* 78 (1), S. 42–49. DOI: 10.1016/j.ijpsycho.2010.05.001.

Abstract:

Panic disorder (PD) has been linked in laboratory investigations to respiratory alterations, particularly persistent respiratory variability. However, studies of PD respiratory pattern outside the laboratory are rare, have not controlled for the confounding influence of varying levels of physical activity, and have not addressed whether abnormalities in respiratory pattern vary depending on the intensity of physical activity. Cognitive and biological theories of PD, in fact, predict that respiratory alterations may be particularly pronounced when patients are physically active. This study assessed physical activity and respiratory pattern of 26 PD patients and 26 healthy controls (HC) during two waking periods of daily life (9:00-21:00) one week apart. Respiratory data were stratified for predefined levels of physical activity (inactivity, minimal movement, slow/moderate/fast walking, and running) and analyzed using linear mixed models. Groups did not generally differ in respiratory measures, although PD patients did show elevated variability of absolute levels of tidal volume during minimal movement and slow walking (root mean squared successive differences). Other ways of analyzing tidal volume variability based on relative levels, percentage of sighing, or pooled activity levels did not substantiate this finding. Amount of time spent at different activity levels did not differ between groups, which is at variance with studies linking anticipatory anxiety with motoric agitation, and PD with self-reported avoidance of exercise. In conclusion, results provided little evidence for respiratory abnormalities or central respiratory dysregulation in PD at varying levels of activity, although instability of tidal volume regulation during low activity remains a possibility. Our research approach indicates the usefulness of stratification of real life data on the basis of levels of activity, as well as how ambulatory assessment strategies, complementarily to laboratory studies, may improve understanding of biological and psychological factors contributing to development and maintenance of PD and other anxiety disorders.

Pfaltz, Monique C.; Michael, Tanja; Grossman, Paul; Blechert, Jens; Wilhelm, Frank H. (2009):

Respiratory pathophysiology of panic disorder: an ambulatory monitoring study.

In: *Psychosomatic Medicine* 71 (8), S. 869–876. DOI: 10.1097/PSY.0b013e3181b492ff.

Abstract:

OBJECTIVE\r\nTo assess the external validity of laboratory baselines in panic disorder (PD), frequently associated with respiratory pattern abnormalities like increased respiratory variability and sighing, implying a stable pathophysiologic trait

characteristic.\r\nMETHODS\r\nPhysical activity and a variety of breath-by-breath volumetric, timing, and variability measures of respiration were recorded in the daily life of 26 patients with PD and 26 healthy controls (HC), using a novel ambulatory monitoring system optimized for reliable assessment of respiratory pattern. Data were stratified for physical activity to eliminate its confounding effects.\r\nRESULTS\r\nGroups showed strong and consistent diurnal patterns in almost all respiratory variables. However, patients with PD did not differ from HC regarding any of the respiratory timing, volumetric and variability measures, with negligible group effect sizes for all measures. Patients with fewer self-reported respiratory symptoms of anxiety exhibited more pronounced rapid shallow breathing as well as diminished total breath time and its variability.\r\nCONCLUSIONS\r\nDespite state-of-the-art ambulatory assessment and sufficient statistical power to detect respiratory alterations previously observed in the laboratory, we found no evidence for such alterations in PD patients' daily life. Neither the total PD group nor patients with particularly pronounced respiratory symptomatology displayed increased respiratory variability. These results caution against interpreting results from laboratory baselines in PD as reflecting a stable trait characteristic. Rather, they likely represent a state-trait interaction due to enhanced reactivity of PD patients to novel environments. These results challenge aspects of respiratory theories of PD that were based on laboratory findings.

Pfaltz, Monique C.; Michael, Tanja; Grossman, Paul; Margraf, Jürgen; Wilhelm, Frank H. (2010):

Instability of physical anxiety symptoms in daily life of patients with panic disorder and patients with posttraumatic stress disorder.

In: *J Anxiety Disord* 24 (7), S. 792–798. DOI: 10.1016/j.janxdis.2010.06.001.

Abstract:

The present study examined severity as well as degree and temporal pattern of instability of DSM-IV-based bodily symptoms of anxiety (BSA) in daily life of 26 panic disorder (PD) patients, 17 posttraumatic stress disorder (PTSD) patients, and 28 healthy controls (HC) during 1 week, using electronic diaries. The ecological momentary assessment around every 3h during wake times was accepted well by patients. Compared to HC, patient groups exhibited elevated instability of BSA. BSA instability was more pronounced in PTSD than PD ($p<0.005$), even after controlling for mean symptom level. Numbers of symptomatic episodes were comparable in PTSD and PD, but the duration of symptom-free episodes was shorter in PTSD than PD. Results indicate that PTSD patients are particularly burdened by fluctuations in somatic symptoms of anxiety, implying perceived unpredictability and uncontrollability. Electronic diaries can be applied in innovative ways to provide novel insights into the phenomenology of anxiety disorders that may not be captured well by retrospective interviews and questionnaires.

Phd, S. K.; Flowers, S. R.; Strotman, D.; Sil, S.; Ting, T. V.; Schikler, K. N. (2012):

Physical activity monitoring in adolescents with juvenile fibromyalgia: Findings from a clinical trial of cognitive behavioral therapy.

In: *Arthritis Care Res (Hoboken.)* (2151-464X (Linking)). DOI: 10.1002/acr.21849.

Abstract:

Juvenile fibromyalgia (JFM) is a chronic musculoskeletal pain condition that is associated with reduced physical function. Recent research has demonstrated that cognitive-behavioral therapy (CBT) is effective in improving daily functioning among adolescents with JFM. However, it is not known whether these improvements were accompanied by increased physical activity levels. Objectives: To analyze secondary data from a randomized clinical trial of CBT to examine if CBT was associated with improvement in objectively measured physical activity and whether actigraphy indices corresponded with self-reported functioning among adolescents with JFM. Methods: Participants were 114 adolescents (ages 11-18) recruited from pediatric rheumatology clinics that met criteria for JFM and were enrolled in a clinical trial. Subjects were randomly (1:1) assigned to receive either CBT or fibromyalgia education (FE). Participants wore a hip-mounted accelerometer for one week as part of their baseline and post-treatment assessments. Results: The final sample included 68 subjects (94% female; mean age = 15.2 years) for whom complete actigraphy data was obtained. Actigraphy measures were not found to correspond with self-reported improvements in functioning. While self-reported functioning improved in the CBT condition compared to FE, no significant changes were seen in either group for activity counts, sedentary, moderate or vigorous activity. The CBT group had significantly lower peak and light activity at post-treatment. Conclusions: Actigraphy monitoring provides a unique source of information about patient outcomes. CBT intervention was not associated with increased physical activity in adolescents with JFM indicating that combining CBT with interventions to increase physical activity may enhance treatment effects. (c) 2012 by the American College of Rheumatology

Phelan, Suzanne; Roberts, Marta; Lang, Wei; Wing, Rena R. (2007):

Empirical evaluation of physical activity recommendations for weight control in women.

In: *Med Sci Sports Exerc* 39 (10), S. 1832.

Abstract:

PURPOSE:

Recent recommendations advise 30-60 min of physical activity per day to prevent weight gain and 60-90 min to prevent weight regain. No studies have used objective measures of physical activity to verify these public health recommendations. The purpose of this study was to use objective measures to quantify the amount and intensity of physical activity in a weight-loss-maintainer group and an always-normal-weight group, and, thus,empirically evaluate the recommendations for prevention of weight gain versus regain.

METHODS:

The weight-loss-maintainer group (N = 135) lost >or= 30.6 kg, maintained >or= 10% weight loss for 14.2 yr, and had a BMI of 22.0 kg.m(-2). The always-normal-weight group (N = 102) had a BMI of 21.1 kg.m(-2) and no history of overweight. Accelerometry was used to assess the amount and intensity of physical activity.

RESULTS:

The weight-loss-maintainer group spent significantly more minutes per day than the always-normal-weight group in physical activity (58.6 vs 52.1; P = 0.0001), largely because of more time spent in higher-intensity activities (24.4 vs 16.9; P = 0.02). The majority of individuals in the always-normal-weight group engaged in 30-60 min.d(-1) of physical activity, whereas a greater proportion of individuals in the weight-loss-maintainer group engaged in > 60 min (P = 0.002).

CONCLUSIONS:

Findings support current recommendations that more activity may be needed to prevent weight regain than to prevent weight gain. Including some higher-intensity activity may also be advisable for weight-loss maintenance.

Phillips, Karran A.; Epstein, David H.; Preston, Kenzie L. (2013):

Daily temporal patterns of heroin and cocaine use and craving: Relationship with business hours regardless of actual employment status.

In: *Addict Behav* 38 (10), S. 2485–2491. DOI: 10.1037/t07774-000;

Abstract:

Real-time monitoring of behavior using Ecological Momentary Assessment (EMA) has provided detailed data about daily temporal patterns of craving and use in cigarette smokers. We have collected similar data from a sample of cocaine and heroin users. Here we analyzed it in the context of its relationship with a societal construct of daily temporal organization: 9-to-5 business hours. In a 28-week prospective study, 112 methadone-maintained polydrug-abusing individuals initiated an electronic-diary entry and provided data each time they used cocaine, heroin, or both during weeks 4 to 28. EMA data were collected for 10,781 person-days and included: 663 cocaine-craving events, 710 cocaine-use events, 288 heroin-craving events, 66 heroin-use events, 630 craving-both-drugs events, and 282 use-of-both-drugs events. At baseline, 34% of the participants reported full-time employment in the preceding 3-year period. Most participants' current employment status fluctuated throughout the study. In a generalized linear mixed model (SAS Proc Glimmix), cocaine use varied by time of day relative to business hours ($p < 0.0001$) and there was a significant interaction between Day of the Week and Time Relative to Business Hours ($p < 0.002$) regardless of current work status. Cocaine craving also varied by time of day relative to business hours ($p < 0.0001$), however, there was no significant interaction between Day of the Week and Time Relative to Business Hours ($p = .57$). Heroin craving and use were mostly reported during business hours, but data were sparse. Cocaine craving is most frequent during business hours while cocaine use is more frequent after business hours. Cocaine use during business hours, but not craving, seems suppressed on most weekdays, but not weekends, suggesting that societal conventions reflected in business hours influence drug-use patterns even in individuals whose daily schedules are not necessarily dictated by employment during conventional business hours. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Phillips, K. A.; Epstein, D. H.; Mezghanni, M.; Vahabzadeh, M.; Reamer, D.; Agage, D.; Preston, K. L. (2013):

Smartphone Delivery of Mobile HIV Risk Reduction Education.

In: *AIDS Res.Treat.* 2013 (2090-1240 (Linking)), S. 231956. DOI: 10.1155/2013/231956.

Abstract:

We sought to develop and deploy a video-based smartphone-delivered mobile HIV Risk Reduction (mHIVRR) intervention to individuals in an addiction treatment clinic. We developed 3 video modules that consisted of a 10-minute HIVRR video, 11 acceptability questions, and 3 knowledge questions and deployed them as a secondary study within a larger study of ecological momentary and geographical momentary assessments. All 24 individuals who remained in the main study long enough completed the mHIVRR secondary study. All 3 videos met our a priori criteria for acceptability "as is" in the population: they achieved median scores of </=2.5 on a 5-point Likert scale; </=20% of the individuals gave them the most negative rating on the scale; a majority of the individuals stated that they would not prefer other formats over video-based smartphone-delivered one (all P < 0.05). Additionally, all of our video modules met our a priori criteria for feasibility: </=20% of data were missing due to participant noncompliance and </=20% were missing due to technical failure. We concluded that video-based mHIVRR education delivered via smartphone is acceptable, feasible and may increase HIV/STD risk reduction knowledge. Future studies, with pre-intervention assessments of knowledge and random assignment, are needed to confirm these findings

Phillips, Karran A.; Epstein, David H.; Vahabzadeh, Massoud; Mezghanni, Mustapha; Lin, Jia-Ling; Preston, Kenzie L. (2014):

Substance use and hepatitis C: an ecological momentary assessment study.

In: *Health Psychol* 33 (7), S. 710–719. DOI: 10.1037/hea0000087.

Abstract:

OBJECTIVE: The objective of this study was to assess craving and mood related to opioid and cocaine use among asymptomatic hepatitis C virus (HCV)+ and HCV- methadone patients who have not started antiviral treatment. METHODS: In this 28-week prospective ecological momentary assessment (EMA) study, 114 methadone-maintained, heroin- and cocaine-abusing individuals reported from the field in real time on their mood, craving, exposure to drug-use triggers, and drug use via handheld computers. RESULTS: Sixty-one percent were HCV+; none were overtly symptomatic or receiving HCV treatment. HCV status was not associated with age, sex, race, or past-30-day or lifetime heroin or cocaine use. In event-contingent EMA entries, HCV+ individuals more often attributed use to having been bored, worried, or sad; feeling uncomfortable; or others being critical of them compared with HCV- participants. In randomly prompted EMA entries, HCV+ participants reported significantly more exposure to drug-use triggers, including handling >/=$10, seeing cocaine or heroin, seeing someone being offered/use cocaine or heroin, being tempted to use cocaine, and wanting to see what would happen if they used just a little cocaine or heroin. CONCLUSIONS: HCV+ individuals experienced more negative moods and more often cited these negative moods as causes for drug use. HCV+ individuals reported greater exposure to environmental drug-use triggers, but they did not more frequently cite these as causes for drug use. The EMA data reported here suggest that HCV+ intravenous drug users may experience more labile mood and more reactivity to mood than HCV- intravenous drug users. The reason for the difference is not clear, but HCV status may be relevant to tailoring of treatment.

Phillips, Michael M.; Phillips, Kristina T.; Lalonde, Trent L.; Dykema, Kristy R. (2014):

Feasibility of text messaging for ecological momentary assessment of marijuana use in college students.

In: *Psychol Assess. DOI:* 10.1037/a0036612.

Abstract:

Measuring self-reported substance use behavior is challenging due to issues related to memory recall and patterns of bias in estimating behavior. Limited research has focused on the use of ecological momentary assessment (EMA) to evaluate marijuana use. This study assessed the feasibility of using short message service (SMS) texting as a method of EMA with college-age marijuana users. Our goals were to evaluate overall response/compliance rates and trends of data missingness, response time, baseline measures (e.g., problematic use) associated with compliance rates and response times, and differences between EMA responses of marijuana use compared to timeline followback (TLFB) recall. Nine questions were texted to participants on their personal cell phones 3 times a day over a 2-week period. Overall response rate was high (89%). When examining predictors of the probability of data missingness with a hierarchical logistic regression model, we found evidence of a higher propensity for missingness for Week 2 of the study compared to Week 1. Self-regulated learning was significantly associated with an increase in mean response time. A model fit at the participant level to explore response time found that more time spent smoking marijuana related to higher response times, while more time spent studying and greater "in the moment" academic motivation and craving were associated with lower response times. Significant differences were found between the TLFB and EMA, with greater reports of marijuana use reported through EMA. Overall, results support the feasibility of using SMS text messaging as an EMA method for college-age marijuana users. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Piasecki, T. M.; Alley, K. J.; Slutske, W. S.; Wood, P. K.; Sher, K. J.; Shiffman, S.; Heath, A. C. (2012):

Low sensitivity to alcohol: relations with hangover occurrence and susceptibility in an ecological momentary assessment investigation.

In: *J Stud.Alcohol Drugs* 73 (6), S. 925–932. Online verfügbar unter PM:23036210.

Abstract:

OBJECTIVE: The current investigation tested whether low sensitivity to alcohol, as measured by the Self-Rating of the Effects of Alcohol (SRE) form, is associated with hangover occurrence or resistance, two potentially important predictors of later problematic drinking outcomes. METHOD: Drinkers who reported using alcohol at least four times in the past month (N = 402) completed the SRE at baseline and used ecological momentary assessment methods with an electronic diary to record drinking behaviors and related experiences over 21 days. Each morning, the diary assessed prior-night drinking behaviors and the presence of current hangover. RESULTS: After adjustments for sex, body weight, age, and smoking status, higher SRE scores (indicating lower alcohol sensitivity) predicted hangover occurrence on postdrinking mornings (odds ratio [OR] = 1.24 per interquartile range [IQR], p = .003). However, when the number of drinks consumed in the drinking episode was covaried, SRE scores were negatively associated with hangover (OR = 0.67 per IQR, p <.001). An interaction between SRE scores and the number of drinks consumed indicated that low-sensitivity drinkers tend to be differentially resistant to hangover at a given number of drinks. Higher SRE scores were associated with consuming more drinks on average (generalized estimating equations coefficient = 2.20 per IQR, p <.001). CONCLUSIONS: Individuals lower in alcohol sensitivity appear to be more resistant to hangovers per unit of alcohol. However, they are also more likely to engage in excessive drinking, and this may account for their increased odds of experiencing hangover during an arbitrary monitoring period. Heavy consumption, hangover resistance, and hangover frequency may each be manifestations of low sensitivity to alcohol, an established risk factor for alcohol use disorder

Piasecki, Thomas M.; Cooper, M. Lynne; Wood, Phillip K.; Sher, Kenneth J.; Shiffman, Saul; Heath, Andrew C. (2013):

Dispositional Drinking Motives: Associations With Appraised Alcohol Effects and Alcohol Consumption in an Ecological Momentary Assessment Investigation.

In: *Psychological Assessment*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-41148-001%26site%3dehost-live.

Abstract:

Alcohol use can be understood as a strategic behavior, such that people choose to drink based on the anticipated affective changes produced by drinking relative to those produced by alternative behaviors. This study investigated whether people who report drinking for specific reasons via the Drinking Motives Questionnaire–Revised (DMQ-R; Cooper, 1994) actually experience the alcohol effects they purportedly seek. As a secondary goal, we examined relations between drinking motives and indices of the amount of alcohol consumed. Data were drawn from 3,272 drinking episodes logged by 393 community-recruited drinkers during a 21-day Ecological Momentary Assessment investigation. After accounting for selected covariates, DMQ-R enhancement motives uniquely predicted real-time reports of enhanced drinking pleasure. DMQ-R coping motives were associated with reports of increased drinking-contingent relief and punishment. Enhancement motives uniquely predicted consuming more drinks per episode and higher peak intra-episode estimated blood alcohol concentration. The findings extend the evidence for the validity of the DMQ-R motive scores by demonstrating that internal drinking motives (enhancement and coping) are related to the experienced outcomes of drinking in the manner anticipated by theory. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Piasecki, Thomas M.; Jahng, Seungmin; Wood, Phillip K.; Robertson, Brandon M.; Epler, Amee J.; Cronk, Nikole J. et al. (2011):

The subjective effects of alcohol–tobacco co-use: An ecological momentary assessment investigation.

In: *Journal of Abnormal Psychology* 120 (3), S. 557.

Abstract:

Alcohol and tobacco use covary at multiple levels of analysis, and co-use of the 2 substances may have profound health consequences. To characterize the motivationally relevant processes contributing to co-use, the current study used ecological momentary assessment (EMA) to examine the subjective consequences of naturally occurring simultaneous use of alcohol and tobacco. Current smokers who reported frequently drinking alcohol (N=259) used electronic diaries to monitor their daily experiences for 21 days. Participants responded to prompted assessments and also initiated recordings when they smoked a

cigarette or completed the first drink in a drinking episode. Momentary reports of smoking and alcohol consumption were associated with one another, and these effects remained after adjustment for occasion- and person-level covariates. When participants consumed alcohol, they reported increased pleasure and decreased punishment from the last cigarette. Smoking was associated with small increases in pleasure from the last drink. Ratings of buzzed and dizzy were synergistically affected by co-use of alcohol and tobacco. Co-use was also followed by higher levels of craving for both alcohol and tobacco. Results point to the importance of reward and incentive processes in ongoing drug use and suggest that alcohol intensifies real-time reports of the motivational consequences of smoking more strongly than smoking affects corresponding appraisals of alcohol effects.

Piasecki, Thomas M.; McCarthy, Danielle E.; Fiore, Michael C.; Baker, Timothy B. (2008):

Alcohol consumption, smoking urge, and the reinforcing effects of cigarettes: an ecological study.

In: *Psychology of Addictive Behaviors* 22 (2), S. 230.

Abstract:

Smokers (N=74) who volunteered for a smoking cessation study monitored their daily experiences for up to 6 weeks prior to the quit date. Self-reports from 7,707 diary records were used to examine the associations among alcohol consumption (present in 607 diary records), situational factors, smoking, urge to smoke, and subjective consequences of smoking. Alcohol use, smoking urge, and the subjective effects of smoking were context dependent. Momentary reports of smoking and alcohol consumption were associated with one another. Alcohol use predicted smoking even when contextual factors were covaried. Alcohol use was associated with more frequent reports of urge to smoke. Alcohol was also associated with more frequent reports that the last cigarette produced a rush/buzz, was good tasting, and reduced the urge. However, effects for rush/buzz and urge reduction were qualified by interactions between alcohol use and the latency since smoking. Rush/buzz tended to be associated with alcohol use, regardless of smoking recency. Alcohol was associated with urge reduction only when the cigarette being appraised was smoked more than 15 minutes prior to the diary entry.

Piasecki, Thomas M.; Richardson, Alison E.; Smith, Shawn M. (2007):

Self-monitored motives for smoking among college students.

In: *Psychology of Addictive Behaviors* 21 (3), S. 328.

Abstract:

College student smokers (N = 50) were asked to carry electronic diaries for 14 days and record smoking events (n = 1,139). They indicated why they were smoking each cigarette on a checklist of potential motives. Results suggest that a desire to reduce craving (62.8% of occasions) and habit/automatic processes (42.8%) were the most frequent motives. More dependent and daily smokers were especially likely to endorse smoking to reduce craving and for habit/automatic reasons and were less likely to cite coping with negative emotion as a reason for smoking. Dependent and daily smokers were more likely to endorse at least 1 dependence-like motive and were less likely to exclusively attribute smoking to nondependence motives. Self-monitored motives appeared valid, according with conceptually related states, activities, and events in the diary records. Diary-recorded motives were compared with smokers' responses to a retrospective motives questionnaire administered at baseline. The 2 assessment modes produced discrepant estimates of the most influential motivational processes. Questionnaire responses incompletely forecast conceptually similar diary-reported motives. Dependence and daily smoking showed a different pattern of associations with diary-based versus retrospective motives measures.

Piasecki, Thomas M.; Slutske, Wendy S.; Wood, Phillip K.; Hunt-Carter, Erin E. (2010):

Frequency and correlates of diary-measured hangoverlike experiences in a college sample.

In: *Psychol Addict Behav* 24 (1), S. 163–169. DOI: 10.1037/a0017148.

Abstract:

A sample of college students, oversampled for smoking (N = 127, 43% smokers), monitored their daily experiences using electronic diaries over 14 days. We examined the frequency and correlates of liberally defined hangoverlike experiences (HLEs) using data from 1,595 person-days (1,325 after abstention from drinking and 270 after drinking, including 125 HLEs). More than 40% of the sample reported at least one HLE, and nearly half of all drinking episodes were followed by HLE. Endorsement of HLE

was more likely as the number of drinks increased and was associated with modest elevations of hangover symptoms. Gender did not predict rates of overall HLE endorsement, but male students were less likely than female students to report an HLE after a drinking episode and showed a weaker relation between number of drinks and HLE. Smokers were more likely to report HLE, but there was no evidence that smoking status was associated with increased HLE susceptibility. Self-reported parental alcohol problems were associated with more frequent HLE and incrementally predicted HLE endorsement when number of drinks was covaried. The findings suggest that HLE is a common outcome of college drinking and attest to the feasibility of using electronic diaries to assess its episode- and person-level correlates.

Piasecki, T. M.; Trela, C. J.; Hedeker, D.; Mermelstein, R. J. (2013):

Smoking Antecedents: Separating Between- and Within-Person Effects of Tobacco Dependence in a Multiwave Ecological Momentary Assessment Investigation of Adolescent Smoking.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt132.

Abstract:

INTRODUCTION: Ecological momentary assessment (EMA) investigations have shown that the antecedents of smoking vary with individual differences in tobacco dependence. This has been interpreted as indicating that the transition to dependence is characterized by an erosion of external stimulus control over smoking. Rigorously testing this requires collecting multiple waves of EMA data, permitting separation of the influence of between- and within-person tobacco dependence variation in multilevel models. METHODS: Adolescents (n = 313, 9th or 10th grade at baseline) participated in up to four waves of week-long EMA assessment over the course of 2 years as part of a larger longitudinal, observational study. At each wave, participants recorded contextual features and subjective states in response to prompted diary assessments and when smoking. They completed a youth-specific form of the Nicotine Dependence Syndrome Scale at each wave. RESULTS: In cross-sectional multilevel analyses, smoking was less contingent on alcohol/drug use and was more common at home and in the morning for adolescents at higher levels of dependence. Multiwave analyses demonstrated that these effects were largely attributable to between-person variation in dependence, although parameter estimates for intraindividual dependence x antecedent effects tended to be in the predicted direction. DISCUSSION: Findings provided partial support for the contention that the antecedents of smoking shift as an individual progresses to higher levels of dependence. Distinctive choices concerning smoking settings also appear to reflect between-person differences in propensity to dependence. More generally, the findings illustrate the value of using multilevel modeling and repeated EMA assessments to investigate the correlates of tobacco dependence at different levels of analysis

Piasecki, T. M.; Wood, P. K.; Shiffman, S.; Sher, K. J.; Heath, A. C. (2012):

Responses to alcohol and cigarette use during ecologically assessed drinking episodes.

In: *Psychopharmacology (Berl)* (0033-3158 (Linking)). DOI: 10.1007/s00213-012-2721-1.

Abstract:

RATIONALE: Tobacco and alcohol are frequently used together, and this may be partly explained by a distinct profile of subjective effects associated with co-administration. Ecological momentary assessment studies have examined effects of naturally occurring co-use, but, to date, have not assessed differing effects as alcohol levels rise and fall. OBJECTIVES: The objective of the study was to describe subjective states and appraisals of cigarette and alcohol effects reported during the entirety of real-world drinking episodes. METHODS: Currently-smoking frequent drinkers (N = 255) carried electronic diaries for 21 days. Analyses focused on reports made during 2,046 drinking episodes. Signaled prompts intensively oversampled moments in the hours following consumption of the first drink in an episode. Multilevel regression analyses were used to predict ratings of buzz, dizziness, excitement, and sluggishness as a function of person-level and contextual covariates, estimated blood alcohol concentration (eBAC) level, ascending vs. descending eBAC, smoking, and their interactions. Appraisals of cigarette and alcohol effects were also examined within this framework. RESULTS: Buzz, excitement, and pleasure from alcohol and cigarettes were prominent features of real-world drinking episodes. Smoking was associated with enhanced buzz and excitement when eBAC was high and descending. Smoking slightly accentuated the relation between eBAC and ratings of drinking pleasure among women, but this relation was somewhat weakened by smoking among men. CONCLUSIONS: Smoking during drinking episodes may be partly explained by a persistence of stimulant alcohol effects beyond the blood alcohol concentration peak. Acute effects of nicotine and tobacco use on the descending limb deserve further scrutiny in experimental alcohol challenge research

Pickering, Thomas G.; Gerin, William; Schwartz, Joseph E.; Spruill, Tanya M.; Davidson, Karina W. (2008):

Franz Volhard lecture: should doctors still measure blood pressure? The missing patients with masked hypertension.

In: *J Hypertens* 26 (12), S. 2259–2267. DOI: 10.1097/HJH.0b013e32831313c4.

Abstract:

The traditional reliance on blood pressure (BP) measurement in the medical setting misses a significant number of individuals with masked hypertension, who have normal clinic BP but persistently high daytime BP when measured out of the office. We suggest that masked hypertension may be a precursor of clinically recognized sustained hypertension and is associated with increased cardiovascular risk compared with consistent normotension. We discuss factors that may contribute to clinic-daytime BP differences as well as the changing relationship between these two measures over time. Anxiety at the time of BP measurement and having been diagnosed as hypertensive appear to be two possible mechanisms. The identification of individuals with masked hypertension is of great clinical importance and requires out-of-office BP screening. Ambulatory BP monitoring is the best established technique for doing this, but home monitoring may be applicable in the future.

Pickering, Thomas G.; Miller, Nancy Houston; Ogedegbe, Gbenga; Krakoff, Lawrence R.; Artinian, Nancy T.; Goff, David (2008):

Call to Action on Use and Reimbursement for Home Blood Pressure Monitoring A Joint Scientific Statement From the American Heart Association, American Society of Hypertension, and Preventive Cardiovascular Nurses Association.

In: *Hypertension* 52 (1), S. 10–29.

Abstract:

Home blood pressure monitoring (HBPM) overcomes many of the limitations of traditional office blood pressure (BP) measurement and is both cheaper and easier to perform than ambulatory BP monitoring. Monitors that use the oscillometric method are currently available that are accurate, reliable, easy to use, and relatively inexpensive. An increasing number of patients are using them regularly to check their BP at home, but although this has been endorsed by national and international guidelines, detailed recommendations for their use have been lacking. There is a rapidly growing literature showing that measurements taken by patients at home are often lower than readings taken in the office and closer to the average BP recorded by 24-hour ambulatory monitors, which is the BP that best predicts cardiovascular risk. Because of the larger numbers of readings that can be taken by HBPM than in the office and the elimination of the white-coat effect (the increase of BP during an office visit), home readings are more reproducible than office readings and show better correlations with measures of target organ damage. In addition, prospective studies that have used multiple home readings to express the true BP have found that home BP predicts risk better than office BP (Class IIa; Level of Evidence A). This call-to-action article makes the following recommendations: (1) It is recommended that HBPM should become a routine component of BP measurement in the majority of patients with known or suspected hypertension; (2) Patients should be advised to purchase oscillometric monitors that measure BP on the upper arm with an appropriate cuff size and that have been shown to be accurate according to standard international protocols. They should be shown how to use them by their healthcare providers; (3) Two to 3 readings should be taken while the subject is resting in the seated position, both in the morning and at night, over a period of 1 week. A total of >/=12 readings are recommended for making clinical decisions; (4) HBPM is indicated in patients with newly diagnosed or suspected hypertension, in whom it may distinguish between white-coat and sustained hypertension. If the results are equivocal, ambulatory BP monitoring may help to establish the diagnosis; (5) In patients with prehypertension, HBPM may be useful for detecting masked hypertension; (6) HBPM is recommended for evaluating the response to any type of antihypertensive treatment and may improve adherence; (7) The target HBPM goal for treatment is <135/85 mm Hg or <130/80 mm Hg in high-risk patients; (8) HBPM is useful in the elderly, in whom both BP variability and the white-coat effect are increased; (9) HBPM is of value in patients with diabetes, in whom tight BP control is of paramount importance; (10) Other populations in whom HBPM may be beneficial include pregnant women, children, and patients with kidney disease; and (11) HBPM has the potential to improve the quality of care while reducing costs and should be reimbursed.

Pieper, Suzanne; Brosschot, Jos F.; van der Leeden, Rien; Thayer, Julian F. (2007):

Cardiac effects of momentary assessed worry episodes and stressful events.

In: *Psychosomatic Medicine* 69 (9), S. 901–909.

Abstract:

OBJECTIVE:

To hypothesize that increased heart rate (HR) and decreased heart rate variability (HRV) occurs not only during stressful events but also during episodes in which stress is cognitively represented, but not necessarily present, i.e., during worry.

METHODS:

Ambulatory HR and HRV of 73 female and male teachers were recorded for 4 days, during which they reported, on an hourly basis using computerized diaries, the number and characteristics of worry episodes and stressful events. Multilevel regression models were used, controlling for biobehavioral variables.

RESULTS:

Compared with neutral periods, worry episodes and stressful events had independent effects on HR (2.00 beats/min and 2.75 beats/min, respectively) and HRV (-1.07 ms and -1.05, respectively). Neither psychological traits nor biobehavioral variables influenced these results. Effects were most pronounced for work-related worry on HR (9.16 beats/min) and HRV (-1.19 ms), and for worry about anticipated future stress on HR (4.79 beats/min).

CONCLUSIONS:

Worry in daily life might have substantial cardiac effects in addition to the effects of stressful events, especially in the form of work-related and anticipatory stress, the latter being a type of stress that has been largely neglected in stress research.

Pierdomenico, Sante D.; Cuccurullo, Franco (2011):

Prognostic value of white-coat and masked hypertension diagnosed by ambulatory monitoring in initially untreated subjects: an updated meta analysis.

In: *Am J Hypertens* 24 (1), S. 52–58.

Abstract:

BACKGROUND:

The prognostic relevance of white-coat hypertension (WCH) and masked hypertension (MH) is controversial. The aim of this study was to perform an updated meta-analysis on the prognostic value of WCH and MH diagnosed by ambulatory monitoring in initially untreated subjects.

METHODS:

We searched for articles evaluating cardiovascular outcome in WCH or MH or sustained hypertension (SH) in comparison with normotension, investigating untreated subjects at baseline or performing separate analysis for untreated or treated subjects, and reporting adjusted hazard ratio (HR) and 95% confidence interval (CI).

RESULTS:

Eight studies were identified. Five whole studies and untreated groups of three others were included in the meta-analysis. The pooled population consisted of 7,961 subjects who experienced 696 events. When compared with normotension, the overall adjusted HR was 0.96 (95% CI 0.65-1.42) for WCH (P = 0.85), 2.09 (1.55-2.81) for MH (P = 0.0001), and 2.59 (2.0-3.35) for SH (P = 0.0001). There was no significant difference between WCH and normotension according to normotensive subjects source (same or different study population) and follow-up length. Where reported, prevalence of drug therapy was higher in subjects with WCH than in those with normotension at follow-up.

CONCLUSIONS:

Cardiovascular risk is not significantly different between WCH and normotension, regardless of normotensive population type and follow-up length. However, at follow-up drug therapy was more frequent in WCH than in normotension and its possible impact on outcome should be evaluated in future studies. MH shows significantly higher risk than normotension, although the best way for its detection and treatment remains to be established.

Pierin, Angela M. G.; Ignez, Edna C.; Jacob Filho, Wilson; Barbato, Alfonso Júlio Guedes; Mion Jr, Décio (2008):

Blood pressure measurements taken by patients are similar to home and ambulatory blood pressure measurements.

In: *Clinics (Sao Paulo)* 63 (1), S. 43–50.

Abstract:

OBJECTIVE:

To compare blood pressure measurements taken at home by physicians, nurses, and patients with office blood pressure measurement , ambulatory blood pressure monitoring and home blood pressure measurement.

METHODS:

A total of 44 patients seen by a home care program were studied. Protocol 1 a) blood pressure was measured by the patient, a physician and a nurse during a regular home visit (Home1); b) home blood pressure measurement was measured for 4 days (HBPM1); c) office blood pressure measurement was measured by a physician, a nurse, and the patient; and by 24-hour ambulatory blood pressure monitoring. Protocol 2 blood pressure was measured by the patient, a physician, and a nurse during a special home visit in the presence of a physician and a nurse only (Home2); and b) home blood pressure measurement was taken for the second time (HBPM2). Echocardiography, guided by a two-dimensional echocardiograph, was performed.

RESULTS:

Protocol 1: a) office blood pressure measurement and Home1 were significantly higher than ambulatory blood pressure monitoring, except for systolic and diastolic office blood pressure measurement taken by the patient or a family member, systolic blood pressure taken by a nurse, and diastolic blood pressure taken by a physician. b) ambulatory blood pressure monitoring and HBPM1 were similar. Protocol 2: a) HBPM2 and Home2 were similar. b) Home2 was significantly lower than Home1, except for diastolic blood pressure taken by a nurse or the patient. There were significant relationships between: a) diastolic blood pressure measured by the patient and the thickness of the interventricular septum, posterior wall, and left ventricular mass; and b) ambulatory and HBPM2 diastolic and systolic blood pressure taken by a physician (home2) and left ventricular mass. Therefore, the data indicate that home blood pressure measurement and ambulatory blood pressure monitoring had good prognostic values relative to "office measurement."

CONCLUSION:

This study showed that the measurement most similar to home blood pressure measurement and ambulatory blood pressure monitoring was blood pressure measured by the patient, and that home blood pressure measurement and ambulatory blood pressure monitoring had good prognostic value relative to "office measurements".

Pieterse, Chine; Schutte, Rudolph; Schutte, Aletta E. (2014):

Autonomic activity and leptin in Africans and whites: the SABPA study.

In: *J Hypertens* 32 (4), S. 826–833. DOI: 10.1097/HJH.0000000000000110.

Abstract:

OBJECTIVES: Evidence exists that leptin enhances sympathetic activity and may thereby contribute to the development of obesity-related hypertension. Sympathetic activation also seems more prominent in Africans than whites. We compared leptin levels, and different markers of autonomic activity between Africans and whites, and determined whether a relationship exists between leptin and autonomic activity. METHODS: The study included 409 African and white school teachers (aged, 44.6 +/- 9.6 years). We determined leptin in serum and measured ambulatory blood pressure. Markers reflecting autonomic activity included renin, cortisol, baroreflex sensitivity, ambulatory heart rate and heart rate variability (HRV) components (assessed by 24-h ECG recordings in the frequency and geometric domain). RESULTS: Africans had higher leptin levels, BMI, blood pressure and heart rate (all P < 0.001) as well as lower HRV triangular index and HRV total power (P < 0.001). After also adjusting for BMI in multivariate regression analyses, in African men, renin (beta = 0.228; P = 0.033), night-time heart rate (beta = 0.184; P = 0.034), HRV triangular index (beta = -0.230; P = 0.010) and HRV total power (beta = -0.214; P = 0.046) associated with leptin. In white men, leptin associated with 24-h heart rate (beta = 0.376; P < 0.001), as well as day and night-time heart rate (both P < 0.01), HRV triangular index (beta = -0.335; P < 0.001) and HRV total power (beta = -0.403; P < 0.001). In African women, we observed an association of leptin with the total power component of HRV (beta = -0.221; P = 0.015) and a borderline association with renin (beta = 0.219; P = 0.057). No significant associations were apparent in the white women. CONCLUSION: We found that leptin is independently associated with different markers of autonomic activity, especially in men.

Piferi, Rachel L.; Lawler, Kathleen A. (2006):

Social support and ambulatory blood pressure: an examination of both receiving and giving.

In: *International journal of psychophysiology : official journal of the International Organization of Psychophysiology* 62 (2), S. 328–336. DOI: 10.1016/j.ijpsycho.2006.06.002.

Abstract:

The relationship between the social network and physical health has been studied extensively and it has consistently been shown that individuals live longer, have fewer physical symptoms of illness, and have lower blood pressure when they are a member of

a social network than when they are isolated. Much of the research has focused on the benefits of receiving social support from the network and the effects of giving to others within the network have been neglected. The goal of the present research was to systematically investigate the relationship between giving and ambulatory blood pressure. Systolic blood pressure, diastolic blood pressure, mean arterial pressure, and heart rate were recorded every 30 min during the day and every 60 min at night during a 24-h period. Linear mixed models analyses revealed that lower systolic and diastolic blood pressure and mean arterial pressure were related to giving social support. Furthermore, correlational analyses revealed that participants with a higher tendency to give social support reported greater received social support, greater self-efficacy, greater self-esteem, less depression, and less stress than participants with a lower tendency to give social support to others. Structural equation modeling was also used to test a proposed model that giving and receiving social support represent separate pathways predicting blood pressure and health. From this study, it appears that giving social support may represent a unique construct from receiving social support and may exert a unique effect on health.

Piira, Olli-Pekka; Huikuri, Heikki V.; Tulppo, Mikko P. (2011):

Effects of emotional excitement on heart rate and blood pressure dynamics in patients with coronary artery disease.

In: *Autonomic Neuroscience* 160 (1), S. 107–114.

Abstract:

The incidence of adverse cardiovascular events is higher among spectators of exciting sports events, but the mechanistic link between the events is not known. We assessed the heart rate (HR) and blood pressure (BP) dynamics of enthusiastic male ice hockey spectators (60 ± 9 years) with coronary artery disease (CAD) during Finnish national league ice hockey play-off final matches. Twenty-four-hour ambulatory ECG (n = 55) and BP (n = 17) were recorded at the time of the match and on a control day. Beat-to-beat R-R intervals and BP were recorded during the match and a bicycle exercise at equal HR levels (n = 21). Systolic and diastolic BP were significantly higher 1h before, during, and 1h after the match than on the control day, e.g., the highest systolic BP was 180 ± 14 vs. 145 ± 15 and diastolic 103 ± 13 vs. 82 ± 11 mmHg ($p<0.001$ for both). HR was higher throughout the match ($p<0.05$) and remained elevated 2h after the match ($p<0001$), and measures of HR variability were decreased during the match ($p<0.01$). Low-frequency variability in BP was higher during the match than during the exercise test ($p<0.01$). The results show that cardiac vagal outflow is attenuated and vasomotor sympathetic activity elevated during exciting sports events and BP dynamics differ from those occurring during physical exercise at equal HRs. The autonomic reactions may partly explain the vulnerability to cardiovascular events caused by this type of leisure-time emotional excitement.

Pishva, Ehsan; Drukker, Marjan; Viechtbauer, Wolfgang; Decoster, Jeroen; Collip, Dina; van Winkel, Ruud et al. (2014):

Epigenetic genes and emotional reactivity to daily life events: a multi-step gene-environment interaction study.

In: *PLoS One* 9 (6), S. e100935. DOI: 10.1371/journal.pone.0100935.

Abstract:

Recent human and animal studies suggest that epigenetic mechanisms mediate the impact of environment on development of mental disorders. Therefore, we hypothesized that polymorphisms in epigenetic-regulatory genes impact stress-induced emotional changes. A multi-step, multi-sample gene-environment interaction analysis was conducted to test whether 31 single nucleotide polymorphisms (SNPs) in epigenetic-regulatory genes, i.e. three DNA methyltransferase genes DNMT1, DNMT3A, DNMT3B, and methylenetetrahydrofolate reductase (MTHFR), moderate emotional responses to stressful and pleasant stimuli in daily life as measured by Experience Sampling Methodology (ESM). In the first step, main and interactive effects were tested in a sample of 112 healthy individuals. Significant associations in this discovery sample were then investigated in a population-based sample of 434 individuals for replication. SNPs showing significant effects in both the discovery and replication samples were subsequently tested in three other samples of: (i) 85 unaffected siblings of patients with psychosis, (ii) 110 patients with psychotic disorders, and iii) 126 patients with a history of major depressive disorder. Multilevel linear regression analyses showed no significant association between SNPs and negative affect or positive affect. No SNPs moderated the effect of pleasant stimuli on positive affect. Three SNPs of DNMT3A (rs11683424, rs1465764, rs1465825) and 1 SNP of MTHFR (rs1801131) moderated the effect of stressful events on negative affect. Only rs11683424 of DNMT3A showed consistent directions of effect in the majority of the 5 samples. These data provide the first evidence that emotional responses to daily life stressors may be moderated by genetic variation in the genes involved in the epigenetic machinery.

Pitchford, E. Andrew; Yun, Joonkoo (2010):

The accuracy of pedometers for adults with Down syndrome.

In: *Adapted Physical Activity Quarterly* 27 (4), S. 321–336.

Abstract:

The purpose of this study was to examine the accuracy of spring-levered and piezoelectric pedometers for adults with and without Down syndrome (DS). Twenty adults with DS and 24 adults without a disability walked for two minute periods on a predetermined indoor course at a self-selected, slower and faster pace. Pedometer recorded and criterion observed steps were compared to determine pedometer error. There was a significant interaction between pedometer model and walking speed. Piezoelectric pedometers demonstrated significantly less measurement error than spring-levered pedometers, particularly at slower walking speeds. There were also significant differences in pedometer error between adults with and without DS. The study concludes that pedometer measurement error is significantly different for adults with DS but also that piezoelectric pedometers can be used in the future to measure walking activity for adults with and without DS.

Pitetti, Kenneth H.; Beets, Michael W.; Flaming, Judy (2009):

Accuracy of pedometer steps and time for youth with intellectual disabilities during dynamic movements.

Abstract:

Pedometer accuracy for steps and activity time during dynamic movement for youth with intellectual disabilities (ID) were examined. Twenty-four youth with ID (13 girls, 13.1 +/- 3.2 yrs; 11 boys, 14.7 +/- 2.7 yrs) were videotaped during adapted physical education class while wearing a Walk4Life 2505 pedometer in five locations around the waist. Researchers viewed each videotape and recorded observed steps and activity time. Observed findings were compared with pedometer recorded steps and time. On average, pedometer registered steps were underestimated by approximately 14% +/- 16.5%, whereas pedometer registered time was overestimated by approximately 8.7% +/- 21.8%. The findings indicate that the accuracy of pedometers may be compromised during dynamic movement for youth with ID.

Plasqui, G.; Bonomi, A. G.; Westerterp, K. R. (2013):

Daily physical activity assessment with accelerometers: new insights and validation studies.

In: *Obes.Rev.* (1467-7881 (Linking)). DOI: 10.1111/obr.12021.

Abstract:

The field of application of accelerometry is diverse and ever expanding. Because by definition all physical activities lead to energy expenditure, the doubly labelled water (DLW) method as gold standard to assess total energy expenditure over longer periods of time is the method of choice to validate accelerometers in their ability to assess daily physical activities. The aim of this paper was to provide a systematic overview of all recent (2007-2011) accelerometer validation studies using DLW as the reference. The PubMed Central database was searched using the following keywords: doubly or double labelled or labeled water in combination with accelerometer, accelerometry, motion sensor, or activity monitor. Limits were set to include articles from 2007 to 2011, as earlier publications were covered in a previous review. In total, 38 articles were identified, of which 25 were selected to contain sufficient new data. Eighteen different accelerometers were validated. There was a large variability in accelerometer output and their validity to assess daily physical activity. Activity type recognition has great potential to improve the assessment of physical activity-related health outcomes. So far, there is little evidence that adding other physiological measures such as heart rate significantly improves the estimation of energy expenditure

Plowman, Lydia; Stevenson, Olivia (2012):

Using mobile phone diaries to explore children's everyday lives.

In: *Childhood: A Global Journal of Child Research* 19 (4), S. 539–553. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31692-010%26site%3dehost-live;lydia.plowman@stir.ac.uk.

Abstract:

This article describes a novel approach to experience sampling as a response to the challenges of researching the everyday lives of young children at home. Parents from 11 families used mobile phones to send the research team combined picture and text messages to provide 'experience snapshots' of their child's activities six times on each of three separate days. The article describes how the method aligns with an ecocultural approach, illustrates the variation in children's experiences and provides sufficient detail for researchers to adapt the method for the purposes of collecting data in other contexts. The article summarizes the benefits and shortcomings from the perspectives of families and researchers. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Pluess, Michael; Conrad, Ansgar; Wilhelm, Frank H. (2009):

Muscle tension in generalized anxiety disorder: a critical review of the literature.

In: *J Anxiety Disord* 23 (1), S. 1–11. DOI: 10.1016/j.janxdis.2008.03.016.

Abstract:

BACKGROUND\r\nGeneralized anxiety disorder (GAD) is a prevalent, disabling, and often chronic disorder. With a typical recovery rate of only about 40% with current psychological treatments a better understanding of potential psychophysiological mechanisms is vital.\r\nMETHODS\r\nSince the most discriminative somatic symptom of GAD compared to other anxiety disorders is muscle tension this review qualitatively examines the literature on muscle tension as it relates to GAD and muscle relaxation therapy for GAD patients.\r\nRESULTS\r\nMuscle tension in GAD is poorly understood. Experimental studies refute the often-assumed direct relationship between anxiety and muscle tension. However, muscle relaxation therapies have been as effective as cognitive interventions directly addressing the defining symptom worry.\r\nCONCLUSIONS\r\nMuscle tension in its objective and subjective representations may play a role in GAD through various pathways that are testable. Future research needs to better examine the different aspects and functions of muscle tension in GAD.

Poerio, G. L.; Totterdell, P.; Miles, E. (2013):

Mind-wandering and negative mood: does one thing really lead to another?

In: *Conscious.Cogn* 22 (4), S. 1412–1421. DOI: 10.1016/j.concog.2013.09.012.

Abstract:

Mind-wandering is closely connected with negative mood. Whether negative mood is a cause or consequence of mind-wandering remains an important, unresolved, issue. We sought to clarify the direction of this relationship by measuring mood before and after mind-wandering. We also measured the affective content, time-orientation and relevance of mind-wandering to current concerns to explore whether the link between mind-wandering and negative mood might be explained by these characteristics. A novel experience-sampling technique with smartphone application prompted participants to answer questions about mind-wandering and mood across 7 days. While sadness tended to precede mind-wandering, mind-wandering itself was not associated with later mood and only predicted feeling worse if its content was negative. We also found prior sadness predicted retrospective mind-wandering, and prior negative mood predicted mind-wandering to current concerns. Our findings provide new insight into how mood and mind-wandering relate but suggest mind-wandering is not inherently detrimental to well-being

Pogue, Velvie; Rahman, Mahboob; Lipkowitz, Michael; Toto, Robert; Miller, Edgar; Faulkner, Marquetta et al. (2009):

Disparate estimates of hypertension control from ambulatory and clinic blood pressure measurements in hypertensive kidney disease.

In: *Hypertension* 53 (1), S. 20–27. DOI: 10.1161/HYPERTENSIONAHA.108.115154.

Abstract:

Ambulatory blood pressure (ABP) monitoring provides unique information about day-night patterns of blood pressure (BP). The objectives of this article were to describe ABP patterns in African Americans with hypertensive kidney disease, to examine the joint distribution of clinic BP and ABP, and to determine associations of hypertensive target organ damage with clinic BP and ABP. This study is a cross-sectional analysis of baseline data from the African American Study of Kidney Disease Cohort Study. Masked hypertension was defined by elevated daytime (>or= 135/85 mm Hg) or elevated nighttime (>or= 120/70 mm Hg) ABP in those with controlled clinic BP (<140/90 mm Hg); nondipping was defined by a <or= 10% decrease in mean nighttime systolic

BP; reverse dipping was defined by a higher nighttime than daytime systolic BP. Of the 617 participants (mean age: 60.2 years; 62% male; mean estimated glomerular filtration rate: 43.8 mL/min per 1.73 m(2)) with both clinic BP and ABP, 498 participants (80%) had a nondipping or reverse dipping profile. Of the 377 participants with controlled clinic BP (61%), 70% had masked hypertension. Compared with those with controlled clinic BP or white-coat hypertension, target organ damage (proteinuria and left ventricular hypertrophy) was more common in those with elevated nighttime BP, masked hypertension, or sustained hypertension. In conclusion, clinic BP provides an incomplete and potentially misleading assessment of the severity of hypertension in African Americans with hypertensive kidney disease, in large part because of increased nighttime BP. Whether lowering nighttime BP improves clinical outcomes is unknown but should be tested given the substantial burden of BP-related morbidity in this population.

Poh, Choo Hean; Gasiorowska, Anita; Allen, Larissa; Navarro-Rodriguez, Tomás; Mizyed, Ibraheem; Powers, Jeannette et al. (2010):

Reassessment of the principal characteristics of gastroesophageal reflux during the recumbent period using integrated actigraphy-acquired information.

In: *The American journal of gastroenterology* 105 (5), S. 1024–1031. DOI: 10.1038/ajg.2009.636.

Abstract:

OBJECTIVES\r\nCharacterization of gastroesophageal reflux (GERD) events during the sleep period has been hampered by lack of any patient-friendly technique that allows accurate assessment of sleep duration and awakening time, without confining patients to a sleep laboratory. Our aim was to compare principal reflux characteristics during the upright, recumbent-awake, and recumbent-asleep periods as well as to determine the effect of sleep awakenings on the principal reflux characteristics of the recumbent-asleep period using novel technology that allows integration of recorded actigraphy data into collected pH information.\r\nMETHODS\r\nPatients with heartburn at least three times a week for the previous 3 months were invited to participate in this study. All participants were evaluated by the demographics and the GERD Symptom Checklist questionnaires. Thereafter, patients underwent ambulatory 24-h esophageal pH monitoring concomitantly with actigraphy. A novel technique was used to superimpose simultaneously recorded raw actigraphy data over pH data, resulting in more accurate information about reflux events during upright, recumbent-awake, recumbent-asleep, and conscious awakening periods as well as the relationship between symptoms and acid reflux events in the aforementioned periods.\r\nRESULTS\r\nThirty-nine subjects (M/F: 26/13, mean age 56.6+/-14 years) with an abnormal pH test were enrolled into the study. The recumbent period appeared heterogeneous and was clearly divided into recumbent-awake (123.0+/-20.2 min) and recumbent-asleep (485.6+/-23.6 min) periods. The percent total time pH<4, the mean number of acid reflux events, and the number of symptoms associated with reflux events were significantly greater in the recumbent-awake as compared with the recumbent-asleep period. The mean duration of an acid reflux event was not different among upright, recumbent-awake, and recumbent-asleep periods. However, short-duration reflux events during the sleep period were associated with conscious awakenings as compared with those during sleep (0.74+/-0.11 min vs. 1.64+/-0.3 min, P=0.01).\r\nCONCLUSIONS\r\nThe recumbent period is divided into recumbent-awake and recumbent-asleep periods. The recumbent-awake period has significantly different principal reflux characteristics than the recumbent-asleep period. Duration of an acid reflux event during the recumbent-asleep period is not uniformly prolonged. Short-duration acid reflux events during the sleep period are likely due to conscious awakenings.

Poh, M. Z.; Loddenkemper, T.; Reinsberger, C.; Swenson, N. C.; Goyal, S.; Sabtala, M. C. et al. (2012):

Convulsive seizure detection using a wrist-worn electrodermal activity and accelerometry biosensor.

In: *Epilepsia* (0013-9580 (Linking)). DOI: 10.1111/j.1528-1167.2012.03444.x.

Abstract:

The special requirements for a seizure detector suitable for everyday use in terms of cost, comfort, and social acceptance call for alternatives to electroencephalography (EEG)-based methods. Therefore, we developed an algorithm for automatic detection of generalized tonic-clonic (GTC) seizures based on sympathetically mediated electrodermal activity (EDA) and accelerometry measured using a novel wrist-worn biosensor. The problem of GTC seizure detection was posed as a supervised learning task in which the goal was to classify 10-s epochs as a seizure or nonseizure event based on 19 extracted features from EDA and accelerometry recordings using a Support Vector Machine. Performance was evaluated using a double cross-validation method. The new seizure detection algorithm was tested on >4,213 h of recordings from 80 patients and detected 15 (94%) of 16 of the GTC seizures from seven patients with 130 false alarms (0.74 per 24 h). This algorithm can potentially provide a convulsive seizure alarm system for caregivers and objective quantification of seizure frequency

Pol, Margriet C.; Poerbodipoero, Soemitro; Robben, Saskia; Daams, Joost; van Hartingsveldt, Margo; Vos, Rien et al. (2013):

Sensor monitoring to measure and support daily functioning for independently living older people: a systematic review and road map for further development.

In: *J Am Geriatr Soc* 61 (12), S. 2219–2227.

Abstract:

OBJECTIVES: To study sensor monitoring (use of a sensor network placed in the home environment to observe individuals' daily functioning (activities of daily living and instrumental activities of daily living)) as a method to measure and support daily functioning for older people living independently at home. DESIGN: Systematic review. SETTING: Participants' homes. PARTICIPANTS: Community-dwelling individuals aged 65 and older. MEASUREMENTS: A systematic search in PubMed, Embase, PsycINFO, INSPEC, and The Cochrane Library was performed for articles published between 2000 and October 2012. All study designs, studies that described the use of wireless sensor monitoring to measure or support daily functioning for independently living older people, studies that included community-dwelling individuals aged 65 and older, and studies that focused on daily functioning as a primary outcome measure were included. RESULTS: Seventeen articles met the inclusion criteria. Nine studies used sensor monitoring solely as a method for measuring daily functioning and detecting changes in daily functioning. These studies focused on the technical investigation of the sensor monitoring method used. The other studies investigated clinical applications in daily practice. The sensor data could enable healthcare professionals to detect alert conditions and periods of decline and could enable earlier intervention, although limited evidence of the effect of interventions was found in these studies because of a lack of high methodological quality. CONCLUSION: Studies on the effectiveness of sensor monitoring to support people in daily functioning remain scarce. A road map for further development is proposed.

Pollak, John P. (2013):

The Photographic Affect Meter: A novel application to measure momentary emotional states.

In: *Dissertation Abstracts International Section A: Humanities and Social Sciences* 73 (8-A(E)). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-99030-112%26site%3dehost-live.

Abstract:

Emotion plays an ever-present role in human existence, impacting nearly every behavior and decision in some way. Research in the behavioral sciences is rife with exploration of emotion and the role it plays in everything from business decision making to health-related behavior. However, affect, the feeling or experience of emotion, is complex and presents many challenges to those interested in measuring it, often resulting in a disconnect between the way emotion is experienced and felt and the way that researchers measure it. This dissertation addresses the challenges of measuring emotion through the presentation of the design, development, and validation of a novel measure of affect. The Photographic Affect Meter, PAM, is a digital measure of affect in which subjects choose from a grid of photos the one that best represents their current emotional state. The objective of PAM is to provide researchers with a means of measuring affect that is brief, reliable, and effective when used in situ. PAM was developed through an extensive iterative design process anchored in Human-Computer Interaction research, drawing inspiration from Affective Computing and Design literature. PAM was then rigorously validated via three separate studies. In the first two studies, subjects were assessed using both PAM and one of three widely accepted measure of affect (PANAS, Russell's Affect Grid, or the Self Assessment Manikin). In the third study, subjects were induced with negative, neutral, or positive affect and then assessed using PAM. In each of the studies, PAM results were found to be consistent with expectation, establishing the validity and reliability of the measure. While the success of this approach has implications for researchers in Affective Computing, Emotion, Design, and Ecological Momentary Assessment, the primary contribution of this work is the introduction of a novel measure of affect that is ready to be deployed in a wide variety of studies. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Possemato, K.; Kaier, E.; Wade, M.; Lantinga, L. J.; Maisto, S. A.; Ouimette, P. (2012):

Assessing daily fluctuations in posttraumatic stress disorder symptoms and substance use with interactive voice response technology: Protocol compliance and reactions.

In: *Psychol.Serv.* 9 (2), S. 185–196. DOI: 10.1037/a0027144.

Abstract:

PTSD symptoms and substance use commonly co-occur, but information is limited regarding their interplay. We used ecological momentary assessment (EMA) to capture fluctuations in PTSD symptoms and drinking within and across days. Fifty Iraq and Afghanistan War veterans completed four daily Interactive Voice Response (IVR) assessments of PTSD and substance use with cell phones for 28 days. The aims of this study were to (1) describe participant compliance and reactions to the protocol and (2) identify participant characteristics and protocol reactions that predict compliance. Protocol compliance was high, with participants completing an average of 96 out of a total of 112 IVR assessments (86%). While some participants perceived that the IVR assessments increased their drinking (21%) and PTSD symptoms (60%), self-report measures showed significant decreases in PTSD symptoms and nonsignificant decreases in drinking over the assessment period. Analyses revealed demographic (e.g., older than 24, full-time employment, more education), clinical (e.g., less binge drinking, less avoidance symptoms), and perceived benefit from participation predicted better protocol compliance. Results can guide future research on participant predictors of compliance with intensive EMA methods. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Potvin, Marie-Julie; Rouleau, Isabelle; Audy, Julie; Charbonneau, Simon; Giguère, Jean-François (2011):

Ecological prospective memory assessment in patients with traumatic brain injury.

In: *Brain injury* 25 (2), S. 192–205.

Abstract:

PRIMARY OBJECTIVE:

Prospective memory (PM) impairments are often observed after traumatic brain injury (TBI). Although PM is crucial for daily functioning, few sensitive, valid and ecological clinical tests are available. To address these concerns, the authors developed a PM task, the TEMP, using naturalistic stimuli, in which each PM phase and component is evaluated independently in time- and event-based conditions.

MAIN OUTCOMES AND RESULTS:

The results show that moderate and severe TBI patients (n = 30), evaluated after spontaneous neurological recovery, experienced problems in learning the delayed intentions content and retrieving these intentions in the right context (prospective component), especially in the time-based condition. They also recalled fewer associated actions (retrospective component), but only in the time-based condition. Correlations revealed that the retrospective component was mainly supported by episodic retrospective memory processes, while the prospective component was supported by episodic retrospective memory processes, along with attentional and executive functions. Moreover, there was a significant correlation between performance on the TEMP and results on a questionnaire assessing PM functioning in daily living completed by participants' relatives.

CONCLUSIONS:

The TEMP therefore appears to be a sensitive tool for assessing PM problems that combines internal and ecological validity.

Poulin, Michael J.; Brown, Stephanie L.; Ubel, Peter A.; Smith, Dylan M.; Jankovic, Aleksandra; Langa, Kenneth M. (2010):

Does a helping hand mean a heavy heart? Helping behavior and well-being among spouse caregivers.

In: *Psychology and Aging* 25 (1), S. 108–117. DOI: 10.1037/a0018064.

Abstract:

Being a caregiver for an ill or disabled loved one is widely recognized as a threat to the caregiver's quality of life. Nonetheless, research indicates that helping behavior, broadly construed, promotes well-being. Could helping behavior in a caregiving context promote well-being as well? In the present study, we used ecological momentary assessment to measure active helping behavior and both positive and negative affect in 73 spouse caregivers. Results indicate that when controlling for care recipient illness status and functional impairment and caregiver \"on call\" caregiving time, active helping predicted greater caregiver positive affect--especially for individuals who perceived themselves as interdependent with their spouse. In addition, although both helping and on-call time predicted greater negative affect for caregivers who perceived low interdependence, helping was unrelated to negative affect among caregivers perceiving high interdependence. Helping valued loved ones may promote caregivers' well-being.

Powell, Rachael; Allan, Julia L.; Johnston, Derek W.; Gao, Chuan; Johnston, Marie; Kenardy, Justin et al. (2009):

Activity and affect: Repeated within-participant assessment in people after joint replacement surgery.

In: *Rehabilitation Psychology* 54 (1), S. 83–90. DOI: 10.1037/a0014864.

Abstract:

OBJECTIVE:

Between-participant research has shown that high negative affectivity predicts greater activity limitations and vice versa. This study examined both between- and within-participant associations of negative and positive affectivity with activity levels using ecological momentary assessment.

METHOD:

Participants were 25 people who had undergone joint replacement surgery 12 months previously. Participants made multiple reports of their activity and positive and negative affectivity over a single day using a computerized diary. Activity was also objectively recorded using an activity monitor. The following day, participants made a self-report of their activity over the measurement day and general positive and negative affectivity levels were recorded.

RESULTS:

Higher self-reported walking time over the whole measurement day was associated with higher general positive affectivity but not negative affectivity. However, using ecological momentary assessment, higher diary reports of negative affectivity predicted increased activity levels while positive affectivity neither predicted nor was predicted by activity.

CONCLUSION:

These findings demonstrate the importance of within-participant methodology in detecting subtle and immediate effects of individuals' mood on behavior that may differ from findings investigating between-participant effects over longer time periods.

Powell, D. J.; Liossi, C.; Moss-Morris, R.; Schlotz, W. (2013):

Unstimulated cortisol secretory activity in everyday life and its relationship with fatigue and chronic fatigue syndrome: A systematic review and subset meta-analysis.

In: *Psychoneuroendocrinology* (0306-4530 (Linking)). DOI: 10.1016/j.psyneuen.2013.07.004.

Abstract:

The hypothalamic-pituitary-adrenal (HPA) axis is a psychoneuroendocrine regulator of the stress response and immune system, and dysfunctions have been associated with outcomes in several physical health conditions. Its end product, cortisol, is relevant to fatigue due to its role in energy metabolism. The systematic review examined the relationship between different markers of unstimulated salivary cortisol activity in everyday life in chronic fatigue syndrome (CFS) and fatigue assessed in other clinical and general populations. Search terms for the review related to salivary cortisol assessments, everyday life contexts, and fatigue. All eligible studies (n=19) were reviewed narratively in terms of associations between fatigue and assessed cortisol markers, including the cortisol awakening response (CAR), circadian profile (CP) output, and diurnal cortisol slope (DCS). Subset meta-analyses were conducted of case-control CFS studies examining group differences in three cortisol outcomes: CAR output; CAR increase; and CP output. Meta-analyses revealed an attenuation of the CAR increase within CFS compared to controls (d=-.34) but no statistically significant differences between groups for other markers. In the narrative review, total cortisol output (CAR or CP) was rarely associated with fatigue in any population; CAR increase and DCS were most relevant. Outcomes reflecting within-day change in cortisol levels (CAR increase; DCS) may be the most relevant to fatigue experience, and future research in this area should report at least one such marker. Results should be considered with caution due to heterogeneity in one meta-analysis and the small number of studies

Prajapati, Sanjay K.; Gage, William H.; Brooks, Dina; Black, Sandra E.; McIlroy, William E. (2011):

A novel approach to ambulatory monitoring investigation into the quantity and control of everyday walking in patients with subacute stroke.

In: *Neurorehabilitation and Neural Repair* 25 (1), S. 6–14.

Abstract:

BACKGROUND:

Promoting whole body activities, such as walking, can help improve recovery after stroke. However, little information exists regarding the characteristics of daily walking in patients enrolled in rehabilitation poststroke. The objectives of this study were to: (1) examine the quantity of walking and duration of individual bouts of walking during an inpatient day, (2) compare standard laboratory symmetry measures with measures of symmetry captured throughout the day, and (3) investigate the association between quantity of walking and indices of stroke severity.

METHODS:

The study examined ambulatory activity among 16 inpatients with subacute stroke who were bilaterally instrumented with a wireless accelerometer above the ankle for approximately 8 continuous hours.

RESULTS:

On average, patients demonstrated 47.5 minutes (standard deviation [SD] = 26.6 minutes) of total walking activity and walking bout durations of 54.4 s (SD = 21.5 s). A statistically significant association was found between the number of walking bouts to total walking time (r = .76; P = .006) and laboratory gait speed (r = .51; P = .045) and between laboratory gait speed and balance impairment (r = .60; P = .013). Also, a significant increase in gait asymmetry was observed during day-long measurement compared with the standard laboratory-based assessment (P = .006).

CONCLUSIONS:

Rather modest amounts of daily walking were found for these ambulatory inpatients, consistent with previous reports about patients after stroke. Bouts of walking were short in duration, and the gait was more asymmetrical, compared with a standard gait assessment. Unobtrusive monitoring of daily walking exposes the characteristics and temporal qualities of poststroke ambulation.

Pramana, Gede; Parmanto, Bambang; Kendall, Philip C.; Silk, Jennifer S. (2014):

The SmartCAT: An m-Health Platform for Ecological Momentary Intervention in Child Anxiety Treatment.

In: *Telemed J E Health. DOI:* 10.1089/tmj.2013.0214.

Abstract:

Abstract Introduction: Cognitive behavioral therapy (CBT) for child anxiety, although efficacious, typically requires 16-20 weekly sessions with a therapist. Brief CBT (BCBT; eight sessions) for child anxiety is promising but may have less favorable outcomes owing to reduced session time. Mobile health (m-health) has the potential to improve BCBT efficacy by delivering ecological momentary intervention to engage youth in learning and practicing CBT skills in their everyday lives (in vivo). Materials and Methods: We developed an m-health platform entitled SmartCAT (Smartphone-enhanced Child Anxiety Treatment). SmartCAT consists of (1) a smartphone application (app) that cues youth to use the CBT skills taught in sessions, (2) an online portal that allows therapists to monitor skill use, to send cues and treatment-related materials, to engage youth in real-time via secure messages, and to manage rewards, and (3) a communication protocol that allows real-time bidirectional exchange between the app and the portal. A pilot study with nine youth (9-14 years old) examined the platform's feasibility as an adjunct to BCBT. Results: SmartCAT was found to be capable of supporting BCBT for child anxiety and received positive feedback from both therapists and youth patients. Patients rated the app as highly usable (mean=1.7 on a 1-7 scale, with 1="easy"). Patients completed 5.36 skills coach entries per session (standard deviation=1.95) and took an average of 3.14 min (standard deviation=0.98 min) to complete the entries. Conclusions: A smartphone app is feasible within CBT for child anxiety. Users found SmartCAT both acceptable and easy to use. Integrating an m-health platform within BCBT for anxious children may facilitate involvement in treatment and dissemination of effective procedures.

Prejbisz, Aleksander; Florczak, Elzbieta; Pregowska-Chwala, Barbara; Klisiewicz, Anna; Kusmierczyk-Droszcz, Beata; Zielinski, Tomasz et al. (2014):

Relationship between obstructive sleep apnea and markers of cardiovascular alterations in never-treated hypertensive patients.

In: *Hypertens Res. DOI:* 10.1038/hr.2014.43.

Abstract:

We addressed a question if there is a relationship between severity of newly diagnosed obstructive sleep apnea (OSA) and markers of cardiovascular alterations in middle-aged untreated hypertensive patients. In 121 consecutive patients with never-treated essential hypertension (mean age 35.9+/-10.1 years; 97 men and 24 women) evaluation of office and ambulatory blood pressure (BP) measurements, metabolic syndrome (MS) components and markers of alterations in cardiovascular system

including left ventricular structure and function, carotid artery wall intima-media thickness (cIMT) and urinary albumin excretion (UAE) was performed. OSA was classified as mild (apnea/hypopnea index (AHI) 5-15 events h-1) or moderate-to-severe (AHI >15 events h-1). Mild and moderate-to-severe OSA were diagnosed in 30% and 20% of patients, respectively. No differences in nighttime BP levels and decline between patients with and without OSA were observed. The patients with moderate-to-severe OSA were characterized by higher cIMT (0.74+/-0.16 vs. 0.60+/-0.15 mm; P=0.001), UAE (14.5+/-6.9 vs. 10.0+/-8.0 mg 24 h-1; P=0.014), relative wall thickness (0.42+/-0.05 vs. 0.39+/-0.05; P=0.023) and by a higher degree of diastolic dysfunction (E'-wave velocity 11.4+/-3.2 vs. 15.5+/-3.8 m s-1; P<0.001) as compared with the patients without OSA. In multivariate analysis, AHI independently of BP and MS components correlated with UAE, relative wall thickness and E'-wave velocity. In the middle-aged never-treated hypertensive patients, moderate-to-severe OSA correlates with markers of cardiovascular alterations independently of BP levels and MS components.Hypertension Research advance online publication, 13 March 2014; doi:10.1038/hr.2014.43.

Preston, Kenzie L.; Epstein, David H. (2011):

Stress in the daily lives of cocaine and heroin users: Relationship to mood, craving, relapse triggers, and cocaine use.

In: *Psychopharmacology* 218 (1), S. 29–37. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-23834-003&site=ehost-live;kpreston@intra.nida.nih.gov.

Abstract:

Rationale: Quantitative real-time data on the stress experienced by drug misusers in their daily lives may provide additional insight into stress's role in drug use. Objective: The purpose of this study is to evaluate stress in relation to craving, mood, relapse-trigger exposure, and cocaine use in cocaine-dependent outpatients. Methods: Methadone-maintained cocaine- and heroin-abusing outpatients (N = 114) provided ecological momentary assessment data on handheld computers. Ratings of stress were compared to those of craving and mood and past-hour exposure to putative drug-use triggers in randomly prompted entries and in the 5 h prior to participant-initiated cocaine use reports. Results: Stress had significant positive relationships with current ratings of craving for cocaine, heroin, and tobacco and with ratings of tiredness, boredom, and irritation, and had significant negative relationships with ratings of happiness and relaxation. Stress was significantly greater in entries in which participants also reported past-hour exposure to negative-mood triggers, most of the drug-exposure triggers, or any trigger involving thoughts about drugs (e.g., tempted out of the blue). The linear increase in stress during the 5-h preceding individual episodes of cocaine use was not significant (p = 0.12), though there was a trend for such an increase before the use episodes that participants attributed to stressful states when they occurred (p = 0.87). Conclusions: The findings suggest a complex role of stress in addiction. Stress reported in real time in the natural environment showed strong cross-sectional momentary relationships with craving, mood, and exposure to drug-use trigger. However, the prospective association between stress ratings and cocaine-use episodes was, at best, weak. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Preston, Kenzie L.; Vahabzadeh, Massoud; Schmittner, John; Lin, Jia-Ling; Gorelick, David A.; Epstein, David H. (2009):

Cocaine craving and use during daily life.

In: *Psychopharmacology* 207 (2), S. 291–301. DOI: 10.1007/s00213-009-1655-8.

Abstract:

RATIONALE\r\nCraving is often assumed to cause ongoing drug use and relapse and is a major focus of addiction research. However, its relationship to drug use has not been adequately documented.\r\nOBJECTIVES\r\nThe aim of this study was to investigate the relationship between craving and drug use in real time and in the daily living environments of drug users.\r\nMETHODS\r\nIn a prospective, longitudinal, cohort design (ecological momentary assessment), 112 cocaine-abusing individuals in methadone maintenance treatment rated their craving and mood at random times (two to five times daily, prompted by electronic diaries) as they went about their everyday activities. They also initiated an electronic diary entry each time they used cocaine. Drug use was monitored by thrice-weekly urine testing.\r\nRESULTS\r\nDuring periods of urine-verified cocaine use, ratings of cocaine craving increased across the day and were higher than during periods of urine-verified abstinence. During the 5 h prior to cocaine use, ratings of craving significantly increased. These patterns were not seen in ratings of heroin craving or mood (e.g., feeling happy or bored).\r\nCONCLUSIONS\r\nCocaine craving is tightly coupled to cocaine use in users' normal environments. Our findings provide previously unavailable support for a relationship that has been seriously questioned in some theoretical accounts. We discuss what steps will be needed to determine whether craving causes use.

Preziosa, Alessandra; Grassi, Alessandra; Gaggioli, Andrea; Riva, Giuseppe (2009):

Therapeutic applications of the mobile phone.

In: *British Journal of Guidance & Counselling* 37 (3), S. 313–325.

Abstract:

As the availability of new communication technologies increases, mental health professionals have incorporated these innovations into their practice and research. Up to now several studies have presented promising results in using the power and convenience of the Internet for clinical care. While multiple contributions focus on the potential and the advantages of therapies delivered through the Internet, mental health practitioners may take into account new technological opportunities to improve their practice. Mobile phone diffusion is expanding worldwide at breath-taking speed. In fewer than 20 years, mobile phones have gone from being rare and expensive pieces of equipment used primarily by the business elite, to a pervasive low-cost personal item. In many countries, mobile phones now outnumber land-line telephones, with most adults and many children now owning mobile phones. With high levels of mobile telephone penetration, a mobile culture has evolved, where the phone becomes a key social and cultural tool. The purpose of this paper is to explore the potentialities that mobile phones may offer in clinical care. The paper will investigate in which areas of clinical interventions mobile phones have already been successfully applied. Moreover, the paper will discuss these opportunities by presenting the results of two different studies based on the use of the mobile phone for anxiety management.

Priebe, Kathlen; Kleindienst, Nikolaus; Zimmer, Josepha; Koudela, Susanne; Ebner-Priemer, Ulrich; Bohus, Martin (2013):

Frequency of Intrusions and Flashbacks in Patients With Posttraumatic Stress Disorder Related to Childhood Sexual Abuse: An Electronic Diary Study.

In: *Psychological Assessment*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-26310-001%26site%3dehost-live.

Abstract:

Intrusions and flashbacks are core features of posttraumatic stress disorder (PTSD). The frequency of these symptoms is usually assessed through retrospective questionnaires, which may be subject to recall bias of unknown magnitude. Electronic diaries that enable real-time assessment have been used to address recall biases in several psychiatric disorders. However, to our knowledge, this is the first study to apply this method to assess intrusions and flashbacks in PTSD related to childhood sexual abuse (CSA). Female patients with PTSD related to CSA (n = 28) were provided with electronic diaries for repeated real-time assessment of intrusions and flashbacks over the period of 1 week. At the end of this period, they were asked to retrospectively report how many such symptoms they recalled having experienced over the past week. The total number of symptoms reported in the electronic diaries (74.5 -[illegible] 62.0 intrusions and 24.4 -[illegible] 36.0 flashbacks for the week) was substantially higher than those reported in previous studies. Furthermore, electronic diaries revealed the occurrence of about 50% more intrusions and flashbacks than did the retrospective assessment (74.5 vs. 49.5 for intrusions, and 24.4 vs. 13.4 for flashbacks). Such high frequencies are not captured with existing assessment instruments and suggest a possible ceiling effect. Future research needs to clarify whether these high numbers are specific to highly symptomatic PTSD patients or might generalize to other populations of PTSD patients. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Prince, Stéphanie A.; Adamo, Kristi B.; Hamel, Meghan E.; Hardt, Jill; Connor Gorber, Sarah; Tremblay, Mark (2008):

A comparison of direct versus self-report measures for assessing physical activity in adults: a systematic review.

In: *Int J Behav Nutr Phys Act* 5, S. 56. DOI: 10.1186/1479-5868-5-56.

Abstract:

BACKGROUND\r\nAccurate assessment is required to assess current and changing physical activity levels, and to evaluate the effectiveness of interventions designed to increase activity levels. This study systematically reviewed the literature to determine the extent of agreement between subjectively (self-report e.g. questionnaire, diary) and objectively (directly measured; e.g. accelerometry, doubly labeled water) assessed physical activity in adults.\r\nMETHODS\r\nEight electronic databases were searched to identify observational and experimental studies of adult populations. Searching identified 4,463 potential articles. Initial screening found that 293 examined the relationship between self-reported and directly measured physical activity and met the eligibility criteria. Data abstraction was completed for 187 articles, which described comparable data and/or comparisons, while 76 articles lacked comparable data or comparisons, and a further 30 did not meet the review's eligibility requirements. A risk of bias assessment was conducted for all articles from which data was abstracted.\r\nRESULTS\r\nCorrelations between self-

report and direct measures were generally low-to-moderate and ranged from -0.71 to 0.96. No clear pattern emerged for the mean differences between self-report and direct measures of physical activity. Trends differed by measure of physical activity employed, level of physical activity measured, and the gender of participants. Results of the risk of bias assessment indicated that 38% of the studies had lower quality scores.\r\nCONCLUSION\r\nThe findings suggest that the measurement method may have a significant impact on the observed levels of physical activity. Self-report measures of physical activity were both higher and lower than directly measured levels of physical activity, which poses a problem for both reliance on self-report measures and for attempts to correct for self-report - direct measure differences. This review reveals the need for valid, accurate and reliable measures of physical activity in evaluating current and changing physical activity levels, physical activity interventions, and the relationships between physical activity and health outcomes.

Prioreschi, A.; Hodkinson, B.; Avidon, I.; Tikly, M.; McVeigh, J. A. (2013):

The clinical utility of accelerometry in patients with rheumatoid arthritis.

In: *Rheumatology.(Oxford)* (1462-0324 (Linking)). DOI: 10.1093/rheumatology/ket216.

Abstract:

Objectives. To assess habitual physical activity levels in patients with RA compared with healthy control participants and to compare these measures with health-related quality of life and disease activity in the RA patients.Methods. Fifty RA patients [age 48 (13) years] and 22 BMI, sex and geographically matched control participants were recruited. Habitual physical activity was measured using an Actical accelerometer worn on the hip for 2 consecutive weeks. Patients completed the Short Form-36 (SF-36) and modified Health Assessment Questionnaires (HAQ-DI). Disease activity was assessed using the Simplified Disease Activity Index (SDAI). RA patients were further categorized as more physically active (n = 25) and less physically active (n = 25) according to their average activity counts.Results. The RA group spent more time in sedentary activity than the control group (71% vs 62% of the day respectively, P = 0.002) and had bimodal decreases in diurnal physical activity compared with the control group in the morning (P < 0.001) and late afternoon (P < 0.001). HAQ-DI, when adjusted for age and disease duration, was negatively correlated with physical activity in the RA group (r = -0.343, P = 0.026). The more physically active patients scored better than the less physically active patients on every component of the SF-36.Conclusion. Patients with RA lead a significantly more sedentary lifestyle than healthy controls and show diurnal differences in physical activity due to morning stiffness and fatigue. Higher levels of habitual physical activity may be protective of functional capacity and are highly associated with improved health-related quality of life in RA patients

Prioreschi, Alessandra; Hodkinson, Bridget; Tikly, Mohammed; McVeigh, Joanne A. (2014):

Changes in physical activity measured by accelerometry following initiation of DMARD therapy in rheumatoid arthritis.

In: *Rheumatology (Oxford). DOI:* 10.1093/rheumatology/ket457.

Abstract:

Objective. The aim of this study was to assess changes in habitual physical activity levels in response to DMARD therapy in RA patients.Methods. Eighteen drug-naive RA patients were prospectively assessed at baseline and following 3 months of DMARD therapy for habitual physical activity by accelerometry, disease activity using the clinical disease activity index (CDAI) and functional disability using the modified HAQ (mHAQ). Baseline physical activity was also compared with an equal number of healthy control participants matched for age, sex and BMI.Results. Following 3 months of DMARD therapy, in parallel with significant improvements in CDAI scores (P < 0.001) and HAQ scores (P < 0.001), accelerometry measures in the RA cohort showed that the average activity counts in sedentary thresholds decreased (P = 0.012), while average activity counts within higher-intensity thresholds increased (P = 0.039). Multiple regression analysis showed that the change in moderate activity was associated with a decrease in CRP (beta = - 0.922, P = 0.026) while the decrease in sedentary activity and increase in moderate activity were associated with decreased morning stiffness of the joints (beta = 0.694, P = 0.035 and beta = -0.927, P = 0.024, respectively). At baseline, RA patients were less physically active than control participants in the morning (P = 0.048) and in the late afternoon (P = 0.016), but these diurnal differences were no longer significant after the DMARD intervention.Conclusion. These findings suggest that accelerometry may potentially be a viable objective method of assessing changes in physical disability in response to various disease-modifying drugs.

Probst-Hensch, Nicole M.; Imboden, Medea; Felber Dietrich, Denise; Barthélemy, Jean-Claude; Ackermann-Liebrich, Ursula; Berger, Wolfgang et al. (2008):

Glutathione S-transferase polymorphisms, passive smoking, obesity, and heart rate variability in nonsmokers.

In: *Environmental health perspectives* 116 (11), S. 1494–1499. DOI: 10.1289/ehp.11402.

Abstract:

BACKGROUND\r\nDisturbances of heart rate variability (HRV) may represent one pathway by which second-hand smoke (SHS) and air pollutants affect cardiovascular morbidity and mortality. The mechanisms are poorly understood.\r\nOBJECTIVES\r\nWe investigated the hypothesis that oxidative stress alters cardiac autonomic control. We studied the association of polymorphisms in oxidant-scavenging glutathione S-transferase (GST) genes and their interactions with SHS and obesity with HRV.\r\nMETHODS\r\nA total of 1,133 nonsmokers > 50 years of age from a population-based Swiss cohort underwent ambulatory 24-hr electrocardiogram monitoring and reported on lifestyle and medical history. We genotyped GSTM1 and GSTT1 gene deletions and a GSTP1 (Ile105Val) single nucleotide polymorphism and analyzed genotype-HRV associations by multiple linear regressions.\r\nRESULTS\r\nHomozygous GSTT1 null genotypes exhibited an average 10% decrease in total power (TP) and low-frequency-domain HRV parameters. All three polymorphisms modified the cross-sectional associations of HRV with SHS and obesity. Homozygous GSTM1 null genotypes with > 2 hr/day of SHS exposure exhibited a 26% lower TP [95% confidence interval (CI), 11 to 39%], versus a reduction of -5% (95% CI, -22 to 17%) in subjects with the gene and the same SHS exposure compared with GSTM1 carriers without SHS exposure. Similarly, obese GSTM1 null genotypes had, on average, a 22% (95% CI, 12 to 31%) lower TP, whereas with the gene present obesity was associated with only a 3% decline (95% CI, -15% to 10%) compared with nonobese GSTM1 carriers.\r\nCONCLUSIONS\r\nGST deficiency is associated with significant HRV alterations in the general population. Its interaction with SHS and obesity in reducing HRV is consistent with an impact of oxidative stress on the autonomous nervous system.

Pronk, N. P.; Katz, A. S.; Lowry, M.; Payfer, J. R. (2012):

Reducing occupational sitting time and improving worker health: the Take-a-Stand Project, 2011.

In: *Prev.Chronic.Dis.* 9 (1545-1151 (Electronic)), S. E154. Online verfügbar unter PM:23057991.

Abstract:

BACKGROUND: Prolonged sitting time is a health risk. We describe a practice-based study designed to reduce prolonged sitting time and improve selected health factors among workers with sedentary jobs. COMMUNITY CONTEXT: We conducted our study during March-May 2011 in Minneapolis, Minnesota, among employees with sedentary jobs. METHODS: Project implementation occurred over 7 weeks with a baseline period of 1 week (period 1), an intervention period of 4 weeks (period 2), and a postintervention period of 2 weeks (period 3). The intervention group (n = 24) received a sit-stand device during period 2 designed to fit their workstation, and the comparison group (n = 10) did not. We used experience-sampling methods to monitor sitting behavior at work during the 7 weeks of the project. We estimated change scores in sitting time, health risk factors, mood states, and several office behaviors on the basis of survey responses. OUTCOME: The Take-a-Stand Project reduced time spent sitting by 224% (66 minutes per day), reduced upper back and neck pain by 54%, and improved mood states. Furthermore, the removal of the device largely negated all observed improvements within 2 weeks. INTERPRETATION: Our findings suggest that using a sit-stand device at work can reduce sitting time and generate other health benefits for workers

Proudfoot, Judith; Parker, Gordon; Pavlovic, Dusan Hadzi; Manicavasagar, Vijaya; Adler, Einat; Whitton, Alexis (2010):

Community attitudes to the appropriation of mobile phones for monitoring and managing depression, anxiety, and stress.

In: *J Med Internet Res* 12 (5).

Abstract:

BACKGROUND:

The benefits of self-monitoring on symptom severity, coping, and quality of life have been amply demonstrated. However, paper and pencil self-monitoring can be cumbersome and subject to biases associated with retrospective recall, while computer-based monitoring can be inconvenient in that it relies on users being at their computer at scheduled monitoring times. As a result, nonadherence in self-monitoring is common. Mobile phones offer an alternative. Their take-up has reached saturation point in most developed countries and is increasing in developing countries; they are carried on the person, they are usually turned on,

and functionality is continually improving. Currently, however, public conceptions of mobile phones focus on their use as tools for communication and social identity. Community attitudes toward using mobile phones for mental health monitoring and self-management are not known.

OBJECTIVE:

The objective was to explore community attitudes toward the appropriation of mobile phones for mental health monitoring and management.

METHODS:

We held community consultations in Australia consisting of an online survey (n = 525), focus group discussions (n = 47), and interviews (n = 20).

RESULTS:

Respondents used their mobile phones daily and predominantly for communication purposes. Of those who completed the online survey, the majority (399/525 or 76%) reported that they would be interested in using their mobile phone for mental health monitoring and self-management if the service were free. Of the 455 participants who owned a mobile phone or PDA, there were no significant differences between those who expressed interest in the use of mobile phones for this purpose and those who did not by gender ($\chi 2(1)$, = 0.98, P = .32, phi = .05), age group ($\chi 2(4)$, = 1.95, P = .75, phi = .06), employment status ($\chi 2(2)$, = 2.74, P = .25, phi = .08) or marital status ($\chi 2(4)$, = 4.62, P = .33, phi = .10). However, the presence of current symptoms of depression, anxiety, or stress affected interest in such a program in that those with symptoms were more interested ($\chi(2)$ (1), = 16.67, P < .001, phi = .19). Reasons given for interest in using a mobile phone program were that it would be convenient, counteract isolation, and help identify triggers to mood states. Reasons given for lack of interest included not liking to use a mobile phone or technology, concerns that it would be too intrusive or that privacy would be lacking, and not seeing the need. Design features considered to be key by participants were enhanced privacy and security functions including user name and password, ease of use, the provision of reminders, and the availability of clear feedback.

CONCLUSIONS:

Community attitudes toward the appropriation of mobile phones for the monitoring and self-management of depression, anxiety, and stress appear to be positive as long as privacy and security provisions are assured, the program is intuitive and easy to use, and the feedback is clear.

Provenzano, David A.; Fanciullo, Gilbert J.; Jamison, Robert N.; McHugo, Gregory J.; Baird, John C. (2007):

Computer assessment and diagnostic classification of chronic pain patients.

In: *Pain Medicine* 8 (s3), S. S167-S175.

Abstract:

OBJECTIVE:

In order to establish a diagnosis of chronic pain, emphasis is placed on a patient's report of the pain's intensity, location, and character. The aim of this study was to evaluate the feasibility of a computer assessment method to collect self-reports of pain that were then used in discriminant analyses to distinguish among chronic pain diagnoses.

METHODS:

A convenience sample of 511 patients from two university-based pain clinics completed a computer pain assessment battery that elicited demographic information, pain drawings, pain and emotion intensity ratings, and intensity ratings of verbal descriptors. Patients classified themselves into one of six chronic pain diagnoses. Discriminant analyses were performed in an attempt to identify the unique features of patients' pain experience associated with each of the diagnostic categories.

RESULTS:

Pain drawings successfully classified patients into three of the diagnostic categories (back, head, and neck pain). In a second analysis, two pain descriptors (cramping and stabbing) separated rheumatoid arthritis patients from those with either fibromyalgia or neural pain. One descriptor of pain (cramping) and one descriptor of emotion (frustration) together distinguished between fibromyalgia and neural pain.

CONCLUSIONS:

1) Computer assessment of a range of patient symptoms is feasible in the pain clinic. 2) Discriminant analysis based on pain drawings can distinguish among patient-reported diagnoses of back pain, headache, and neck pain. 3) Discriminant analysis based on three verbal descriptors can help to distinguish among diagnoses of fibromyalgia, neuralgia, and rheumatoid arthritis. 4) However, in general, most computerized descriptive information is not useful in distinguishing differences among pain patient diagnostic groups.

Pruitt, Leslie A.; Glynn, Nancy W.; King, Abby C.; Guralnik, Jack M.; Aiken, Erin K.; Miller, Gary; Haskell, William L. (2008):

Use of accelerometry to measure physical activity in older adults at risk for mobility disability.

In: *J Aging Phys Act* 16 (4), S. 416–434. Online verfügbar unter http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2895565/.

Abstract:

We explored using the ActiGraph accelerometer to differentiate activity levels between participants in a physical activity (PA, n=54) or `successful aging' (SA) program (n = 52). The relationship between a PA questionnaire for older adults (CHAMPS) and accelerometry variables was also determined. Individualized accelerometry count thresholds (THRESH(IND)) measured during a 400-m walk were used to identify "meaningful activity." Participants then wore the ActiGraph for 7 days. Results indicated more activity bouts·d(−1) ≥ 10 min above THRESH(IND) in the PA group compared to SA group (1.1 ± 2.0 vs 0.5 ± 0.8, p = 0.05) and more activity counts·d(−1) above THRESH(IND) for the PA group (28,101 ± 27,521) compared to the SA group (17,234 ± 15,620, p = 0.02). Correlations between activity counts·hr(−1) and CHAMPS ranged from 0.27 – 0.42, p<0.01. The ActiGraph and THRESH(IND) may be useful for differentiating PA levels in older adults at risk for mobility disability.

Pryce, R.; Johnson, M.; Goytan, M.; Passmore, S.; Berrington, N.; Kriellaars, D. (2012):

The Relationship Between Ambulatory Performance and Self-rated Disability in Patients with Lumbar Spinal Stenosis.

In: *Spine (Phila Pa 1976.)* (0362-2436 (Linking)). DOI: 10.1097/BRS.0b013e31824a8314.

Abstract:

ABSTRACT: Study Design. cross-sectionalObjective. To identify the relationship between performance measures derived from accelerometry and subjective reports of pain, disability and health in patients with lumbar spinal stenosis (LSS).Summary of Background Data. Accelerometers have emerged as a measure of performance, providing the ability to characterize the pattern and magnitude of real life activity, and sedentarism. Pain and loss of function, particularly ambulation, are common in LSS. The extent that pain, perceived disability and self-rated health relate to performance in patients with LSS is not well known.Methods. Self-reported pain, disability (Oswestry Disability Index, Roland-Morris Disability Questionnaire, Disabilities of Arm Shoulder and Hand) and health (Short Form-36) were collected from patients with LSS (n = 33). Physical activity, ambulation and inactivity performance measures were derived from 7-day accelerometer records. Correlation and step-wise regression were used.Results. The physical function subscale of the Short Form-36, a non-pathology specific outcome, had the best overall correlation to physical activity and ambulation (average r = 0.53) compared to pain (average r = 0.32) and disability (average r = -0.45) outcomes. Stepwise regression models for performance were predominantly single variable (4 of 8 models); pain was not selected as a predictor. A second non-pathology specific outcome, the Disabilities of Arm Shoulder and Hand, improved the prediction of performance in 5 of 8 models.Conclusions. Subjective measures of pain and disability had limited ability to account for real life performance in LSS patients. Future research is required to identify determinants of performance in LSS since barriers to activity may not be disease specific

Pu, Fang; Fan, Xiaoya; Yang, Yang; Chen, Wei; Li, Shuyu; Li, Deyu; Fan, Yubo (2014):

Feedback system based on plantar pressure for monitoring toe-walking strides in children with cerebral palsy.

In: *Am J Phys Med Rehabil* 93 (2), S. 122–129. DOI: 10.1097/PHM.0b013e3182a54207.

Abstract:

OBJECTIVE: The aim of this study was to develop a feedback system to assist gait rehabilitation of cerebral palsy (CP) toe walkers with dynamic equinus. DESIGN: Plantar pressure of the forefoot and the heel was collected by sensorized insoles embedded in custom-built shoes and transmitted to a smartphone via Bluetooth. Dynamic foot pressure index of each stride was calculated by purpose-designed software running in the smartphone to distinguish toe-walking strides from normal strides in real time. An auditory signal would be produced to alert the patient each time a toe-walking stride was detected. RESULTS: For CP toe walkers, the one-way analysis of variance indicated a significant difference ($F_{1,14} = 19.492$, $P = 0.001$) in dynamic foot pressure index between the affected side (31.4 +/- 12.0) and the unaffected side (58.6 +/- 2.5). In addition, the validation test showed that this system can distinguish toe-walking strides from normal strides of children with CP with an accuracy of 95.3%. CONCLUSIONS: This system was able to monitor the toe-walking strides of children with CP in real time and had the potential to enhance rehabilitation training efficiency and correct toe-walking gait in children with CP with dynamic equinus.

Pugach, Oksana; Hedeker, Donald; Mermelstein, Robin (2014):

A Bivariate Mixed-Effects Location-Scale Model with application to Ecological Momentary Assessment (EMA) data.

In: *Health Serv Outcomes Res Methodol* 14 (4), S. 194–212.

Abstract:

A bivariate mixed-effects location-scale model is proposed for estimation of means, variances, and covariances of two continuous outcomes measured concurrently in time and repeatedly over subjects. Modeling the two outcomes jointly allows examination of BS and WS association between the outcomes and whether the associations are related to covariates. The variance-covariance matrices of the BS and WS effects are modeled in terms of covariates, explaining BS and WS heterogeneity. The proposed model relaxes assumptions on the homogeneity of the within-subject (WS) and between-subject (BS) variances. Furthermore, the WS variance models are extended by including random scale effects. Data from a natural history study on adolescent smoking are used for illustration. 461 students, from 9th and 10th grades, reported on their mood at random prompts during seven consecutive days. This resulted in 14,105 prompts with an average of 30 responses per student. The two outcomes considered were a subject's positive affect and a measure of how tired and bored they were feeling. Results showed that the WS association of the outcomes was negative and significantly associated with several covariates. The BS and WS variances were heterogeneous for both outcomes, and the variance of the random scale effects were significantly different from zero.

Punzi, Henry A. (2014):

Efficacy and safety of olmesartan/amlodipine/hydrochlorothiazide in patients with hypertension not at goal with mono, dual or triple drug therapy: results of the CHAMPiOn study.

In: *Ther Adv Cardiovasc Dis* 8 (1), S. 12–21. DOI: 10.1177/1753944713520062.

Abstract:

OBJECTIVE: To assess the efficacy and safety of once daily olmesartan medoxomil (OM)/amlodipine besylate (AM)/hydrochlorothiazide (HCTZ) 40/10/25 mg in patients with hypertension not at goal with mono, dual or triple drug therapy. METHODS: This was a single-center, prospective, open-label, blinded-endpoint study. After a 1-week screening visit, 40 patients were enrolled into the study and given once daily treatment with OM/AM/HCTZ after the patients underwent baseline ambulatory blood pressure monitoring (ABPM) on their original therapy. The primary endpoint was changes from baseline in mean 24 h ABPM [systolic blood pressure (SBP)] after the first day of therapy with OM/AM/HCTZ 40/10/25 mg. Secondary endpoints were changes from baseline in mean 24 h ABPM [diastolic blood pressure (DBP)] after the first day of therapy with OM/AM/HCTZ 40/10/25 mg; mean changes from baseline in trough seated SBP (SeSBP) at day 1 and SeSBP at weeks 1, 2, 3 and 4; mean changes from baseline in trough seated DBP (SeDBP) at day 1 and SeDBP at weeks 1, 2, 3 and 4; and the percentage of subjects achieving mean 24 h, daytime and night-time ABPM BP goals. RESULTS: The baseline paired t-test systolic ABPM was 134.0 +/- 2.77 mmHg and day 1 was 128.6 +/- 2.47 mmHg with a treatment difference of -5.55 +/- 1.3 mmHg ($p<0.0001$). At week 1, paired t-test ABPM SBP reduction was 117.7 +/- 2.0 mmHg with a treatment difference of -16.5 +/- 1.8 mmHg ($p < 0.0001$). At week 2, paired t-test ABPM SBP reduction was 115.8 +/- 1.8 mmHg with a treatment difference of -18.4 +/- 2.0 mmHg ($p < 0.0001$). At week 3, paired t-test ABPM SBP reduction was 115.5 +/- 1.9 mmHg with a treatment difference of -18.6 +/- 2.0 mmHg ($p < 0.0001$). At week 4, paired t-test ABPM SBP reduction was 115.5 +/- 1.8 mmHg with a treatment difference of -18.6 +/- 2.2 mmHg ($p < 0.0001$). The baseline paired t-test SeSBP was 142 +/- 2.43 mmHg and day 1 was 132 +/- 2.59 mmHg with a treatment difference of -9.78 +/- 1.51 mmHg ($p < 0.0001$). At week 1, paired t-test SeSBP reduction was 124.0 +/- 1.6 mmHg with a treatment difference of -17.9 +/- 1.8 mmHg ($p < 0.0001$). At week 2, paired t-test SeSBP reduction was 120.3 +/- 1.7 mmHg with a treatment difference of -21.5 +/- 2.1 mmHg ($p < 0.0001$). At week 3, paired t-test SeSBP reduction was 118.5 +/- 1.8 mmHg with a treatment difference of -23.3 +/- 1.7 mmHg ($p < 0.0001$). At week 4, paired t-test SeSBP reduction was 119.6 +/- 1.7 mmHg with a treatment difference of -22.2 +/- 1.9 mmHg ($p < 0.0001$). CONCLUSION: Treatment with OM/AM/HCTZ achieved superior (SBP) ABPM reductions compared with mono, dual or triple drug therapy, resulting in all patients achieving systolic ABPM goal without ABPM documented hypotension.

Pusuroglu, Hamdi; Akgul, Ozgur; Erturk, Mehmet; Ozal, Ender; Celik, Omer; Gul, Mehmet et al. (2014):

A comparative analysis of leukocyte and leukocyte subtype counts among isolated systolic hypertensive, systo-diastolic hypertensive and nonhypertensive patients.

In: *Kardiol Pol. DOI:* 10.5603/KP.a2014.0044.

Abstract:

BACKGROUND: Isolated systolic hypertension (ISHT) is a subtype of hypertension (HT) that often exhibits wide pulse pressure, and pulse pressure has a strong predictive value for future adverse cardiovascular events. Previous studies have shown the effects of : leukocyte count on prognosis of ischemic heart disease and HT. METHODS: Thus, in this cross-sectional study, we analyzed the relationship between leukocyte counts and subtypes in HT and non-HT groups. The study population consisted of 960 consecutive patients who were admitted to the outpatient clinic of our hospital. After ambulatory blood pressure (ABP) values were assessed, the participants were divided into three groups: isolated systolic hypertensives (98), systo-diastolic hypertensives (405), and nonhypertensives (457). RESULTS: The subjects in the ISHT group were older than those in the systo-diastolic HT and non-HT groups (64+/-10, 53+/-12, and 52+/-13, respectively; p<0.001). The leukocyte and neutrophil counts and neutrophil/lymphocyte (NL) ratios were significantly different in all groups. In subgroup analysis, the leukocyte count, neutrophil count, and N/L ratio were higher in the ISHT and systo-diastolic HT groups than in the non-HT group (p<0.001 for all). The leukocyte count, neutrophil count, and N/L ratio were significantly higher in the ISHT group than in the systo-diastolic HT group (p=0.023, p=0.007, p=0.010, respectively). Neutrophil count (p=0.012; OR=1.229, 95% Cl 1.046-1.444) was independent risk factors for ISHT in multivariate logistic regression analysis. CONCLUSIONS: The leukocyte and neutrophil counts and N/L ratios were higher in the ISHT group than in the systo-diastolic HT and non-HT groups. High neutrophil count was an independent predictor of ISHT.

Putnam, Katherine M.; McSweeney, Lauren B. (2008):

Depressive symptoms and baseline prefrontal EEG alpha activity: a study utilizing Ecological Momentary Assessment.

In: *Biol Psychol* 77 (2), S. 237–240.

Abstract:

Prefrontal cortex (PFC) electroencephalography (EEG) alpha asymmetry has been found in individuals with major depression. However, EEG activity has never been examined in regard to specific depressive symptoms. We examine the relationship between resting baseline PFC alpha activity and both rumination and self-esteem in a depressed outpatient group (N=6) and a healthy control group (N=7) using high-density EEG sampling and multiple longitudinal self report measures, i.e. Ecological Momentary Assessment (EMA). Symptom measures were collected five times daily for 7 days, i.e. 35 assessments. Using a mixed-level analysis, significant Group x Hemisphere interactions for PFC sites and both rumination and self-esteem were found. Within the depressed group, lower bilateral PFC activity predicted higher levels of rumination, and lower right PFC activity predicted higher levels of self-esteem. There were no significant effects for the control group. Results indicate that specific symptoms of depression are uniquely associated with patterns of PFC EEG alpha activity.

Qin, S. M.; Verkasalo, H.; Mohtaschemi, M.; Hartonen, T.; Alava, M. (2012):

Patterns, entropy, and predictability of human mobility and life.

In: *PLoS One* 7 (12), S. e51353. DOI: 10.1371/journal.pone.0051353.

Abstract:

Cellular phones are now offering an ubiquitous means for scientists to observe life: how people act, move and respond to external influences. They can be utilized as measurement devices of individual persons and for groups of people of the social context and the related interactions. The picture of human life that emerges shows complexity, which is manifested in such data in properties of the spatiotemporal tracks of individuals. We extract from smartphone-based data for a set of persons important locations such as "home", "work" and so forth over fixed length time-slots covering the days in the data-set (see also [1], [2]). This set of typical places is heavy-tailed, a power-law distribution with an exponent close to -1.7. To analyze the regularities and stochastic features present, the days are classified for each person into regular, personal patterns. To this are superimposed fluctuations for each day. This randomness is measured by "life" entropy, computed both before and after finding the clustering so as to subtract the contribution of a number of patterns. The main issue that we then address is how predictable individuals are in their mobility. The patterns and entropy are reflected in the predictability of the mobility of the life both individually and on average. We explore the simple approaches to guess the location from the typical behavior, and of exploiting the transition probabilities with time from location or activity A to B. The patterns allow an enhanced predictability, at least up to a few hours into the future from the current location. Such fixed habits are most clearly visible in the working-day length

Quan, Minghui; Chen, Peijie; Zhuang, Jie; Wang, Chao (2013):

Chinese city children and youth's walking behavior.

In: *Res Q Exerc Sport* 84 Suppl 2, S. S29-40.

Abstract:

PURPOSE: Although walking has been demonstrated as one of the best forms for promoting physical activity (PA), little is known about Chinese city children and youth's walking behavior. The purpose of this study was therefore to assess ambulatory PA behavior of Chinese city children and youth. METHOD: The daily steps of 2,751 children and youth (1,415 boys, 1,336 girls; aged 9 to 17 years old, M(age) = 154.78 +/- 44.63 months) from 11 cities in China were recorded using ActiGraph GT3X accelerometers for 7 consecutive days. RESULTS: The most active walking day was on Friday (M +/- SD = 11,183 +/- 5,130 steps), followed by Monday (M +/- SD = 10,780 +/- 4,921), Thursday (M +/- SD = 10,705 +/- 4,607), Tuesday (M +/- SD = 10,687 +/- 5,038), Wednesday (M +/- SD = 10,428 +/- 4,697), Saturday (M +/- SD = 9,734 +/- 5,582), and Sunday (M +/- SD = 9,303 +/- 5,569). Participants walked more steps during weekdays (M +/- SD = 10,615 +/- 4,411) than they did during weekend days (M +/- SD = 9,444 +/- 5,224; t = 15.71, p < .01, d = 0.34); boys walked more steps (M +/- SD = 10,847 +/- 4,322) than did girls (M +/- SD = 9,938 +/- 4,282; t = 4.92, p < .01, d = 0.22). The most active age was 11 years old in boys (M +/- SD = 12,984 +/- 4,897) and 10 years old in girls (M +/- SD = 11,745 +/- 4,721), and older children walked fewer steps. The data suggest that depending on age (9 to 17 years old), a range of 5.71% to 35.73%, 29.70% to 56.65%, and 15.96% to 47.62% boys and 22.86% to 40.14%, 29.41% to 46.26%, and 12.94% to 40.14% girls met 3 different health-related criteria for daily steps, respectively. CONCLUSION: Boys walked more than girls walked, but a majority of the Chinese city children and youth did not meet the recommended health-related steps/day.

Quinn, Francis; Johnston, Marie; Johnston, Derek W. (2013):

Testing an integrated behavioural and biomedical model of disability in N-of-1 studies with chronic pain.

In: *Psychology & Health* 28 (12), S. 1391–1406. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-38540-004%26site%3dehost-live;francis.quinn@rgu.ac.uk.

Abstract:

Background: Previous research has supported an integrated biomedical and behavioural model explaining activity limitations. However, further tests of this model are required at the within-person level, because while it proposes that the constructs are related within individuals, it has primarily been tested between individuals in large group studies. We aimed to test the integrated model at the within-person level. Method: Six correlational N-of-1 studies in participants with arthritis, chronic pain and walking limitations were carried out. Daily measures of theoretical constructs were collected using a hand-held computer (PDA), the activity was assessed by self-report and accelerometer and the data were analysed using time-series analysis. Results: The biomedical model was not supported as pain impairment did not predict activity, so the integrated model was supported partially. Impairment predicted intention to move around, while perceived behavioural control (PBC) and intention predicted activity. PBC did not predict activity limitation in the expected direction. Conclusions: The integrated model of disability was partially supported within individuals, especially the behavioural elements. However, results suggest that different elements of the model may drive activity (limitations) for different individuals. The integrated model provides a useful framework for understanding disability and suggests interventions, and the utility of N-of-1 methodology for testing theory is illustrated. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Quittner, Alexandra L.; Modi, Avani C.; Lemanek, Kathleen L.; Ievers-Landis, Carolyn E.; Rapoff, Michael A. (2008):

Evidence-based assessment of adherence to medical treatments in pediatric psychology.

In: *Journal of Pediatric Psychology* 33 (9), S. 916-36; discussion 937-8. DOI: 10.1093/jpepsy/jsm064.

Abstract:

OBJECTIVES\r\nAdherence to medical regimens for children and adolescents with chronic conditions is generally below 50% and is considered the single, greatest cause of treatment failure. As the prevalence of chronic illnesses in pediatric populations increases and awareness of the negative consequences of poor adherence become clearer, the need for reliable and valid measures of adherence has grown.\r\nMETHODS\r\nThis review evaluated empirical evidence for 18 measures utilizing three assessment methods: (a) self-report or structured interviews, (b) daily diary methods, and (c) electronic monitors.\r\nRESULTS\r\nTen measures met the \"well-established\" evidence-based (EBA) criteria.\r\nCONCLUSIONS\r\nSeveral recommendations for improving adherence assessment were made. In particular, consideration should be given to the use of

innovative technologies that provide a window into the \"real time\" behaviors of patients and families. Providing written treatment plans, identifying barriers to good adherence, and examining racial and ethnic differences in attitudes, beliefs and behaviors affecting adherence were strongly recommended.

Rabbitts, J. A.; Holley, A. L.; Karlson, C. W.; Palermo, T. M. (2013):

Bidirectional Associations Between Pain and Physical Activity in Adolescents.

In: *Clin.J Pain* (0749-8047 (Linking)). DOI: 10.1097/AJP.0b013e31829550c6.

Abstract:

OBJECTIVES:: The objectives were to: (1) examine temporal relationships between pain and activity in youth, specifically, whether physical activity affects pain intensity and whether intensity of pain affects subsequent physical activity levels on a daily basis, and (2) examine clinical predictors of this relationship. METHODS:: Participants were 119 adolescents (59 with chronic pain and 60 healthy) aged 12 to 18 years, 71% female. Adolescents completed 10 days of actigraphic monitoring of physical activity and daily electronic diary recordings of pain intensity, medication use, sleep quality, and mood. Linear mixed models assessed daily associations among physical activity and pain. Daily mean (average count/min) and peak (highest daily level) activity were used for analyses. Medication use, sleep quality, and mood ratings were included as covariates, and age, sex, and body mass index percentile were adjusted for. RESULTS:: Higher pain intensity was associated with lower peak physical activity levels on the next day (t641=-2.25, P=0.03) and greater medication use predicted lower mean physical activity levels the same day (t641=-2.10, P=0.04). Higher mean physical activity levels predicted lower pain intensity ratings at the end of the day (t705=-2.92, P=0.004), but only in adolescents with chronic pain. DISCUSSION:: Youth experiencing high pain intensity limit their physical activity level on a day-to-day basis. Activity was related to subsequent pain intensity, and may represent an important focus in chronic pain treatment. Further study of the effect of medications on subsequent activity is needed

Rachele, J. N.; McPhail, S. M.; Washington, T. L.; Cuddihy, T. F. (2012):

Practical physical activity measurement in youth: a review of contemporary approaches.

In: *World J Pediatr* 8 (3), S. 207–216. DOI: 10.1007/s12519-012-0359-z.

Abstract:

BACKGROUND: The accurate evaluation of physical activity levels amongst youth is critical for quantifying physical activity behaviors and evaluating the effect of physical activity interventions. The purpose of this review is to evaluate contemporary approaches to physical activity evaluation amongst youth. DATA SOURCES: The literature from a range of sources was reviewed and synthesized to provide an overview of contemporary approaches for measuring youth physical activity. RESULTS: Five broad categories are described: selfreport, instrumental movement detection, biological approaches, direct observation, and combined methods. Emerging technologies and priorities for future research are also identified. CONCLUSIONS: There will always be a trade-off between accuracy and available resources when choosing the best approach for measuring physical activity amongst youth. Unfortunately, cost and logistical challenges may prohibit the use of "gold standard" physical activity measurement approaches such as doubly labelled water. Other objective methods such as heart rate monitoring, accelerometry, pedometry, indirect calorimetry, or a combination of measures have the potential to better capture the duration and intensity of physical activity, while self-reported measures are useful for capturing the type and context of activity

Rahman, Khairunnessa; Burton, Alexander; Galbraith, Sally; Lloyd, Andrew; Vollmer-Conna, Ute (2011):

Sleep-wake behavior in chronic fatigue syndrome.

In: *Sleep: Journal of Sleep and Sleep Disorders Research* 34 (5), S. 671–678. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-16230-017&site=ehost-live;ute@unsw.edu.au.

Abstract:

Study Objectives: Disturbances of the internal biological clock manifest as fatigue, poor concentration, and sleep disturbances—symptoms reminiscent of chronic fatigue syndrome (CFS) and suggestive of a role for circadian rhythm disturbance in CFS. We examined circadian patterns of activity, sleep, and cortisol secretion in patients with CFS. Design: Case-control study, 5-day behavioral observation. Setting: Natural setting/home environment Participants: 15 patients with CFS and 15 healthy subjects of similar age, sex, body mass index (BMI), and activity levels. Interventions: N/A Measurements: Self-report questionnaires were used to obtain medical history and demographic information and to assess health behaviors, somatic and psychological

symptoms, and sleep quality. An actiwatch accelerometer recorded activity and sleep patterns over 5 days with concurrent activity and symptom logs. Diurnal salivary cortisol secretion was measured. Additionally, overnight heart rate monitoring and pain sensitivity assessment was undertaken. Results: Ratings of symptoms, disability, sleep disturbance, and pain sensitivity were greater in patients with CFS. No between-group differences were found in the pattern or amount of sleep, activity, or cortisol secretion. Afternoon activity levels significantly increased evening fatigue in patients but not control subjects. Low nocturnal heart rate variability was identified as a biological correlate of unrefreshing sleep. Conclusions: We found no evidence of circadian rhythm disturbance in CFS. However, the role of autonomic activity in the experience of unrefreshing sleep warrants further assessment. The activity symptom-relationship modelled here is of clinical significance in the approach to activity and symptom management in the treatment of CFS. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Raj, Rishi; Ussavarungsi, Kamonpun; Nugent, Kenneth (2014):

Accelerometer-based devices can be used to monitor sedation/agitation in the intensive care unit.

In: *J Crit Care. DOI:* 10.1016/j.jcrc.2014.05.014.

Abstract:

PURPOSE: Monitoring sedation/agitation levels in patients in the intensive care unit (ICU) are important to direct treatment and to improve outcomes. This study was designed to determine the potential use of accelerometer-based sensors/devices to objectively measure sedation/agitation in patients admitted to the ICU. MATERIALS AND METHODS: Accelerometer-based devices (actigraphs) were placed on nondominant wrists of 86 patients in the ICU after informed consent. The sedation/agitation levels were classified as deep sedation, light sedation, alert and calm, mild agitation and severe agitation, and measured at regular intervals. The sedation/agitation levels were correlated with the accelerometer data (downloaded raw actigraphy data). RESULTS: The sedation/agitation levels correlated strongly with the accelerometer readings represented by mean actigraphy counts (r = 0.968; P = .007) and the proportion of time spent moving as determined by actigraphy (r = 0.979; P = .004). CONCLUSIONS: Accelerometer data correlate strongly with the sedation/agitation levels of patients in the ICUs, and appropriately designed accelerometer-based sensors/devices have the potential to be used for automating objective and continuous monitoring of sedation/agitation levels in patients in the ICU.

Ralston, James D.; Hirsch, Irl B.; Hoath, James; Mullen, Mary; Cheadle, Allen; Goldberg, Harold I. (2009):

Web-based collaborative care for type 2 diabetes: a pilot randomized trial.

In: *Diabetes Care* 32 (2), S. 234–239. DOI: 10.2337/dc08-1220.

Abstract:

OBJECTIVE\r\nTo test Web-based care management of glycemic control using a shared electronic medical record with patients who have type 2 diabetes.\r\nRESEARCH DESIGN AND METHODS\r\nWe conducted a trial of 83 adults with type 2 diabetes randomized to receive usual care plus Web-based care management or usual care alone between August 2002 and May 2004. All patients had GHb > or =7.0%, had Web access from home, and could use a computer with English language-based programs. Intervention patients received 12 months of Web-based care management. The Web-based program included patient access to electronic medical records, secure e-mail with providers, feedback on blood glucose readings, an educational Web site, and an interactive online diary for entering information about exercise, diet, and medication. The primary outcome was change in GHb.\r\nRESULTS\r\nGHb levels declined by 0.7% (95% CI 0.2-1.3) on average among intervention patients compared with usual-care patients. Systolic blood pressure, diastolic blood pressure, total cholesterol levels, and use of in-person health care services did not differ between the two groups.\r\nCONCLUSIONS\r\nCare management delivered through secure patient Web communications improved glycemic control in type 2 diabetes.

Ram, Nilam; Brose, Annette; Molenaar, Peter C. M. (2013):

Dynamic factor analysis: Modeling person-specific process. In: Todd D. Little (Hg.): The Oxford handbook of quantitative methods (Vol 2): Statistical analysis.

New York, NY US: Oxford University Press (Oxford library of psychology), S. 441–457. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-01010-021%26site%3dehost-live.

Abstract:

(from the chapter) Modern data collection technologies are providing large data sets, with many repeated observations of many individuals on many variables—and new opportunities for application of analytical techniques that consider individuals as unique, complex, multivariate, dynamic entities. In this chapter we review the conceptual and technical background for dynamic factor analysis and provide a primer for application to multivariate time series data. Step-by-step procedures are illustrated using daily diary data obtained from three women over 100+ days. Specifically, we provide background on and demonstrate (l) formulation of DFA research questions; (2) study design and data collection; (3) variable selection and data pre-processing procedures; (4) the fitting and evaluation of person-specific DFA models; and (5) examination of between-person differences/similarities. We conclude by pointing to some extensions that might be elaborated and used to articulate additional complexities of within-person process. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (chapter)

Ram, N.; Coccia, M.; Conroy, D.; Lorek, A.; Orland, B.; Pincus, A. et al. (2013):

Behavioral Landscapes and Change in Behavioral Landscapes: A Multiple Time-Scale Density Distribution Approach.

In: *Res Hum.Dev.* 10 (1), S. 88–110. DOI: 10.1080/15427609.2013.760262.

Abstract:

In developmental arenas, it is well accepted that multiple observations are needed to obtain a robust characterization of individuals' behavioral tendencies across time and context. In this paper, we fuse core ideas from the study of lifespan development with intraindividual variability based approaches to personality and methods used to characterize the topography of geographic landscapes. We generalize the notion of density distributions into bivariate and multivariate space and draw parallels between the resulting behavioral landscapes and geographic landscapes. We illustrate through an empirical example how multiple time-scale study designs, measures of intraindividual variability, and methods borrowed from geography can be used to describe both an individual's behavioral landscape and changes in the behavioral landscape

Ram, Nilam; Gerstorf, Denis (2009):

Time-structured and net intraindividual variability: tools for examining the development of dynamic characteristics and processes.

In: *Psychology and Aging* 24 (4), S. 778–791. DOI: 10.1037/a0017915.

Abstract:

The study of intraindividual variability is the study of fluctuations, oscillations, adaptations, and \"noise\" in behavioral outcomes that manifest on microtime scales. This article provides a descriptive frame for the combined study of intraindividual variability and aging/development. At the conceptual level, we show that the study of intraindividual variability provides access to dynamic characteristics-construct-level descriptions of individuals' capacities for change (e.g., lability)--and to dynamic processes--the systematic changes that individuals exhibit in response to endogenous and exogenous influences (e.g., regulation). At the methodological level, we review how quantifications of net intraindividual variability and models of time-structured intraindividual variability are used to measure and describe dynamic characteristics and processes. At the research design level, we point to the benefits of measurement-burst study designs, wherein data are obtained across multiple time scales, for the study of development.

Ramgopal, Sriram; Thome-Souza, Sigride; Jackson, Michele; Kadish, Navah Ester; Sanchez Fernandez, Ivan; Klehm, Jacquelyn et al. (2014):

Seizure detection, seizure prediction, and closed-loop warning systems in epilepsy.

In: *Epilepsy Behav* 37C, S. 291–307. DOI: 10.1016/j.yebeh.2014.06.023.

Abstract:

Nearly one-third of patients with epilepsy continue to have seizures despite optimal medication management. Systems employed to detect seizures may have the potential to improve outcomes in these patients by allowing more tailored therapies and might, additionally, have a role in accident and SUDEP prevention. Automated seizure detection and prediction require algorithms which employ feature computation and subsequent classification. Over the last few decades, methods have been developed to detect seizures utilizing scalp and intracranial EEG, electrocardiography, accelerometry and motion sensors,

electrodermal activity, and audio/video captures. To date, it is unclear which combination of detection technologies yields the best results, and approaches may ultimately need to be individualized. This review presents an overview of seizure detection and related prediction methods and discusses their potential uses in closed-loop warning systems in epilepsy.

Ramirez, J.; Miranda,R. ,Jr. (2013):

Alcohol craving in adolescents: bridging the laboratory and natural environment.

In: *Psychopharmacology (Berl)* (0033-3158 (Linking)). DOI: 10.1007/s00213-013-3372-6.

Abstract:

RATIONALE: Initial lab studies suggest that adolescent drinkers crave alcohol when presented with alcohol cues. Whether this effect generalizes to the natural environment, however, remains unknown, and studies have not examined whether craving predicts drinking among youths. OBJECTIVES: This study builds on existing research by pairing controlled lab-based cue reactivity assessments (CRAs) with data collected in the natural environment using ecological momentary assessment (EMA) methods. We examined whether alcohol cues evoke craving among adolescent drinkers in the lab and natural environment, and tested the clinical relevance of craving during adolescence by examining the prospective association between craving and alcohol use. METHODS: Non-treatment-seeking adolescent drinkers (N = 42; ages 15 to 20 years) completed a lab-based CRA followed by a 1-week EMA monitoring period. During the EMA period, youth were prompted randomly throughout the day to record momentary data on craving and contextual factors (e.g., alcohol cues, peers present). RESULTS: Alcohol cues elicited craving in the lab, and this effect generalized to the natural environment, especially among adolescents with more alcohol problems. In addition, craving predicted subsequent drinking levels in the natural environment. CONCLUSIONS: This study demonstrates the utility of pairing lab paradigms with EMA methods to better characterize adolescents' reactivity to alcohol cues. Results implicate craving as a clinically meaningful motivator for drinking among adolescents and highlight a potentially important target of pharmacological or behavioral intervention

Ramos-Castro, J.; Moreno, J.; Miranda-Vidal, H.; Garcia-Gonzalez, M. A.; Fernandez-Chimeno, M.; Rodas, G.; Capdevila, L. (2012):

Heart rate variability analysis using a seismocardiogram signal.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 5642–5645. DOI: 10.1109/EMBC.2012.6347274.

Abstract:

Seismocardiography is a simple and non invasive method of recording cardiac activity from the movements of the body caused by heart pumping. In this preliminary study we use a smartphone to record this acceleration and estimate the heart rate. We compare the heart rate variability parameters from the seismocardiogram and ECG reference signal. The results show a great similarity and are strongly influenced by the instability in the sampling frequency of the device. The differences between RR series are lower than 10 ms

Rancourt, Diana; Leahey, Tricia M.; Larose, Jessica Gokee; Crowther, Janis H. (2015):

Effects of weight-focused social comparisons on diet and activity outcomes in overweight and obese young women.

In: *Obesity (Silver Spring)* 23 (1), S. 85–89. DOI: 10.1002/oby.20953.

Abstract:

OBJECTIVE: To investigate social comparison processes as a potential mechanism by which social networks impact young women's weight control thoughts and behaviors and to examine whether social comparisons with close social ties (i.e., friends) have a greater influence on weight control outcomes relative to more emotionally distant ties. METHODS: Using Ecological Momentary Assessment, overweight young adult women (N = 46; M age = 19; M BMI = 29) reported the nature and effects of weight-focused social comparisons on dieting and exercising intentions and on behaviors during their daily routine. RESULTS: Relative to social comparisons to targets of the same weight, weight-focused comparisons to both thinner and heavier individuals led to increased thoughts of dieting and exercising. Moreover, comparisons to thinner targets also increased the likelihood of engaging in actual dieting and exercising behaviors. Weight comparisons to friends amplified these effects. CONCLUSIONS: Weight-focused social comparisons may be one mechanism by which social networks impact weight control thoughts and behaviors. Obesity interventions with young adults may achieve better outcomes by harnessing social comparison processes in treatment.

Ranzenhofer, Lisa M.; Engel, Scott G.; Crosby, Ross D.; Anderson, Micheline; Vannucci, Anna; Cohen, L. Adelyn et al. (2014):

Using ecological momentary assessment to examine interpersonal and affective predictors of loss of control eating in adolescent girls.

In: *Int J Eat Disord. DOI:* 10.1002/eat.22333.

Abstract:

OBJECTIVE: Pediatric loss of control (LOC) eating is predictive of partial- and full-syndrome binge eating disorder. The interpersonal model proposes that LOC eating is used to cope with negative mood states resulting from interpersonal distress, possibly on a momentary level. We therefore examined temporal associations between interpersonal problems, negative affect, and LOC eating among overweight adolescent girls using ecological momentary assessment (EMA). METHOD: Thirty overweight and obese (>/=85th body mass index (BMI) percentile; BMI: M = 36.13, SD = 7.49 kg/m2) adolescent females (Age: M = 14.92, SD = 1.54 y; 60.0% African American) who reported at least two LOC episodes in the past month completed self-report momentary ratings of interpersonal problems, state affect, and LOC eating for 2 weeks. A series of 2-level multilevel models with centering within subjects was conducted. RESULTS: Between- and within-subjects interpersonal problems (p's < .05), but not between- (p = .12) or within- (p = .32) subjects negative affect predicted momentary LOC eating. At the between-subjects level, interpersonal problems significantly predicted increases in negative affect (p < 001). DISCUSSION: Naturalistic data lend support to the predictive value of interpersonal problems for LOC eating among adolescents. Interventions targeting interpersonal factors on a momentary basis may be useful during this developmental stage. (c) 2014 Wiley Periodicals, Inc. (Int J Eat Disord 2014;).

Raselli, Carla; Broderick, Joan E. (2007):

The association of depression and neuroticism with pain reports: a comparison of momentary and recalled pain assessment.

In: *Journal of Psychosomatic Research* 62 (3), S. 313–320.

Abstract:

OBJECTIVE:

Pain assessment has been shown to be affected by depression, neuroticism, and recall bias. The purpose of this study was to determine whether momentary pain assessment, compared with recalled pain reports, would diminish the influence of neuroticism and depression on the measurement of pain.

METHODS:

Patients with chronic pain (n=66) completed depression (Beck Depression Inventory II) and neuroticism (NEO Personality Inventory) questionnaires, made weekly recall pain ratings, judged their change in pain from 1 week to the next over a 4-week period, and collected momentary reports of pain intensity and pain unpleasantness over a 2-week period.

RESULTS

Analyses showed that neuroticism and depression correlated with pain intensity and pain unpleasantness at low levels for both momentary and recalled pain reports. Neuroticism and depression did not influence the accuracy of recalled pain (difference between momentary and recalled data). Both neuroticism and depression were systematically associated with ratings of judged change in pain even when actual changes in pain were controlled. Specifically, for increased levels of baseline depression and neuroticism, patients displayed a pattern of judging recent pain as more severe than pain in the previous week following several weeks of symptom monitoring.

CONCLUSION:

There was little evidence for neuroticism and depression affecting either recall or momentary pain ratings or influencing the accuracy of recall ratings. However, neuroticism and depression did influence pain assessment when the task involved rating change in pain-a measure widely used in clinical research.

Ratcliff, Chelsea G.; Lam, Cho Y.; Arun, Banu; Valero, Vincente; Cohen, Lorenzo (2014):

Ecological momentary assessment of sleep, symptoms, and mood during chemotherapy for breast cancer.

In: *Psychooncology. DOI:* 10.1002/pon.3525.

Abstract:

OBJECTIVE: This study examined the association of sleep before and during a chemotherapy (CT) cycle for breast cancer with symptoms and mood during a CT cycle. METHODS: Twenty women undergoing CT for breast cancer completed the Pittsburgh Sleep Quality Index (PSQI) 1 h prior to a CT infusion. For 3 weeks following infusion, participants estimated sleep efficiency, minutes to sleep (sleep latency), number of nocturnal awakenings (sleep fragmentation (SF)), and sleep quality (SQ) each morning and rated symptoms (nausea, fatigue, numbness, and difficulty thinking) and mood three times daily (morning, afternoon, and evening) via ecological momentary assessments using automated handheld computers. RESULTS: The results showed that disturbed sleep (PSQI score > 5) prior to CT infusion was associated with greater fatigue, and more negative and anxious mood throughout the 3-week CT cycle, and good pre-CT infusion sleep (PSQI score < 5) buffered anxious mood in the first days following infusion. Time-lagged analyses controlling for mood/symptom ratings reported the previous evening revealed that longer sleep latency and greater SF were associated with greater daytime fatigue; poorer SQ and greater SF were antecedents of worse morning negative mood, and greater SF was associated with feeling more passive and drowsy. No evening symptom or mood ratings were related to subsequent SQ. CONCLUSIONS: These findings suggest that disturbed sleep before and after a CT infusion exacerbates fatigue, and negative, anxious, and drowsy mood during a CT cycle. Reducing sleep disturbance may be an important way to improve quality of life during CT. Copyright (c) 2014 John Wiley & Sons, Ltd.

Ratcliff, Megan B.; Zeller, Meg H.; Inge, Thomas H.; Hrovat, Kathleen B.; Modi, Avani C. (2014):

Feasibility of ecological momentary assessment to characterize adolescent postoperative diet and activity patterns after weight loss surgery.

In: *Surg Obes Relat Dis. DOI:* 10.1016/j.soard.2014.01.034.

Abstract:

BACKGROUND: Adherence to postoperative lifestyle recommendations may be associated with weight outcomes among weight loss surgery (WLS) patients, but it is difficult to objectively assess and has not been reported among adolescents. Methods of assessment that are ecologically valid and provide important contextual information related to adherence are needed. The objective of this pilot study was to demonstrate the feasibility of using a form of ecological momentary assessment (i.e., daily phone diaries; DPD) to assess postoperative diet and activity patterns among a sample of adolescent WLS patients to determine adherence to best-practice lifestyle recommendations. SETTING: University Hospital. METHODS: Eight adolescent WLS patients completed 3 consecutive DPDs at 12 and 18 months postsurgery. RESULTS: Ninety-four percent of DPD's were completed with an average 20.9+/-5.0 activities/day. Although adolescents engaged in recommended lifestyle behaviors (e.g.,>/=30 min moderate physical activity/d; duration of meals/snacks>/=20 min) some of the time, few were adherent to postoperative physical activity and dietary recommendations the majority of the time. CONCLUSION: The DPD provides a feasible and informative methodology for assessing adherence behaviors among adolescent WLS patients. It is a relatively low burden method that may be useful in identifying behavioral targets for postoperative intervention. Adherence to postoperative lifestyle recommendations may be a serious concern among this cohort. These preliminary data shed light on potential targets for postoperative intervention. Targeting nonadherence is essential in not only improving health outcomes but in deciphering the true potential effectiveness of WLS in this at-risk population.

Rathbun, S. L.; Song, X.; Neustifter, B.; Shiffman, S. (2013):

Survival Analysis with Time-Varying Covariates Measured at Random Times by Design.

In: *J R Stat.Soc.Ser.C.Appl.Stat.* 62 (3), S. 419–434. DOI: 10.1111/j.1467-9876.2012.01064.x.

Abstract:

Ecological momentary assessment (EMA) is a method for collecting real-time data in subjects' environments. It often uses electronic devices to obtain information on psychological state through administration of questionnaires at times selected from a probability-based sampling design. This information can be used to model the impact of momentary variation in psychological state on the lifetimes to events such as smoking lapse. Motivated by this, a probability-sampling framework is proposed for estimating the impact of time-varying covariates on the lifetimes to events. Presented as an alternative to joint modeling of the covariate process as well as event lifetimes, this framework calls for sampling covariates at the event lifetimes and at times selected according to a probability-based sampling design. A design-unbiased estimator for the cumulative hazard is substituted into the log likelihood, and the resulting objective function is maximized to obtain the proposed estimator. This estimator has two quantifiable sources of variation, that due to the survival model and that due to sampling the covariates. Data from a nicotine patch trial are used to illustrate the proposed approach

Raustorp, Anders; Boldemann, Cecilia; Johansson, Maria; Mårtensson, Fredrika (2010):

Objectively measured physical activty level a during a physical education class: A pilot study with Swedish youth.

In: *International journal of adolescent medicine and health* 22 (4), S. 469–476.

Abstract:

The aim of this study is to advance our knowledge of the contribution of a typical physical education (PE) class to children's daily physical activity.

METHODS:

The pilot project is a part of a survey study comprising 11 fourth grader classes (250 pupils). One class of 19 pupils (9 girls) participated in the pilot study. Daily step counts were measured by Yamax pedometers during four consecutive weekdays. During PE class, the participants wore a second pedometer and an Actigraph GT1M accelerometer.

RESULTS:

The total average step count during PE class was 2512, average 74 steps/min. The counts for the whole day were 16668, and 19 steps/min respectively. The total share of moderate-vigorous physical activity (MVPA) of the PE class was 50.4% (52.5% and 48.3% for boys and girls respectively). There was an inverse correlation between daily mean step count and contribution of PE class step to daily mean step (r = -0.64, p = .003).

CONCLUSION:

The contribution of PE class to MVPA was in high in both boys and girls. Considering the suggested independent role of physical fitness for cardiovascular health in children, the PE class must be seen as an important health factor, especially for otherwise inactive children.

Rawson, Eric S.; Walsh, Talia M. (2010):

Estimation of resistance exercise energy expenditure using accelerometry.

In: *Med Sci Sports Exerc* 42 (3), S. 622–628. DOI: 10.1249/MSS.0b013e3181b64ef3.

Abstract:

UNLABELLED\r\nResistance exercise is recommended by the major health and sports medicine organizations to maintain good health, but resistance exercise energy expenditure is difficult to measure. Accelerometers offer a viable alternative to estimate energy expenditure during resistance exercise because they are cost effective and do not restrict motion or exercise choice.\r\nPURPOSE\r\n: To estimate resistance exercise energy expenditure using accelerometry and to determine whether there are differences in counts of activity during resistance exercise on the basis of accelerometer location.\r\nMETHODS\r\nThirty men and women (21.6 yr) performed two sets of 10 repetitions of each of eight exercises. During the exercise protocol, participants wore accelerometers (ActiGraph GT1M) on the wrist, waist, and ankle and a portable metabolic system (CosMed K4b(2)).\r\nRESULTS\r\nActivity counts (mean +/- SD) were different between the wrist (61,282 +/- 8358), the ankle (26,886 +/- 3998), and the waist (6565 +/- 2445). Resistance exercise energy expenditure was significantly associated with ankle (r = 0.50; P < 0.01) and waist (r = 0.77; P < 0.001) accelerometer counts, and there was a trend for an association between resistance exercise energy expenditure and wrist accelerometer counts (r = 0.31; P = 0.10). Total waist accelerometer counts explained 59% of the variance (R(2) = 0.59) in energy expenditure. A regression equation to predict resistance exercise energy expenditure including sex, fat-free mass, and counts of activity from the waist accelerometer explained 90% (R(2) = 0.90) of the variance in energy expenditure.\r\nCONCLUSION\r\nResistance exercise energy expenditure can be estimated using a uniaxial accelerometer worn at the waist, along with the sex, and fat-free mass, of the participant.

Ray, Lara A.; Miranda, Robert; Tidey, Jennifer W.; McGeary, John E.; MacKillop, James; Gwaltney, Chad J. et al. (2010):

Polymorphisms of the mu-opioid receptor and dopamine D4 receptor genes and subjective responses to alcohol in the natural environment.

In: *Journal of Abnormal Psychology* 119 (1), S. 115–125. DOI: 10.1037/a0017550.

Abstract:

Polymorphisms of the mu-opioid receptor (OPRM1) and dopamine D4 receptor (DRD4) genes are associated with subjective responses to alcohol and urge to drink under laboratory conditions. This study examined these associations in the natural environment using ecological momentary assessment. Participants were non-treatment-seeking heavy drinkers (n = 112, 52%

female, 61% alcohol dependent) who enrolled in a study of naltrexone effects on craving and drinking in the natural environment. Data were culled from 5 consecutive days of drinking reports prior to medication randomization. Analyses revealed that, after drinking, carriers of the Asp40 allele of the OPRM1 gene reported higher overall levels of vigor and lower levels negative mood, as compared to homozygotes for the Asn40 variant. Carriers of the long allele (i.e., >or=7 tandem repeats) of the DRD4 endorsed greater urge to drink than homozygotes for the short allele. Effects of OPRM1 and DRD4 variable-number-of-tandem-repeats genotypes appear to be alcohol dose-dependent. Specifically, carriers of the DRD4-L allele reported slight decreases in urge to drink at higher levels of estimated blood alcohol concentration (eBAC), and Asp40 carriers reported decreases in vigor and increases in negative mood as eBAC rose, as compared to carriers of the major allele for each gene. Self-reported vigor and urge to drink were positively associated with alcohol consumption within the same drinking episode. This study extends findings on subjective intoxication, urge to drink, and their genetic bases from controlled laboratory to naturalistic settings.

Rea, Mark S.; Brons, Jennifer A.; Figueiro, Mariana G. (2011):

Measurements of light at night (LAN) for a sample of female school teachers.

In: *Chronobiology International* 28 (8), S. 673–680. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-21647-004&site=ehost-live;ream@rpi.edu.

Abstract:

Epidemiological studies have shown an association between rotating shiftwork and breast cancer (BC) risk. Recently, light at night (LAN) measured by satellite photometry and by self-reports of bedroom brightness has been shown to be associated with BC risk, irrespective of shiftwork history. Importance has been placed on these associations because retinal light exposures at night can suppress the hormone melatonin and/or disrupt circadian entrainment to the local 24-h light-dark cycle. The present study examined whether it was valid to use satellite photometry and self-reports of brightness to characterize light, as it might stimulate the circadian system and thereby affect BC incidence. Calibrated photometric measurements were made at the bedroom windows and in the bedrooms of a sample of female school teachers, who worked regular dayshifts and lived in a variety of satellite-measured sky brightness categories. The light levels at both locations were usually very low and were independent of the amount of satellite-measured light. Calibrated photometric measurements were also obtained at the corneas of these female school teachers together with calibrated accelerometer measurements for seven consecutive days and evenings. Based upon these personal light exposure and activity measurements, the female teachers who participated in this study did not have disrupted light-dark cycles like those associated with rotating shiftworkers who do exhibit a higher risk for BC. Rather, this sample of female school teachers had 24-h light-dark and activity-rest patterns very much like those experienced by dayshift nurses examined in an earlier study who are not at an elevated risk of BC. No relationship was found between the amount of satellite-measured light levels and the 24-h light-dark patterns these women experienced. It was concluded from the present study that satellite photometry is unrelated to personal light exposures as they might affect melatonin suppression and/or circadian disruption. More generally, photometric devices calibrated in terms of the operational characteristics of the human circadian system must be used to meaningfully link LAN and BC incidence. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Read, Scott A.; Collins, Michael J.; Vincent, Stephen J. (2014):

Light exposure and physical activity in myopic and emmetropic children.

In: *Optom Vis Sci* 91 (3), S. 330–341. DOI: 10.1097/OPX.0000000000000160.

Abstract:

PURPOSE: To objectively assess daily light exposure and physical activity levels in myopic and emmetropic children. METHODS: One hundred two children (41 myopes and 61 emmetropes) aged 10 to 15 years old had simultaneous objective measures of ambient light exposure and physical activity collected over a 2-week period during school term, using a wrist-worn actigraphy device (Actiwatch 2). Measures of visible light illuminance and physical activity were captured every 30 seconds, 24 hours a day over this period. Mean hourly light exposure and physical activity for weekdays and weekends were examined. To ensure that seasonal variations did not confound comparisons, the light and activity data of the 41 myopes was compared with 41 age- and gender-matched emmetropes who wore the Actiwatch over the same 2-week period. RESULTS: Mean light exposure and physical activity for all 101 children with valid data exhibited significant changes with time of day and day of the week ($p < 0.0001$). On average, greater daily light exposure occurred on weekends compared to weekdays ($p < 0.05$), and greater physical activity occurred on weekdays compared to weekends ($p < 0.01$). Myopic children ($n = 41$, mean daily light exposure 915 +/- 519 lx) exhibited significantly lower average light exposure compared to 41 age- and gender-matched emmetropic children (1272 +/- 625 lx, $p < 0.01$). The amount of daily time spent in bright light conditions (>1000 lx) was also significantly greater in emmetropes (127 +/- 51 minutes) compared to myopes (91 +/- 44 minutes, $p < 0.001$). No significant differences were found

between the average daily physical activity levels of myopes and emmetropes (p > 0.05). CONCLUSIONS: Myopic children exhibit significantly lower daily light exposure, but no significant difference in physical activity compared to emmetropic children. This suggests the important factor involved in documented associations between myopia and outdoor activity is likely exposure to bright outdoor light rather than greater physical activity.

Real, Ruben G. L.; Dickhaus, Thorsten; Ludolph, Albert; Hautzinger, Martin; Kubler, Andrea (2014):

Well-being in amyotrophic lateral sclerosis: a pilot experience sampling study.

In: *Front Psychol* 5, S. 704. DOI: 10.3389/fpsyg.2014.00704.

Abstract:

OBJECTIVE: The aim of this longitudinal study was to identify predictors of instantaneous well-being in patients with amyotrophic lateral sclerosis (ALS). Based on flow theory well-being was expected to be highest when perceived demands and perceived control were in balance, and that thinking about the past would be a risk factor for rumination which would in turn reduce well-being. METHODS: Using the experience sampling method, data on current activities, associated aspects of perceived demands, control, and well-being were collected from 10 patients with ALS three times a day for two weeks. RESULTS: RESULTS show that perceived control was uniformly and positively associated with well-being, but that demands were only positively associated with well-being when they were perceived as controllable. Mediation analysis confirmed thinking about the past, but not thinking about the future, to be a risk factor for rumination and reduced well-being. DISCUSSION: Findings extend our knowledge of factors contributing to well-being in ALS as not only perceived control but also perceived demands can contribute to well-being. They further show that a focus on present experiences might contribute to increased well-being.

Rebellato, Andrea; Grillo, Andrea; Dassie, Francesca; Sonino, Nicoletta; Maffei, Pietro; Martini, Chiara et al. (2014):

Ambulatory blood pressure monitoring-derived short-term blood pressure variability is increased in Cushing's syndrome.

In: *Endocrine. DOI:* 10.1007/s12020-014-0164-7.

Abstract:

Cushing's syndrome is associated with high cardiovascular morbility and mortality. Blood pressure (BP) variability within a 24-h period is increasingly recognized as an independent predictor of cardiovascular risk. The aim of our study was to investigate the short-term BP variability indices in Cushing's syndrome. Twenty-five patients with Cushing's syndrome (mean age 49 +/- 13 years, 4 males; 21 Cushing's disease and 4 adrenal adenoma patients) underwent 24-h ambulatory BP monitoring (ABPM) and evaluation of cardiovascular risk factors. Cushing patients were divided into 8 normotensive (NOR-CUSH) and 17 hypertensive (HYP-CUSH) patients and were compared with 20 normotensive (NOR-CTR) and 20 hypertensive (HYP-CTR) age-, sex-, and BMI-matched control subjects. Short-term BP variability was derived from ABPM and calculated as the following: (1) standard deviation (SD) of 24-h, daytime, and nighttime BP; (2) 24-h weighted SD of BP; and (3) average real variability (ARV), i.e., the average of the absolute differences between consecutive BP measurements over 24 h. In comparison with controls, patients with Cushing's syndrome, either normotensive or hypertensive, had higher 24-h and daytime SD of BP, as well as higher 24-h weighted SD and ARV of BP (P = 0.03 to P < 0.0001). No difference in metabolic parameters was observed between NOR-CTR and NOR-CUSH or between HYP-CTR and HYP-CUSH subgroups. ABPM-derived short-term BP variability is increased in Cushing's syndrome, independent of BP elevation. It may represent an additional cardiovascular risk factor in this disease. The role of excess cortisol in BP variability has to be further clarified.

Recio-Rodriguez, Jose I.; Martin-Cantera, Carlos; Gonzalez-Viejo, Natividad; Gomez-Arranz, Amparo; Arietaleanizbeascoa, Maria S.; Schmolling-Guinovart, Yolanda et al. (2014):

Effectiveness of a smartphone application for improving healthy lifestyles, a randomized clinical trial (EVIDENT II): study protocol.

In: *BMC Public Health* 14 (1), S. 254. DOI: 10.1186/1471-2458-14-254.

Abstract:

BACKGROUND: New technologies could facilitate changes in lifestyle and improve public health. However, no large randomized, controlled studies providing scientific evidence of the benefits of their use have been made. The aims of this study are to develop and validate a smartphone application, and to evaluate the effect of adding this tool to a standardized intervention

designed to improve adherence to the Mediterranean diet and to physical activity. An evaluation is also made of the effect of modifying habits upon vascular structure and function, and therefore on arterial aging. METHODS/DESIGN: A randomized, double-blind, multicenter, parallel group clinical trial will be carried out. A total of 1215 subjects under 70 years of age from the EVIDENT trial will be included. Counseling common to both groups (control and intervention) will be provided on adaptation to the Mediterranean diet and on physical activity. The intervention group moreover will receive training on the use of a smartphone application designed to promote a healthy diet and increased physical activity, and will use the application for three months. The main study endpoints will be the changes in physical activity, assessed by accelerometer and the 7-day Physical Activity Recall (PAR) interview, and adaptation to the Mediterranean diet, as evaluated by an adherence questionnaire and a food frequency questionnaire (FFQ). Evaluation also will be made of vascular structure and function based on central arterial pressure, the radial augmentation index, pulse velocity, the cardio-ankle vascular index, and carotid intima-media thickness. DISCUSSION: Confirmation that the new technologies are useful for promoting healthier lifestyles and that their effects are beneficial in terms of arterial aging will have important clinical implications, and may contribute to generalize their application in favor of improved population health. TRIAL REGISTRATION: Clinical Trials.gov Identifier: NCT02016014.

Reddy, Arun K.; Jogendra, Mather R. D.; Rosendorff, Clive (2014):

Blood pressure measurement in the geriatric population.

In: *Blood Press Monit* 19 (2), S. 59–63. DOI: 10.1097/MBP.0000000000000021.

Abstract:

As the population above 60 years of age is the fastest growing and hypertension is highly prevalent in this group, accurate blood pressure (BP) measurement in the elderly is a very important and widely applicable subject. As with any other population, an accurate measurement of BP is essential to plan therapy and this remains an important consideration in the elderly as well. There are some unique problems of BP measurement in the elderly, including drug-induced orthostatic hypotension, white-coat hypertension, and advanced atherosclerotic disease with stiff arteries. For clinical use, home blood pressure monitoring (HBPM), office measurement, and ambulatory blood pressure monitoring all play a role in patient management. In the office setting, aneroid devices, hybrid devices with electronic transducers, and oscillometric devices are available; all of these require frequent calibration, well-trained operators and technically sound execution. Because the white-coat effect is common in this group, there is a good case for the use of HBPM, which could also be used to detect orthostatic changes at home. Also, HBPM predicts cardiovascular events better than clinical BP, and is also useful in monitoring treatment. Ambulatory blood pressure monitoring provides the most precise assessment of BP over an extended period, but is more complex and expensive. Finally, the utility of noninvasive central arterial pressure through radial artery applanation tonometry, especially in patients with resistant hypertension and likely in the elderly because of advanced atherosclerotic disease and stiff arteries, may prove to be a useful tool to guide or modify drug therapy in the future and requires further study.

Redfield, Morgan T.; Cagle, John C.; Hafner, Brian J.; Sanders, Joan E. (2013):

Classifying prosthetic use via accelerometry in persons with transtibial amputations.

In: *J Rehabil Res Dev* 50 (9), S. 1201–1212. DOI: 10.1682/JRRD.2012.12.0233.

Abstract:

Knowledge of how persons with amputation use their prostheses and how this use changes over time may facilitate effective rehabilitation practices and enhance understanding of prosthesis functionality. Perpetual monitoring and classification of prosthesis use may also increase the health and quality of life for prosthetic users. Existing monitoring and classification systems are often limited in that they require the subject to manipulate the sensor (e.g., attach, remove, or reset a sensor), record data over relatively short time periods, and/or classify a limited number of activities and body postures of interest. In this study, a commercially available three-axis accelerometer (ActiLife ActiGraph GT3X+) was used to characterize the activities and body postures of individuals with transtibial amputation. Accelerometers were mounted on prosthetic pylons of 10 persons with transtibial amputation as they performed a preset routine of actions. Accelerometer data was postprocessed using a binary decision tree to identify when the prosthesis was being worn and to classify periods of use as movement (i.e., leg motion such as walking or stair climbing), standing (i.e., standing upright with limited leg motion), or sitting (i.e., seated with limited leg motion). Classifications were compared to visual observation by study researchers. The classifier achieved a mean +/- standard deviation accuracy of 96.6% +/- 3.0%.

Reilly, John J.; Kelly, Louise; Montgomery, Colette; Williamson, Avril; Fisher, Abigail; McColl, John H. et al. (2006):

Physical activity to prevent obesity in young children: cluster randomised controlled trial.

In: *BMJ* 333 (7577), S. 1041. DOI: 10.1136/bmj.38979.623773.55.

Abstract:

OBJECTIVE\r\nTo assess whether a physical activity intervention reduces body mass index in young children.\r\nDESIGN\r\nCluster randomised controlled single blinded trial over 12 months.\r\nSETTING\r\nThirty six nurseries in Glasgow, Scotland.\r\nPARTICIPANTS\r\n545 children in their preschool year, mean age 4.2 years (SD 0.2) at baseline.\r\nINTERVENTION\r\nEnhanced physical activity programme in nursery (three 30 minute sessions a week over 24 weeks) plus home based health education aimed at increasing physical activity through play and reducing sedentary behaviour.\r\nMAIN OUTCOME MEASURE\r\nBody mass index, expressed as a standard deviation score relative to UK 1990 reference data. Secondary measures were objectively measured physical activity and sedentary behaviour; fundamental movement skills; and evaluation of the process.\r\nRESULTS\r\nGroup allocation had no significant effect on the primary outcome measure at six and 12 months or on measures of physical activity and sedentary behaviour by accelerometry. Children in the intervention group had significantly higher performance in movement skills tests than control children at six month follow-up (P=0.0027; 95% confidence interval 0.3 to 1.3) after adjustment for sex and baseline performance.\r\nCONCLUSIONS\r\nPhysical activity can significantly improve motor skills but did not reduce body mass index in young children in this trial.\r\nTRIAL REGISTRATION\r\nCurrent Controlled Trials ISRCTN36363490.

Reilly, John J.; Penpraze, Victoria; Hislop, Jane; Davies, Gwyneth; Grant, Stanley; Paton, James Y. (2008):

Objective measurement of physical activity and sedentary behaviour: review with new data.

In: *Archives of disease in childhood* 93 (7), S. 614–619.

Abstract:

Objective methods are being used increasingly for the quantification of the amount of physical activity, intensity of physical activity and amount of sedentary behaviour in children. The accelerometer is currently the objective method of choice. In this review we address the advantages of objective measurement compared with more traditional subjective methods, notably the avoidance of bias, greater confidence in the amount of activity and sedentary behaviour measured, and improved ability to relate variation in physical activity and sedentary behaviour to variation in health outcomes. We also consider unresolved practical issues in paediatric accelerometry by critically reviewing the existing evidence and by providing new evidence.

Reis, Harry T. (2012):

Why researchers should think 'real-world': A conceptual rationale. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 3–21. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-001%26site%3dehost-live.

Abstract:

(from the chapter) Methods for studying daily life experiences have arrived. Daily life protocols are intended to "capture life as it is lived" (Bolger, Davis, & Rafaeli, 2003)—that is, to describe behavior as it occurs within its typical, spontaneous setting. By documenting the "particulars of life" (Allport, 1942), these methods provide extensively detailed data that can be used to examine the operation of social, psychological, and physiological processes within their natural contexts. A key premise of the daily life approach is that the contexts in which these processes unfold matter—in other words, that context influences behavior, and that proper understanding of behavior necessarily requires taking contextual factors into account. As the accessibility and popularity of daily life methods have increased, so too has researchers' ability grown in both range and complexity to ask and answer important questions about behavior. My goal in this chapter is to present the conceptual case for why researchers should consider adding daily life methods to their methodological toolbox. I begin by discussing the kind of information that daily life methods provide, highlighting ways in which they complement more traditional methods. Following this, the chapter reviews in turn three conceptual bases for daily life research: ecological validity, the value of field research, and the need to take context seriously. Next, I describe the role of daily life data in description and taxonomies, a step of theory building that in my opinion has been underemphasized in the behavioral sciences. The chapter concludes with a review of the place of daily life methods in research programs. An overarching goal of this chapter is to provide a context for the remainder of this handbook. My hope is

that greater appreciation of why these methods are valuable for substantive research will make the what and how of subsequent chapters more compelling. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Reisch, T.; Ebner-Priemer, U. W.; Tschacher, W.; Bohus, M.; Linehan, M. M. (2008):

Sequences of emotions in patients with borderline personality disorder.

In: *Acta Psychiatrica Scandinavica* 118 (1), S. 42–48.

Abstract:

OBJECTIVE:

To investigate sequences of emotions (temporal dependence of emotions) to identify specific patterns of borderline personality disorder (BPD).

METHOD:

The perceived emotions of 50 BPD patients and 50 healthy controls (HC) were monitored by using a hand-held computer system for a 24-h period in a daily life setting. Participants were prompted four times per hour to assess their current perceived emotions. Differences between BPD patients and HC in terms of activation, persistence and down-regulation of emotions were analyzed.

RESULTS:

Healthy controls in contrast to BPD patients more often activated joy and interest. BPD patients more often experienced persistence of anxiety and sadness. BPD patients more frequently switched from anxiety to sadness, from anxiety to anger and from sadness to anxiety. Anger was predominantly preceded by anxiety.

CONCLUSION:

Persistence of sadness and anxiety, as well as emotional oscillating between anxiety, sadness and anger are important aspects of the emotional dysregulation in BPD patients.

Reiterer, Veronika; Sauter, Cornelia; Klösch, Gerhard; Lalouschek, Wolfgang; Zeitlhofer, Josef (2008):

Actigraphy--a useful tool for motor activity monitoring in stroke patients.

In: *Eur Neurol* 60 (6), S. 285–291. DOI: 10.1159/000157882.

Abstract:

AIM\r\nThe aim of the present study was the evaluation of actigraphy as a tool to objectify the recovery process after motor paresis due to stroke.\r\nMETHODS\r\nThe motor activity of both arms of patients suffering from stroke was actigraphically recorded at four different time points during the course of rehabilitation: 24-36 h, 5-7 days, 3 months, and 6 months after stroke.\r\nRESULTS\r\nMotor activity monitored by wrist-worn actigraphs located at the impaired side revealed an increase in activity between the first two time points and the subsequent ones. Additionally, actigraphic recordings showed lower total motor activity at the impaired side as compared to the nonimpaired side. A significant positive correlation was found between the actigraphically recorded motor activity and the results of the Scandinavian Stroke scale, the Barthel Index, the Rankin Scale Score and with the Motoricity Index during the 1st week, which corresponds to the time when neurological deficits were most pronounced.\r\nCONCLUSION\r\nOur results suggest that actigraphy is a useful tool in the objective evaluation of motor activity after stroke. Moreover, actigraphy covers additional aspects that are not reflected by the usual stroke scales in a clinical situation.

Reitzel, Lorraine R.; Kendzor, Darla E.; Nguyen, Nga; Regan, Seann D.; Okuyemi, Kolawole S.; Castro, Yessenia et al. (2014):

Shelter Proximity and Affect among Homeless Smokers Making a Quit Attempt.

In: *Am J Health Behav* 38 (2), S. 161–169. DOI: 10.5993/AJHB.38.2.1.

Abstract:

OBJECTIVES: To explore the associations between shelter proximity and real-time affect during a specific smoking quit attempt among 22 homeless adults. METHODS: Affect was measured via 485 smartphone-based Ecological Momentary Assessments randomly administered during the weeks immediately before and after the quit day, and proximity to the shelter was measured via GPS. Adjusted linear mixed model regressions examined associations between shelter proximity and affect. RESULTS: Closer

proximity to the shelter was associated with greater negative affect only during the post-quit attempt week (p = .008). All participants relapsed to smoking by one week post-quit attempt. CONCLUSIONS: Among homeless smokers trying to quit, the shelter may be associated with unexpected negative affect/stress. Potential intervention applications are suggested.

Remacle, A.; Morsomme, D.; Finck, C. (2013):

Comparison of vocal loading parameters in kindergarten and elementary school teachers.

In: *J.Speech Lang Hear.Res.* (1092-4388 (Linking)). DOI: 10.1044/2013_JSLHR-S-12-0351.

Abstract:

PURPOSE: Although a global picture exists of teachers' voice demands in general, few studies have compared specific groups of teachers to determine whether some are more at risk than others. This study compared vocal loading of kindergarten and elementary school teachers; professional and non-professional vocal load was determined for both groups. METHOD: Twelve kindergarten and twenty elementary school female teachers without voice problems were monitored during one workweek using the Ambulatory Phonation Monitor. Vocal loading parameters analyzed were F0, SPL, time dose, distance dose and cycle dose. RESULTS: Comparisons between the groups showed significantly higher cycle dose and distance dose for kindergarten teachers than for elementary school teachers, in both professional and non-professional environments. Professional and non-professional voice use comparisons showed significant differences for all parameters, indicating that vocal load was higher in the professional environment for both groups. CONCLUSIONS: The higher vocal doses measured in kindergarten teachers suggest that particular attention should be paid to this specific group of teachers. Although non-professional vocal load is lower than professional vocal load, it is important to take both into account because of their cumulative effects

Rey-Lopez, J. P.; Ruiz, J. R.; Vicente-Rodriguez, G.; Gracia-Marco, L.; Manios, Y.; Sjostrom, M. et al. (2012):

Physical activity does not attenuate the obesity risk of TV viewing in youth.

In: *Pediatr.Obes.* (2047-6302 (Linking)). DOI: 10.1111/j.2047-6310.2011.00021.x.

Abstract:

OBJECTIVE: This study aimed to examine the association of television (TV) time, the frequency of meals while watching TV and the presence of TV set in the bedroom with total and abdominal obesity and to assess whether physical activity (PA) attenuates the obesity risk of TV viewing. METHODS: Cross-sectional data were obtained from 2200 adolescents (46% boys) from 10 European cities, The Healthy Lifestyle in Europe by Nutrition in Adolescence study, between 2006 and 2007. TV viewing, PA (by accelerometry) and body composition were measured. Binary logistic regression analyses were performed. RESULTS: Even adjusting by vigorous PA, TV in the bedroom (odds ratio [OR]: 1.33, 95% confidence interval [CI], 1.01-1.74) and >4 h d(-1) TV during week days (OR: 1.30, 95% CI, 1.02-1.67) (in boys) and eating every day with TV (OR: 1.18, 95% CI, 1.07-1.30) and >2 h d(-1) TV during weekend days (OR: 1.68, 95% CI, 1.25-2.26) (in girls) were significantly associated with total obesity. Likewise, in both sexes, having a TV set at bedroom was significantly associated with abdominal obesity. CONCLUSIONS: Adolescents spending excessive TV time are prone to obesity independently of their PA levels. Families should put TV sets out of adolescents' bedroom and keep TV sets off during meal times

Reynoldson, Charmian; Stones, Catherine; Allsop, Matthew; Gardner, Peter; Bennett, Michael I.; Closs, S. Jose et al. (2014):

Assessing the Quality and Usability of Smartphone Apps for Pain Self-Management.

In: *Pain Med. DOI:* 10.1111/pme.12327.

Abstract:

OBJECTIVE: To evaluate smartphone apps intended for self-management of pain using quality assessment criteria and usability testing with prospective users. DESIGN: 1) Survey and content analysis of available apps; and 2) individual usability study of two apps. SETTING: University of Leeds, United Kingdom. PARTICIPANTS: Forty-one participants (aged 19-59 years) with experience of chronic or recurrent pain episodes. METHODS: We undertook a survey, content analysis, and quality appraisal of all currently available mobile phone apps for self-management of pain. Two apps were then selected and assessed with usability testing. RESULTS: Twelve apps met the inclusion criteria. The quality assessment revealed wide variation in their clinical content, interface design, and usability to support self-management of pain. Very little user or clinician involvement was identified in the development of the apps. From the usability testing, participants stated a preference for an interface design employing a lighter color scheme and particular text font. Although very few participants were aware of pain-reporting apps prior to participation,

many would consider use in the future. CONCLUSIONS: Variation in app quality and a lack of user and clinician engagement in development were found across the pain apps in this research. Usability testing identified a range of user preferences. Although useful information was obtained, it would be beneficial to involve users earlier in the process of development, as well as establishing ways to merge end user requirements with evidence-based content, to provide high-quality and usable apps for self-management of pain.

Rhee, Moo-Yong; Kim, Ji-Hyun; Kim, Yong-Seok; Chung, Jin-Wook; Bae, Jun-Ho; Nah, Deuk-Young et al. (2014):

High sodium intake in women with metabolic syndrome.

In: *Korean Circ J* 44 (1), S. 30–36. DOI: 10.4070/kcj.2014.44.1.30.

Abstract:

BACKGROUND AND OBJECTIVES: Metabolic syndrome and high sodium intake are associated with frequent cardiovascular events. Few studies have estimated sodium intake in subjects with metabolic syndrome by 24-hour urine sodium excretion. We evaluated sodium intake in individuals with metabolic syndrome. SUBJECTS AND METHODS: Participants were recruited by random selection and through advertisement. Twenty four-hour urine collection, ambulatory blood pressure measurements, and blood test were performed. Sodium intake was estimated by 24-hour urine sodium excretion. Participants receiving antihypertensive medications were excluded from analysis. RESULTS: Among the 463 participants recruited, subjects with metabolic syndrome had higher levels of 24-hour urine sodium excretion than subjects without metabolic syndrome (p=0.0001). There was a significant relationship between the number of metabolic syndrome factors and 24-hour urine sodium excretion (p=0.001). The proportion of subjects with metabolic syndrome was increased across the tertile groups of 24-hour urine sodium excretion (p<0.0001). The association of high sodium intake and metabolic syndrome was significant only among women. Among the factors related to metabolic syndrome, body mass index had an independent association with 24-hour urine sodium excretion (p<0.0001). CONCLUSION: Women with metabolic syndrome exhibited significantly higher sodium intake, suggesting that dietary education to reduce sodium consumption should be emphasized for women with metabolic syndrome.

Richmond, M. J.; Mermelstein, R. J.; Wakschlag, L. S. (2012):

Direct Observations of Parenting and Real-Time Negative Affect Among Adolescent Smokers and Nonsmokers.

In: *J Clin.Child Adolesc.Psychol.* (1537-4416 (Linking)). DOI: 10.1080/15374416.2012.738452.

Abstract:

This longitudinal study examined how observations of parental general communication style and control with their adolescents predicted changes in negative affect over time for adolescent smokers and nonsmokers. Participants were 9th- and 10th-grade adolescents (N = 111; 56.8% female) who had all experimented with cigarettes and were thus at risk for continued smoking and escalation; 36% of these adolescents (n = 40) had smoked in the past month at baseline and were considered smokers in the present analyses. Adolescents participated separately with mothers and fathers in observed parent-adolescent problem-solving discussions to assess parenting at baseline. Adolescent negative affect was assessed at baseline, 6 months, and 24 months via ecological momentary assessment. Among both smoking and nonsmoking adolescents, escalating negative affect significantly increased risk for future smoking. Higher quality maternal and paternal communication predicted a decline in negative affect over 1.5 years for adolescent smokers but was not related to negative affect for nonsmokers. Controlling maternal, but not paternal, parenting predicted escalation in negative affect for all adolescents. Findings suggest that reducing negative affect among experimenting youth can reduce risk for smoking escalation. Therefore, family-based prevention efforts for adolescent smoking escalation might consider parental general communication style and control as intervention targets. However, adolescent smoking status and parent gender may moderate these effects

Riddoch, Chris J.; Leary, Sam D.; Ness, Andy R.; Blair, Steven N.; Deere, Kevin; Mattocks, Calum et al. (2009):

Prospective associations between objective measures of physical activity and fat mass in 12-14 year old children: the Avon Longitudinal Study of Parents and Children (ALSPAC).

In: *BMJ* 339, S. b4544. DOI: 10.1136/bmj.b4544.

Abstract:

OBJECTIVE\r\nTo investigate associations between physical activity at age 12 and subsequent adiposity at age 14.\r\nDESIGN\r\nProspective birth cohort study with data collected between 2003 and 2007.\r\nSETTING\r\nOriginal recruitment in 1991-2 of 14,541 pregnant women living in the former County of Avon (United Kingdom).\r\nPARTICIPANTS\r\nAt age 12, 11,952 children were invited to attend the research clinic. Of these, 7159 attended, and 4150 (1964 boys, 2186 girls) provided sufficient data on exposure, outcome, and confounding variables.\r\nMAIN OUTCOME MEASURE\r\nFat mass at age 14, measured by dual emission x ray absorptiometry, associated with physical activity at age 12, measured by accelerometry.\r\nRESULTS\r\nProspective associations of fat mass at age 14 (outcome) with physical activity at age 12 (exposure) were strong for both total activity (accelerometer counts/min) and for daily amount of moderate-vigorous physical activity (min/day). An extra 15 minutes of moderate-vigorous physical activity per day at age 12 was associated with lower fat mass at age 14 in boys (by 11.9% (95% confidence interval 9.5% to 14.3%)) and girls (by 9.8% (6.7% to 12.8%)). The proportion of physical activity due to moderate-vigorous physical activity was between 20% and 30% in boys and girls at the two ages.\r\nCONCLUSIONS\r\nHigher levels of physical activity, in particular activity of moderate to higher intensities, are prospectively associated with lower levels of fat mass in early adolescence. Interventions to raise levels of physical activity in children are likely to be important in the fight against obesity.

Ridgers, Nicola D.; Graves, Lee E. F.; Foweather, Lawrence; Stratton, Gareth (2010):

Examining influences on boys' and girls' physical activity patterns: the a-class project.

In: *Pediatric Exercise Science* 22 (4), S. 638–650.

Abstract:

Understanding children's physical activity (PA) patterns and the factors that may influence PA are important for developing interventions within this population. One hundred and ten children aged 9-10 years from 8 schools had their PA patterns assessed over 7 days. Physiological and self-report data were also collected. Multilevel analyses revealed that cardiorespiratory fitness was a consistent, significant and positive predictor of weekday and weekend PA, while the availability of home sedentary activities was a significant but negative predictor of PA. Since a range of variables were associated with PA levels, intervention developers should be cognizant of variables that may influence children's activity.

Ridgers, Nicola D.; Salmon, Jo; Ridley, Kate; O'Connel, Eoin; Arundell, Lauren; Timperio, Anna (2012):

Agreement between activPAL and ActiGraph for assessing children's sedentary time.

In: *Int J Behav Nutr Phys Act* 9. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31461-001%26site%3dehost-live;nicky.ridgers@deakin.edu.au.

Abstract:

BACKGROUND:

Accelerometers have been used to determine the amount of time that children spend sedentary. However, as time spent sitting may be detrimental to health, research is needed to examine whether accelerometer sedentary cut-points reflect the amount of time children spend sitting. The aim of this study was to: a) examine agreement between ActiGraph (AG) cut-points for sedentary time and objectively-assessed periods of free-living sitting and sitting plus standing time using the activPAL (aP); and b) identify cut-points to determine time spent sitting and sitting plus standing.

METHODS:

Forty-eight children (54% boys) aged 8-12 years wore a waist-mounted AG and thigh-mounted aP for two consecutive school days (9-3:30 pm). AG data were analyzed using 17 cut-points between 50-850 counts·min-1 in 50 counts·min-1 increments to determine sedentary time during class-time, break time and school hours. Sitting and sitting plus standing time were obtained from the aP for these periods. Limits of agreement were computed to evaluate bias between AG50 to AG850 sedentary time and sitting and sitting plus standing time. Receiver Operator Characteristic (ROC) analyses identified AG cut-points that maximized sensitivity and specificity for sitting and sitting plus standing time.

RESULTS:

The smallest mean bias between aP sitting time and AG sedentary time was AG150 for class time (3.8 minutes), AG50 for break time (-0.8 minutes), and AG100 for school hours (-5.2 minutes). For sitting plus standing time, the smallest bias was observed for AG850. ROC analyses revealed an optimal cut-point of 96 counts·min-1 (AUC = 0.75) for sitting time, which had acceptable sensitivity (71.7%) and specificity (67.8%). No optimal cut-point was obtained for sitting plus standing (AUC = 0.51).

CONCLUSIONS:

Estimates of free-living sitting time in children during school hours can be obtained using an AG cut-point of 100 counts·min-1. Higher sedentary cut-points may capture both sitting and standing time.

Ridgers, Nicola D.; Stratton, Gareth; Fairclough, Stuart J.; Twisk, Jos W. R. (2007):

Long-term effects of a playground markings and physical structures on children's recess physical activity levels.

In: *Prev Med* 44 (5), S. 393–397.

Abstract:

OBJECTIVE:

The aim of the study was to investigate the impact of a playground redesign intervention across time on children's recess physical activity levels using combined physical activity measures and to evaluate the potential influence of covariates on the intervention effect.

METHOD:

Fifteen schools located in areas of high deprivation in one large city in England each received 20,000 pounds through a national 10 million pounds Sporting Playgrounds Initiative to redesign the playground environment based on a multicolored zonal design. Eleven schools served as matched socioeconomic controls. Physical activity levels during recess were quantified using heart rate telemetry and accelerometry at baseline, 6 weeks and 6 months following the playground redesign intervention. Data were collected between July 2003 and January 2005 and analyzed using multilevel modeling.

RESULTS:

Statistically significant intervention effects were found across time for moderate-to-vigorous and vigorous physical activity assessed using both heart rate and accelerometry.

CONCLUSIONS:

The results suggest that a playground redesign, which utilizes multicolor playground markings and physical structures, is a suitable stimulus for increasing children's school recess physical activity levels.

Ridgers, Nicola D.; Tóth, Miklós; Uvacsek, Martina (2009):

Physical activity levels of Hungarian children during school recess.

In: *Prev Med* 49 (5), S. 410–412. DOI: 10.1016/j.ypmed.2009.08.008.

Abstract:

OBJECTIVE\r\nThe purpose of this study was to examine physical activity levels and patterns of physical activity across daily school recess periods, and the contribution of recess to daily physical activity.\r\nMETHOD\r\nNinety-eight children (61% boys) from three schools in Hungary had their physical activity quantified using uni-axial accelerometry every 5 s for three consecutive school days (Wednesday to Friday). The proportion of time spent in sedentary, light, moderate-to-vigorous, and vigorous physical activity during 5 daily school recess periods was determined using existing age-appropriate cut-points. The relative contribution of recess to daily moderate-to-vigorous physical activity was also determined. Data were collected between May and October 2008.\r\nRESULTS\r\nBoys engaged in significantly more light (30.6+/-5.2%; 27.7+/-5.1%), moderate-to-vigorous (24.9+/-8.9%; 17.5+/-5.2%) and vigorous physical activity (7.6+/-4.7%; 4.3+/-2.9%) than girls during recess. Girls (54.8+/-8.1%) engaged in more sedentary activity than boys (44.5+/-10.2%). Physical activity levels were generally similar across multiple recess periods. Recess contributed more moderate-to-vigorous physical activity towards weekday physical activity for boys (13.1%) than girls (10.8%).\r\nCONCLUSIONS\r\nSince sedentary activity accounted for the largest proportion of recess, interventions may be needed across all recess periods to promote physical activity during the school day.

Riediger, Michaela; Wrzus, Cornelia; Wagner, Gert G. (2014):

Happiness is pleasant, or is it? Implicit representations of affect valence are associated with contrahedonic motivation and mixed affect in daily life.

In: *Emotion* 14 (5), S. 950–961. DOI: 10.1037/t03782-000.

Abstract:

People typically want to feel good. At times, however, they seek to maintain or enhance negative affect or to dampen positive affect. The prevalence of such contrahedonic motivation has been related to simultaneous experiences of positive and negative (i.e., mixed) affect. We investigated the role that implicit mental representations of affect valence may play in this regard in a study with N = 400 participants aged 11–88 years. Results demonstrated the age-fairness and reliability of the affect-valence Implicit Association Test, a newly developed implicit measure of interindividual differences in mental representations of affect valence. The older participants were, the more distinctively they implicitly associated happiness with pleasantness and/or unhappiness with unpleasantness. Participants furthermore carried mobile phones as assessment instruments with them for 3 weeks while pursuing their daily routines. The phones prompted participants on average 54 times to report their momentary affective experience and affect-regulation motivation. Contrahedonic motivation and mixed affect were most prevalent among adolescents and least prevalent among older adults, and thus showed a similar pattern of age differences as the affect-valence Implicit Association Test. Furthermore, the more distinctive participants' implicit associations of happiness with pleasantness, and/or unhappiness with unpleasantness, the less likely participants were to report contrahedonic motivation and mixed affect in their daily lives. These findings contribute to a refined understanding of the mixed-affect perspective on contrahedonic motivation by demonstrating the respective role of implicit affect-valence representations. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Rittig, Søren; Matthiesen, Thorsten B.; Pedersen, Erling B.; Djurhuus, Jens C. (2006):

Circadian variation of angiotensin II and aldosterone in nocturnal enuresis: relationship to arterial blood pressure and urine output.

In: *The Journal of urology* 176 (2), S. 774–780.

Abstract:

PURPOSE:

We investigated the circadian rhythm of solute excretion and regulating hormones as well as blood pressure in patients with monosymptomatic nocturnal enuresis.

MATERIALS AND METHODS:

We included 15 patients with a mean age +/- SE of 13.4 +/- 0.9 years who had monosymptomatic nocturnal enuresis with at least 3 wet nights weekly and a control group of 10 healthy children with a similar age and sex distribution. During inpatient circadian studies urine was collected during 6 periods and blood was drawn at 7 time points during 24 hours. Heart rate and blood pressure was recorded with an ambulatory blood pressure monitor every 30 to 60 minutes.

RESULTS:

The total patient group excreted a significantly larger nocturnal urine volume than controls ($p < 0.01$). Five patients had marked nocturnal polyuria (nocturnal urine volume greater than the mean in the control group +2 SD), whereas urine output in the remaining patients without polyuria were similar to controls. Nocturnal polyuria was caused mainly by increased nocturnal solute excretion, especially Na. Serum aldosterone and plasma angiotensin II showed a marked circadian rhythm in normal children with a nocturnal increase concomitant with a significant decrease in mean arterial blood pressure during sleep. In contrast, the group of patients with nocturnal polyuria showed a lack of circadian rhythm in all excretion variables as well as an attenuated rhythm in plasma angiotensin II and mean arterial blood pressure. Interestingly this group had normal circadian rhythms of the circadian rhythm markers plasma cortisol and heart rate.

CONCLUSIONS:

The study suggests that an abnormally large nocturnal excretion of Na caused by selectively attenuated circadian rhythms of Na regulating hormones might be an important pathogenic factor in monosymptomatic nocturnal enuresis.

Robbins, Megan L.; Mehl, Matthias R.; Holleran, Shannon E.; Kasle, Shelley (2011):

Naturalistically observed sighing and depression in rheumatoid arthritis patients: a preliminary study.

In: *Health Psychol* 30 (1), S. 129.

Abstract:

OBJECTIVE:

This study tested the degree to which naturalistically observed sighing in daily life is a behavioral indicator of depression and reported physical symptoms (i.e., experienced pain and flare days) in rheumatoid arthritis (RA) patients.

DESIGN:

Thirteen RA patients wore the Electronically Activated Recorder (EAR), an observational ambulatory assessment tool, for two weekends (Friday through Sunday) approximately one month apart. The EAR periodically recorded snippets of ambient sounds from participants' momentary environments (50 s every 18 min). Sighs were coded from the sampled ambient sounds.

MAIN OUTCOME MEASURES:

Depression was assessed with the Center for Epidemiological Studies Depression Scale and the Beck Depression Inventory. Pain during the past month was assessed with a 10-cm visual-analog scale, and number of flare days during the prior 6 months was reported.

RESULTS:

Sighing was significantly and strongly related to patients' levels of depression and nonsignificantly and less strongly related to their reported pain and number of flare days.

CONCLUSION:

The findings suggest that sighing can serve as an observable marker of depression in RA patients. Because the sample size was small, the findings should be considered preliminary.

Robertson, Brandon M.; Piasecki, Thomas M.; Slutske, Wendy S.; Wood, Phillip K.; Sher, Kenneth J.; Shiffman, Saul; Heath, Andrew C. (2012):

Validity of the Hangover Symptoms Scale: Evidence from an electronic diary study.

In: *Alcoholism: Clinical and Experimental Research* 36 (1), S. 171–177. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-00176-020&site=ehost-live;piaseckit@missouri.edu.

Abstract:

Background: The Hangover Symptoms Scale (HSS) assesses the frequency of 13 symptoms experienced after drinking in the past year. Cross-sectional analyses in college drinkers showed preliminary evidence for the validity of the HSS (Slutske et al., 2003). The current investigation extended this work by examining the construct validity of the HSS in an ecological momentary assessment investigation. Methods: Frequent drinkers (N = 404) carried electronic diaries to track their daily experiences over 3 weeks. Each morning, the diary assessed prior-night drinking behaviors, the presence of current hangover, and intensity of current headache and nausea. Results: Adjusting for sex and body mass, the HSS significantly predicted diary endorsement of hangover (OR = 2.11, 95% CI = 1.78 to 2.49, p < 0.001). Participants who endorsed the HSS headache and nausea items were especially likely to report the elevations of corresponding symptoms in diary records made the morning after drinking. HSS scores incrementally predicted hangover when the number of drinks consumed in the episode was covaried but did not moderate the relationship between the number of drinks and diary hangover reports. Conclusions: The HSS appears to be a valid tool for hangover research. Higher HSS scores identify individuals who complain of "real world" hangovers and who may be especially likely to display particular symptoms after a night of drinking. Past hangovers predicted future hangovers, suggesting hangovers do not necessarily discourage or inhibit future drinking, at least across the several-week time interval studied here. There is a need to develop and evaluate complementary measures that can more directly index individual differences in hangover susceptibility in survey designs. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Robinson, E.; Higgs, S.; Daley, A. J.; Jolly, K.; Lycett, D.; Lewis, A.; Aveyard, P. (2013):

Development and feasibility testing of a smart phone based attentive eating intervention.

In: *BMC Public Health* 13 (1471-2458 (Linking)), S. 639. DOI: 10.1186/1471-2458-13-639.

Abstract:

BACKGROUND: Attentive eating means eating devoid of distraction and increasing awareness and memory for food being consumed. Encouraging individuals to eat more attentively could help reduce calorie intake, as a strong evidence base suggests that memory and awareness of food being consumed substantially influence energy intake. METHODS: The development and feasibility testing of a smartphone based attentive eating intervention is reported. Informed by models of behavioral change, a smartphone application was developed. Feasibility was tested in twelve overweight and obese volunteers, sampled from university staff. Participants used the application during a four week trial and semi-structured interviews were conducted to

assess acceptability and to identify barriers to usage. We also recorded adherence by downloading application usage data from participants' phones at the end of the trial. RESULTS: Adherence data indicated that participants used the application regularly. Participants also felt the application was easy to use and lost weight during the trial. Thematic analysis indicated that participants felt that the application raised their awareness of what they were eating. Analysis also indicated barriers to using a smartphone application to change dietary behavior. CONCLUSIONS: An attentive eating based intervention using smartphone technology is feasible and testing of its effectiveness for dietary change and weight loss is warranted

Robinson, Fiona; Jones, Catriona (2014):

Women's engagement with mobile device applications in pregnancy and childbirth.

In: *Pract Midwife* 17 (1), S. 23–25.

Abstract:

Childbearing women are increasingly engaging with social media and technology. The use of apps for pregnancy and childbirth advice is a new approach to maternity provision, and has potential to impact upon midwifery. Apps are ideally placed to provide opportunities for women to access information; however, there are concerns about the quality of mobile app data in relation to evidence based midwifery. This discussion paper presents a general overview of the use of apps as an information resource, and provides a platform for debate about their position in midwifery care.

Robinson, Katie; Kennedy, Norelee; Harmon, Dominic (2012):

The flow experiences of people with chronic pain.

In: *OTJR: Occupation, Participation and Health* 32 (3), S. 104–112. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-19292-007&site=ehost-live;katie.robinson@ul.ie.

Abstract:

This electronic momentary assessment study explored the relationship between flow and pain intensity and examined whether flow is an optimal experience for people with chronic pain. Adults with chronic pain (n = 30) were signaled randomly seven times daily during 1 week to respond to a flow questionnaire via personal digital assistant. The participants responded to 718 questionnaires from 1,447 beeps (response rate = 49.6%). Results indicated that participants were most commonly at home, doing self-care activities, with family or alone. Participants experienced flow 34.9%, apathy 44.6%, relaxation 11.6%, and anxiety 8.9% of the sampled time. Participants' mean concentration, self-esteem, motivation, and potency scores were highest in flow compared to the other three states. Separate one-way between-groups analyses of variance comparing concentration ($F(3) = 11.85$; $p < .001$), self-esteem ($F(3) = 11.98$; $p < .001$), motivation ($F(3) = 29.29$; $p < .001$), positive affect ($F(3) = 2.89$; $p = .035$), potency ($F(3) = 19.88$; $p < .001$), and pain intensity ($F(3) = 1.39$; $p = .245$) scores across the four states showed a significant overall effect on all comparisons except pain intensity and positive affect. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Robinson, Michael D.; Moeller, Sara K.; Buchholz, Maria M.; Boyd, Ryan L.; Troop-Gordon, Wendy (2012):

The regulatory benefits of high levels of affect perception accuracy: A process analysis of reactions to stressors in daily life.

In: *Emotion* 12 (4), S. 785–795. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-17909-001&site=ehost-live;Michael.D.Robinson@ndsu.edu.

Abstract:

Individuals attuned to affective signals from the environment may possess an advantage in the emotion-regulation realm. In two studies (total n = 151), individual differences in affective perception accuracy were assessed in an objective, performance-based manner. Subsequently, the same individuals completed daily diary protocols in which daily stressor levels were reported as well as problematic states shown to be stress-reactive in previous studies. In both studies, individual differences in affect perception accuracy interacted with daily stressor levels to predict the problematic outcomes. Daily stressors precipitated problematic reactions—whether depressive feelings (Study 1) or somatic symptoms (Study 2)—at low levels of affect perception accuracy, but did not do so at high levels of affect perception accuracy. The findings support a regulatory view of such perceptual abilities.

Implications for understanding emotion regulation processes, emotional intelligence, and individual differences in reactivity are discussed. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Robustillo Cortes, Maria de Las Aguas; Cantudo Cuenca, Maria Rosa; Morillo Verdugo, Ramon; Calvo Cidoncha, Elena (2014):

High Quantity but Limited Quality in Healthcare Applications Intended for HIV-Infected Patients.

In: *Telemed J E Health. DOI:* 10.1089/tmj.2013.0262.

Abstract:

Abstract Objective: The aim of this study was to evaluate, through the creation of a specific questionnaire, the information quality in mobile applicatons (apps) aimed at human immunodeficiency virus (HIV)-infected patients. We also established a quality rating and identified the main strengths and weaknesses of this kind of health app. Materials and Methods: Smartphone apps specifically related to HIV/acquired immunodeficiency syndrome (AIDS) were searched. We conducted a key word search with the terms "HIV," "AIDS," and "acquired immune deficiency syndrome" in the Apple (Cupertino, CA) App Store and the Android Google (Mountain View, CA) Play Store. A questionnaire was developed based on the different quality recommendations for health apps up to December 2012. The recommendations consulted were as follows: the Happtique Health App Certification Program, the Food and Drug Administration (Mobile Medical Applications), and recommendations for the design, use, and evaluation of health apps of the Agency of Health Quality in Andalusia. A group of 17 experts assessed the importance of the different sections by using a Delphi method. Results: In total, 41 health apps were analyzed. Only one app (2.4%), called inPractice HIV, approached class A. The remaining were classed as follows: 2 (4.9%) class B, 1 (2.4%) class C, 5 (12.2%) class D and E, and 27 (65.9%) class F (not exceeding minimum criteria). The design and the relevance were highlighted among the strengths. The main areas for improvement are provision of services and confidentiality in addition to privacy policies. Conclusions: The quality of the revised apps is limited. Only one app complied with the excellence criteria, and over 50% of the apps did not exceed minimum quality standards. The worst rated aspects were political advertising and logical security.

Robusto, K. M.; Trost, S. G. (2012):

Comparison of three generations of ActiGraph activity monitors in children and adolescents.

In: *J.Sports Sci.* 30 (13), S. 1429–1435. DOI: 10.1080/02640414.2012.710761.

Abstract:

In this study, we evaluated agreement among three generations of ActiGraph accelerometers in children and adolescents. Twenty-nine participants (mean age = 14.2 +/- 3.0 years) completed two laboratory-based activity sessions, each lasting 60 min. During each session, participants concurrently wore three different models of the ActiGraph accelerometers (GT1M, GT3X, GT3X+). Agreement among the three models for vertical axis counts, vector magnitude counts, and time spent in moderate-to-vigorous physical exercise (MVPA) was evaluated by calculating intraclass correlation coefficients and Bland-Altman plots. The intraclass correlation coefficient for total vertical axis counts, total vector magnitude counts, and estimated MVPA was 0.994 (95% CI = 0.989-0.996), 0.981 (95% CI = 0.969-0.989), and 0.996 (95% CI = 0.989-0.998), respectively. Inter-monitor differences for total vertical axis and vector magnitude counts ranged from 0.3% to 1.5%, while inter-monitor differences for estimated MVPA were equal to or close to zero. On the basis of these findings, we conclude that there is strong agreement between the GT1M, GT3X, and GT3X+ activity monitors, thus making it acceptable for researchers and practitioners to use different ActiGraph models within a given study

Robyn RM Gershon, MT, MHS, DrPH, Monika Pogorzelska, MPH, Kristine A Qureshi, RN, DNSc, Patricia W Stone, PhD, Allison N Canton, BA, Stephanie M Samar, BA, Leah J Westra, BA, Marc R Damsky, MPH, and Martin Sherman, PhD (2013):

Including the home as a care setting.

In: *Hosp Health Netw* 87 (12), S. 20.

Abstract:

Introduction: Home health care is the fastest growing sector in the health care industry, with an anticipated growth of 66 percent over the next 10 years and with over 7 million patients served each year. With the increasing acuteness of care provided in home health care and the increasing number of frail elderly that make up this patient population, it is important to identify risk factors

that affect patient health and safety in this setting. Methods: A convenience sample of 1,561 home health aides, attendants, and personal care workers completed a risk assessment survey. Items addressed personal, patient, and home characteristics and health hazards. All activities had prior Institutional Review Board approval. Preliminary Results: Ninety-five percent of home health care workers (HHCWs) were female with an average of 8 years experience. The majority of clients were elderly, with a smaller percentage of adult (26 percent) and pediatric (7 percent) cases. HHCWs reported the following exposures at their clients' homes: cockroaches (33 percent), cigarette smoke (30 percent), vermin (23 percent), irritating chemicals (17 percent), and peeling paint (15 percent). The following conditions were also described: clutter (17 percent), temperature extremes (9 percent), unsanitary (12 percent) and unsafe (6 percent) conditions in the home, neighborhood violence/crime (11 percent), and aggressive pets (6 percent). Two percent of respondents reported the presence of guns in the home. Additionally, 12 percent of HHCWs reported signs of abuse of their clients. Conclusion: Both HHCWs and home care patients appear to be at potential risk due to a variety of health hazards/exposures in the clients' homes. Given the growing population of both HHCWs and recipients, it is important to document this risk as an important first step in prevention and management.

Roche, Veronique Pasquale; Mohamad-Djafari, Ali; Innominato, Pasquale Fabio; Karaboue, Abdoulaye; Gorbach, Alexander; Levi, Francis Albert (2014):

Thoracic surface temperature rhythms as circadian biomarkers for cancer chronotherapy.

In: *Chronobiol Int* 31 (3), S. 409–420. DOI: 10.3109/07420528.2013.864301.

Abstract:

The disruption of the temperature circadian rhythm has been associated with cancer progression, while its amplification resulted in cancer inhibition in experimental tumor models. The current study investigated the relevance of skin surface temperature rhythms as biomarkers of the Circadian Timing System (CTS) in order to optimize chronotherapy timing in individual cancer patients. Baseline skin surface temperature at four sites and wrist accelerations were measured every minute for 4 days in 16 patients with metastatic gastro-intestinal cancer before chronotherapy administration. Temperature and rest-activity were recorded, respectively, with wireless skin surface temperature patches (Respironics, Phillips) and an actigraph (Ambulatory Monitoring). Both variables were further monitored in 10 of these patients during and after a 4-day course of a fixed chronotherapy protocol. Collected at baseline, during and after therapy longitudinal data sets were processed using Fast Fourier Transform Cosinor and Linear Discriminant Analyses methods. A circadian rhythm was statistically validated with a period of 24 h ($p < 0.05$) for 49/61 temperature time series (80.3%), and 15/16 rest-activity patterns (93.7%) at baseline. However, individual circadian amplitudes varied from 0.04 degrees C to 2.86 degrees C for skin surface temperature (median, 0.72 degrees C), and from 16.6 to 146.1 acc/min for rest-activity (median, 88.9 acc/min). Thirty-nine pairs of baseline temperature and rest-activity time series (75%) were correlated ($r > |0.7|$; $p < 0.05$). Individual circadian acrophases at baseline were scattered from 15:18 to 6:05 for skin surface temperature, and from 12:19 to 15:18 for rest-activity, with respective median values of 01:10 (25-75% quartiles, 22:35-3:07) and 14:12 (13:14-14:31). The circadian patterns in skin surface temperature and rest-activity persisted or were amplified during and after fixed chronotherapy delivery for 5/10 patients. In contrast, transient or sustained disruption of these biomarkers was found for the five other patients, as indicated by the lack of any statistically significant dominant period in the circadian range. No consistent correlation ($r < |0.7|$, $p >/= 0.05$) was found between paired rest-activity and temperature time series during fixed chronotherapy delivery. In conclusion, large inter-patient differences in circadian amplitudes and acrophases of skin surface temperature were demonstrated for the first time in cancer patients, despite rather similar rest-activity acrophases. The patient-dependent coupling between both CTS biomarkers, and its possible alteration on a fixed chronotherapy protocol, support the concept of personalized cancer chronotherapy.

Röcke, Christina; Li, Shu-Chen; Smith, Jacqui (2009):

Intraindividual variability in positive and negative affect over 45 days: do older adults fluctuate less than young adults?

In: *Psychology and Aging* 24 (4), S. 863–878. DOI: 10.1037/a0016276.

Abstract:

Opposing scenarios about age-related increases and decreases in intraindividual variability are found in the literature: Whereas accumulating evidence indicates that cognitive functioning is characterized by an age-related increase of short-term variability, age-related decreases in variability could be expected in affective states on the basis of theories of emotion regulation and self development. We examined age differences in intraindividual variability of positive affect (PA) and negative affect (NA) and in contingencies among daily affect, daily stress, and daily events using up to 45 daily assessments of 18 young (20-30 years) and 19 older (70-80 years) adults. Whereas age groups differed little in average affect levels, older adults showed significantly less variability in PA and NA than young adults. Age differences accounted for greater variance in variability than personality factors. Multilevel modeling indicated that for young but not older adults, PA was higher (lower) on days with a positive (negative) event,

and NA was lower on days with a positive event. There were no age differences in daily affect reactivity to appraised stress severity.

Rodell, Jessica B.; Judge, Timothy A. (2009):

Can \"good\" stressors spark \"bad\" behaviors? The mediating role of emotions in links of challenge and hindrance stressors with citizenship and counterproductive behaviors.

In: *J Appl Psychol* 94 (6), S. 1438–1451. DOI: 10.1037/a0016752.

Abstract:

The authors combined affective events theory (H. M. Weiss & Cropanzano, 1996) and the transactional stress model (R. S. Lazarus & Folkman, 1984) to build and test a model specifying the dynamic, emotion-based relationships among challenge and hindrance stressors and citizenship and counterproductive behaviors. The study employed an experience sampling methodology. Results showed that challenge stressors had offsetting indirect links with citizenship behaviors through attentiveness and anxiety and a positive indirect effect on counterproductive behaviors through anxiety. Hindrance stressors had a negative indirect effect on citizenship behaviors through anxiety and a positive indirect effect on counterproductive behaviors through anxiety and anger. Finally, multilevel moderating effects showed that the relationship between hindrance stressors and anger varied according to employees' levels of neuroticism.

Roelofs, Jeffrey; Peters, Madelon L.; Patijn, Jacob; Schouten, Erik G. W.; Vlaeyen, Johan W. S. (2006):

An electronic diary assessment of the effects of distraction and attentional focusing on pain intensity in chronic low back pain patients.

In: *British Journal of Health Psychology* 11 (Pt 4), S. 595–606. DOI: 10.1348/135910705X74819.

Abstract:

OBJECTIVE\r\nThe present study examined the effects of a manipulation of attention to pain (i.e. attentional focusing vs. distraction) on pain intensity in daily life of patients with chronic low back pain. It was hypothesized that attentional focusing would lead to decreased pain intensity in high pain fearful individuals, whereas distraction from pain would be associated with decreased pain intensity in low pain fearful individuals.\r\nDESIGN\r\nAn experience sampling methodology was used to examine the effects of a manipulation of attention to pain on pain intensity in daily life of pain patients.\r\nMETHODS\r\nA total number of 38 patients with chronic low back pain participated in this study and carried a palmtop computer for 2 weeks. During this period, patients were 'beeped' 8 times a day to complete diary questions. On certain days, instructions to either attend to or distract from pain were given.\r\nRESULTS\r\nMulti-level analyses showed that attentional focusing was not associated with decreased pain intensity in high pain fearful individuals and that distraction did not lead to decreased pain intensity in low pain fearful individuals. The manipulations in isolation neither influenced pain intensity. The manipulation check was generally weak.\r\nCONCLUSION\r\nA manipulation of attention to pain in daily life of patients with chronic low back pain proved difficult to accomplish. As the manipulation check was generally unsuccessful, no clear inferences about the underlying theory can be made. Future research within the field of pain treatments (e.g. in vivo exposure) might benefit greatly from electronic diary assessments studies.

Roetenberg, Daniel; Baten, Chris; Veltink, Peter H. (2007):

Estimating body segment orientation by applying inertial and magnetic sensing near ferromagnetic materials.

In: *Neural Systems and Rehabilitation Engineering, IEEE Transactions on* 15 (3), S. 469–471.

Abstract:

Inertial and magnetic sensors are very suitable for ambulatory monitoring of human posture and movements. However, ferromagnetic materials near the sensor disturb the local magnetic field and, therefore, the orientation estimation. A Kalman-based fusion algorithm was used to obtain dynamic orientations and to minimize the effect of magnetic disturbances. This paper compares the orientation output of the sensor fusion using three-dimensional inertial and magnetic sensors against a laboratory bound opto-kinetic system (Vicon) in a simulated work environment. With the tested methods, the difference between the optical reference system and the output of the algorithm was 2.6 degrees root mean square (rms) when no metal was near the

sensor module. Near a large metal object instant errors up to 50 degrees were measured when no compensation was applied. Using a magnetic disturbance model, the error reduced significantly to 3.6 degrees rms.

Roetenberg, Daniel; Slycke, Per J.; Veltink, Peter H. (2007):

Ambulatory position and orientation tracking fusing magnetic and inertial sensing.

In: *Biomedical Engineering, IEEE Transactions on* 54 (5), S. 883–890.

Abstract:

This paper presents the design and testing of a portable magnetic system combined with miniature inertial sensors for ambulatory 6 degrees of freedom (DOF) human motion tracking. The magnetic system consists of three orthogonal coils, the source, fixed to the body and 3-D magnetic sensors, fixed to remote body segments, which measure the fields generated by the source. Based on the measured signals, a processor calculates the relative positions and orientations between source and sensor. Magnetic actuation requires a substantial amount of energy which limits the update rate with a set of batteries. Moreover, the magnetic field can easily be disturbed by ferromagnetic materials or other sources. Inertial sensors can be sampled at high rates, require only little energy and do not suffer from magnetic interferences. However, accelerometers and gyroscopes can only measure changes in position and orientation and suffer from integration drift. By combing measurements from both systems in a complementary Kalman filter structure, an optimal solution for position and orientation estimates is obtained. The magnetic system provides 6 DOF measurements at a relatively low update rate while the inertial sensors track the changes position and orientation in between the magnetic updates. The implemented system is tested against a lab-bound camera tracking system for several functional body movements. The accuracy was about 5 mm for position and 3 degrees for orientation measurements. Errors were higher during movements with high velocities due to relative movement between source and sensor within one cycle of magnetic actuation.

Rofail, Lydia Makarie; Wong, Keith K. H.; Unger, Gunnar; Marks, Guy B.; Grunstein, Ronald R. (2010):

The utility of single-channel nasal airflow pressure transducer in the diagnosis of OSA at home.

In: *Sleep* 33 (8), S. 1097.

Abstract:

RATIONALE:

Given the high prevalence of obstructive sleep apnea (OSA) and the demand on polysomnography (PSG), there is a need for low cost accurate simple diagnostic modalities that can be easily deployed in primary care to improve access to diagnosis.

STUDY OBJECTIVES:

The aim was to examine the utility of single-channel nasal airflow monitoring using a pressure transducer at home in patients with suspected OSA.

DESIGN:

Cross-sectional study

SETTING:

Laboratory and home

PARTICIPANTS:

The study was conducted in two populations. Consecutive patients with suspected OSA were recruited from the sleep disorders clinic at a tertiary referral center and from 6 local metropolitan primary care centers.

INTERVENTIONS:

All patients answered questionnaires and had laboratory PSG. Nasal airflow was monitored for 3 consecutive nights at home in random order either before or after PSG.

RESULTS:

Atotal of 193 patients participated (105 sleep clinic patients and 88 from primary care). The mean bias PSG apnea hypopnea index (AHI) minus nasal flow respiratory disturbance index (NF RDI) was -4.9 events per hour with limits of agreement (2 SD) of 27.8. NF RDI monitored over 3 nights had high accuracy for diagnosing both severe OSA (defined as PSG AHI > 30 events per

hour) with area under the receiver operating characteristic curve (AUC) 0.92 (95% confidence interval (CI) 0.88-0.96) and any OSA (PSG AHI > 5), AUC 0.87 (95% CI 0.80-0.94).

CONCLUSIONS:

Single-channel nasal airflow can be implemented as an accurate diagnostic tool for OSA at home in both primary care and sleep clinic populations.

Rofey, Dana L.; Hull, Ethan E.; Phillips, Jennifer; Vogt, Kristen; Silk, Jennifer S.; Dahl, Ronald E. (2010):

Utilizing Ecological Momentary Assessment in pediatric obesity to quantify behavior, emotion, and sleep.

In: *Obesity (Silver Spring)* 18 (6), S. 1270–1272. DOI: 10.1038/oby.2009.483.

Abstract:

This study examined the feasibility of using Ecological Momentary Assessment (EMA) to examine important domains relevant to interregulatory health processes in overweight adolescent females in their natural environments. Participants were 20 overweight adolescent females engaged in a cognitive-behavioral and motivational interviewing intervention aimed at weight loss and improving mood (11-19 years old, 80% white, 15% African American, mean BMI = 39). During this EMA protocol, participants were asked to report their physical activity (PA), nutrition, mood, and sleep during 14 cellular phone calls over three extended weekends (Thursday to Monday). Simultaneously, participants wore an actigraph (armband and watch communicator) that provided instantaneous PA feedback (steps taken and kilocalories) and sleep parameters (duration and efficiency). EMA compliance rates for the armband and phone calls were 74.7 +/- 0.3% and 64.2 +/- 0.3%, respectively. Data from the armband and phone calls are presented to illustrate the depth of information acquired by utilizing this innovative methodology.

Romero-Canyas, Rainer; Downey, Geraldine; Berenson, Kathy; Ayduk, Ozlem; Kang, N. Jan (2010):

Rejection sensitivity and the rejection-hostility link in romantic relationships.

In: *J Personality* 78 (1), S. 119–148. DOI: 10.1111/j.1467-6494.2009.00611.x.

Abstract:

Rejection sensitivity is the disposition to anxiously expect, readily perceive, and intensely react to rejection. In response to perceived social exclusion, highly rejection sensitive people react with increased hostile feelings toward others and are more likely to show reactive aggression than less rejection sensitive people in the same situation. This paper summarizes work on rejection sensitivity that has provided evidence for the link between anxious expectations of rejection and hostility after rejection. We review evidence that rejection sensitivity functions as a defensive motivational system. Thus, we link rejection sensitivity to attentional and perceptual processes that underlie the processing of social information. A range of experimental and diary studies shows that perceiving rejection triggers hostility and aggressive behavior in rejection sensitive people. We review studies that show that this hostility and reactive aggression can perpetuate a vicious cycle by eliciting rejection from those who rejection sensitive people value most. Finally, we summarize recent work suggesting that this cycle can be interrupted with generalized self-regulatory skills and the experience of positive, supportive relationships.

Rönkä, Anna; Malinen, Kaisa; Kinnunen, Ulla; Tolvanen, Asko; Lämsä, Tiina (2010):

Capturing daily family dynamics via text messages: development of the mobile diary.

In: *Community, Work & Family* 13 (1), S. 5–21.

Abstract:

In this paper we introduce a new tool, the mobile phone, for use in diary research. We demonstrate, with reference to two family studies conducted in Finland, how daily family dynamics can be captured by using the mobile diary. In both studies family members sent text messages (SMSs) in answer to structured diary questions three times a day over a one-week period. The participants kept also paper-and-pencil diaries. Two mobile diary items measuring mood (stressfulness and feelings of competence) both at home and at work are reported here as examples. For both items we found statistically significant daily and weekly variation as well as individual fluctuation. The data gathered by the mobile diary were congruent but not identical with the data gathered by the paper-and-pencil diary. The mobile phone method of data collection facilitated participants' answers at the agreed times and the participants reported that answering was easy and did not take too much time. The main limitation is the lack of space for answers; therefore, the few questions that are used have to be reliable and valid.

Rose, M.; Bjorner, J. B.; Fischer, F.; Anatchkova, M.; Gandek, B.; Klapp, B. F.; Ware, J. E. (2012):

Computerized adaptive testing--ready for ambulatory monitoring?

In: *Psychosom.Med.* 74 (4), S. 338–348. DOI: 10.1097/PSY.0b013e3182547392.

Abstract:

BACKGROUND: Computerized adaptive tests (CATs) have abundant theoretical advantages over established static instruments, which could improve ambulatory monitoring of patient-reported outcomes (PROs). However, an empirical demonstration of their practical benefits is warranted. METHODS: We reviewed the literature and evaluated existing data to discuss the potential of CATs for use in ambulatory monitoring outside clinical facilities. RESULTS: Computerized adaptive tests are not being used for ambulatory monitoring, but initial results from their use in health care research allow for discussion of some issues relevant to ambulatory care. Evidence shows that CATs can capture the most relevant health outcomes as well as established static tools, with substantially decreased respondent burden. They can be more precise than static tools of similar length and can reduce floor and ceiling effects. Computerized adaptive tests can reliably measure a construct over time with different items, which yields the potential of introducing item exposure control in ambulatory monitoring. Studies have shown that CATs can be at least as valid as well-designed static tools in group comparisons, but further investigation is needed to determine whether psychometric advantages lead to increased responsiveness of CATs. CONCLUSIONS: Ambulatory monitoring of PROs demands short, yet very precise measurements, which can be repeated up to many times a day. Computerized adaptive tests may address several present shortcomings in ambulatory monitoring of PROs efficiently. However, most CAT developments have primarily focused on psychometric improvements. To use the full potential of CATs for ambulatory monitoring purposes, content must also be carefully considered

Rosen, P. J.; Epstein, J. N.; Van, Orden G. (2013):

I know it when I quantify it: ecological momentary assessment and recurrence quantification analysis of emotion dysregulation in children with ADHD.

In: *Atten.Defic.Hyperact.Disord.* (1866-6116 (Linking)). DOI: 10.1007/s12402-013-0101-2.

Abstract:

Two studies examined the feasibility, utility, and validity of Ecological Momentary Assessment (EMA) and Recurrence Quantification Analysis (RQA) in assessing emotion dysregulation in children with Attention-Deficit/Hyperactivity Disorder (ADHD). In Study 1, 11 parents of children with ADHD ages 8-11 completed EMA-based ratings of their children's mood three times daily for 28 days (84 ratings total) and questionnaires regarding their children's emotion dysregulation. RQA was used to quantify the temporal patterning of dysregulation of the children's mood. In Study 2, five children ages 8-11 completed EMA-based ratings of their mood three times daily for 28 days. Results supported the feasibility and validity of the parent report EMA protocol, with greater intensity, variability, and persistent patterning of variability associated with greater emotion dysregulation. Results did not support the validity of the child report protocol, as children were less likely to complete ratings when emotionally distressed and demonstrated substantial response bias

Rosen, P. J.; Factor, P. I. (2012):

Emotional Impulsivity and Emotional and Behavioral Difficulties Among Children With ADHD: An Ecological Momentary Assessment Study.

In: *J Atten.Disord.* (1087-0547 (Linking)). DOI: 10.1177/1087054712463064.

Abstract:

OBJECTIVE:

Children with ADHD often demonstrate impulsive shifts in emotion, characterized by sudden and intense shifts in affect. This study examined the effects of emotional impulsivity over time on the emotional and behavioral functioning of children with ADHD using ecological momentary assessment (EMA).

METHOD:

Twenty-seven 8- to 12-year-old children with ADHD, and their parents, completed baseline measures of the children's emotional and behavioral functioning. Parents and children then completed an EMA protocol, whereby they each rated the child's affect three times daily for 28 days.

RESULTS:

Hierarchical regression analyses strongly supported the relation of greater EMA-derived emotional impulsivity to children's increased emotional and behavioral difficulties. These effects were evident across reporters and were maintained after controlling for baseline emotion dysregulation.

CONCLUSION:

Overall, this study demonstrated the utility of EMA-based assessments and suggested that emotional impulsivity may play an important role in the emotional and behavioral functioning of children with ADHD.

Rosenbaum, D.; Brandes, M.; Hardes, J.; Gosheger, G.; Rödl, R. (2008):

Physical activity levels after limb salvage surgery are not related to clinical scores—objective activity assessment in 22 patients after malignant bone tumor treatment with modular prostheses.

In: *Journal of surgical oncology* 98 (2), S. 97–100.

Abstract:

BACKGROUND:

The aim of the present study was to objectively assess the physical activity levels of patients after tumor prosthesis implantation with two objective measurement devices.

METHODS:

The DynaPort ADL monitor permitted up to 24 hr monitoring of lower-extremity physical activities in daily life with respect to posture and locomotion. The step activity monitor (SAM) was worn for a whole week to collect the daily number of gait cycles. The devices were worn during the waking hours by 22 patients with knee prostheses after wide tumor resection.

RESULTS:

In the MSTS and TESS scores the patients achieved over 80% of the maximum score indicating a good clinical outcome. The most prominent activity was sitting which accounted for 54 +/- 18% of the recorded time, followed by standing (27 +/- 16%), locomotion (10 +/- 6%), and lying (8 +/- 6%). During locomotion, the average walking activity accumulated to 4,786 +/- 1,770 step cycles per day (range 2,045-8,135) corresponding to a yearly 1.75 million steps. There was no significant correlation between clinical scores and step count measures.

CONCLUSIONS:

Even though this activity level was lower than for a group of healthy adults it was comparable to the activity level for other patients, for example, with hip arthroplasty as reported in the literature.

Rosenkranz, Richard R.; Welk, Gregory J.; Hastmann, Tanis J.; Dzewaltowski, David A. (2011):

Psychosocial and demographic correlates of objectively measured physical activity in structured and unstructured after-school recreation sessions.

In: *Journal of Science and Medicine in Sport* 14 (4), S. 306–311. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-12851-009&site=ehost-live;r.rosenkranz@uws.edu.au.

Abstract:

Most studies of psychosocial and demographic correlates of physical activity (PA) have examined relationships across various types of physical and social environments, rather than within a specific environmental behavior setting. The objective of this study was to investigate correlates of PA in structured and unstructured after-school recreation sessions. This study is cross-sectional. School records, questionnaires, and anthropometry were used to obtain demographic and psychosocial variables. Third and fourth-grade children (n=230) from seven schools wore Actigraph GT1M accelerometers up to six times per year during after-school programming. Accelerometer data were processed to determine percentage of time in moderate-to-vigorous PA (T scores, reflective of an individual child's PA level relative to group mean, were computed for each session and averaged across sessions). Pearson correlations, point-biserial correlations, and mixed-model analyses were used to determine significant associations with PA for each session type (structured and unstructured). For structured sessions, gender, PA barriers self-efficacy, and PA enjoyment were significantly related to PA. For unstructured sessions, only gender was related to PA. Despite equivalent opportunities to participate in active recreation, boys were more active than girls, and children varied in PA

level partly due to psychosocial factors. Our results showed that PA self-efficacy and enjoyment explained variability in structured PA sessions. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Rossi, Maria C. E.; Nicolucci, Antonio; Pellegrini, Fabio; Bruttomesso, Daniela; Di Bartolo, Paolo; Marelli, Giuseppe et al. (2009):

Interactive diary for diabetes: A useful and easy-to-use new telemedicine system to support the decision-making process in type 1 diabetes.

In: *Diabetes technology & therapeutics* 11 (1), S. 19–24. DOI: 10.1089/dia.2008.0020.

Abstract:

BACKGROUND\r\nWidespread use of carbohydrate (CHO) counting is limited by its complex educational needs, but a telemedicine system could simplify the patients' training.\r\nMETHODS\r\nThe Diabetes Interactive Diary (DID) was set up on patients' mobile phones and allowed to record the blood glucose values and quantify the total CHO intake during a meal, by choosing the specific food and the amount ingested from a list of pictures. It also suggested the most appropriate insulin bolus in relation to the patient's CHO/insulin ratio. Data were sent to the physician by Short Message Service (also known as text message). Two pilot studies were carried out to investigate the feasibility and acceptability of the system and its effectiveness in improving metabolic control.\r\nRESULTS\r\nIn the first study, 50 patients were involved in a survey with questionnaires administered before and 12 weeks after the start of the DID. The system was considered by almost all the patients as easy to use and very helpful. CHO counting and insulin bolus calculation were ranked as the most useful functions. In the second study, 41 consecutive patients using DID under routine clinical practice conditions were evaluated after a median of 9 months of follow-up. DID was associated with a nonstatistically significant reduction in fasting blood glucose (FBG), postprandial glucose (PPG), and hemoglobin A1c levels. FBG and PPG coefficient of variation (CV) values were significantly reduced: FBG-CV decreased by 6.7% (95% confidence interval -11.9, -1.6; P = 0.02), while PPG-CV decreased by 11.5% (95% confidence interval -19.3, -3.7; P = 0.01). No patients reported serious hypoglycemic episodes requiring medical intervention.\r\nCONCLUSIONS\r\nDID can represent a useful, safe, and easy-to-use tool to help the patient with type 1 diabetes promote dietary freedom. Adjustment of insulin doses according to CHO intake allowed the reduction of glucose variability, increasingly recognized as an important, independent risk factor for cardiovascular events.

Rotariu, C.; Costin, H. (2013):

Remote respiration monitoring system for sleep apnea detection.

In: *Rev Med Chir Soc Med Nat Iasi* 117 (1), S. 268–274.

Abstract:

Sleep is a dynamic physiological process, its primary function being the restoration of the central nervous system. Because sleep disorders affect a significant part of the population the dynamic long term monitoring of human respiration plays a very important role in diagnosis and treatment. MATERIAL AND METHODS: We describe a remote monitoring system designed for in-hospital or at-home detection with a high degree of accuracy of sleep-related disorders in patients experiencing episodes of obstructive sleep apnea. Patient's respiratory rate is continuously measured by using wireless devices and then transfered to a central monitoring station via a wireless sensor network. The central monitoring station runs a respiration monitoring application that receives the patient's respiratory rate from the network and activates an alert upon detection of a sleep apnea episode. RESULTS: A user-friendly graphical user interface was designed for the respiration monitoring application that displays patient's respiratory rates and sleep apnea alerts. A prototype of the system has been developed, implemented and tested. CONCLUSIONS: The described system allows persons with respiratory diseases or elderly to be monitored at their homes, as an alternative to medical supervision in hospitals.

Rotenberg, Sivan; McGrath, Jennifer J. (2014):

Sampling compliance for cortisol upon awakening in children and adolescents.

In: *Psychoneuroendocrinology* 40, S. 69–75. DOI: 10.1016/j.psyneuen.2013.10.002.

Abstract:

Compliance with awakening salivary sampling is important for precise measurement of the diurnal cortisol profile. During childhood and adolescence, developmental factors influence sampling upon awakening (awake0) due to school routine, sleep/wake patterns, and age related cortisol changes. In the present study, children and adolescents' sampling compliance of awakening cortisol was evaluated using accelerometry. Children and adolescents (N=201; 45.3% female; 8-18 years; Mage=12.68

years, SD=2.03) participating in the Healthy Heart Project collected saliva samples, wore a tri-axle accelerometer, and completed demographic questionnaires. Intra-class correlations derived to examine awake0 sampling compliance indicated children and adolescents were highly compliant (ICC=.98). In children, a delay in awake0 sampling was associated with a steeper diurnal slope (beta=-.23, p=.037) and greater awake0 cortisol (beta=.24, p=.024); this was not observed in adolescents. In summary, children and adolescents are compliant with awakening salivary sampling. Sampling delay, particularly in children, and time of awakening influenced measures of the diurnal cortisol profile. These findings inform future studies assessing the diurnal cortisol profile in children and adolescents.

Roth, M. A.; Mindell, J. S. (2012):

Who provides accelerometry data? Correlates of adherence to wearing an accelerometry motion sensor: the 2008 Health Survey for England.

In: *J.Phys.Act.Health* (1543-3080 (Linking)). Online verfügbar unter PM:22398686.

Abstract:

BACKGROUND: Use of objective physical activity measures is rising. We investigated the representativeness of survey participants who wore an accelerometer. METHODS: 4,273 adults aged 16+ from a cross-sectional survey of a random, nationally-representative general population sample in England in 2008 were categorised as: provided sufficient accelerometry data (4-7 valid days (10+ hrs/d), n=1,724); less than that (n=237); or declined (n=302). Multinomial logistic regression identified demographic, socio-economic, health, lifestyle, and biological correlates of participants in these latter two groups, compared with those who provided sufficient accelerometry data (4+ valid days). RESULTS: Those in the random sub-sample offered the accelerometer were older and more likely to be retired and to report having a longstanding limiting illness than the rest of the adult HSE participants. Compared with those providing sufficient accelerometery data, those wearing the accelerometer less were younger, less likely to be in paid employment, and more likely to be a current smoker. Those who declined to wear an accelerometer did not differ significantly from those who wore it for sufficient time. CONCLUSIONS: We found response bias in wearing the accelerometers for sufficient time, but refusers did not differ from those providing sufficient data. Differences should be acknowledged by data users

Roth, Walter R.; Vilardaga, Roger; Wolfe, Nathanael; Bricker, Jonathan B.; McDonell, Michael G. (2014):

Practical considerations in the design and development of smartphone apps for behavior change.

In: *J Contextual Behav Sci* 3 (4), S. 269–272. DOI: 10.1016/j.jcbs.2014.08.006.

Abstract:

The fast adoption of smartphone applications (apps) by behavioral scientists pose a new host of opportunities as well as knowledge and interdisciplinary challenges. Therefore, this brief report will discuss the lessons we have learned during the development and testing of smartphone apps for behavior change, and provide the reader with guidance and recommendations about this design and development process. We hope that the guidance and perspectives presented in this brief report will empower behavioral scientists to test the efficacy of smartphone apps for behavior change, further advance the contextual behavioral etiology of behavioral disorders and help move the field towards personalized behavior change technologies.

Rothney, Megan P.; Apker, Gregory A.; Song, Yanna; Chen, Kong Y. (2008):

Comparing the performance of three generations of ActiGraph accelerometers.

In: *Journal of applied physiology (Bethesda, Md. : 1985)* 105 (4), S. 1091–1097. DOI: 10.1152/japplphysiol.90641.2008.

Abstract:

ActiGraph accelerometers are a useful tool for objective assessment of physical activity in clinical and epidemiological studies. Several generations of ActiGraph are being used; however, little work has been done to verify that measurements are consistent across generations. This study employed mechanical oscillations to characterize the dynamic response and intermonitor variability of three generations of ActiGraph monitors, from the oldest 7164 (n = 13), 71256 (n = 12), to the newest GT1M (n = 12). The response due to independent radius (22.1-60.4 mm) and frequency (25-250 rpm) changes were measured, as well as intermonitor variability within each generation. The 7164 and 71256 have similar relationships between activity counts and radius (P = 0.229) but were significantly different from the GT1M (P < 0.001). The frequency responses were nonlinear in all three

generations. Although the response curve shapes were similar, the differences between generations at various frequencies were significant ($P < 0.017$), especially in the extremes of the measurement range. Intermonitor variability was markedly reduced in the GT1M compared with the 7164 and 71256. Other measurement differences between generations include decreased peak counts and decreased sensitivity in low-frequency detection in the GT1M. The results of this study revealed an improvement of the intermonitor variability by the GT1M monitor. However, the reduced sensitivity in low-count ranges in the GT1M may not be well suited for monitoring sedentary or light-intensity movements. Furthermore, the algorithms for energy expenditure predictions developed using older 7164 monitors may need to be modified for the GT1M.

Rouhani, Hossein; Favre, Julien; Crevoisier, Xavier; Aminian, Kamiar (2010):

Ambulatory assessment of 3D ground reaction force using plantar pressure distribution.

In: *Gait Posture* 32 (3), S. 311–316.

Abstract:

This study aimed to use the plantar pressure insole for estimating the three-dimensional ground reaction force (GRF) as well as the frictional torque (T(F)) during walking. Eleven subjects, six healthy and five patients with ankle disease participated in the study while wearing pressure insoles during several walking trials on a force-plate. The plantar pressure distribution was analyzed and 10 principal components of 24 regional pressure values with the stance time percentage (STP) were considered for GRF and T(F) estimation. Both linear and non-linear approximators were used for estimating the GRF and T(F) based on two learning strategies using intra-subject and inter-subjects data. The RMS error and the correlation coefficient between the approximators and the actual patterns obtained from force-plate were calculated. Our results showed better performance for non-linear approximation especially when the STP was considered as input. The least errors were observed for vertical force (4%) and anterior-posterior force (7.3%), while the medial-lateral force (11.3%) and frictional torque (14.7%) had higher errors. The result obtained for the patients showed higher error; nevertheless, when the data of the same patient were used for learning, the results were improved and in general slight differences with healthy subjects were observed. In conclusion, this study showed that ambulatory pressure insole with data normalization, an optimal choice of inputs and a well-trained nonlinear mapping function can estimate efficiently the three-dimensional ground reaction force and frictional torque in consecutive gait cycle without requiring a force-plate.

Rovine, Michael J.; Lo, Lawrence L. (2012):

Foundational issues in intraindividual longitudinal analysis. In: Brett Laursen, Todd D. Little und Noel A. Card (Hg.): Handbook of developmental research methods.

New York, NY US: Guilford Press, S. 313–332. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-07988-019%26site%3dehost-live.

Abstract:

(from the chapter) Single-subject and person-specific approaches to the modeling of developmental processes are becoming more central in the description of complex and time-varying processes. The availability of time series data (intensive data collected on each individual) through diaries, personal data assistants, and "smartphone" devices through measures of physiological characteristics (EKG, fMRI, heart rate, blood pressure, etc.); and by other means have brought time series approaches into the domain of the developmental sciences (Molenaar, 1994). Time series approaches, including Box-Jenkins type autoregressive integrated moving average (ARIMA) models (Box & Jenkins, 1970), multivariate vector autoregressive models (Luktepohl, 2005), P-technique factor models and dynamic factor models (Molenaar, 1985; Wood & Brown, 1994), and state-space models (Molenaar, 1994), among others, have been appearing more often in the developmental literature. Both time domain (Box & Jenkins, 1970) and frequency domain (Jenkins & Watts, 1968) approaches developed for engineering, econometric, and medical applications are now becoming important tools in the social sciences. As with the switch to any new set of methods, a certain amount of reluctance and misunderstanding exists. In this chapter we wish to discuss issues involved in these important approaches. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Rowan, Paul J.; Cofta-Woerpel, Ludmila; Mazas, Carlos A.; Vidrine, Jennifer Irvin; Reitzel, Lorraine R.; Cinciripini, Paul M.; Wetter, David W. (2007):

Evaluating reactivity to ecological momentary assessment during smoking cessation.

In: *Experimental and Clinical Psychopharmacology* 15 (4), S. 382.

Abstract:

Ecological momentary assessment (EMA) consists of assessing phenomena in real time in the natural environment. EMA allows for more fine-grained analyses of addictive behavior and minimizes threats to internal validity, such as recall biases and errors. However, because of the intensive monitoring involved in EMA, measurement reactivity is a concern. To test whether EMA with palmtop personal computers induces reactivity, the authors compared smoking-related outcomes between smokers using EMA and those not using EMA during a quit attempt. The use of no-EMA control groups has been rare in reactivity investigations to date. The EMA protocol included event-contingent assessments (smoking episodes, urge episodes) and random assessments. Outcomes included biologically confirmed abstinence and self-report measures of withdrawal, self-efficacy, motivation, affect, and temptations. Participants were smokers motivated to quit (N = 96). They were randomized to 1 of 3 groups: EMA for the week preceding a planned quit date, EMA for the week following the quit date, and no EMA. Abstinence rates did not differ between the groups at Day 7 or at Day 28 postcessation. For the 20 subscales assessed at each of 3 assessment times, there were significant differences between participants with and without EMA experience for 3 subscales at the 1st of 3 assessment times, and significant differences for 3 different subscales at the 3rd assessment time. These differences suggest some reactivity to EMA, although the inconsistent pattern across time indicates that further research is needed to definitively conclude that EMA induces reactivity.

Rowlands, Alex V.; Fraysse, Francois; Catt, Mike; Stiles, Victoria H.; Stanley, Rebecca M.; Eston, Roger G.; Olds, Tim S. (2014):

Comparability of Measured Acceleration from Accelerometry-Based Activity Monitors.

In: *Med Sci Sports Exerc. DOI:* 10.1249/MSS.0000000000000394.

Abstract:

BACKGROUND: Accelerometers that provide triaxial measured acceleration data are now available. However, equivalence of output between brands cannot be assumed and testing is necessary to determine whether features of the acceleration signal are interchangeable. PURPOSE: To establish the equivalence of output between two brands of monitor in a laboratory and in a free-living environment. METHODS: Part 1: Thirty-eight adults performed nine laboratory-based activities while wearing an ActiGraph GT3X+ and GENEActiv at the hip. Part 2: Fifty-eight 10-12 y old children wore a GT3X+ and GENEActiv at the hip for seven days in a free-living setting. RESULTS: Part 1: The magnitude of time-domain features from the GENEActiv was greater than from the GT3X+. However, frequency domain features compared well, with perfect agreement of the dominant frequency for 97-100% of participants for most activities. Part 2: Mean daily acceleration measured by the two brands was correlated ($r=0.93$, $p<0.001$, respectively), but the magnitude was ~15% lower for the GT3X+ than the GENEActiv at the hip. CONCLUSION: Frequency-domain-based classification algorithms should be transferable between monitors and it should be possible to apply time-domain-based classification algorithms developed for one device to the other, by applying an affine conversion on the measured acceleration values. The strong relationship between accelerations measured by the two brands suggests habitual activity level and activity patterns assessed by the GENE and GT3X+ may compare well if analysed appropriately.

Rowlands, Ann V.; Pilgrim, Emma L.; Eston, Roger G. (2008):

Patterns of habitual activity across weekdays and weekend days in 9–11-year-old children.

In: *Prev Med* 46 (4), S. 317–324.

Abstract:

OBJECTIVE:

To characterize the pattern of activity in boys and girls across weekdays and weekend days.

METHODS:

Physical activity was recorded every 2 s by uniaxial accelerometry in 84 children, aged 9-11 years, for up to four weekdays and two weekend days. Activity bouts (>or= 4 s and >or= 5 min) greater than light (>or= LIGHT), moderate (>or= MOD) and vigorous (>or= VIG) intensity were recorded. The study took place in the South-West of England in 2007.

RESULTS:

The mean duration of activity bouts decreased as intensity increased from 11.0+/-1.3 s for >or= LIGHT activity to 6.1+/-1.0 s for >or= VIG activity. The frequency, duration and intensity of bouts were greater in boys than girls, and the frequency and duration of bouts were greater on weekdays than weekend days. Girls accumulated more activity sporadically than boys, whereas boys accumulated more activity in >or= 5-min bouts.

CONCLUSION:

Sex differences and weekday/weekend differences in activity were largely due to the intensity of the most frequent bouts of activity and frequency of the most intense bouts. Information regarding the pattern of children's habitual activity can be used to inform activity interventions and assess the aspects of the activity pattern that are related to health.

Rozenblyum, Evelyn V.; Mistry, Niraj; Cellucci, Tania; Martimianakis, Tina; Laxer, Ronald M. (2014):

A144: Resident's Guide to Rheumatology Guide Mobile Application: An International Needs Assessment.

In: *Arthritis Rheumatol* 66 Suppl 11, S. S187. DOI: 10.1002/art.38565.

Abstract:

BACKGROUND/PURPOSE: "A Resident's Guide To Pediatric Rheumatology" (the Guide) is a widely accepted resource for pediatric rheumatologists and trainees. In preliminary assessments, uptake of the Guide was broader than intended and it was used by trainees to help with clinical decision-making, learning and teaching. Users of the Guide suggested that it be developed into a mobile application (app) The Technology Acceptance Model (TAM) provides a framework to assess the perceived usefulness and ease of use of a tool to predict future acceptance and use. OBJECTIVES: To determine the International demand amongst pediatric professionals and current trainees for a mobile app format of the Guide. To determine user preferred features, functions, and format to be included in a mobile app using the TAM. METHODS: An electronic survey was developed and distributed to pediatric residents at SickKids hospital and to both faculty and trainee members of the international Pediatric Rheumatology list server. The survey included respondent demographics, perceived usefulness, perceived ease of use, and behavioural intention to use the app based on the TAM. Data were analyzed using descriptive statistics. RESULTS: The survey was distributed to 75 pediatric residents and 1132 members of the Pediatric Rheumatology listserver and 135 (12% response rate) completed the survey. The majority of respondents were rheumatologists (53%), while the remainder consisted of Fellows (17%), Pediatric Residents (16%), and other allied health professionals (5%). 93% owned a smartphone and 58% owned a tablet. Most had medically related apps (75%) compared to e-books (38%), but had similar use for each-Mone to several times per week for 1-15 minutes each time on average. The most useful features of an app would be clinical pictures (e.g. skin rashes), radiology images (e.g. joint x-rays), and definitions of key terms. Least useful features were games and multiple-choice questions. Additional features included a searchable index and links to journal articles. Looking at the TAM, the vast majority of respondents thought that the mobile app would enhance trainees' learning and teaching effectiveness. Greater than 80% of respondents consistently supported its perceived ease of use. 55% stated that they were likely to use the app often. 86% felt it was important for the app to be developed. If the app was not available for free, a majority (43%) of respondents were willing to pay for the app with a most willing to pay up to $5.00, and 10% willing to pay up to $10 for access to the app. CONCLUSION: Development of the Guide app was well supported with adding features such as clinical photographs, radiology images, definitions and searchable index. TAM showed the intention to use the app in the future will be most determined by the perceived ease of use which was consistently high in the survey. Interestingly, users were willing to pay for the app if it was not free. Future steps include a qualitative study ultilizing focus groups to assess the perceived functionality, usability, facilitators and barriers in using the Guide app prototype to create the most targeted, user friendly app.

Rozov-Ung, Inna; Mreyoud, Amjad; Moore, John; Wilding, Gregory E.; Khawam, Elias; Lackner, Jeffrey M. et al. (2014):

Detection of drug effects on gastric emptying and contractility using a wireless motility capsule.

In: *BMC Gastroenterol* 14, S. 2. DOI: 10.1186/1471-230X-14-2.

Abstract:

BACKGROUND: A wireless motility capsule is a new method for ambulatory assessment of transit times and motility throughout the gastrointestinal tract. The objective of this study was to evaluate the ability of a wireless motility capsule to detect drug effects on gastric emptying time (GET) and gastric contractility. METHODS: 15 healthy adults were administered in random order saline, erythromycin IV 150 mg, or morphine IV 0.05 mg/kg BW. Subjects ate a standard meal after each infusion, and subsequently ingested the motility capsule. Data were recorded for 8 hours, and the results were analyzed using the manufacturer's software. RESULTS: GET was significantly faster after erythromycin than either saline or morphine. Morphine tended to delay emptying of the capsule compared to saline. There was a trend toward a greater frequency of gastric contractions with erythromycin and a reduced frequency of gastric contractions with morphine that did not reach statistical significance. CONCLUSIONS: A wireless motility capsule successfully detected acceleration of gastric emptying induced by erythromycin, and retardation of gastric motility caused by morphine. These results indicate that a wireless motility capsule is a promising technique to assess pharmacologic effects on gastric transit and contractility and aid in development of drugs for gastric motor disorders.

Rubin, Daniela A.; Wilson, Kathleen S.; Wiersma, Lenny D.; Weiss, Jie W.; Rose, Debra J. (2014):

Rationale and design of active play @ home: a parent-led physical activity program for children with and without disability.

In: *BMC Pediatr* 14, S. 41. DOI: 10.1186/1471-2431-14-41.

Abstract:

BACKGROUND: Compared to other children, those with disability have additional challenges to being physically active. Prader-Willi Syndrome is a genetic form of childhood obesity that is characterized by hypotonia, growth hormone deficiency, behavioral, and cognitive disability. In children, the low prevalence of this syndrome (1 in 10,000 to 15,000 live births) makes group-based physical activity interventions difficult. In contrast, the home environment presents a natural venue to establish a physical activity routine for this population. This manuscript describes the design of a parent-led physical activity intervention incorporating playground and interactive console-based games to increase physical activity participation in youth with and without Prader-Willi Syndrome. METHODS/DESIGN: The study participants will be 115 youth ages 8-15 y (45 with the syndrome and 70 without the syndrome but categorized as obese). The study will use a parallel design with the control group receiving the intervention after serving as control. Participants will be expected to complete a physical activity curriculum 4 days a week for 6 months including playground games 2 days a week and interactive console games 2 days a week. Parents will be trained at baseline and then provided with a curriculum and equipment to guide their implementation of the program. Tips related to scheduling and coping with barriers to daily program implementation will be provided. Throughout, parents will be contacted by phone once a week (weeks 1-4) and then every other week to receive support in between visits. Measurements of children and parents will be obtained at baseline, 12 weeks, and at the end (week 24) of the intervention. Children main outcomes include physical activity (accelerometry), body composition (dual x-ray absorptiometry), motor proficiency (Bruininks-Oseretsky Test of Motor Proficiency), quality of life and physical activity self-efficacy (questionnaires). Intervention compliance will be monitored using mail-in daily self-report checklists. DISCUSSION: This parent-guided physical activity intervention aims to increase physical activity by using a curriculum that builds physical activity related self-confidence through the development and/or enhancement of motor skill competency. Ultimately, helping children develop these skills as well as joy in being physically active will translate into sustained behavior change. TRIAL REGISTRATION: Current Controlled Trial: NCT02058342.

Ruiz, Pedro J. Garcia; Bernardos, Vicenta Sanchez (2008):

Evaluation of ActiTrac®(ambulatory activity monitor) in Parkinson's Disease.

In: *J Neurol Sci* 270 (1), S. 67–69.

Abstract:

At present, the evaluation of Parkinson's Disease (PD) relies mainly on Unified Parkinson's Disease Rating Scale (UPDRS). Other objective measures have been proposed, including functional studies, timed tests and ambulatory activity monitors (AAM). We carried out a prospective study to analyze the utility and correlation of the AAM: ActiTrac with UPDRS scores and timed tests in patients with PD. We studied 28 patients with idiopathic PD (age: 62 +/- 11 years; duration of illness: 7.7 +/- 4.4 years; clinical stage 2.3 +/- 0.39). Motor evaluation included UPDRS and five timed tests: Purdue Pegboard test and those proposed in CAPIT protocol, pronation-supination (PS), finger dexterity (FD), movement between two points (MTP) and walking test (WT). Clinical evaluation was performed in off condition, at 9 a.m., (12h off their medication). Finally, ActiTrac was placed on the wrist (more affected side) continuously for at least 72h. ActiTrac activity was correlated (Spearman) with total UPDRS (r: - 0.53, p < 0.005) and motor UPDRS (r:- 0.46, p: 0.01); UPDRS rigidity subscore (r:- 0.52, p < 0.01); UPDRS bradykinesia subscore (r:- 0.48; p:0.01); FD (r: - 0.47 p: 0.01), WT (r: - 0.49, p < 0.01) and Purdue test (r:0.54; p < 0.01). ActiTrac seems to be a reasonably accurate method to evaluate motor activity in PD.

Ruiz, Jonatan R.; Labayen, Idoia; Ortega, Francisco B.; Moreno, Luis A.; Rodriguez, Gerardo; Breidenassel, Christina et al. (2014):

Physical activity, sedentary time, and liver enzymes in adolescents: the HELENA study.

In: *Pediatr Res. DOI:* 10.1038/pr.2014.26.

Abstract:

Background:To examine the association between physical activity (PA) and liver enzyme levels in adolescents from nine European countries.Methods:The study comprised 718 adolescents (397 girls). PA was measured by accelerometry and expressed as total PA (counts/min), and time (min/d) engaged in moderate to vigorous intensity PA (MVPA). Time spent sedentary was also objectively measured. We measured serum levels of alanine aspartate aminostrasferase (AST), alanine aminostransferase (ALT), and gamma-glutamyltrasnferase (GGT), and the AST/ALT ratio was computed.Results:There was an association between MVPA and AST and AST/ALT (age, sex, and center-adjusted beta = 0.096, 95% confidence interval (CI):

0.016 to 0.118; and beta = 0.090, 95% CI: 0.006 to 0.112, respectively). Meeting the PA recommendations (60 min/d of MVPA) was significantly associated with higher AST and AST/ALT, which persisted after further adjusting for sedentary time and waist circumference. Sedentary time was not associated with any of the studied liver enzyme levels.Conclusion:Meeting the current PA recommendations of 60 min/d of MVPA is associated with higher levels of AST and AST/ALT regardless of time spent sedentary as well as total and central body fat in European adolescents.Pediatric Research (2014); doi:10.1038/pr.2014.26.

Ruiz, Jonatan R.; Rizzo, Nico S.; Hurtig-Wennlöf, Anita; Ortega, Francisco B.; Wärnberg, Julia; Sjöström, Michael (2006):

Relations of total physical activity and intensity to fitness and fatness in children: the European Youth Heart Study.

In: *Am J Clin Nutr* 84 (2), S. 299–303.

Abstract:

BACKGROUND:

It is unclear how the amount and intensity of physical activity (PA) are associated with cardiovascular fitness (CVF) and body fatness in children.

OBJECTIVE:

We aimed to examine the associations of total PA and intensity levels to CVF and fatness in children.

DESIGN:

A cross-sectional study of 780 children aged 9-10 y from Sweden and Estonia was conducted. PA was measured by accelerometry and was expressed as min/d of total PA, moderate PA, and vigorous PA. CVF was measured with a maximal ergometer bike test and was expressed as W/kg. Body fat was derived from the sum of 5 skinfold-thickness measurements. Multiple regression analysis was used to determine the degree to which variance in CVF and body fat was explained by PA, after control for age, sex, and study location.

RESULTS:

Lower body fat was significantly associated with higher levels of vigorous PA, but not with moderate or total PA. Those children who engaged in >40 min vigorous PA/d had lower body fat than did those who engaged in 10-18 min vigorous PA/d. Total PA, moderate PA, and vigorous PA were positively associated with CVF. Those children who engaged in >40 min vigorous PA/d had higher CVF than did those who accumulated <18 min vigorous PA/d.

CONCLUSIONS:

The results suggest that PA of vigorous intensity may have a greater effect on preventing obesity in children than does PA of lower intensity, whereas both total and at least moderate to vigorous PA may improve children's CVF.

Ruiz-Fernandez, Daniel; Marin-Alonso, Oscar; Soriano-Paya, Antonio; Garcia-Perez, Joaquin D. (2014):

eFisioTrack: a telerehabilitation environment based on motion recognition using accelerometry.

In: *ScientificWorldJournal* 2014, S. 495391. DOI: 10.1155/2014/495391.

Abstract:

The growing demand for physical rehabilitation processes can result in the rising of costs and waiting lists, becoming a threat to healthcare services' sustainability. Telerehabilitation solutions can help in this issue by discharging patients from points of care while improving their adherence to treatment. Sensing devices are used to collect data so that the physiotherapists can monitor and evaluate the patients' activity in the scheduled sessions. This paper presents a software platform that aims to meet the needs of the rehabilitation experts and the patients along a physical rehabilitation plan, allowing its use in outpatient scenarios. It is meant to be low-cost and easy-to-use, improving patients and experts experience. We show the satisfactory results already obtained from its use, in terms of the accuracy evaluating the exercises, and the degree of users' acceptance. We conclude that this platform is suitable and technically feasible to carry out rehabilitation plans outside the point of care.

Rullier, Laetitia; Atzeni, Thierry; Husky, Mathilde; Bouisson, Jean; Dartigues, Jean-Francois; Swendsen, Joel; Bergua, Valerie (2013):

Daily life functioning of community-dwelling elderly couples: an investigation of the feasibility and validity of Ecological Momentary Assessment.

In: *Int J Methods Psychiatr Res. DOI:* 10.1002/mpr.1425.

Abstract:

Although ambulatory data collection techniques have been used in elderly populations, their feasibility and validity amongst elderly individuals with cognitive impairment and amongst couples remains unexplored. The main objective of this study is to examine the validity of Ecological Momentary Assessment (EMA) in elderly persons with or without cognitive impairment and their spouses. The sample included 58 retired farmers (mean 77.3 years, standard deviation [SD] 5.5) with or without cognitive impairment, recruited within a French cohort and 60 spouses (mean 73.4 years, SD 6.9). The presence of cognitive impairment determining by a panel of specialized neurologists permitted to define two groups: "The Cognitive Impairment Group" and "The Control Group". EMA procedures consisted of repeated telephone interviews five times per day during four days for each spouse. Our results demonstrate the validity of EMA procedures through a 92.1% level of compliance, the absence of fatigue effects, and the lack of evidence for major reactivity to the methods. However, the specificity of our sample may explain the acceptance (42%) and response (75%) rates and may reduce the generalizability of the results to the general population of elderly individuals. Finally, the validation of such techniques may contribute to future research examining community-dwelling elderly individuals and their spouses. Copyright (c) 2013 John Wiley & Sons, Ltd.

Rump, Keiran May (2012):

Affective experiences in adolescents with autism: An EMA study.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 72 (11-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99100-030&site=ehost-live.

Abstract:

Clinical consensus and a limited number of empirical studies indicate that the understanding, awareness, and expression of personal emotional experiences are atypical in individuals with autism; however, the exact nature and magnitude of the atypicality is unclear. The purpose of the current study was to gain a better understanding of how individuals with autism understand and describe their own emotional experiences. This study measured affective awareness and understanding in both the laboratory setting, and in the individual's natural environment using ecological momentary assessment. Nineteen individuals with autism (11-17 years old) and 19 typically developing controls, matched on age and IQ, completed an in-lab task asking them to describe causes of their emotions in addition to self-report measures of depression, anxiety, social skills, and alexithymia. Their parents completed corresponding parent-report forms. Following the lab visit, participants were contacted via cell phone for 14 consecutive days and were asked to rate a subset of emotions from the PANAS-C. Corresponding parent reports were collected for a random subset of these days. Results indicated that on the lab-based measure, the individuals with autism, in contrast to controls, had significantly more difficulty describing appropriate causal contexts for their self-conscious emotions. When reporting on their daily levels of affect, the individuals with autism, in contrast to controls, reported higher intensity negative affect and more lability in positive and negative affect. In comparison to parent report, there was some suggestion that the individuals with autism, but not controls, were underreporting the intensity of their negative affect. For both groups, intensity and lability of negative affect were related to self-reported depression symptoms, but not to parent reports of child depression or self- or parent-reported anxiety symptoms. In addition, no measures of affective awareness and understanding were related to child or parent reported social skills. The current findings suggest that in adolescence, the manner in which individuals with autism understand, experience, and report on their emotional experiences differs from their typically developing peers in subtle yet notable ways. Potential mechanisms underlying these differences are discussed, and a number of future directions are suggested. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Runyan, J. D.; Steenbergh, T. A.; Bainbridge, C.; Daugherty, D. A.; Oke, L.; Fry, B. N. (2013):

A smartphone ecological momentary assessment/intervention "app" for collecting real-time data and promoting self-awareness.

In: *PLoS One* 8 (8), S. e71325. DOI: 10.1371/journal.pone.0071325.

Abstract:

We have designed a flexible ecological momentary assessment/intervention smartphone (EMA/EMI) "app". We examine the utility of this app for collecting real-time data, and assessing intra-subject variability, by using it to assess how freshman undergraduates spend their time. We also explore whether its use can promote greater self-awareness. Participants were

randomly divided into an experimental group, who used the app, and a control group, who did not. We used the app to collect both randomized in-the-moment data as well as end-of-day data to assess time use. Using a posttest survey we asked participants questions about how they spent time throughout the school semester. We also asked the experimental group about their experience with the app. Among other findings, 80.49% participants indicated that they became more aware of how they spent their time using the app. Corroborating this report, among the experimental group, end-of-semester self-assessment of time spent wasted, and time spent using electronics recreationally, predicted semester GPA at a strength comparable to high school GPA and ACT score (two of the best single predictors for first semester college GPA), but had no correlation among controls. We discuss the advantages and limitations of using apps, such as ours, for EMA and/or EMI

Rusby, J. C.; Westling, E.; Crowley, R.; Light, J. M. (2012):

Concurrent and Predictive Associations Between Early Adolescent Perceptions of Peer Affiliates and Mood States Collected in Real Time via Ecological Momentary Assessment Methodology.

In: *Psychol.Assess.* (1040-3590 (Linking)). DOI: 10.1037/a0030393.

Abstract:

This study uses ecological momentary assessment (EMA) to simultaneously capture youths' perceptions of peer affiliates and social contexts to determine their association with youths' current and future mood states. A sample of 82 seventh grade students (36 at risk for developing or escalating rule breaking and substance use and 46 randomly selected) from 4 schools participated. Using EMA methodology, we had students report their peer affiliations, perceptions of peer affiliates, moods, activities, location, and behaviors during their free time. Data from 3 assessment waves were collected; each wave consisted of 27 randomly prompted assessments during a week. Youths spent a large portion of their free time watching television, on the computer, or playing video games. Being "out and about" increased over the school year, whereas adult supervision decreased, showing an increase in potentially risky situations. Happiness was associated with affiliating with peers who were perceived to be popular. Negative moods were associated with affiliating with peers by whom they were teased or treated meanly. Multilevel models found that both levels and lability of negative moods (i.e., sadness, anxiety) were predicted by risk status and affiliation with peers who tease them. Compared with boys, girls who affiliated more with peers who teased them and were classified as at risk had more extreme negative moods and negative mood lability. EMA methodology has demonstrated the ways in which salient intrapersonal and peer processes are associated over time, which can inform efforts to prevent the development and escalation of behavior problems, substance use, and mood disorders in adolescence. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Ruslami, R.; van Crevel, R.; van de Berge, E.; Alisjahbana, B.; Aarnoutse, R. E. (2008):

A step-wise approach to find a valid and feasible method to detect non-adherence to tuberculosis drugs.

Abstract:

A step-wise approach to identify valid and feasible methods to detect non-adherence to tuberculosis drugs was evaluated in a prospective study among pulmonary tuberculosis patients in an outpatient clinic in Indonesia. First, adherence was measured by self-reporting with the standardized Morisky questionnaire, physician assessment, pill-count, visit attendance, diary and an electronic medication event monitoring system (MEMS). Next, validity of single methods was assessed against MEMS as gold standard. Feasibility of methods was then judged by physicians in the field. Finally, when valid and feasible methods were combined, it appeared that self-reporting by a questionnaire plus physician assessment could identify all non-adherent patients. It is recommended to use a systematic approach to develop a valid and locally feasible combination of methods to detect non-adherence to TB drugs.

Rutledge, Thomas; Stucky, Erin; Dollarhide, Adrian; Shively, Martha; Jain, Sonia; Wolfson, Tanya et al. (2009):

A real-time assessment of work stress in physicians and nurses.

In: *Health Psychol* 28 (2), S. 194–200. DOI: 10.1037/a0013145.

Abstract:

OBJECTIVE\r\nThis study adapted ecological momentary assessment methods to: (a) examine differences in work stress between nurses and physicians, and (b) to study relationships between work stress, work activity patterns, and sleep.\r\nDESIGN\r\nA total of 185 physicians and 119 nurses (206 women, 98 men) working in four teaching hospitals participated in an observational study of work stress.\r\nMAIN OUTCOME MEASURES\r\nParticipants carried handheld computers that randomly prompted them for work activity, patient load, and work stress information.\r\nRESULTS\r\nParticipants completed more than 9,500 random interval surveys during the study (an average of 30.8 surveys per person-week). Approximately 85% of all surveys were completed in full (73.3%) or partially (11.6%). Emotional stress scores among physicians were nearly 50% higher (26.9[19.0]) than those of nurses (18.1[14.9], r[302] = .37, p < .001). Direct and indirect care activities were associated with higher stress reports by both clinician groups (rs[159] = .14-.26, ps < .01). Sleep quality and quantity were predictors of work stress scores (ps < .05). Finally, higher work stress and lower sleep quality were also associated with poorer memory performance (r[302] = -.12, .17, ps < 05).\r\nCONCLUSIONS\r\nThe findings identify patterns of work stress in relationship to work activities, sleep habits, and provider differences that may be used to assist ongoing hospital work reform efforts.

Ryan, Miriam; Livingstone, M. Barbara E.; Ducluzeau, Pierre-Henri; Sallé, Agnès; Genaitay, Manon; Ritz, Patrick (2008):

Is a failure to recognize an increase in food intake a key to understanding insulin-induced weight gain?

In: *Diabetes Care* 31 (3), S. 448–450.

Abstract:

The present study aimed to assess the contribution of energy intake to positive energy balance and weight gain with insulin therapy. Changes in energy intake (self-report and weighed food intake), dietary behavior (auto-questionnaires), resting energy expenditure (REE) (indirect calorimetry), physical activity (accelerometry), and glucosuria were monitored over the first 6 months of insulin therapy in 46 diabetic adults. No change in REE, activity, or glucosuria could explain weight gain in the type 1 (4.1 +/- 0.6 kg, P < 0.0001) or type 2 (1.8 +/- 0.8 kg, P = 0.02) diabetic groups. An increase in energy intake provides the most likely explanation for weight gain with insulin. However, it is not being recognized because of significant underestimation of self-reported food intake, which appears to be associated with increased dietary restraint.

Sabia, Severine; van Hees, Vincent T.; Shipley, Martin J.; Trenell, Michael I.; Hagger-Johnson, Gareth; Elbaz, Alexis et al. (2014):

Association between questionnaire- and accelerometer-assessed physical activity: the role of sociodemographic factors.

In: *Am J Epidemiol* 179 (6), S. 781–790. DOI: 10.1093/aje/kwt330.

Abstract:

The correlation between objective and self-reported measures of physical activity varies between studies. We examined this association and whether it differed by demographic factors or socioeconomic status (SES). Data were from 3,975 Whitehall II (United Kingdom, 2012-2013) participants aged 60-83 years, who completed a physical activity questionnaire and wore an accelerometer on their wrist for 9 days. There was a moderate correlation between questionnaire- and accelerometer-assessed physical activity (Spearman's r = 0.33, 95% confidence interval: 0.30, 0.36). The correlations were higher in high-SES groups than in low-SES groups (P 's = 0.02), as defined by education (r = 0.38 vs. r = 0.30) or occupational position (r = 0.37 vs. r = 0.29), but did not differ by age, sex, or marital status. Of the self-reported physical activity, 68.3% came from mild activities, 25% from moderate activities, and only 6.7% from vigorous activities, but their correlations with accelerometer-assessed total physical activity were comparable (range of r 's, 0.21-0.25). Self-reported physical activity from more energetic activities was more strongly associated with accelerometer data (for sports, r = 0.22; for gardening, r = 0.16; for housework, r = 0.09). High-SES persons reported more energetic activities, producing stronger accelerometer associations in these groups. Future studies should identify the aspects of physical activity that are most critical for health; this involves better understanding of the instruments being used.

Sacco, Paul; Smith, Cristan A.; Harrington, Donna; Svoboda, Deborah V.; Resnick, Barbara (2014):

Feasibility and Utility of Experience Sampling to Assess Alcohol Consumption Among Older Adults.

In: *J Appl Gerontol. DOI:* 10.1177/0733464813519009.

Abstract:

In the literature on alcohol use and aging, drinking has often been conceptualized as a means of coping with negative feelings, such as stress, yet much of the literature on older adults and drinking has utilized cross-sectional or other data ill-suited for exploring dynamic processes. Experience sampling methods have the ability to measure and analyze dynamic processes in real time, such as relations between alcohol use and mood states. Nonetheless, these approaches are intensive and may burden respondents. Therefore, this study evaluated the feasibility, acceptability, and validity of a modified daily diary to measure alcohol use and explored alternate methods of collecting diary data. Findings suggest that a modified diary was acceptable and not burdensome. Respondents were reluctant to consider technology (e.g., cellphone)-based means of data collection. Measures of alcohol use showed little within-person variation suggesting that for those who drink at all, drinking is a daily habit.

Saeedi, Sara; Moussa, Adel; El-Sheimy, Naser (2014):

Context-aware personal navigation using embedded sensor fusion in smartphones.

In: *Sensors (Basel)* 14 (4), S. 5742–5767. DOI: 10.3390/s140405742.

Abstract:

Context-awareness is an interesting topic in mobile navigation scenarios where the context of the application is highly dynamic. Using context-aware computing, navigation services consider the situation of user, not only in the design process, but in real time while the device is in use. The basic idea is that mobile navigation services can provide different services based on different contexts-where contexts are related to the user's activity and the device placement. Context-aware systems are concerned with the following challenges which are addressed in this paper: context acquisition, context understanding, and context-aware application adaptation. The proposed approach in this paper is using low-cost sensors in a multi-level fusion scheme to improve the accuracy and robustness of context-aware navigation system. The experimental results demonstrate the capabilities of the context-aware Personal Navigation Systems (PNS) for outdoor personal navigation using a smartphone.

Saeki, K.; Obayashi, K.; Iwamoto, J.; Tanaka, Y.; Tanaka, N.; Takata, S. et al. (2013):

Influence of room heating on ambulatory blood pressure in winter: a randomised controlled study.

In: *J Epidemiol.Community Health* (0143-005X (Linking)). DOI: 10.1136/jech-2012-201883.

Abstract:

BACKGROUND: Previous studies have proposed that higher blood pressure (BP) in winter is an important cause of increased mortality from cardiovascular disease during the winter. Some observational and physiological studies have shown that cold exposure increases BP, but evidence from a randomised controlled study assessing the effectiveness of intensive room heating for lowering BP was lacking. OBJECTIVES: The present study aimed to determine whether intensive room heating in winter decreases ambulatory BP as compared with weak room heating resulting in a 10 degrees C lower target room temperature when sufficient clothing and bedclothes are available. METHODS: We conducted a parallel group, assessor blinded, simple randomised controlled study with 1:1 allocation among 146 healthy participants in Japan from November 2009 to March 2010. Ambulatory BP was measured while the participants stayed in single experimental rooms from 21:00 to 8:00. During the session, participants could adjust the amount of clothing and bedclothes as required. Compared with the weak room heating group (mean temperature+/-SD: 13.9+/-3.3 degrees C), systolic morning BP (mean BP 2 h after getting out of bed) of the intensive room heating group (24.2+/-1.7 degrees C) was significantly lower by 5.8 mm Hg (95% CI 2.4 to 9.3). Sleep-trough morning BP surges (morning BP minus lowest night-time BP) in the intensive room heating group were significantly suppressed to about two thirds of the values in the weak room heating group (14.3 vs 21.9 mm Hg; $p<0.01$). CONCLUSIONS: Intensive room heating decreased morning BP and the morning BP surge in winter

Sagarra-Tio, Maria; Felez-Carrobe, Estel; Baiget, Montserrat; Felez, Jordi (2014):

Assessment of primary healthcare professionals' management of hypertensive patients with riser pattern.

In: *Eur J Cardiovasc Nurs. DOI:* 10.1177/1474515113518856.

Abstract:

Background:Ambulatory blood pressure monitoring (ABPM) was implemented in our primary care setting four years ago. Since then, 450 ABPMs have been performed and 69 riser subjects identified. The riser pattern is an independent risk factor for both incidence of cardiovascular events and their associated mortality.Objective:The purpose of this study was to assess the amount of control of essential hypertension (EH) among riser patients and to evaluate how our health professionals manage therapeutic changes in riser individuals.Materials and methodology:This retrospective study involved 34,289 inhabitants served in a centre in the Barcelona metropolitan area. EH individuals (450) were recruited and ABPM was performed following guidelines of the MAPAPRES (www.cardiorisc.com/MP/index_MP.asp).Results:Good control of blood pressure was observed in 46% of dipper and non-dipper subjects but only 35% of riser subjects had blood pressures within good control ranges. The measured cardiovascular risk was either high or very high in 35% of riser individuals. Changes in medication were introduced in riser patients with both good and poor blood pressure control. A second follow-up ABPM was done in only 27% of the riser individuals. In these subjects, therapeutic changes successfully modified ABPM patterns in 87% of cases.Conclusions:Therapeutic changes in riser patients were introduced when these subjects were poorly controlled and these changes were highly effective. Additional ABPM to confirm the effectiveness of therapeutic changes was only performed in some individuals. Thus, for management of riser patients, more specific training of health professionals is needed.

Sakai, M.; Okuyama, Y.; Wei, D. (2012):

Separation of EEG and ECG components based on wavelet shrinkage and variable cosine window.

In: *J.Med.Eng Technol.* 36 (2), S. 135–143. DOI: 10.3109/03091902.2011.645947.

Abstract:

During ambulatory monitoring, it is sometimes required to record an electroencephalogram (EEG) and an electrocardiogram (ECG) simultaneously. It would be ideal if both EEG and ECG could be obtained with one measurement. Here, we introduce an algorithm that combines the wavelet shrinkage and variable cosine window operation to separate the EEG and ECG components from an EEG signal recorded with a noncephalic reference (NCR). Evaluation using simulated data and actual measured data showed that accurate frequency analysis of EEG and an R-R detection-based heart rate analysis were feasible with our proposed algorithm, which improved the signal-averaging based algorithm so that ECG components containing ectopic beats can be applied

Sakai, Motoki; Wei, Daming (2009):

Separation of electrocardiographic and encephalographic components based on signal averaging and wavelet shrinkage techniques.

In: *Computers in biology and medicine* 39 (7), S. 620–629. DOI: 10.1016/j.compbiomed.2009.04.009.

Abstract:

During ambulatory monitoring, it is often required to record the electroencephalogram (EEG) and the electrocardiogram (ECG) simultaneously. It would be ideal if both EEG and ECG can be obtained with one measurement. We introduce an algorithm combining the wavelet shrinkage and signal averaging techniques to extract the EEG and ECG components from an EEG lead signal to a noncephalic reference (NCR). The evaluation using simulation data and measured data showed that the normalized power spectrum unvaried in all frequency bands for the EEG components, and the sensitivity and specificity of R-wave detection for the ECG component were nearly 100%.

Sakamoto, Noriyuki; Yoshiuchi, Kazuhiro; Kikuchi, Hiroe; Takimoto, Yoshiyuki; Kaiya, Hisanobu; Kumano, Hiroaki et al. (2008):

Panic disorder and locomotor activity.

In: *BioPsychoSocial Medicine* 2, S. 23.

Abstract:

Background

Panic disorder is one of the anxiety disorders, and anxiety is associated with some locomotor activity changes such as "restlessness". However, there have been few studies on locomotor activity in panic disorder using actigraphy, although many studies on other psychiatric disorders have been reported using actigraphy. Therefore, the aim of the present study was to investigate the relationship between panic disorder and locomotor activity pattern using a wrist-worn activity monitor. In addition, an ecological momentary assessment technique was used to record panic attacks in natural settings.

Methods

Sixteen patients with panic disorder were asked to wear a watch-type computer as an electronic diary for recording panic attacks for two weeks. In addition, locomotor activity was measured and recorded continuously in an accelerometer equipped in the watch-type computer. Locomotor activity data were analyzed using double cosinor analysis to calculate mesor and the amplitude and acrophase of each of the circadian rhythm and 12-hour harmonic component. Correlations between panic disorder symptoms and locomotor activity were investigated.

Results

There were significant positive correlations between the frequency of panic attacks and mesor calculated from double cosinor analysis of locomotor activity (r = 0.55) and between HAM-A scores and mesor calculated from double cosinor analysis of locomotor activity (r = 0.62).

Conclusion

Panic disorder patients with more panic attacks and more anxiety have greater objectively assessed locomotor activity, which may reflect the "restlessness" of anxiety disorders.

Sakima, Hirokuni; Isa, Katsunori; Nakachi, Koh; Shiroma, Kanako; Tokashiki, Takashi; Ohya, Yusuke (2014):

A case of transient ischemic attack of hemodynamic origin induced by postprandial hypotension.

In: *Rinsho Shinkeigaku* 54 (2), S. 162–165.

Abstract:

An 82-year-old man had a transient ischemic attack (TIA) with symptoms of consciousness disturbance and right hemiparesis while resting in a sitting position after breakfast. His symptoms improved around 1 h after onset when he lied in a supine position and received intravenous hydration. Duplex carotid ultrasonography revealed severe stenosis of the left common carotid artery. A decrease in the brain perfusion reserve was confirmed by acetazolamide-stress brain perfusion scintigraphy. Moreover, ambulatory blood pressure monitoring revealed a reduction in systolic blood pressure below 90 mmHg after each meal, indicating postprandial hypotension (PPH). The PPH was improved by oral administration of alpha-glucosidase inhibitor without any subsequent recurrences of TIA. The patient was diagnosed with TIA of hemodynamic origin that was induced by PPH and exhibited severe carotid stenosis. PPH is common in elderly people, and it should be recognized as a significant trigger for ischemic cerebrovascular disease.

Saladini, F.; Benetti, E.; Malipiero, G.; Casiglia, E.; Palatini, P. (2012):

Does home blood pressure allow for a better assessment of the white-coat effect than ambulatory blood pressure?

In: *J Hypertens* 30 (11), S. 2118–2124. DOI: 10.1097/HJH.0b013e3283589ee6.

Abstract:

BACKGROUND: The difference between clinic and ambulatory blood pressure (BP) is a poor estimate of the true white-coat effect (WCE) measured with beat-to-beat recording. METHOD: We investigated whether the difference between clinic and home BP (home WCE) was a better estimate of true WCE than ambulatory WCE. In 73 young hypertensives, ambulatory WCE was calculated as the difference between clinic BP and the mean of two 24-h BP recordings, and home WCE as the difference

between clinic and home BP (HBP) measured over 6 months. All individuals underwent beat-to-beat BP monitoring with the Finometer. During the recording, a white-coat test (true WCE) and a public speaking test were performed. RESULTS: Ambulatory WCE correlated with home WCE (P < 0.001 for systolic and diastolic BPs). However, both surrogate WCEs were unrelated to true WCE (P = 0.93/0.36 and P = 0.11/0.36, respectively). True WCE correlated with the BP reaction to public speaking (P < 0.001/P < 0.001), whereas both surrogate WCEs were unrelated to the BP response to this test (all P > 0.21). Individuals were divided into two groups according to whether BP response to the doctor's visit was above (WCH+) or below (WCH-) the median. WCH+ patients had similar clinic and ambulatory BPs to WCH- but showed a higher BP response to public speaking. CONCLUSION: As previously observed for ambulatory WCE, home WCE does not reflect the true BP reaction to doctor's visit. BP response to psychosocial stressors is increased in individuals with hyperreactivity to doctor's measurement but not in individuals with white-coat hypertension identified with either ambulatory or HBP measurement

Salamon, Reda; Johnson, Elizabeth I.; Swendsen, Joel (2011):

Daily life mechanisms of stress spillover among early adolescents experiencing academic difficulty.

In: *European Journal of Psychology of Education* 26 (4), S. 453–463. DOI: 10.1037/t06497-000;

Abstract:

Research has suggested that academic stress may “spillover” into other life domains and have negative psychological or social consequences for children and adolescents outside of school settings, but relatively few investigations have examined mediators and moderators of spillover. The current study explored the mediating role of state affect and the moderating roles of prior academic performance and mood disturbances on spillover in a sample of 131 French adolescents. Participants completed clinical measures of anxiety and depression and participated in a 7-day ambulatory monitoring phase that involved multiple daily assessments of mood, behaviors, and activities. Spillover was observed for family events and subsequent school-related events, as well as between family and leisure events. These associations remained significant when controlling for immediate mood responses, suggesting that state affect does not play a salient mediating role. There was no evidence that spillover was moderated by academic difficulty, anxiety, depression, or gender. Results are discussed in terms of the role that emotional processes may play in spillover phenomena as well as the reciprocal influence that academic and non-academic events may exert each other. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Salarian, Arash; Russmann, Heike; Vingerhoets, François J. G.; Burkhard, Pierre R.; Aminian, Kamiar (2007):

Ambulatory monitoring of physical activities in patients with Parkinson's disease.

In: *Biomedical Engineering, IEEE Transactions on* 54 (12), S. 2296–2299.

Abstract:

A new ambulatory method of monitoring physical activities in Parkinson's disease (PD) patients is proposed based on a portable data-logger with three body-fixed inertial sensors. A group of ten PD patients treated with subthalamic nucleus deep brain stimulation (STN-DBS) and ten normal control subjects followed a protocol of typical daily activities and the whole period of the measurement was recorded by video. Walking periods were recognized using two sensors on shanks and lying periods were detected using a sensor on trunk. By calculating kinematics features of the trunk movements during the transitions between sitting and standing postures and using a statistical classifier, sit-to-stand (SiSt) and stand-to-sit (StSi) transitions were detected and separated from other body movements. Finally, a fuzzy classifier used this information to detect periods of sitting and standing. The proposed method showed a high sensitivity and specificity for the detection of basic body postures allocations: sitting, standing, lying, and walking periods, both in PD patients and healthy subjects. We found significant differences in parameters related to SiSt and StSi transitions between PD patients and controls and also between PD patients with and without STN-DBS turned on. We concluded that our method provides a simple, accurate, and effective means to objectively quantify physical activities in both normal and PD patients and may prove useful to assess the level of motor functions in the latter.

Salarian, Arash; Russmann, Heike; Wider, Christian; Burkhard, Pierre R.; Vingerhoets, Françios J. G.; Aminian, Kamiar (2007):

Quantification of tremor and bradykinesia in Parkinson's disease using a novel ambulatory monitoring system.

In: *Biomedical Engineering, IEEE Transactions on* 54 (2), S. 313–322.

Abstract:

An ambulatory system for quantification of tremor and bradykinesia in patients with Parkinson's disease (PD) is presented. To record movements of the upper extremities, a sensing units which included miniature gyroscopes, has been fixed to each of the forearms. An algorithm to detect and quantify tremor and another algorithm to quantify bradykinesia have been proposed and validated. Two clinical studies have been performed. In the first study, 10 PD patients and 10 control subjects participated in a 45-min protocol of 17 typical daily activities. The algorithm for tremor detection showed an overall sensitivity of 99.5% and a specificity of 94.2% in comparison to a video reference. The estimated tremor amplitude showed a high correlation to the Unified Parkinson's Disease Rating Scale (UPDRS) tremor subscore (e.g., $r = 0.87$, $p < 0.001$ for the roll axis). There was a high and significant correlation between the estimated bradykinesia related parameters estimated for the whole period of measurement and respective UPDRS subscore (e.g., $r = -0.83$, $p < 0.001$ for the roll axis). In the second study, movements of upper extremities of 11 PD patients were recorded for periods of 3-5 hr. The patients were moving freely during the measurements. The effects of selection of window size used to calculate tremor and bradykinesia related parameters on the correlation between UPDRS and these parameters were studied. By selecting a window similar to the period of the first study, similar correlations were obtained. Moreover, one of the bradykinesia related parameters showed significant correlation ($r = -0.74$, $p < 0.01$) to UPDRS with window sizes as short as 5 min. Our study provides evidence that objective, accurate and simultaneous assessment of tremor and bradykinesia can be achieved in free moving PD patients during their daily activities.

Salazar, Antonio J.; Silva, Ana S.; Silva, Claudia; Borges, Carla M.; Correia, Miguel V.; Santos, Rubim S.; Vilas-Boas, Joao P. (2014):

Low-cost wearable data acquisition for stroke rehabilitation: a proof-of-concept study on accelerometry for functional task assessment.

In: *Top Stroke Rehabil* 21 (1), S. 12–22. DOI: 10.1310/tsr2101-12.

Abstract:

BACKGROUND: An increasingly aging society and consequently rising number of patients with poststroke-related neurological dysfunctions are forcing the rehabilitation field to adapt to ever-growing demands. Although clinical reasoning within rehabilitation is dependent on patient movement performance analysis, current strategies for monitoring rehabilitation progress are based on subjective time-consuming assessment scales, not often applied. Therefore, a need exists for efficient nonsubjective monitoring methods. Wearable monitoring devices are rapidly becoming a recognized option in rehabilitation for quantitative measures. Developments in sensors, embedded technology, and smart textile are driving rehabilitation to adopt an objective, seamless, efficient, and cost-effective delivery system. This study aims to assist physiotherapists' clinical reasoning process through the incorporation of accelerometers as part of an electronic data acquisition system. METHODS: A simple, low-cost, wearable device for poststroke rehabilitation progress monitoring was developed based on commercially available inertial sensors. Accelerometry data acquisition was performed for 4 first-time poststroke patients during a reach-press-return task. RESULTS: Preliminary studies revealed acceleration profiles of stroke patients through which it is possible to quantitatively assess the functional movement, identify compensatory strategies, and help define proper movement. CONCLUSION: An inertial data acquisition system was designed and developed as a low-cost option for monitoring rehabilitation. The device seeks to ease the data-gathering process by physiotherapists to complement current practices with accelerometry profiles and aid the development of quantifiable methodologies and protocols.

Salinas, Jennifer J.; Hilfinger Messias, Deanne K.; Morales-Campos, Daisy; Parra-Medina, Deborah (2014):

English language proficiency and physical activity among Mexican-origin women in South Texas and South Carolina.

In: *J Health Care Poor Underserved* 25 (1), S. 357–375. DOI: 10.1353/hpu.2014.0033.

Abstract:

OBJECTIVES: To examine the relationship between English language proficiency (ELP), physical activity, and physical activity-related psychosocial measures (i.e., exercise self-efficacy, exercise social support, perceptions of environmental supports) among Mexican-origin women in South Carolina and Texas. DESIGN: Adjusted robust regression and interaction modeling to evaluate baseline questionnaire data on self-reported ELP with CHAMPS leisure-time moderate-to-vigorous physical activity (MVPA), accelerometry data, Physical Activity Self-Efficacy, Physical Activity Social Support, and Environmental Support for Physical Activity in 118 Mexican-origin women. RESULTS: The adjusted regression revealed a significant association between ELP and perceived physical activity self-efficacy (beta = 234.2, $p = .004$), but not with physical activity social support. In South Carolina, CHAMPS leisure-time MVPA (411.4 versus 114.3 minutes, $p < .05$) was significantly different between women in the high ELP quartile and those in the very low quartile. Among high ELP Mexican-origin women, participants in Texas reported significantly higher MVPA measured by accelerometry ($p = .042$) than those in South Carolina. CONCLUSION: Our findings indicate that ELP was associated with physical activity and that contextual factors may also play a role.

Salles, Gil F.; Cardoso, Claudia R. L.; Muxfeldt, Elizabeth S. (2008):

Prognostic influence of office and ambulatory blood pressures in resistant hypertension.

In: *Archives of internal medicine* 168 (21), S. 2340–2346.

Abstract:

BACKGROUND:

The prognostic value of office and ambulatory blood pressures (BPs) in patients with resistant hypertension is uncertain.

METHODS:

This prospective study investigates the importance of office and ambulatory BPs as predictors of cardiovascular morbidity and mortality. At baseline, 556 resistant hypertensive patients underwent clinical-laboratory and 24-hour ambulatory BP monitoring examinations. Primary end points were a composite of fatal and nonfatal cardiovascular events and all-cause and cardiovascular mortalities. Multiple Cox regression was used to assess associations between BP and subsequent end points.

RESULTS:

After median follow-up of 4.8 years, 109 patients (19.6%) reached the primary end point, and 70 all-cause deaths (12.6%) occurred (46 had cardiovascular causes). After adjustment for age, sex, body mass index, diabetes mellitus, smoking, physical inactivity, dyslipidemia, previous cardiovascular diseases, serum creatinine level, and number of antihypertensive drugs in use, no office BP showed any prognostic value. After further adjustment for office BP, higher mean ambulatory BPs were independent predictors of the composite end point. The hazard ratios associated with a 1-SD increment in daytime and nighttime systolic BP were 1.26 (95% confidence interval, 1.04-1.53) and 1.38 (1.13-1.68), respectively; the corresponding values for diastolic BP were 1.31 (1.05-1.63) and 1.36 (1.10-1.69). Ambulatory systolic and diastolic BP were equivalent predictors, and both were better than pulse pressure; nighttime BP was superior to daytime BP. For all-cause mortality, only the ambulatory BP monitoring diagnosis of true resistant hypertension was an independent predictor.

CONCLUSION:

Higher ambulatory BP predicts cardiovascular morbidity and mortality in resistant hypertensive patients, whereas office BP has no prognostic value.

Salvador, R.; Watson, T. J.; Herbella, F.; Dubecz, A.; Polomsky, M.; Jones, C. E. et al. (2009):

Association of gastroesophageal reflux and O2 desaturation: a novel study of simultaneous 24-h MII-pH and continuous pulse oximetry.

In: *Journal of gastrointestinal surgery : official journal of the Society for Surgery of the Alimentary Tract* 13 (5), S. 854–861. DOI: 10.1007/s11605-009-0815-9.

Abstract:

BACKGROUND\r\nProof of the relationship between gastroesophageal reflux disease (GERD) and respiratory symptoms remains a challenge. Our aim was to determine the association between reflux events and O(2) desaturation in GERD patients with primary respiratory symptoms (RS) compared to those with primary esophageal symptoms (ES) using ambulatory monitoring systems.\r\nMETHODS\r\nOne thousand eight hundred fifty-one reflux episodes were detected by multichannel intraluminal impedance (MII)-pH testing in 30 patients with symptoms of GERD (20 RS, ten ES.) All patients underwent simultaneous 24-h MII-pH and continuous O(2) saturation monitoring via pulse oximetry. Reflux-associated desaturation events were determined by correlating synchronized 24-h esophageal pH and/or impedance and O(2) desaturation.\r\nRESULTS\r\nOne thousand one hundred seventeen reflux events occurred in patients with RS and 734 in those with ES. Nearly 60% of these 1,851 reflux events were associated with O(2) desaturation. Markedly more events were associated with O(2) desaturation in patients with RS (74.5%, 832/1,117) than in patients with ES (30.4%, 223/734, $p < 0.0001$). The difference in reflux desaturation association was more profound with proximal reflux--80.3% with RS vs. 29.4% with ES ($p < 0.0001$).\r\nCONCLUSIONS\r\nA remarkably high prevalence of O(2) desaturation associated with gastroesophageal reflux was noted in patients with RS. Given further study, simultaneous combined esophageal reflux and O(2) saturation monitoring may prove a useful diagnostic tool in this difficult group of patients.

Sama, Preethi R.; Eapen, Zubin J.; Weinfurt, Kevin P.; Shah, Bimal R.; Schulman, Kevin A. (2014):

An evaluation of mobile health application tools.

In: *JMIR Mhealth Uhealth* 2 (2), S. e19. DOI: 10.2196/mhealth.3088.

Abstract:

BACKGROUND: The rapid growth in the number of mobile health applications could have profound significance in the prevention of disease or in the treatment of patients with chronic disease such as diabetes. OBJECTIVE: The objective of this study was to describe the characteristics of the most common mobile health care applications available in the Apple iTunes marketplace. METHODS: We undertook a descriptive analysis of a sample of applications in the "health and wellness" category of the Apple iTunes Store. We characterized each application in terms of its health factor and primary method of user engagement. The main outcome measures of the analysis were price, health factors, and methods of user engagement. RESULTS: Among the 400 applications that met the inclusion criteria, the mean price of the most frequently downloaded paid applications was US $2.24 (SD $1.30), and the mean price of the most currently available paid applications was US $2.27 (SD $1.60). Fitness/training applications were the most popular (43.5%, 174/400). The next two most common categories were health resource (15.0%, 60/400) and diet/caloric intake (14.3%, 57/400). Applications in the health resource category constituted 5.5% (22/400) of the applications reviewed. Self-monitoring was the most common primary user engagement method (74.8%, 299/400). A total of 20.8% (83/400) of the applications used two or more user engagement approaches, with self-monitoring and progress tracking being the most frequent. CONCLUSIONS: Most of the popular mobile health applications focus on fitness and self-monitoring. The approaches to user engagement utilized by these applications are limited and present an opportunity to improve the effectiveness of the technology.

Samuels, Tiana Y.; Raedeke, Thomas D.; Mahar, Matthew T.; Karvinen, Kristina H.; Dubose, Katrina D. (2011):

A randomized controlled trial of continuous activity, short bouts, and a 10,000 step guideline in inactive adults.

In: *Prev Med* 52 (2), S. 120–125.

Abstract:

OBJECTIVE:

Although several studies have examined the effect of accumulated bouts on health outcomes, the impact of recommending short bouts on activity-related behavior in health promotion efforts has received minimal investigation.

METHOD:

During this 5-week study in 2007-2008, 43 university employees (8 male, 35 female) in the Southeastern United States were randomly assigned to a group recommended to achieve (a) 10,000 steps (10K), (b) 30-minutes (30 min) of continuous physical activity, or (c) 30-minutes of activity in bouts of at least 10 minutes (bouts).

RESULTS AND CONCLUSIONS:

Repeated measures ANOVA revealed that the 10K group showed the largest increase in step counts whereas the bouts group showed the smallest change over the intervention period, p=0.01. Condition differences were most pronounced on days in which participants met their activity recommendation. Accelerometer results revealed that the 10K (d=1.1) and 30 min groups (d=0.89) showed large increases in minutes of moderate to vigorous activity (MVPA), whereas the bouts group showed minimal change (d=0.11). Although activity recommendations did not differentially affect self-efficacy, participants from all conditions showed decreased self-efficacy across the intervention (p=0.02), highlighting the need to develop strategies to increase self-efficacy in activity promotion efforts.

Sanchez, Diana T.; Garcia, Julie A. (2009):

When race matters: racially stigmatized others and perceiving race as a biological construction affect biracial people's daily well-being.

In: *Pers Soc Psychol Bull* 35 (9), S. 1154–1164. DOI: 10.1177/0146167209337628.

Abstract:

Stigmatized group members experience greater well-being in the presence of similar others, which may be driven by the perception that similar others value their shared stigmatized identities (i.e., high public regard). Using experience sampling methodology, this hypothesis is tested with biracial people (29 Asian/White, 23 Black/ White, and 26 Latino/White biracial participants). This study proposes that the greater percentage of stigmatized similar others in one's daily context would predict greater daily well-being for biracial people through higher public regard, but only if biracial people believe that race has biological meaning. These findings add to a growing, but limited, literature on biracial individuals. These findings are situated within the broader literature on stigma and similar others, as well as new theories regarding the consequences of believing race has biological meaning.

Sanchez, Amy H.; Lavaysse, Lindsey M.; Starr, Jessica N.; Gard, David E. (2014):

Daily life evidence of environment-incongruent emotion in schizophrenia.

In: *Psychiatry Res. DOI:* 10.1016/j.psychres.2014.07.041.

Abstract:

Researchers have recently hypothesized that negative emotion in positive situations may be one mechanism for understanding emotion dysfunction in schizophrenia. Using ecological momentary assessment, we examined the relationship between emotion experience and environmental context in the daily lives of participants with and without schizophrenia. Participants with (n=47) and without schizophrenia (n=41) were provided a cellular telephone and called four times a day for one week. During each call participants rated their emotion experiences, described their current activities, and rated enjoyment from those activities. In line with previous research, participants with schizophrenia reported higher negative emotion overall relative to participants without schizophrenia, but equivalent levels of positive emotion and activity enjoyment. In line with the environment-incongruent negative emotion hypothesis, participants with schizophrenia evidenced a weaker relationship between reported enjoyment of current activities and current negative emotion compared to participants without schizophrenia. In addition, lower neurocognition predicted this weak relationship between negative emotion and context in the schizophrenia group. These findings provide ecologically valid support for environment-incongruent negative emotion in schizophrenia, and suggest that people with schizophrenia with more impaired neurocognition may have more difficulties regulating negative emotion.

Sanders, Taren; Cliff, Dylan P.; Lonsdale, Chris (2014):

Measuring adolescent boys' physical activity: bout length and the influence of accelerometer epoch length.

In: *PLoS One* 9 (3), S. e92040. DOI: 10.1371/journal.pone.0092040.

Abstract:

OBJECTIVES: Accurate, objective measurement is important for understanding adolescents' physical activity (PA) behaviour. When using accelerometry to objectively measure PA, a decision must be made regarding how frequently data is recorded (i.e., epoch length). The purpose of this study was to examine i) PA bout length, and ii) the effect of variations in accelerometer epoch length on PA estimates during physical education (PE) and leisure time in adolescent boys. DESIGN: Cross-sectional study. METHODS: Year 9 boys (N = 133; mean age +/-SD = 14.36+/-0.48 years) wore accelerometers during two PE lessons, and for a period of seven consecutive days. Data were reintegrated from 1s into longer periods of 2, 5, 10, 30, and 60 seconds. ANOVAs were used to test for differences in PA estimates between epochs in leisure time and PE. RESULTS: The mean length of vigorous PA (VPA) bouts was 3.5+/-2.0 seconds for PE and 2.5+/-1.7 seconds for leisure time, and mean length of moderate PA (MPA) bouts was 2.3+/-0.5 seconds for PE and 2.9+/-0.5 seconds for leisure time. During PE, estimates of MVPA, MPA, and light PA (LPA) increased as epoch increased from 1 second to 60 seconds, while VPA and sedentary behaviour estimates decreased. During leisure time, estimates of all PA intensities decreased as epoch increased from 1 second to 60 seconds, with the exception of sedentary behaviour, which increased as epoch length increased. CONCLUSION: The context in which PA occurs can influence PA bout length measurement and the effect of variations in epoch length on PA estimates. Researchers measuring PA with accelerometry should be conscious of the possible influence of context on PA estimates.

Sandland, Carolyn J.; Morgan, Mike D. L.; Singh, Sally J. (2008):

Patterns of domestic activity and ambulatory oxygen usage in COPD.

In: *CHEST Journal* 134 (4), S. 753–760.

Abstract:

BACKGROUND:

The aim of this study was to examine patterns of domestic activity and ambulatory oxygen usage in patients with COPD in their domestic environment.

METHODS:

Twenty patients (14 men; mean age, 73.4 years [SD, 6.8 years]; FEV1, 1.0 L [SD, 0.5 L]) with stable COPD were recruited after completing a 7-week pulmonary rehabilitation program. Patients were either hypoxic at rest or had desaturation during exercise. Patients were randomized to an 8-week, double-blind, placebo-controlled trial of cylinder oxygen vs cylinder air. Total domestic physical activity and health-related quality of life (HRQL) measures were recorded before and after intervention.

RESULTS:

There were no significant changes in domestic activity or HRQL measures after the intervention for either cylinder oxygen or cylinder air, except for a worsening of the Chronic Respiratory Questionnaire dyspnea domain on cylinder air. There was a significant increase in mean duration (minutes per day) of cylinder use ($p < 0.05$) between weeks 1 vs 7 and weeks 1 vs 8 for the oxygen group. However, when comparing the two groups together, there were no between-group differences in cylinder use or time spent outside the home. Over the 8 weeks the majority of patients were using the cylinders in the home rather than outside, however, the number of times patients reported using the cylinders outside the home increased over the 8 weeks for the oxygen group.

CONCLUSION:

In the short term, ambulatory oxygen therapy is not associated with improvements in physical activity, HRQL, or time spent away from home. However, the use of cylinder oxygen increased over the 8 weeks compared to cylinder air. Patients need time to learn how to use oxygen, and ambulatory oxygen appears to enhance activities rather than increase them.

Sandroff, Brian M.; Riskin, Barry J.; Agiovlasitis, Stamatis; Motl, Robert W. (2014):

Accelerometer cut-points derived during over-ground walking in persons with mild, moderate, and severe multiple sclerosis.

In: *J Neurol Sci. DOI:* 10.1016/j.jns.2014.02.024.

Abstract:

BACKGROUND: There has been increased interest in objectively quantifying time spent in moderate-to-vigorous physical activity (MVPA) using accelerometry as an outcome among persons with multiple sclerosis (MS). This requires development of a cut-point for interpreting the rate of accelerometer output based on its association with energy expenditure during physical activity. OBJECTIVE: The current study measured activity counts from a waist-worn accelerometer and energy expenditure based on indirect calorimetry during three speeds of over-ground walking for deriving cut-points for interpreting accelerometer output in persons with mild, moderate, and severe MS disability. METHODS: 54 participants with MS initially completed a neurological examination for generation of an EDSS score. Participants were then fitted with an ActiGraph model GT3X+ accelerometer and a Cosmed portable metabolic system, and completed three, 6-minute walk (6 MW) tests that were interspersed with 10-15min of rest. The first 6 MW was undertaken at a comfortable walking speed (CWS), and the two remaining 6 MW tests were undertaken above (faster walking speed) or below (slower walking speed) the participant's CWS in a counterbalanced order. RESULTS: The linear association between activity counts per minute and energy expenditure did not differ between persons with mild and moderate MS disability, but it was significantly different among persons with severe disability. This resulted in disability-specific cut-points for MVPA of 1980 and 1185 counts per minute for groups with mild/moderate disability and severe disability, respectively. CONCLUSIONS: We believe that this research will facilitate a better understanding of time spent in MVPA across a broad range of MS disability.

Sano, W.; Nakamura, T.; Yoshiuchi, K.; Kitajima, T.; Tsuchiya, A.; Esaki, Y. et al. (2012):

Enhanced persistency of resting and active periods of locomotor activity in schizophrenia.

In: *PLoS One* 7 (8), S. e43539. DOI: 10.1371/journal.pone.0043539.

Abstract:

Patients with schizophrenia frequently exhibit behavioral abnormalities associated with its pathological symptoms. Therefore, a quantitative evaluation of behavioral dynamics could contribute to objective diagnoses of schizophrenia. However, such an approach has not been fully established because of the absence of quantitative biobehavioral measures. Recently, we studied the dynamical properties of locomotor activity, specifically how resting and active periods are interwoven in daily life. We discovered universal statistical laws ("behavioral organization") and their alterations in patients with major depressive disorder. In this study, we evaluated behavioral organization of schizophrenic patients (n = 19) and healthy subjects (n = 11) using locomotor activity data, acquired by actigraphy, to investigate whether the laws could provide objective and quantitative measures for a possible diagnosis and assessment of symptoms. Specifically, we evaluated the cumulative distributions of resting and active periods, defined as the periods with physical activity counts successively below and above a predefined threshold, respectively. Here we report alterations in the laws governing resting and active periods; resting periods obeyed a power-law cumulative distribution with significantly lower parameter values (power-law scaling exponents), whereas active periods followed a stretched exponential distribution with significantly lower parameter values (stretching exponents), in patients. Our findings indicate enhanced persistency of both lower and higher locomotor activity periods in patients with schizophrenia, probably reflecting schizophrenic pathophysiology

Santangelo, P.; Bohus, M.; Ebner-Priemer, U. W. (2012):

Ecological Momentary Assessment in Borderline Personality Disorder: A Review of Recent Findings and Methodological Challenges.

In: *J Pers.Disord.* (0885-579X (Linking)). DOI: 10.1521/pedi_2012_26_067.

Abstract:

The use of Ecological Momentary Assessment (EMA) has led to increased insight into borderline personality disorder (BPD) symptoms, especially regarding affective instability. EMA is characterized by a series of repeated assessments of current affective, behavioral, and contextual experiences or physiological processes while participants engage in normal daily activities. EMA has several advantages. It enables researchers to avoid biased recollection, to investigate within-person processes, and to enhance real-life generalizability. This review is dedicated to four main objectives: (1) to discuss the characteristics of EMA in studying BPD symptomatology; (2) to provide an extensive overview of EMA findings in BPD structured into findings regarding DSM-IV criteria and findings regarding emotional dysregulation as stated in the biosocial theory of Linehan; (3) to discuss challenges of EMA and to give recommendations for the proper use of it; and (4) to highlight prospects and promising applications that should be addressed

Santhanam, Gopal; Linderman, Michael D.; Gilja, Vikash; Afshar, Afsheen; Ryu, Stephen; Meng, Teresa H.; Shenoy, Krishna V. (2007):

HermesB: a continuous neural recording system for freely behaving primates.

In: *Biomedical Engineering, IEEE Transactions on* 54 (11), S. 2037–2050.

Abstract:

Chronically implanted electrode arrays have enabled a broad range of advances in basic electrophysiology and neural prosthetics. Those successes motivate new experiments, particularly, the development of prototype implantable prosthetic processors for continuous use in freely behaving subjects, both monkeys and humans. However, traditional experimental techniques require the subject to be restrained, limiting both the types and duration of experiments. In this paper, we present a dual-channel, battery-powered neural recording system with an integrated three-axis accelerometer for use with chronically implanted electrode arrays in freely behaving primates. The recording system called HermesB, is self-contained, autonomous, programmable, and capable of recording broadband neural (sampled at 30 kS/s) and acceleration data to a removable compact flash card for up to 48 h. We have collected long-duration data sets with HermesB from an adult macaque monkey which provide insight into time scales and free behaviors inaccessible under traditional experiments. Variations in action potential shape and root-mean square (RMS) noise are observed across a range of time scales. The peak-to-peak voltage of action potentials varied by up to 30% over a 24-h period including step changes in waveform amplitude (up to 25%) coincident with high acceleration movements of the head. These initial results suggest that spike-sorting algorithms can no longer assume stable neural signals and will need to transition to adaptive signal processing methodologies to maximize performance. During physically active periods (defined by head-mounted accelerometer), significantly reduced 5-25-Hz local field potential (LFP) power and increased firing rate variability were observed. Using a threshold fit to LFP power, 93% of 403 5-min recording blocks were correctly classified as active or inactive, potentially providing an efficient tool for identifying different behavioral contexts in prosthetic applications. These results demonstrate the utility of the HermesB system and motivate using this type of system to advance neural prosthetics and electrophysiological experiments.

Santos, R.; Mota, J.; Okely, A. D.; Pratt, M.; Moreira, C.; Coelho-E-Silva Mj et al. (2013):

The independent associations of sedentary behaviour and physical activity on cardiorespiratory fitness.

In: *Br.J Sports Med* (0306-3674 (Linking)). DOI: 10.1136/bjsports-2012-091610.

Abstract:

BACKGROUND: During childhood and adolescence, both physical activity (PA) and sedentary behaviour seem to influence cardiorespiratory fitness (CRF); however, the combined association of PA and sedentary behaviour remains to be understood. We analysed the combined association of objectively measured sedentary behaviour and moderate-to-vigorous intensity PA (MVPA) on CRF in Portuguese children and adolescents. METHODS: The sample comprised 2506 Portuguese healthy children and adolescents aged 10-18 years, from a cross-sectional school-based study (2008). PA and sedentary behaviour were assessed with accelerometry. Participants were classified as meeting current PA guidelines for youth versus not meeting, and as low versus high sedentary (according to the median value of sedentary time/day by age and gender), and then grouped as follows: Low active-high sedentary; low active-low sedentary; high active-high sedentary; high active-low sedentary. CRF was assessed with

the FITNESSGRAM 20 m shuttle-run test. Binary logistic regression models were constructed to verify the relationship between high CRF and the combined influence of MVPA/sedentary behaviour, adjusting for age, gender, body mass index and accelerometer wear time. RESULTS: Participants classified as high active/low sedentary (OR=1.81; 95% CI 1.21 to 2.69), as well as those classified as low active/low sedentary (OR=1.27; 95% CI 1.01 to 1.61) were more likely to be fit, compared with those from the low-active/high-sedentary group. CONCLUSION: MVPA and sedentary behaviour may act independently in their relation with CRF, and that MVPA levels may not overcome the deleterious influence of high-sedentary time in maximising CRF

Santos-Silva, Rogerio; Sartori, Denis E.; Truksinas, Viviane; Truksinas, Eveli; Alonso, Fabiana F F D; Tufik, Sergio; Bittencourt, Lia R. A. (2009):

Validation of a Portable Monitoring System for the Diagnosis of Obstructive Sleep Apnea Syndrome.

In: *Sleep* 32 (5), S. 629–636. DOI: 10.1016/j.jamcollsurg.2006[PII].

Abstract:

STUDY OBJECTIVE:: To evaluate if a portable monitor could accurately measure the apnea-hypopnea index (AHI) in patients with a suspicion of obstructive sleep apnea (OSA). DESIGN:: Prospective and randomized. SETTING:: Sleep laboratory. PARTICIPANTS:: 80 participants: 70 patients with clinical OSA suspicion and 10 subjects without suspicion of OSA. INTERVENTIONS:: N/A MEASUREMENTS AND RESULTS:: Three-order randomized evaluations were performed: (1) STD (Stardust II) used at the participants' home (STD home), (2) STD used simultaneously with PSG in the sleep lab (STD+PSG lab), and (3) PSG performed without the STD (PSG lab). Four AHI values were generated and analyzed: (a) STD home; (b) STD from STD+PSG lab; (c) PSG from STD+PSG (named PSG+STD lab); and (d) PSG lab. Two technicians, blinded to study details, performed the analyses of all evaluations. There was a strong correlation between AHI from the STD and PSG recordings for all 4 AHI values (all correlations above 0.87). Sensitivity, specificity, and positive and negative predictive values at AHI cut-off values of 5, 15, and 30 events/hour were calculated. AHI values from the PSG lab and PSG+STD lab were compared to STD home and STD+PSG lab and showed the best results when STD and PSG were performed simultaneously. In all analyses, the area under ROC curve was at least 0.90. With multiple comparisons, diagnostic agreement was between 91% and 75%. The Bland Altman analyses showed strong agreement between AHI values from the STD and PSG recordings, especially when comparing the AHI from simultaneous STD and PSG recordings. CONCLUSION:: These data suggest that the STD is accurate in confirming the diagnosis of OSA where there is a suspicion of the disorder. Better agreement occurred during simultaneous recordings. CITATION:: Santos-Silva R; Sartori DE; Truksinas V; Truksinas E; Alonso FFFD; TufikS; Bittencourt LRA. Validation of a portable monitoring system for the diagnosis of obstructive sleep apnea syndrome. SLEEP 2009;32(5):629-639.

Saramaki, Jari; Leicht, E. A.; Lopez, Eduardo; Roberts, Sam G. B.; Reed-Tsochas, Felix; Dunbar, Robin I. M. (2014):

Persistence of social signatures in human communication.

In: *Proc Natl Acad Sci U S A* 111 (3), S. 942–947. DOI: 10.1073/pnas.1308540110.

Abstract:

The social network maintained by a focal individual, or ego, is intrinsically dynamic and typically exhibits some turnover in membership over time as personal circumstances change. However, the consequences of such changes on the distribution of an ego's network ties are not well understood. Here we use a unique 18-mo dataset that combines mobile phone calls and survey data to track changes in the ego networks and communication patterns of students making the transition from school to university or work. Our analysis reveals that individuals display a distinctive and robust social signature, captured by how interactions are distributed across different alters. Notably, for a given ego, these social signatures tend to persist over time, despite considerable turnover in the identity of alters in the ego network. Thus, as new network members are added, some old network members either are replaced or receive fewer calls, preserving the overall distribution of calls across network members. This is likely to reflect the consequences of finite resources such as the time available for communication, the cognitive and emotional effort required to sustain close relationships, and the ability to make emotional investments.

Sardella, Chiara; Urbani, Claudio; Lombardi, Martina; Nuzzo, Alessandro; Manetti, Luca; Lupi, Isabella et al. (2014):

The Beneficial Effect Of Acromegaly Control On Blood Pressure Values In Normotensive Patients.

In: *Clin Endocrinol (Oxf). DOI:* 10.1111/cen.12455.

Abstract:

OBJECTIVE: Control of acromegaly may ameliorate blood pressure (BP) in hypertensive patients. We evaluated the impact of acromegaly control on BP values of normotensive acromegalics. DESIGN: Retrospective cohort study. PATIENTS: Fifty-eight naive patients with acromegaly (39 F; age range, 30-69 years), including 28 normotensive (NT) and 30 hypertensive (HT) subjects, participated in the study. MEASUREMENTS: Blood pressure was measured by clinical measurement and 24-hr ambulatory monitoring at diagnosis and after 24 months of medical therapy for acromegaly. RESULTS: Acromegaly was controlled by medical therapy in 15 NT and 17 HT patients at 24 months. In the NT group, systolic (SBP) or diastolic (DBP) BP significantly increased (all $p < 0.005$) when acromegaly was uncontrolled, but did not change when the disease was controlled. Changes in SBP and DPB were also significantly different between uncontrolled and controlled NT patients. At 24 months, clinical hypertension was detected only in uncontrolled NT patients (46% vs. 0%, $p < 0.001$), whereas ambulatory hypertension was found in 38% of uncontrolled and in 7% of controlled NT subjects ($p = 0.035$). In the HT group, ambulatory SBP increased in patients with uncontrolled acromegaly (24-hr SBP $p = 0.046$, day SBP $p = 0.005$, night SBP $p = 0.005$), whereas ambulatory DBP decreased in subjects with controlled disease (24-hr DBP $p = 0.008$, day DBP $p = 0.026$). CONCLUSIONS: Control of acromegaly has a beneficial effect on BP regulation either in HT or NT subjects; in the latter it may prevent progression towards hypertension.

Sartori, Raffaela D. G.; Marelli, Marco; Garavaglia, Paolo; Castelli, Lucia; Busin, Silvano; Delle Fave, Antonella (2014):

The assessment of patients' quality of experience: autonomy level and perceived challenges.

In: *Rehabil Psychol* 59 (3), S. 267–277. DOI: 10.1037/a0036519.

Abstract:

PURPOSE/OBJECTIVE: Motor rehabilitation programs in hospital aim at promoting patients' highest attainable recovery of body functions and capabilities. Well-being is predominantly identified with physical autonomy, yet the psychological dimensions of rehabilitation are often overlooked. RESEARCH METHOD/DESIGN: To partially fill this gap, the quality of daily experience reported by 50 adult participants hospitalized in an Italian rehabilitation unit was investigated. Data were gathered through Experience Sampling Method, (ESM), providing repeated real-time assessments of the experience associated with daily activities. Before analysis, participants were divided into 3 groups, according to their low, moderate, or high levels of autonomy assessed through Barthel Index. RESULTS: Participants predominantly associated rehabilitation activities with optimal experience, characterized by high concentration, engagement, control of the situation, and by the perception of high challenges matched with adequate personal skills. During personal care and leisure-the most frequent daily activities-participants reported instead low challenging experiences of apathy and boredom. During social interactions perceived high challenges prevailed. Multilevel analysis showed that the type of activity performed was a significant predictor of participants' quality of experience, and the level of autonomy had a modest impact on it. CONCLUSIONS/IMPLICATIONS: Results highlighted the potential added value of rehabilitation tasks as opportunities to promote patients' well-being. The predominantly negative experiences associated with the other daily activities point instead to the need for changes in hospital organization in order to more effectively promote patients' autonomy and resource mobilization.

Sartori, Raffaela D. G.; Marelli, Marco; Garavaglia, Paolo; Castelli, Lucia; Busin, Silvano; Delle Fave, Antonella (2014):

The Assessment of Patients' Quality of Experience: Autonomy Level and Perceived Challenges.

In: *Rehabilitation Psychology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-26962-001%26site%3dehost-live.

Abstract:

Purpose/Objective: Motor rehabilitation programs in hospital aim at promoting patients' highest attainable recovery of body functions and capabilities. Well-being is predominantly identified with physical autonomy, yet the psychological dimensions of rehabilitation are often overlooked. Research Method/Design: To partially fill this gap, the quality of daily experience reported by 50 adult participants hospitalized in an Italian rehabilitation unit was investigated. Data were gathered through Experience Sampling Method, (ESM), providing repeated real-time assessments of the experience associated with daily activities. Before analysis, participants were divided into 3 groups, according to their low, moderate, or high levels of autonomy assessed through Barthel Index. Results: Participants predominantly associated rehabilitation activities with optimal experience, characterized by high concentration, engagement, control of the situation, and by the perception of high challenges matched with adequate personal skills. During personal care and leisure—the most frequent daily activities—participants reported instead low challenging experiences of apathy and boredom. During social interactions perceived high challenges prevailed. Multilevel

analysis showed that the type of activity performed was a significant predictor of participants' quality of experience, and the level of autonomy had a modest impact on it. Conclusions/Implications: Results highlighted the potential added value of rehabilitation tasks as opportunities to promote patients' well-being. The predominantly negative experiences associated with the other daily activities point instead to the need for changes in hospital organization in order to more effectively promote patients' autonomy and resource mobilization. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Satoh, Michihiro; Hosaka, Miki; Asayama, Kei; Kikuya, Masahiro; Inoue, Ryusuke; Metoki, Hirohito et al. (2014):

Aldosterone-to-renin ratio and nocturnal blood pressure decline assessed by self-measurement of blood pressure at home: the Ohasama Study.

In: *Clin Exp Hypertens* 36 (2), S. 108–114. DOI: 10.3109/10641963.2014.892121.

Abstract:

Abstract Based on ambulatory blood pressure (BP) monitoring, the aldosterone-to-renin ratio (ARR) has been reported to be associated with a diminished nocturnal decline in BP, generally referred to as a "non-dipping" pattern. The objective of this cross-sectional study was to investigate the association between ARR and the non-dipping pattern based on home BP measurements. This study included 177 participants >/=55 years from the general population of Ohasama (mean age: 67.2 years; 74.6% women); no patient was receiving antihypertensive treatment. The median plasma renin activity (PRA), plasma aldosterone concentration (PAC) and ARR were 0.8 ng/mL/h, 8.1 ng/dL and 9.7 ng/dL per ng/mL/h, respectively. Each 1 SD increase in log-transformed (ln) ARR was significantly associated with the prevalence of the non-dipping pattern after adjustments for possible confounding factors including home morning systolic BP (odds ratio, 1.45; p = 0.049). However, no significant associations of PRA or PAC with the non-dipping pattern were observed (p >/= 0.2). When participants were divided into four groups according to median levels of home morning and night-time systolic BPs, the group with a higher home morning systolic BP (>/=128.4 mmHg) with a higher home night-time systolic BP (>/=114.4 mmHg) had the greatest ARR levels (ANCOVA p = 0.01). These results support the hypothesis that relative aldosterone excess may be related to a non-dipping pattern in a general population and suggest that a non-dipping pattern can be accurately observed by home BP measurements.

Sawada, Natsumi; Gagné, Faby M.; Séguin, Louise; Kramer, Michael S.; McNamara, Helen; Platt, Robert W. et al. (2014):

Maternal Prenatal Felt Security and Infant Health at Birth Interact to Predict Infant Fussing and Crying at 12 Months Postpartum.

In: *Health Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-56005-001%26site%3dehost-live.

Abstract:

Infants born with medical problems are at risk for less optimal developmental outcomes. This may be, in part, because neonatal medical problems are associated with maternal distress, which may adversely impact infants. However, the reserve capacity model suggests that an individual's bank of psychosocial resources buffers the adverse effects of later-encountered stressors. This prospective longitudinal study examined whether preexisting maternal psychosocial resources, conceptualized as felt security in close relationships, moderate the association between neonatal medical problems and infant fussing and crying 12 months postpartum. Maternal felt security was measured by assessing its indicators in 5,092 pregnant women. At birth, infants were classified as healthy or having a medical problem. At 12 months, experience sampling was used to assess daily maternal reports of fussing and crying in 135 mothers of infants who were healthy or had medical problems at birth. Confirmatory factor analyses revealed that attachment, relationship quality, self-esteem, and social support can be conceptualized as indicators of a single felt security factor. Multiple regression analyses revealed that prenatal maternal felt security interacts with infant health at birth to predict fussing and crying at 12 months. Among infants born with medical problems, higher felt security predicted decreased fussing and crying. Maternal felt security assessed before birth dampens the association between neonatal medical problems and subsequent infant behavior. This supports the hypothesis that psychosocial resources in reserve can be called upon in the face of a stressor to reduce its adverse effects on the self or others. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Sayk, Friedhelm; Teckentrup, Christina; Becker, Christoph; Heutling, Dennis; Wellhöner, Peter; Lehnert, Hendrik; Dodt, Christoph (2010):

Effects of selective slow-wave sleep deprivation on nocturnal blood pressure dipping and daytime blood pressure regulation.

In: *American journal of physiology. Regulatory, integrative and comparative physiology* 298 (1), S. R191-7. DOI: 10.1152/ajpregu.00368.2009.

Abstract:

Nocturnal blood pressure (BP) decline or \"dipping\" is an active, central, nervously governed process, which is important for BP regulation during daytime. It is, however, not known whether the sleep process itself or, more specifically, slow-wave sleep (SWS) is important for normal dipping. Therefore, in the present study, healthy subjects (6 females, 5 males) were selectively deprived of SWS by EEG-guided acoustic arousals. BP and heart rate (HR) were monitored during experimental nights and the following day. Additionally, nocturnal catecholamine excretion was determined, and morning baroreflex function was assessed by microneurographic measurements of muscle sympathetic nerve activity (MSNA) and heart rate variability (HRV). Data were compared with a crossover condition of undisturbed sleep. SWS was successfully deprived leading to significantly attenuated mean arterial BP dipping during the first half ($P < 0.05$), but not during the rapid-eye-movement-dominated second half of total sleep; however, dipping still evolved even in the absence of SWS. No differences were found for nighttime catecholamine excretion. Moreover, daytime resting and ambulatory BP and HR were not altered, and morning MSNA and HRV did not differ significantly, indicating that baroreflex-mediated sympathoneural BP regulation was not affected by the preceding SWS deprivation. We conclude that in healthy humans the magnitude of nocturnal BP dipping is significantly affected by sleep depth. Deprivation of SWS during one night does not modulate the morning threshold and sensitivity of the vascular and cardiac baroreflex and does not alter ambulatory BP during daytime.

Sbarra, David A.; Ferrer, Emilio (2006):

The structure and process of emotional experience following nonmarital relationship dissolution: dynamic factor analyses of love, anger, and sadness.

In: *Emotion* 6 (2), S. 224–238. DOI: 10.1037/1528-3542.6.2.224.

Abstract:

Dynamic factor analysis was used to examine the structure and process of daily emotions in a sample of young adults following a romantic breakup. Participants completed a daily diary for 4 weeks reporting on their love/longing for their ex-partner, anger, and sadness. Using a lag-1 process factor analysis model, results revealed that love/longing, sadness, and anger could be reliably distinguished as separate but correlated mood states in a trivariate model. Four emotional dynamics (amplification, reversing, persistence, and cooccurrence) were operationalized and investigated. Differences in these dynamics were observed on the basis of overall adjustment to the separation and attachment styles. Findings are discussed in terms of attachment and contemporary emotion theories, as well as the need to operationalize time-based affective processes.

Scanaill, Cliodhna Ni; Ahearne, Brian; Lyons, Gerard M. (2006):

Long-term telemonitoring of mobility trends of elderly people using SMS messaging.

In: *IEEE transactions on information technology in biomedicine : a publication of the IEEE Engineering in Medicine and Biology Society* 10 (2), S. 412–413.

Abstract:

A telemonitoring system, based on short message service (SMS), has been developed to remotely monitor the long-term mobility levels of elderly people in their natural environment. Mobility is measured by an accelerometer-based portable unit, worn by each monitored subject. Mobility level summaries are transmitted hourly, as an SMS message, directly from the portable unit to a remote server for long-term analysis. Each subject's mobility levels are monitored using custom-designed mobility alert software, and the appropriate medical personnel are alerted by SMS if the subject's mobility levels decrease.

Schaefer, C. A.; Nace, H.; Browning, R. (2013):

Establishing Wrist-Based Cutpoints for the Actical Accelerometer in Elementary School Aged Children.

In: *J Phys.Act.Health* (1543-3080 (Linking)). Online verfügbar unter PM:23493290.

Abstract:

BACKGROUND: The wrist has become a standard location for accelerometry (ACC) data collection, primarily to optimize compliance, yet interpreting wrist ACC data is limited due to a lack of calibration studies. This study aimed to establish cutpoints for a wrist-mounted Actical accelerometer in 6-11 year-old children using two methods. METHODS: Metabolic and ACC data (15 sec epoch) were collected during 8 activities in 22 children ages 6-11. Linear regression (LR) and Receiver Operator Characteristics (ROC) were used to examine the relationship between METs and ACC counts. Cutpoints were established at <1.5, 1.5-3, 3-6 and >/=6 METs for sedentary, light, moderate and vigorous activity, respectively. Cutpoints were applied to a large, multi-day sample of children (n=269) to examine differences in cutpoints on minutes of moderate-vigorous PA (MVPA). RESULTS: LR and ROC yielded moderate cutpoints of 574 and 388, respectively. When applied to the large sample, LR and ROC cutpoints resulted in an estimated 83 and 140 minutes of daily MVPA, respectively. CONCLUSIONS: We have established wrist-mounted Actical cutpoints for children using two methods. The differences in cutpoints and their effect on estimates of MVPA in an independent sample highlight challenges associated with establishing cutpoints, suggesting that standardized calibration procedures be developed

Schafer, A.; Vagedes, J. (2012):

How accurate is pulse rate variability as an estimate of heart rate variability?: A review on studies comparing photoplethysmographic technology with an electrocardiogram.

In: *Int.J Cardiol.* (0167-5273 (Linking)). DOI: 10.1016/j.ijcard.2012.03.119.

Abstract:

BACKGROUND: The usefulness of heart rate variability (HRV) as a clinical research and diagnostic tool has been verified in numerous studies. The gold standard technique comprises analyzing time series of RR intervals from an electrocardiographic signal. However, some authors have used pulse cycle intervals instead of RR intervals, as they can be determined from a pulse wave (e.g. a photoplethysmographic) signal. This option is often called pulse rate variability (PRV), and utilizing it could expand the serviceability of pulse oximeters or simplify ambulatory monitoring of HRV. METHODS: We review studies investigating the accuracy of PRV as an estimate of HRV, regardless of the underlying technology (photoplethysmography, continuous blood pressure monitoring or Finapresi, impedance plethysmography). RESULTS/CONCLUSIONS: Results speak in favor of sufficient accuracy when subjects are at rest, although many studies suggest that short-term variability is somewhat overestimated by PRV, which reflects coupling effects between respiration and the cardiovascular system. Physical activity and some mental stressors seem to impair the agreement of PRV and HRV, often to an inacceptable extent. Findings regarding the position of the sensor or the detection algorithm are not conclusive. Generally, quantitative conclusions are impeded by the fact that results of different studies are mostly incommensurable due to diverse experimental settings and/or methods of analysis

Schaffer, A.; Kreindler, D.; Reis, C.; Levitt, A. J. (2013):

Use of mental health telemetry to enhance identification and predictive value of early changes during augmentation treatment of major depression.

In: *J.Clin.Psychopharmacol.* 33 (6), S. 775–781. DOI: 10.1097/JCP.0b013e31829e8359.

Abstract:

Standard clinical trial methodology in depression does not allow for careful examination of early changes in symptom intensity. The purpose of this study was to use daily "Mental Health Telemetry" (MHT) to prospectively record change in depressive and anxiety symptoms for depressed patients receiving augmentation treatment, and determine the extent and predictive capacity of early changes. We report results of a 6-week, open-label study of the addition of quetiapine XR (range, 50-300 mg) for adult patients (n = 26) with major depressive disorder who were nonresponsive to antidepressant treatment. In addition to regular study visits, all participants completed daily, wirelessly transmitted self-report ratings of symptoms on a Smartphone. Daily and 3-day moving average mean scores were calculated, and associations between early symptom change and eventual response to treatment were determined. Improvement in depressive and anxiety symptoms was identified as early as day 1 of treatment. Of the total decline in depression severity over 6 weeks, 9% was present at day 1, 28% at day 2, 39% at days 3 and 4, 65% at day 7, and 80% at day 10. Self-report rating of early improvement (>/=20%) in depressive symptoms at day 7 significantly predicted

responder status at week 6 (P = 0.03). Clinician-rated depressive and anxiety symptoms only became significantly associated with responder status at day 14. In conclusion, very early changes in depressive symptoms were identified using MHT, early changes accounted for most of total change, and MHT-recorded improvement as early as day 7 significantly predicted response to treatment at study end point

Scharf, Deborah M.; Martino, Steven C.; Setodji, Claude M.; Staplefoote, B. Lynette; Shadel, William G. (2013):

Middle and High School Students' Exposure to Alcohol- and Smoking-Related Media: A Pilot Study Using Ecological Momentary Assessment.

In: *Psychology of Addictive Behaviors*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-20766-001%26site%3dehost-live.

Abstract:

The goals of this study were to assess the feasibility of using Ecological Momentary Assessment (EMA) to measure adolescents' exposure to alcohol and smoking-related media. A sample of 20 middle and high school students completed a 2-week EMA protocol in which they monitored exposures to alcohol and smoking-related media. Results showed that adolescents were highly compliant with the study protocol. A total of 255 exposures to alcohol (67%) and smoking (33%) were captured, representing an average of 8.50 (SD = 5.82) alcohol-related media exposures and 4.25 (SD = 3.67) smoking-related media exposures per participant, during the study period. Exposures tended to occur in the afternoon (52% alcohol; 54% smoking), at point of sale (44% alcohol; 65% smoking), and on days leading up to the weekend (57% alcohol; 57% smoking). Exposures were also likely in the presence of family (69% alcohol; 56% smoking). Overall, results of this small pilot provide preliminary evidence that EMA is a useful tool for tracking and characterizing middle and high school students' real-world exposures to alcohol- and smoking-related media. Future studies may suggest mechanisms by which media exposures lead to youth uptake of drinking and smoking behaviors. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Schasfoort, Fabiënne C.; Formanoy, Margriet A. G.; Bussmann, Johannes B. J.; Peters, Jeroen W. B.; Tibboel, Dick; Stam, Henk J. (2008):

Objective and continuous measurement of peripheral motor indicators of pain in hospitalized infants: a feasibility study.

In: *Pain* 137 (2), S. 323–331. DOI: 10.1016/j.pain.2007.09.011.

Abstract:

Measurement of pain in pre-verbal infants is complex. Until now, pain behavior has mainly been assessed intermittently using observational tools. Therefore, we determined the feasibility of long-term, objective and continuous measurement of peripheral motor parameters through body-fixed sensors to discriminate between pain and no pain in hospitalized pre-verbal infants. Two pain modes were studied: for procedural pain 10 measurements were performed before, during and after routine heel lances in 9 infants (age range infants: 5-175 days), and for post-operative pain 14 infants (age range 45-400 days) were measured for prolonged periods (mean 7h) using the validated COMFORT-behavior scale as reference method. Several peripheral motor parameters were studied: three body part activity parameters derived from acceleration sensors attached to one arm and both legs, and two muscle activity parameters derived from electromyographic (EMG) sensors attached to wrist flexor and extensor muscles. Results showed that the accelerometry-based parameters legs activity and overall extremity activity (i.e. mean of arm and legs) were significantly higher during heel lance than before or after lance (p0.001), whereas arm activity accelerometry data and wrist muscle activity EMG data showed no significant change. For the post-operative pain measurements, relationships were found between accelerometry-based overall extremity activity and COMFORT-behavior ($r=0.76$, $p<0.001$), and between EMG-based wrist flexor activity and COMFORT-behavior ($r=0.55$, $p<0.001$, for a subgroup of 7 infants). We conclude that long-term, objective and continuous measurement of peripheral motor parameters is feasible, has high potential, and is promising to assess pain in pre-verbal hospitalized infants.

Scheers, T.; Philippaerts, R.; Lefevre, J. (2012):

Assessment of physical activity and inactivity in multiple domains of daily life: a comparison between a zomputerized questionnaire and the SenseWear Armband complemented with an electronic diary.

In: *Int.J Behav.Nutr.Phys.Act.* 9 (1), S. 71. DOI: 10.1186/1479-5868-9-71.

Abstract:

ABSTRACT: BACKGROUND: Although differences between paper-and-pencil questionnaires and accelerometers have been reported for overall physical activity and time spent in moderate and vigorous activity, few studies have looked at domain-specific behavior. This study compared estimates of domainspecific physical (in)activity obtained with the Flemish physical activity computerized questionnaire (FPACQ) with those obtained from a combination of the SenseWear Armband and an electronic diary. Furthermore, it was investigated whether the correspondence between the two methods varied with gender and age METHODS: Data were obtained from 442 Flemish adults (41.4+/-9.8 years). Physical activity was questioned with the FPACQ and measured for seven consecutive days using the SenseWear Armband together with an electronic activity diary (SWD). Analogous variables were calculated from the FPACQ and SWD. Mean differences and associations between FPACQ and SWD outcomes were examined with paired t-tests and Pearson correlations. The BlandAltman method was used to assess the level of agreement between the two methods. Main effects and interaction of gender and age groups (20-34; 35-49; 50-64 years) on differences between FPACQ and SWD outcomes were analyzed using two-way ANOVAs. RESULTS: All parameters of the FPACQ were significantly correlated with SWD assessments (r = 0.21 to 0.65). Reported activity was significantly different from SWD-obtained values for all parameters, except screen time. Physical activity level, total energy expenditure and time spent in vigorous activities were significantly higher (+0.14 MET, +25.09 EThours.week-1and +1.66 hours.week-1, respectively), and moderate activities and sedentary behavior significantly lower (-5.20 and -25.01 hours.week-1, respectively) with the FPACQ compared to SWD. Time and energy expenditure of job activities and active transport were significantly higher, while household chores, motorized transport, eating and sleeping were significantly lower with the FPACQ. Time spent in sports was lower (-0.54 hours.week-1), but energy expenditure higher (+4.18 METhours.week-1) with the FPACQ. The correspondence between methods varied with gender and age, but results differed according to the intensity and domain of activity. CONCLUSIONS: Despite the moderate correlations, significant differences between the two methods were found. In general, physical activity was higher and sedentary behavior lower as calculated from the FPACQ compared to SWD

Scheers, T.; Philippaerts, R.; Lefevre, J. (2013):

Objectively-determined intensity- and domain-specific physical activity and sedentary behavior in relation to percent body fat.

In: *Clin.Nutr.* 32 (6), S. 999–1006. DOI: 10.1016/j.clnu.2013.03.014.

Abstract:

BACKGROUND & AIMS: This study examined the independent and joint associations of overall, intensity-specific and domain-specific physical activity and sedentary behavior with bioelectrical impedance-determined percent body fat. METHODS: Physical activity was measured in 442 Flemish adults (41.4 +/- 9.8 years) using the SenseWear Armband and an electronic diary. Two-way analyses of covariance investigated the interaction of physical activity and sedentary behavior with percent body fat. Multiple linear regression analyses, adjusted for potential confounders, examined the associations of intensity-specific and domain-specific physical activity and sedentary behavior with percent body fat. RESULTS: Results showed a significant main effect for physical activity in both genders and for sedentary behavior in women, but no interaction effects. Light activity was positively (beta = 0.41 for men and 0.43 for women) and moderate (beta = -0.64 and -0.41), vigorous (beta = -0.21 and -0.24) and moderate-to-vigorous physical activity (MVPA) inversely associated with percent body fat, independent of sedentary time. Regarding domain-specific physical activity, significant associations were present for occupation, leisure time and household chores, irrespective of sedentary time. The positive associations between body fat and total and domain-specific sedentary behavior diminished after MVPA was controlled for. CONCLUSIONS: MVPA during leisure time, occupation and household chores may be essential to prevent fat gain

Scheibe, S.; English, T.; Tsai, J. L.; Carstensen, L. L. (2012):

Striving to Feel Good: Ideal Affect, Actual Affect, and Their Correspondence Across Adulthood.

In: *Psychol.Aging* (0882-7974 (Linking)). DOI: 10.1037/a0030561.

Abstract:

The experience of positive affect is essential for healthy functioning and quality of life. Although there is a great deal of research on ways in which people regulate negative states, little is known about the regulation of positive states. In the present study we examined age differences in the types of positive states people strive to experience and the correspondence between their desired and actual experiences. Adults aged 18-93 years of age described their ideal positive affect states. Then, using experience-sampling over a 7-day period, they reported their actual positive affect experiences. Two types of positive affect were assessed: low-arousal (calm, peaceful, relaxed) and high-arousal (excited, proud). Young participants valued both types of positive affect equally. Older participants, however, showed increasingly clear preferences for low-arousal over high-arousal positive affect. Older adults reached both types of positive affective goals more often than younger adults (indicated by a smaller discrepancy between actual and ideal affect). Moreover, meeting ideal levels of positive low-arousal affect (though not positive high-arousal affect) was associated with individuals' physical health, over and above levels of actual affect. Findings underscore the importance of considering age differences in emotion-regulatory goals related to positive experience. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Schepers, H. Martin; Koopman, Hfjm; Veltink, Peter H. (2007):

Ambulatory assessment of ankle and foot dynamics.

In: *Biomedical Engineering, IEEE Transactions on* 54 (5), S. 895–902.

Abstract:

Ground reaction force (GRF) measurement is important in the analysis of human body movements. The main drawback of the existing measurement systems is the restriction to a laboratory environment. This paper proposes an ambulatory system for assessing the dynamics of ankle and foot, which integrates the measurement of the GRF with the measurement of human body movement. The GRF and the center of pressure (CoP) are measured using two six-degrees-of-freedom force sensors mounted beneath the shoe. The movement of foot and lower leg is measured using three miniature inertial sensors, two rigidly attached to the shoe and one on the lower leg. The proposed system is validated using a force plate and an optical position measurement system as a reference. The results show good correspondence between both measurement systems, except for the ankle power estimation. The root mean square (RMS) difference of the magnitude of the GRF over 10 evaluated trials was (0.012 plusmn 0.001) N/N (mean plusmn standard deviation), being (1.1 plusmn 0.1)% of the maximal GRF magnitude. It should be noted that the forces, moments, and powers are normalized with respect to body weight. The CoP estimation using both methods shows good correspondence, as indicated by the RMS difference of (5.1 plusmn 0.7) mm, corresponding to (1.7 plusmn 0.3)% of the length of the shoe. The RMS difference between the magnitudes of the heel position estimates was calculated as (18 plusmn 6) mm, being (1.4 plusmn 0.5)% of the maximal magnitude. The ankle moment RMS difference was (0.004 plusmn 0.001) Nm/N, being (2.3 plusmn 0.5)% of the maximal magnitude. Finally, the RMS difference of the estimated power at the ankle was (0.02 plusmn 0.005) W/N, being (14 plusmn 5)% of the maximal power. This power difference is caused by an inaccurate estimation of the angular velocities using the optical reference measurement system, which is due to considering the foot as a single segment. The ambulatory system considers separa- e heel and forefoot segments, thus allowing an additional foot moment and power to be estimated. Based on the results of this research, it is concluded that the combination of the instrumented shoe and inertial sensing is a promising tool for the assessment of the dynamics of foot and ankle in an ambulatory setting

Scherbaum, Charles A.; Meade, Adam W. (2013):

New directions for measurement in management research.

In: *International Journal of Management Reviews* 15 (2), S. 132–148. DOI: 10.1037/t03782-000;

Abstract:

Despite its importance, measurement has received less attention in the management sciences than it deserves. Currently, there is an over-reliance on a narrow set of methods of measuring cognitive, affective, motivational, attitudinal and individual difference constructs that are often of interest in behavioural management research. The authors argue that there is a need to expand the scope of the measurement methods commonly employed by management researchers and that a greater diversity of measurement methods would benefit the field by contributing to theory development and the pursuit of new areas of research. The goals of this review are twofold: (1) to increase awareness among management researchers of the alternative measurement methods that can capture many of the cognitive, affective, motivational, attitudinal and individual difference constructs of interest; (2) to critically evaluate how these methods can and should be used, with a focus on both the strengths and limitations of each method. This review focuses on three classes of measures: physiological and biological measures; experience-sampling measures; and implicit measures. These measures have had a tremendous impact on the research and theories of other fields such as marketing and economics, despite still being in their infancy. The authors believe that these three classes of measures have the potential to impact the nature and scope of management research and theory as well. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Schlotz, Wolff; Schulz, Peter; Hellhammer, Juliane; Stone, Arthur A.; Hellhammer, Dirk H. (2006):

Trait anxiety moderates the impact of performance pressure on salivary cortisol in everyday life.

In: *Psychoneuroendocrinology* 31 (4), S. 459–472. DOI: 10.1016/j.psyneuen.2005.11.003.

Abstract:

Stress and negative affective states are associated with cortisol in everyday life. However, it remains unclear what types of stressors and which affective states yield these associations, and the effect of trait anxiety is unknown. This study investigates the associations of specific task-related stressors and negative affective states in everyday life with salivary cortisol, and explores the mediating and moderating role of state negative affect and trait anxiety, respectively. Salivary cortisol, subjective stress, and state negative affect were measured three times a day on 2 days in 71 participants in everyday life, using a handheld computer to collect self-reports and time stamps and an electronic device to monitor saliva sampling compliance. Stress measures comprised the experience of performance pressure and failure during daily tasks; measures of negative affect comprised worn-out, tense, unhappy, and angry. Effects were tested using multilevel fixed-occasion models. Momentary performance under pressure was related to higher momentary cortisol measures, while mean task failure was related to lower daily cortisol concentrations. The association of performance pressure with cortisol varied between subjects, and this variation was explained by trait anxiety, yielding stronger associations in participants scoring high on trait anxiety. No evidence was found for a mediating role of state negative affect. These results describe the well-documented associations of everyday stressors and affect with salivary cortisol more precisely, suggesting that performance pressure is a significant condition related to short-term changes in cortisol. Subjects scoring high on trait anxiety seem to process stress-relevant information in a way that amplifies the association of performance pressure with reactions of the hypothalamus-pituitary-adrenal axis.

Schmidt, Michael D.; Cleland, Verity J.; Shaw, Kelly; Dwyer, Terence; Venn, Alison J. (2009):

Cardiometabolic risk in younger and older adults across an index of ambulatory activity.

In: *Am J Prev Med* 37 (4), S. 278–284. DOI: 10.1016/j.amepre.2009.05.020.

Abstract:

BACKGROUND\r\nPedometers are increasingly being used to assess population levels of physical activity and as motivational tools for individuals to increase their physical activity. To maximize their utility, a framework for classifying pedometer-determined activity into meaningful health-related categories is needed.\r\nPURPOSE\r\nThis study investigated whether a pedometer step index proposed by Tudor-Locke and Bassett can effectively group younger and older adults according to cardiometabolic health status.\r\nMETHODS\r\nAnalyses (conducted in 2008) used cross-sectional data from the Childhood Determinants of Adult Health study (1793 adults aged 26-36 years; collected 2004-2006) and from the Tasmanian Older Adult Cohort study (1014 adults aged 50-80 years; collected 2002-2006). Participants wore a pedometer for 7 days and the prevalence of cardiometabolic health indicators, including the metabolic syndrome, elevated Pathobiological Determinants of Atherosclerosis in Youth risk scores, and elevated Framingham risk scores, was examined across the following step categories: sedentary (< 5000); low-active (5000-7499); somewhat active (7500-9999); active (10,000-12,499); and high-active (> or = 12,500).\r\nRESULTS\r\nWith the exception of younger men, individuals achieving > or = 5000 steps had a substantially lower prevalence of adverse cardiometabolic health indicators than those obtaining fewer steps. Differences in the prevalence of adverse indicators were generally modest across higher steps-per-day categories. However, younger men and women in the high-active category had a substantially lower prevalence of some adverse health indicators.\r\nCONCLUSIONS\r\nIn general, the proposed index for classifying pedometer activity effectively distinguishes cardiometabolic health risk. Pedometers may be a useful tool for objectively identifying inactive individuals at greatest risk for poor cardiometabolic health.

Schnall, R.; Okoniewski, A.; Tiase, V.; Low, A.; Rodriguez, M.; Kaplan, S. (2013):

Using text messaging to assess adolescents' health information needs: an ecological momentary assessment.

In: *J Med Internet Res* 15 (3), S. e54. DOI: 10.2196/jmir.2395.

Abstract:

BACKGROUND: Use of mobile technology has made a huge impact on communication, access, and information/resource delivery to adolescents. Mobile technology is frequently used by adolescents. OBJECTIVE: The purpose of this study was to understand the health information needs of adolescents in the context of their everyday lives and to assess how they meet their information needs. METHODS: We gave 60 adolescents smartphones with unlimited text messaging and data for 30 days. Each smartphone had applications related to asthma, obesity, human immunodeficiency virus, and diet preinstalled on the phone. We

sent text messages 3 times per week and asked the following questions: (1) What questions did you have about your health today? (2) Where did you look for an answer (mobile device, mobile application, online, friend, book, or parent)? (3) Was your question answered and how? (4) Anything else? RESULTS: Our participants ranged from 13-18 years of age, 37 (62%) participants were male and 22 (37%) were female. Of the 60 participants, 71% (42/60) participants identified themselves as Hispanic and 77% (46/60) were frequent users of mobile devices. We had a 90% (1935/2150) response rate to our text messages. Participants sent a total of 1935 text messages in response to the ecological momentary assessment questions. Adolescents sent a total of 421 text messages related to a health information needs, and 516 text messages related to the source of information to the answers of their questions, which were related to parents, friends, online, mobile apps, teachers, or coaches. CONCLUSIONS: Text messaging technology is a useful tool for assessing adolescents' health behavior in real-time. Adolescents are willing to use text messaging to report their health information. Findings from this study contribute to the evidence base on addressing the health information needs of adolescents. In particular, attention should be paid to issues related to diet and exercise. These findings may be the harbinger for future obesity prevention programs for adolescents

Schneiders, Josien; Nicolson, Nancy A.; Berkhof, Johannes; Feron, Frans J.; van Os, Jim; Devries, Marten W. (2006):

Mood reactivity to daily negative events in early adolescence: relationship to risk for psychopathology.

In: *Developmental Psychology* 42 (3), S. 543–554. DOI: 10.1037/0012-1649.42.3.543.

Abstract:

Emotional responses to negative daily experiences in young adolescents may provide important clues to the development of psychopathology, but research is lacking. This study assessed momentary mood reactivity to daily events as a function of risk profile in a school sample, ages 11-14. High-risk (HR, n=25) and low-risk (LR, n=106) subgroups completed frequent self-reports of mood and events for 5 days. HR adolescents reported more negative events involving family and peers. Multilevel modeling results showed that negative events, especially if stressful, were associated with increased negative and decreased positive affects, with heightened responses in HR adolescents. HR adolescents with greater stress over the last 3 months showed additional increases in depressed mood following negative events. Altered reactivity to and dysfunctional appraisals of daily events may link adolescent risk profiles to later mental health problems.

Schoebi, Dominik (2008):

The coregulation of daily affect in marital relationships.

In: *Journal of Family Psychology* 22 (4), S. 595.

Abstract:

This study examined whether changes in individuals' affective states are associated with their partners' affect when spouses come together in daily life after having spent time apart while pursuing individual activities, as well as whether such associations are moderated by individual differences in interpersonal insecurity and perspective taking. For 7 consecutive days, spouses from 166 married couples reported their affect 6 times per day on 2 dimensions, hard affect (angry-calm) and soft affect (sad/depressed-upbeat/content). Within-couple analyses indicated that spouses' changes in hard affect covaried, particularly when they scored high on interpersonal insecurity. Moreover, husbands' changes in soft affect covaried with their wives' soft affect when the husbands scored high on perspective taking. The results emphasize the interconnectedness of spouses' feelings when they reunite, and they identify key individual difference variables that strengthen interpersonal transmission of emotion in close relationships.

Schoenthaler, Antoinette M.; Schwartz, Joseph; Cassells, Andrea; Tobin, Jonathan N.; Brondolo, Elizabeth (2010):

Daily interpersonal conflict predicts masked hypertension in an urban sample.

In: *Am J Hypertens* 23 (10), S. 1082–1088.

Abstract:

BACKGROUND:

Masked hypertension (MH) is a risk factor for cardiovascular and cerebrovascular diseases. However, little is known about the effect of psychosocial stressors on MH.

METHODS:

Daily interpersonal conflict was examined as a predictor of elevated ambulatory blood pressure (ABP) in a community sample of 240 unmedicated black and Latino(a) adults (63% women; mean age 36 years) who had optimal office blood pressure (BP) readings (≤120/80 mm Hg). Electronic diaries were used to assess daily interpersonal conflict (i.e., perceptions of being treated unfairly/harassed during social interactions). Participants rated the degree to which they experienced each interaction as unfair or harassing on a scale of 1-100. Systolic and diastolic ABP (SysABP and DiaABP, respectively) were collected using a validated 24-h ABP monitor. Participants were classified as having marked MH (MMH) if the average of all readings obtained yielded SysABP: ≥135 mm Hg or DiaABP: ≥85 mm Hg. Logistic regression was used to examine whether daily interpersonal conflict is an independent predictor of MMH.

RESULTS:

This form of MMH (i.e., optimal office BP plus elevated ABP) was present in 21% of participants (n = 50). Those with MMH (vs. without) were significantly more likely to be men (P < 0.001). Daily harassment and unfair treatment scores were significant predictors of MMH group status (P < 0.05). Participants with harassment scores >30 were significantly more likely to be in the MMH group.

CONCLUSION:

MH may be a concern, even for patients with optimal office BP. Evaluating exposure to psychosocial stressors, including routine levels of interpersonal conflict may help to identify those patients who might benefit from further clinical follow-up.

Schomer, Donald L. (2006):

Ambulatory EEG telemetry: how good is it?

In: *Journal of clinical neurophysiology* 23 (4), S. 294–305.

Abstract:

When someone asks the question, how good is ambulatory EEG telemetry, there is no correct answer. There are many manufacturers of ambulatory EEG technology. Each device has its own strengths and weaknesses. What one is really interested in when one asks such a question needs to be defined in terms of expectations and technical capabilities for the piece of equipment under discussion. Systems exist or can be easily modified to be as sophisticated as the best of the inpatient units. However, is that level of sophistication needed for the ambulatory based recordings? Again, the answer to that is dependent on the ordering physician's expectations. Below is a discussion of the different clinical expectations that are frequently encountered and the needed requirements for an ambulatory system to properly address them.

Schott, Timm Cornelius; Ludwig, Bjorn (2014):

Microelectronic wear-time documentation of removable orthodontic devices detects heterogeneous wear behavior and individualizes treatment planning.

In: *Am J Orthod Dentofacial Orthop* 146 (2), S. 155–160. DOI: 10.1016/j.ajodo.2014.04.020.

Abstract:

INTRODUCTION: The aim of this study was to investigate whether microelectronic wear-time documentation can contribute to individualized orthodontic management. METHODS: The wear times and behaviors of 281 patients undergoing orthodontic treatment with removable appliances were quantified and analyzed using the TheraMon microelectronic system (Sales Agency Gschladt, Hargelsberg, Austria) over a 6-month treatment period. RESULTS: The 281 study participants wore their removable appliances for a median of 9.0 hours per day, compared with the 12 to 15 hours per day prescribed. Wear behavior was variable and heterogeneous in patients with almost identical median wear times, with fluctuating and numerous zero wear-time periods observed. CONCLUSIONS: Both the duration of daily wear time and the wear behavior need to be considered to individualize the prescription for wear time; this is made possible with microelectronic wear-time documentation. Individual prescription changes based on the wear-time documentation can be arranged with patients in a shared decision-making process to achieve effective and successful treatment progress.

Schrama, Thijs (2009):

A wireless portable physiology recorder for psychophysiology research based on a personal digital assistant.

In: *Behavior Research Methods* 41 (3), S. 827–832. DOI: 10.3758/BRM.41.3.827.

Abstract:

Psychophysiology research is increasingly relying on portable instruments that can assess physiological responses during real-life situations at locations outside of research labs, such as at school, home, work, and outdoors. In this article, I report on the feasibility of a personal digital assistant-based portable physiology recording system with online signal graphing and wireless digital telemetry for psychophysiology research. I demonstrate that such a system can measure electrocardiogram and electrodermal activity and send this data over a wireless communication link to a PC. It enables users to inspect the integrity of the acquired signals on the portable device and on a PC base station, and it allows users to place time markers for online data analysis.

Schreiber-Gregory, D. N.; Lavender, J. M.; Engel, S. G.; Wonderlich, S. A.; Crosby, R. D.; Peterson, C. B. et al. (2013):

Examining duration of binge eating episodes in binge eating disorder.

In: *Int.J Eat.Disord.* (0276-3478 (Linking)). DOI: 10.1002/eat.22164.

Abstract:

OBJECTIVE: The primary goal of this article is to examine and clarify characteristics of binge eating in individuals with binge eating disorder (BED), particularly the duration of binge eating episodes, as well as potential differences between individuals with shorter compared to longer binge eating episodes. METHOD: Two studies exploring binge eating characteristics in BED were conducted. Study 1 examined differences in clinical variables among individuals (N = 139) with BED who reported a short (<2 h) versus long (>/=2 h) average binge duration. Study 2 utilized an ecological momentary assessment design to examine the duration and temporal pattern of binge eating episodes in the natural environment in a separate sample of nine women with BED. RESULTS: Participants in Study 1 who were classified as having long duration binge eating episodes displayed greater symptoms of depression and lower self-esteem, but did not differ on other measures of eating disorder symptoms, compared to those with short duration binge eating episodes. In Study 2, the average binge episode duration was approximately 42 min, and binge eating episodes were most common during the early afternoon and evening hours, as well as more common on weekdays versus weekends. DISCUSSION: Past research on binge episode characteristics, particularly duration, has been limited to studies of binge eating episodes in bulimia nervosa. This study contributes to the existing literature on characteristics of binge eating in BED. (c) 2013 Wiley Periodicals, Inc. (Int J Eat Disord 2013)

Schubert, Christian (2008):

Research on psychosomatic complexity: another example of the usefulness of diaries for symptoms research.

In: *Journal of Psychosomatic Research* 64 (2), S. 237–238. DOI: 10.1016/j.jpsychores.2007.11.002.

Abstract:

I read the Burton et al. [1] review on the usefulness of electronic diaries for symptoms research with great interest. The authors concluded from the comparison of 32 papers that electronic diaries are both acceptable to users and sufficiently accurate for research purposes. However, in their list of issues still to be resolved with electronic diaries, I miss the point that electronic diary studies—supposed to answer questions too complex for simpler designs—have not yet identified truly complex psychosomatic phenomena such as feedback mechanisms and dynamic networks [2].

Schulz, Marc S.; Waldinger, Robert J. (2010):

Capturing the elusive: Studying emotion processes in couple relationships.

Abstract:

In this chapter, we describe our efforts to study emotion processes in couple interactions using multiple approaches and multiple windows of observation. We begin by briefly embedding these efforts in the larger context of research and theory on

emotion processes in couples. We then discuss modern theories of emotion and note the challenges that these theories present for investigators. Finally, we review approaches to addressing major challenges in emotion research using examples from the field and from our own studies of couple interactions. These challenges include how to study emotion in ecologically valid situations; how to capture fleeting emotional experiences, including associated cognitive and motivational elements; how to reliably and sensitively assess emotion expression; and how to track and integrate multiple aspects of emotion (e.g., physiology, subjective feeling states, observed expression) as they unfold over time.

Schutte, A. E.; Schutte, R.; Smith, W.; Huisman, H. W.; Mels, C. M. C.; Malan, L. et al. (2014):

Compromised bioavailable IGF-1 of black men relates favourably to ambulatory blood pressure: The SABPA study.

In: *Atherosclerosis* 233 (1), S. 139–144. DOI: 10.1016/j.atherosclerosis.2013.12.025.

Abstract:

OBJECTIVES: Insulin-like growth factor-1 (IGF-1) has potent endothelial-protective, anti-platelet and anti-thrombotic activities, and also exerts mitogenic and proliferatory actions on vascular smooth muscle cells. Conflicting reports exist regarding the role of IGF-1 in vascular protection and atherogenesis. We therefore investigated the relationships of ambulatory blood pressure (BP) and carotid intima-media thickness (cIMT) with a range of components of the IGF-1 axis in a bi-ethnic population. METHODS: We included black (N = 86) and white (N = 101) men and measured growth hormone, total IGF-1, insulin-like growth factor binding protein-3 (IGFBP-3), and pregnancy-associated plasma protein-A (PAPP-A) levels. RESULTS: Ambulatory BP was almost 10 mmHg higher in black men (137/88 mmHg versus 128/80 mmHg; both $p < 0.001$), accompanied by an adverse profile of the IGF-axis for all measured components (all $p < 0.01$), including reduced bioavailable IGF-1 (IGF-1/IGFBP-3; $p = 0.006$) and tissue IGF-1 accessibility index as represented by IGF-1.PAPP-A/IGFBP-3 ($p < 0.001$). Single, partial and multiple regression analyses confirmed an independent inverse association between ambulatory systolic BP and bioavailable IGF-1 in black men ($R(2) = 0.24$; beta = -0.22; $p = 0.035$). cIMT was similar in the ethnic groups ($p = 0.34$), and was negatively associated with bioavailable IGF-1 in white men ($R(2) = 0.42$; beta = -0.17; $p = 0.039$) prior to adjustment for gamma-glutamyl transferase ($R(2) = 0.45$; beta = -0.10; $p = 0.25$). CONCLUSION: Ambulatory systolic BP is inversely related to bioavailable IGF-1 in black men who displayed low IGF-1 concentrations. An inverse relation was found between cIMT and IGF-1 in white men, which disappeared after correction for gamma-glutamyl transferase - opposing reports of a detrimental role of IGF-1 in the early stages of atherogenesis.

Schuz, Natalie; Ferguson, Stuart G. (2014):

Australian Smokers' and Nonsmokers' Exposure to Antismoking Warnings in Day-to-Day Life: A Pilot Study.

In: *Nicotine Tob Res. DOI:* 10.1093/ntr/ntu253.

Abstract:

INTRODUCTION: Smokers and nonsmokers can encounter a variety of antismoking messages in their everyday life. Antismoking warnings often involve fear appeals to which particularly smokers may react in a defensive manner by avoiding or derogating the messages, or downplaying their personal risk. However, previous studies testing the effects of antismoking warnings have either been retrospective or lab-based, thus introducing potential recall biases and yielding limited ecological validity. We used ecological momentary assessment (EMA) to give an overview on the number, type, and locations where individuals encounter such messages and to examine their immediate reactions. METHODS: In an EMA study, 33 smokers and 37 never-smokers logged every encounter with antismoking warnings during 2.5 weeks (1,237 participant days of monitoring). After randomly selected encounters, several markers of defensiveness were assessed. RESULTS: On average, nonsmokers reported noticing significantly fewer warnings than smokers (M = 0.49/day vs. M = 2.14/day). Both groups saw the majority of warnings on cigarette packages. Smokers reported a significantly higher level of message derogation and a significantly lower level of message acceptance than nonsmokers. There were no differences in feelings of vulnerability between smokers and nonsmokers upon encountering the warnings. CONCLUSIONS: The overall number of encounters with antismoking warnings in people's everyday life is relatively low, particularly among smokers. Smokers are likely to avoid messages and respond defensively, thus limiting their potential effectiveness.

Schuz, N.; Walters, J. A.; Frandsen, M.; Bower, J.; Ferguson, S. G. (2013):

Compliance With an EMA Monitoring Protocol and Its Relationship With Participant and Smoking Characteristics.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt142.

Abstract:

INTRODUCTION: Arguably, the greatest advantage of ecological momentary assessment (EMA) studies is that data are collected repeatedly in real-time and real-world situations, which reduces recall and situational biases and thus improves the accuracy and validity of the data collected. However, the validity of EMA data is contingent upon compliance rates. If participant characteristics are related to missing data, analyses should control for these factors, or they should be targeted in EMA training sessions. This study evaluates the impact of demographic and smoking-related participant characteristics on compliance to an EMA smoking study protocol. METHODS: Prequit day data were taken from the control arm of an ongoing randomized controlled trial of a smoking-cessation program. After training, N = 119 participants were asked to carry a mobile device with them at all times for ~6 days and log every cigarette they smoked in addition to completing randomly scheduled assessments. Different types of compliance were assessed: the percentage of completed random prompts (signal-contingent compliance), the percentage of logged cigarettes per day compared to a timeline follow-back measure, and the correlation between logged cigarettes and a carbon monoxide assessment 2hr later (both event-contingent compliance). RESULTS: Overall compliance rates were 78.48% for event-contingent and 72.17% for signal-contingent compliance. None of the demographic or smoking-related participant characteristics predicted signal-contingent compliance; however, female participants showed higher event-contingent compliance than male participants, and Caucasian participants showed higher event-contingent compliance than non-Caucasian participants. CONCLUSIONS: Compliance did not depend on smoking-related characteristics. EMA is a valid method to assess smoking behavior in real-time and real-world settings

Schwerdtfeger, Andreas R.; Schienle, Anne; Leutgeb, Verena; Rathner, Eva-Maria (2014):

Does cardiac reactivity in the laboratory predict ambulatory heart rate? Baseline counts.

In: *Psychophysiology* 51 (6), S. 565–572. DOI: 10.1111/psyp.12199.

Abstract:

Cardiovascular reactivity to laboratory stress might predict cardiovascular load in everyday life. However, previous research throws doubt on this hypothesis. This study examined associations between heart rate (HR) to a public speaking task and ambulatory HR throughout a day. Electrocardiogram, bodily movement, and psychosocial variables (affect, context) were recorded in 111 individuals. Ambulatory HR was positively associated with both positive and negative affect. Baseline HR in the laboratory significantly predicted ambulatory HR, but HR reactivity did not. The interaction of momentary negative affect and cardiac reactivity in the laboratory was also not significant. However, a significant interaction of baseline HR and reactivity indicated that, when baseline was high, there was a positive relation between HR reactivity and ambulatory HR. Findings suggest that baseline has to be considered when aiming to predict cardiovascular load in everyday life.

Scott, Stacey B.; Sliwinski, Martin J.; Blanchard-Fields, Fredda (2013):

Age differences in emotional responses to daily stress: The role of timing, severity, and global perceived stress.

In: *Psychology and Aging* 28 (4), S. 1076–1087. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-44002-013%26site%3dehost-live;sbs26@psu.edu.

Abstract:

Research on age differences in emotional responses to daily stress has produced inconsistent findings. Guided by recent theoretical advances in aging theory (S. T. Charles, 2010, Strength and vulnerability integration: A model of emotional well-being across adulthood, Psychological Bulletin, Vol. 136, pp. 1068–1091) that emphasize the importance of context for predicting when and how age is related to affective well-being, the current study examined age differences in emotional responses to everyday stressors. The present study examined how three contextual features (e.g., timing of exposure, stressor severity, global perceived stress [GPS]) moderate age differences in emotional experience in an ecological momentary assessment study of adults (N = 190) aged 18–81 years. Results indicated that older adults' negative affect (NA) was less affected by exposure to recent stressors than younger adults, but that there were no age differences in the effects of stressor exposure 3–6 hr afterward. Higher levels of GPS predicted amplified NA responses to daily stress, and controlling for GPS eliminated age differences in NA responses to stressors. No age differences in NA responses as a function of stressor severity were observed. In contrast, older age was

associated with less of a decrease in PA when exposed to recent stressors or with more severe recent stressors. There were no age differences in the effect of previous stressor exposure or severity on PA, or any interactions between momentary or previous stress and GPS on PA. Together, these results support the notion that chronic stress plays a central role in emotional experience in daily life. We discuss the implications of these results for emotion theories of aging. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Scott, Stacey B.; Sliwinski, Martin J.; Mogle, Jacqueline A.; Almeida, David M. (2014):

Age, stress, and emotional complexity: Results from two studies of daily experiences.

In: *Psychol Aging* 29 (3), S. 577–587. DOI: 10.1037/a0037282.

Abstract:

Experiencing positive and negative emotions together (i.e., co-occurrence) has been described as a marker of positive adaptation during stress and a strength of socioemotional aging. Using data from daily diary (N = 2,022; ages 33-84) and ecological momentary assessment (N = 190; ages 20-80) studies, we evaluate the utility of a common operationalization of co-occurrence, the within-person correlation between positive affect (PA) and negative affect (NA). Then we test competing predictions regarding when co-occurrence will be observed and whether age differences will be present. Results indicate that the correlation is not an informative indicator of co-occurrence. Although correlations were stronger and more negative when stressors occurred (typically interpreted as lower co-occurrence), objective counts of emotion reports indicated that positive and negative emotions were 3 to 4 times more likely to co-occur when stressors were reported. This suggests that co-occurrence reflects the extent to which negative emotions intrude on typically positive emotional states, rather than the extent to which people maintain positive emotions during stress. The variances of both PA and NA increased at stressor reports, indicating that individuals reported a broader not narrower range of emotion during stress. Finally, older age was associated with less variability in NA and a lower likelihood of co-occurring positive and negative emotions. In sum, these findings cast doubt on the utility of the PA-NA correlation as an index of emotional co-occurrence, and question notion that greater emotional co-occurrence represents either a typical or adaptive emotional state in adults. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Seeger, Christian; van Laerhoven, Kristof; Buchmann, Alejandro (2014):

MyHealthAssistant: An Event-driven Middleware for Multiple Medical Applications on a Smartphone-mediated Body Sensor Network.

In: *IEEE J Biomed Health Inform. DOI:* 10.1109/JBHI.2014.2326604.

Abstract:

An ever-growing range of wireless sensors for medical monitoring has shown that there is significant interest in monitoring patients in their everyday surroundings. It however remains a challenge to merge information from several wireless sensors and applications are commonly built from scratch. This paper presents a middleware targeted for medical applications on smartphone-like platforms that relies on an event-based design to enable flexible coupling with changing sets of wireless sensor units, while posing only a minor overhead on the resources and battery capacity of the interconnected devices. We illustrate the requirements for such middleware with three different healthcare applications that were deployed with our middleware solution, and characterize the performance with energy consumption, overhead caused for the smartphone, and processing time under real-world circumstances. Results show that with sensingintensive applications our solution only minimally impacts the phone's resources, with an added CPU utilization of 3% and a memory usage under 7 MB. Furthermore, for a minimum message delivery ratio of 99.9%, up to 12 sensor readings per second are guaranteed to be handled, regardless of the number of applications using our middleware.

Seekins, Tom; Ipsen, Catherine; Arnold, Nancy L. (2007):

Using ecological momentary assessment to measure participation: A preliminary study.

In: *Rehabilitation Psychology* 52 (3), S. 319.

Abstract:

Purpose/Objective: Participation is emerging as the gold standard of outcome measurement in disability and rehabilitation, but there are few methods for measuring it. This article describes the development of a dynamic measure of participation that uses the International Classification of Functioning, Disability and Health as the framework for measure development and ecological momentary assessment (EMA) as the data collection methodology. Research Method/Design: Researchers programmed

personal data assistants to prompt 5 residents of a rural community to report their location, activity, social contact, environmental barriers and facilitators, secondary conditions, and ratings of community connectedness and fulfillment. Results: Overall, 5 participants reported data on 1,352 engagements over 7 weeks. Participants reported greater community connectedness and fulfillment when they spent time with others, were not home, and were not experiencing barriers or secondary conditions. Conclusions/Implications: EMA measures and methodology are 1 step in answering questions about participation within the ecological framework of disability. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Segura-Jimenez, Victor; Munguia-Izquierdo, Diego; Camiletti-Moiron, Daniel; Alvarez-Gallardo, Inmaculada C.; Ortega, Francisco B.; Ruiz, Jonatan R.; Delgado-Fernandez, Manuel (2013):

Comparison of the International Physical Activity Questionnaire (IPAQ) with a multi-sensor armband accelerometer in women with fibromyalgia: the al-Andalus project.

In: *Clin Exp Rheumatol* 31 (6 Suppl 79), S. S94-101.

Abstract:

OBJECTIVES: To compare levels of physical activity (PA) assessed by the International Physical Activity Questionnaire (IPAQ) with PA measured with the SenseWear Pro Armband (SWA) in women with fibromyalgia, and to assess the test-retest reliability of the IPAQ. METHODS: The study comprised a total of 183 women with fibromyalgia aged 51.1+/-8.2 years. Participants wore the SWA for 9 consecutive days and filled in the IPAQ twice (separated by a 9-day interval). Total PA, time spent on moderate and vigorous intensity PA, and sitting time assessed by the IPAQ and the SWA (n=123) were compared. RESULTS: Time spent on PA at different intensities (total, moderate and vigorous) was higher and sedentary time was lower when assessed by the IPAQ compared with the SWA (all p<0.001). Differences between the IPAQ and the SWA increased as the minutes per day in the IPAQ increased. The Bland-Altman plots showed no agreement between the IPAQ and the SWA. There was no association between the IPAQ and the SWA in any of the variables studied, except for walking domain from the IPAQ and moderate PA from the SWA (rp=0.19, p=0.03). Test-retest systematic differences were found for total PA score, moderate and vigorous intensity, working and domestic domains (all p<0.05). The ICCs for those domains without systematic differences (sitting, vehicle, walking, active transport time and leisure domains) ranged from 0.52 to 0.71). CONCLUSIONS: The IPAQ differs from objectively measured PA and presents limitations to classify different categories of PA based on SWA data. Moreover, the IPAQ is not a reliable tool to assess PA in women with fibromyalgia.

Sejdić, Ervin; Steele, Catriona M.; Chau, Tom (2010):

A procedure for denoising dual-axis swallowing accelerometry signals.

In: *Physiol Meas* 31 (1), S. N1-9. DOI: 10.1088/0967-3334/31/1/N01.

Abstract:

Dual-axis swallowing accelerometry is an emerging tool for the assessment of dysphagia (swallowing difficulties). These signals however can be very noisy as a result of physiological and motion artifacts. In this note, we propose a novel scheme for denoising those signals, i.e. a computationally efficient search for the optimal denoising threshold within a reduced wavelet subspace. To determine a viable subspace, the algorithm relies on the minimum value of the estimated upper bound for the reconstruction error. A numerical analysis of the proposed scheme using synthetic test signals demonstrated that the proposed scheme is computationally more efficient than minimum noiseless description length (MNDL)-based denoising. It also yields smaller reconstruction errors than MNDL, SURE and Donoho denoising methods. When applied to dual-axis swallowing accelerometry signals, the proposed scheme exhibits improved performance for dry, wet and wet chin tuck swallows. These results are important for the further development of medical devices based on dual-axis swallowing accelerometry signals.

Selby, Edward Andrew (2012):

A real-time evaluation of emotional cascades in borderline personality disorder.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 73 (2-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-99160-552%26site%3dehost-live.

Abstract:

Borderline personality disorder (BPD) is characterized by intensity and sensitivity of negative emotion (emotion dysregulation) as well as various dysregulated behaviors, including self-injury, suicide attempts, binge eating, and substance use. The emotional

cascade model of BPD (Selby & Joiner, 2009) suggests that the turbulent emotional experience of those with BPD is the result of emotional cascades, vicious cycles of increasing rumination and negative emotion. Dysregulated behaviors, then, may serve as potent methods of distraction from rumination due to the salient physical sensations these behaviors provide (e.g., pain from self-injury). Although this model has received correlational and experimental support (Selby et al., 2009), additional research on the real-time processes of rumination and emotion, and how they relate to dysregulated behaviors, is needed. The following study used experience sampling methodology wherein individuals endorsing recent behavioral dysregulation (some with diagnoses of BPD) were signaled randomly 5 times each day for two weeks using palm pilots, at which times they recorded their thought processes, emotional experience, recent interpersonal events and dysregulated behaviors. Participants completed a total of 3,118 scheduled random assessments over monitoring. Using various forms of hierarchical linear modeling, the results of the study supported the Emotional Cascade Model using real-world data. Importantly, the data indicated that high levels of rumination have an exponential effect on predicting future engagement in dysregulated behaviors, especially for those with BPD. The results of this study provide important support for the emotional cascade model and suggest that it is a theory with important clinical implications. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Selby, E. A.; Doyle, P.; Crosby, R. D.; Wonderlich, S. A.; Engel, S. G.; Mitchell, J. D.; Le, Grange D. (2012):

Momentary emotion surrounding bulimic behaviors in women with bulimia nervosa and borderline personality disorder.

In: *J Psychiatr.Res* 46 (11), S. 1492–1500. DOI: 10.1016/j.jpsychires.2012.08.014.

Abstract:

BACKGROUND: Bulimia nervosa (BN) and borderline personality disorder (BPD) are disorders that involve emotion dysregulation, for negative emotion in particular, as well as impulsive behaviors beyond binge eating and vomiting. Given these similarities in psychopathology, it is not surprising that those with BN also present with BPD in approximately one third of cases. Improved understanding of similarities and differences in the experience of negative and positive emotion could aid in the development of treatments specifically tailored to the needs of these disorders. METHODS: In this study, we examined Ecological Momentary Assessment (EMA) data from 133 women diagnosed with BN, 25 of whom also exhibited diagnostic levels of BPD. Emotions and behaviors were assessed daily, with multiple random and event-contingent signals to complete questionnaires on portable digital devices, for a period of two weeks. RESULTS: Results indicated that the BPD group experienced higher negative emotional variability on bulimic event days. Both groups also demonstrated increasing negative emotion and decreasing positive emotion pre- binge eating and vomiting, with levels of negative emotion decreasing and positive emotion increasing after, for both behaviors. CONCLUSIONS: In terms of group differences, additive effects were found for the BN comorbid with BPD group, who demonstrated greater negative emotional variability, on bulimic event days, and also had higher overall levels of negative emotion pre- and post-binge eating. Those with BN only, however, displayed increasing trajectories of positive emotion before and after binge eating and after vomiting, indicating a potential emotional dampening effect of BPD

Selby, Edward A.; Franklin, Joe; Carson-Wong, Amanda; Rizvi, Shireen L. (2013):

Emotional cascades and self-injury: Investigating instability of rumination and negative emotion.

In: *Journal of Clinical Psychology* 69 (12), S. 1213–1227. DOI: 10.1037/t18597-000;

Abstract:

Objective: Nonsuicidal self-injury (NSSI) is a public health concern and risk factor for suicide. The Emotional Cascade Model (ECM) proposes that NSSI partially functions as a distraction from cascades of negative affect and rumination. The purpose of this study was to examine the roles of trait rumination, and momentary instability of rumination and negative emotion, in NSSI. Method: Experience sampling methods were used to monitor thoughts, emotions, and behaviors in 47 individuals reporting dysregulated behaviors including NSSI. Instability indices were generated for rumination and negative emotion using the momentary assessments. Results: Twenty-five episodes of NSSI were reported during monitoring. Trait rumination prospectively predicted NSSI episodes, and the instability indices interacted to predict NSSI. Conclusions: Consistent with the ECM, the interaction between rumination instability and negative affect instability during monitoring significantly predicted NSSI, with the strongest effects occurring for sadness and rumination about past. These findings may enhance conceptualization and treatment of patients with NSSI. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Selby, Edward A.; Nock, Matthew K.; Kranzler, Amy (2014):

How does self-injury feel? Examining automatic positive reinforcement in adolescent self-injurers with experience sampling.

In: *Psychiatry Res* 215 (2), S. 417–423. DOI: 10.1016/j.psychres.2013.12.005.

Abstract:

One of the most frequently reported, yet understudied, motivations for non-suicidal self-injury (NSSI) involves automatic positive reinforcement (APR), wherein sensations arising from NSSI reinforce and promote the behavior. The current study used experience sampling methodology with a clinical sample of self-injuring adolescents (N=30) over a 2-week period during which the adolescents reported NSSI behaviors, and rated if an APR motivation was present, and if so whether that motivation pertained to feeling "pain," "stimulation," or "satisfaction." Over 50% of the sample reported at least one instance of NSSI for APR reasons. No significant differences were found on demographic factors or psychiatric comorbidity for those with and without an APR motivation. However, those with an APR motivation reported elevated NSSI thoughts, longer duration of those thoughts, and more NSSI behaviors. They also reported more alcohol use thoughts, alcohol use, impulsive spending, and binge eating. The most commonly reported sensation following NSSI for APR was "satisfaction." However those endorsing feeling pain reported the most NSSI behaviors. These findings provide new information about the APR motivations for NSSI and shed light on the different sensations felt.

Selby, Edward A.; Ribeiro, Jessica D.; Joiner, Thomas E. (2013):

What Dreams May Come: Emotional Cascades and Nightmares in Borderline Personality Disorder.

In: *Dreaming*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-08154-001%26site%3dehost-live.

Abstract:

People diagnosed with borderline personality disorder (BPD) have been found to have a number of sleep problems, including frequent and distressing nightmares. The experience of nightmares is likely to worsen emotion dysregulation and decrease coping abilities the subsequent day, making it an important issue for clinicians to address. One recent theoretical model of BPD psychopathology, the Emotional Cascade Model (ECM), may shed light on this phenomenon by characterizing nightmares as the experience of emotional cascades that occur during sleep. A model is presented in which these cascades may carry over from a stressful day and lead to elevated cognitive activity during sleep, as well as nightmare-like phenomena. To test this model we used experience sampling from 47 participants exhibiting dysregulated behaviors—16 of them diagnosed with BPD. Negative emotion, rumination, and number of nightmares were assessed daily across two consecutive weeks. Analyses indicated that the BPD group experienced more frequent nightmares, that BPD diagnosis interacted with baseline trait rumination to prospectively predict number of nightmares reported during monitoring, and daily experience of emotional cascades predicted subsequent number of nightly nightmares. These findings held after controlling for key covariates, including sleep quality and diagnoses of depression and posttraumatic stress disorder. Important clinical interventions consistent with the ECM conceptualization of nightmares are proposed, including the potential for management of daily rumination and negative emotion, imagery rescripting for recurrent or anxiously anticipated nightmares, and potential prescription of prazosin (an alpha1-adrenergic antagonist) for the reduction of nightmares in this group. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Selya, Arielle S.; Updegrove, Nicole; Rose, Jennifer S.; Dierker, Lisa; Tan, Xianming; Hedeker, Donald et al. (2015):

Nicotine-dependence-varying effects of smoking events on momentary mood changes among adolescents.

In: *Addict Behav* 41, S. 65–71. DOI: 10.1016/j.addbeh.2014.09.028.

Abstract:

INTRODUCTION: Theories of nicotine addiction emphasize the initial role of positive reinforcement in the development of regular smoking behavior, and the role of negative reinforcement at later stages. These theories are tested here by examining the effects of amount smoked per smoking event on smoking-related mood changes, and how nicotine dependence (ND) moderates this effect. The current study examines these questions within a sample of light adolescent smokers drawn from the metropolitan Chicago area (N=151, 55.6% female, mean 17.7years). INSTRUMENTS: Ecological momentary assessment data were

collected via handheld computers, and additional variables were drawn from a traditional questionnaire. METHODS: Effects of the amount smoked per event on changes in positive affect (PA) and negative affect (NA) after vs. before smoking were examined, while controlling for subject-averaged amount smoked, age, gender, and day of week. ND-varying effects were examined using varying effect models to elucidate their change across levels of ND. RESULTS: The effect of the amount smoked per event was significantly associated with an increase in PA among adolescents with low-to-moderate levels of ND, and was not significant at high ND. Conversely, the effect of the amount smoked was significantly associated with a decrease in NA only for adolescents with low levels of ND. CONCLUSIONS: These findings support the role of positive reinforcement in early stages of dependent smoking, but do not support the role of negative reinforcement beyond early stages of smoking. Other potential contributing factors to the relationship between smoking behavior and PA/NA change are discussed.

Senso, Meghan M.; Anderson, Christopher P.; Crain, A. Lauren; Sherwood, Nancy E.; Martinson, Brian C. (2014):

Self-reported Activity and Accelerometry in 2 Behavior-maintenance Trials.

In: *Am J Health Behav* 38 (2), S. 254–264. DOI: 10.5993/AJHB.38.2.11.

Abstract:

OBJECTIVES: To compare between accelerometry (MVPA-A) and self-reported activity (MVPA-SR) in activity-maintenance (Keep Active Minnesota; KAM) and weight loss-maintenance (Keep It Off; KIO) trials. METHODS: Linear regression estimated moderation of study, treatment, or time on MVPA-A and MVPA-SR associations. RESULTS: MVPA-A was similar between studies (KAM 119 minutes, KIO 112 minutes, p = .555), whereas MVPA-SR differed significantly (KAM 350 minutes, KIO 87 minutes, p < .0001). Only study moderated correla-tion between MVPA-A and MVPA-SR. MVPA-SR better predicted MVPA-A in KIO relative to KAM (p = .023). CONCLUSIONS: Results suggest that self-presentation bias may influence validity of self-report in intervention studies with activity as a primary outcome. Researchers should select self-report to assess activity dimensions that objective measures capture poorly.

Seo, Myeong-Gu; Bartunek, Jean M.; Barrett, Lisa Feldman (2010):

The role of affective experience in work motivation: Test of a conceptual model.

In: *J. Organiz. Behav.* 31 (7), S. 951–968.

Abstract:

The purpose of this paper was to contribute to understanding of the crucial role of emotion in work motivation by testing a conceptual model developed by Seo, Barrett, and Bartunek (2004) that predicted the impacts of core affect on three behavioral outcomes of work motivation, generative-defensive orientation, effort, and persistence. We tested the model using an Internet-based investment simulation combined with an experience sampling procedure. Consistent with the predictions of the model, pleasantness was positively related to all three of the predicted indices. For the most part, these effects occurred indirectly via its relationships with expectancy, valence, and progress judgment components. Also as predicted by the model, activation was directly and positively related to effort.

Sepp&#65533;L&#65533;, Piia; Mauno, Saija; Kinnunen, Marja Liisa; Feldt, Taru; Juuti, Tanja; Tolvanen, Asko; Rusko, Heikki (2012):

Is work engagement related to healthy cardiac autonomic activity? Evidence from a field study among Finnish women workers.

In: *The Journal of Positive Psychology* 7 (2), S. 95–106. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-07208-002&site=ehost-live;piia.seppala@ttl.fi.

Abstract:

The present study investigated whether work engagement is related to and can explain healthy cardiac autonomic activity as indicated by decreased heart rate (HR; i.e., sympathetic and parasympathetic activity) and increased high-frequency power (HFP) of heart rate variability (i.e., parasympathetic activity). A total of 30 healthy Finnish female cleaning workers underwent an ambulatory monitoring period of two nights and two regular workdays, and mean values of work period HR and HFP were utilized as dependent variables. Correlations revealed that work engagement was, as hypothesized, negatively related to HR and positively to HFP. Furthermore, in hierarchical linear regression analysis, work engagement accounted for an additional 19% of the variance explained in HFP, independent of individual baseline, age, Body Mass Index, physical fitness, and medication. However, the explanation rate for HR did not reach statistical significance. The findings suggest that work engagement is

associated with healthy, adaptable cardiac autonomic activity, particularly increased parasympathetic activity. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Serre, F.; Fatseas, M.; Debrabant, R.; Alexandre, J. M.; Auriacombe, M.; Swendsen, J. (2012):

Ecological momentary assessment in alcohol, tobacco, cannabis and opiate dependence: A comparison of feasibility and validity.

In: *Drug Alcohol Depend* (0376-8716 (Linking)). DOI: 10.1016/j.drugalcdep.2012.04.025.

Abstract:

BACKGROUND: Despite growing use of computerized ambulatory monitoring in substance dependence research, little is known about the comparative feasibility and validity of these novel methods by substance type. This study compares the feasibility and validity of computerized ambulatory monitoring in outpatients seeking treatment for alcohol, tobacco, cannabis or opiate dependence. METHODS: A total of 109 participants were recruited from an outpatient treatment center and completed standard clinical instruments followed by 2 weeks of computerized ambulatory monitoring of daily life experiences and substance use. RESULTS: Individuals with cannabis dependence had the lowest rates of study acceptance (31%) as well as compliance with the repeated electronic interviews (79.9%), while those with tobacco dependence had the highest rates (62% and 91.0%, respectively). Concurrent validity was found between scores from standard clinical instruments and similar constructs assessed in daily life, with no difference by substance group. While no fatigue effects were detected, change in some variables was observed as a function of time in the study. CONCLUSIONS: Computerized ambulatory protocols are feasible and provide valid data in individuals with diverse forms of dependence, but compliance to repeated sampling methodology may vary by substance type

Setodji, C. M.; Martino, S. C.; Scharf, D. M.; Shadel, W. G. (2012):

Friends Moderate the Effects of Pro-Smoking Media on College Students' Intentions to Smoke.

In: *Psychol.Addict.Behav.* (0893-164X (Linking)). DOI: 10.1037/a0028895.

Abstract:

Exposure to prosmoking media (e.g., smoking in movies, advertising in magazines) contributes to smoking in young people. However, the extent to which the impact of exposure depends on the social context in which those exposures occur has not been investigated. This study used ecological momentary assessment to examine the moderating role of social context in the relationship between college students' exposure to prosmoking media and their smoking refusal self-efficacy and intention to smoke. College students (n = 134) carried handheld computers for 21 days, recording their exposure to all forms of prosmoking media during the assessment period. They also responded to three investigator-initiated control prompts (programmed to occur randomly) each day of the assessment. After each exposure to prosmoking media and after each control prompt, participants answered questions about smoking refusal self-efficacy and their intentions to smoke; they also indicated whether they were with friends, with family, with a romantic partner, or alone (i.e., their social context). When participants were with friends, prosmoking media exposures were associated with stronger smoking intentions and lower smoking refusal self-efficacy; these associations were not present when participants were alone. Being with family members or with a romantic partner did not moderate the impact of prosmoking media exposure on either dependent variable. These results suggest a new role for peers in the development of youth smoking. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Setodji, Claude M.; Martino, Steven C.; Scharf, Deborah M.; Shadel, William G. (2014):

Quantifying the persistence of pro-smoking media effects on college students' smoking risk.

In: *Journal of Adolescent Health* 54 (4), S. 474–480. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-11041-007%26site%3dehost-live.

Abstract:

Purpose: To quantify the persistence of pro-smoking media exposure effects on college students' intentions to smoke and smoking refusal self-efficacy. Method: A total of 134 college students (ages 18–24 years) were enrolled in an ecological momentary assessment study in which they carried handheld data collection devices for 3 weeks and reported their exposures to

pro-smoking media as they occurred in the real world. Smoking intentions and smoking refusal self-efficacy were assessed after each exposure to pro-smoking media and at random prompts during each day of the 3-week assessment period. A generalized additive model was used to determine how long the effect of an exposure to pro-smoking media persisted. Results: The effect of pro-smoking media exposures persisted for 7 days. After exposure, smoking intentions immediately increased (.56; 95% confidence interval [CI]: [.26, .87]) and then steadily decreased (−.12; 95% CI: [−.19, −.05]) each day for 7 days, while smoking refusal self-efficacy immediately decreased (−.42; 95% CI: [−.75, −.10]) and then steadily increased (.09; 95% CI: [.02, .16]) each day for 7 days. Daily changes occurring after 7 days were not statistically significant, suggesting that smoking intentions and refusal self-efficacy had stabilized and were no longer affected by pro-smoking media exposure. Conclusions: Exposures to pro-smoking media may have strong implications for emerging young adults smoking risk as the impact of an individual exposure appears to persist for at least a week. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Severo, Mateus Dornelles; Leiria, Liana Farias; Ledur, Priscila Dos Santos; Becker, Alexandre Dalpiaz; Aguiar, Fernanda Musa; Massierer, Daniela et al. (2014):

Association between erectile dysfunction and echocardiographic variables of ventricular hypertrophy and diastolic function in hypertensive patients with type 2 diabetes mellitus: A cross-sectional study.

In: *J Diabetes. DOI:* 10.1111/1753-0407.12133.

Abstract:

BACKGROUND: This study was conducted among individuals with diabetes and hypertension in order to assess the prevalence of erectile dysfunction (ED) and the association between ED and cardiovascular risk variables such as echocardiographic changes. METHODS: We evaluated 114 men with type 2 diabetes mellitus and hypertension. ED was assessed by International Index of Erectile Function (IIEF-5) score. Clinical and laboratory variables were evaluated, including C-reactive protein (CRP), ambulatory blood pressure monitoring (ABPM), ankle brachial index (ABI) and transthoracic echocardiography. Comparisons between patients with ED (IIEF-5 < 22) and without ED (IIEF-5 >/= 22) were performed. RESULTS: Patients were 56.8 +/- 5.7 years-old, systolic and diastolic blood pressure were 150.7 +/- 19.5 mmHg and 85.4 +/- 11.4 mmHg, respectively, and HbA1c was 8.0 +/- 1.7%. The majority (74.6%) of patients had ED. Levels of CRP, ABPM values and ABI were similar between men with and without ED. Echocardiography variables related to cardiac chamber diameters, left ventricular hypertrophy and diastolic function were similar between groups, except there was a slight lower left ventricular ejection fraction in men with ED (64.9 +/- 7.3 vs 68.1 +/- 3.9%, P = 0.004). CONCLUSIONS: In high cardiovascular risk hypertensive individuals with type 2 diabetes, ED is highly prevalent as expected, but its presence is associated with neither echocardiographic variables, nor other cardiovascular risk factors.

Sevick, Mary Ann; Stone, Roslyn A.; Zickmund, Susan; Wang, Yuanyuan; Korytkowski, Mary; Burke, Lora E. (2010):

Factors associated with probability of personal digital assistant-based dietary self-monitoring in those with type 2 diabetes.

In: *Journal of Behavioral Medicine* 33 (4), S. 315–325.

Abstract:

Knowledge of factors associated with the use of technology could inform the design of technology-based behavioral interventions. This study examined modifiable and nonmodifiable factors associated with technology-based self-monitoring. 123 participants with type 2 diabetes self-monitored diet using a personal digital assistant in a 6-month behavioral intervention. Multinomial logistic regression was used to examine probability of nonadherent and suboptimally adherent behavior relative to adherent behavior. Sociodemographic characteristics were not associated with probability of self-monitoring. Probability of adherence generally was greater in the weeks preceding no group session, and lower in the weeks following no group session or following skipped sessions. Non-modifiable factors suggested by the literature to be associated with poorer access to technology (lower income, older age, minority race, and lower education) were not associated with probability of self-monitoring in this population.

Shaban, Heba A.; Abou El-Nasr, Mohamad; Buehrer, R. Michael (2010):

Toward a highly accurate ambulatory system for clinical gait analysis via UWB radios.

In: *IEEE transactions on information technology in biomedicine : a publication of the IEEE Engineering in Medicine and Biology Society* 14 (2), S. 284–291. DOI: 10.1109/TITB.2009.2037619.

Abstract:

In this paper, we propose and investigate a low-cost and low-complexity wireless ambulatory human locomotion tracking system that provides a high ranging accuracy (intersensor distance) suitable for the assessment of clinical gait analysis using wearable ultra wideband (UWB) transceivers. The system design and transceiver performance are presented in additive-white-gaussian noise and realistic channels, using industry accepted channel models for body area networks. The proposed system is theoretically capable of providing a ranging accuracy of 0.11 cm error at distances equivalent to interarker distances, at an 18 dB SNR in realistic on-body UWB channels. Based on real measurements, it provides the target ranging accuracy at an SNR = 20 dB. The achievable accuracy is ten times better than the accuracy reported in the literature for the intermarker-distance measurement. This makes it suitable for use in clinical gait analysis, and for the characterization and assessment of unstable mobility diseases, such as Parkinson's disease.

Shadel, W. G.; Martino, S. C.; Setodji, C.; Scharf, D. (2012):

Momentary Effects of Exposure to Prosmoking Media on College Students' Future Smoking Risk.

In: *Health Psychol* (0278-6133 (Linking)). DOI: 10.1037/a0027291.

Abstract:

Objective: This study used ecological momentary assessment to examine acute changes in college students' future smoking risk as a function of their exposure to prosmoking media (e.g., smoking in movies, paid advertising, point-of-sale displays). Method: A sample of 135 college students ("ever" and "never" smokers) carried handheld computers for 21 days, recording their exposures to all forms of prosmoking media during the assessment period. They also responded to three investigator-initiated control prompts during each day of the assessment period (i.e., programmed to occur randomly). After each prosmoking media exposure and after each random control prompt they answered questions that measured their risk of future smoking. Responses between prosmoking media encounters were compared (within subjects) to responses made during random control prompts. Results: Compliance with the study protocol was high, with participants responding to over 83% of all random prompts. Participants recorded nearly three encounters with prosmoking media each week. Results of linear mixed modeling indicated that all participants had higher future smoking risk following exposure to prosmoking media compared with control prompts ($p < .05$); this pattern of response did not differ between ever and never smokers ($p = .769$). Additional modeling of the variances around participants' risk of future smoking revealed that the response of never smokers to prosmoking media was significantly more variable than the response of ever smokers. Conclusion: Exposure to prosmoking media is associated with acute changes in future smoking risk, and never smokers and ever smokers respond differently to these exposures. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Shadel, William G.; Martino, Steven C.; Setodji, Claude; Scharf, Deborah (2013):

Exposure to pro-smoking media in college students: Does type of media channel differentially contribute to smoking risk?

In: *Annals of Behavioral Medicine* 45 (3), S. 387–392. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-15639-015%26site%3dehost-live;shadel@rand.org.

Abstract:

Background: There are almost no data on whether the different channels through which pro-smoking media appear (i.e., point-of-sale advertising, movie smoking) differently influence smoking. Purpose: This study used ecological momentary assessment to examine whether differences in smoking risk were observed for exposures to different pro-smoking media channels. Methods: College students (n = 134) carried smartphones for 21 days, recording their exposures to pro-smoking media and the media channels for that exposure and responding to three randomly issued control prompts per day. Participants answered questions about their future smoking risk after each pro-smoking media exposure and random prompt. Results: Participants had elevated future smoking risk following exposure to pro-smoking media at point of sale ($p < 0.001$); smoking risk at times of exposure to smoking in movies did not differ from risk measured during control prompts ($p = 0.78$). Conclusions: There is merit to examining

the relative contribution of different pro-smoking media channels to smoking behavior. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Shadur, Julia M.; Hussong, Andrea M. (2014):

Friendship intimacy, close friend drug use, and self-medication in adolescence.

In: *Journal of Social and Personal Relationships* 31 (8), S. 997–1018. DOI: 10.1037/t05466-000;

Abstract:

The current study tested between-person hypotheses that global negative affect, friendship intimacy, and close friend drug use predict increased substance use, and the within-person hypothesis that friendship intimacy and close friend substance use moderate the temporal relationship between daily negative affect and subsequent substance use (i.e., self-medication). Experience sampling methodology captured daily variations in mood and substance use, and multilevel modeling techniques were used to parse between- versus within-person effects. Findings supported between-person hypotheses that greater negative affect and lower friendship intimacy predicted greater substance use, and a consistent trend indicated that friendship intimacy and close friend drug use interact to predict substance use overall (though not for self-medication). Risk and protective mechanisms indicate that the effect of friendship intimacy on adolescent use depends on close friend drug use. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Shalev-Goldman, Einat; McGuire, K. Ashlee; Ross, Robert (2014):

Waist circumference and cardiorespiratory fitness are independently associated with glucose tolerance and insulin resistance in obese women.

In: *Appl Physiol Nutr Metab* 39 (3), S. 358–362. DOI: 10.1139/apnm-2013-0160.

Abstract:

The purpose of this study was to determine the independent associations between physical activity (PA), cardiorespiratory fitness (CRF), abdominal obesity and insulin action in obese women. We studied 141 abdominally obese women (waist circumference (WC): 106.4 +/- 10.2 cm). PA duration (min/day) and intensity (counts/min) were obtained by accelerometry. CRF was measured using a treadmill. WC was measured at the iliac crest; abdominal adiposity was measured by magnetic resonance imaging. Glucose and insulin measures were obtained during a 75-g, 2-h glucose tolerance test. The homeostasis model of assessment iHOMA2-IS was used to estimate insulin sensitivity. PA duration and intensity were not associated with glucose or insulin metabolism ($p > 0.05$). However, moderate-to-vigorous PA (MVPA) duration was associated with fasting insulin and iHOMA2-IS ($p < 0.01$). CRF was associated with fasting insulin and iHOMA2-IS ($r = 0.27$, $p </= 0.01$), whereas WC was associated with fasting insulin ($r = 0.50$, $p < 0.01$) and iHOMA2-IS ($r = -0.52$, $p </= 0.01$). Following adjustment for CRF, MVPA, and age, WC remained associated with fasting glucose, insulin, 2-h glucose and iHOMA2-IS ($r = -0.44$, $p </= 0.01$). CRF was associated with fasting glucose as well as 1- and 2-h glucose ($r = 0.24$, $p < 0.01$) after adjusting for WC, MVPA, and age. MVPA was not associated with glucose or insulin measures after control for CRF and WC ($p > 0.05$). Mediation analysis revealed that CRF and WC combined mediated the relationship between MVPA and both glucose tolerance and insulin resistance ($p < 0.05$). In conclusion, among abdominally obese women, WC and CRF are independently associated with measures of glucose tolerance and insulin resistance and mediate the association between MVPA and insulin resistance.

Sharp, Darren B.; Allman-Farinelli, Margaret (2014):

Feasibility and validity of mobile phones to assess dietary intake.

In: *Nutrition* 30 (11-12), S. 1257–1266. DOI: 10.1016/j.nut.2014.02.020.

Abstract:

Current limitations of conventional dietary assessment methods restrict the establishment of diet-disease relationships and efficacy of dietary interventions. Technology, in particular the use of mobile phones, may help resolve methodologic limitations, in turn improving the validity of dietary assessment and research and associated findings. This review aims to evaluate the validity, feasibility, and acceptability of dietary assessment methods that have been deployed on mobile phone platforms. In August 2013, electronic databases for health sciences were searched for English, peer-reviewed, full-text articles, published from January 1, 2001 onward; and accompanied by a hand search of available relevant publications from universities and government bodies. Studies were not limited by design, length, setting, or population group. Of 194 articles, 12 met eligibility criteria: mobile phone as the dietary recording platform and validation of energy and/or macronutrient intake against another dietary or

biological reference method. Four dietary recoding methods had been validated on mobile phone platforms: electronic food diary, food photograph-assisted self-administered, 24 h recall, food photograph analysis by trained dietitians, and automated food photograph analysis. All mobile phone dietary assessment methods showed similar, but not superior, validity or reliability when compared with conventional methods. Participants' satisfaction and preferences for mobile phone dietary assessment methods were higher than those for conventional methods, indicating the need for further research. Validity testing in larger and more diverse populations, over longer durations is required to evaluate the efficacy of these methods in dietary research.

Sheftell, Fred; Almas, Mary; Weeks, Randall; Mathew, Ninan T.; Pitman, Verne; Lipton, Richard B. (2010):

Quantifying the return of headache in triptan-treated migraineurs: an observational study.

In: *Cephalalgia* 30 (7), S. 838–846.

Abstract:

To improve understanding of secondary treatment failure in migraine patients, we evaluated 'headache return' as a novel endpoint to assess returning headaches according to their severity, expanding on current standard assessments of overall recurrence or relapse rates, in a six-month observational study of triptan-treated migraineurs. A total of 359 patients (91% female; mean age, 42.5 years) recorded data for 2168 headaches in electronic diaries. Two-thirds of headaches responded to triptan treatment (improved-to-mild or no pain two hours post-dose); 34% of headaches had a pain-free response. By 48 hours post-dose, 19% of all responding headaches returned; 24% of headaches achieving a pain-free response returned, predominantly to mild pain. More severe baseline headache, short duration since diagnosis of migraine, and female gender were associated with increased likelihood of headache return. Treatment satisfaction declined with increasing severity of headache return, demonstrating the value of assessing headache return by severity to fully evaluate its impact.

Shelby-James, Tania M.; Abernethy, Amy P.; McAlindon, Andrew; Currow, David C. (2007):

Handheld computers for data entry: high tech has its problems too.

In: *Trials* 8 (5), S. 2.

Abstract:

BACKGROUND:

The use of handheld computers in medicine has increased in the last decade, they are now used in a variety of clinical settings. There is an underlying assumption that electronic data capture is more accurate that paper-based data methods have been rarely tested. This report documents a study to compare the accuracy of hand held computer data capture versus more traditional paper-based methods.

METHODS:

Clinical nurses involved in a randomised controlled trial collected patient information on a hand held computer in parallel with a paper-based data form. Both sets of data were entered into an access database and the hand held computer data compared to the paper-based data for discrepancies.

RESULTS:

Error rates from the handheld computers were 67.5 error per 1000 fields, compared to the accepted error rate of 10 per 10,000 field for paper-based double data entry. Error rates were highest in field containing a default value.

CONCLUSION:

While popular with staff, unacceptable high error rates occurred with hand held computers. Training and ongoing monitoring are needed if hand held computers are to be used for clinical data collection.

Shelton, Nicole; Douglass, Sara; Garcia, Randi L.; Yip, Tiffany; Trail, Thomas E. (2014):

Feeling (Mis)Understood and Intergroup Friendships in Interracial Interactions.

In: *Pers Soc Psychol Bull. DOI:* 10.1177/0146167214538459.

Abstract:

The present research investigated whether having out-group friends serves as a buffer for feeling misunderstood in interracial interactions. Across three experience sampling studies, we found that among ethnic minorities who have few White friends or are not interacting with White friends, daily interracial interactions are associated with feeling less understood. By contrast, we found that among ethnic minorities who have more White friends or are interacting with White friends, the relationship between daily interracial interactions and feeling understood is not significant. We did not find similar results for Whites; that is, having ethnic minority friends did not play a role in the relationship between daily interracial interactions and feeling understood. Together, these studies demonstrate the beneficial effects of intergroup friendships for ethnic minorities.

Shernoff, David J. (2010):

Engagement in after-school programs as a predictor of social competence and academic performance.

In: *American journal of community psychology* 45 (3-4), S. 325–337. DOI: 10.1007/s10464-010-9314-0.

Abstract:

Using the experience sampling method, this study examined two questions related to outcomes associated with after-school programming. First, does the quality of experience in after-school programs mediate the effect of program participation on social competence and academic performance? Second, among program participants, is the difference in quality of experience when in programs versus other settings after school related to higher social competence and academic performance? Middle school students (N = 196) attending eight programs in three Midwestern states reported a total of 4,970 randomly sampled experiences in and out of after-school programs during 1 week in the fall and spring of the 2001-2002 academic year. Engagement during after-school hours partially mediated the relationship between participation in after-school programs and social competence. In addition, relative perceptions of engagement, challenge, and importance when in after-school programs compared to elsewhere after school predicted higher English and math grades. Results suggest that the quality of experiences in after-school programs may be a more important factor than quantity of experiences (i.e., dosage) in predicting positive academic outcomes.

Shernoff, David J.; Anderson, Brett (2013):

Flow: Flow and optimal learning environments. In: Jeffrey J. Froh und Acacia C. Parks (Hg.): Activities for teaching positive psychology: A guide for instructors.

Washington, DC US: American Psychological Association, S. 109–115. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-22248-018%26site%3dehost-live.

Abstract:

(from the chapter) Flow is a peak experiential state of focused concentration and elevated enjoyment during intrinsically interesting activities. The experience of flow is further characterized by deep absorption, the perception of being in control, loss of self-consciousness, and a distorted perception of time (usually time seems to fly). It is suggested that students first obtain instruction in the basic concept and theory of flow through readings, presentations, or discussions before initiating the activity described in this chapter (suggested readings are provided). In this activity, students participate in the leading methodology used to research flow (the experience sampling method) by tracking and graphing their subjective experiences when signaled in a variety of instructional activities throughout an instructional unit on flow and engagement in learning. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Sherwood, Nancy E.; Martinson, Brian C.; Crain, A. Lauren; Hayes, Marcia G.; Pronk, Nicolaas P.; O'Connor, Patrick J. (2008):

A new approach to physical activity maintenance: Rationale, design, and baseline data from the Keep Active Minnesota trial.

In: *BMC geriatrics* 8 (1), S. 17.

Abstract:

BACKGROUND:

Since many individuals who initiate physical activity programs are highly likely to return to a sedentary lifestyle, innovative strategies to efforts to increase the number of physically active older adults who successfully maintain beneficial levels of PA for a substantial length of time are needed.

METHODS/DESIGN:

The Keep Active Minnesota Trial is a randomized controlled trial of an interactive phone- and mail-based intervention to help 50-70 year old adults who have recently increased their physical activity level, maintain that activity level over a 24-month period in comparison to usual care. Baseline, 6, 12, and 24 month measurement occurred via phone surveys with kilocalories expended per week in total and moderate-to-vigorous physical activity (CHAMPS Questionnaire) as the primary outcome measures. Secondary outcomes include hypothesized mediators of physical activity change (e.g., physical activity enjoyment, self-efficacy, physical activity self-concept), body mass index, and depression. Seven day accelerometry data were collected on a sub-sample of participants at baseline and 24-month follow-up.

DISCUSSION:

The Keep Active Minnesota study offers an innovative approach to the perennial problem of physical activity relapse; by focusing explicitly on physical activity maintenance, the intervention holds considerable promise for modifying the typical relapse curve. Moreover, if shown to be efficacious, the use of phone- and mail-based intervention delivery offers potential for widespread dissemination.

Shetty, Vivek; Zigler, Corwin; Robles, Theodore F.; Elashoff, David; Yamaguchi, Masaki (2011):

Developmental validation of a point-of-care, salivary α-amylase biosensor.

In: *Psychoneuroendocrinology* 36 (2), S. 193–199.

Abstract:

The translation of salivary alpha-amylase (sAA) to the ambulatory assessment of stress hinges on the development of technologies capable of speedy and accurate reporting of sAA levels. Here, we describe the developmental validation and usability testing of a point-of-care, colorimetric, sAA biosensor. A disposable test strip allows for streamlined sample collection and a corresponding hand-held reader with integrated analytic capabilities permits rapid analysis and reporting of sAA levels. Bioanalytical validation utilizing saliva samples from 20 normal subjects indicates that, within the biosensor's linear range (10-230 U/ml), its accuracy (R(2)=0.989), precision (CV<9%), and measurement repeatability (range -3.1% to +3.1%) approach more elaborate laboratory-based, clinical analyzers. The truncated sampling-reporting cycle (<1 min) and the excellent performance characteristics of the biosensor has the potential to take sAA analysis out of the realm of dedicated, centralized laboratories and facilitate future sAA biomarker qualification studies.

Shiffman, Saul (2009):

Ecological momentary assessment (EMA) in studies of substance use.

In: *Psychological Assessment* 21 (4), S. 486–497. DOI: 10.1037/a0017074.

Abstract:

Ecological momentary assessment (EMA) is particularly suitable for studying substance use, because use is episodic and thought to be related to mood and context. This article reviews EMA methods in substance use research, focusing on tobacco and alcohol use and relapse, where EMA has been most applied. Common EMA designs combine event-based reports of substance use with time-based assessments. Approaches to data organization and analysis have been very diverse, particularly regarding their treatment of time. Compliance with signaled assessments is often high. Compliance with recording of substance use appears good but is harder to validate. Treatment applications of EMA are emerging. EMA captures substance use patterns not measured by questionnaires or retrospective data and holds promise for substance use research.

Shiffman, Saul (2009):

How many cigarettes did you smoke? Assessing cigarette consumption by global report, Time-Line Follow-Back, and ecological momentary assessment.

In: *Health Psychol* 28 (5), S. 519–526. DOI: 10.1037/a0015197.

Abstract:

OBJECTIVE\r\nThis study evaluated and compared several methods of assessing daily cigarette consumption.\r\nDESIGN\r\nComparison of measures of daily cigarette consumption from several sources, from 232 smokers entering a smoking cessation program.\r\nMAIN OUTCOME MEASURES\r\nGlobal reports of average smoking, Time-Line Follow-Back (TLFB) recall for the week preceding the study (premonitoring TLFB), 2 weeks' cigarette recordings using electronic diaries and ecological momentary assessment (EMA), and TLFB recall of smoking during EMA (monitored TLFB).\r\nRESULTS\r\nGlobal reports and premonitoring TLFB showed severe digit bias: six times as many values as expected were rounded at 10. Monitored TLFB also showed substantial digit bias (four times). EMA data showed none. EMA averaged 2.6 cigarettes lower than monitored TLFB, but exceeded TLFB on 32% of days. Across days, EMA and TLFB only correlated 0.29. Daily variations in TLFB did not correlate with variations in carbon monoxide (CO) measures taken on 3 days, but EMA measures did; among participants whose CO varied, r = .69. CO correlated with EMA cigarettes recorded in the preceding 2 hours, suggesting timely recording of cigarettes.\r\nCONCLUSION\r\nTLFB measures are limited for precise assessment of cigarette consumption. EMA measures appear to be useful for tracking smoking, and likely other health-relevant events.

Shiffman, S. (2013):

Conceptualizing Analyses of Ecological Momentary Assessment Data.

In: *Nicotine.Tob.Res.* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt195.

Abstract:

Ecological Momentary Assessment (EMA) methods, which involve collection of real-time data in subjects' real-world environments, are particularly well suited to studying tobacco use. Analyzing EMA datasets can be challenging, as the datasets include a large and varied number of observations per subject and are relatively unstructured. This paper suggests that time is typically a key organizing principle in EMA data, and that conceptualizing the data as a timeline of events, behaviors, and experiences can help define analytic approaches. EMA datasets lend themselves to answering a diverse array of research questions, and the research question must drive how data are arranged for analysis, and the kinds of statistical models that are applied. The paper illustrates this with brief examples of diverse analyses applied to answer different questions from an EMA study of tobacco use and relapse

Shiffman, Saul; Balabanis, Mark H.; Gwaltney, Chad J.; Paty, Jean A.; Gnys, Maryann; Kassel, Jon D. et al. (2007):

Prediction of lapse from associations between smoking and situational antecedents assessed by ecological momentary assessment.

In: *Drug Alcohol Depend* 91 (2), S. 159–168.

Abstract:

Smoking is associated with particular moods and activities, but it is not known whether there are individual differences in these associations and whether these differences are associated with success in smoking cessation. We assessed such associations using ecological momentary assessment: real-world, real-time data, collected by palm-top computer. Two hundred and fourteen smokers participating in a smoking cessation study provided data during ad lib smoking at baseline. Participants recorded moods and activities each time they smoked and, for comparison, at randomly selected non-smoking occasions. Situational associations with smoking were captured by examining the associations between smoking and antecedents considered relevant to lapse risk: negative affect (NA), arousal, socializing with others, the presence of others smoking, and consumption of coffee and alcohol. The associations varied across participants, confirming individual differences in situational smoking associations. Survival analyses revealed that only the NA pattern predicted first lapse. The effect was only seen in EMA assessments of NA smoking, and was not captured by questionnaire measures of negative affect smoking, which did not predict lapse risk. Moreover, the effect was not mediated by nicotine dependence.

Shiffman, Saul; Dunbar, Michael S.; Li, Xiaoxue; Scholl, Sarah M.; Tindle, Hilary A.; Anderson, Stewart J.; Ferguson, Stuart G. (2014):

Craving in Intermittent and Daily Smokers During Ad Libitum Smoking.

In: *Nicotine Tob Res. DOI:* 10.1093/ntr/ntu023.

Abstract:

INTRODUCTION: This study aimed to assess average and peak craving intensity among nondaily intermittent smokers (ITS), in smoking episodes and when not smoking, compared to that of daily smokers (DS). METHODS: Two hundred and twelve ITS and 194 DS monitored their smoking and craving for 3 weeks using Ecological Momentary Assessment methods. Craving was assessed (0-100 scale) when subjects lit a cigarette and at random times when not smoking; 48,469 observations were analyzed using generalized estimating equations. RESULTS: ITS experienced craving, including intense craving; their 95th percentile intensity averaged 77.7+/-22.5 out of 100 (higher among DS: 89.1+/-14.5). ITS reported lower craving than DS, both when smoking and when not smoking. In both groups, craving was less intense when not smoking (DS: 71.1+/-20.7 vs. 59.83+/-21.97; ITS: 59.91+/-23.03 vs. 26.63+/-19.87), but the difference was significantly greater among ITS. Among ITS, the probability of smoking rose continuously as craving increased over the full range of the scale. In contrast, among DS, the probability of smoking rose until the midpoint of the scale, after which the relationship flattened. Findings were mostly similar for ITS with and without a history of past daily smoking. CONCLUSIONS: ITS do experience craving, including intense craving. The relationship between craving and smoking is stronger among ITS because DS experience moderate craving even between cigarettes. In contrast, ITS appear to experience craving in limited situations associated with smoking, suggesting that their craving and smoking may be driven by transient cues rather than endogenous needs.

Shiffman, Saul; Dunbar, Michael S.; Li, Xiaoxue; Scholl, Sarah M.; Tindle, Hilary A.; Anderson, Stewart J.; Ferguson, Stuart G. (2014):

Smoking patterns and stimulus control in intermittent and daily smokers.

In: *PLoS One* 9 (3), S. e89911. DOI: 10.1371/journal.pone.0089911.

Abstract:

Intermittent smokers (ITS) - who smoke less than daily - comprise an increasing proportion of adult smokers. Their smoking patterns challenge theoretical models of smoking motivation, which emphasize regular and frequent smoking to maintain nicotine levels and avoid withdrawal, but yet have gone largely unexamined. We characterized smoking patterns among 212 ITS (smoking 4-27 days per month) compared to 194 daily smokers (DS; smoking 5-30 cigarettes daily) who monitored situational antecedents of smoking using ecological momentary assessment. Subjects recorded each cigarette on an electronic diary, and situational variables were assessed in a random subset (n = 21,539 smoking episodes); parallel assessments were obtained by beeping subjects at random when they were not smoking (n = 26,930 non-smoking occasions). Compared to DS, ITS' smoking was more strongly associated with being away from home, being in a bar, drinking alcohol, socializing, being with friends and acquaintances, and when others were smoking. Mood had only modest effects in either group. DS' and ITS' smoking were substantially and equally suppressed by smoking restrictions, although ITS more often cited self-imposed restrictions. ITS' smoking was consistently more associated with environmental cues and contexts, especially those associated with positive or "indulgent" smoking situations. Stimulus control may be an important influence in maintaining smoking and making quitting difficult among ITS.

Shiffman, Saul; Ferguson, Stuart G. (2008):

The effect of a nicotine patch on cigarette craving over the course of the day: results from two randomized clinical trials.

In: *Current Medical Research and Opinion®* 24 (10), S. 2795–2804.

Abstract:

OBJECTIVES:

The objective of this analysis was to assess the efficacy of a 21 mg/24-h nicotine patch for the reduction of craving throughout the waking day, compared both to placebo, and to a 15 mg/16-h patch differing pharmacokinetic profile over the day. The primary end-point was craving during the evening hours, because previous research suggested that smoking relapse was particularly likely at that time.

RESEARCH DESIGN AND METHODS:

Data were drawn from two similar randomized clinical trials among nicotine-dependent smokers who were quitting smoking: Study 1 compared the 21 mg/24-h patch to a placebo patch, while Study 2 compared the 21 mg/24-h patch to a 15 mg/16-h nicotine patch. In both studies, subjects (Study 1: n = 102; Study 2: n = 244) were prompted by an electronic diary to rate their craving multiple times per day during a 1 week baseline period, and for up to 2 weeks after quitting. For analysis, the day was divided into five blocks: morning (up to 10:59 a.m.), mid-day (11:00 a.m.-1:59 p.m.), afternoon (2:00 p.m.-4:59 p.m.), evening (5:00 p.m.-8:59 p.m.), and late night (9:00 p.m. onwards). The individual craving ratings were divided into three intervals based on time since quitting: Days 1-3, 4-7, and 8-14.

RESULTS:

The 21 mg/24-h nicotine patch resulted in significantly lower craving during all post-quit intervals, at each time of day, both compared to placebo (Study 1), and compared to the 15 mg/16-h nicotine patch (Study 2). Study 2 saw a significant treatment by interval interaction: in later time intervals, the difference in craving experience between 24- and 16-h patch conditions shrunk--while remaining significantly different--as overall levels of craving experienced by subjects in the two groups dropped. Adverse events reported in both studies tended to be mild and transient, consistent with the well characterized adverse event profile of nicotine patches.

CONCLUSIONS:

Study 1 demonstrated that a 21 mg/24-h patch was effective in reducing craving throughout the day, including the evening period when relapse risk is heightened. A further study comparing the 21 mg/24-h patch to a 15 mg/16-h nicotine patch found that craving was significantly lower at all times of day for smokers using the 21 mg/24-h patch. The studies were limited in that craving was only monitored for the first 2 weeks of quitting (when craving is most prominent), and cannot elucidate the impact of patch use on craving outside of this time. Also, there was substantial attrition of the sample over time, partly due to relapse in all conditions.

Shiffman, S.; Ferguson, S. G.; Dunbar, M. S.; Scholl, S. M. (2012):

Tobacco Dependence Among Intermittent Smokers.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/nts097.

Abstract:

INTRODUCTION: Intermittent smokers (ITS) are an increasingly prevalent segment of smokers, yet it is unknown whether or how dependence severity may vary across ITS. METHODS: Participants were 217 ITS (70 never daily ITS [NITS], 138 converted ITS [CITS], and 9 unknown), who smoked 4-27 days per month, and 197 daily smokers (DS), recruited for a study on smoking patterns. Participants completed questionnaires on dependence (time to first cigarette after waking, Fagerstrom Test of Nicotine Dependence [FTND], Nicotine Dependence Syndrome Scale [NDSS], Wisconsin Inventory of Smoking Dependence Motives [WISDM], and Hooked on Nicotine Checklist [HONC]) and recorded each cigarette in real time over 3 weeks using Ecological Momentary Assessment. Logistic regression assessed differences in dependence between groups (DS vs. ITS; CITS vs. NITS), and least squares regression examined associations between dependence and smoking behavior (mean, maximum cigarettes per day; proportion of days smoked; longest period of abstinence) within ITS. RESULTS: As expected, DS were significantly more dependent than ITS: FTND, NDSS, and WISDM discriminated between ITS and DS with greater than 90% accuracy. Similarly, among ITS, NITS demonstrated lower dependence than CITS. Within ITS, dependence measures also correlated with observed smoking rate and duration of abstinence.Conclusions:The study confirmed that DS are more dependent than ITS and that CITS are more dependent than NITS. Importantly, ITS exhibit features of dependence, and there is meaningful variation in dependence within ITS, suggesting that some aspects of dependence may appear with very infrequent smoking. Future work should examine implications for ITS' potential progression to daily smoking and cessation outcome

Shiffman, Saul; Gwaltney, Chad J. (2008):

Does heightened affect make smoking cues more salient?

In: *Journal of Abnormal Psychology* 117 (3), S. 618.

Abstract:

Negative affect (NA) states are robustly related to relapse. However, the mechanisms for this relationship are not well understood. Whereas most models have proposed that NA directly promotes lapsing, some models suggest that NA may promote lapses indirectly by increasing reactivity to smoking cues. This hypothesis was tested in secondary analyses of a study in which 248 smokers used ecological momentary assessment to self-monitor affective valence, smoking cues, and lapses during an attempt to quit smoking. The smoking cues the authors examined were others' smoking and consumption of alcohol or coffee. The odds of lapsing when exposed to smoking cues were compared across conditions of positive affect, neutral affect, and NA. Consistent main effects of affective valence were seen but not the hypothesized interaction. Indeed, analyses showed that the effect of cues was typically diminished under conditions of NA. No evidence was found to support the hypothesis that smoking cues and lapsing are more closely linked under NA conditions.

Shiffman, Saul; Kirchner, Thomas R. (2009):

Cigarette-by-cigarette satisfaction during ad libitum smoking.

In: *Journal of Abnormal Psychology* 118 (2), S. 348–359. DOI: 10.1037/a0015620.

Abstract:

Smoking is thought to produce immediate reinforcement, and subjective satisfaction with smoking is thought to influence subsequent smoking. The authors used ecological momentary assessment (A. A. Stone & S. Shiffman, 1994) to assess cigarette-by-cigarette smoking satisfaction in 394 heavy smokers who subsequently attempted to quit. Across 14,882 cigarettes rated, satisfaction averaged 7.06 (0-10 scale), but with considerable variation across cigarettes and individuals. Women and African American smokers reported higher satisfaction. More satisfied smokers were more likely to lapse after quitting (HR = 1.1, $p < .03$), whereas less satisfied smokers derived greater benefit from patch treatment to help them achieve abstinence (HR = 1.23, $p < .001$). Cigarettes smoked in positive moods were more satisfying, correcting for mood at the time of rating. The best predictor of subsequent smoking satisfaction was the intensity of craving prior to smoking. Understanding subjective smoking satisfaction provides insight into sources of reinforcement for smoking.

Shiffman, Saul; Patten, Christi; Gwaltney, Chad; Paty, Jean; Gnys, Maryann; Kassel, Jon et al. (2006):

Natural history of nicotine withdrawal.

In: *Addiction* 101 (12), S. 1822–1832. DOI: 10.1111/j.1360-0443.2006.01635.x.

Abstract:

AIMS\r\nTo examine the natural history of nicotine withdrawal and individual differences associated with withdrawal duration and severity.\r\nDESIGN AND SETTING\r\nProspective study of withdrawal symptoms among smokers who quit for at least 24 hours. Participants used Ecological Momentary Assessment to monitor symptoms in their natural environment using an Electronic Diary (ED).\r\nPARTICIPANTS\r\nA total of 214 cigarette smokers (59% female, 92% Caucasian).\r\nINTERVENTION\r\nAll participants received a clinic-based, behavioral, group cessation intervention. Severity and duration of withdrawal was not addressed explicitly in treatment.\r\nMEASUREMENTS\r\nParticipants were 'beeped' by the ED approximately five times/day to complete affect assessments (negative affect, arousal, attention disturbance, restlessness), and daily assessments of sleep disturbance (at waking) and of cognitive performance (each evening) for a week prior to quitting and for up to 21 days after quitting. Withdrawal was considered resolved when withdrawal scores returned to baseline levels for at least 2 consecutive days.\r\nFINDINGS\r\nAll symptoms returned to baseline levels within 10 days of quitting. All variables except arousal and sleep disturbance showed change over time. No robust predictors of individual differences in withdrawal responses emerged.\r\nCONCLUSIONS\r\nThe time-course of withdrawal may be shorter than previously reported. The natural history of nicotine withdrawal may have implications for theories of withdrawal and smoking relapse and for smoking cessation treatment.

Shiffman, Saul; Paty, Jean (2006):

Smoking patterns and dependence: contrasting chippers and heavy smokers.

In: *Journal of Abnormal Psychology* 115 (3), S. 509.

Abstract:

The authors used ecological momentary assessment to contrast smoking patterns among chippers (CHs; n = 26)--smokers who smoke despite an apparent absence of tobacco dependence--with those seen in heavy smokers (HSs; n = 28). Smoking and nonsmoking settings (activity, mood, etc.) were assessed by means of electronic diary. CHs were not social smokers; like HSs, they smoked half their cigarettes while alone. When smoking, CHs' urge levels equaled those of HSs; between cigarettes, CHs had few urges, whereas HSs reported moderate urges. CHs' smoking was particularly associated with indulgent activities: relaxation, socializing, eating, and drinking alcohol. Outside of these indulgent settings, CHs' (but not HSs') smoking was associated with negative affect. In idiographic analyses, CHs' smoking was under much stronger stimulus control than was that of HSs. The authors propose that the disappearance of stimulus control over use is a characteristic of dependence.

Shiffman, Saul; Scharf, Deborah M.; Shadel, William G.; Gwaltney, Chad J.; Dang, Qianyu; Paton, Stephanie M.; Clark, Duncan B. (2006):

Analyzing milestones in smoking cessation: illustration in a nicotine patch trial in adult smokers.

In: *Journal of Consulting and Clinical Psychology* 74 (2), S. 276–285. DOI: 10.1037/0022-006X.74.2.276.

Abstract:

Tests of addiction treatments seldom reveal where treatment exercises its effect (i.e., promoting initial abstinence, preventing lapses, and/or impeding progression from lapse to relapse). The authors illustrate analyses distinguishing effects on these milestones in a randomized trial of high-dose nicotine patch (35 mg; n = 188) versus placebo (n = 136) in adult smokers, who used electronic diaries to monitor smoking in real time during 5 weeks of treatment. High-dose patch promoted initial abstinence (hazard ratio [HR] = 1.3) and decreased the risk of lapsing among those who achieved abstinence (HR = 1.6). The biggest effect of treatment was to prevent progression to relapse among those who had lapsed (HR = 7.1). Analysis of effects by milestones may enhance understanding of cessation treatments and their mechanisms of action.

Shimbo, Daichi; Kuruvilla, Sujith; Haas, Donald; Pickering, Thomas G.; Schwartz, Joseph E.; Gerin, William (2009):

Preventing misdiagnosis of ambulatory hypertension: algorithm using office and home blood pressures.

In: *J Hypertens* 27 (9), S. 1775–1783. DOI: 10.1097/HJH.0b013e32832db8b9.

Abstract:

OBJECTIVES\r\nAn algorithm for making a differential diagnosis between sustained and white coat hypertension (WCH) has been proposed - patients with office hypertension undergo home blood pressure monitoring (HBPM) and those with normal HBP levels undergo ambulatory blood pressure monitoring (ABPM). We tested whether incorporating an upper office blood pressure (OBP) cut-off in the algorithm, higher than the traditional 140/90 mmHg, reduces the need for HBPM and ABPM.\r\nMETHODS\r\nTwo hundred twenty-nine normotensive and untreated mildly hypertensive participants (mean age 52.5 +/- 14.6 years, 54% female participants) underwent OBP measurements, HBPM, and 24-h ABPM. Using the algorithm, sensitivity, specificity, and positive and negative predictive values (PPV, NPV) for sustained hypertension and WCH were assessed. We then modified the algorithm utilizing a systolic and diastolic OBP cut-off at a specificity of 95% for ambulatory hypertension - those with office hypertension but OBP levels below the upper cut-off underwent HBPM and subsequent ABPM, if appropriate.\r\nRESULTS\r\nUsing the original algorithm, sensitivity and PPV for sustained hypertension were 100% and 93.8%, respectively. Despite a specificity of 44.4%, NPV was 100%. These values correspond to specificity, NPV, sensitivity, and PPV for WCH, respectively. Using the modified algorithm, the diagnostic accuracy for sustained hypertension and WCH did not change. However, far fewer participants needed HBPM (29 vs. 84) and ABPM (8 vs. 15).\r\nCONCLUSION\r\nIn this sample, the original and modified algorithms are excellent at diagnosing sustained hypertension and WCH. However, the latter requires far fewer participants to undergo HBPM and ABPM. These findings have important implications for the cost-effective diagnosis of sustained hypertension and WCH.

Shimbo, Daichi; Pickering, Thomas G.; Spruill, Tanya M.; Abraham, Dennis; Schwartz, Joseph E.; Gerin, William (2007):

Relative utility of home, ambulatory, and office blood pressures in the prediction of end-organ damage.

In: *Am J Hypertens* 20 (5), S. 476–482.

Abstract:

BACKGROUND:

Home blood pressure (HBP) monitoring plays an increasingly important role in the diagnosis and treatment of hypertension. We evaluated the independent value of HBP compared with ambulatory blood pressure (ABP) and office blood pressure (OBP) in the prediction of cardiovascular end-organ damage in normotensive subjects and untreated patients with mild hypertension.

METHODS:

One hundred sixty-three subjects underwent measurements of OBP, HBP, ABP, and echocardiography. A physician using a mercury-column sphygmomanometer performed three OBP measurements. The ABP was recorded using a noninvasive ambulatory monitor (mean, 35.4 awake readings per subject). Participants took HBP readings with an automatic, oscillometric

device over a 10-week period (mean, 277.9 readings per subject). The left-ventricular mass index (LVMI) was calculated from measurements obtained from two-dimensionally guided M-mode or linear tracings on echocardiography.

RESULTS:

For systolic and diastolic blood pressures (SBP/DBP), the correlation coefficients of the LVMI with OBP, awake ABP, and HBP were 0.29/0.27, 0.41/0.26, and 0.47/0.35, respectively (all P < .01). In a multivariate regression analysis in which age, sex, body mass index, OBP, awake ABP, and HBP were included, only age, sex, and HBP were significant predictors of LVMI. When only the first 12 home readings were used, the superiority of HBP was no longer evident.

CONCLUSIONS:

In contrast to OBP and ABP, HBP measurements, when averaged over a 10-week period, are independently related to LVMI. The HBP adds prognostic information over and above OBP and ABP in the prediction of cardiovascular end-organ damage, but this relationship appears to depend on the number of readings taken.

Shin, Hangsik; Cho, Jaegeol (2014):

Unconstrained snoring detection using a smartphone during ordinary sleep.

In: *Biomed Eng Online* 13, S. 116. DOI: 10.1186/1475-925X-13-116.

Abstract:

BACKGROUND: Snoring can be a representative symptom of a sleep disorder, and thus snoring detection is quite important to improving the quality of an individual's daily life. The purpose of this research is to develop an unconstrained snoring detection technique that can be integrated into a smartphone application. In contrast with previous studies, we developed a practical technique for snoring detection during ordinary sleep by using the built-in sound recording system of a smartphone, and the recording was carried out in a standard private bedroom. METHOD: The experimental protocol was designed to include a variety of actions that frequently produce noise (including coughing, playing music, talking, rining an alarm, opening/closing doors, running a fan, playing the radio, and walking) in order to accurately recreate the actual circumstances during sleep. The sound data were recorded for 10 individuals during actual sleep. In total, 44 snoring data sets and 75 noise datasets were acquired. The algorithm uses formant analysis to examine sound features according to the frequency and magnitude. Then, a quadratic classifier is used to distinguish snoring from non-snoring noises. Ten-fold cross validation was used to evaluate the developed snoring detection methods, and validation was repeated 100 times randomly to improve statistical effectiveness. RESULTS: The overall results showed that the proposed method is competitive with those from previous research. The proposed method presented 95.07% accuracy, 98.58% sensitivity, 94.62% specificity, and 70.38% positive predictivity. CONCLUSION: Though there was a relatively high false positive rate, the results show the possibility for ubiquitous personal snoring detection through a smartphone application that takes into account data from normally occurring noises without training using preexisting data.

Shin, Hyoseung; Kim, Dong Hyun; Ryu, Hyeong Ho; Yoon, So Young; Jo, Seong Jin (2014):

Teledermatology consultation using a smartphone multimedia messaging service for common skin diseases in the Korean army: a clinical evaluation of its diagnostic accuracy.

In: *J Telemed Telecare* 20 (2), S. 70–74. DOI: 10.1177/1357633X14524151.

Abstract:

We evaluated the diagnostic accuracy of teleconsultations for skin diseases common in the army using a smartphone multimedia messaging service (MMS). Images of skin lesions were obtained from 100 army patients using digital cameras built into smartphones. Three remotely located dermatologists received the dermatology images and associated clinical information via the MMS. The teledermatologists' diagnoses were compared with those obtained from face-to-face examinations. The three most common diagnoses made at the dermatology clinics were eczema, viral warts and fungal infections. The mean diagnostic agreement between face-to-face and teledermatology consultations was 71% (SD 2). The mean kappa coefficient was 0.73 (SD 0.06) for the three most common diagnostic categories. The mean values for sensitivity were 78% (SD 0), 88% (SD 21) and 61% (SD 11) for eczema, viral warts and fungal infections, respectively, and the specificity values were above 90% for these skin diseases. Teledermatology consultation using smartphones is simple. Although diagnoses using telemedicine do not perfectly match diagnoses from face-to-face consultations the diagnostic accuracy using smartphones is superior to that of clinicians who are not specialized in dermatology.

Shively, Martha; Rutledge, Thomas; Rose, Barbara A.; Graham, Patricia; Long, Rebecca; Stucky, Erin et al. (2011):

Real-Time Assessment of Nurse Work Environment and Stress.

In: *Journal for healthcare quality* 33 (1), S. 39–48.

Abstract:

Ecological momentary assessment methods were used to examine real-time relationships between work environment factors and stress in a sample of 119 registered nurses (RNs) in acute and critical care settings of three hospitals. The RNs carried handheld computers for 1 week of work shifts and were randomly surveyed within 90-min intervals to self-report work activity, perceived workload, and stress. Mixed effects linear regression analyses were completed to predict the stress score in the sample. The number of patients assigned significantly predicted stress; the greater the number of assigned patients, the higher the reported stress ($p<.01$). Age, gender, adult versus pediatric facility type, familiarity with patients, and proportion of direct care tasks were not significant predictors of stress. Further research is needed to link work environment factors and stress with errors among nurses.

Shiyko, Mariya P.; Burkhalter, Jack; Li, Runze; Park, Bernard J. (2013):

Modeling Nonlinear Time-Dependent Treatment Effects: An Application of the Generalized Time-Varying Effect Model (TVEM).

In: *Journal of Consulting and Clinical Psychology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-44749-001%26site%3dehost-live.

Abstract:

Objective: The goal of this article is to introduce to social and behavioral scientists the generalized time-varying effect model (TVEM), a semiparametric approach for investigating time-varying effects of a treatment. The method is best suited for data collected intensively over time (e.g., experience sampling or ecological momentary assessments) and addresses questions pertaining to effects of treatment changing dynamically with time. Thus, of interest is the description of timing, magnitude, and (nonlinear) patterns of the effect. Method: Our presentation focuses on practical aspects of the model. A step-by-step demonstration is presented in the context of an empirical study designed to evaluate effects of surgical treatment on quality of life among early stage lung cancer patients during posthospitalization recovery (N = 59; 61% female, M age = 66.1 years). Frequency and level of distress associated with physical symptoms were assessed twice daily over a 2-week period, providing a total of 1,544 momentary assessments. Results: Traditional analyses (analysis of covariance [ANCOVA], repeated-measures ANCOVA, and multilevel modeling) yielded findings of no group differences. In contrast, generalized TVEM identified a pattern of the effect that varied in time and magnitude. Group differences manifested after Day 4. Conclusions: Generalized TVEM is a flexible statistical approach that offers insight into the complexity of treatment effects and allows modeling of nonnormal outcomes. The practical demonstration, shared syntax, and availability of a free set of macros aim to encourage researchers to apply TVEM to complex data and stimulate important scientific discoveries. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Shockley, K. M.; Allen, T. D. (2013):

Episodic work-family conflict, cardiovascular indicators, and social support: an experience sampling approach.

In: *J Occup.Health Psychol.* 18 (3), S. 262–275. DOI: 10.1037/a0033137.

Abstract:

Work-family conflict, a prevalent stressor in today's workforce, has been linked to several detrimental consequences for the individual, including physical health. The present study extends this area of research by examining episodic work-family conflict in relation to objectively measured cardiovascular health indicators (systolic and diastolic blood pressure and heart rate) using an experience sampling methodology. The results suggested that the occurrence of an episode of work interference with family conflict is linked to a subsequent increase in heart rate but not blood pressure; however, the relationship between episodes of family interference with work conflict and both systolic and diastolic blood pressure is moderated by perceptions of family-supportive supervision. No evidence was found for the moderating role of work-supportive family. Further theoretical and practical implications are discussed

Shrier, Lydia A.; Scherer, Emily Blood (2014):

It depends on when you ask: Motives for using marijuana assessed before versus after a marijuana use event.

In: *Addict Behav* 39 (12), S. 1759–1765. DOI: 10.1016/j.addbeh.2014.07.018.

Abstract:

BACKGROUND: Marijuana use motives are typically evaluated retrospectively using measures that summarize or generalize across episodes of use, which may compromise validity. Using Ecological Momentary Assessment data, we examined the main reason for a specific marijuana use event measured both prospectively and retrospectively. We then determined reason types, event characteristics, and user characteristics that predicted change in reason. METHODS: Thirty-six medical outpatients age 15 to 24 years who used marijuana two times a week or more used a handheld computer to select their main reason for use from the five categories of the Marijuana Motives Measure (Simons, Correia, & Carey, 1998) just before and after each time they used marijuana over two weeks (n=263 events with before/after reason). The reasons were examined individually and according to dimensions identified in motivational models of substance use (positive/negative, internal/external). RESULTS: The reason assessed before use changed to a different reason after use for 20% of events: 10% of events for pleasure; 21%, to cope; 35%, to be more social; 55%, to expand my mind; and 100%, to conform. In the multivariable model, external and expansion reasons each predicted change in reason for use ($p<0.0001$ and $p=0.001$, respectively). Youth were also more likely to change their reason if older ($p=0.04$), if male ($p=0.02$), and with weekend use ($p=0.002$). CONCLUSION: Retrospective assessments of event-specific motives for marijuana use may be unreliable and therefore invalid for a substantial minority of events, particularly if use is for external or expansion reasons.

Shrier, Lydia A.; Shih, Mei-Chiung; Hacker, Laura; Moor, Carl (2007):

A momentary sampling study of the affective experience following coital events in adolescents.

In: *Journal of Adolescent Health* 40 (4), S. 357-e1.

Abstract:

PURPOSE:

To describe the affective experience following sexual intercourse among sexually active adolescents. We hypothesized that these youth would experience more positive and less negative affects following sexual intercourse than at other times in their daily lives.

METHODS:

Approximately every 3 waking hours, sexually active adolescents aged 15-21 years used a handheld computer to report current affect and recent sexual intercourse in response to random signals. Participants also completed a report after sexual intercourse. Affect was determined by eight states, as well as composite variables for positive and negative affect. Generalized estimating equations compared affect on reports that did and did not include sexual intercourse. Each model included average affect, affect variability (standard deviation), and significant interactions with the occurrence of sexual intercourse. Based on their distribution, outcome variables were modeled as presence/absence of affect.

RESULTS:

Sixty-seven youth completed 1385 random and 392 event reports. There were 266 unique coital reports (median 2.6/participant/week); 94% were with a main partner and 49% involved condom use. Youth were more likely to report positive affect and less likely to report negative affect when they were also reporting recent sexual intercourse, as compared to noncoital reports. In multivariate analyses, participants had greater odds of reporting well being and alertness and lower odds of reporting stress and anger following sexual intercourse compared to other times.

CONCLUSIONS:

Adolescents report improvement in specific positive and negative affective states following sexual intercourse. Determining how feeling more positive and less negative after sexual intercourse may motivate or reinforce sexual intercourse will be important in understanding adolescent sexual behavior.

Shrier, Lydia A.; Shih, Mei-Chiung; Hacker, Laura; Moor, Carl (2007):

A momentary sampling study of the affective experience following coital events in adolescents.

In: *The Journal of adolescent health : official publication of the Society for Adolescent Medicine* 40 (4), S. 357.e1-8. DOI: 10.1016/j.jadohealth.2006.10.014.

Abstract:

PURPOSE\r\nTo describe the affective experience following sexual intercourse among sexually active adolescents. We hypothesized that these youth would experience more positive and less negative affects following sexual intercourse than at other times in their daily lives.\r\nMETHODS\r\nApproximately every 3 waking hours, sexually active adolescents aged 15-21 years used a handheld computer to report current affect and recent sexual intercourse in response to random signals. Participants also completed a report after sexual intercourse. Affect was determined by eight states, as well as composite variables for positive and negative affect. Generalized estimating equations compared affect on reports that did and did not include sexual intercourse. Each model included average affect, affect variability (standard deviation), and significant interactions with the occurrence of sexual intercourse. Based on their distribution, outcome variables were modeled as presence/absence of affect.\r\nRESULTS\r\nSixty-seven youth completed 1385 random and 392 event reports. There were 266 unique coital reports (median 2.6/participant/week); 94% were with a main partner and 49% involved condom use. Youth were more likely to report positive affect and less likely to report negative affect when they were also reporting recent sexual intercourse, as compared to noncoital reports. In multivariate analyses, participants had greater odds of reporting well being and alertness and lower odds of reporting stress and anger following sexual intercourse compared to other times.\r\nCONCLUSIONS\r\nAdolescents report improvement in specific positive and negative affective states following sexual intercourse. Determining how feeling more positive and less negative after sexual intercourse may motivate or reinforce sexual intercourse will be important in understanding adolescent sexual behavior.

Shuren, J. (2014):

The FDA's role in the development of medical mobile applications.

In: *Clin Pharmacol Ther* 95 (5), S. 485–488. DOI: 10.1038/clpt.2014.45.

Abstract:

The use of mobile apps is revolutionizing health-care delivery and has the potential to transform health care by allowing doctors to diagnose patients with potentially life-threatening conditions outside traditional health-care settings, as well as helping consumers manage their own health and wellness and gain access to useful information when and where they need it.

Sievert, L. L. (2013):

Subjective and objective measures of hot flashes.

In: *Am J Hum.Biol.* 25 (5), S. 573–580. DOI: 10.1002/ajhb.22415.

Abstract:

Up to 75% of women in the US report having experienced hot flashes during the menopausal transition. The purpose of this review is to describe the physiology of hot flashes, and the ways in which hot flashes have been examined by subjective report and by objective measurement. Hot flashes occur because of an activation of the heat dissipation response, possibly triggered by a hypothalamic mechanism within the context of declining estrogen levels. There is cross-population variation in the frequency of self-reported hot flashes, although cross-study comparisons are problematic because of incompatibilities in study design. Diaries are a good way to collect information on the time and severity of hot flashes, and body diagrams allow researchers to study the pattern of heat and sweating. Hot flashes can be objectively measured by increases in heart rate, finger blood flow, respiratory exchange ratio, skin temperature, and core body temperature. Sternal skin conductance is the method most highly correlated with subjective hot flash report. In a laboratory, concordance between subjective report and sternal skin conductance can approach 100%. Ambulatory monitoring allows for the tracking of hot flashes during a woman's daily routine or sleep; however, concordance is much lower with ambulatory, compared to laboratory, monitoring. The study of hot flashes at menopause provides a model for the study of any experience that can be assessed by both self-report and biometric measurement. Am. J. Hum. Biol., 25:573-580, 2013. (c) 2013 Wiley Periodicals, Inc

Sievert, Lynnette L.; Reza, Angela; Mills, Phoebe; Morrison, Lynn; Rahberg, Nichole; Goodloe, Amber et al. (2010):

Diurnal rhythm and concordance between objective and subjective hot flashes: the Hilo Women's Health Study.

In: *Menopause (New York, N.Y.)* 17 (3), S. 471–479. DOI: 10.1097/gme.0b013e3181cbb3c6.

Abstract:

OBJECTIVE\r\nThe aims of this study were to test for a diurnal pattern in hot flashes in a multiethnic population living in a hot, humid environment and to examine the rates of concordance between objective and subjective measures of hot flashes using ambulatory and laboratory measures.\r\nMETHODS\r\nStudy participants aged 45 to 55 years were recruited from the general population of Hilo, HI. Women wore a Biolog hot flash monitor (UFI, Morro Bay, CA), kept a diary for 24 hours, and also participated in 3-hour laboratory measures (n = 199). Diurnal patterns were assessed using polynomial regression. For each woman, objectively recorded hot flashes that matched subjective experience were treated as true-positive readings. Subjective hot flashes were considered the standard for computing false-positive and false-negative readings. True-positive, false-positive, and false-negative readings were compared across ethnic groups by chi analyses.\r\nRESULTS\r\nFrequencies of sternal, nuchal, and subjective hot flashes peaked at 1500 +/- 1 hours with no difference by ethnicity. Laboratory results supported the pattern seen in ambulatory monitoring. Sternal and nuchal monitoring showed the same frequency of true-positive measures, but nonsternal electrodes picked up more false-positive readings. Laboratory monitoring showed very low frequencies of false negatives. There were no ethnic differences in the frequency of true-positive or false-positive measures. Women of European descent were more likely to report hot flashes that were not objectively demonstrated (false-negative measures).\r\nCONCLUSIONS\r\nThe diurnal pattern and peak in hot flash occurrence in the hot humid environment of Hilo were similar to results from more temperate environments. Lack of variation in sternal versus nonsternal measures and in true-positive measures across ethnicities suggests no appreciable effect of population variation in sweating patterns.

Silbermann, Andrea; Henkel, Andreas; Müller, Astrid; Zwaan, Martina (2008):

Der Einsatz von Ecological Momentary Assessment bei Patienten mit pathologischem Kaufverhalten.

In: *Psychotherapie, Psychosomatik, medizinische Psychologie* 58 (12), S. 454–461. DOI: 10.1055/s-2007-986352.

Abstract:

Although compulsive buying is a disorder that has begun to receive attention from researchers in recent years, relatively little is known about the relationship between compulsive buying, mood, and daily stressful events. In our pilot study ecological momentary assessment (EMA) was used to examine the described relationships for the first time. 26 patients, who met criteria for compulsive buying, self-monitored their pathological behaviour, their momentary mood and the occurrence of stressful events four times a day on a handheld computer for a period of two weeks. On days with excessive buying behaviour patients reported significantly more daily stressful events compared to days without pathological buying. Before the buying episode patients recorded significantly more positive emotions. The most common consequence of compulsive buying was a significant decrease of positive affects. Thus the results of the current study suggest that mood states and daily stressful events are associated with compulsive buying behaviour. Although mood got worse immediately after excessive buying, this negative consequence did not reduce the frequency of pathological behaviour. This could implicate a high presence-orientation and impulsivity of the patients.

Silk, Jennifer S.; Dahl, Ronald E.; Ryan, Neal D.; Forbes, Erika E.; Axelson, David A.; Birmaher, Boris; Siegle, Greg J. (2007):

Pupillary reactivity to emotional information in child and adolescent depression: links to clinical and ecological measures.

In: *American Journal of Psychiatry* 164 (12), S. 1873–1880.

Abstract:

Objective: Pupil dilation provides a quantitative index of the temporal pattern of brain reactivity to emotional stimuli. Previous reports indicate that depressed adults show sustained pupil dilation to emotional words, but this phenomenon has not been investigated in children. This study investigated pupil dilation in children with depression and examined how differences in pupillary responses to emotional stimuli correlate with self-rated emotional experiences in participants' natural environments in everyday life. Method: Participants were 20 children with major depressive disorder and 22 comparison children ages 8–17. Pupil dilation was measured during a valence identification task. Participants also rated positive and negative affect in their natural environments as part of an ecological momentary assessment protocol. Results: Children showed greater pupil dilation to

negative words than to neutral or positive words. Children with major depression had diminished late pupil dilation relative to comparison children 9–12 sec after a negative word was presented. Diminished late pupil dilation to negative words was associated with greater severity of depression and with higher levels of negative affect and lower levels of positive affect in the natural environment. Conclusions: Depressed children exhibit a dynamic change in cognitive-affective resources devoted to processing negative emotional words, with more dramatic decreases than in comparison children after a negative word is initially processed, a pattern that differs markedly from that observed in depressed adults. Diminished late pupil dilation in children with major depression could be a marker for problems in emotional reactivity and/or regulation associated with pediatric depression.

Silk, Jennifer S.; Stroud, Laura R.; Siegle, Greg J.; Dahl, Ronald E.; Lee, Kyung Hwa; Nelson, Eric E. (2012):

Peer acceptance and rejection through the eyes of youth: Pupillary, eyetracking and ecological data from the Chatroom Interact Task.

In: *Social Cognitive and Affective Neuroscience* 7 (1), S. 93–105. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-00562-009&site=ehost-live;silkj@upmc.edu.

Abstract:

We developed an ecologically valid virtual peer interaction paradigm—the Chatroom Interact Task in which 60 pre-adolescents and adolescents (ages 9–17 years) were led to believe that they were interacting with other youth in a simulated internet chatroom. Youth received rejection and acceptance feedback from virtual peers. Findings revealed increased pupil dilation, an index of increased activity in cognitive and affective processing regions of the brain, to rejection compared to acceptance trials, which was greater for older youth. Data from a cell-phone Ecological Momentary Assessment (EMA) protocol completed following the task indicated that increased pupillary reactivity to rejection trials was associated with lower feelings of social connectedness with peers in daily life. Eyetracking analyses revealed attentional biases toward acceptance feedback and away from rejection feedback. Biases toward acceptance feedback were stronger for older youth. Avoidance of rejection feedback was strongest among youth with increased pupillary reactivity to rejection, even in the seconds leading up to and following rejection feedback. These findings suggest that adolescents are sensitive to rejection feedback and seek to anticipate and avoid attending to rejection stimuli. Furthermore, the salience of social rejection and acceptance feedback appears to increase during adolescence. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Silva, Pedro; Lott, Ryan; Mota, Jorge; Welk, Greg (2014):

Direct and indirect effects of social support on youth physical activity behavior.

In: *Pediatr Exerc Sci* 26 (1), S. 86–94. DOI: 10.1123/pes.2012-0207.

Abstract:

Social support (SS) from parents and peers are key reinforcing factors in the Youth Physical Activity Promotion (YPAP) model. This study aims to identify the relative contribution of parental and peer SS on youth participation in moderate to vigorous physical activity (MVPA). Participants included 203 high school students (n = 125 girls; mean age 14.99 +/- 1.55 years). MVPA was assessed by accelerometry. SS influences were evaluated using a well-established scale. Structural equation modeling measured (AMOS, Version 19) the relative fit of the YPAP models using both parental and peer SS. Parental SS had significant associations with both predisposing factors, enjoyment (beta = .62, $p < .01$), and self-efficacy (beta= .32, $p < .01$), as well a direct effect on MVPA (beta = .30, $p < .01$). Peer SS had direct effect on MVPA (beta = .33, $p < .05$), also significantly influenced levels of enjoyment (beta = .47, $p < .01$) and self-efficacy (beta = .67, $p < .01$). In both models self-efficacy mediated the influence on MVPA. The direct effects for parents and peers were similar. This demonstrates that both parental and peer social support exert a strong influence on adolescent MVPA.

Silva, Joana; Monteiro, Miguel; Sousa, Filipe (2014):

Human activity classification with inertial sensors.

In: *Stud Health Technol Inform* 200, S. 101–104.

Abstract:

Monitoring human physical activity has become an important research area and is essential to evaluate the degree of functional performance and general level of activity of a person. The discrimination of daily living activities can be implemented with

machine learning techniques. A public dataset provided during the European Symposium on Artificial Neural Networks 2013, with time and frequency domain features extracted from raw signals of the smartphone inertial sensors, was used to implement and evaluate an activity classifier. Using a decision tree classifier, an accuracy of 86% was achieved for the classification of walk, climb stairs, stand, sit, and lay down. The results obtained suggest that the smartphone's inertial sensors could be used for an accurate physical activity classification even with real-time requirements.

Silvia, Paul J.; Beaty, Roger E.; Nusbaum, Emily C.; Eddington, Kari M.; Levin-Aspenson, Holly; Kwapil, Thomas R. (2014):

Everyday creativity in daily life: An experience-sampling study of “little c” creativity.

In: *Psychology of Aesthetics, Creativity, and the Arts* 8 (2), S. 183–188. DOI: 10.1037/t05569-000;

Abstract:

Richards proposed that everyday creativity—creative actions that are common among ordinary people in daily life, such as drawing, making recipes, writing, and any activity done with the purpose of being creative—both fosters and reflects psychological health. To explore when people are more likely to do something creative during the day, and to see who tends to act more creatively, we conducted a week-long experience-sampling study with a sample of young adults. Throughout the day, people’s actions and feelings were randomly sampled, with an emphasis on whether people were doing something creative. Consistent with the notion of everyday creativity as a psychological strength, within-person models showed that people who reported feeling happy and active were more likely to be doing something creative at the time. Between-person models found that openness to experience and conscientiousness had large effects on whether people spent their time on creative pursuits. Neither negative states (e.g., momentary feelings of anger, stress, and self-consciousness) nor traits (e.g., neuroticism) significantly predicted creative activity. The findings support Richards’s theorizing about everyday creative behavior as a cause and effect of positive psychological processes, and they illustrate the value of experience sampling for uncovering what creativity looks like in people’s idiosyncratic environments. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Silvia, P. J.; Kwapil, T. R.; Walsh, M. A.; Myin-Germeys, I. (2013):

Planned missing-data designs in experience-sampling research: Monte Carlo simulations of efficient designs for assessing within-person constructs.

In: *Behav.Res Methods* (1554-351X (Linking)). DOI: 10.3758/s13428-013-0353-y.

Abstract:

Experience-sampling research involves trade-offs between the number of questions asked per signal, the number of signals per day, and the number of days. By combining planned missing-data designs and multilevel latent variable modeling, we show how to reduce the items per signal without reducing the number of items. After illustrating different designs using real data, we present two Monte Carlo studies that explored the performance of planned missing-data designs across different within-person and between-person sample sizes and across different patterns of response rates. The missing-data designs yielded unbiased parameter estimates but slightly higher standard errors. With realistic sample sizes, even designs with extensive missingness performed well, so these methods are promising additions to an experience-sampler's toolbox

Simmons, R. K.; Griffin, S. J.; Steele, R.; Wareham, N. J.; Ekelund, U.; Proactive Research Team (2008):

Increasing overall physical activity and aerobic fitness is associated with improvements in metabolic risk: cohort analysis of the ProActive trial.

In: *Diabetologia* 51 (5), S. 787–794.

Abstract:

Aims/hypothesis

Our aim was to examine the association between change in physical activity energy expenditure (PAEE), total body movement (counts per day) and aerobic fitness (maximum oxygen consumption [equation M1]) over 1 year and metabolic risk among individuals with a family history of diabetes.

Methods

Three hundred and sixty-five offspring of people with type 2 diabetes underwent measurement of energy expenditure (PAEE measured using the flex heart rate method), total body movement (daily activity counts from accelerometry data), equation M2

predicted from a submaximal graded treadmill exercise test and anthropometric and metabolic status at baseline and 1 year (n = 321) in the ProActive trial. Clustered metabolic risk was calculated by summing standardised values for waist circumference, fasting triacylglycerol, insulin and glucose, blood pressure and the inverse of HDL-cholesterol. Linear regression was used to quantify the association between changes in PAEE, total body movement and fitness and clustered metabolic risk at follow-up.

Results

Participants increased their activity by 0.01 units PAEE kJ kg−1 day−1 over 1 year. Total body movement increased by an average of 9,848 counts per day. Change in total body movement (β = −0.066, p = 0.004) and fitness (β = −0.056, p = 0.003) was associated with clustered metabolic risk at follow-up, independently of age, sex, smoking status, socioeconomic status and baseline metabolic score.

Conclusions/interpretation

Small increases in activity and fitness were associated with a reduction in clustered metabolic risk in this cohort of carefully characterised at-risk individuals. Further research to quantify the reduction in risk of type 2 diabetes associated with feasible changes in these variables should inform preventive interventions.

Simon, S. K.; Seldon, H. L. (2012):

Personal health records: mobile biosensors and smartphones for developing countries.

In: *Stud.Health Technol.Inform.* 182 (0926-9630 (Linking)), S. 125–132. Online verfügbar unter PM:23138087.

Abstract:

A target of telehealth is to maintain or improve the health of people outside the normal healthcare infrastructure. A modern paradigm in healthcare, and one which fits perfectly with telehealth, is "person self-monitoring", and this fits with the concept of "personal health record" (PHR). One factor in maintaining health is to monitor physiological parameters; this is of course especially important in people with chronic maladies such as diabetes or heart disease. Parameters to be monitored include blood pressure, pulse rate, temperature, weight, blood glucose, oxygen saturation, electrocardiogram (ECG), etc. So one task within telehealth would be to help monitor an individual's physiological parameters outside of healthcare institutions and store the results in a PHR in a way which is available, comprehensible and beneficial to the individual concerned and to healthcare providers. To date many approaches to this problem have been fragmented - emphasizing only part of the problem - or proprietary and not freely verifiable. We describe a framework to approach this task; it emphasizes the implementation of standards for data acquisition, storage and transmission in order to maximize the compatibility among disparate components, e.g. various PHR systems. Data from mobile biosensors is collected on a smartphone using the IEEE 11073 standard where possible; the data can be stored in a PHR on the phone (using standard formats) or can be converted in real-time into more useful information in the PHR, which is based on the International Classification for Primary Care (ICPC2e). The phone PHR data or information can be uploaded to a central online PHR using either the Wi-Fi or GSM transmission protocol together with the Continuity of Care Record message format (CCR, ASTM E2369)

Simons, Jeffrey S.; Wills, Thomas A.; Neal, Dan J. (2014):

The Many Faces of Affect: A Multilevel Model of Drinking Frequency/Quantity and Alcohol Dependence Symptoms Among Young Adults.

In: *J Abnorm Psychol. DOI:* 10.1037/a0036926.

Abstract:

This research tested a multilevel structural equation model of associations between 3 aspects of affective functioning (state affect, trait affect, and affective lability) and 3 alcohol outcomes (likelihood of drinking, quantity on drinking days, and dependence symptoms) in a sample of 263 college students. Participants provided 49 days of experience sampling data over 1.3 years in a longitudinal burst design. Within-person results: At the daily level, positive affect was directly associated with greater likelihood and quantity of alcohol consumption. Daily negative affect was directly associated with higher consumption on drinking days and with higher dependence symptoms. Between-person direct effects: Affect lability was associated with higher trait negative, but not positive, affect. Trait positive affect was inversely associated with the proportion of drinking days, whereas negative affectivity predicted a greater proportion of drinking days. Affect lability exhibited a direct association with dependence symptoms. Between-person indirect effects: Trait positive affect was associated with fewer dependence symptoms via proportion of drinking days. Trait negative affect was associated with greater dependence symptoms via proportion of drinking days. The results distinguish relations of positive and negative affect to likelihood versus amount of drinking and state versus trait drinking outcomes, and highlight the importance of affect variability for predicting alcohol dependence symptoms.

Simpson, Tracy L.; Galloway, Christopher; Rosenthal, Christina F.; Bush, Kristen R.; McBride, Brittney; Kivlahan, Daniel R. (2011):

Daily telephone monitoring compared with retrospective recall of alcohol use among patients in early recovery.

In: *The American Journal on Addictions* 20 (1), S. 63–68.

Abstract:

Most studies comparing frequent self-monitoring protocols and retrospective assessments of alcohol use find good correspondence, but have excluded participants with significant comorbidity and/or social instability, and some have included abstainers. We evaluated the correspondence between measures of alcohol use based on daily interactive voice response (IVR) telephone monitoring and a 28-day modification of the Form-90 (Form-28). Participants were 25 outpatients with alcohol use disorder and significant PTSD symptomatology. Overall correlations between the IVR and Form-28 on days drinking and total standard drink units (SDUs) were strong for the entire sample and the subsample of drinkers (n = 7). Day-to-day correspondence between IVR and Form-28 was modest, but much stronger for the most recent week assessed than for the prior 3 weeks. Finally, the drinkers reported significantly greater total SDUs and heavy drinking days on the Form-28 than via IVR. The results indicate a need for further refinement of IVR methodology for treatment seeking populations as well as caution when retrospectively assessing drinking over time periods longer than a week among these individuals. (Am J Addict 2010;00:1–6)

Sinadinovic, Kristina; Berman, Anne H.; Hasson, Dan; Wennberg, Peter (2010):

Internet-based assessment and self-monitoring of problematic alcohol and drug use.

In: *Addict Behav* 35 (5), S. 464–470. DOI: 10.1016/j.addbeh.2009.12.021.

Abstract:

A Swedish web-based service (www.escreen.se) offers self-assessment and self-monitoring of alcohol and drug use via on-line screening with the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Use Disorders Identification Test (DUDIT) as well as in-depth risk assessment using extended versions of both tests (Alcohol-E and DUDIT-E). Users receive individualized feedback concerning their alcohol and drug consumption and can follow their alcohol and drug use over time in personal diagrams and by writing in an electronic diary. This study describes user characteristics, service utilization patterns, and psychometric test properties for 2361 individuals who created a valid account over 20 months starting in February 2007. Problematic alcohol use according to AUDIT criteria was indicated for 67.4%, while 46.0% met DUDIT criteria for problematic drug use. Men and women accessed the service equally, with a mean age of 23 years. Internal consistency reliability figures were 0.90 for 1846 first-time AUDIT users and 0.97 for 1211 first-time DUDIT users; among 213 second-time AUDIT users reliability was 0.93, and 0.96 for 97 second-time DUDIT users. Internet-based alcohol and drug monitoring could function as a self-help tool or as a complement to substance abuse treatment.

Singh, B.; Russell, S. D.; Cheng, A. (2012):

Update on device technologies for monitoring heart failure.

In: *Curr.Treat.Options.Cardiovasc.Med.* 14 (5), S. 536–549. DOI: 10.1007/s11936-012-0192-7.

Abstract:

OPINION STATEMENT: Congestive heart failure (CHF) affects more than 5 million people in the United States and is one of the most common reasons for recurrent hospitalizations. Since the majority of admissions related to CHF are secondary to progressively worsening congestion, many clinicians are quick to initiate aggressive diuresis once early signs of impending heart failure develop. These signs are based in large measure on patient-reported symptoms. Unfortunately, recent trials have shown that traditional ambulatory monitoring of heart failure using patient symptoms or body weight do not reduce episodes of decompensated heart failure requiring hospitalization. This has led to great interest in developing monitoring systems that can detect impending episodes of CHF even prior to the development of symptoms. Some of the these systems utilize existing implantable cardioverter defibrillators and cardiac resynchronization therapy devices to monitor electrophysiologic parameters including the presence of ventricular arrhythmias, heart rate variability and even transthoracic impedances. Other more recent developments have focused on more invasive hemodynamic monitoring systems that can measure pressures in the right ventricle, pulmonary arteries and the left atrium. The data on the utility of such systems is limited but encouraging. While none of these systems are currently FDA approved, they have been applied in a number of clinical trials. This paper highlights the currently available monitoring systems for heart failure and reviews the evidence supporting its use

Sirard, John R.; Pate, Russell R. (2001):

Physical activity assessment in children and adolescents.

In: *Sports Med* 31 (6), S. 439–454.

Abstract:

Chronic disease risk factors, including a sedentary lifestyle, may be present even in young children, suggesting that early prevention programmes may be critical to reducing the rates of chronic disease. Accurate assessment of physical activity in children is necessary to identify current levels of activity and to assess the effectiveness of intervention programmes designed to increase physical activity. This article summarises the strengths and limitations of the methods used to evaluate physical activity in children and adolescents. MEDLINE searches and journal article citations were used to locate 59 articles that validated physical activity measurement methods in children and adolescents. Only those methods that were validated against a more stringent measure were included in the review.

Based on the definition of physical activity as any bodily movement resulting in energy expenditure (EE), direct observation of the individual's movement should be used as the gold standard for physical activity research. The doubly labelled water technique and indirect calorimetry can also be considered criterion measures for physical activity research, because they measure EE, a physiologic consequence closely associated with physical activity. Devices such as heart rate monitors, pedometers and accelerometers have become increasingly popular as measurement tools for physical activity. These devices reduce the subjectivity inherent in survey methods and can be used with large groups of individuals. Heart rate monitoring is sufficiently valid to use in creating broad physical activity categories (e.g. highly active, somewhat active, sedentary) but lacks the specificity needed to estimate physical activity in individuals. Laboratory and field validations of pedometers and accelerometers yield relatively high correlations using oxygen consumption (r = 0.62 to 0.93) or direct observation (r = 0.80 to 0.97) as criterion measures, although, they may not be able to capture all physical activity.

Physical activity has traditionally been measured with surveys and recall instruments. These techniques must be used cautiously in a paediatric population that has difficulty recalling such information. Still, some studies have reported 73.4% to 86.3% agreement between these instruments and direct observation. Future investigations of physical activity instruments should validate the novel instrument against a higher standard. Additional studies are needed to investigate the possibility of improving the accuracy ofmeasurement by combining 2 or more techniques. The accurate measurement of physical activity is critical for determining current levels of physical activity, monitoring compliance with physical activity guidelines, understanding the dose-response relationship between physical activity and health and determining the effectiveness of intervention programmes designed to improve physical activity.

Sisson, Susan B.; Camhi, Sarah M.; Tudor-Locke, Catrine; Johnson, William D.; Katzmarzyk, Peter T. (2012):

Characteristics of step-defined physical activity categories in U.S. adults.

In: *Am J Health Promot* 26 (3), S. 152–159. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-01535-004&site=ehost-live;susan-sisson@ouhsc.edu.

Abstract:

Purpose: Descriptive physical activity epidemiology of the U.S. population is critical for program development and resource allocation. The purpose of this project was to describe step-defined categories (as measured by accelerometer) of U.S. adults and to determine predictors of sedentary classification (<5000 steps/d). Design: The National Health and Nutrition Examination Survey (NHANES) is an annual, nationally representative survey used to determine the health status of the U.S. populace. Setting: In-home interviews and physical examination components of NHANES. Participants: Overall, 4372 eligible adults wore accelerometers in the 2005–2006 NHANES; 628 were excluded, which yielded 3744 adults (of which 46.8% were men). Measures: Steps per day; body mass index (BMI); demographic, household and behavioral variables. Analysis: Means and frequencies were calculated. Logistic regression was utilized to determine predictors of sedentary classification. Results: Overall, 36.1% were sedentary (i.e., <5000 steps/d); 47.6% were low to somewhat active (5000–9999 steps/d); 16.3% were active to highly active (≥10,000 steps/d). Advancing age (odds ratio [OR], 1.95; confidence intervals [CIs], 1.78, 2.13), higher BMI (OR, 1.40; CIs, 1.23, 1.59), female sex (OR, 1.86; CIs, 1.46, 2.36), African-American versus European-American ethnicity (OR, 1.36; CIs, 1.13, 1.65), household income versus ≥$45,000 (<$25,000: OR, 1.94; CIs, 1.40, 2.69; $25,000–$44,000: OR, 1.51; CIs, 1.23, 1.85), and current versus never smoker (OR, 1.53; CIs, 1.26, 1.86) variables had higher odds of sedentary classification. Usual daily occupational/domestic physical activity categories of standing/walking (OR, .51; CIs, .38, .69); lifting/climbing (OR, .26; CIs, .17, .38); and heavy loads/labor (OR, .16; CIs, .10, .26) had lower odds of sedentary classification than sitting. Conclusions: Over one-third of the U.S. population was classified as sedentary by accelerometer-determined steps per day, and several characteristics predicted sedentary classification. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Sisson, Susan B.; Tudor-Locke, Catrine (2008):

Comparison of cyclists' and motorists' utilitarian physical activity at an urban university.

In: *Prev Med* 46 (1), S. 77–79.

Abstract:

OBJECTIVE:

Preliminary comparison of cyclists and motorists on: (1) distance lived from campus and, (2) the impact of transportation mode on physical activity.

METHODS:

A purposive sample of students (n=50; cyclists=26, motorists=24) living <5 miles from Arizona State University campus wore an accelerometer and completed a travel log for two on-campus days during fall 2005-spring 2006. Residence distance to campus was calculated by geocoded addresses (n=45; cyclists=23 vs. motorists=22). Final outcome variables were: distance lived from campus, accelerometer time moderate-to-vigorous physical activity, steps/day, total time moderate-to-vigorous physical activity (logged minutes cycling+accelerometer-derived moderate-to-vigorous physical activity), and minutes total active commuting (logged walking+cycling).

RESULTS:

Groups were significantly different for: distance lived from campus (cyclists=0.6+/-0.6 vs. motorists=2.0+/-1.1 miles; p<0.000); steps/day (cyclists=11,051+/-4295 vs. motorists=9174+/-3319; p=0.046); total time moderate-to-vigorous physical activity (cyclists=85.7+/-37.0 vs. motorists=50.3+/-23.8 minutes; p<0.001); minutes in motorized transport (cyclists=24.9+/-27.5 vs. motorists=61.6+/-32.9; p<0.001); and total active transport (cyclists=59.4+/-32.4 vs. motorists=29.5+/-20.0; p<0.001).

CONCLUSION:

Among students living within 5 miles of campus, cyclists lived relatively closer to campus, accumulated more minutes of physical activity, and spent more time in active transportation than students who used motorized means.

Skirrow, C.; Ebner-Priemer, U.; Reinhard, I.; Malliaris, Y.; Kuntsi, J.; Asherson, P. (2014):

Everyday emotional experience of adults with attention deficit hyperactivity disorder: evidence for reactive and endogenous emotional lability.

In: *Psychol Med*, S. 1–13. DOI: 10.1017/S0033291714001032.

Abstract:

BACKGROUND: Emotional lability (EL), characterized by negative emotional traits and emotional instability, is frequently reported in children and adults with attention deficit hyperactivity disorder (ADHD). However, EL is primarily assessed using retrospective self-report, which is subject to reporting bias and does not consider the potential influence of positive and negative everyday experiences. METHOD: Ambulatory assessment was carried out in 41 men with ADHD without co-morbidity, current medication or substance abuse, and 47 healthy control participants. Reports of negative and positive emotions (irritability, frustration, anger, happiness, excitement) and the occurrence of bad and good events were completed eight times daily during a working week. Group differences in emotional intensity and instability were investigated using multilevel models, and explored in relation to bad and good events and the Affective Lability Scale - Short Form (ALS-SF), an EL questionnaire. RESULTS: The ADHD group reported significantly more frequent bad events, heightened intensity and instability of irritability and frustration, and greater intensity of anger. The results for positive emotions were equivocal or negative. Bad events significantly contributed to the intensity and instability of negative emotions, and showed a stronger influence in the ADHD group. However, covariation for their effect did not eliminate group differences. Small-to-moderate correlations were seen between intensity and instability of negative emotions and the ALS-SF. CONCLUSIONS: Adults with ADHD report heightened intensity and instability of negative emotions in daily life. The results suggest two components of EL in ADHD: a reactive component responsive to bad events and an endogenous component, independent of negative everyday events.

Skoglund, Per H.; Arpegard, Johannes; Ostergren, Jan; Svensson, Per (2014):

Amino-terminal pro-B-type natriuretic peptide and high-sensitivity C-reactive protein but not cystatin C predict cardiovascular events in male patients with peripheral artery disease independently of ambulatory pulse pressure.

In: *Am J Hypertens* 27 (3), S. 363–371. DOI: 10.1093/ajh/hpt278.

Abstract:

BACKGROUND: Patients with peripheral arterial disease (PAD) are at high risk for cardiovascular (CV) events. We have previously shown that ambulatory pulse pressure (APP) predicts CV events in PAD patients. The biomarkers amino-terminal pro-B-type natriuretic peptide (NT-proBNP), high-sensitivity C-reactive protein (hs-CRP), and cystatin C are related to a worse outcome in patients with CV disease, but their predictive values have not been studied in relation to APP. METHODS: Blood samples and 24-hour measurements of ambulatory blood pressure were examined in 98 men referred for PAD evaluation during 1998-2001. Patients were followed for a median of 71 months. The outcome variable was CV events defined as either CV mortality or any hospitalization for myocardial infarction, stroke, or coronary revascularization. The predictive values of log(NT-proBNP), log(hs-CRP), and log(cystatin C) alone and together with APP were assessed by multivariable Cox regression. Area under the curve (AUC) and net reclassification improvement (NRI) were calculated compared with a model containing other significant risk factors. RESULTS: During follow-up, 36 patients had at least 1 CV event. APP, log(NT-proBNP), and log(hs-CRP) all predicted CV events in univariable analysis, whereas log(cystatin C) did not. In multivariable analysis log(NT-proBNP) (hazard ratio (HR) = 1.62; 95% confidence interval (CI) = 1.05-2.51) and log(hs-CRP) (HR = 1.63; 95% CI = 1.19-2.24) predicted events independently of 24-hour PP. The combination of log(NT-proBNP), log(hs-CRP), and average day PP improved risk discrimination (AUC = 0.833 vs. 0.736; P < 0.05) and NRI (37%; P < 0.01) when added to other significant risk factors. CONCLUSIONS: NT-proBNP and hs-CRP predict CV events independently of APP and the combination of hs-CRP, NT-proBNP, and day PP improves risk discrimination in PAD patients.

Skoglund, P. H.; Ostergren, J.; Svensson, P. (2012):

Ambulatory pulse pressure predicts cardiovascular events in patients with peripheral arterial disease.

In: *Blood Press* (0803-7051 (Linking)). DOI: 10.3109/00365599.2012.676755.

Abstract:

Background. Patients with peripheral arterial disease (PAD) are at high risk of cardiovascular (CV) events and often have hypertension with a high pulse pressure (PP). We studied the prognostic value of ambulatory blood pressure (ABP) in PAD patients with special reference to PP. Methods. 98 consecutive males with PAD had 24-h ABP measurements. The mean age was 68 years and CV comorbidity was prevalent. The outcome variable was CV events defined as CV mortality or any hospitalization for myocardial infarction, stroke or coronary revascularization. The predictive value of ABP variables was assessed by Cox regression. 90 age-matched men free of CV disease served as controls. Results. During follow-up (median 71 months), 36 patients and seven controls had at least one CV event. In PAD patients, 24-h PP (hazard ratios, HR, 1.48 (95% confidence interval, CI, 1.14-1.92), p < 0.01) predicted CV events. Office PP did not predict events in PAD patients (HR 1.15 (0.97-1.38), ns). In multivariate analysis, 24-h PP (HR 1.48 (1.12-1.95), p < 0.01) remained a predictor of CV events. Conclusions. Ambulatory PP predicts CV events in patients with PAD. ABP measurement may be indicated for better risk stratification in PAD patients

Sladek, Michael R.; Doane, Leah D. (2014):

Daily diary reports of social connection, objective sleep, and the cortisol awakening response during adolescents' first year of college.

In: *Journal of Youth and Adolescence*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-57518-001%26site%3dehost-live.

Abstract:

Poor sleep and alterations in the stress-sensitive hypothalamic–pituitary–adrenal (HPA) axis may be mechanisms through which loneliness impacts adolescents' well-being. Few researchers have explored whether daily variation in experiences of social connection predict day-to-day variation in sleep and HPA axis activity among adolescents navigating the college context. Using daily diary reports of social connection, objective measures of sleep (actigraphy), and naturalistic salivary assessment, the present study examined within-person associations between first-year college students' social connection during the day and sleep that night, as well as diurnal cortisol activity the following day. The present study also explored trait-level loneliness as a moderator of these associations after adjusting for baseline loneliness assessed in high school. Seventy-one first-year college students (23 % male; M age = 18.85; 52 % non-Hispanic White) completed daily diary reports, wore a wrist-based accelerometer (actigraph watch), and provided saliva samples five times daily across three consecutive weekdays. The results from hierarchical linear models indicated that within-person increases in daily social connection were significantly associated with longer time spent in bed and more actual time asleep that night only for adolescents high on loneliness. Within-person increases in daily social connection were associated with a greater cortisol awakening response (CAR) the next day, regardless of trait loneliness. These findings illustrate that more daily social connection with others than usual may predict improved sleep quantity for lonely

adolescents and a physiological index of anticipating upcoming daily demands (CAR) in general. Future intervention programs might consider including strategies focused on enhancing daily social interactions among adolescents starting college, particularly for lonely adolescents. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Slaman, J.; Bussmann, J.; van der Slot, W. M.; Stam, H. J.; Roebroeck, M. E.; Van Den Berg-Emons Rj (2012):

Physical Strain of Walking Relates to Activity Level in Adults With Cerebral Palsy.

In: *Arch.Phys.Med.Rehabil.* (0003-9993 (Linking)). DOI: 10.1016/j.apmr.2012.11.005.

Abstract:

OBJECTIVE: To gain insight into underlying mechanisms of inactive lifestyles among adults with spastic bilateral cerebral palsy (CP) with a focus on aerobic capacity, oxygen consumption, and physical strain during walking at preferred walking speed, as well as fatigue. DESIGN: Cross-sectional. SETTING: University hospital. PARTICIPANTS: Adults (N=36), aged 25 to 45 years, with spastic bilateral CP, walking with (n=6) or without (n=30) walking aids. INTERVENTIONS: Not applicable. MAIN OUTCOME MEASURES: Physical strain during walking was defined as oxygen uptake during walking, expressed as percentage of peak aerobic capacity. Participants with spastic bilateral CP walked their preferred walking speed while oxygen uptake was measured using a portable gas analyzer. Peak aerobic capacity was measured during maximal cycle ergometry. An accelerometry-based activity monitor measured total daily walking time. Regression analyses were performed to assess the relation between aerobic capacity, oxygen uptake, and physical strain of walking on the one hand and total daily walking time on the other hand. RESULTS: Neither aerobic capacity nor oxygen uptake during walking was related to total daily walking time ($r(2)=.29$, $P=.10$ and $r(2)=.27$, $P=.16$, respectively). Physical strain of walking at preferred walking speed was inversely related to total daily walking time ($r(2)=.44$, $P<.01$). CONCLUSIONS: Physical strain during walking is moderately related to total daily walking time, implying that people with high physical strain during walking at preferred walking speed likely walk less in daily life

Slaper, Michael R.; Conkol, Kimberly (2014):

mHealth tools for the pediatric patient-centered medical home.

In: *Pediatr Ann* 43 (2), S. e39-43. DOI: 10.3928/00904481-20140127-09.

Abstract:

The concept of the pediatric patient-centered medical home (PCMH) as a theory has been evolving since it was initially conceived more than 40 years ago. When the American Academy of Pediatrics' (AAP) Council on Pediatric Practice first wrote about this model, "medical home" was defined solely as the central location of a pediatric patient's medical records. Approximately two decades later, the AAP published its inaugural policy statement on this topic. Through this policy statement, the medical home was defined as a place where care for pediatric patients would be accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective. Although the lack of access to providers, especially in rural communities, may inhibit the adoption of the PCMH or chronic care models, technology has evolved to the point where many of the gaps in care can be bridged. mHealth, defined by the National Institutes of Health (NIH) as the use of mobile and wireless devices to improve health outcomes, health care services, and health research, can be one specific example of how technology can address these issues. One early study has shown that patients who use mHealth tools are more likely to adhere to self-monitoring requirements and, in turn, have significantly improved outcomes. A rapidly evolving and scalable mHealth technology that has the ability to address these issues are self-management mobile applications, or apps. It has been estimated that there are currently more than 40,000 health care-related apps available. Furthermore, use of these apps is growing, as more than 50% of smartphone users surveyed responded that they have used their device to gather health information, and almost 20% of this population has at least one health care app on their device.

Sliwinski, Martin J. (2011):

Approaches to modeling intraindividual and interindividual facets of change for developmental research. In: Karen L. Fingerman, Cynthia A. Berg, Jacqui Smith und Toni C. Antonucci (Hg.): Handbook of life-span development.

New York, NY US: Springer Publishing Co, S. 1–25. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-03366-001&site=ehost-live.

Abstract:

(from the chapter) The science of human development seeks to understand how individuals change on physical, cognitive, and social dimensions of functioning across the life span. Although many informative developmental studies have relied on cross-sectional comparisons among individuals of different ages, optimal designs for addressing developmental questions must involve the study of intraindividual change across time. In this chapter, I will discuss the conceptual underpinnings and methodological approaches for linking change processes that operate across different time scales. First, I will discuss important distinctions (i.e., variability vs. change, intraindividual vs. interindividual differences in change) in developmental methodology and how they map onto commonly used analytic approaches. Second, I will explore the utility of different research designs for studying both the intraindividual and interindividual facets of developmental change across different time scales (i.e., over the shortterm and long-term). Emphasis will be given to a relatively novel hybrid research design, the measurement burst. Most longitudinal designs consist of measuring behavior once every several months or years to detect long-term developmental trends. In contrast, measurement-burst designs consist of "bursts" of intensive (e.g., daily) measurements that are repeated over longer intervals (e.g., every several months). Thus, the measurement burst combines elements of intensive short-term measurement designs (e.g., microgenetic, daily diary, experience sampling) with more conventional longitudinal designs that focus on longerterm follow-up. For example, a researcher interested in developmental changes in emotion regulation might examine affective reactivity to daily stress and how characteristics such as personality and chronic stress exposure influence these changes. A measurement-burst approach to this problem could involve repeating a week-long daily diary study every few months to examine longer-term intraindividual changes in patterns of variability and covariation between affect and stress. This type of design affords researchers with the opportunity to pose and address a rich array of questions regarding processes of intraindividual variability and change that operate across very different time intervals. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Sloane, Richard; Snyder, Denise Clutter; Demark-Wahnefried, Wendy; Lobach, David; Kraus, William E. (2009):

Comparing the 7-day physical activity recall with a triaxial accelerometer for measuring time in exercise.

In: *Med Sci Sports Exerc* 41 (6), S. 1334–1340. DOI: 10.1249/MSS.0b013e3181984fa8.

Abstract:

PURPOSE\r\nThe primary study aim was to evaluate associations of estimated weekly minutes of moderate-to-vigorous-intensity exercise from self-reports of the telephone-administered 7-Day Physical Activity Recall (7-Day PAR) with data captured by the RT3 triaxial accelerometer.\r\nMETHODS\r\nThis investigation was undertaken as part of the FRESH START study, a randomized clinical trial that tested an iteratively tailored diet and exercise mailed print intervention among newly diagnosed breast and prostate cancer survivors. A convenience sample of 139 medically eligible subjects living within a 60-mile radius of the study center provided both 7-Day PAR and accelerometer data at enrollment. Ultimately, substudy subjects (n = 115) were found eligible for the FRESH START study and randomized to one of two study treatment arms. Follow-up assessments at year 1 (n = 103) and year 2 (n = 99) provided both the 7-Day PAR and the accelerometer data.\r\nRESULTS\r\nThere was moderate agreement between the 7-Day PAR and the accelerometer with longitudinal serial correlation coefficients of 0.54 (baseline), 0.24 (year 1), and 0.53 (year 2), all P values <0.01, although the accelerometer estimates for weekly time in moderate-to-vigorous physical activity (PA) were much higher than those of the 7-Day PAR at all time points. The two methods were poorly correlated in assessing sensitivity to change from baseline to year 1 (rho = 0.11, P = 0.30). Using mixed models repeated-measures analysis, both methods exhibited similar nonsignificant treatment arm x time interaction P values (7-Day PAR = 0.22, accelerometer = 0.23).\r\nCONCLUSIONS\r\nThe correlations for three serial time points were in agreement with findings of other studies that compared self-reported time in exercise with PA captured by accelerometry. However, these methods capture somewhat different dimensions of PA and provide differing estimates of change over time.

Slootmaker, Sander M.; Chinapaw, Mai J. M.; Seidell, Jacob C.; van Mechelen, Willem; Schuit, Albertine J. (2010):

Accelerometers and Internet for physical activity promotion in youth? Feasibility and effectiveness of a minimal intervention [ISRCTN93896459].

In: *Prev Med* 51 (1), S. 31–36. DOI: 10.1016/j.ypmed.2010.03.015.

Abstract:

OBJECTIVE\r\nTo evaluate the feasibility and effectiveness of a 3-month minimal physical activity (PA) intervention in adolescents.\r\nMETHODS\r\nA randomised controlled trial, including five secondary schools (n=87). In the 3-month intervention (Amsterdam, The Netherlands, 2005) adolescents were provided with a PAM accelerometer, coupled to a web-based tailored PA advice (PAM COACH). Measurements (i.e., PA, determinants of PA, aerobic fitness and anthropometrics) took place at baseline and at 3- and 8-month follow-up.\r\nRESULTS\r\nSixty-five percent of the participants in the intervention

group reported to have worn the PAM frequently and 56% of the PAM users uploaded their PAM scores to the PAM COACH at least once. We found significant differences between groups in favour of the intervention group in moderate intensity PA (MPA) for girls after 3 months (411 min/week; 95% CI: 1; 824; P=0.04) and in sedentary time for boys after 8 months (-1801 min/week; 95% CI: -3545; -57; P=0.04).\r\nCONCLUSIONS\r\nAlthough the process evaluation suggests that a substantial proportion of the participants did not regularly wear the PAM and did not upload information to the PAM COACH website, our findings suggest promising intervention effects on MPA among girls and sedentary time among boys.

Slootmaker, Sander M.; Schuit, Albertine J.; Chinapaw, Marijke J. M.; Seidell, Jacob C.; van Mechelen, Willem (2009):

Disagreement in physical activity assessed by accelerometer and self-report in subgroups of age, gender, education and weight status.

In: *Int J Behav Nutr Phys Act* 6. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-30460-001%26site%3dehost-live;w.vanmechelen@vumc.nl;jaap.seidell@falw.vu.nl;m.chinapaw@vumc.nl;jantine.schuit@rivm.nl;slootmaker@gmail.com.

Abstract:

Background

The purpose of this study is to compare self-reported time (by questionnaire) and objectively measured time (by accelerometer) spent on physical activity at moderate (MPA) and vigorous intensity (VPA) in subgroups of age, gender, education and weight status.

Methods

In total, 236 adolescents (aged 12–18) and 301 adults (aged 22–40), completed the questionnaire and wore an accelerometer for two weeks.

Results

Adolescents reported exceptionally more time spent on MPA (mean difference 596 ± 704 min/wk) and VPA (mean difference 178 ± 315 min/wk) than was assessed objectively by the accelerometer. Based on the questionnaire, high educated adolescents spent more time on MPA (205 min/wk, p = 0.002) and VPA (120 min/wk, p = 0.01) than low educated adolescents, but according to the accelerometer they spent less time on MPA (149 min/wk, p = 0.001) and VPA (47 min/wk, p = 0.001). Among adults there was moderate agreement between self-reported time and objectively measured time spent on MPA, but in general the reported time spent on MPA (mean difference 107 ± 334 min/wk) and VPA (mean difference 169 ± 250 min/wk) exceeded the time measured with the accelerometer. Overweight adults reported significantly more VPA (57 min/wk, p = 0.04) than normal weight adults, but this was not confirmed by the accelerometer data.

Conclusion

We observed large differences in time spent on MPA and VPA measured by questionnaire and accelerometer in adolescents but reasonably good agreement in adults. Differences between methods varied by gender, education and weight status. This finding raises serious questions about the use of questionnaires to quantify MPA and VPA in adolescents. There is a clear need in advanced valid assessments of PA in adolescents.

Smallwood, Jonathan; Schooler, Jonathan W.; Turk, David J.; Cunningham, Sheila J.; Burns, Phebe; MacRae, C. Neil (2011):

Self-reflection and the temporal focus of the wandering mind.

In: *Conscious Cogn* 20 (4), S. 1120–1126. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-24616-018&site=ehost-live;jonsmallwood2004@yahoo.com.

Abstract:

Current accounts suggest that self-referential thought serves a pivotal function in the human ability to simulate the future during mind-wandering. Using experience sampling, this hypothesis was tested in two studies that explored the extent to which self-reflection impacts both retrospection and prospection during mind-wandering. Study 1 demonstrated that a brief period of self-reflection yielded a prospective bias during mind-wandering such that participants' engaged more frequently in spontaneous future than past thought. In Study 2, individual differences in the strength of self-referential thought — as indexed by the memorial advantage for self rather than other-encoded items — was shown to vary with future thinking during mind-wandering. Together these results confirm that self-reflection is a core component of future thinking during mind-wandering

and provide novel evidence that a key function of the autobiographical memory system may be to mentally simulate events in the future. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Smart Richman, Laura; Pek, Jolynn; Pascoe, Elizabeth; Bauer, Daniel J. (2010):

The effects of perceived discrimination on ambulatory blood pressure and affective responses to interpersonal stress modeled over 24 hours.

In: *Health Psychol* 29 (4), S. 403.

Abstract:

OBJECTIVE:

This research examined the impact of perceived discrimination on ambulatory blood pressure (ABP) and daily level affect during social interaction.

DESIGN:

For 24 hrs, adult Black and White participants wore an ABP monitor and completed palm pilot diary entries about their social interactions.

MAIN OUTCOME MEASURES:

Mean level and time-trend trajectories of blood pressure and heart rate were examined as well as mean level measures of positive and negative affect after stressful and nonstressful social interactions.

RESULTS:

Analyses showed that, after controlling for important covariates, perceived discrimination predicted the slopes of both wake and nocturnal ABP responses, with those who reported more discrimination having steeper daytime trajectories for systolic and diastolic blood pressure and less nighttime dipping in heart rate over time as compared to those who had reported relatively infrequent discrimination. High levels of perceived discrimination were also related to positive and negative affective responses after stressful encounters.

CONCLUSIONS:

These results suggest that, regardless of race, perceived discrimination is related to cardiovascular and affective responses that may increase vulnerability to pathogenic processes.

Smetana, Judith G.; Villalobos, Myriam; Rogge, Ronald D.; Tasopoulos-Chan, Marina (2010):

Keeping secrets from parents: daily variations among poor, urban adolescents.

In: *Journal of Adolescence* 33 (2), S. 321–331. DOI: 10.1016/j.adolescence.2009.04.003.

Abstract:

Daily variations in secrecy with mothers and fathers were examined in 108 poor, urban, diverse middle adolescents (M=15.16 years, SD=0.89). Adolescents completed online diaries over 14 days assessing secrecy from parents about school, personal, and multifaceted activities (e.g., staying out late), and bad behavior. Three-level hierarchical linear models indicated that there were significant daily fluctuations in adolescents' secrecy with mothers and that adolescents kept more secrets from mothers about personal than other activities. Secrecy with mothers also was associated with greater involvement in problem behavior. For both mothers and fathers, secrecy on the current day was associated with greater secrecy on the previous day and with poorer overall relationships (as aggregated across study days) with that parent. Thus, for mothers, secrecy appeared to be associated with both stable factors and daily variations, whereas for fathers, secrecy was associated primarily with stable factors. The results provide a detailed picture of secrecy in diverse adolescents' everyday lives.

Smith, T. W.; Birmingham, W.; Uchino, B. N. (2012):

Evaluative threat and ambulatory blood pressure: Cardiovascular effects of social stress in daily experience.

In: *Health Psychol* (0278-6133 (Linking)). DOI: 10.1037/a0026947.

Abstract:

Objective: Physiological effects of social evaluation are central in models of psychosocial influences on physical health. Experimental manipulations of evaluative threat evoke substantial cardiovascular and neuroendocrine responses in laboratory studies, but only preliminary evidence is available regarding naturally occurring evaluative threats in daily life. In such nonexperimental ambulatory studies, it is essential to distinguish effects of evaluative threat from related constructs known to alter stress, such as ability perceptions and concerns about appearance. Methods: 94 married, working couples (mean age 29.2 years) completed a 1-day (8 a.m. to 10 p.m.) ambulatory blood pressure protocol with random interval-contingent measurements using a Suntech monitor and Palm Pilot-based measures of control variables and momentary experiences of social-evaluative threat, concerns about appearance, and perceived ability. Results: In hierarchical analyses for couples and multiple measurement occasions (Proc Mixed; SAS) and controlling individual differences (BMI, age, income) and potential confounds (e.g., posture, activity), higher reports of social-evaluative threat were associated with higher concurrent systolic (estimate = .87, SE = .34) and diastolic blood pressure (estimate = 1.06; SE = .26), both $p < .02$. Effects of social-evaluative threat remained significant when perceived ability and appearance concerns were controlled. Conclusions: Naturally occurring social-evaluative threat during daily activity is associated with increased systolic and diastolic blood pressure. Given associations between ambulatory blood pressure and risk of cardiovascular disease, the findings support conceptual models of threats to the social self as a potentially important influence on physical health. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Smith, Dylan M.; Brown, Stephanie L.; Ubel, Peter A. (2008):

Mispredictions and misrecollections: challenges for subjective outcome measurement.

In: *Disability and rehabilitation* 30 (6), S. 418–424.

Abstract:

PURPOSE:

To review research from the behavioral sciences that demonstrates how predictions of future events--and memories of past events--are often systematically biased.

METHOD:

Description of how these biases present challenges for subjective outcome measurement in rehabilitation settings, and for measuring health utility.

RESULTS:

Two new techniques for outcome measurement that have been specifically designed to resist these biases Ecological Momentary Assessment and the Day Reconstruction Method are successful.

CONCLUSION:

We propose that these techniques could be adopted for measuring rehabilitation outcomes.

Smith, Jaclyn A.; Decalmer, Samantha; Kelsall, Angela; McGuinness, Kevin; Jones, Helen; Galloway, Simon et al. (2010):

Acoustic cough—reflux associations in chronic cough: potential triggers and mechanisms.

In: *Gastroenterology* 139 (3), S. 754–762.

Abstract:

Background & Aims

Central sensitization is thought to play a role in chronic cough and might explain the temporal association between cough and gastroesophageal reflux (GOR) in patients in whom non-GOR causes have been excluded. Using our novel simultaneous acoustic cough recording and impedance/pH monitoring technique, we aimed to explore this further by assessing such temporal associations and their relationship to the acidity, duration, and proximal extent of reflux and the presence of erosive disease and cough reflex sensitivity in unselected patients (ie, including non-GOR causes) with chronic cough.

Methods

Twenty-four hour ambulatory acoustic cough monitoring with simultaneous impedance/pH recording was carried out in 71 unselected patients with chronic cough, aged 51–64 years (47 female). In addition, all patients underwent cough reflex sensitivity testing to citric acid, and 66 patients underwent gastroscopy. Temporal associations between cough and reflux were expressed using the symptom association probability.

Results

Seventy percent of patients exhibited temporal associations, with 48% having a positive symptom association probability (SAPR-C) for cough preceded by reflux (mainly distal), 56% a positive symptom association probability (SAPC-R (2 min)) for reflux preceded by cough, and 32% both. Moreover, SAPR-C positive patients had a more sensitive cough reflex (P = .03) but similar esophageal reflux exposure and erosive disease, together with similar prevalence of extraesophageal causes of cough compared with SAPR-C negative patients. Reflux immediately following cough was rare.

Conclusions

Cough temporally associates with reflux irrespective of proposed diagnoses, may be self-perpetuating in some patients, and is likely to be driven by central processes.

Smith, Meredith Y.; Depue, Judith D.; Rini, Christine (2007):

Computerized Decision-Support Systems for Chronic Pain Management in Primary Care.

In: *Pain Medicine* 8 (s3), S. S155-S166.

Abstract:

Objective. Computerized decision-support systems (CDSSs) can offer clinical guidance, as well as promote doctor–patient collaboration and patient self-care. As such, they have great potential for improving chronic pain management, particularly in the primary care setting, where physicians often lack sufficient pain-specific clinical expertise and communication skills. The objective of this study was to examine the use of CDSSs in chronic pain management, and to review the evidence for their feasibility and effectiveness.

Design. A review of the available literature using search terms associated with computerized decision-support and chronic pain management. Major databases searched included: MEDLINE, CINAHL, PsychINFO, HealthSTAR, EMBASE, Cochrane Library, Computer and Information Systems Abstracts, and Electronics and Communications Abstracts. Descriptive and evaluative studies were included.

Results. Nine studies describing eight CDSSs met study inclusion criteria. With but two exceptions, CDSSs were specific to a pain-related condition(s). All were designed to assist clinicians to manage pain medically. Aside from pain status, input specifications differed markedly. Evaluative studies were exclusively feasibility studies and varied widely in design and level of description. All were nonexperimental; most were methodologically weak. Two primary care studies were reported. Patient and clinician acceptability ratings of CDSSs ranged from moderate to high. Due to insufficient data, definitive conclusions concerning the impact of CDSSs on provider performance and patient outcomes were not possible.

Conclusion. Research on CDSSs in chronic pain management is limited. The effects of CDSSs on provider and patient outcomes remain understudied, and their potential to improve doctor–patient collaboration and self-care largely untested.

Smith, B.; Harms, W. D.; Burres, S.; Korda, H.; Rosen, H.; Davis, J. (2012):

Enhancing behavioral health treatment and crisis management through mobile ecological momentary assessment and SMS messaging.

In: *Health Informatics.J* 18 (4), S. 294–308. DOI: 10.1177/1460458212445349.

Abstract:

Many veterans returning from service in Afghanistan or Iraq suffer from post-traumatic stress disorder or mild traumatic brain injury. Treating these conditions can be challenging because of high rates of relapse and associated memory impairments. We report on a pilot study that assessed the utility of mobile health (mHealth) technologies, including personal digital assistant-based ecological momentary assessment and two-way interactive text (SMS) messaging, for providing treatment feedback to clinicians, encouraging and motivating veterans throughout treatment, and monitoring participants for relapse after treatment discharge. The results of the pilot suggest that mHealth technologies are feasible adjuncts to traditional mental treatment in the veteran population. Additional work is needed to establish the degree of clinical and economic value

Smith, Lindsey P.; Hua, Jenna; Seto, Edmund; Du, Shufa; Zang, Jiajie; Zou, Shurong et al. (2014):

Development and validity of a 3-day smartphone assisted 24-hour recall to assess beverage consumption in a Chinese population: a randomized cross-over study.

In: *Asia Pac J Clin Nutr* 23 (4), S. 678–690. DOI: 10.6133/apjcn.2014.23.4.10.

Abstract:

This paper addresses the need for diet assessment methods that capture the rapidly changing beverage consumption patterns in China. The objective of this study was to develop a 3-day smartphone-assisted 24-hour recall to improve the quantification of beverage intake amongst young Chinese adults (n=110) and validate, in a small subset (n=34), the extent to which the written record and smartphone-assisted recalls adequately estimated total fluid intake, using 24-hour urine samples. The smartphone-assisted method showed improved validity compared with the written record-assisted method, when comparing reported total fluid intake to total urine volume. However, participants reported consuming fewer beverages on the smartphone-assisted method compared with the written record-assisted method, primarily due to decreased consumption of traditional zero-energy beverages (i.e. water, tea) in the smartphone-assisted method. It is unclear why participants reported fewer beverages in the smartphone-assisted method than the written record -assisted method. One possibility is that participants found the smartphone method too cumbersome, and responded by decreasing beverage intake. These results suggest that smartphone-assisted 24-hour recalls perform comparably but do not appear to substantially improve beverage quantification compared with the current written record-based approach. In addition, we piloted a beverage screener to identify consumers of episodically consumed SSBs. As expected, a substantially higher proportion of consumers reported consuming SSBs on the beverage screener compared with either recall type, suggesting that a beverage screener may be useful in characterizing consumption of episodically consumed beverages in China's dynamic food and beverage landscape.

OPublisher: Abstract available from the publisher.

Smith, Wally R.; Penberthy, Lynne T.; Bovbjerg, Viktor E.; McClish, Donna K.; Roberts, John D.; Dahman, Bassam et al. (2008):

Daily assessment of pain in adults with sickle cell disease.

In: *Ann Intern Med* 148 (2), S. 94–101.

Abstract:

BACKGROUND:

Researchers of sickle cell disease have traditionally used health care utilization as a proxy for pain and underlying vaso-occlusion. However, utilization may not completely reflect the amount of self-reported pain or acute, painful episodes (crises).

OBJECTIVE:

To examine the prevalence of self-reported pain and the relationship among pain, crises, and utilization in adults with sickle cell disease.

DESIGN:

Prospective cohort study.

SETTING:

Academic and community practices in Virginia.

PATIENTS:

232 patients age 16 years or older with sickle cell disease.

MEASUREMENTS:

Patients completed a daily diary for up to 6 months, recording their maximum pain (on a scale of 0 to 9); whether they were in a crisis (crisis day); and whether they used hospital, emergency, or unscheduled ambulatory care for pain on the previous day (utilization day). Summary measures included both simple proportions and adjusted probabilities (for repeated measures within patients) of pain days, crisis days, and utilization days, as well as mean pain intensity.

RESULTS:

Pain (with or without crisis or utilization of care) was reported on 54.5% of 31 017 analyzed patient-days (adjusted probability, 56%). Crises without utilization were reported on 12.7% of days and utilization on only 3.5% (unadjusted). In total, 29.3% of patients reported pain in greater than 95% of diary days, whereas only 14.2% reported pain in 5% or fewer diary days (adjusted). The frequency of home opiate use varied and independently predicted pain, crises, and utilization. Mean pain intensity on crisis days, noncrisis pain days, and total pain days increased as the percentage of pain days increased ($P < 0.001$). Intensity was

significantly higher on utilization days (P < 0.001). However, utilization was not an independent predictor of crisis, after controlling for pain intensity.

LIMITATIONS:

The study was done in a single state. Patients did not always send in their diaries.

CONCLUSION:

Pain in adults with sickle cell disease is the rule rather than the exception and is far more prevalent and severe than previous large-scale studies have portrayed. It is mostly managed at home; therefore, its prevalence is probably underestimated by health care providers, resulting in misclassification, distorted communication, and undertreatment.

Smyth, N.; Clow, A.; Thorn, L.; Hucklebridge, F.; Evans, P. (2013):

Delays of 5-15min between awakening and the start of saliva sampling matter in assessment of the cortisol awakening response.

In: *Psychoneuroendocrinology* (0306-4530 (Linking)). DOI: 10.1016/j.psyneuen.2012.12.013.

Abstract:

Linking psychosocial measures to the cortisol awakening response (CAR) demands accurate saliva sampling times. Monitoring adherence to the saliva sampling protocol requires electronic monitoring of both awakening and sampling times since self-reported times are inaccurate. Delays greater than 15min between awakening and commencement of saliva sampling reduce CAR magnitude. Less delay has been judged tolerable but remains unexplored for different magnitude measures, and for timing of the CAR peak. Study 1: Fifty healthy females (21+/-4 years) were instructed to collect saliva on four days at 0, 15, 30 and 45min post-awakening (samples 1-4). Both self-reported awakening and sampling times were electronically monitored using actigraphy and track caps. Self-reported awakening was later than actigraph estimated awakening (median difference of 4min). Estimates of CAR magnitude were significantly greater on non-adherent days (delay of 5-15min) compared to adherent days (delay<5min). On non-adherent compared to adherent days cortisol on average peaked earlier, at sample 3 rather than at sample 4. Study 2: Accurately timed cortisol values were obtained in an intensive investigation of 10 participants who collected saliva on 2 days every 5min for 30min post-awakening. Cortisol did not significantly increase until 10min post-awakening, suggesting a time lag may be typical between awakening and observation of a cortisol increase. We conclude that moderate delays between awakening and collection of saliva samples previously considered tolerable result in erroneous estimation of CAR magnitude and timing of the peak. These results are attributed to an approximate 10min time lag between awakening and the start of the cortisol rise. The absence of this latent period in calculations leads to overestimation of the CAR magnitude on moderately non-adherent sampling days. These findings, if more universally generalizable, will further theoretical understanding of the physiology of the CAR, but are methodologically challenging for researchers since self-reported awakening times are not accurate enough to override the concerns raised. However accurate electronic measurement of adherence to protocol would enable sampling delays to be taken into account in computing CAR estimates

Smyth, Joshua M.; Heron, Kristin E. (2012):

Health psychology. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 569–584. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-032%26site%3dehost-live.

Abstract:

(from the chapter) There is a long history of the study and practice of mind-body medicine (see Harrington, 2009). Speaking broadly, this area of enquiry attempts to study the interplay of social, behavioral, psychological, and biological factors that influence health (Smyth & Stone, 2003). Such research is conducted at many "levels" and includes basic biological and physiological processes, as well as behavioral, social, psychological, cultural, and other factors. We use the term health psychology, although there are many other cognate disciplines and related nomenclatures (behavioral medicine, medical sociology, psychosomatic medicine, etc.). Our goal in this chapter is to provide an overview of how research methods for studying daily life can be applied within the field of health psychology. We begin with a discussion of the specific advantages and challenges researchers might experience when using these methods in the field. We then provide an overview of the various ways in which daily assessment methods, particularly ecological momentary assessment (EMA), can be and have been used to address research questions in health psychology. Finally we conclude with a discussion of the innovative uses of daily

assessment and intervention methods, particularly as advances in technology continue, as well as some future directions of the field. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Smyth, Joshua M.; Wonderlich, Stephen A.; Sliwinski, Martin J.; Crosby, Ross D.; Engel, Scott G.; Mitchell, James E.; Calogero, Rachel M. (2009):

Ecological momentary assessment of affect, stress, and binge-purge behaviors: day of week and time of day effects in the natural environment.

In: *Int J Eat Disord* 42 (5), S. 429–436. DOI: 10.1002/eat.20623.

Abstract:

OBJECTIVE\r\nThe present study examined ecological momentary assessments of binge/vomit behavior, mood, and type and severity of stressors in a sample of 133 women with bulimia nervosa.\r\nMETHOD\r\nParticipants completed an ecological momentary assessment protocol for a period of 2 weeks.\r\nRESULTS\r\nMixed-effects and multilevel logistic models revealed significant variation across time of day and day of the week in the occurrence of binging, vomiting, positive and negative affect, and the severity and types of stressful events.\r\nDISCUSSION\r\nThese findings explicate how momentary and daily experiences vary in the natural environments of women with bulimia nervosa, and document critical time periods for intervention.

Smyth, Joshua M.; Zawadzki, Matthew J.; Santuzzi, Alecia M.; Filipkowski, Kelly B. (2014):

Examining the effects of perceived social support on momentary mood and symptom reports in asthma and arthritis patients.

In: *Psychology & Health* 29 (7), S. 813–831. DOI: 10.1037/t29468-000.

Abstract:

Objective: Social support has been linked to beneficial effects on health directly (main effect) and as a buffer to stress. Most research, however, has examined these relationships using global and retrospective assessments of health and stress, which may be subject to recall biases. This study used ambulatory ecological momentary assessment (EMA) methods to test the main and stress-buffering effects of social support on the daily health and well-being of asthma and rheumatoid arthritis (RA) patients.Design: Community volunteers with asthma (n = 97) or RA (n = 31) responded to EMA prompts five times daily for one week.Main outcomes: Baseline perceived social support was obtained, and then, participants reported mood, stress and symptoms using EMA. Multilevel mixed-modeling examined whether social support predicted mood and symptoms directly or via stress-reducing effects.Results: Supporting a main effect, more perceived social support predicted decreased negative mood and stress severity. Supporting a stress-buffering effect, more perceived social support resulted in fewer reported symptoms when stress was present.Conclusion: Results suggest perceived social support directly relates to better ambulatory status and dynamically buffers individuals against the negative effects of stressors, and highlight the importance of studying social support across different temporal and contextual levels. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Snell, Carolyn (2012):

A daily phone diary procedure to assess behavioral engagement in the treatment of adolescent anxiety and depressive disorders.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 73 (5-B). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-99220-093%26site%3dehost-live.

Abstract:

Anxiety and depressive disorders are common conditions for adolescents and are associated with significant impairments in functioning. Cognitive behavior therapy (CBT) is an effective treatment modality for these youth, and the behavioral components of CBT protocols, in particular, are thought to be one of the active mechanisms through which positive symptom changes are produced. However, few procedures are available to measure the behavioral changes taking place in adolescents' daily lives as they make therapeutic progress. This study examined adolescents' "behavioral engagement" throughout treatment, a construct defined as time spent in social, athletic and academic activities. Behavioral engagement was measured using the Daily Phone Diary (DPD), a validated measure of daily activities utilized in the child health literature, which employs the principles of

Ecological Momentary Assessment (EMA). Twenty-four adolescents reported each activity they engaged in throughout the day, in chronological order, over the past 24 hours. Participants were diverse in their ages, ethnicities, socioeconomic statuses and internalizing disorder diagnoses. Activities were reported during phone calls scheduled before, during, and after treatment using a transdiagnostic formulation of CBT and, for a randomized subset of the sample (N=8), both before and following a Waitlist comparison condition. Results indicated that "behavioral engagement" is a construct that is measurable and that daily phone diaries are an acceptable method of data collection for this population. Based on theoretical and empirical literature, three key categories of activities on the DPD comprised behavioral engagement: (1) Time spent socially engaged with others; (2) Time spent on any physical or athletic activity; and (3) Time doing homework. Results supported good inter-rater reliability and potentially reasonable test-retest reliability; data collection via the DPD was feasible and acceptable in this context. Tests of convergent validity with other measures of anxiety and depressive symptoms suggested that prior to treatment, more time spent in some activity categories was associated with more internalizing symptoms for those with anxiety disorders only, but fewer internalizing symptoms for those with depression as well as anxiety. Tests of convergent validity with other measures of weekly mood were promising. Future studies will explore alternate definitions of behavioral engagement, examine this construct in a larger sample that has completed a full course of CBT, and explore this construct's potential role as a mediator of clinical improvement. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Snir, Raphael; Zohar, Dov (2008):

Workaholism as Discretionary Time Investment at Work: An Experience-Sampling Study.

In: *Applied Psychology* 57 (1), S. 109–127.

Abstract:

Adopting an operational definition of workaholism as discretionary investment of considerable time at work, the purpose of the present study was to test hypotheses regarding the cognitive aspect of workaholism, as well as the positive and negative/addictive views of this construct. The study employed an experience-sampling method (ESM), using a sample of 65 full-time employees who completed the ESM forms at four random times during the day for one week. Results indicated that workaholism was associated with continued cognitive engagement with work, accompanied by a preference for work over leisure activity and higher positive affect during work activity than during leisure activity. No significant differences were found between workaholics and non-workaholics with regard to the likelihood of performing work-related activities during leisure activity, or in the levels of physical discomfort and negative affect during the weekend. These results highlight the utility of an operational framework for studying the variety of workaholism correlates. Theoretical and applied implications are discussed.

A partir d'une définition opérationnelle de l'addiction au travail comme étant un investissement sans contrôle d'un temps considérable consacré au travail, cette recherche s'est donné comme objectif de mettre à l'épreuve des hypothèses relatives à la dimension cognitive de l'addiction au travail, ainsi que les aspects positifs et négatifs (addictifs) de ce concept. Cette recherche a exploité la méthode de l'échantillonnage des expériences (ESM) à partir d'un échantillon composé de 65 salariés à plein-temps qui ont rempli la feuille de recueil des données quatre fois par jour au hasard pendant une semaine. Les résultats ont montré que l'addiction au travail était liée à un engagement cognitif permanent vis-à-vis du travail, associéà une plus forte attirance pour le travail que pour les loisirs et à un état affectif plus fortement positif lors du travail qu'à l'occasion des activités de loisirs. On n'a pas trouvé de différences significatives entre les drogués du travail et les autres en ce qui concerne la probabilité de réaliser des activités relevant du travail pendant les loisirs, ou dans le niveau d'inconfort physique et le poids des affects négatifs pendant le week-end. Ces résultats montrent l'utilité d'un schéma opérationnel dans l'étude de la diversité des phénomènes reliés à l'addiction au travail. Les implications théoriques et pratiques sont examinées.

Snook, Erin M.; Motl, Robert W.; Gliottoni, Rachael C. (2009):

The effect of walking mobility on the measurement of physical activity using accelerometry in multiple sclerosis.

In: *Clinical Rehabilitation* 23 (3), S. 248–258.

Abstract:

Objective: To examine whether accelerometry provides a measure of physical activity, walking ability or both in a sample of individuals with multiple sclerosis. The secondary purpose was to examine the validity of physical activity measures in people with multiple sclerosis who have ambulatory impairments.

Participants: Forty-two individuals with multiple sclerosis without ambulatory impairment (Expanded Disability Status Scale (EDSS) score ≤ 4.5) and 32 individuals with multiple sclerosis with ambulatory impairment (EDSS ≥5.0).

Method: Participants completed the Multiple Sclerosis Walking Scale-12 and Performance Scales, wore an accelerometer for seven days, and completed the Godin Leisure-Time Exercise Questionnaire and short-form of the International Physical Activity Questionnaire.

Results: There were significant differences between groups on scores from the five measures. There were large correlations between the accelerometer counts with scores from both the self-report measures of physical activity and the self-report measures of walking mobility in the overall sample. There were large correlations between scores from both measures of physical activity in the overall sample and the subsample with ambulatory impairment.

Conclusion: Our data suggest that accelerometers are measuring both physical activity and walking mobility in individuals with multiple sclerosis, whereas self-report measures are measuring physical activity in individuals with multiple sclerosis, including those with ambulatory impairment.

So, Suzanne Ho-Wai; Peters, Emmanuelle Roisin; Swendsen, Joel; Garety, Philippa Anne; Kapur, Shitij (2013):

Detecting improvements in acute psychotic symptoms using experience sampling methodology.

In: *Psychiatry Res*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-24916-001%26site%3dehost-live.

Abstract:

This study aimed to explore the feasibility and validity of using experience sampling methodology (ESM, or ecological momentary assessment or mobile device signaling) to measure temporal changes and fluctuations in psychotic symptoms in patients with acute psychosis at the start of antipsychotic treatment. Twenty-six in-patients with delusions were assessed within 2 weeks of starting antipsychotic treatment using ESM on a personal digital assistant (PDA), seven times a day for 14 consecutive days. They were also interviewed at baseline, 1 week and 2 weeks after using standardized symptom measures. Sixteen patients (61.5%) completed at least one-third of the entries, with a compliance rate of 70.7%. Responses to the ESM items were internally consistent. At baseline, ESM and clinical ratings converged on suspiciousness and images, but not on voices and most of the delusion dimensions. Conducting ESM with patients in an acute episode was found to be feasible and internally valid. There is some divergence in symptom data obtained by ESM and standard symptom interviews, but ESM captures rich information about change that may not be represented by observer ratings. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

So, Suzanne Ho-Wai; Peters, Emmanuelle Roisin; Swendsen, Joel; Garety, Philippa Anne; Kapur, Shitij (2014):

Changes in delusions in the early phase of antipsychotic treatment - An experience sampling study.

In: *Psychiatry Res* 215 (3), S. 568–573. DOI: 10.1016/j.psychres.2013.12.033.

Abstract:

It has been suggested that different aspects of delusions (conviction, distress, preoccupation) respond to treatment at different rates, and that the cognitive bias of 'Jumping to Conclusions' (JTC) may predict treatment outcome. This study investigates changes in delusion dimensions using Experience Sampling Methodology (ESM) and the role of JTC as a predictor of change during the initial 2 weeks of antipsychotic treatment on admission to hospital. Sixteen acute patients with delusions were assessed seven times per day for 14 days using computerised ESM. ESM assessed moment-by-moment experiences of affect, psychotic symptoms, and delusion dimensions. Clinical ratings were completed at baseline, 1 week and 2 weeks later. The 'beads' task was used to measure JTC at baseline. Delusion dimensions improved over the two weeks of antipsychotic treatment and admission to hospital. Different delusional dimensions changed at different rates, with distress and disruption being more responsive than conviction and preoccupation on both PSYRATS and ESM ratings. Eight out of 16 participants showed a JTC bias on the beads task at baseline. Exploratory analyses showed that JTC predicted changes in the ESM ratings of delusion conviction and distress, suggesting that reasoning biases may predict treatment response.

Soares-Miranda, Luisa; Sandercock, Gavin; Valente, Hugo; Vale, Susana; Santos, Rute; Mota, Jorge (2009):

Vigorous physical activity and vagal modulation in young adults.

In: *European journal of cardiovascular prevention and rehabilitation : official journal of the European Society of Cardiology, Working Groups on Epidemiology & Prevention and Cardiac Rehabilitation and Exercise Physiology* 16 (6), S. 705–711. DOI: 10.1097/HJR.0b013e3283316cd1.

Abstract:

BACKGROUND\r\nAerobic exercise leads to reduced sympathetic and increased cardiac vagal modulation, providing an antiarrhythmic effect. The optimal exercise intensity to promote this adaptation remains undefined. The aims of the present investigation were twofold. First, to examine differences in heart rate variability (HRV) measures in participants with different levels of objectively measured physical activity (PA). Second, to identify the characteristic of PA which most influences the cardiac autonomic nervous system (cANS) function in young adults.\r\nMETHODS\r\nCross-sectional evaluation of 84 adults examining relationships between PA amount and intensities, measured by accelerometry, cANS function derived from HRV. Groups were created based on tertiles of PA and analysis of covariance was used to assess between-group differences in HRV. Stepwise regression analysis was used to determine the characteristic of PA, which best predicted vagal HRV indices.\r\nRESULTS\r\nThere were significantly higher levels of vagal HRV indices in the most active group compared with the least active group. Regression analysis revealed that the number of bouts of vigorous PA undertaken was the best predictor of the vagal HRV indices assessed.\r\nCONCLUSION\r\nThis study suggests that vagal modulation is enhanced with high levels of PA and that it is the number of bouts of vigorous PA that is most closely associated with cANS function.

Sokolovsky, A. W.; Mermelstein, R. J.; Hedeker, D. (2013):

Factors Predicting Compliance to Ecological Momentary Assessment Among Adolescent Smokers.

In: *Nicotine.Tob.Res.* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt154.

Abstract:

INTRODUCTION: Ecological momentary assessments (EMAs) are increasingly used in smoking research to understand contextual and individual differences related to smoking and changes in smoking. To date, there has been little detailed research into the predictors of EMA compliance. However, patterns or predictors of compliance may affect key relationships under investigation and introduce sources of bias in results. The purpose of this study was to investigate predictors of compliance to random prompts among a sample of adolescents who had ever smoked. METHODS: Data for this study were drawn from a sample of 461 adolescents (9th and 10th graders at baseline) participating in a longitudinal study of smoking escalation. We examined 2 outcomes: subject-level EMA compliance (overall rate of compliance over a week-long EMA wave) and in-the-moment prompt-level compliance to the most proximal random prompt. We investigated several covariates including gender, race, smoking rate, alcohol use, psychological symptomatology, home composition, mood, social context, time in study, inter-prompt interval, and location. RESULTS: At the overall subject level, higher mean negative affect, smoking rate, alcohol use, and male gender predicted lower compliance with random EMA prompts. At the prompt level, after controlling for significant subject-level predictors of compliance, increased positive affect, being outside of the home, and longer inter-prompt interval predicted lower momentary compliance. CONCLUSIONS: This study identifies several factors associated with overall and momentary EMA compliance among a sample of adolescents participating in a longitudinal study of smoking. We also propose a conceptual framework for investigating the contextual and momentary predictors of compliance within EMA studies

Sokolovsky, Alexander W.; Mermelstein, Robin J.; Hedeker, Donald (2014):

Factors predicting compliance to ecological momentary assessment among adolescent smokers.

In: *Nicotine & Tobacco Research* 16 (3), S. 351–358. DOI: 10.1037/t02942-000.

Abstract:

Introduction: Ecological momentary assessments (EMAs) are increasingly used in smoking research to understand contextual and individual differences related to smoking and changes in smoking. To date, there has been little detailed research into the predictors of EMA compliance. However, patterns or predictors of compliance may affect key relationships under investigation and introduce sources of bias in results. The purpose of this study was to investigate predictors of compliance to random prompts among a sample of adolescents who had ever smoked. Methods: Data for this study were drawn from a sample of 461 adolescents (9th and 10th graders at baseline) participating in a longitudinal study of smoking escalation. We examined 2 outcomes: subject-level EMA compliance (overall rate of compliance over a week-long EMA wave), and in-the-moment prompt-

level compliance to the most proximal random prompt. We investigated several covariates including gender, race, smoking rate, alcohol use, psychological symptomatology, home composition, mood, social context, time in study, inter-prompt interval, and location. Results: At the overall subject level, higher mean negative affect, smoking rate, alcohol use, and male gender predicted lower compliance with random EMA prompts. At the prompt level, after controlling for significant subject-level predictors of compliance, increased positive affect, being outside of the home, and longer inter-prompt interval predicted lower momentary compliance. Conclusions: This study identifies several factors associated with overall and momentary EMA compliance among a sample of adolescents participating in a longitudinal study of smoking. We also propose a conceptual framework for investigating the contextual and momentary predictors of compliance within EMA studies. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Solhan, Marika B.; Trull, Timothy J.; Jahng, Seungmin; Wood, Phillip K. (2009):

Clinical assessment of affective instability: comparing EMA indices, questionnaire reports, and retrospective recall.

In: *Psychological Assessment* 21 (3), S. 425–436. DOI: 10.1037/a0016869.

Abstract:

Traditional self-report measures of psychopathology may be influenced by a variety of recall biases. Ecological momentary assessment (EMA) reduces these biases by assessing individuals' experiences as they occur in their natural environments. This study examines the discrepancy between trait questionnaire, retrospective report, and EMA measures of affective instability in psychiatric outpatients either with a borderline personality diagnosis (n = 58) or with a current episode of major depressive disorder or dysthymia (n = 42). The authors examined the agreement of 3 trait measures of affective instability-the Affective Instability subscale of the Personality Assessment Inventory-Borderline Features scale (L. C. Morey, 1991), the Affect Intensity Measure (R. J. Larsen, E. Diener, & R. Emmons, 1986), and the Affect Lability Scales (P. D. Harvey, B. R. Greenberg, & M. R. Serper, 1989)-and 1 retrospective mood recall task with EMA indices of mood and mood instability. Results indicate only modest to moderate agreement between momentary and questionnaire assessments of trait affective instability; agreement between recalled mood changes and EMA indices was poor. Implications for clinical research and practice and possible applications of EMA methodology are discussed.

Sondhi, Vishal; Devgan, Amit (2013):

Translating technology into patient care: Smartphone applications in pediatric health care.

In: *Med J Armed Forces India* 69 (2), S. 156–161. DOI: 10.1016/j.mjafi.2013.03.003.

Abstract:

The latest generations of smartphones are increasingly viewed as handheld computers rather than as phones and the applications on these phones are becoming increasingly popular among the medical professionals. A large number of health care applications are available across various smartphone platforms. At times it may be difficult to identify most appropriate and reliable application for use at the point of care. In this review, we have tried to identify the applications relevant to Pediatrics and Childcare which when used at the point of care might be helpful in improving patient care.

Song, Zhaoli; Foo, Maw-Der; Uy, Marilyn A.; Sun, Shuhua (2011):

Unraveling the daily stress crossover between unemployed individuals and their employed spouses.

In: *J Appl Psychol* 96 (1), S. 151.

Abstract:

This study examined the dynamic relationship of distress levels between spouses when one is unemployed (and looking for a job) while the other is engaged in full-time employment. Using the diary survey method, we sampled 100 couples in China for 10 days and tested a model comprising three stress crossover mechanisms: the direct crossover, the mediating crossover, and the common stressor mechanisms. Results supported the direct crossover and common stressor mechanisms. Other stressors (e.g., work–family conflict and negative job search experience) were also related to distress of the unemployed individuals and their employed spouses. Additionally, we found a three-way interaction involving gender, marital satisfaction, and distress levels of

employed spouses. We discuss how the study contributes to the unemployment and stress crossover literatures. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Sonnenberg, B.; Riediger, M.; Wrzus, C.; Wagner, G. G. (2012):

Measuring time use in surveys - Concordance of survey and experience sampling measures.

In: *Soc.Sci.Res* 41 (5), S. 1037–1052. DOI: 10.1016/j.ssresearch.2012.03.013.

Abstract:

It is still unclear to what extent time allocation retrospectively reported in questionnaires reflects people's actual behavior. Addressing this research gap, we analyze the congruence of time use information assessed through retrospective questionnaires and through experience sampling methodology. Participants completed standard survey questions on time allocation. In addition, a mobile-phone-based experience sampling technology obtained snapshots of, on average, 54 momentary activities in which respondents participated while pursuing their normal daily routines. Results indicate that the associations between standard survey questions and experience sampling methods are quite substantial for long-lasting and externally structured activities, such as paid work. In contrast, associations between survey and experience sampling methods are somewhat weaker for less externally structured, short-term and infrequent activities, such as errands, housework, and leisure. However, further research is required to elucidate which method (experience sampling method or survey questions) results in more reliable and valid measures for short-term and sporadic activities

Sonnenschein, Mieke; Sorbi, Marjolijn J.; van Doornen, Lorenz J. P.; Schaufeli, Wilmar B.; Maas, Cora J. M. (2007):

Electronic diary evidence on energy erosion in clinical burnout.

In: *Journal of Occupational Health Psychology* 12 (4), S. 402.

Abstract:

Burnout is generally defined as a state of severe exhaustion. So far, research has predominantly focused on relatively mild burnout in employees able to work despite their complaints. This study examines energy depletion in clinical burnout (e.g., the severest cases on extended sick leave) by comparing the diurnal patterns of fatigue and exhaustion with those of healthy individuals. Sixty clinically burned-out and 40 healthy participants kept an electronic diary for 14 days, 7 times a day, yielding a total of 8,116 diary entries. This study shows that burned-out individuals typically suffer continuously from a severe fatigue throughout the day. The resulting flattened diurnal cycles mark a stable exhaustion that is uncommon in healthy persons. The current results provide novel support for the existence of severe energy erosion in clinical burnout. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Sonnenschein, Mieke; Sorbi, Marjolijn J.; van Doornen, Lorenz Jp; Schaufeli, Wilmar B.; Maas, Cora J. M. (2007):

Evidence that impaired sleep recovery may complicate burnout improvement independently of depressive mood in clinical burnout.

In: *Sick with burnout*, S. 63.

Abstract:

Objective

This article examines recovery through sleep in relation to sleep quality, exhaustion, and depression in clinical burnout. We focus on actual recovery per night, given its relevance to burnout improvement.

Methods

Sixty clinically burned-out participants and 40 healthy controls recorded symptoms with an electronic diary for 2 weeks at random times per day. Recovery through sleep was defined as the difference in fatigue between late evening and the next morning.

Results

In clinical burnout, sleep quality and recovery are impaired, and depression is elevated. Poor recovery through sleep is associated with poor same-night sleep quality, clarifying the mechanisms underlying poor recovery. Individual differences in

recovery though sleep were related to differences in refreshed awakening, but not to other sleep problems. Impaired recovery was also related to severity of exhaustion, but not to severity of depressive mood, indicating that, in burnout, nonprofit from sleep is a symptom of energy depletion, not a sign of depression.

Conclusion

Impaired recovery through sleep may hamper recovery from burnout independently of the influence of depression.

Sonnentag, Sabine; Jelden, Stefanie (2009):

Job stressors and the pursuit of sport activities: a day-level perspective.

In: *Journal of Occupational Health Psychology* 14 (2), S. 165–181. DOI: 10.1037/a0014953.

Abstract:

This article addresses the relation between day-specific experiences of job stressors and the pursuit of off-job activities. Following the limited-resources model of self-regulation, the authors proposed that job stressors and long working hours are negatively related to pursuit of sport activities after work because, after stressful days, employees have no resources left for initiating and persisting in effortful behaviors such as sport. Routines for off-job activities were hypothesized to be positively related to the pursuit of sport activities after work. Seventy-eight police employees completed a daily survey over 5 working days and indicated that they perceive sport to be highly useful for recovery. Random coefficient modeling showed that job stressors (particularly situational constraints) encountered on a specific day were negatively related to self-regulatory resources and to the amount of time spent on sport activities after work, whereas the relation with low-effort activities was positive. Thus, after a stressful day when an effective recovery activity such as sport is highly needed, persons tend to engage less in such an activity.

Sorrentino, Richard M.; Nezlek, John B.; Yasunaga, Satoru; Kouhara, Sadafusa; Otsubo, Yasunao; Shuper, Paul (2008):

Uncertainty Orientation and Affective Experiences Individual Differences Within and Across Cultures.

In: *Journal of Cross-Cultural Psychology* 39 (2), S. 129–146.

Abstract:

This study examined whether people with the same self-regulatory style of coping with uncertainty differed in their affective experiences as a function of what may be the dominant coping style of their culture. Two hundred twenty men and women from universities in Japan and Canada described the extent to which they experienced various emotions. Consistent with their expectations, the authors found that participants whose uncertainty orientation matched that of their country (i.e., uncertainty-oriented students in Canada, certainty-oriented students in Japan) experienced more active emotions than mismatched participants (i.e., certainty-oriented students in Canada, uncertainty-oriented students in Japan), who experienced more passive emotions. Moreover, those who matched their country's coping style also reported experiencing more positive and fewer negative emotions than mismatched students. These results suggest that the theory of uncertainty orientation has important implications for research on affective experiences within and across cultures.

Sosnoff, Jacob J.; Goldman, Myla D.; Motl, Robert W. (2010):

Real-life walking impairment in multiple sclerosis: preliminary comparison of four methods for processing accelerometry data.

In: *Multiple Sclerosis*.

Abstract:

This study further validates accelerometers as a measure of walking impairment in persons with multiple sclerosis. We examined total movement counts and three novel methods of processing accelerometer data (i.e. standard deviation, approximate entropy and detrended fluctuation analysis) for quantifying real-life walking impairment in this population. A total of 70 individuals with a definite diagnosis of multiple sclerosis completed a battery of patient-rated measures of walking impairment and then wore an ActiGraph accelerometer for 7 days. The data were analyzed using multivariate analysis of variance and bivariate correlation analysis. The results indicated that total daily movement counts and standard deviation of daily movement counts differed between groups of persons with mild, moderate, and severe self-reported disability status and who were independently

ambulatory or ambulatory with assistance. Those two metrics for the accelerometer data further demonstrated strong correlations with patient-rated measures of walking impairment. By comparison, there were smaller and often non-significant differences in approximate entropy and detrended fluctuation analysis metrics for the accelerometer data as a function of disability and ambulatory status, and only moderate correlations with patient-rated measures of walking impairment. The results confirm that the metric of total daily movement counts correlates with level of disability, ambulatory status, and patient reports of walking impairment in persons with multiple sclerosis. We further demonstrate that variability, indexed by the standard deviation of daily movement counts, correlates with multiple sclerosis-related disability, ambulatory status, and self-reported walking impairment. Such results provide preliminary evidence that variability in accelerometer counts is not simply noise and may provide important information about multiple sclerosis-related walking impairment.

Sotgiu, I.; Rusconi, M. L. (2013):

Investigating emotions in Parkinson's disease: what we know and what we still don't know.

In: *Front Psychol* 4 (1664-1078 (Electronic)), S. 336. DOI: 10.3389/fpsyg.2013.00336.

Abstract:

Over the last decade, there has been an increasing attention to the role played by emotional processes in Parkinson's disease (PD). However, most of what is known in this area is based on research conducted in laboratory or clinical settings. In this article, the authors underline the need to expand our current knowledge of the psychological correlates of PD by investigating patients' everyday emotions in natural contexts. Specifically, the authors illustrate new research avenues based on the implementation of experience sampling methods. It is argued that these methods could permit future researchers to ecologically assess the frequency and intensity with which parkinsonian patients experience specific emotions (either negative or positive) during their everyday life, providing at the same time precious information on what are the most typical situations in which these emotions occur and on how patients behave in these circumstances. Potential practical implications associated with investigating these issues are discussed

Soundy, Andy; Taylor, Adrian; Faulkner, Guy; Rowlands, Ann (2007):

Psychometric properties of the 7-day physical activity recall questionnaire in individuals with severe mental illness.

In: *Archives of psychiatric nursing* 21 (6), S. 309–316.

Abstract:

Few self-report measures of physical activity have been validated in individuals with severe mental illness. The purpose of this study was to examine the validity and reliability of a 7-day recall measure (7DR: [Blair, S. N. (1984). How to assess exercise habits and physical fitness. In J. D. Matarazzo, N. E. Miller, & S. M. Weiss, (Eds.), Behavioural health: A handbook of health enhancement and disease prevention (pp. 424-447). New York: Wiley.]) through comparison with RT3 triaxial accelerometry data. Fourteen individuals took part in the study. Validity was considered by Kendall's tau correlation and (Bland, J. M., & Altman, D. G. (1986). Statistical-methods for assessing agreement between 2 methods of clinical measurement. Lancet, 1(8476), 307-310) limits of agreement and test-retest reliability was measured by ICC. The only significant correlation between measures was total energy expenditure (tau = 0.43). The 7-DR over reported moderate physical activity by 16.9 +/- 52.3 min/day, but under reported vigorous physical activity by -10.4 +/- 24.3 min/day. Test retest ICC was significant for all outcome measures. Overall, the 7-DR was reliable but exhibited questionable validity. The use of self-report questionnaires such as the 7-DR may inaccurately estimate the levels of physical activity in this population, and may not be sensitive to monitoring intervention-related changes in physical activity.

South, Susan C.; Miller, Michelle L. (2013):

Measuring momentary stress, affect, and cognition: Relationships with the internalizing and externalizing spectra.

In: *Journal of Psychopathology and Behavioral Assessment*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-25831-001%26site%3dehost-live;ssouth@purdue.edu.

Abstract:

The Internalizing (INT) and Externalizing (EXT) spectra are an emerging way to conceptualize the structure of psychopathology. Demonstrating relationships with emotional reactions to, and cognitive appraisals of, daily stressful events would be strong evidence of ecological validity. In the current study (N = 78), the experience sampling method (ESM, a structured diary technique with Palm Pilots) was used to capture affect and cognition related to current stressor, five times per day, for 1 week. Multilevel random coefficient modeling was used to examine affective and cognitive reactivity to daily stressors as a function of baseline levels of INT and EXT. INT scores were related to higher levels of negative affect (NA), lower levels of positive affect (PA) and more negative cognitive appraisals of the stressful situation. Several cross-level interactions were found between psychopathology scores, cognitive appraisals, and affect. Participants higher in INT psychopathology showed less decrease in NA as level of control increased, compared to participants low in INT. EXT moderated the association between NA and distress, with higher levels of EXT resulting in a stronger association between distress and NA. INT and EXT also moderated the relationships between the cognitive variables (distress and control, coping and control). Findings support both the utility and validity of the INT and EXT dimensions in understanding different forms of stress-related impairment in emotion and cognition. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Soylu, Ahmet; Duzenli, Mehmet Akif; Yazici, Mehmet; Ozdemir, Kurtulus; Tokac, Mehmet; Gok, Hasan (2009):

The effect of nondipping blood pressure patterns on cardiac structural changes and left ventricular diastolic functions in normotensives.

In: *Echocardiography (Mount Kisco, N.Y.)* 26 (4), S. 378–387. DOI: 10.1111/j.1540-8175.2008.00821.x.

Abstract:

BACKGROUND\r\nCardiac structural changes have been reported to be more prominent in nondipper normotensives than the dipper ones. But the influence of nondipping status on cardiac diastolic functions of normotensives has not been studied yet. In this study, we investigated the effect of nondipping status on both cardiac structural changes and left ventricular (LV) diastolic functions in normotensives.\r\nMETHODS\r\nWe performed ambulatory blood pressure (BP) monitoring (ABPM) and echocardiography in 62 normotensive subjects with the following criteria: (1) office BP < 140/90 mmHg; (2) average 24-hour ambulatory BP < 130/80 mmHg.\r\nRESULTS\r\nIn the evaluation by tissue Doppler imaging (TDI), the early diastolic myocardial peak velocity (Em) and Em/late diastolic myocardial peak velocity (Am) ratio (Em/Am ratio) were lower in nondippers than those in dippers (P = 0.009 and P < 0.001, respectively). Isovolumic relaxation time (IRT) and myocardial performance index (MPI) were higher in nondippers than those in dippers (P = 0.036 and P = 0.026, respectively). Nondipping status, independent of other factors, was observed to cause both a decrease in the Em and Em/Am ratio and an increase in IRT. However, its effect on IRT was not statistically significant (coefficient =-0.27, P = 0.027; coefficient =-0.37, P = 0.002; coefficient = 0.20, P = 0.082, respectively).\r\nCONCLUSIONS\r\nNondipping of nocturnal BP seems to be a determinant of cardiac remodeling and LV diastolic dysfunction (LVDD) and may result in a cardiovascular (CV) risk independent of the increase in LV mass (LVM) in normotensives.

Spain, Rebecca I.; Mancini, Martina; Horak, Fay B.; Bourdette, Dennis (2014):

Body-worn sensors capture variability, but not decline, of gait and balance measures in multiple sclerosis over 18 months.

In: *Gait Posture* 39 (3), S. 958–964. DOI: 10.1016/j.gaitpost.2013.12.010.

Abstract:

Gait and balance deficits are a frequent complaint in MS but poorly captured by stopwatch-timed tests or rating scales. Body-worn accelerometers and gyroscopes are able to detect gait and balance abnormalities in people with MS who have normal walking speeds. Few longitudinal studies exist using this technology to study the evolution of mobility deficits. The purpose of this study was to determine if body-worn sensors detected any decline in gait and balance measures in people with MS over time. Twenty-seven people with MS (13 mildly disabled, self-rated expanded disability status scale 0-3.5; 14 moderately disabled, SR-EDSS 4.0-5.5) who had normal walking speeds and 18 matched control subjects underwent gait and balance testing using body-worn sensors every 6 months for 18 months. While no parameter worsened over time, the moderately disabled MS cohort performed more poorly than the mildly disabled MS cohort who, in turn, was worse than control subjects for both objective and subjective walking and balance measures. Furthermore, the moderately disabled MS cohort demonstrated greater variation in between-visit performance than did the less disabled MS cohort or controls (Bonferroni-corrected $p<0.05$). Variability may be a key indicator of worsening gait and balance disability in MS.

Sparacino, Giovanni; Zanderigo, Francesca; Corazza, Stefano; Maran, Alberto; Facchinetti, Andrea; Cobelli, Claudio (2007):

Glucose concentration can be predicted ahead in time from continuous glucose monitoring sensor time-series.

In: *Biomedical Engineering, IEEE Transactions on* 54 (5), S. 931–937.

Abstract:

A clinically important task in diabetes management is the prevention of hypo/hyperglycemic events. In this proof-of-concept paper, we assess the feasibility of approaching the problem with continuous glucose monitoring (CGM) devices. In particular, we study the possibility to predict ahead in time glucose levels by exploiting their recent history monitored every 3 min by a minimally invasive CGM system, the Glucoday, in 28 type 1 diabetic volunteers for 48 h. Simple prediction strategies, based on the description of past glucose data by either a first-order polynomial or a first-order autoregressive (AR) model, both with time-varying parameters determined by weighted least squares, are considered. Results demonstrate that, even by using these simple methods, glucose can be predicted ahead in time, e.g., with a prediction horizon of 30 min crossing of the hypoglycemic threshold can be predicted 20-25 min ahead in time, a sufficient margin to mitigate the event by sugar ingestion.

Spicer, J.; Werner, E.; Zhao, Y.; Choi, C. W.; Lopez-Pintado, S.; Feng, T. et al. (2013):

Ambulatory assessments of psychological and peripheral stress-markers predict birth outcomes in teen pregnancy.

In: *J.Psychosom.Res.* 75 (4), S. 305–313. DOI: 10.1016/j.jpsychores.2013.07.001.

Abstract:

OBJECTIVE: Pregnant adolescents have high rates of poor birth outcomes, but the causes are unclear. We present a prospective, longitudinal study of pregnant adolescents assessing associations between maternal psychobiological stress indices and offspring gestational age at birth and birthweight. METHOD: Healthy nulliparous pregnant adolescents were recruited (n=205) and followed during pregnancy. Ambulatory assessments over 24h of perceived psychological stress (collected every 30 min) and salivary cortisol (6 samples) and a summary questionnaire, the Perceived Stress Scale, were collected at three time points (13-16, 24-27, and 34-37 gestational weeks). Corticotropin-releasing hormone, C-reactive protein, and interleukin 6 were assayed from blood taken at the latter 2 sessions. A final sample of 119 participants was selected for analyses. RESULTS: The ambulatory assessment of perceived psychological stress was positively correlated with the Perceived Stress Scale (r=.20, p=.03) but neither was associated with any of the biological assays (all ps>.20). Based on backward selection regression models that included all stress variables and relevant covariates, the ambulatory assessments of perceived psychological stress and cortisol - though not the Perceived Stress Scale - were negatively associated with gestational age at birth (F(4, 107)=3.38, p=.01) while cortisol was negatively related to birthweight (F(5, 107)=14.83, p<.0001). CONCLUSIONS: Targeted interventions to reduce psychological and biological indicators of heightened stress during pregnancy may have positive public health benefits for the offspring given the associations of shortened gestation and lower birthweight with risk for poor mental and physical health outcomes

Spinelli, Alessio; Da Ros, Valerio; Morosetti, Daniele; D'Onofrio, Silvia; Rovella, Valentina; Di Daniele, Nicola; Simonetti, Giovanni (2013):

Technical aspects of renal denervation in end-stage renal disease patients with challenging anatomy.

In: *Diagn Interv Radiol. DOI:* 10.5152/dir.2013.13408.

Abstract:

We describe our preliminary experience with percutaneous renal denervation in end-stage renal disease patients with resistant hypertension and challenging anatomy, in terms of the feasibility, safety, and efficacy of this procedure. Four patients with end-stage renal disease patients with resistant hypertension (mean hemodialysis time, 2.3 years) who had been taking at least four antihypertensive medications underwent percutaneous renal denervation. Renal artery eligibility included the absence of prior renal artery interventions, vessel stenosis <70%, or extended calcifications (more than 30% of the vessel circumference). No cut-off values of vessel diameter were used. All patients were successfully treated with no intra- or postprocedural complications, and all showed 24-hour ambulatory blood pressure reduction at the 12-month follow-up. Percutaneous renal denervation is a feasible approach for end-stage renal disease patients with resistant hypertension with encouraging short-term preliminary results in terms of procedural efficacy and safety.

Spivey, Robin J.; Bishop, Charles M. (2014):

An implantable instrument for studying the long-term flight biology of migratory birds.

In: *Rev Sci Instrum* 85 (1), S. 14301. DOI: 10.1063/1.4854635.

Abstract:

The design of an instrument deployed in a project studying the high altitude Himalayan migrations of bar-headed geese (Anser indicus) is described. The electronics of this archival datalogger measured 22 x 14 x 6.5 mm, weighed 3 g, was powered by a (1/2)AA-sized battery weighing 10 g and housed in a transparent biocompatible tube sealed with titanium electrodes for electrocardiography (ECG). The combined weight of 32 g represented less than 2% of the typical bodyweight of the geese. The primary tasks of the instrument were to continuously record a digitised ECG signal for heart-rate determination and store 12-bit triaxial accelerations sampled at 100 Hz with 15% coverage over each 2 min period. Measurement of atmospheric pressure provided an indication of altitude and rate of ascent or descent during flight. Geomagnetic field readings allowed for latitude estimation. These parameters were logged twice per minute along with body temperature. Data were stored to a memory card of 8 GB capacity. Instruments were implanted in geese captured on Mongolian lakes during the breeding season when the birds are temporarily flightless due to moulting. The goal was to collect data over a ten month period, covering both southward and northward migrations. This imposed extreme constraints on the design's power consumption. Raw ECG can be post-processed to obtain heart-rate, allowing improved rejection of signal interference due to strenuous activity of locomotory muscles during flight. Accelerometry can be used to monitor wing-beat frequency and body kinematics, and since the geese continued to flap their wings continuously even during rather steep descents, act as a proxy for biomechanical power. The instrument enables detailed investigation of the challenges faced by the geese during these arduous migrations which typically involve flying at extreme altitudes through cold, low density air where oxygen availability is significantly reduced compared to sea level.

Spook, J. E.; Paulussen, T.; Kok, G.; Van, Empelen P. (2013):

Monitoring dietary intake and physical activity electronically: feasibility, usability, and ecological validity of a mobile-based ecological momentary assessment tool.

In: *J Med Internet Res* 15 (9), S. e214. DOI: 10.2196/jmir.2617.

Abstract:

BACKGROUND: Despite the growing body of research on complex lifestyle behaviors (eg, Dietary Intake [DI] and Physical Activity [PA]), monitoring of these behaviors has been hampered by a lack of suitable methods. A possible solution to this deficiency is mobile-based Ecological Momentary Assessment (mEMA), which enables researchers to collect data on participants' states in real-time by means of a smartphone application. However, feasibility, usability, and ecological validity need to be anticipated and managed in order to enhance the validity of mEMA. OBJECTIVE: To examine the feasibility, usability, and ecological validity of a mEMA application (app) with regard to DI and PA among Dutch vocational education students. METHODS: The students (n=30) participated in the mEMA study for seven consecutive days. They downloaded the mEMA app on their smartphone. Feasibility and usability of the mEMA app were evaluated by completing an online evaluation after seven days of participation. Ecological validity was measured by assessing the degree to which the content of the mEMA app approximated the real-world setting that was being examined, through several multiple-choice questions. RESULTS: Compliance rates, as registered by the mEMA app, declined 46% over a seven-day period, while self-reported compliance, as measured with an online evaluation questionnaire afterwards, indicated a smaller decrease in compliance (29%). The students evaluated the mEMA app as feasible and usable. Ecological validity analyses showed that all DI and almost all PA multiple-choice options were covered with the compound response categories. CONCLUSIONS: The mEMA app offers the opportunity to assess complex health behaviors (eg, DI and PA) in real-time settings, in which specifically routinized behaviors are involved. However, the mEMA app faced several challenges that needed to be overcome in order to improve its validity. Overall, the present study showed that the mEMA app is a usable and ecologically valid tool to measure DI and PA behaviors among vocational education students, but compliance is still limited

Spruill, Tanya M.; Gerin, William; Ogedegbe, Gbenga; Burg, Matthew; Schwartz, Joseph E.; Pickering, Thomas G. (2009):

Socioeconomic and psychosocial factors mediate race differences in nocturnal blood pressure dipping.

In: *Am J Hypertens* 22 (6), S. 637–642. DOI: 10.1038/ajh.2009.58.

Abstract:

BACKGROUND\r\nReduced nocturnal blood pressure (BP) dipping is more prevalent among blacks living in the United States than whites and is associated with increased target organ damage and cardiovascular risk. The primary aim of this study was to

determine whether socioeconomic and psychosocial factors help to explain racial differences in dipping. In order to address the limited reproducibility of dipping measures, we investigated this question in a sample of participants who underwent multiple ambulatory BP monitoring (ABPM) sessions.\r\nMETHODS\r\nThe study sample included 171 black and white normotensive and mildly hypertensive participants who underwent three ABPM sessions, each 1 month apart, and completed a battery of questionnaires to assess socioeconomic and psychosocial factors.\r\nRESULTS\r\nAs expected, blacks showed less dipping than whites, after adjusting for age, sex, body mass index (BMI), and mean 24-h BP level (mean difference = 3.3%, P = 0.002). Dipping was related to several of the socioeconomic and psychosocial factors examined, with higher education and income, being married, and higher perceived social support, each associated with a larger dipping percentage. Of these, marital status and education were independently associated with dipping and together accounted for 36% of the effect of race on dipping.\r\nCONCLUSIONS\r\nWe identified a number of socioeconomic and psychosocial correlates of BP dipping and found that reduced dipping among blacks vs. whites is partially explained by marital status (being unmarried) and lower education among blacks. We also present results suggesting that repeated ABPM may facilitate the detection of associations between dipping and other variables.

Stabelini Neto, Antonio; Campos, Wagner; Dos Santos, Gessika Castilho; Mazzardo Junior, Oldemar (2014):

Metabolic syndrome risk score and time expended in moderate to vigorous physical activity in adolescents.

In: *BMC Pediatr* 14, S. 42. DOI: 10.1186/1471-2431-14-42.

Abstract:

BACKGROUND: The clustering of metabolic syndrome risk factors is inversely related to the amount of physical activity. However, the question remains as to how much daily physical activity is enough to prevent the onset of metabolic disorders in adolescents? Therefore, the objectives of this study were to associate the metabolic risk score with the moderate to vigorous physical activity (MVPA) and to identify the amount of daily physical activity to prevent the onset of the metabolic risk factors in Brazilian adolescents. METHODS: The study involved 391 participants aged 10 to 18 years. Physical activity was measured by accelerometry. The counts obtained in the different activities were transformed into metabolic equivalents and classified as light (>/= 1.5 but < 3.0 METs), moderate (>/= 3.0 but < 6.0 METs) and vigorous (>/= 6.0 METs) activities. The continuous risk score for metabolic syndrome was calculated using the following risk factors: waist circumference, blood pressure, blood glucose, HDL-C and triglycerides. RESULTS: Time spent in MVPA was inversely associated with the continuous risk score for metabolic syndrome ($p < 0.05$). Analysis of the ROC curve suggests that these adolescents must perform at least 88 minutes per day of MVPA. CONCLUSIONS: These findings reinforce previous evidence that physical activity relates to metabolic syndrome in adolescents. This population should be encouraged to gradually replace part of their sedentary time with physical activities.

Stamatakis, Emmanuel; Davis, Mark; Stathi, Afroditi; Hamer, Mark (2012):

Associations between multiple indicators of objectively-measured and self-reported sedentary behaviour and cardiometabolic risk in older adults.

In: *Prev Med* 54 (1), S. 82–87. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-00602-020&site=ehost-live;e.stamatakis@ucl.ac.uk.

Abstract:

Objective: To examine the associations between sedentary behaviour (SB) measured objectively and by self-report and cardiometabolic risk factors. Method: Cross-sectional analyses of adults ≥60 years who participated in the 2008 Health Survey for England. Main exposures were self-reported leisure-time SB consisting of TV/DVD viewing, non-TV leisure-time sitting, and accelerometry-measured SB. Outcomes included body mass index (BMI), waist circumference, cholesterol ratio (total/HDL), Hb1Ac and prevalent diabetes. Results: 2765 participants (1256 men) had valid self-reported SB and outcomes/confounding variables data, of whom 649 (292 men) had accelerometer data. Total self-reported leisure-time SB showed multivariable-adjusted (including for moderate-to-vigorous physical activity) associations with BMI (beta for mean difference in BMI per 30 min/day extra SB: 0.088 kg/m-&#xfffd;, 95% CI 0.047 to 0.130); waist circumference (0.234, 0.129 to 0.339 cm); cholesterol ratio (0.018, 0.005 to 0.032) and diabetes (odds ratio per 30 min/day extra SB: 1.059, 1.030 to 1.089). Similar associations were observed for TV time while non-TV self-reported SB showed associations only with diabetes (1.057, 1.017 to 1.099). Accelerometry SB was associated with waist circumference only (0.633, 0.173 to 1.093). Conclusion: In older adults SB is associated with cardiometabolic risk factors, but the associations are more consistent when is measured by self-report that includes TV viewing. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Stamatakis, E.; Hamer, M.; Tilling, K.; Lawlor, D. A. (2012):

Sedentary time in relation to cardio-metabolic risk factors: differential associations for self-report vs accelerometry in working age adults.

In: *Int.J Epidemiol.* (0300-5771 (Linking)). DOI: 10.1093/ije/dys077.

Abstract:

BACKGROUND: Sedentary behaviour has been proposed to be detrimentally associated with cardio-metabolic risk independently of moderate to vigorous physical activity (MVPA). However, it is unclear how the choice of sedentary time (ST) indicator may influence such associations. The main objectives of this study were to examine the associations between ST and a set of cardio-metabolic risk factors [waist, body mass index (BMI), systolic and diastolic blood pressure, total and high-density lipoprotein cholesterol, glycated haemoglobin] and whether these associations differ depending upon whether ST is assessed by self-report or objectively by accelerometry. METHODS: Multiple linear regression was used to examine the above objectives in a cross-sectional study of 5948 adults (2669 men) aged 16-65 years with self-reported measures of television time, other recreational sitting and occupational sitting or standing. In all, 1150 (521 men) participants had objective (accelerometry) data on ST as well. RESULTS: Total self-reported ST showed multivariable-adjusted (including for MVPA) associations with BMI [(unstandardized beta coefficients corresponding to the mean difference per 10 min/day greater ST: 0.035 kg/m(2); 95% CI: 0.027-0.044), waist circumference (0.083 cm; 0.062-0.105), systolic (0.024 mmHg; 0.000-0.049) and diastolic blood pressure (0.023 mmHg; 0.006-0.040) and total cholesterol (0.004 mmol/l; 0.001-0.006)]. Similar associations were observed for TV time, whereas non-TV self-reported ST showed consistent associations with the two adiposity proxies (BMI/waist circumference) and total cholesterol. Accelerometry-assessed ST was only associated with total cholesterol (0.010 mmol/l; 0.001-0.018). CONCLUSIONS: In this study, ST was associated consistently with cardio-metabolic risk only when it was measured by self-report

Statland, Jeffrey M.; Bundy, Brian N.; Wang, Yunxia; Rayan, Dipa Raja; Trivedi, Jaya R.; Sansone, Valeria A. et al. (2012):

Mexiletine for symptoms and signs of myotonia in nondystrophic myotonia: a randomized controlled trial.

In: *JAMA* 308 (13), S. 1357–1365. DOI: 10.1001/jama.2012.12607.

Abstract:

CONTEXT\r\nNondystrophic myotonias (NDMs) are rare diseases caused by mutations in skeletal muscle ion channels. Patients experience delayed muscle relaxation causing functionally limiting stiffness and pain. Mexiletine-induced sodium channel blockade reduced myotonia in small studies; however, as is common in rare diseases, larger studies of safety and efficacy have not previously been considered feasible.\r\nOBJECTIVE\r\nTo determine the effects of mexiletine for symptoms and signs of myotonia in patients with NDMs.\r\nDESIGN, SETTING, AND PARTICIPANTS\r\nA randomized, double-blind, placebo-controlled 2-period crossover study at 7 neuromuscular referral centers in 4 countries of 59 patients with NDMs conducted between December 23, 2008, and March 30, 2011, as part of the National Institutes of Health-funded Rare Disease Clinical Research Network.\r\nINTERVENTION\r\nOral 200-mg mexiletine or placebo capsules 3 times daily for 4 weeks, followed by the opposite intervention for 4 weeks, with 1-week washout in between.\r\nMAIN OUTCOME MEASURES\r\nPatient-reported severity score of stiffness recorded on an interactive voice response (IVR) diary (scale of 1 = minimal to 9 = worst ever experienced). Secondary end points included IVR-reported changes in pain, weakness, and tiredness; clinical myotonia assessment; quantitative measure of handgrip myotonia; and Individualized Neuromuscular Quality of Life summary quality of life score (INQOL-QOL, percentage of maximal detrimental impact).\r\nRESULTS\r\nMexiletine significantly improved patient-reported severity score stiffness on the IVR diary. Because of a statistically significant interaction between treatment and period for this outcome, primary end point is presented by period (period 1 means were 2.53 for mexiletine and 4.21 for placebo; difference, -1.68; 95% CI, -2.66 to -0.706; P < .001; period 2 means were 1.60 for mexiletine and 5.27 for placebo; difference, -3.68; 95% CI, -3.85 to -0.139; P = .04). Mexiletine improved the INQOL-QOL score (mexiletine, 14.0 vs placebo, 16.7; difference, -2.69; 95% CI, -4.07 to -1.30; P < .001) and decreased handgrip myotonia on clinical examination (mexiletine, 0.164 seconds vs placebo, 0.494 seconds; difference, -0.330; 95% CI, -0.633 to -0.142; P < .001). The most common adverse effect was gastrointestinal (9 mexiletine and 1 placebo). Two participants experienced transient cardiac effects that did not require stopping the study (1 in each group). One serious adverse event was determined to be not study related.\r\nCONCLUSION\r\nIn this preliminary study of patients with NDMs, the use of mexiletine compared with placebo resulted in improved patient-reported stiffness over 4 weeks of treatment, despite some concern about the maintenance of blinding.\r\nTRIAL REGISTRATION\r\nclinicaltrials.gov Identifier: NCT00832000.

Staudenmayer, John; Pober, David; Crouter, Scott; Bassett, David; Freedson, Patty (2009):

An artificial neural network to estimate physical activity energy expenditure and identify physical activity type from an accelerometer.

In: *Journal of Applied Physiology* 107 (4), S. 1300–1307.

Abstract:

The aim of this investigation was to develop and test two artificial neural networks (ANN) to apply to physical activity data collected with a commonly used uniaxial accelerometer. The first ANN model estimated physical activity metabolic equivalents (METs), and the second ANN identified activity type. Subjects (n = 24 men and 24 women, mean age = 35 yr) completed a menu of activities that included sedentary, light, moderate, and vigorous intensities, and each activity was performed for 10 min. There were three different activity menus, and 20 participants completed each menu. Oxygen consumption (in ml x kg(-1) x min(-1)) was measured continuously, and the average of minutes 4-9 was used to represent the oxygen cost of each activity. To calculate METs, activity oxygen consumption was divided by 3.5 ml x kg(-1) x min(-1) (1 MET). Accelerometer data were collected second by second using the Actigraph model 7164. For the analysis, we used the distribution of counts (10th, 25th, 50th, 75th, and 90th percentiles of a minute's second-by-second counts) and temporal dynamics of counts (lag, one autocorrelation) as the accelerometer feature inputs to the ANN. To examine model performance, we used the leave-one-out cross-validation technique. The ANN prediction of METs root-mean-squared error was 1.22 METs (confidence interval: 1.14-1.30). For the prediction of activity type, the ANN correctly classified activity type 88.8% of the time (confidence interval: 86.4-91.2%). Activity types were low-level activities, locomotion, vigorous sports, and household activities/other activities. This novel approach of applying ANNs for processing Actigraph accelerometer data is promising and shows that we can successfully estimate activity METs and identify activity type using ANN analytic procedures.

Stavro, P. Mark; Woo, Minna; Leiter, Lawrence A.; Heim, Tibor F.; Sievenpiper, John L.; Vuksan, Vladimir (2006):

Long-term intake of North American ginseng has no effect on 24-hour blood pressure and renal function.

In: *Hypertension* 47 (4), S. 791–796. DOI: 10.1161/01.HYP.0000205150.43169.2c.

Abstract:

Ginseng is consumed by 10% to 20% of adults in Asia and by up to 5% in Western countries. Despite observational evidence suggesting a link between its intake and the development of hypertension, there remains no long-term scrutiny for its effect on blood pressure (BP). We therefore undertook a randomized, placebo-controlled, double-blinded, crossover trial in 52 hypertensive individuals to determine the effect of 12-week North American ginseng intake on 24-hour BP; we also measured serum cystatin C as a marker of renal function. After a 4-week placebo run-in, we randomly assigned 52 participants to 3 g/day of ginseng or placebo for 12 weeks. This was followed by an 8-week washout and a subsequent 12-week period in which the opposite treatment was administered. At run-in and at weeks 0 and 12 of each treatment period, participants were fitted with an ambulatory BP monitor to assess 24-hour BP. The primary outcome was the treatment difference at week 12 in mean 24-hour systolic BP. Secondary outcomes were treatment differences at week 12 in other ambulatory BP parameters and serum cystatin C. Forty participants (77%) completed the trial, with 3 removed from main analysis (n=2, antihypertensive drug changes; n=1, incomplete ambulatory monitoring). In the remaining 37, 12-week ginseng treatment was associated with a neutral effect on all ambulatory BP parameters compared with placebo; an intention-to-treat analysis supported this. Ginseng did not affect serum cystatin C level. Overall, long-term ginseng use had no effect on 24-hour BP and renal function in hypertensive individuals.

Steca, Patrizia; Bassi, Marta; Caprara, Gian Vittorio; Delle Fave, Antonella (2011):

Parents' self-efficacy beliefs and their children's psychosocial adaptation during adolescence.

In: *Journal of Youth and Adolescence* 40 (3), S. 320–331.

Abstract:

Research has shown that parents' perceived parental self-efficacy (PSE) plays a pivotal role in promoting their children's successful adjustment. In this study, we further explored this issue by comparing psychosocial adaptation in children of parents with high and low PSE during adolescence. One hundred and thirty Italian teenagers (55 males and 75 females) and one of their parents (101 mothers and 29 fathers) participated in the research. Data were collected at T1 (adolescents' mean age = 13.6) and T2 (mean age = 17.5). Parents reported their PSE at T1. At T1 and T2, adolescents reported their perceived academic self-efficacy, aggressive and violent conducts, well-being, and perceived quality of their relationships with parents. At T2, they were

also administered questions by using Experience Sampling Method to assess their quality of experience in daily life. As hypothesized, adolescents with high PSE parents reported higher competence, freedom and well-being in learning activities as well as in family and peer interactions. They also reported fewer problematic aspects and more daily opportunities for optimal experience. Findings pointed to the stability of adolescents' psychosocial adaptation and highlighted possible directions in future research.

Steele, Rebekah M.; Brage, Soren; Corder, Kirsten; Wareham, Nicholas J.; Ekelund, Ulf (2008):

Physical activity, cardiorespiratory fitness, and the metabolic syndrome in youth.

In: *Journal of Applied Physiology* 105 (1), S. 342–351.

Abstract:

The metabolic syndrome is defined as the coexistence of multiple cardiovascular and diabetes risk factors, the prevalence of which has increased dramatically in adult populations in the last decades. More recently, the same cluster of metabolic risk factors has also been recognized in children and adolescents. Epidemiological evidence suggests that high levels of cardiorespiratory fitness (CRF) and physical activity are associated with a favorable metabolic risk profile in adults. However, in youth the role of these factors is less clear. Therefore, the purpose of this mini-review is to examine the recent evidence between objectively measured habitual physical activity and CRF with clustered metabolic risk in youth. In general, it appears that both physical activity and CRF are separately and independently associated with metabolic risk factors in youth, possibly through different causal pathways. Further research is necessary to quantify how much physical activity is needed to prevent the metabolic syndrome and the diseases with which it is associated. Public health approaches that encourage increased physical activity and reduce sedentary behaviors may prove useful in reducing the population burden associated with metabolic risk.

Steele, Rebekah M.; van Sluijs, Esther Mf; Cassidy, Aedín; Griffin, Simon J.; Ekelund, Ulf (2009):

Targeting sedentary time or moderate-and vigorous-intensity activity: independent relations with adiposity in a population-based sample of 10-y-old British children.

In: *Am J Clin Nutr* 90 (5), S. 1185–1192.

Abstract:

BACKGROUND:

It is unclear whether subcomponents of physical activity (PA) are associated with adiposity independent of time spent while sedentary.

OBJECTIVE:

The objective was to examine associations between objectively measured PA and its subcomponents [ie, time spent at light-intensity PA, moderate-intensity PA (MPA), vigorous-intensity PA (VPA), and moderate-plus-vigorous-intensity PA (MVPA)], independent of sedentary time, and self-reported leisure screen time (television and electronic game use) with indexes of adiposity in a population-based sample of British children.

DESIGN:

A cross-sectional study was conducted in 1862 UK children aged 9-10 y. PA and sedentary activity were measured by accelerometry, and indicators of adiposity were waist circumference, body mass index (BMI), and fat mass index calculated from bioimpedance measurements. Screen time was assessed by self-report. We examined the associations between PA subcomponents and adiposity by multilevel linear models adjusted for birth weight, maternal BMI, energy intake, and sleep duration.

RESULTS:

Objectively measured sedentary time was positively associated with waist circumference ($P = 0.04$) and fat mass index ($P = 0.05$), independent of age and sex. However, this association was attenuated after adjustment for MVPA and other covariates. VPA (all $P < 0.0001$), combined MVPA (all $P < 0.01$), and total activity (counts/min) (all $P < 0.001$) were all inversely associated with each of the adiposity indexes, independent of sedentary time and other important covariates. Associations were weaker for MPA: $P = 0.05$, 0.87, and 0.1 for waist circumference, BMI, and fat mass index, respectively.

CONCLUSIONS:

Time spent in VPA appears to be more strongly associated with adiposity than sedentary time. Interventions may therefore need to incorporate higher intensity-based activities to curb the growing obesity epidemic.

Steins, Dax; Dawes, Helen; Esser, Patrick; Collett, Johnny (2014):

Wearable accelerometry-based technology capable of assessing functional activities in neurological populations in community settings: a systematic review.

In: *J Neuroeng Rehabil* 11 (1), S. 36. DOI: 10.1186/1743-0003-11-36.

Abstract:

BACKGROUND: Integrating rehabilitation services through wearable systems has the potential to accurately assess the type, intensity, duration, and quality of movement necessary for procuring key outcome measures. OBJECTIVES: This review aims to explore wearable accelerometry-based technology (ABT) capable of assessing mobility-related functional activities intended for rehabilitation purposes in community settings for neurological populations. In this review, we focus on the accuracy of ABT-based methods, types of outcome measures, and the implementation of ABT in non-clinical settings for rehabilitation purposes. DATA SOURCES: Cochrane, PubMed, Web of Knowledge, EMBASE, and IEEE Xplore. The search strategy covered three main areas, namely wearable technology, rehabilitation, and setting. STUDY SELECTION: Potentially relevant studies were categorized as systems either evaluating methods or outcome parameters. METHODS: Methodological qualities of studies were assessed by two customized checklists, depending on their categorization and rated independently by three blinded reviewers. RESULTS: Twelve studies involving ABT met the eligibility criteria, of which three studies were identified as having implemented ABT for rehabilitation purposes in non-clinical settings. From the twelve studies, seven studies achieved high methodological quality scores. These studies were not only capable of assessing the type, quantity, and quality measures of functional activities, but could also distinguish healthy from non-healthy subjects and/or address disease severity levels. CONCLUSION: While many studies support ABT's potential for telerehabilitation, few actually utilized it to assess mobility-related functional activities outside laboratory settings. To generate more appropriate outcome measures, there is a clear need to translate research findings and novel methods into practice.

Stephens, M. A.; Franks, M. M.; Rook, K. S.; Iida, M.; Hemphill, R. C.; Salem, J. K. (2012):

Spouses' Attempts to Regulate Day-to-Day Dietary Adherence Among Patients With Type 2 Diabetes.

In: *Health Psychol* (0278-6133 (Linking)). DOI: 10.1037/a0030018.

Abstract:

Objective: To investigate daily dietary adherence and diabetes-specific distress among older adults with type 2 diabetes mellitus (T2DM) as a function of spouses' diet-related support and diet-related control (persuasion and pressure) and whether these daily processes differ among couples who do and do not appraise responsibility for managing T2DM as shared. Methods: End-of-day diaries were completed by 126 couples in which one partner had T2DM (patient) and the other did not (spouse). Using electronic diary methods, each partner independently recorded data for 24 consecutive days (patients recorded their day's dietary adherence and diabetes-specific distress; spouses recorded their day's involvement in patients' dietary management). To assess dietary adherence, patients reported the extent to which they followed dietary recommendations that day with items from the Summary of Diabetes Self-Care Activities Measure. To assess diabetes-specific distress, patients reported the extent to which they worried about diabetes that day using items from the Problem Areas in Diabetes (PAID) scale. Results: Multilevel modeling revealed that, relative to the prior day, spouses' diet-related support was associated with increases in patients' adherence whereas diet-related persuasion and pressure were associated with decreases in adherence; spouses' pressure was associated with increases in patients' diabetes-specific distress. When partners appraised responsibility for managing T2DM as shared, support was associated with decreases in diabetes-specific distress; pressure was associated with decreases in adherence. Conclusions: Our findings offer insight into partners' day-to-day disease-related interactions and identify those that are likely to be beneficial versus detrimental for patients' physical and psychological health. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Steptoe, A.; Wardle, J. (2011):

Positive affect measured using ecological momentary assessment and survival in older men and women.

In: *Proc.Natl.Acad.Sci U.S A* 108 (45), S. 18244–18248. DOI: 10.1073/pnas.1110892108.

Abstract:

Links between positive affect (PA) and health have predominantly been investigated by using measures of recollected emotional states. Ecological momentary assessment is regarded as a more precise measure of experienced well-being. We analyzed data

from the English Longitudinal Study of Aging, a representative cohort of older men and women living in England. PA was assessed by aggregating momentary assessments over a single day in 3,853 individuals aged 52 to 79 y who were followed up for an average of 5 y. Respondents in the lowest third of PA had a death rate of 7.3%, compared with 4.6% in the medium-PA group and 3.6% in the high-PA group. Cox proportional-hazards regression showed a hazard ratio of 0.498 (95% confidence interval, 0.345-0.721) in the high-PA compared with the low-PA group, adjusted for age and sex. This was attenuated to 0.646 (95% confidence interval, 0.436-0.958) after controlling for demographic factors, negative affect, depressed mood, health indicators, and health behaviors. Negative affect and depressed mood were not related to survival after adjustment for covariates. These findings indicate that experienced PA, even over a single day, has a graded relationship with survival that is not caused by baseline health status or other covariates. Momentary PA may be causally related to survival, or may be a marker of underlying biological, behavioral, or temperamental factors, although reverse causality cannot be conclusively ruled out. The results endorse the value of assessing experienced affect, and the importance of evaluating interventions that promote happiness in older populations

Stergiou, George S.; Argyraki, Katerina K.; Moyssakis, Ioannis; Mastorantonakis, Stylianos E.; Achimastos, Apostolos D.; Karamanos, Vasilios G.; Roussias, Leonidas G. (2007):

Home blood pressure is as reliable as ambulatory blood pressure in predicting target-organ damage in hypertension.

In: *Am J Hypertens* 20 (6), S. 616–621.

Abstract:

BACKGROUND:

Our objective was to assess the value of home blood pressure (BP) monitoring in comparison to office BP measurements and ambulatory monitoring in predicting hypertension-induced target-organ damage.

METHODS:

Sixty-eight untreated patients with hypertension with at least two routine prestudy office visits were included (mean age, 48.6 +/- 9.1 [SD] years; 50 men). Office BP was measured in two study visits, home BP was measured for 6 workdays, and ambulatory BP was monitored for 24 h. All BP measurements were obtained using validated electronic devices. Target-organ damage was assessed by measuring the echocardiographic left-ventricular mass index (LVMI), urinary albumin excretion rate (AER) in two overnight urine collections, and carotid-femoral pulse-wave velocity (PWV) (Complior device; Colson, Garges-les-Gonesse, Paris, France).

RESULTS:

The correlation coefficients of LVMI with office BP were 0.24/0.15 (systolic/diastolic), with home BP 0.35/0.21 (systolic, $P < .01$), and with 24-h ambulatory BP 0.23/0.19, awake 0.21/0.16, and asleep 0.28/0.26 (asleep, both $P < .05$). The correlation coefficients of AER with office BP were 0.24/0.31 (diastolic, $P < .05$), with home BP 0.28/0.26 (both $P < .05$), and with 24-h ambulatory BP 0.25/0.24, awake 0.24/0.25 (diastolic, $P < .05$), and asleep 0.26/0.18 (systolic, $P < .05$). There was a trend for negative correlations between PWV and diastolic BP measurements (not significant). In multiple-regression models assessing independent predictors of each of the three indices of target-organ damage, systolic home BP and age were the only independent predictors of increased LVMI that reached borderline statistical significance.

CONCLUSIONS:

These data suggest that home BP is as reliable as ambulatory monitoring in predicting hypertension-induced target-organ damage, and is superior to carefully taken office measurements.

Stergiou, George S.; Christodoulakis, George R.; Nasothimiou, Efthimia G.; Giovas, Periklis P.; Kalogeropoulos, Petros G. (2008):

Can validated wrist devices with position sensors replace arm devices for self-home blood pressure monitoring? A randomized crossover trial using ambulatory monitoring as reference.

In: *Am J Hypertens* 21 (7), S. 753–758.

Abstract:

BACKGROUND:

Electronic devices that measure blood pressure (BP) at the arm level are regarded as more accurate than wrist devices and are preferred for home BP (HBP) monitoring. Recently, wrist devices with position sensors have been successfully validated using

established protocols. This study assessed whether HBP values measured with validated wrist devices are sufficiently reliable to be used for making patient-related decisions in clinical practice.

METHODS:

This randomized crossover study compared HBP measurements taken using validated wrist devices (wrist-HBP, Omron R7 with position sensor) with those taken using arm devices (arm-HBP, Omron 705IT), and also with measurements of awake ambulatory BP (ABP, SpaceLabs), in 79 subjects (36 men and 43 women) with hypertension. The mean age of the study population was 56.7 +/- 11.8 years, and 33 of the subjects were not under treatment for hypertension.

RESULTS:

The average arm-HBP was higher than the average wrist-HBP (mean difference, systolic 5.2 +/- 9.1 mm Hg, P < 0.001, and diastolic 2.2 +/- 6.7, P < 0.01). Twenty-seven subjects (34%) had a > or =10 mm Hg difference between systolic wrist-HBP and arm-HBP and twelve subjects (15%) showed similar levels of disparity in diastolic HBP readings. Strong correlations were found between arm-HBP and wrist-HBP (r 0.74/0.74, systolic/diastolic, P < 0.0001). However, ABP was more strongly correlated with arm-HBP (r 0.73/0.76) than with wrist-HBP (0.55/0.69). The wrist-arm HBP difference was associated with systolic ABP (r 0.34) and pulse pressure (r 0.29), but not with diastolic ABP, sex, age, arm circumference, and wrist circumference.

CONCLUSIONS:

There might be important differences in HBP measured using validated wrist devices with position sensor vs. arm devices, and these could impact decisions relating to the patient in clinical practice. Measurements taken using arm devices are more closely related to ABP values than those recorded by wrist devices. More research is needed before recommending the widespread use of wrist monitors in clinical practice.

Stergiou, George S.; Christodoulakis, George; Giovas, Periklis; Lourida, Panayiota; Alamara, Christina; Roussias, Leonidas G. (2008):

Home blood pressure monitoring in children: how many measurements are needed?

In: *Am J Hypertens* 21 (6), S. 633–638.

Abstract:

OBJECTIVE:

To investigate the minimum schedule of blood pressure (BP) measurements necessary to provide a reliable assessment of home BP (HBP) in children and adolescents.

METHODS:

Subjects aged 6-18 years referred for elevated BP were assessed with HBP monitoring (6 workdays, duplicate morning and evening measurements) and 24-h ambulatory BP monitoring (ABP). Criteria for HBP reliability were its reproducibility (test-retest correlations and SD of differences (SDDs) between repeated measurements), its stability (average home BP of an increasing number of readings and its SD), and its relationship with ABP.

RESULTS:

Data from 100 subjects were analyzed (mean age 13 +/- 2.8 (SD) years, 61 boys). The reproducibility of 3-day HBP (r 0.88/0.79, SDDs 5.1/4.9, systolic/diastolic) was superior to that of a single (r 0.79/0.65, SDDs 7.6/7.1) or 2-day HBP (r 0.85/0.72, SDDs 6.1/5.4). By averaging up to 12 readings (3 days), there was a progressive decline in average HBP, with no further decline thereafter. The SD of average HBP was also progressively reduced, with little change after day 3. The association of HBP with ABP was improved by averaging more readings up to 12, with no further improvement when more readings were averaged. The exclusion of first-day measurements slightly increased the SD of average HBP and weakened the correlation with ABP, probably due to reduced number of readings.

CONCLUSIONS:

In children and adolescents, 3-day monitoring with duplicate morning and evening measurements appears to be the minimum schedule for the reliable assessment of HBP.

Stergiou, George S.; Mastorantonakis, Stylianos E.; Roussias, Leonidas G. (2008):

Intraindividual reproducibility of blood pressure surge upon rising after nighttime sleep and siesta.

In: *Hypertens Res* 31 (10), S. 1859–1864. DOI: 10.1291/hypres.31.1859.

Abstract:

The surge in blood pressure (BP) upon rising after waking in the morning has been associated with increased risk of target organ damage and cardiovascular events. The reproducibility of this phenomenon within the same 24-h period was tested in subjects with a siesta during ambulatory BP monitoring by assessing the morning surge (MS) vs. the evening surge (ES) after siesta. Ambulatory BP recordings with reported siesta from hypertensive subjects were analyzed. MS and ES were assessed using four different definitions. The intraindividual reproducibility was assessed using the standard deviation of differences between MS and ES, the concordance correlation coefficient, the coefficient of variation and the agreement between MS and ES in detecting \"surgers\" among hypertensive subjects (top quartile of the BP surge distribution). A total of 562 ambulatory recordings were analyzed (476 subjects, mean age 54.9+/-13.2 [SD] years, treated 47%). Average MS (16.3/14.4 mmHg, systolic/diastolic) was higher than ES (13.3/12.1 mmHg, p<0.001) due to higher post-rising BP in the morning (p<0.01). The intraindividual reproducibility was rather poor, with no clear differences among different definitions. However, there was about 70% agreement between MS and ES in the detection of \"surgers\" (systolic and diastolic, kappa statistic 0.18). These data suggest that, although the intraindividual reproducibility of the BP surge within the same 24-h period is rather poor, about 70% of the \"morning surgers\" were also \"evening surgers.\" Thus, the BP surge might be an inherent pathophysiological characteristic of the BP behavior of an individual and deserves further investigation.

Sterling, Michele; Chadwick, Benjamin J. (2010):

Psychologic processes in daily life with chronic whiplash: Relations of posttraumatic stress symptoms and fear-of-pain to hourly pain and uptime.

In: *Clin J Pain* 26 (7), S. 573–582.

Abstract:

OBJECTIVES:

Recent models of the relationship between posttraumatic stress and whiplash pain suggest that psychological stress relating to a motor vehicle crash may influence pain perception. The mechanisms of this relationship may be through more direct, psychological pathways, or through factors proposed by the fear-avoidance models of chronic pain. This study sought to investigate the relative contribution of fear-of-pain and trauma symptomatology to daily pain and time spent in an upright posture (uptime) in chronic whiplash-associated disorder (WAD).

METHODS:

Hourly electronic-diary reports were used to explore the within-day relationship of psychological trauma symptoms and fear-of-pain to same-hour and next-hour pain reports and next-hour uptime (measured by accelerometers) in 32 individuals with a chronic WAD. Within-person effects were analyzed for 329 diary entries using multilevel modeling with fixed slopes and random intercepts.

RESULTS:

Reports of trauma-related hyperarousal were associated with greater same-hour pain, and this relationship was mediated by fear-of-pain. Fear-of-pain and uptime were independently associated with reports of increased next-hour pain (controlling for first-order serial autocorrelation). Fear-of-pain was unrelated to next-hour uptime, but trauma-related avoidance symptoms were associated with reduced uptime. This study supports the relationship between psychological trauma responses and pain, suggesting behavioral (avoidance) pathways and effects on pain perception through fear-of-pain. These findings reinforce the need to evaluate traumatic stress as a factor in recovery from WAD.

Stevens, D. J.; McKenzie, K.; Cui, H. W.; Noble, J. G.; Turney, B. W. (2014):

Smartphone apps for urolithiasis.

In: *Urolithiasis. DOI:* 10.1007/s00240-014-0738-0.

Abstract:

There are an increasing number of healthcare smartphone applications ('apps') available. Urolithiasis presents a major healthcare burden. Patients are increasingly keen to educate themselves regarding the diagnosis and management of their condition. There is no formal regulation of healthcare apps, including a large number of apps relating to urolithiasis. This review aims to examine the range of apps available, and the prevalence of healthcare professional input. Four international smartphone app stores were searched: Apple's App Store, Google Play (Android), BlackBerry App World and the Windows Phone App store. A total of 42 unique apps were downloaded and analysed. Recorded data included the cost (pound/$), publisher information, number of ratings, average rating and any documentation of medical professional involvement. Twenty-one (50 %) apps required payment for download. The mean cost was pound3.58 ($6.04) with range pound0.61- pound34.90 ($1.03-$58.87). Thirty-three (79 %) of

the 42 apps were designed to be used by patients. Fifteen (36 %) of the 42 apps had clear input from health professionals. Twenty-two apps offered patient information, including dietary advice on lowering calcium intake, which is contrary to current evidence-based practice. We conclude that urolithiasis apps have future potential to inform both patients and healthcare professionals on stone management. However, inaccuracies in the recommendations made by some apps can be misleading or even harmful due to a lack of specialist involvement. We recommend improving the usefulness of these apps by seeking a 'quality stamp' from recognised urological organisations and greater clinician involvement in future app development.

Stinson, Jennifer N.; Jibb, Lindsay A.; Nguyen, Cynthia; Nathan, Paul C.; Maloney, Anne Marie; Lee Dupuis, L. et al. (2013):

Development and testing of a multidimensional iPhone pain assessment application for adolescents with cancer.

In: *J Med Internet Res* 15 (3), S. 137–151. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-26867-012%26site%3dehost-live;jennifer.stinson@sickkids.ca.

Abstract:

Background: Pain is one of the most common and distressing symptoms reported by adolescents with cancer. Despite advancements in pain assessment and management research, pain due to cancer and/or its treatments continues to be poorly managed. Our research group has developed a native iPhone application (app) called Pain Squad to tackle the problem of poorly managed pain in the adolescent with cancer group. The app functions as an electronic pain diary and is unique in its ability to collect data on pain intensity, duration, location, and the impact pain has on an adolescent's life (ie, relationships, school work, sleep, mood). It also evaluates medications and other physical and psychological pain management strategies used. Users are prompted twice daily at configurable times to complete 20 questions characterizing their pain and the app transmits results to a database for aggregate reporting through a Web interface. Each diary entry represents a pain case filed by an adolescent with cancer and a reward system (ie, moving up through law-enforcement team ranks, built-in videotaped acknowledgements from fictitious officers) encourages consistent use of the diary. Objective: Our objective was to design, develop, and test the usability, feasibility, compliance, and satisfaction of a game-based smartphone pain assessment tool for adolescents with cancer. Methods: We used both low- and high-fidelity qualitative usability testing with qualitative semi-structured, audio-taped interviews and iterative cycles to design and refine the iPhone based Pain Squad app. Qualitative thematic analysis of interviews using constant comparative methodology captured emergent themes related to app usability. Content validity was assessed using question importance-rating surveys completed by participants. Compliance and satisfaction data were collected following a 2-week feasibility trial where users were alarmed to record their pain twice daily on the app. Results: Thematic analysis of usability interviews showed the app to be appealing overall to adolescents. Analyses of both low- and high-fidelity testing resulted in minor revisions to the app to refine the theme and improve its usability. Adolescents resoundingly endorsed the game-based nature of the app and its virtual reward system. The importance of app pain diary questions was established by content validity analysis. Compliance with the app, assessed during feasibility testing, was high (mean 81%, SD 22%) and adolescents from this phase of the study found the app likeable, easy to use, and not bothersome to complete. Conclusions: A multifaceted usability approach demonstrated how the Pain Squad app could be made more appealing to children and adolescents with cancer. The game-based nature and built-in reward system of the app was appealing to adolescents and may have resulted in the high compliance rates and satisfaction ratings observed during clinical feasibility testing. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Stinson, J. N.; Jibb, L. A.; Nguyen, C.; Nathan, P. C.; Maloney, A. M.; Dupuis, L. L. et al. (2013):

Development and Testing of a Multidimensional iPhone Pain Assessment Application for Adolescents with Cancer.

In: *J Med Internet Res* 15 (3), S. e51. DOI: 10.2196/jmir.2350.

Abstract:

BACKGROUND: Pain is one of the most common and distressing symptoms reported by adolescents with cancer. Despite advancements in pain assessment and management research, pain due to cancer and/or its treatments continues to be poorly managed. Our research group has developed a native iPhone application (app) called Pain Squad to tackle the problem of poorly managed pain in the adolescent with cancer group. The app functions as an electronic pain diary and is unique in its ability to collect data on pain intensity, duration, location, and the impact pain has on an adolescent's life (ie, relationships, school work, sleep, mood). It also evaluates medications and other physical and psychological pain management strategies used. Users are prompted twice daily at configurable times to complete 20 questions characterizing their pain and the app transmits results to a database for aggregate reporting through a Web interface. Each diary entry represents a pain case filed by an adolescent with cancer and a reward system (ie, moving up through law-enforcement team ranks, built-in videotaped

acknowledgements from fictitious officers) encourages consistent use of the diary. OBJECTIVE: Our objective was to design, develop, and test the usability, feasibility, compliance, and satisfaction of a game-based smartphone pain assessment tool for adolescents with cancer. METHODS: We used both low- and high-fidelity qualitative usability testing with qualitative semi-structured, audio-taped interviews and iterative cycles to design and refine the iPhone based Pain Squad app. Qualitative thematic analysis of interviews using constant comparative methodology captured emergent themes related to app usability. Content validity was assessed using question importance-rating surveys completed by participants. Compliance and satisfaction data were collected following a 2-week feasibility trial where users were alarmed to record their pain twice daily on the app. RESULTS: Thematic analysis of usability interviews showed the app to be appealing overall to adolescents. Analyses of both low- and high-fidelity testing resulted in minor revisions to the app to refine the theme and improve its usability. Adolescents resoundingly endorsed the game-based nature of the app and its virtual reward system. The importance of app pain diary questions was established by content validity analysis. Compliance with the app, assessed during feasibility testing, was high (mean 81%, SD 22%) and adolescents from this phase of the study found the app likeable, easy to use, and not bothersome to complete. CONCLUSIONS: A multifaceted usability approach demonstrated how the Pain Squad app could be made more appealing to children and adolescents with cancer. The game-based nature and built-in reward system of the app was appealing to adolescents and may have resulted in the high compliance rates and satisfaction ratings observed during clinical feasibility testing

Stinson, Jennifer N.; Jibb, Lindsay A.; Lalloo, Chitra; Feldman, Brian M.; McGrath, Patrick J.; Petroz, Guy C. et al. (2014):

Comparison of Average Weekly Pain Using Recalled Paper and Momentary Assessment Electronic Diary Reports in Children with Arthritis.

In: *Clin J Pain. DOI:* 10.1097/AJP.0000000000000072.

Abstract:

OBJECTIVE:: The current study investigated the construct validity of a multidimensional pain diary for youth with juvenile idiopathic arthritis and also compared participants' responses on electronic and retrospective diary measures. The purpose of the latter part of this study was to compare absolute agreement, between and within-person consistency and judged change in weekly pain between these two methods of assessing pain. METHODS:: 70 adolescents with Juvenile Idiopathic Arthritis (JIA) completed both weekly recalled and momentary reports of pain over a 2-week period and assessed their change in pain over the 2-week period using 5-point global change in pain scale. Pearson correlations and intra-class correlation coefficients were computed to demonstrate three different ways of comparing the measures on both a between-persons and within-person basis. RESULTS:: Momentary ratings of pain episodes were consistently greater than weekly ratings of recalled pain. Moderate to strong consistency and agreement correlations were computed for between-person momentary and recalled pain intensity. However, these correlations were much weaker when the within-person data were analyzed. The judged change in pain across weeks was significantly associated with computed change in both average momentary and recalled pain. DISCUSSION:: This is one of the few studies to explore the relationship between the measurement methods of pain recall and momentary assessment in adolescents. The poor within-person correlations observed have important implications for research design and practice in pediatric pain.

Stinson, Jennifer N.; Stevens, Bonnie J.; Feldman, Brian M.; Streiner, David; McGrath, Patrick J.; Dupuis, Annie et al. (2008):

Construct validity of a multidimensional electronic pain diary for adolescents with arthritis.

In: *Pain* 136 (3), S. 281–292.

Abstract:

The aim of this study was to evaluate the construct validity and feasibility of a multidimensional electronic pain diary (e-Ouch©) in adolescents with juvenile idiopathic arthritis (JIA). Two descriptive studies with repeated measures were conducted between January and December 2005. Participants were drawn from a large metropolitan rheumatology clinic in a university affiliated pediatric tertiary care centre. In Study 1, 76 adolescents with active arthritis recorded their pain three times a day for 2 weeks using the e-Ouch©. In Study 2, 36 adolescents recorded their pain three times a day for 1 week before and 2 weeks after joint injections. Adolescents in both studies completed multiple measures to determine the construct validity and feasibility of the e-Ouch©. Adolescents reported mild levels of pain intensity, unpleasantness, and interference as well as stiffness, and mild to moderate levels of fatigue. e-Ouch© average weekly pain unpleasantness and interference scores were higher in adolescents with higher pain intensity scores. Correlations between average weekly pain ratings on the e-Ouch© and scores from: (a) recalled least, average and worst weekly pain, (b) health-related quality of life and pain coping, and (c) disease activity were as predicted. Pain ratings were significantly lower following joint injections with effect sizes in the low to moderate and moderate to high ranges at the first and second week post-injection, respectively. These findings provide evidence of the construct validity

and feasibility of the e-Ouch© electronic diary in adolescents with JIA. Use of real-time data capture approaches should be considered in future studies of chronic arthritis.

Stone, Arthur A.; Broderick, Joan E. (2007):

Real-time data collection for pain: appraisal and current status.

In: *Pain Med* 8 Suppl 3, S. S85-93. DOI: 10.1111/j.1526-4637.2007.00372.x.

Abstract:

OBJECTIVE\r\nReal-time data capture (RTDC) techniques have rapidly developed with the advent of computer and information technology. We plan to discuss the use of RTDC in the assessment of pain, including issues pertaining to its rationale, sampling protocols, and our opinion on the current status of the methodology.\r\nDESIGN\r\nThis is \"thought\" piece involving no systematic data collection methods.\r\nRESULTS\r\nWe described the rationale for using RTDC, including issues in recall bias, the desire for detailed information about pain, and the ability to examine within-person associations between pain and other variables. The mechanics of RTDC implementations were discussed with a focus on sampling protocols and data collection methods. The final section concerned the status of RTDC. Current acceptance of RTDC is evaluated and three issues in the science of RTDC were discussed: the interpretation of differences between recall and the average of momentary assessments for the same period; if RTDC is advancing our understanding of pain; and, the issue of what consumers of pain assessments actually desire. RTDC extensions to feedback based on momentary assessments are also discussed.\r\nCONCLUSION\r\nReal-time data collection can be a useful methodology for improving our understanding of pain and especially of its dynamic nature in real-world settings.

Stone, Michelle R.; Faulkner, Guy Ej; Mitra, Raktim; Buliung, Ron N. (2014):

The freedom to explore: examining the influence of independent mobility on weekday, weekend and after-school physical activity behaviour in children living in urban and inner-suburban neighbourhoods of varying socioeconomic status.

In: *Int J Behav Nutr Phys Act* 11, S. 5. DOI: 10.1186/1479-5868-11-5.

Abstract:

BACKGROUND: Children's independent mobility (CIM) is critical to healthy development in childhood. The physical layout and social characteristics of neighbourhoods can impact opportunities for CIM. While global evidence is mounting on CIM, to the authors' knowledge, Canadian data on CIM and related health outcomes (i.e., physical activity (PA) behaviour) are missing. The purpose of this study was to examine if CIM is related to multiple characteristics of accelerometry-measured PA behaviour (total PA, light PA, moderate-to-vigorous PA, time spent sedentary) and whether associations between CIM and PA behaviour systematically vary by place of residence, stratifying by gender and type of day/period (weekdays, after-school, weekend). METHODS: Participants were recruited through Project BEAT (Built Environment and Active Transport; http://www.beat.utoronto.ca). Children (n = 856) were stratified into four neighbourhood classifications based on the period of neighbourhood development (urban built environment (BE) (old BE) versus inner-suburban BE (new BE)) and socioeconomic status (SES; low SES and high SES). Physical activity was measured via accelerometry (ActiGraph GT1M). CIM was assessed via parental report and two categories were created (low CIM, n = 332; high CIM, n = 524). A series of two-factor ANOVAs were used to determine gender-specific differences in PA for weekdays, weekend days and the after-school period, according to level of CIM, across four neighbourhood classifications. RESULTS: Children who were granted at least some independent mobility (high CIM) had more positive PA profiles across the school week, during the after-school period, and over the weekend; they were also less sedentary. The influence of CIM on PA behaviour was particularly salient during the after-school period. Associations of CIM with PA varied by gender, and also by neighbourhood classification. CIM seemed to matter more in urban neighbourhoods for boys and suburban neighbourhoods for girls. CONCLUSION: Our findings highlight the importance of independent mobility to multiple characteristics of children's PA behaviour across the week. Furthermore, they emphasize that independent mobility-activity relationships need to be considered by gender and the type of neighbourhood independent mobility is offered in. Future work will focus on developing a predictive model of CIM that could be used to inform decision-making around alleviating barriers to CIM.

Stone, Nicola; Obeid, Joyce; Dillenburg, Rejane; Milenkovic, Jovana; MacDonald, Maureen J.; Timmons, Brian W. (2014):

Objectively measured physical activity levels of young children with congenital heart disease.

In: *Cardiol Young*, S. 1–6. DOI: 10.1017/S1047951114000298.

Abstract:

Physical activity tends to be lower in school-age children with congenital heart disease than in healthy controls. To the best of our knowledge, objectively measured physical activity levels of preschool-age children with congenital heart disease have not been studied. Methods: A total of 10 children with either coarctation of the aorta (n=6; age 3.8+/-0.9) or tetralogy of Fallot (n=4, age 4.3+/-0.9) were recruited from the cardiology unit of McMaster Children's Hospital. Height (103.7+/-8.2 cm) and weight (17.3+/-2.7 kg) measurements were recorded, and physical activity was determined using accelerometry over 7 consecutive days. Patients were compared with age-, sex-, and season of data acquisition-matched controls. Parents completed a questionnaire regarding the child's physical activity and sedentary behaviours. Results: Patients spent on average 219.4+/-39.9 minutes engaged in total physical activity per day at the following intensities: light, 147.5+/-22.3; moderate, 44.0+/-11.8; moderate-to-vigorous, 71.9+/-22.6; and vigorous, 27.9+/-11.7. No significant differences were observed between patients and controls for total physical activity (p=0.80) or any of the intensities (p=0.71, 0.46, 0.43, and 0.45, respectively). Only 40% of patients and controls met the new Canadian Physical Activity Guidelines for the Early Years of at least 180 minutes of physical activity at any intensity every day. Of the patients' parents, 90% believed that their child was as active, if not more active, than his/her siblings, and 80% of parents reported their child spending 1-3 hours in screen time activities daily. Conclusion: Children aged 3-5 years old with congenital heart disease have comparable physical activity levels to age-, sex-, and season-matched controls, and many do not meet Canadian Physical Activity Guidelines.

Stone, Michelle R.; Rowlands, Ann V.; Eston, Roger G. (2009):

Characteristics of the activity pattern in normal weight and overweight boys.

In: *Prev Med* 49 (2-3), S. 205–208. DOI: 10.1016/j.ypmed.2009.06.012.

Abstract:

OBJECTIVE\r\nTo assess whether the activity pattern differs between normal weight and overweight boys across weekdays and weekend days.\r\nMETHODS\r\nPhysical activity was recorded every 2 s by accelerometry in 32 normal weight and 15 overweight boys aged 8-10 years for four weekdays and two weekend days (South-West England 2007). Summary activity measures and activity pattern characteristics (frequency, intensity and duration of > or =4 s (short) and > or =5-min (long) bouts of > or =light, > or =moderate, > or =vigorous, and > or =hard activity) were recorded.\r\nRESULTS\r\nNormal weight boys accumulated more > or =hard activity (p<0.05) but other summary measures did not differ by weight status. However, the activity pattern differed in overweight relative to normal weight boys. The most frequent short bouts were shorter and less intense (p<0.05). All long bouts were less intense and > or =moderate long bouts were shorter and less frequent (p<0.05). Overall, less activity was accumulated on weekends (frequency of more intense short bouts, intensity of most frequent long bouts and duration of > or =light, > or =moderate (and for overweight boys > or =vigorous) short bouts dropped-off) (p<0.05).\r\nCONCLUSION\r\nDespite equivalent summary activity measures overweight boys exhibited fewer and shorter bouts, particularly sustained > or =moderate bouts, relative to normal weight boys suggesting that the activity pattern may be important for weight control.

Stopczynski, Arkadiusz; Stahlhut, Carsten; Petersen, Michael Kai; Larsen, Jakob Eg; Jensen, Camilla Falk; Ivanova, Marieta Georgieva et al. (2013):

Smartphones as pocketable labs: Visions for mobile brain imaging and neurofeedback.

In: *International Journal of Psychophysiology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-33925-001%26site%3dehost-live.

Abstract:

Mobile brain imaging solutions, such as the Smartphone Brain Scanner, which combines low cost wireless EEG sensors with open source software for real-time neuroimaging, may transform neuroscience experimental paradigms. Normally subject to the physical constraints in labs, neuroscience experimental paradigms can be transformed into dynamic environments allowing for the capturing of brain signals in everyday contexts. Using smartphones or tablets to access text or images may enable experimental design capable of tracing emotional responses when shopping or consuming media, incorporating sensorimotor responses reflecting our actions into brain machine interfaces, and facilitating neurofeedback training over extended periods.

Even though the quality of consumer neuroheadsets is still lower than laboratory equipment and susceptible to environmental noise, we show that mobile neuroimaging solutions, like the Smartphone Brain Scanner, complemented by 3D reconstruction or source separation techniques may support a range of neuroimaging applications and thus become a valuable addition to high-end neuroimaging solutions. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Stopczynski, Arkadiusz; Stahlhut, Carsten; Larsen, Jakob Eg; Petersen, Michael Kai; Hansen, Lars Kai (2014):

The smartphone brain scanner: a portable real-time neuroimaging system.

In: *PLoS One* 9 (2), S. e86733. DOI: 10.1371/journal.pone.0086733.

Abstract:

Combining low-cost wireless EEG sensors with smartphones offers novel opportunities for mobile brain imaging in an everyday context. Here we present the technical details and validation of a framework for building multi-platform, portable EEG applications with real-time 3D source reconstruction. The system - Smartphone Brain Scanner - combines an off-the-shelf neuroheadset or EEG cap with a smartphone or tablet, and as such represents the first fully portable system for real-time 3D EEG imaging. We discuss the benefits and challenges, including technical limitations as well as details of real-time reconstruction of 3D images of brain activity. We present examples of brain activity captured in a simple experiment involving imagined finger tapping, which shows that the acquired signal in a relevant brain region is similar to that obtained with standard EEG lab equipment. Although the quality of the signal in a mobile solution using an off-the-shelf consumer neuroheadset is lower than the signal obtained using high-density standard EEG equipment, we propose mobile application development may offset the disadvantages and provide completely new opportunities for neuroimaging in natural settings.

Straker, L.; Campbell, A.; Mathiassen, S.; Abbott, R. A.; Parry, S.; Davey, P. (2013):

Capturing the Pattern of Physical Activity and Sedentary Behavior: Exposure Variation Analysis of Accelerometer Data.

In: *J Phys.Act.Health* (1543-3080 (Linking)). Online verfügbar unter PM:23416959.

Abstract:

BACKGROUND: Capturing the complex time pattern of physical activity and sedentary behavior using accelerometry remains a challenge. Research from occupational health suggests Exposure Variation Analysis (EVA) could provide a meaningful tool. This paper 1) explains the application of EVA to accelerometer data, 2) demonstrates how EVA thresholds and derivatives could be chosen and used to examine adherence to physical activity and sedentary behaviour guidelines, and 3) explores the validity of EVA outputs. METHODS: EVA outputs are compared with accelerometer data from 4 individuals (study 1a and1b) and 3 occupational groups (study 2): seated workstation office workers (n=8), standing workstation office workers (n=8) and teachers (n=8). RESULTS: Line graphs and related EVA graphs highlight the use of EVA derivatives for examining compliance with guidelines. EVA derivatives of occupational groups confirm no difference in bouts of activity but clear differences as expected in extended bouts of sedentary behavior and brief bursts of activity, thus providing evidence of construct validity. CONCLUSIONS: EVA offers a unique and comprehensive generic method that is able, for the first time, to capture the time pattern (both frequency and intensity) of physical activity and sedentary behavior, which can be tailored for both occupational and public health research

Stroe-Kunold, Esther; Wesche, Daniela; Friederich, Hans Christoph; Herzog, Wolfgang; Zastrow, Arne; Wild, Beate (2012):

Temporal relationships of emotional avoidance in a patient with anorexia nervosa--A time series analysis.

In: *International Journal of Psychiatry in Medicine* 44 (1), S. 53–62. DOI: 10.1037/t02598-000;

Abstract:

Objective: Anorexia nervosa (AN) is a serious eating disorder marked by self-induced underweight. In patients with AN, the avoidance of emotions appears to be a central feature that is reinforced during the acute state of the disorder. This single case study investigated the role of emotional avoidance of a 25-year-old patient with AN during her inpatient treatment. Method: Throughout the course of 96 days, the patient answered questions daily about her emotional avoidance, pro-anorectic beliefs, perfectionism, and further variables on an electronic diary. The patient's daily self-assessment of emotional avoidance was described in terms of mean value, range, and variability for the various treatment phases. Temporal relationships between

emotional avoidance and further variables were determined using a time series approach (vector autoregressive (VAR) modelling). Results: Diary data reflect that the patient's ability to tolerate unpleasant emotions appeared to undergo a process of change during inpatient treatment. Results of the time series analysis indicate that the more the patient was able to deal with negative emotions on any one day (t–1), the less she would be socially avoidant, cognitively confined to food and eating, as well as feeling less secure with her AN, and less depressive on the following day (t). Conclusions: The findings show that for this patient emotional avoidance plays a central role in the interacting system of various psychosocial variables. Replication of these results in other patients with AN would support the recommendation to focus more on emotional regulation in the treatment of AN. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Stucky, Erin R.; Dresselhaus, Timothy R.; Dollarhide, Adrian; Shively, Martha; Maynard, Gregory; Jain, Sonia et al. (2009):

Intern to attending: assessing stress among physicians.

In: *Academic medicine : journal of the Association of American Medical Colleges* 84 (2), S. 251–257. DOI: 10.1097/ACM.0b013e3181938aad.

Abstract:

PURPOSE\r\nOrganizations have raised concerns regarding stress in the medical work environment and effects on health care worker performance. This study's objective was to assess workplace stress among interns, residents, and attending physicians using Ecological Momentary Assessment technology, the gold-standard method for real-time measurement of psychological characteristics.\r\nMETHOD\r\nThe authors deployed handheld computers with customized software to 185 physicians on the medicine and pediatric wards of four major teaching hospitals. The physicians contemporaneously recorded multiple dimensions of physician work (e.g., type of call day), emotional stress (e.g., worry, stress, fatigue), and perceived workload (e.g., patient volume). The authors performed descriptive statistics and t test and linear regression analyses.\r\nRESULTS\r\nParticipants completed 5,673 prompts during an 18-month period from 2004 to 2005. Parameters associated with higher emotional stress in linear regression models included male gender (t = -2.5, P = .01), total patient load (t = 4.2, P < .001), and sleep quality (t = -2.8, P = .006). Stress levels reported by attendings (t = -3.3, P = .001) were lower than levels reported by residents (t = -2.6, P = .009), and emotional stress levels of attendings and residents were both lower compared with interns.\r\nCONCLUSIONS\r\nOn inpatient wards, after recent resident duty hours changes, physician trainees continue to show wide-ranging evidence of workplace stress and poor sleep quality. This is among the first studies of medical workplace stress in real time. These results can help residency programs target education in stress and sleep and readdress workload distribution by training level. Further research is needed to clarify behavioral factors underlying variability in housestaff stress responses.

Stut, Wim; Deighan, Carolyn; Armitage, Wendy; Clark, Michelle; Cleland, John G.; Jaarsma, Tiny (2014):

Design and Usage of the HeartCycle Education and Coaching Program for Patients With Heart Failure.

In: *JMIR Res Protoc* 3 (4), S. e72. DOI: 10.2196/resprot.3411.

Abstract:

BACKGROUND: Heart failure (HF) is common, and it is associated with high rates of hospital readmission and mortality. It is generally assumed that appropriate self-care can improve outcomes in patients with HF, but patient adherence to many self-care behaviors is poor. OBJECTIVE: The objective of our study was to develop and test an intervention to increase self-care in patients with HF using a novel, online, automated education and coaching program. METHODS: The online automated program was developed using a well-established, face-to-face, home-based cardiac rehabilitation approach. Education is tailored to the behaviors and knowledge of the individual patient, and the system supports patients in adopting self-care behaviors. Patients are guided through a goal-setting process that they conduct at their own pace through the support of the system, and they record their progress in an electronic diary such that the system can provide appropriate feedback. Only in challenging situations do HF nurses intervene to offer help. The program was evaluated in the HeartCycle study, a multicenter, observational trial with randomized components in which researchers investigated the ability of a third-generation telehealth system to enhance the management of patients with HF who had a recent (<60 days) admission to the hospital for symptoms or signs of HF (either new onset or recurrent) or were outpatients with persistent New York Heart Association (NYHA) functional class III/IV symptoms despite treatment with diuretic agents. The patients were enrolled from January 2012 through February 2013 at 3 hospital sites within the United Kingdom, Germany, and Spain. RESULTS: Of 123 patients enrolled (mean age 66 years (SD 12), 66% NYHA III, 79% men), 50 patients (41%) reported that they were not physically active, 56 patients (46%) did not follow a low-salt diet, 6 patients (5%) did not restrict their fluid intake, and 6 patients (5%) did not take their medication as prescribed. About 80% of the patients who started the coaching program for physical activity and low-salt diet became adherent by achieving their personal goals for 2 consecutive weeks. After becoming adherent, 61% continued physical activity coaching, but only 36% continued low-salt diet coaching. CONCLUSIONS: The HeartCycle education and coaching program helped most nonadherent patients with HF to adopt recommended self-care behaviors. Automated coaching worked well for most patients who started

the coaching program, and many patients who achieved their goals continued to use the program. For many patients who did not engage in the automated coaching program, their choice was appropriate rather than a failure of the program.

Su, Steven W.; Celler, Branko G.; Savkin, Andrey V.; Nguyen, Hung T.; Cheng, Teddy M.; Guo, Ying; Wang, Lu (2009):

Transient and steady state estimation of human oxygen uptake based on noninvasive portable sensor measurements.

In: *Medical & biological engineering & computing* 47 (10), S. 1111–1117. DOI: 10.1007/s11517-009-0534-0.

Abstract:

The main motivation of this study is to establish an ambulatory cardio-respiratory analysis system for the monitoring and evaluation of exercise and regular daily physical activity. We explored the estimation of oxygen uptake by using noninvasive portable sensors. These sensors are easy to use but may suffer from malfunctions under free living environments. A promising solution is to combine sensors with different measuring mechanisms to improve both reliability and accuracy of the estimation results. For this purpose, we selected a wireless heart rate sensor and a tri-axial accelerometer to form a complementary sensor platform. We analyzed the relationship between oxygen uptake measured by gas analysis and data collected from the simple portable sensors using multivariable nonlinear modeling approaches. It was observed that the resulting nonlinear multivariable model could not only achieve a better estimate compared with single input single output models, but also had greater potential to improve reliability.

Subhi, Yousif; Todsen, Tobias; Ringsted, Charlotte; Konge, Lars (2014):

Designing web-apps for smartphones can be easy as making slideshow presentations.

In: *BMC Res Notes* 7, S. 94. DOI: 10.1186/1756-0500-7-94.

Abstract:

BACKGROUND: Limited clinician involvement in smartphone application development poses problems considering the extensive use of smartphones among medical professionals and patients. FINDINGS: We present a simple method for the clinician to develop simple web-apps using only an Internet browser and a text editor. CONCLUSIONS: This method may help clinicians develop simple web-apps and increase clinician involvement in smartphone content.

Sugden, Jacqui A.; Sniehotta, Falko F.; Donnan, Peter T.; Boyle, Paul; Johnston, Derek W.; McMurdo, Marion E. T. (2008):

The feasibility of using pedometers and brief advice to increase activity in sedentary older women–a pilot study.

In: *BMC Health Services Research* 8 (1), S. 169.

Abstract:

People over the age of 70 carry the greatest burden of chronic disease, disability and health care use. Participation in physical activity is crucial for health, and walking accounts for much of the physical activity undertaken by sedentary individuals. Pedometers are a useful motivational tool to encourage increased walking and they are cheap and easy to use. The aim of this pilot study was to evaluate the feasibility of the use of pedometers plus a theory-based intervention to assist sedentary older women to accumulate increasing amounts of physical activity, mainly through walking.

METHODS:

Female participants over the age of 70 were recruited from primary care and randomised to receive either pedometer plus a theory-based intervention or a theory-based intervention alone. The theory-based intervention consisted of motivational techniques, goal-setting, barrier identification and self-monitoring with pedometers and daily diaries. The pedometer group were further randomised to one of three target groups: a 10%, 15% or 20% monthly increase in step count to assess the achievability and acceptability of a range of targets. The primary outcome was change in daily activity levels measured by accelerometry. Secondary outcome measures were lower limb function, health related quality of life, anxiety and depression.

RESULTS:

54 participants were recruited into the study, with an average age of 76. There were 9 drop outs, 45 completing the study. All participants in the pedometer group found the pedometers easy to use and there was good compliance with diary keeping (96%

in the pedometer group and 83% in the theory-based intervention alone group). There was a strong correlation (0.78) between accelerometry and pedometer step counts i.e. indicating that walking was the main physical activity amongst participants. There was a greater increase in activity (accelerometry) amongst those in the 20% target pedometer group compared to the other groups, although not reaching statistical significance (p = 0.192).

CONCLUSION:

We have demonstrated that it is feasible to use pedometers and provide theory-based advice to community dwelling sedentary older women to increase physical activity levels and a larger study is planned to investigate this further.

Sugiyama, Takemi; Okely, Anthony D.; Masters, Jane M.; Moore, Gary T. (2012):

Attributes of child care centers and outdoor play areas associated with preschoolers' physical activity and sedentary behavior.

In: *Environment and Behavior* 44 (3), S. 334–349. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-10511-002&site=ehost-live;t.sugiyama@uq.edu.au.

Abstract:

This study examined characteristics of child care centers associated with preschoolers' moderate-to-vigorous physical activity and sedentary behavior while in child care (MVPA-C, SB-C), and attributes of outdoor play areas associated with the same behaviors during outdoor time (MVPA-O, SB-O). Participants were 89 children (3 -5 years) recruited from 10 child care centers in Brisbane, Australia. Children's activity was measured by accelerometer over a 3-day period. Center characteristics and outdoor play area attributes were identified through survey and observation. We found that children were mostly sedentary while in child care. Lower child-staff ratios and using indoor play areas for motor activity were associated with more MVPA-C and less SB-C. Fixed play equipment in outdoor areas was conducive to more MVPA-O and less SB-O. This study suggests the possibility of enhancing preschoolers' activity levels through changing these attributes. Further research with more centers from diverse settings is needed to test these findings. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Sullivan, Tami P.; Khondkaryan, Enna; Dos Santos, Nancy P.; Peters, Erica N. (2011):

Applying experience sampling methods to partner violence research: Safety and feasibility in a 90-day study of community women.

In: *Violence against women* 17 (2), S. 251–266.

Abstract:

An experience sampling method (ESM) rarely has been applied in studies of intimate partner violence (IPV) despite the benefits to be gained. Because ESM approaches and women who experience IPV present unique challenges for data collection, an empirical question exists: Is it safe and feasible to apply ESM to community women who currently are experiencing IPV? A 90-day, design-driven feasibility study examined daily telephone data collection, daily paper diaries, and monthly retrospective semistructured interview methods among a community sample of 123 women currently experiencing IPV to study within-person relationships between IPV and substance use. Findings suggest that ESM is a promising method for collecting data among this population and can elucidate daily dynamics of victimization as well as associated behaviors and experiences. Lessons learned from the application of ESM to this population are also discussed.

Summerville, Amy; Roese, Neal J. (2008):

Dare to compare: Fact-based versus simulation-based comparison in daily life.

In: *Journal of Experimental Social Psychology* 44 (3), S. 664–671.

Abstract:

We examined the relative frequency of social, counterfactual, past-temporal, and future-temporal comparison in daily life using an experience-sampling method, in which participants were randomly prompted to record thought samples using palmtop computers carried for two weeks. Comparative thought accounted for 12% of all thoughts, and all four comparison types occurred with equivalent frequency. Comparisons may be either fact-based (i.e., based on actuality, as in social and past-temporal comparison) or simulation-based (i.e., based on imagination, as in counterfactual and future-temporal comparison).

Because the latter are more "unbounded," and because greater perceived opportunity invites greater self-improvement, we predicted and found that counterfactual and future-temporal comparison were more likely to be upward (vs. downward) than social and past-temporal comparison. All comparison types focused on approach more than avoidance motives, except for counterfactuals, which showed equivalent focus on both. These findings reveal the prominence of comparative thought in daily life, and underscore the value an integrative theory that describes social, counterfactual, or temporal comparison using a common theoretical platform.

Sumukadas, Deepa; Laidlaw, Simon; Witham, Miles D. (2008):

Using the RT3 accelerometer to measure everyday activity in functionally impaired older people.

In: *Aging clinical and experimental research* 20 (1), S. 15–18.

Abstract:

BACKGROUND AND AIMS:

Triaxial accelerometry may provide a simple measure of physical activity in older people, but the effect of different walking aids and accelerometer placements on measurement is not known. This study aimed to examine the effect of accelerometer placement, use of walking aids, and different types of physical activity on Stay- Healthy RT3 triaxial accelerometer readings in older people.

METHODS:

Twenty subjects aged over 65 years and five younger volunteers were recruited from Medicine for the Elderly services. Subjects performed six minutes each of standardized standing activity, sitting activity, sitting at rest, walking, and stair climbing. Counts generated from RT3 accelerometers worn anteriorly over both hips were recorded in subjects using different walking aids during these standardized activities.

RESULTS:

There were significant differences between counts generated by the left and right hip positions. The intraclass correlation coefficient of RT3 counts between left and right hip positions was 0.48, 0.39 and 0.99 for sedentary tasks (standing, sitting and rest), stair and walking tasks respectively. Counts ranged between 250-3000 min-1 during the walking task. Counts were proportional to the distance walked. Resting, sitting or standing all generated counts below 250 min-1, but there was no clear demarcation between these activities. The use of different walking aids did not affect the counts generated for any activity.

CONCLUSIONS:

Walking can be distinguished from other activities by upper and lower cutoffs. The RT3 accelerometer should be used on the same side of the body. Different walking aids do not appear to affect RT3 counts in older people.

Sund, Z. M.; Powell, T.; Greenwood, R.; Jarad, N. A. (2009):

Remote daily real-time monitoring in patients with COPD --a feasibility study using a novel device.

In: *Respiratory medicine* 103 (9), S. 1320–1328. DOI: 10.1016/j.rmed.2009.03.017.

Abstract:

New technologies have allowed remote real-time electronic recording of symptoms and spirometry. The feasibility of utilising this technology in COPD patients has not been investigated. This is a feasibility study. The primary objective is to determine whether the use of an electronic diary with a portable spirometer can be performed by COPD patients with a moderate to severe disease. Secondary objectives are to investigate the value of this method in early detection of acute exacerbations of COPD (AECOPD). In this 6-month study, 18 patients recorded daily their symptom score and spirometry. Data was sent on real time. AECOPD which was defined according to pre-set criteria were noted. Spirometry values and scores for health-related quality of life were compared between the start and the end of the study. Hospitalisation rate due to AECOPD was compared with a parallel period in the previous year. On average, patients were able to record 77% of their total study days. The system detected 73% of AECOPD. In further 27% of AECOPD patients sought treatment although the change in symptoms did not meet AECOPD definition. The number of COPD-related hospitalisations significantly reduced compared to the previous year. There was a significant increase in FEV(1) and FVC from the start to the end of the study. The remote monitoring device used in this study can be used in COPD patients. AECOPD was detected early in the majority of cases. Hospitalisation rate due to AECOPD was reduced and FEV(1) and FVC values increased during the study.

Sunner, L. E.; Walls, C.; Blood, E. A.; Mehta, C. M.; Shrier, L. A. (2012):

Feasibility and Utility of Momentary Sampling of Sex Events in Young Couples.

In: *J Sex Res* (0022-4499 (Linking)). DOI: 10.1080/00224499.2012.674574.

Abstract:

Research on couples' sexual behaviors is limited because most studies collect data from only one person, rely on retrospective recall, and lack ecological validity. This study explored the feasibility of using momentary sampling (MS) methods to collect sex event data from both members of heterosexual young adult couples. Over two weeks, 40 participants (20 couples) were asked to use a handheld computer to respond to random auditory signals each day and self-initiate a report as soon as possible after sex. Couples were randomized into two groups: (a) both partners reported after sex events, or (b) one partner reported after sex events during Week 1 and the other during Week 2 (randomized by gender). Descriptive statistics examined protocol compliance, partner agreement on whether an event occurred, condom use, and reason for sex, as well as partner involvement in reporting, comfort with reporting after sex, and study burden. Results indicated that couples were willing and able to adhere to the protocol. Partners agreed on condom use for nearly all sex events, but frequently reported different reasons for sex events. The use of MS methods to collect information about sex events within couples is a promising approach to the study of sexual behavior

Suto, Shin; Hiraoka, Takahiro; Okamoto, Yoshifumi; Okamoto, Fumiki; Oshika, Tetsuro (2014):

Photography of anterior eye segment and fundus with smartphone.

In: *Nihon Ganka Gakkai Zasshi* 118 (1), S. 7–14.

Abstract:

PURPOSE: To evaluate the safety and efficacy of anterior segment and fundus photography with a smartphone (iPhone 4S). METHOD: Safety was evaluated by comparing the luminance of the light emitting diode (LED) of the iPhone 4S and of a binocular indirect ophthalmoscope. Efficacy was assessed by recording the ocular findings in patients. The anterior segment was photographed in 30 patients using a macro lens and a handy slit lamp as a light source, and the retinal image was captured in 60 patients using a fundus lens. RESULT: The luminance of the iPhone LED was approximately 700,000 cd/m2, apparently lower than that of the ophthalmoscope, approximately 1,400,000 cd/m2. Clear images of the anterior segment were captured in all cases, and the fundus was clearly photographed in 58 of 60 cases. It was possible to watch the display and evaluate the real time images with other practitioners. CONCLUSION: We could successfully record and share the images of the anterior segment and fundus recorded with a smartphone. The current method is useful for diagnosis, treatment, and education in ophthalmology.

Suveg, Cynthia; Payne, Mary; Thomassin, Kristel; Jacob, Marni L. (2010):

Electronic diaries: A feasible method of assessing emotional experiences in youth?

In: *Journal of Psychopathology and Behavioral Assessment* 32 (1), S. 57–67.

Abstract:

The primary goal of this study was to examine whether electronic diaries are a feasible method of monitoring transitory emotional states with a school-age, community sample of youth. A second goal was to examine preliminary relations between indices of emotional functioning captured via electronic diaries and other measures of child emotional and psychological functioning. Participants included 38 youth between the ages of 7 and 12 (51% males, M age = 9 [1.52] years and 49% females, M age = 9 [1.94] years) and their mothers (M age = 39 years) and fathers (M age = 42 years). Children were prompted to indicate the intensity of their current emotion four times a day for 1 week using Palm Tungsten E2s. Youth also completed self-report measures of emotion intensity, awareness, and dysregulation. Parents completed measures of child emotion regulation and symptoms of externalizing and internalizing psychopathology. Sixty percent of the prompts were answered as intended. Higher levels of positive emotion intensity based on electronic diary ratings were negatively related to parent reports of adaptive emotion regulation and were positively related to youths' reports of emotion dysregulation and poor emotion awareness. Given that the electronic diary data offered unique information on youth emotional functioning, strategies to increase compliance with the diaries are suggested.

Swartz, Sarah J.; Srivaths, Poyyapakkam R.; Croix, Beth; Feig, Daniel I. (2008):

Cost-effectiveness of ambulatory blood pressure monitoring in the initial evaluation of hypertension in children.

In: *Pediatrics* 122 (6), S. 1177–1181. DOI: 10.1542/peds.2007-3432.

Abstract:

OBJECTIVE\r\nThe goal was to determine the cost-effectiveness of ambulatory blood pressure monitoring in the initial evaluation of stage 1 hypertension.\r\nMETHODS\r\nRetrospective chart review of data for children referred to Texas Children's Hospital hypertension clinic between January 2005 and August 2006 was performed. We compared the costs of standard evaluations versus the initial use of ambulatory blood pressure monitoring for children with clinic blood pressure measurements suggesting stage 1 hypertension. Charges for clinic visits, laboratory tests, and imaging were obtained from the Texas Children's Hospital billing department.\r\nRESULTS\r\nA total of 267 children were referred. One hundred thirty-nine children did not receive ambulatory blood pressure monitoring; 54 met clinical indications for ambulatory blood pressure monitoring but did not receive it because it was not a covered expense (44 children) or the family refused the study (10 children). One hundred twenty-six children received clinically indicated ambulatory blood pressure monitoring, paid for either through insurance or by the family. Fifty-eight children (46%) had confirmed white-coat hypertension, 62 (49%) stage 1 hypertension, and 6 (5%) stage 2 hypertension. With the observed prevalence of white-coat hypertension, initial ambulatory blood pressure monitoring use yielded net savings after evaluation of 3 patients, with projected savings of $2.4 million per 1000 patients.\r\nCONCLUSIONS\r\nAmbulatory blood pressure monitoring in the initial evaluation of suspected childhood hypertension is highly cost-effective. Awareness of cost saving potential may increase the availability of ambulatory blood pressure monitoring for evaluation of new-onset hypertension.

Swendeman, Dallas; Comulada, W. Scott; Ramanathan, Nithya; Lazar, Maya; Estrin, Deborah (2014):

Reliability and validity of daily self-monitoring by smartphone application for health-related quality-of-life, antiretroviral adherence, substance use, and sexual behaviors among people living with hiv.

In: *AIDS and Behavior*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-44594-001%26site%3dehost-live.

Abstract:

This paper examines inter-method reliability and validity of daily self-reports by smartphone application compared to 14-day recall web-surveys repeated over 6 weeks with people living with HIV (PLH). A participatory sensing framework guided participant-centered design prioritizing external validity of methods for potential applications in both research and self-management interventions. Inter-method reliability correlations were consistent with prior research for physical and mental health quality-of-life (r = 0.26–0.61), antiretroviral adherence (r = 0.70–0.73), and substance use (r = 0.65–0.92) but not for detailed sexual encounter surveys (r = 0.15–0.61). Concordant and discordant pairwise comparisons show potential trends in reporting biases, for example, lower recall reports of unprotected sex or alcohol use, and rounding up errors for frequent events. Event-based reporting likely compensated for modest response rates to daily time-based prompts, particularly for sexual and drug use behaviors that may not occur daily. Recommendations are discussed for future continuous assessment designs and analyses. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Swendsen, Joel; Ben-Zeev, Dror; Granholm, Eric (2011):

Real-time electronic ambulatory monitoring of substance use and symptom expression in schizophrenia.

In: *American Journal of Psychiatry* 168 (2), S. 202–209.

Abstract:

Objective:

Despite evidence demonstrating elevated comorbidity between schizophrenia and substance use disorders, the underlying mechanisms of association remain poorly understood. The brief time intervals that characterize interactions between substance use and psychotic symptoms in daily life are inaccessible to standard research protocols. The authors used electronic personal

digital assistants (PDAs) to examine the temporal association of diverse forms of substance use with psychotic symptoms and psychological states in natural contexts.

Method:

Of 199 community-dwelling individuals with schizophrenia or schizoaffective disorder who were contacted to participate in the study, 92% accepted and 73% completed the study. The 145 participants who completed the study provided reports of substance use, psychotic symptoms, mood, and event negativity multiple times per day over 7 consecutive days through PDAs.

Results:

Participants responded to 72% of the electronic interviews (N=2,737) across daily life contexts. Strong within-day prospective associations were observed in both directions between substance use and negative psychological states or psychotic symptoms, but considerable variation was observed by substance type. Consistent with the notion of self-medication, alcohol use was most likely to follow increases in anxious mood or psychotic symptoms. Cannabis and other illicit substances, demonstrating more complex patterns, were more likely to follow certain psychological states but were also associated with the later onset of psychotic symptoms.

Conclusions:

The dynamic interplay of substance use and psychotic symptoms is in many cases consistent with both causal and self-medication mechanisms, and these patterns of association should be considered in the design of treatment and prevention strategies.

Swinnen, Thijs Willem; Scheers, Tineke; Lefevre, Johan; Dankaerts, Wim; Westhovens, Rene; Vlam, Kurt (2014):

Physical activity assessment in patients with axial spondyloarthritis compared to healthy controls: a technology-based approach.

In: *PLoS One* 9 (2), S. e85309. DOI: 10.1371/journal.pone.0085309.

Abstract:

INTRODUCTION: Traditionally, assessment in axial Spondyloarthritis (aSpA) includes the evaluation of the capacity to execute tasks, conceptualized as physical function. The role of physical activity, defined as movement-related energy expenditure, is largely unknown and almost exclusively studied using patient-reported outcome measures. The aims of this observational cross-sectional study are to compare physical activity between patients with aSpA and healthy controls (HC) and to evaluate the contribution of disease activity to physical activity differences between groups. METHODS: Forty patients with aSpA were matched by age, gender, period of data acquisition in terms of days and season to 40 HC. Physical activity was measured during five consecutive days (three weekdays and two weekend days) using ambulatory monitoring (SenseWear Armband). Self-reported disease activity was measured by the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI). Differences in physical activity between patients with aSpA and HC were examined with Wilcoxon signed-rank tests and a mixed linear model. Difference scores between patients and HC were correlated with disease activity. RESULTS: Average weekly physical activity level (Med(IQR); HC:1.54(1.41-1.73); aSpA:1.45(1.31-1.67),MET) and energy expenditure (HC:36.40(33.43-41.01); aSpA:34.55(31.08-39.41),MET.hrs/day) were significantly lower in patients with aSpA. Analyses across intensity levels revealed no significant differences between groups for inactivity and time spent at light or moderate physical activities. In contrast, weekly averages of vigorous (HC:4.02(1.20-12.60); aSpA:0.00(0.00-1.20),min/d), very vigorous physical activities (HC0.00(0.00-1.08); aSpA:0.00(0.00-0.00),mind/d) and moderate/(very)vigorous combined (HC2.41(1.62-3.48); aSpA:1.63(1.20-2.82),hrs/d) were significantly lower in patients with aSpA. Disease activity did not interact with differences in physical activity between patients with aSpA and HC, evidenced by non-significant and very low correlations (range: -0.06-0.17) between BASDAI and HC-aSpA patients' difference scores. CONCLUSIONS: Patients with aSpA exhibit lower physical activity compared to HC and these differences are independent of self-reported disease activity. Further research on PA in patients with aSpA should be prioritized.

Syed, Faiz I.; Oza, Ashish L.; Vanderby, Ray; Heiderscheit, Bryan; Anderson, Paul A. (2007):

A method to measure cervical spine motion over extended periods of time.

In: *Spine* 32 (19), S. 2092–2098.

Abstract:

Objective. To develop and validate a motion sensor system for measuring cervical spine motion over extended time periods.

Summary of Background Data. Many studies using different methodologies have tried to estimate cervical spine motion. These have mostly been carried out in a laboratory setting performing active/passive range of motion or activities of daily living. However, cervical spine performance over extended periods of time in natural environments remains unknown.

Methods. A novel motion sensor system, Wisconsin Analysis of Spine Motion Performance (WASP), was validated using 2 benchmarks: a materials testing machine (MTS) and optical motion tracking laboratory. Parameters tested included drift, frequency response, accuracy, effect of sensor orientation, and coupled motions. Applied motions from the MTS and measured motions in subject volunteers under various conditions were compared with WASP using correlation coefficients. Intersubject and intrasubject variability analyses for WASP were also performed.

Results. The average WASP slopes for accuracy (compared with MTS) in flexion-extension, lateral bending, and axial rotation were 0.89, 0.93, and 0.38, respectively. The correlation coefficient was 0.99 in all cases. Compared with optical motion tracking, the WASP regression slopes were 1.1, 1.02, and 0.4 and the correlation coefficients were 0.98, 0.92, and 0.93 in the 3 axes of motion. Coupled motion was noted during all subject motions. WASP peak detection algorithm had a 0% error discounting boundary conditions.

Conclusion. WASP was accurate in flexion-extension and lateral bending. In axial rotation, WASP was less accurate. However, the system was highly reliable with low intersubject and intrasubject variability. WASP can be used in estimating cervical spine motion with high reliability while keeping in mind the decreased accuracy in measuring axial rotation.

T Prill and J Fahrenberg (2006):

Simultaneous assessment of posture and limb movements (e.g., periodic leg movements) with calibrated multiple accelerometry.

In: *Physiol Meas* 27 (10), S. N47. Online verfügbar unter http://stacks.iop.org/0967-3334/27/i=10/a=N02.

Abstract:

This study describes new applications for the method of calibrated multiple accelerometry , which detects posture and distinct motion patterns, and limb movements continuously. The aim of our study was to evaluate this assessment technique in terms of its suitability for exploring the relationships between pathological limb movement activity (e.g., periodic leg movements) and posture. The new method proved to be appropriate for the simultaneous assessment of pathological leg jerks and posture and provided a means to revealing possible relations. Generally, our study demonstrates the application of this (ambulatory) assessment technique in the field of sleep and neurological disorders.

Tabak, M.; Vollenbroek-Hutten, M. M.; van der Valk, P. D.; van der Palen, J.; Tonis, T. M.; Hermens, H. J. (2012):

Telemonitoring of Daily Activity and Symptom Behavior in Patients with COPD.

In: *Int.J Telemed.Appl.* 2012 (1687-6415 (Linking)), S. 438736. DOI: 10.1155/2012/438736.

Abstract:

Objectives. This study investigated the activity behavior of patients with COPD in detail compared to asymptomatic controls, and the relationship between subjective and objective activities (awareness), and readiness to change activity behavior. Methods. Thirty-nine patients with COPD (66.0 years; FEV(1)% predicted: 44.9%) and 21 healthy controls (57.0 years) participated. Objective daily activity was assessed by accelerometry and expressed as amount of activity in counts per minute (cpm). Patients' baseline subjective activity and stage of change were assessed prior to measurements. Results. Mean daily activity in COPD patients was significantly lower compared to the healthy controls (864 +/- 277 cpm versus 1162 +/- 282 cpm, $P < 0.001$). COPD patients showed a temporary decrease in objective activities in the early afternoon. Objective and subjective activities were significantly moderately related and most patients (55.3%) were in the maintenance phase of the stages of change. Conclusions. COPD patients show a distinctive activity decrease in the early afternoon. COPD patients are moderately aware of their daily activity but regard themselves as physically active. Therefore, future telemedicine interventions might consider creating awareness of an active lifestyle and provide feedback that aims to increase and balance activity levels

Tabak, M.; Vollenbroek-Hutten, M. M.; van der Valk, P. D.; van der Palen, J.; Hermens, H. J. (2013):

A telerehabilitation intervention for patients with Chronic Obstructive Pulmonary Disease: a randomized controlled pilot trial.

In: *Clin.Rehabil.* (0269-2155 (Linking)). DOI: 10.1177/0269215513512495.

Abstract:

Objective:First, to investigate the effects of a telerehabilitation intervention on health status and activity level of patients with Chronic Obstructive Pulmonary Disease (COPD), compared to usual care. Second, to investigate how patients comply with the intervention and whether compliance is related to treatment outcomes.Design:a randomized controlled pilot trialSubjects:Thirty-four patients diagnosed with COPD.Intervention:The telerehabilitation application consists of an activity coach (3D-accelerometer with smartphone) for ambulant activity registration and real-time feedback, complemented by a web portal with a symptom diary for self-treatment of exacerbations. The intervention group used the application for 4 weeks. The control group received usual care.Main measures:Activity level measured by a pedometer (in steps/day), health status by the Clinical COPD Questionnaire at baseline and after intervention. Compliance was expressed as the time the activity coach was worn.Results:Fourteen intervention and 16 control patients completed the study. Activity level (steps/day) was not significantly affected by the intervention over time. There was a non-significant difference in improvement in health status between the intervention (-0.34+/-0.55) and control group (0.02+/-0.57, p=0.10). Health status significantly improved within the intervention group (p=0.05). The activity coach was used more than prescribed (108%) and compliance was related to the increase in activity level for the first two feedback weeks (r=0.62, p=0.03).Conclusions:This pilot study shows the potential of the telerehabilitation intervention: compliance with the activity coach was high, which directly related to an improvement in activity levels

Taber, Daniel R.; Stevens, June; Murray, David M.; Elder, John P.; Webber, Larry S.; Jobe, Jared B.; Lytle, Leslie A. (2009):

The effect of a physical activity intervention on bias in self-reported activity.

In: *Annals of epidemiology* 19 (5), S. 316–322. DOI: 10.1016/j.annepidem.2009.01.001.

Abstract:

PURPOSE\r\nA positive outcome in self-reported behavior could be detected erroneously if an intervention caused over-reporting of the targeted behavior. Data collected from a multi-site randomized trial were examined to determine if adolescent girls who received a physical activity intervention over-reported their activity more than girls who received no intervention.\r\nMETHODS\r\nActivity was measured using accelerometers and self-reports (3-Day Physical Activity Recall, 3DPAR) in cross-sectional samples preintervention (6th grade, n = 1,464) and post-intervention (8th grade, n = 3,114). Log-transformed accelerometer minutes were regressed on 3DPAR blocks, treatment group, and their interaction, while adjusting for race, body mass index, and timing of data collection.\r\nRESULTS\r\nPreintervention, the association between measures did not differ between groups, but post-intervention 3DPAR blocks were associated with fewer log-accelerometer minutes of moderate-vigorous physical activity (MVPA) in intervention girls than in control girls (p = 0.002). The group difference was primarily in the upper 15% of the 3DPAR distribution, where control girls had >1.7 more accelerometer minutes of MVPA than intervention girls who reported identical activity levels. Group differences in this subsample were 8.5%-16.2% of the mean activity levels; the intervention was powered to detect a difference of 10%.\r\nCONCLUSION\r\nSelf-report measures should be interpreted with caution when used to evaluate a physical activity intervention.

Takano, Keisuke; Sakamoto, Shinji; Tanno, Yoshihiko (2014):

Repetitive thought impairs sleep quality: an experience sampling study.

In: *Behav Ther* 45 (1), S. 67–82. DOI: 10.1016/j.beth.2013.09.004.

Abstract:

Although previous research has suggested that presleep negative cognitive activities are associated with poor sleep quality, there is little evidence regarding the association between negative thoughts and sleep in real-life settings. The present study used experience sampling and long-term sleep monitoring with actigraphy to investigate the relationships among negative repetitive thought, mood, and sleep problems. During a 1-week sampling period, 43 undergraduate students recorded their thought content and mood eight times a day at semirandom intervals. In addition to these subjective reports, participants wore actigraphs on their wrists in order to measure sleep parameters. Analyses using multilevel modeling showed that repetitive thought in the evening was significantly associated with longer sleep-onset latency, decreased sleep efficiency, and reduced total sleep time. Furthermore, impaired sleep quality was significantly associated with reduced positive affect the next morning, and decreased positive affect was indirectly associated with increased repetitive thought in the evening. These findings suggest

the existence of a self-reinforcing cycle involving repetitive thought, mood, and impaired sleep quality, highlighting the importance of cognitive and emotional factors in enhancement and maintenance of good-quality sleep.

Takano, Keisuke; Tanno, Yoshihiko (2010):

Concreteness of thinking and self-focus.

In: *Consciousness and cognition* 19 (1), S. 419–425. DOI: 10.1016/j.concog.2009.11.010.

Abstract:

The present study used the experience sampling method to detect fluctuations in thinking, such as self-focus or concreteness in daily life, and to examine their relationship with depressive symptoms and concurrent negative affect. Thirty-one undergraduates recorded their negative affect, ruminative self-focus, and concreteness of thinking eight times a day for 1 week. Multilevel modeling showed that individuals with increasing levels of depression showed lower levels of concreteness in their daily thinking. Further analysis revealed a significant positive association between momentary ruminative self-focus and concurrent negative affect only with low concreteness of thinking. These results suggested that individuals with increasing levels of depression chronically process self-related information on an abstract level, which reflects a malfunction of their self-regulatory cycle and might serve to maintain or even exacerbate dysphoric moods.

Takano, Keisuke; Ueno, Mayumi; Tanno, Yoshihiko (2014):

Self-focused thinking predicts nighttime physiological de-arousal.

In: *Biol Psychol* 97, S. 9–14. DOI: 10.1016/j.biopsycho.2014.01.001.

Abstract:

Excessive focus on the internal self has maladaptive consequences for mental and physical health. Although the emotional functions of self-focus have been well established, no study has examined physiological arousal during the daily experience of self-focused thinking. The present study investigates the association between self-focus and autonomic activity using the experience sampling method with ambulatory monitoring of heart rate variability (HRV). Forty-five students reported the content of their thoughts during their daily activities while their heart rate (HR) was being recorded. Multilevel modeling analyses showed that HRV was lower (and HR was higher) over the sampling day if participants engaged in more self-focus, while HRV increased (and HR decreased) from midday to nighttime if participants did not engage in self-focused thinking. These results suggest that self-focus at night is associated with increased physiological arousal, and leads to inhibition of de-arousal associated with normal sleep processes. Implications for insomnia are discussed.

Takeda, Ryo; Tadano, Shigeru; Natorigawa, Akiko; Todoh, Masahiro; Yoshinari, Satoshi (2009):

Gait posture estimation using wearable acceleration and gyro sensors.

In: *Journal of biomechanics* 42 (15), S. 2486–2494. DOI: 10.1016/j.jbiomech.2009.07.016.

Abstract:

A method for gait analysis using wearable acceleration sensors and gyro sensors is proposed in this work. The volunteers wore sensor units that included a tri-axis acceleration sensor and three single axis gyro sensors. The angular velocity data measured by the gyro sensors were used to estimate the translational acceleration in the gait analysis. The translational acceleration was then subtracted from the acceleration sensor measurements to obtain the gravitational acceleration, giving the orientation of the lower limb segments. Segment orientation along with body measurements were used to obtain the positions of hip, knee, and ankle joints to create stick figure models of the volunteers. This method can measure the three-dimensional positions of joint centers of the hip, knee, and ankle during movement. Experiments were carried out on the normal gait of three healthy volunteers. As a result, the flexion-extension (F-E) and the adduction-abduction (A-A) joint angles of the hips and the flexion-extension (F-E) joint angles of the knees were calculated and compared with a camera motion capture system. The correlation coefficients were above 0.88 for the hip F-E, higher than 0.72 for the hip A-A, better than 0.92 for the knee F-E. A moving stick figure model of each volunteer was created to visually confirm the walking posture. Further, the knee and ankle joint trajectories in the horizontal plane showed that the left and right legs were bilaterally symmetric.

Tan, P. Z.; Forbes, E. E.; Dahl, R. E.; Ryan, N. D.; Siegle, G. J.; Ladouceur, C. D.; Silk, J. S. (2011):

Emotional reactivity and regulation in anxious and nonanxious youth: a cell-phone ecological momentary assessment study.

In: *J Child Psychol Psychiatry* (0021-9630 (Linking)). DOI: 10.1111/j.1469-7610.2011.02469.x.

Abstract:

Background: Reviews have highlighted anxious youths' affective disturbances, specifically, elevated negative emotions and reliance on ineffective emotion regulation strategies. However, no study has examined anxious youth's emotional reactivity and regulation in real-world contexts. Methods: This study utilized an ecological momentary assessment approach to compare real-world emotional experiences of 65 youth with generalized anxiety disorder, social anxiety disorder, or social phobia (ANX) and 65 age-matched healthy controls (CON), ages 9-13 years. Results: Hierarchical linear models revealed that ANX reported higher levels of average past-hour peak intensity of nervous, sad and upset emotions than CON youth but similar levels during momentary reports of current emotion. As expected, ANX youth reported more frequent physiological reactions in response to a negative event; however, there were no group differences in how frequently they used cognitive-behavioral strategies. Avoidance, distraction and problem solving were associated with the down-regulation of all negative emotions except nervousness for both ANX and CON youth; however, group differences emerged for acceptance, rumination and physiological responding. Conclusions: In real-world contexts, ANX youth do not report higher levels of momentary negative emotions but do report heightened negative emotions in response to challenging events. Moreover, ANX youth report no differences in how frequently they use adaptive regulatory strategies but are more likely to have physiological responses to challenging events. They are also less effective at using some strategies to down-regulate negative emotion than CON youth

Tan, Patricia Z.; Forbes, Erika E.; Dahl, Ronald E.; Ryan, Neal D.; Siegle, Greg J.; Ladouceur, Cecile D.; Silk, Jennifer S. (2012):

Emotional reactivity and regulation in anxious and nonanxious youth: A cell-phone ecological momentary assessment study.

In: *J Child Psychol Psychiatry* 53 (2), S. 197–206. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-01555-013&site=ehost-live;tanpz@upmc.edu.

Abstract:

Background: Reviews have highlighted anxious youths' affective disturbances, specifically, elevated negative emotions and reliance on ineffective emotion regulation strategies. However, no study has examined anxious youth's emotional reactivity and regulation in real-world contexts. Methods: This study utilized an ecological momentary assessment approach to compare real-world emotional experiences of 65 youth with generalized anxiety disorder, social anxiety disorder, or social phobia (ANX) and 65 age-matched healthy controls (CON), ages 9–13 years. Results: Hierarchical linear models revealed that ANX reported higher levels of average past-hour peak intensity of nervous, sad and upset emotions than CON youth but similar levels during momentary reports of current emotion. As expected, ANX youth reported more frequent physiological reactions in response to a negative event; however, there were no group differences in how frequently they used cognitive–behavioral strategies. Avoidance, distraction and problem solving were associated with the down-regulation of all negative emotions except nervousness for both ANX and CON youth; however, group differences emerged for acceptance, rumination and physiological responding. Conclusions: In real-world contexts, ANX youth do not report higher levels of momentary negative emotions but do report heightened negative emotions in response to challenging events. Moreover, ANX youth report no differences in how frequently they use adaptive regulatory strategies but are more likely to have physiological responses to challenging events. They are also less effective at using some strategies to down-regulate negative emotion than CON youth. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Tanaka, Chiaki; Tanaka, Shigeho (2009):

Daily physical activity in Japanese preschool children evaluated by triaxial accelerometry: the relationship between period of engagement in moderate-to-vigorous physical activity and daily step counts.

In: *Journal of physiological anthropology* 28 (6), S. 283–288.

Abstract:

The purpose of the present study was to evaluate moderate-to-vigorous physical activity using triaxial accelerometry in Japanese preschool children. The relationship between daily step counts as a convenient measure of physical activity and minutes of

engagement in moderate-to-vigorous physical activity was also examined. Physical activity was assessed using a triaxial accelerometer (ActivTracer, GMS) and daily steps using a uniaxial accelerometer for 6 consecutive days, including weekdays and weekend days, in 157 four- to six-year-old Japanese children attending kindergarten or nursery school. Using triaxial and uniaxial accelerometers, nonlocomotive activities and step counts for young children can be evaluated, respectively. Average daily moderate-to-vigorous physical activity (physical activity ratio >or=3) and step counts were 102 (+/-32) min/day and 13,037 (+/-2,846) steps/day, respectively. A strong and significant correlation was observed between minutes of moderate-to-vigorous physical activity and step counts (r=0.832, p<0.001). The daily step counts corresponding to 60 min, 100 min, and 120 min of moderate-to-vigorous physical activity were 9,934, 12,893, and 14,373 steps/day, respectively. The correlation coefficient between minutes of higher intensity activities (physical activity ratio >or=4) and step counts was slightly lower (r=0.604, p<0.001). The daily step count corresponding to 30 min of the higher intensity activities was 14,768 steps/day. These results suggest that approximately 13,000 steps/day are required for preschool children to engage in more than 100 min of moderate-to-vigorous physical activity.

Tanantong, T.; Nantajeewarawat, E.; Thiemjarus, S. (2014):

Toward continuous ambulatory monitoring using a wearable and wireless ECG-recording system: a study on the effects of signal quality on arrhythmia detection.

In: *Biomed.Mater.Eng* 24 (1), S. 391–404. DOI: 10.3233/BME-130823.

Abstract:

Five well-known arrhythmia classification algorithms were compared in this paper based on the recommendations in AAMI standard. They are C4.5, k-Nearest Neighbor, Multilayer Perceptron, PART, and Support Vector Machine, respectively, with inputs related to heartbeat intervals and ECG morphological features. They were evaluated on three independent datasets, including the MIT-BIH arrhythmia database, a collection of ECG signals acquired from healthy subjects by the wireless Body Sensor Network (BSN) nodes, and a third dataset captured also by the BSN nodes. Results showed the overall accuracy on the MIT-BIH arrhythmia database was approximately 99.04%, with high sensitivity, specificity, and selectivity. When tested with ECG signals acquired from the human subjects, which were partially deteriorated due to several factors, e.g., motion artifacts and data transmission problems, the overall accuracy of 94.19% and that of 81.22% were obtained for static activities and dynamic activities, respectively. In addition, the effects of the signal quality from these human subjects on false alarms were investigated. When false alarms occurring in signal segments with low quality were excluded, the number of false detections reduced from 14.17% to 8.65%. When evaluated on signals generated by the patient simulator, which included several types of premature ventricular contraction without artifacts from body movements, a high classification accuracy was also observed

Tang, Jason; Abraham, Charles; Greaves, Colin; Yates, Tom (2014):

Self-directed interventions to promote weight loss: a systematic review of reviews.

In: *J Med Internet Res* 16 (2), S. e58. DOI: 10.2196/jmir.2857.

Abstract:

BACKGROUND: A wide range of self-directed weight-loss interventions are available, providing users with a variety of tools delivered through various formats to regulate weight-related behavior patterns. However, it is unclear how effective self-directed interventions are and how they promote weight loss and weight maintenance. OBJECTIVE: A systematic review of reviews was conducted to examine the effectiveness of such interventions and to identify intervention content associated with effectiveness. METHODS: MEDLINE, Embase, PsycINFO, CINAHL, and the Cochrane Library for systematic reviews were searched from 2000-2012 for reviews of the effectiveness of self-directed interventions on weight loss and weight maintenance in adults. Two reviewers used predefined inclusion criteria to select relevant reviews and assess their quality using the Overview Quality Assessment Questionnaire (OQAQ). We extracted data on effectiveness and on relationships between intervention characteristics and effectiveness. RESULTS: Twenty reviews were included and quality assessed. Findings relevant to self-directed interventions, including interactive websites, smartphone applications, and text messaging (short message service, SMS) were summarized. Findings were mixed but promising. For example, one review of Internet-based interventions found that, when used in conjunction with standard weight loss programs, these interventions resulted in a significant average increase in weight loss of 1.5 kg over evaluation periods. Unfortunately, only 7 of 20 reviews were of high methodological quality according to OQAQ scores, and only 4 employed meta-analyses. Few reviews linked intervention content to effectiveness. CONCLUSIONS: Current evidence suggests that self-directed interventions can independently promote weight loss and can augment interventions involving personal contact. Particular change techniques and delivery modes including individualized feedback, email counseling, and online social support appear to enhance effectiveness. Further reviews of the content of self-directed weight-loss intervention studies are needed to clarify which change techniques delivered through which delivery formats optimize intervention effectiveness.

Tang, Nicole K. Y.; Goodchild, Claire E.; Sanborn, Adam N.; Howard, Jonathan; Salkovskis, Paul M. (2012):

Deciphering the temporal link between pain and sleep in a heterogeneous chronic pain patient sample: A multilevel daily process study.

In: *Sleep: Journal of Sleep and Sleep Disorders Research* 35 (5), S. 657–687. DOI: 10.1037/t14108-000;

Abstract:

Objectives: Because insomnia is a common comorbidity of chronic pain, scientific and clinical interest in the relationship of pain and sleep has surged in recent years. Although experimental studies suggest a sleep-interfering property of pain and a pain-enhancing effect of sleep deprivation/ fragmentation, the temporal association between pain and sleep as experienced by patients is less understood. The current study was conducted to examine the influence of presleep pain on subsequent sleep and sleep on pain reports the next day, taking into consideration other related psychophysiologic variables such as mood and arousal. Design: A daily process study, involving participants to monitor their pain, sleep, mood, and presleep arousal for 1 wk. Multilevel modeling was used to analyze the data. Setting: In the patients' natural living and sleeping environment. Patients: One hundred nineteen patients (73.9% female, mean age = 46 years) with chronic pain and concomitant insomnia. Measurement: An electronic diary was used to record patients' self-reported sleep quality/efficiency and ratings of pain, mood, and arousal at different times of the day; actigraphy was also used to provide estimates of sleep efficiency. Results: Results indicated that presleep pain was not a reliable predictor of subsequent sleep. Instead, sleep was better predicted by presleep cognitive arousal. Although sleep quality was a consistent predictor of pain the next day, the pain-relieving effect of sleep was only evident during the first half of the day. Conclusions: These findings challenge the often-assumed reciprocal relationship between pain and sleep and call for a diversification in thinking of the daily interaction of these 2 processes. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Tang, Nicole K. Y.; Sanborn, Adam N. (2014):

Better quality sleep promotes daytime physical activity in patients with chronic pain? A multilevel analysis of the within-person relationship.

In: *PLoS One* 9 (3), S. e92158. DOI: 10.1371/journal.pone.0092158.

Abstract:

BACKGROUND: Promoting physical activity is key to the management of chronic pain, but little is understood about the factors facilitating an individual's engagement in physical activity on a day-to-day basis. This study examined the within-person effect of sleep on next day physical activity in patients with chronic pain and insomnia. METHODS: 119 chronic pain patients monitored their sleep and physical activity for a week in their usual sleeping and living environment. Physical activity was measured using actigraphy to provide a mean activity score each hour. Sleep was estimated with actigraphy and an electronic diary, providing an objective and subjective index of sleep efficiency (A-SE, SE) and a sleep quality rating (SQ). The individual and relative roles of these sleep parameters, as well as morning ratings of pain and mood, in predicting subsequent physical activity were examined in multilevel models that took into account variations in relationships at the 'Day' and 'Participant' levels. RESULTS: Of the 5 plausible predictors SQ was the only significant within-person predictor of subsequent physical activity, such that nights of higher sleep quality were followed by days of more physical activity, from noon to 11pm. The temporal association was not explained by potential confounders such as morning pain, mood or effects of the circadian rhythm. CONCLUSIONS: In the absence of interventions, chronic pain patients spontaneously engaged in more physical activity following a better night of sleep. Improving nighttime sleep may well be a novel avenue for promoting daytime physical activity in patients with chronic pain.

Taraldsen, Kristin; Chastin, Sebastien F. M.; Riphagen, Ingrid I.; Vereijken, Beatrix; Helbostad, Jorunn L. (2012):

Physical activity monitoring by use of accelerometer-based body-worn sensors in older adults: A systematic literature review of current knowledge and applications.

In: *Maturitas* 71 (1), S. 13–19. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-00510-005&site=ehost-live;Kristin.Taraldsen@ntnu.no.

Abstract:

Objectives: To systematically review the literature on physical activity variables derived from body-worn sensors during long term monitoring in healthy and in-care older adults. Methods: Using pre-designed inclusion and exclusion criteria, a PubMed search strategy was designed to trace relevant reports of studies. Last search date was March 8, 2011. Study selection: Studies

that included persons with mean or median age of >65 years, used accelerometer-based body-worn sensors with a monitoring length of >24 h, and reported values on physical activity in the samples assessed. Results: 1403 abstracts were revealed and 134 full-text papers included in the final review. A variety of variables derived from activity counts or recognition of performed activities were reported in healthy older adults as well as in in-care older adults. Three variables were possible to compare across studies, level of Energy Expenditure in kcal per day and activity recognition in terms of total time in walking and total activity. However, physical activity measured by these variables demonstrated large variation between studies and did not distinguish activity between healthy and in-care samples. Conclusion: There is a rich variety in methods used for data collection and analysis as well as in reported variables. Different aspects of physical activity can be described, but the variety makes it challenging to compare across studies. There is an urgent need for developing consensus on activity monitoring protocols and which variables to report. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Tasca, Giorgio A.; Illing, Vanessa; Balfour, Louise; Krysanski, Valerie; Demidenko, Natasha; Nowakowski, Joanna; Bissada, Hany (2009):

Psychometric properties of self-monitoring of eating disorder urges among treatment seeking women: ecological momentary assessment using a daily diary method.

In: *Eat Behav* 10 (1), S. 59–61. DOI: 10.1016/j.eatbeh.2008.10.004.

Abstract:

OBJECTIVES\r\nThe psychometric properties of an ecological momentary assessment (EMA) method used to evaluate eating disorder (ED) urges were examined.\r\nMETHODS\r\nParticipants, 139 women who sought treatment for an ED, completed a daily diary measuring ED urges after each meal for a three week period at the start of treatment, and a measure of ED attitudes and behaviors pre- and post-treatment.\r\nRESULTS\r\nThe construct validity of this method was indicated by a two factor solution representing binge eating urges and ED compensatory behavior urges, and by significant differences between ED diagnostic groups on ED urge type. Correlations of ED urges early in therapy with outcomes provided evidence for predictive validity. Correlations at pre-treatment between ED urges and ED attitudes and behaviors supported criterion validity. EMA of ED urges showed good retest stability.\r\nCONCLUSIONS\r\nEMA of ED urges is a valid and reliable approach that is associated with ED symptom severity, and predictive of treatment outcome.

Taub, E.; Uswatte, G.; Bowman, M. H.; Mark, V. W.; Delgado, A.; Bryson, C. et al. (2012):

Constraint-Induced Therapy Combined with Conventional Neurorehabilitation Techniques in Chronic Stroke Patients with Plegic Hands: A Case Series.

In: *Arch.Phys.Med.Rehabil.* (0003-9993 (Linking)). DOI: 10.1016/j.apmr.2012.07.029.

Abstract:

OBJECTIVE: To determine in this pilot study whether the combination of CI therapy and conventional rehabilitation techniques can produce meaningful motor improvement in chronic stroke patients with initially fisted hands. In the past, limited success has been achieved using CI therapy alone for stroke patients with plegic hands. DESIGN: Case series SETTING: University hospital outpatient laboratory PARTICIPANTS: Consecutive sample of 6 patients > 1 yr post-stroke with plegic hands INTERVENTIONS: Treatment consisted of an initial period of 3 weeks (Phase A) when adaptive equipment in the home, orthotics and splints were employed to improve ability to engage in activities of daily living. This was continued in Phase B, when CI therapy along with selected neurodevelopmental treatment techniques were added. MAIN OUTCOME MEASURES: Motor Activity Log (MAL), accelerometry, Fugl-Meyer Motor Assessment (F-M) RESULTS: Patients exhibited a large improvement in spontaneous real-world use of the more-affected arm (mean lower-functioning MAL change = 1.3+/-0.4 points, P <0.001, d' = 3.0), and a similar pattern of increase in an objective measure of real-world more-affected arm movement (mean change in ratio of more- to less-affected arm accelerometer recordings = 0.12+/-0.1 points, P = 0.016 d' = 1.2). A large improvement in motor status was also recorded (mean F-M change = 5.3+/-3.3 points, P = 0.005, d' = 1.6). CONCLUSIONS: The findings of this pilot study suggest that stroke patients with plegic hands can benefit from CI therapy combined with some conventional rehabilitation techniques, even long after brain injury. More research is warranted

Tay, Louis; Chan, David; Diener, Ed (2014):

The metrics of societal happiness.

In: *Social Indicators Research* 117 (2), S. 577–600. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-20235-001%26site%3dehost-live.

Abstract:

Growing interest in the measurement of subjective well-being (SWB) has also been accompanied by scientific debate on the optimal method for measuring SWB. The momentary perspective, which is represented by the ecological momentary assessment (EMA) and day reconstruction method (DRM), emphasizes the momentary experiences and aims to measure SWB in an objective manner via the aggregation of happiness levels over time and activities. The global reporting perspective emphasizes the subjective evaluation of life experiences and aims to capture the overall evaluation using retrospection or global evaluations. We discuss the strengths and weaknesses of these different perspectives and methods by examining conceptual, methodological, and practical issues. We propose adopting a multi-method assessment approach to SWB that uses both perspectives and the corresponding methods in a theory-driven and complementary manner. For the purposes of measuring and tracking SWB of societies, we also call for more research on the reliability and validity of EMA and DRM. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Taylor, Lynne M.; Klenk, Jochen; Maney, Alistair J.; Kerse, Ngaire; MacDonald, Bruce M.; Maddison, Ralph (2014):

Validation of a Body-Worn Accelerometer to Measure Activity Patterns in Octogenarians.

In: *Arch Phys Med Rehabil. DOI:* 10.1016/j.apmr.2014.01.013.

Abstract:

OBJECTIVE: To determine the validity of a triaxial body-worn accelerometer for detection of gait and postures in people aged >80 years. DESIGN: Participants performed a range of activities (sitting, lying, walking, standing) in both a controlled and a home setting while wearing the accelerometer. Activities in the controlled setting were performed in a scripted sequence. Activities in the home setting were performed in an unscripted manner. Analyzed accelerometer data were compared against video observation as the reference measure. SETTING: Independent-living and long-term-care retirement village. PARTICIPANTS: Older people (N=22; mean age +/- SD, 88.1+/-5y) residing in long-term-care and independent-living retirement facilities. INTERVENTIONS: Not applicable. MAIN OUTCOME MEASURES: The level of agreement between video observation and the accelerometer for the total duration of each activity, and second-by-second correspondence between video observation and the accelerometer for each activity. RESULTS: The median absolute percentage errors between video observation and the accelerometer were <1% for locomotion and lying. The absolute percentage errors were higher for sitting (median, -22.3%; interquartile range [IQR], -62.8% to 10.7%) and standing (median, 24.7%; IQR, -7.3% to 39.6%). A second-by-second analysis between video observation and the accelerometer found an overall agreement of >/=85% for all activities except standing (median, 56.1%; IQR, 34.8%-81.2%). CONCLUSIONS: This single-device accelerometer provides a valid measure of lying and locomotion in people aged >80 years. There is an error of approximately 25% when discriminating sitting from standing postures, which needs to be taken into account when monitoring longer-term habitual activity in this age group.

Taylor, Rachael W.; Murdoch, Linda; Carter, Philippa; Gerrard, David F.; Williams, Sheila M.; Taylor, Barry J. (2009):

Longitudinal study of physical activity and inactivity in preschoolers: the FLAME study.

In: *Med Sci Sports Exerc* 41 (1), S. 96–102. DOI: 10.1249/MSS.0b013e3181849d81.

Abstract:

PURPOSE\r\nTo investigate patterns of activity and inactivity in a birth cohort of children followed from 3 to 5 yr and to investigate whether changes in activity occurred over time.\r\nMETHODS\r\nTwo hundred and forty-four children (44% female) were seen annually at 3, 4, and 5 yr. Physical activity and inactivity was measured by questionnaire (parent-proxy) and by Actical accelerometers for five consecutive days (24-h monitoring) each year in children and once in each parent for 7 d (69% with data).\r\nRESULTS\r\nRetention of participants was high (92%). Viable accelerometry data were obtained for 76-85% of children at each age. Reliability estimates ranged from 0.80 (3 yr) to 0.84 (5 yr). Day of the week, season, sex, hours of childcare, or birth order did not affect daily average accelerometry counts (AAC) at any age. Parental activity correlated weakly with the child's activity at 3 and 4 yr (r values = 0.17-0.28), but only the father's activity remained a significant predictor of the child's activity after adjustment for confounders. Children spent approximately 90 min.d in screen time (television, videos, DVD, and computers) with an additional 90 min in other sedentary activities (reading, drawing, and music). Physical activity was significantly reduced at 4 and 5 yr compared with 3 yr in both sexes, whether measured as AAC (24-h data, awake time only, weekend days, weekdays),

time in moderate or vigorous activity, or from parental reports of activity.\r\nCONCLUSION\r\nLevels of physical activity declined in boys and girls between the ages 3 and 4-5 yr, whether using objective measures or parental reports of activity.

Te Lindert, Bart H. W.; van Someren, Eus J. W. (2013):

Sleep estimates using microelectromechanical systems (MEMS).

In: *Sleep: Journal of Sleep and Sleep Disorders Research* 36 (5), S. 781–789. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-15433-021%26site%3dehost-live;b.te.lindert@nin.knaw.nl.

Abstract:

Study Objectives: Although currently more affordable than polysomnography, actigraphic sleep estimates have disadvantages. Brand-specific differences in data reduction impede pooling of data in large-scale cohorts and may not fully exploit movement information. Sleep estimate reliability might improve by advanced analyses of three-axial, linear accelerometry data sampled at a high rate, which is now feasible using microelectromechanical systems (MEMS). However, it might take some time before these analyses become available. To provide ongoing studies with backward compatibility while already switching from actigraphy to MEMS accelerometry, we designed and validated a method to transform accelerometry data into the traditional actigraphic movement counts, thus allowing for the use of validated algorithms to estimate sleep parameters. Design: Simultaneous actigraphy and MEMS-accelerometry recording. Setting: Home, unrestrained. Participants: Fifteen healthy adults (23-36 y, 10 males, 5 females). Interventions: None. Measurements: Actigraphic movement counts/15-sec and 50-Hz digitized MEMS-accelerometry. Analyses: Passing-Bablok regression optimized transformation of MEMS-accelerometry signals to movement counts. Kappa statistics calculated agreement between individual epochs scored as wake or sleep. Bland-Altman plots evaluated reliability of common sleep variables both between and within actigraphs and MEMS-accelerometers. Results: Agreement between epochs was almost perfect at the low, medium, and high threshold (kappa = 0.87 -&#65533; 0.05, 0.85 -&#65533; 0.06, and 0.83 -&#65533; 0.07). Sleep parameter agreement was better between two MEMS-accelerometers or a MEMS-accelerometer and an actigraph than between two actigraphs. Conclusions: The algorithm allows for continuity of outcome parameters in ongoing actigraphy studies that consider switching to MEMS-accelerometers. Its implementation makes backward compatibility feasible, while collecting raw data that, in time, could provide better sleep estimates and promote cross-study data pooling. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Teacher, Amber G. F.; Griffiths, David J.; Hodgson, David J.; Inger, Richard (2013):

Smartphones in ecology and evolution: a guide for the app-rehensive.

In: *Ecol Evol* 3 (16), S. 5268–5278. DOI: 10.1002/ece3.888.

Abstract:

Smartphones and their apps (application software) are now used by millions of people worldwide and represent a powerful combination of sensors, information transfer, and computing power that deserves better exploitation by ecological and evolutionary researchers. We outline the development process for research apps, provide contrasting case studies for two new research apps, and scan the research horizon to suggest how apps can contribute to the rapid collection, interpretation, and dissemination of data in ecology and evolutionary biology. We emphasize that the usefulness of an app relies heavily on the development process, recommend that app developers are engaged with the process at the earliest possible stage, and commend efforts to create open-source software scaffolds on which customized apps can be built by nonexperts. We conclude that smartphones and their apps could replace many traditional handheld sensors, calculators, and data storage devices in ecological and evolutionary research. We identify their potential use in the high-throughput collection, analysis, and storage of complex ecological information.

Telford, C.; McCarthy-Jones, S.; Corcoran, R.; Rowse, G. (2012):

Experience sampling methodology studies of depression: The state of the art.

In: *Psychological Medicine* 42 (6), S. 1119–1129. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-11782-001&site=ehost-live;s.mccarthyjones@gmail.com.

Abstract:

Background: Experience Sampling Methodology (ESM) is ideally suited to test the predictions, and inform the development of contemporary cognitive models of depression. Yet there has been no systematic examination of ESM in depression research. Method: A search of databases (PsychARTICLES, PsycINFO, AMED, Ovid Medline and CINAHL) was conducted to identify studies published within the last 25 years investigating major depressive disorder (MDD) using ESM. Results: Altogether, 19 studies using ESM, or comparable methodologies, with clinically depressed individuals were identified and critically reviewed. The identified studies examined six aspects of MDD: methodological issues ; positive and negative affect ; cortisol secretion ; antidepressant treatment ; work performance; genetic risk factors. Conclusions: Despite some methodological limitations of existing studies, ESM has made a significant contribution to our current understanding of depression by consolidating existing theories, uncovering new and clinically relevant findings and identifying questions for future research. This review concludes by introducing the possibility of using ESM as an intervention tool in clinical practice and proposing that ESM could be useful for furthering knowledge of the causes of MDD. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Temple, Viviene A.; Stanish, Heidi I. (2009):

Pedometer-measured physical activity of adults with intellectual disability: predicting weekly step counts.

In: *Am J Intellect Dev Disabil* 114 (1), S. 15–22. DOI: 10.1352/2009.114:15-22.

Abstract:

Pedometers are objective, inexpensive, valid, and reliable measures of physical activity. The minimum number of days of pedometer monitoring needed to estimate average weekly step counts was investigated. Seven days of pedometer data were collected from 154 ambulatory men and women (ns = 88 and 66, respectively) with intellectual disability. Correlations between average weekly steps and 3-day combinations ranged from .80 to .94, and adjusted R(2) for 3 days of monitoring was .886. Results suggest that 3 days of pedometer wear is sufficient to predict average weekly steps among ambulatory adults with intellectual disability. This finding will allow researchers to reduce participant burden and study costs, may guide measurement procedures, and inform missing data protocols.

Tenderenda-Banasiuk, Edyta; Wasilewska, Anna; Filonowicz, Renata; Jakubowska, Urszula; Waszkiewicz-Stojda, Marlena (2014):

Serum copeptin levels in adolescents with primary hypertension.

In: *Pediatr Nephrol* 29 (3), S. 423–429. DOI: 10.1007/s00467-013-2683-5.

Abstract:

BACKGROUND: The prevalence of hypertension continues to rise in the pediatric population. In recent years, there has been an increasing amount of reports on serum arginine vasopressin and its derivative, copeptin, in blood pressure control, but its role is still unclear. The objective of this study was to assess serum copeptin in adolescents with essential hypertension. METHODS: The study cohort consisted of 84 subjects (30 girls and 54 boys) aged 11-18 years, divided into two groups: hypertension (HT) - 53 subjects with confirmed primary hypertension and R - reference group - 31 subjects in whom hypertension was excluded on the basis of ambulatory blood pressure monitoring (ABPM) (white-coat hypertension). Serum copeptin concentration was measured using a commercially available enzyme-linked immunosorbent assay kit (USCN). RESULTS: Hypertensive patients had higher serum copeptin levels (median, 267 [Q1-Q3: 151.1-499.7 pg/ml]) than controls (median, 107.3 [Q1-Q3: 36.7-203.4 pg/ml]), ($p < 0.01$). Statistically significant difference was found both in males and females. In both groups, positive correlations between serum copeptin and uric acid levels ($r = 0.31$, $p < 0.01$), albuminuria ($r = 0.45$, $p < 0.01$), serum triglycerides ($r = 0.3$, $p < 0.05$), body mass index (BMI) standard deviation score (SDS) ($r = 0.24$, $p < 0.05$) and 24-h systolic blood pressure (SBP) ($r = 0.37$, $p < 0.01$) and diastolic blood pressure (DBP) ($r = 0.23$, $p < 0.05$) were found. CONCLUSIONS: In summary, higher serum copeptin levels, a surrogate for arginine vasopressin (AVP) release, are associated not only with systolic and diastolic blood pressure but also with several components of metabolic syndrome including obesity, elevated concentration of triglycerides, albuminuria, and serum uric acid level. However, for the time being, more research is needed in order to confirm the role of serum copeptin as a novel marker of elevated blood pressure and predictor of metabolic syndrome.

Tennen, Howard; Affleck, Glenn; Zautra, Alex (2006):

Depression history and coping with chronic pain: a daily process analysis.

In: *Health Psychol* 25 (3), S. 370–379. DOI: 10.1037/0278-6133.25.3.370.

Abstract:

This study examined how a previous episode of depression is related to daily pain and reactions to pain among individuals with fibromyalgia, a chronic pain syndrome. Seventy-one women with fibromyalgia (including 30 who were previously depressed) rated their pain and mood 3 times daily for 30 days. Each night, participants rated the extent to which they responded to pain by catastrophizing, how much control they had over that day's pain, their ways of coping with pain that day, and the effectiveness of their coping efforts. Multivariate multilevel regression models revealed that after controlling for neuroticism and current depressive symptoms, formerly depressed and never-depressed individuals differed in how they coped with increased pain and in how they appraised the efficacy of their coping efforts. Formerly depressed participants who also reported more current depressive symptoms showed a greater decline in pleasant mood on more painful days than did formerly depressed participants who were experiencing fewer current depressive symptoms. These findings illustrate how a history of depression can be captured in the dynamics of daily life.

Terracciano, Antonio; Strait, James; Scuteri, Angelo; Meirelles, Osorio; Sutin, Angelina R.; Tarasov, Kirill et al. (2014):

Personality Traits and Circadian Blood Pressure Patterns: A 7-Year Prospective Study.

In: *Psychosom Med. DOI:* 10.1097/PSY.0000000000000035.

Abstract:

ObjectiveA nighttime dip in blood pressure is associated with decreased risk of cardiovascular morbidity and mortality. We examined whether personality traits predict nighttime dipping blood pressure.MethodsA community-based sample of 2848 adults from Sardinia (Italy) completed the Revised NEO Personality Inventory and 7 years later were examined with 24-hour ambulatory blood pressure monitoring. The primary analyses examined the associations of personality traits with continuous and categorical measures of mean arterial, systolic, and diastolic blood pressure nighttime dipping.ResultsAgreeableness and conscientiousness were associated with more nocturnal blood pressure dipping (beta = .05 [p = .025] and beta = .07 [p < .001], respectively) and lower systolic blood pressure at night (beta = -.05 [p = .018] and beta = -.03 [p = .072], respectively). Nondippers were particularly more impulsive (p = .009), less trusting (p = .004), and less self-disciplined (p = .001), but there was no significant association between nocturnal dipping blood pressure and trait anxiety (p = .78) or depression (p = .59). The associations were stronger when comparing extreme dippers (nighttime drop >/=20%) to reverse dippers (nighttime increase in blood pressure). Indeed, scoring 1 standard deviation higher on conscientiousness was associated with approximately 40% reduced risk of reverse dipping (odds ratio = 1.43, confidence interval = 1.08-1.91).ConclusionsWe found evidence that reduced nighttime blood pressure dipping is associated with antagonism and impulsivity-related traits but not with measures of emotional vulnerability. The strongest associations were found with conscientiousness, a trait that may have a broad impact on cardiovascular health.

Thalenberg, José Marcos; Póvoa, Rui Manoel dos Santos; Bombig, Maria Teresa Nogueira; Sá, Gustavo André Costa de; Atallah, álvaro Nagib; Luna Filho, Bráulio (2008):

Teste de respiração lenta aumenta a suspeita da hipertensão do avental branco no consultório.

In: *Arq. Bras. Cardiol.* 91 (4), S. 267–273. DOI: 10.1590/S0066-782X2008001600010.

Abstract:

FUNDAMENTO: Seria útil dispor de um teste clínico que aumentasse a suspeita da hipertensão do avental branco (HAB) durante a consulta.

OBJETIVO: Avaliar o teste de respiração lenta (TRL) na diferenciação entre hipertensão e HAB.

MÉTODOS: Cento e um pacientes hipertensos selecionados em triagem tiveram a medicação suspensa por duas a três semanas. A pressão arterial (PA) foi medida antes e depois do TRL em duas visitas. O teste consistiu em respirar por 1 minuto na freqüência de um ciclo respiratório a cada 10 segundos. Dois critérios diagnósticos foram comparados: 1- queda da PA diastólica >10% em pelo menos uma consulta, ou 2- queda da PA para níveis normais (<140/90 mmHg) em pelo menos uma consulta. A MAPA foi realizada de forma cega às medidas clínicas.

RESULTADOS: Setenta e uma mulheres e 30 homens, idade média 51+10 anos, média pré e pós-teste de 152+17/ 99+11 e 140+18/ 91+11 mmHg. Nove pacientes tiveram medidas clínicas e ambulatoriais normais. De 92 pacientes, 28 (30%) foram classificados como HAB; 15 tiveram teste positivo para o critério 1, e 21 para o critério 2. Entre 64 (70%) hipertensos, 14 testaram positivo para o critério 1, e 12 para o critério 2. Sensibilidade e especificidade (95% IC): 0,54 (0,36-0,71) e 0,78 (0,67-0,87) critério 1; 0,75 (0,57-0,87) e 0,81 (0,70-0,89) critério 2.

CONCLUSÃO: O TRL mostrou aumento da suspeita clínica de HAB em duas consultas ao utilizar o critério de normalização da PA. Isso sugere que esse teste pode auxiliar na otimização dos pedidos de MAPA para casos suspeitos.

Palavras-chave: Hipertensão / diagnóstico, testes de função respiratória, monitorização ambulatorial da pressão arterial.

Thapa, Amit; Shrestha, Dibesh; Shrestha, Dipendra; Giri, Sandarva (2013):

Use of viber app: a fast, easy and cost effective method of communication in neurosurgery.

In: *Neurol India* 61 (6), S. 610–613. DOI: 10.4103/0028-3886.125260.

Abstract:

OBJECTIVE: Neurosurgeons often have to rely on judgments of junior staffs to decide on patients whom they cannot attend immediately. Viber is a free to use application for image transfer on Internet. We evaluated the use of viber in neurosurgical scenario, to show it is cheap, fast, accessible, reliable and feasible. MATERIALS AND METHODS: We conducted a prospective study from March 2013 to July 2013. Residents were taught to take sharp pictures and upload them immediately using viber on Internet. Primary endpoints were discordance between opinion of residents and consultants on viber images and subsequent actual image evaluation and time delay in decision-making. Discordance was considered significant if it changed management decision. RESULTS: During the study period, 120 (mean age: 42 years, 58% males) patients were enrolled. Wi-Fi is freely available in the institute and thus no costs were involved. Decision could be made on images received on viber at an average of 20 min. There was discordance in 56.7% cases between residents' reports and images on viber, which was significant in 88.2% cases. However in 5% cases decision changed after actual images were reviewed. Of all imaging modalities, computed tomography angiographic images were associated with statistically significant discordance (P <0.05). CONCLUSION: This study suggests that the use of viber app in neurosurgery can be an easy fast reliable and almost free mode of communicating images enabling a quick decision. However this cost-effective method should be used with caution particularly with imaging modalities, which require processing and review on console.

Theuns, Dominic A M J; Rivero-Ayerza, Maximo; Knops, Paul; Res, Jan C. J.; Jordaens, Luc (2009):

Analysis of 57,148 transmissions by remote monitoring of implantable cardioverter defibrillators.

In: *Pacing and clinical electrophysiology : PACE* 32 Suppl 1, S. S63-5. DOI: 10.1111/j.1540-8159.2008.02230.x.

Abstract:

INTRODUCTION\r\nRemote monitoring of implantable cardioverter defibrillators (ICD) is designed to decrease the number of ambulatory visits and facilitate the early detection of adverse events. We examined the impact of remote monitoring on clinical workload by a comprehensive analysis of transmitted events.\r\nMETHODS\r\nThe study population consisted of 146 recipients of ICD capable of remote monitoring. Data were transmitted daily or in case of pre-specified events (e.g., arrhythmia, out-of-range lead and/or shock impedance). Transmitted events were classified as clinical (disease-related) or system-related. Event rates/patient/month were calculated and compared according to events classification and clinical groups.\r\nRESULTS\r\nDuring a mean follow-up of 22 +/- 16 months, a total of 57,148 remote transmissions were recorded. Of these transmissions, 1009 (1.8%) were triggered by a pre-specified event, including induced ventricular fibrillation (VF) episodes during defibrillation threshold testing. The median number of events/patient/month was 0.14. Event rates were similar in patients with primary and secondary prevention indications for ICD (0.15 vs. 0.11). After exclusion of the induced VF episodes, 5.6% of transmitted events were classified as system-related and 94.4% as clinical. The median number of clinical events/patient/month was 0.023. The clinical event-free rates were 62% and 45%, at 1 and 4 years, respectively.\r\nCONCLUSION\r\nRemote monitoring of ICD patients is feasible. Despite the large number of data transmissions, remote monitoring imposed a minimal additional burden on the clinical workload. The rate of triggered data transmissions by critical events was, relatively, very low.

Thewissen, Viviane; Bentall, Richard P.; Oorschot, Margreet; A Campo, Joost; van Lierop, Thom; van Os, Jim; Myin-Germeys, Inez (2011):

Emotions, self-esteem, and paranoid episodes: an experience sampling study.

In: *British Journal of Clinical Psychology* 50 (2), S. 178–195. DOI: 10.1348/014466510X508677.

Abstract:

OBJECTIVES. The evidence to date for a causal role of emotions in the generation of paranoid symptoms is scarce, mainly because of a lack of studies investigating the longitudinal association between emotional processes and paranoia. The primary aim of this study was to investigate whether momentary emotional experiences (anxiety, depression, anger/irritability) and self-esteem predicted the onset and duration of a paranoid episode. We also studied whether levels of emotional experiences and self-esteem were respectively higher and lower during a paranoid episode. DESIGN. A 1-week, prospective momentary assessment study. METHODS. Data were collected using the experience sampling method, a structured self-assessment diary technique. The sample consisted of 158 individuals who ranged across the paranoia continuum. Participants with a psychotic disorder were recruited from in-patient and out-patient mental health services. Participants without psychotic disorder were sampled from the general population. RESULTS. Specific aspects of emotional experience were implicated in the onset and persistence of paranoid episodes. Both an increase in anxiety and a decrease in self-esteem predicted the onset of paranoid episodes. Cross-sectionally, paranoid episodes were associated with high levels of all negative emotions and low level of self-esteem. Initial intensity of paranoia and depression was associated with longer, and anger/irritability with shorter duration of paranoid episodes. CONCLUSIONS. Paranoid delusionality is driven by negative emotions and reductions in self-esteem, rather than serving an immediate defensive function against these emotions and low self-esteem. Clinicians need to be aware of the central role of emotion-related processes and especially self-esteem in paranoid thinking.

Thieden, Elisabeth (2008):

Sun exposure behaviour among subgroups of the Danish population.

In: *Danish medical bulletin* 55 (1), S. 47–68.

Abstract:

Solar ultraviolet radiation (UVR) is known to be an important etiological factor in the development of melanoma as well as non-melanoma cancer of the skin. Malignant melanoma of the skin, CMM, is supposed to be provoked by high intermittent UVR doses, while quamous cell cancer, SCC, is more connected with the cumulative UVR dose and basal cell cancer, BCC, is believed to be provoked by both exposure patterns (Elwood and Jopson 1997; Armstrong and Kricker, 2001). Different UVR exposure patterns seem therefore to provoke different skin cancer forms and call for different sun protection strategies. In spite of this, many people want to be able to enjoy the benefits of the sun, mentally, socially and with respect to D-vitamin synthesis. A better understanding of UVR exposure patterns and corresponding UVR doses can point at the most suitable approach a person can take to lower the UVR dose, and thereby reduce the risk of skin cancer. However, no one has previously conducted studies where individual UVR exposure doses have been established through actual measurements. Apart from the ambient UVR dose available, several parameters have been debated as to their influence on the UVR dose received by a person, such as age, sex, outdoor work, sunbathing, and long lasting outdoor leisure activities (Holman et al, 1983; Herlihy et al, 1994; Diffey et al, 1996). In addition, to actually cause skin damages and add to the cumulative UVR dose of a person, the UVR dose exposed to should be transmitted into the skin. Factors as dark complexion, acquired skin pigmentation, clothing, and sunscreen use can reduce the part of the UVR dose transmitted into the skin. Yet, no one has actually measured with which power these factors influence on the UVR dose received and transmitted into the skin of an individual. My primary task was therefore to conduct a prospective study among groups of healthy Danes to assess objectively, by personal, UVR dosimetry supported by sun exposure diaries, the annual UVR dose received by an individual an to estimate the lifetime UVR dose. In addition, to establish basic knowledge about how different UVR exposure behaviour patterns influence on the UVR exposure dose received. A model to assess individual skin cancer risk including the UVR exposure pattern could help doctors and health advisers in choosing the UVR precautions needed to avoid the development of skin cancer. However, although skin cancer risk assessment was the reason for performing these studies, it is not a subject of discussion in this thesis.

Thom, Nicole K.; Lewis, Gregory G.; Yeung, Kimy; Phillips, Scott T. (2014):

Quantitative Fluorescence Assays Using a Self-Powered Paper-Based Microfluidic Device and a Camera-Equipped Cellular Phone.

In: *RSC Adv* 4 (3), S. 1334–1340. DOI: 10.1039/C3RA44717K.

Abstract:

Fluorescence assays often require specialized equipment and, therefore, are not easily implemented in resource-limited environments. Herein we describe a point-of-care assay strategy in which fluorescence in the visible region is used as a readout, while a camera-equipped cellular phone is used to capture the fluorescent response and quantify the assay. The fluorescence assay is made possible using a paper-based microfluidic device that contains an internal fluidic battery, a surface-mount LED, a 2-mm section of a clear straw as a cuvette, and an appropriately-designed small molecule reagent that transforms from weakly fluorescent to highly fluorescent when exposed to a specific enzyme biomarker. The resulting visible fluorescence is digitized by

photographing the assay region using a camera-equipped cellular phone. The digital images are then quantified using image processing software to provide sensitive as well as quantitative results. In a model 30 min assay, the enzyme beta-D-galactosidase was measured quantitatively down to 700 pM levels. This Communication describes the design of these types of assays in paper-based microfluidic devices and characterizes the key parameters that affect the sensitivity and reproducibility of the technique.

Thomas, J. Graham; Bond, Dale S. (2014):

Review of innovations in digital health technology to promote weight control.

In: *Curr Diab Rep* 14 (5), S. 485. DOI: 10.1007/s11892-014-0485-1.

Abstract:

Advances in technology have contributed to the obesity epidemic and worsened health by reducing opportunities for physical activity and by the proliferation of inexpensive calorie-dense foods. However, much of the same technology can be used to counter these troublesome trends by fostering the development and maintenance of healthy eating and physical activity habits. In contrast to intensive face-to-face treatments, technology-based interventions also have the potential to reach large numbers of individuals at low cost. The purpose of this review is to discuss studies in which digital technology has been used for behavioral weight control, report on advances in consumer technology that are widely adopted but insufficiently tested, and explore potential future directions for both. Web-based, mobile (eg, smartphone), virtual reality, and gaming technologies are the focus of discussion. The best evidence exists to support the use of digital technology for self-monitoring of weight-related behaviors and outcomes. However, studies are underway that will provide additional, important information regarding how best to apply digital technology for behavioral weight control.

Thomas, J. Graham; Bond, Dale S.; Ryder, Beth A.; Leahey, Tricia M.; Vithiananthan, Siva; Roye, G. Dean; Wing, Rena R. (2011):

Ecological momentary assessment of recommended postoperative eating and activity behaviors.

In: *Surg Obes Relat Dis* 7 (2), S. 206–212.

Abstract:

Background

Successful weight loss after bariatric surgery depends on the patient's adherence to prescribed eating and physical activity behaviors. However, few studies have assessed patients' adherence to the behavioral recommendations and most have used retrospective self-report measures. The present study is the first to use ecological momentary assessment (EMA) via a palmtop computer to assess bariatric surgery patients' eating and activity behaviors in real-time in the natural environment. The study was conducted at Miriam Hospital (Providence, RI).

Methods

A total of 21 patients (14 laparoscopic adjustable gastric banding and 7 Roux-en-Y; 81% women; mean age 48.5 yr) were studied 6.1 ± 2.1 months postoperatively. The participants used a palmtop computer for 6 days to report on all eating and physical activity episodes as they occurred in the natural environment.

Results

All participants demonstrated good compliance with the EMA, using the device on ≥5 full days. Most participants (94.8%) adhered to the recommendation to not drink while eating, and most took their vitamin supplements and medication as prescribed (85.7% and 90.5%, respectively). Few (4.8%) participants ate the recommended ≥5 meals daily, most participants exceeded the recommended portion sizes during meals and snacks (100% and 72.0% of the participants, respectively), and 47.6% of the participants consumed ≥5 servings of fruit and vegetables daily. Only 15.8% regularly consumed adequate liquids. Only 23.8% of participants engaged in moderate to vigorous physical activity for ≥30 minutes daily, as recommended.

Conclusion

The EMA results suggested that adherence to the recommended behaviors varied considerably, depending on the behavior, with greater adherence to simple versus complex behaviors. EMA might eventually be a useful tool to help optimize the outcomes of bariatric surgery by identifying behavioral targets for additional monitoring and intervention.

Thomas, J. Graham; Doshi, Sapna; Crosby, Ross D.; Lowe, Michael R. (2011):

Ecological Momentary Assessment of obesogenic eating behavior: Combining person-specific and environmental predictors.

In: *Obesity* 19 (8), S. 1574–1579. DOI: 10.1037/t02178-000;

Abstract:

Obesity has been promoted by a food environment that encourages excessive caloric intake. An understanding of how the food environment contributes to obesogenic eating behavior in different types of individuals may facilitate healthy weight control efforts. In this study, Ecological Momentary Assessment (EMA) via palmtop computers was used to collect real-time information about participants' environment and eating patterns to predict overeating (i.e., greater than usual intake during routine meals/snacks, and eating outside of a participant's normal routine) that could lead to weight gain. Thirty-nine women (BMI = 21.6 ± 1.8; age = 20.1 ± 2.0 years; 61% white) of normal weight (BMI 18.5-25) completed the Three Factor Eating Questionnaire and the Power of Food Scale (PFS), and carried a palmtop computer for 7-10 days, which prompted them to answer questions about eating events, including a count of the types of good tasting high-calorie foods that were available. None of the self-report measures predicted overeating, but BMI interacted with the number of palatable foods available to predict overeating (P = 0.035). Compared to leaner individuals who reported a relatively low frequency of overeating regardless of the availability of palatable food, the probability of overeating among heavier individuals was very low in the absence of palatable food, but quickly increased in proportion to the number of palatable foods available. Our findings suggest that the eating behavior of those with higher relative weights is susceptible to the presence of palatable foods in the environment. Individuals practicing weight control may benefit from limiting their exposure to good tasting high-calorie food in their immediate environment.

Thomas, Amy S.; Greene, Lori F.; Ard, Jamy D.; Oster, Robert A.; Darnell, Betty E.; Gower, Barbara A. (2009):

Physical activity may facilitate diabetes prevention in adolescents.

In: *Diabetes Care* 32 (1), S. 9–13. DOI: 10.2337/dc08-0780.

Abstract:

OBJECTIVE\r\nThe aim of this study was to examine the association of physical activity with glucose tolerance and resting energy expenditure (REE) among adolescents.\r\nRESEARCH DESIGN AND METHODS\r\nSubjects were 32 male and female adolescents aged 12-18 years. Intravenous glucose tolerance (K(g)) and REE were assessed under inpatient conditions after an overnight fast. K(g) was determined as the inverse slope of time versus (ln) glucose over minutes 8-19 of an intravenous glucose tolerance test. Physical activity was assessed over 8 days using accelerometry (counts per minute).\r\nRESULTS\r\nIn multiple linear regression analysis, K(g) was positively associated with total physical activity (TPA), moderate physical activity (MPA), and 5-min bouts of MPA. Similarly, REE was positively associated with TPA, MPA, and 5-min bouts of MPA.\r\nCONCLUSIONS\r\nIn this population, physical activity was positively related to both glucose tolerance and REE. These results suggest that moderate activity may be beneficial in the prevention of diabetes in adolescent populations both through promoting efficient glucose disposal and through increasing energy expenditure.

Thomas, Silke; Kühnlein, Anja; Heinrich, Sabine; Praml, Georg; Nowak, Dennis; Kries, Rüdiger; Radon, Katja (2008):

Personal exposure to mobile phone frequencies and well-being in adults: A cross-sectional study based on dosimetry.

In: *Bioelectromagnetics* 29 (6), S. 463–470.

Abstract:

The use of mobile phone telecommunication has increased in recent years. In parallel, there is growing concern about possible adverse health effects of cellular phone networks. We used personal dosimetry to investigate the association between exposure to mobile phone frequencies and well-being in adults. A random population-based sample of 329 adults living in four different Bavarian towns was assembled for the study. Using a dosimeter (ESM-140 Maschek Electronics), we obtained an exposure profile over 24 h for three mobile phone frequency ranges (measurement interval 1 s, limit of determination 0.05 V/m). Exposure levels over waking hours were totalled and expressed as mean percentage of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) reference level. Each participant reported acute symptoms in a day-long diary. Data on five groups of chronic symptoms and potential confounders were assessed during an interview. The overall exposure to high-frequency electromagnetic fields was markedly below the ICNIRP reference level. We did not find any statistically significant association between the exposure and chronic symptoms or between the exposure and acute symptoms. Larger studies using mobile phone dosimetry are warranted to confirm these findings.

Thomassin, Kristel; Morelen, Diana; Suveg, Cynthia (2012):

Emotion reporting using electronic diaries reduces anxiety symptoms in girls with emotion dysregulation.

In: *Journal of Contemporary Psychotherapy* 42 (4), S. 207–213. DOI: 10.1037/t05050-000;

Abstract:

Theory and empirical research suggest that electronic diaries, which require children to report on their emotional experiences, might encourage emotional processing and facilitate a reduction in symptoms of anxiety, particularly for children exhibiting emotion-related deficits. Electronic diaries were given to 52 children (aged 7–12) to track their emotions and associated intensity for 7 days; anxiety was assessed prior to and after the use of the electronic diary by both parent- and child-report. It was hypothesized that the use of an electronic diary to track emotional experiences would lead to a reduction in anxiety symptoms for those children high in poor awareness, high in expressive reluctance, and low in emotion coping. The use of electronic diaries was effective at reducing child self-reported anxiety symptoms in girls who reported low emotion coping and reducing parent-reported anxiety for girls who reported a high reluctance to express emotions. Current findings suggest that having children identify their emotions using electronic diaries may be particularly beneficial for girls who are reluctant to express emotions and who report poor coping abilities. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Thompson, Dylan; Batterham, Alan M.; Bock, Susan; Robson, Claire; Stokes, Keith (2006):

Assessment of low-to-moderate intensity physical activity thermogenesis in young adults using synchronized heart rate and accelerometry with branched-equation modeling.

In: *The Journal of nutrition* 136 (4), S. 1037–1042.

Abstract:

Low-to-moderate intensity physical activity thermogenesis is a highly variable and quantitatively important component of total energy expenditure that is difficult to assess outside the laboratory. Greater precision and accuracy in the measurement of this key contributor to energy balance is a research priority. We developed a laboratory-based protocol that simulated a range of low-to-moderate intensity physical activities. We characterized the bias and random (individual) error in estimating energy expenditure using combined accelerometry and heart rate (AHR) with branched-equation modeling and a simple motion sensor (pedometer) against an indirect calorimetry criterion. Twenty young adult subjects performed a 2-h laboratory-based protocol, simulating 6 low-to-moderate intensity physical activities interspersed with periods of rest. The physical activity level during the laboratory-based protocol reflected an energy expenditure toward the lower end of the active category. We found that AHR-derived energy expenditure showed no evidence of substantial fixed or proportional bias (mean bias 6%), whereas pedometer-derived energy expenditure showed both fixed and proportional bias (bias at minimum, mean, and maximum energy expenditure +11, -20, and -36%, respectively). It appears that AHR provides an accurate estimate of criterion energy expenditure whereas a simple motion sensor (pedometer) does not. It is noteworthy that AHR provides quantitative information about the nature and patterns of physical activity, such as the amount of time and/or energy spent engaged in physical activity above critical health-related thresholds.

Thompson, Dylan; Batterham, Alan M.; Markovitch, Daniella; Dixon, Natalie C.; Lund, Adam J. S.; Walhin, Jean-Philippe (2009):

Confusion and conflict in assessing the physical activity status of middle-aged men.

In: *PLoS One* 4 (2), S. e4337. DOI: 10.1371/journal.pone.0004337.

Abstract:

BACKGROUND\r\nPhysical activity (including exercise) is prescribed for health and there are various recommendations that can be used to gauge physical activity status. The objective of the current study was to determine whether twelve commonly-used physical activity recommendations similarly classified middle-aged men as sufficiently active for general health.\r\nMETHODS AND FINDINGS\r\nWe examined the commonality in the classification of physical activity status between twelve variations of physical activity recommendations for general health in ninety men aged 45-64 years. Physical activity was assessed using synchronised accelerometry and heart rate. Using different guidelines but the same raw data, the proportion of men defined as active ranged from to 11% to 98% for individual recommendations (median 73%, IQR 30% to 87%). There was very poor absolute agreement between the recommendations, with an intraclass correlation coefficient (A,1) of 0.24 (95% CI, 0.15 to 0.34). Only 8% of men met all 12 recommendations and would therefore be unanimously classified as active and only one man failed to meet every recommendation and would therefore be unanimously classified as not sufficiently active. The wide variability in physical activity classification was explained by ostensibly subtle differences between the 12 recommendations for thresholds related to activity volume (time or energy), distribution (e.g., number of days of the week), moderate intensity cut-point (e.g., 3

vs. 4 metabolic equivalents or METs), and duration (including bout length).\r\nCONCLUSIONS\r\nPhysical activity status varies enormously depending on the physical activity recommendation that is applied and even ostensibly small differences have a major impact. Approximately nine out of every ten men in the present study could be variably described as either active or not sufficiently active. Either the effective dose or prescription that underlies each physical activity recommendation is different or each recommendation is seeking the same prescriptive outcome but with variable success.

Thompson, Patricia; Beath, Tricia; Bell, Jacqueline; Jacobson, Gabrielle; Phair, Tegan; Salbach, Nancy M.; Wright, Fvirginia (2008):

Test–retest reliability of the 10-metre fast walk test and 6-minute walk test in ambulatory school-aged children with cerebral palsy.

In: *Developmental Medicine & Child Neurology* 50 (5), S. 370–376.

Abstract:

Short-term test-retest reliability of the 10-metre fast walk test (10mFWT) and 6-minute walk test (6MWT) was evaluated in 31 ambulatory children with cerebral palsy (CP), with subgroup analyses in Gross Motor Function Classification System (GMFCS) Levels I (n=9), II (n=8), and III (n=14). Sixteen females and 15 males participated, mean age 9 years 5 months (SD 3y 7mo, range 4y 3mo-18y 2mo). Twenty had spastic diplegia, while the others had another form of CP. Retest interval varied from 1 to 4 weeks (mean 10.6d [SD 6.4]). Intraclass correlation coefficients (ICCs) estimated reliability. The 10mFWT ICC was 0.81 (95% confidence interval [CI] 0.65-0.90) across participants, and >0.59 in GMFCS subgroups (95% CI lower bound >0.01). The 6MWT ICC was 0.98, and >0.90 in GMFCS subgroups (95% CI lower bound >0.64). Bland-Altman plots indicated bias towards higher 6MWT retest distances in GMFCS Level I. Minimum detectable change (95% CI) was 61.9, 64.0, and 47.4m for the 6MWT within GMFCS Levels I, II, and III respectively. The conclusion is that while the 10mFWT showed inadequate test-retest reliability given its wide 95% CI, the 6MWT demonstrated good to excellent reliability. Investigation of the need for a practice walk when administering the 6MWT with children in GMFCS Level I is recommended to establish their fastest pace.

Thompson, Debbe; Cantu, Dora; Bhatt, Riddhi; Baranowski, Tom; Rodgers, Wendy; Jago, Russell et al. (2014):

Texting to Increase Physical Activity Among Teenagers (TXT Me!): Rationale, Design, and Methods Proposal.

In: *JMIR Res Protoc* 3 (1), S. e14. DOI: 10.2196/resprot.3074.

Abstract:

BACKGROUND: Physical activity decreases from childhood through adulthood. Among youth, teenagers (teens) achieve the lowest levels of physical activity, and high school age youth are particularly at risk of inactivity. Effective methods are needed to increase youth physical activity in a way that can be maintained through adulthood. Because teens text a great deal, text messages promoting walking, a low cost physical activity, may be an effective method for promoting sustainable physical activity. OBJECTIVE: The objective of our study was to determine the effect of pedometers, self selected step goals, and texts grounded in the self-determination theory (SDT) on physical activity among the teens. METHODS: "TXT Me!" was a 12 week intervention that texted 14-17 year olds to increase their daily physical activity by increasing the number of steps they take each day. The intervention was grounded in the SDT. Formative research with the teens helped construct the intervention and develop the texts. A total of 84 texts were developed (12 to set a step goal, and 72 promoting autonomy, competence, and relatedness). The pilot evaluation used a four group, randomized design (n=160). After baseline data collection, the participants were randomized to one of four conditions (no treatment control, pedometer only, pedometer + weekly prompts, pedometer + weekly prompts + SDT grounded texts). Data were collected at baseline and immediately upon completion of the study. The primary outcome was physical activity, measured by 7 days of accelerometry. Basic psychological needs, physical activity motivation, process evaluation, and program satisfaction data were also collected. RESULTS: To our knowledge, this is one of the first studies to explore the use of stand alone, SDT grounded texts, supported by pedometers and prompts to set a self selected step goal, as a method for increasing physical activity among teens. CONCLUSIONS: This pilot study will contribute valuable information regarding whether theoretically grounded text messages show promise as an effective method to increase physical activity among teens. TRIAL REGISTRATION: Clinicaltrials.gov NCT01482234; http://clinicaltrials.gov/ct2/show/NCT01482234 (Archived by WebCite at http://www.webcitation.org/6NYvRMOoq).

Thompson, Wesley K.; Gershon, Anda; O'Hara, Ruth; Bernert, Rebecca A.; Depp, Colin A. (2014):

The prediction of study-emergent suicidal ideation in bipolar disorder: A pilot study using ecological momentary assessment data.

In: *Bipolar Disorders*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-23653-001%26site%3dehost-live.

Abstract:

Objectives Bipolar disorder is associated with idiosyncratic precursors of clinically important states such as suicidal ideation. Ecological momentary assessment (EMA) – high frequency data collection in a subject's usual environment – provides the potential for development of temporal, individualized prediction of risk states. The present study tested the ability of EMA data to predict individual symptom change in clinician-rated suicidal ideation. Methods Thirty-five adults diagnosed with inter-episode bipolar disorder completed daily measures of affect in their home environments using diaries administered over an eight-week assessment timeline. Suicidal ideation was assessed monthly at in-person visits using the Inventory of Depressive Symptomatology–Clinician Rated. We used a novel application of functional linear models (FLMs) to generate prospective predictions of suicidal ideation at in-person clinician assessments based on intensively sampled trajectories of daily affect. Results Eight instances of suicidal ideation scores > 0 were recorded during the study period on six participants. Utilizing trajectories of negative and positive affect, cross-validated predictions attained 88% sensitivity with 95% specificity for elevated suicidal ideation one week prior to in-person clinician assessment. This model strongly outperformed prediction models using cross-sectional data obtained at study visits alone. Conclusions Utilizing EMA data with FLM prediction models substantially increases the accuracy of prediction of study-emergent suicidal ideation. Prediction algorithms employing intensively sampled longitudinal EMA data could sensitively detect the warning signs of suicidal ideation to facilitate improved suicide risk assessment and the timely delivery of preventative interventions. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Thompson, R. J.; Mata, J.; Jaeggi, S. M.; Buschkuehl, M.; Jonides, J.; Gotlib, I. H. (2013):

The role of attention to emotion in recovery from major depressive disorder.

In: *Depress.Res Treat.* 2013 (2090-1321 (Linking)), S. 540726. DOI: 10.1155/2013/540726.

Abstract:

Major Depressive Disorder (MDD) is characterized by several emotional disturbances. One possible but not well-examined disturbance is in attention to emotion, an important facet of emotional awareness. We examined whether attention to emotion predicted recovery from MDD. Fifty-three adults with current MDD completed a week of experience sampling (Time 1). At each prompt, participants reported attention to emotion, negative affect (NA), and positive affect (PA). Approximately one year later (Time 2), the depressive status of 27 participants was reassessed. Participants who had recovered from MDD (n = 8) indicated paying less attention to their emotions at Time 1 than did participants who had not fully recovered (n = 19). Attention to emotion was better predictor of recovery than was severity of MDD, NA, or PA at Time 1. Levels of attention to emotion at Time 1 in participants who recovered from MDD did not differ significantly from the levels reported by 53 never-depressed individuals who had participated in the experience sampling. Findings indicate that high levels of an otherwise adaptive emotional facet can adversely affect the course of MDD

Thomson, Rebecca L.; Coates, Alison M.; Howe, Peter R. C.; Bryan, Janet; Matsumoto, Megumi; Buckley, Jonathan D. (2014):

Increases in Plasma Lutein through Supplementation Are Correlated with Increases in Physical Activity and Reductions in Sedentary Time in Older Adults.

In: *Nutrients* 6 (3), S. 974–984. DOI: 10.3390/nu6030974.

Abstract:

Cross-sectional studies have reported positive relationships between serum lutein concentrations and higher physical activity levels. The purpose of the study was to determine whether increasing plasma lutein levels increases physical activity. Forty-four older adults (BMI, 25.3 +/- 2.6 kg/m2; age, 68.8 +/- 6.4 year) not meeting Australian physical activity guidelines (150 min/week of moderate to vigorous activity) were randomized to consume capsules containing 21 mg of lutein or placebo with 250 mL of full-cream milk per day for 4 weeks and encouraged to increase physical activity. Physical activity was assessed by self-report, pedometry and accelerometry (daily activity counts and sedentary time). Exercise self-efficacy was assessed by questionnaire. Thirty-nine participants competed the study (Lutein = 19, Placebo = 20). Lutein increased plasma lutein concentrations compared with placebo ($p < 0.001$). Absolute and percentage changes in plasma lutein were inversely associated with absolute (r

= -0.36, p = 0.03) and percentage changes (r = -0.39, p = 0.02) in sedentary time. Percentage change in plasma lutein was positively associated with the percentage change in average daily activity counts (r = 0.36, p = 0.03). Exercise self-efficacy did not change (p = 0.16). Lutein increased plasma lutein, which was associated with increased physical activity and reduced sedentary time in older adults. Larger trials should evaluate whether Lutein can provide health benefits over the longer term.

Thrul, Johannes; Buhler, Anneke; Ferguson, Stuart G. (2014):

Situational and mood factors associated with smoking in young adult light and heavy smokers.

In: *Drug Alcohol Rev. DOI:* 10.1111/dar.12164.

Abstract:

INTRODUCTION AND AIMS: Antecedents of smoking have been widely researched in studies with older adults. However, less is known about the smoking patterns and antecedents of smoking in young adult smokers. DESIGN AND METHODS: In this study, we used ecological momentary assessment collected with an Internet-based survey instrument and used the participants' own mobile phones to contrast the smoking patterns of young adult light and intermittent smokers (n = 23) with heavy smokers (n = 18). Overall, 1543 smoking and non-smoking situations were analysed. By means of generalised estimating equations, we used a range of situational characteristics to predict smoking in both groups. RESULTS: Craving and smoking of others increased the odds of smoking, and smoking bans were associated with a decreased probability of smoking among both light and intermittent smokers and heavy smokers. Situational antecedents differed between both groups. Cue-associated smoking played a bigger role for light and intermittent smokers than for heavy smokers. Situational antecedents, such as craving, being at the home of others, drinking alcohol and smoking by others, were more strongly associated with the smoking of light and intermittent smokers compared with heavy smokers. DISCUSSION AND CONCLUSIONS: Smoking among young adults is associated with both internal and external situational characteristics. Compared with heavy smokers, light and intermittent smoking seems to be under more stimulus control and more characterised by social smoking. These results are consistent with several findings from previous studies and provide further information on different subgroups of smokers in early adulthood. [Thrul J, Buhler A, Ferguson SG. Situational and mood factors associated with smoking in young adult light and heavy smokers. Drug Alcohol Rev 2014].

Thrul, Johannes; Buhler, Anneke; Ferguson, Stuart G. (2015):

An internet-based ecological momentary assessment study relying on participants' own mobile phones: insights from a study with young adult smokers.

In: *Eur Addict Res* 21 (1), S. 1–5. DOI: 10.1159/000363231.

Abstract:

BACKGROUND: In this paper we describe a novel Internet-based cell phone-optimized assessment technique (ICAT) to conduct an ecological momentary assessment (EMA) study. Participants could access the assessment instrument via the web browsers of their mobile phones. METHODS: We report results from 92 young adult smokers (18-25 years old) who completed the baseline assessment and the first of 4 waves (3 days/wave) of EMA. Random prompts were issued via text messages sent to the participants. The participants were also instructed to self-initiate reports of smoking situations. RESULTS: Compliance with the study protocols was low. In total, the participants completed 885 assessments during the 3 days of monitoring. Only 50.2% of random prompts were responded to, and 52.4% of those were completed within the first 10 min after issuing. Furthermore, reports of smoking situations were rarely self-initiated. In a multivariate regression analysis, age (positively) and female gender (negatively) predicted the number of completed assessments. CONCLUSIONS: This study adds to the limited experiences made with ICAT in substance use research. Similar to the few prior ICAT studies, compliance was low compared to traditional EMA studies. While using ICAT is technically feasible, specific improvements should be implemented to tap ICAT's full potential in future studies. (c) 2014 S. Karger AG, Basel.

Thurman, S. Kenneth; McGrath, Marie C. (2008):

Environmentally based assessment practices: Viable alternatives to standardized assessment for assessing emergent literacy skills in young children.

In: *Reading & Writing Quarterly* 24 (1), S. 7–24.

Abstract:

Ecological validity is an important construct in the assessment of young children. The argument is made that using environmentally based assessment practices as well as understanding the child's ecology will help assure that assessments are carried out in an ecologically valid manner. The discussion focuses on play-based assessment, curriculum-based assessment, and dynamic assessment. Each of these approaches is based on authentic procedures and is typically carried out in the child's natural environment. In addition, there is a discussion of how specific environments can be delineated as well as stressing the importance of developing operational definitions of specific skills in the natural environment.

Tidey, Jennifer W.; Monti, Peter M.; Rohsenow, Damaris J.; Gwaltney, Chad J.; Miranda, Robert; McGeary, John E. et al. (2008):

Moderators of naltrexone's effects on drinking, urge, and alcohol effects in non-treatment-seeking heavy drinkers in the natural environment.

In: *Alcohol Clin Exp Res* 32 (1), S. 58–66. DOI: 10.1111/j.1530-0277.2007.00545.x.

Abstract:

BACKGROUND\r\nNaltrexone (NTX) has proven to be effective with alcoholics in treatment, with most controlled clinical trials showing beneficial effects on heavy drinking rates. However, little is known about the behavioral mechanisms underlying the effects of NTX on drinking, or about patient characteristics that may moderate NTX's effects on drinking. In this study, ecological momentary assessment (EMA) techniques were used to investigate some of the putative mechanisms of naltrexone's effects on drinking in heavy drinkers who were not seeking treatment for alcohol problems. Polymorphisms in the D4 dopamine receptor (DRD4) gene and the mu-opiate receptor (OPRM1) gene, family history of alcohol problems, age of onset of alcoholism and gender were explored as potential moderators of NTX's effects.\r\nMETHODS\r\nAfter a 1-week placebo lead-in period, heavy drinkers (n = 180), 63% of whom were alcohol-dependent, were randomized to 3 weeks of daily naltrexone (50 mg) or placebo. Throughout the study, participants used EMA on palm-pilot computers to enter, in real time, drink data, urge levels, and subjective effects of alcohol consumption.\r\nRESULTS\r\nNaltrexone reduced percentage drinking days in all participants and reduced percent heavy drinking days in DRD4-L individuals; NTX decreased urge levels in participants with younger age of alcoholism onset; NTX increased time between drinks in participants who had more relatives with alcohol problems; and NTX reduced the stimulating effects of alcohol in women. OPRM1 status did not moderate any of NTX's effects.\r\nCONCLUSIONS\r\nThese results confirm earlier findings of NTX's effects on drinking and related subjective effects, and extend them by describing individual difference variables that moderate these effects in the natural environment, using data collected in real time.

Tikkanen, Olli; Karkkainen, Salme; Haakana, Piia; Kallinen, Mauri; Pullinen, Teemu; Finni, Taija (2014):

EMG, Heart Rate, and Accelerometer as Estimators of Energy Expenditure in Locomotion.

In: *Med Sci Sports Exerc. DOI:* 10.1249/MSS.0000000000000298.

Abstract:

PURPOSE: Precise measures of energy expenditure (EE) during everyday activities are needed. This study assessed the validity of novel shorts measuring electromyography (EMG) and compared this method to heart rate (HR) and accelerometry (ACC) when estimating EE. METHODS: 54 volunteers (39.4 +/- 13.9 yrs) performed a maximal treadmill test (3 min loads) including walking with different speeds uphill, downhill and on level ground and one running load. The data were categorized into all, low and level loads. EE was measured by indirect calorimetry, while HR, ACC and EMG were measured continuously. EMG from quadriceps (Q) and hamstrings (H) was measured using shorts with textile electrodes. Validity of the methods used to estimate EE was compared using Pearson correlations, regression coefficients, linear mixed models providing Akaike information criteria (AIC) and applying cross-validation at the individual and population level. RESULTS: At all loads, correlations with EE were as follows: EMG(QH) 0.94+/-0.03, EMG(Q) 0.91+/-0.03, EMG(H) 0.94+/-0.03, HR 0.96+/-0.04 and ACC 0.77+/-0.10. The corresponding correlations at low loads were 0.89+/-0.08, 0.79+/-0.10, 0.93+/-0.07, 0.89+/-0.23, 0.80+/-0.07 and at level loads they were 0.97+/-0.03, 0.97+/-0.05, 0.96+/-0.04, 0.95+/-0.08, 0.99+/-0.02, respectively. AIC ranked the methods in accordance with the individual correlations. CONCLUSIONS: It is shown for the first time that EMG shorts can be used for EE estimations across a wide range of physical activity intensities in a heterogeneous group. Across all loads HR is a superior method of predicting EE, while ACC is most accurate for level loads at the population level. At low levels of physical activity in changing terrains, thigh muscle EMG provides more accurate EE estimations than ACC and HR if individual calibrations are performed.

Tilley, P. J. Matt; Rees, Clare S. (2014):

A clinical case study of the use of ecological momentary assessment in obsessive compulsive disorder.

In: *Front Psychol* 5, S. 339. DOI: 10.3389/fpsyg.2014.00339.

Abstract:

Accurate assessment of obsessions and compulsions is a crucial step in treatment planning for Obsessive-Compulsive Disorder (OCD). In this clinical case study, we sought to determine if the use of Ecological Momentary Assessment (EMA) could provide additional symptom information beyond that captured during standard assessment of OCD. We studied three adults diagnosed with OCD and compared the number and types of obsessions and compulsions captured using the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) compared to EMA. Following completion of the Y-BOCS interview, participants then recorded their OCD symptoms into a digital voice recorder across a 12-h period in reply to randomly sent mobile phone SMS prompts. The EMA approach yielded a lower number of symptoms of obsessions and compulsions than the Y-BOCS but produced additional types of obsessions and compulsions not previously identified by the Y-BOCS. We conclude that the EMA-OCD procedure may represent a worthy addition to the suite of assessment tools used when working with clients who have OCD. Further research with larger samples is required to strengthen this conclusion.

Timmers, Corrie; Maeghs, Anne; Vestjens, Michiel; Bonnemayer, Charlie; Hamers, Huub; Blokland, Arjan (2014):

Ambulant cognitive assessment using a smartphone.

In: *Appl Neuropsychol Adult* 21 (2), S. 136–142. DOI: 10.1080/09084282.2013.778261.

Abstract:

The focus of neuropsychology is to understand the relationship between assessment results and everyday cognitive abilities and disabilities. However, the generalizability of traditional neuropsychological tests to real-life behaviors, the ecological validity, is compromised by the test environment, among other things. Neuropsychological tests are often completed in a laboratory setting that is typically quiet with few distractions. This is very unlike most everyday environments. The aim of the present study was to investigate the possibility of using a smartphone in standardized cognitive assessment. A short-term memory task was obtained from young adults in either an everyday-life environment or a controlled test setting at four time points during a day. Results show no significant differences between the task performances in both conditions. There was no indication that fatigue, tension, or environmental noise had an effect on task performance. High correlations between subsequent time points were found in the everyday-life environment, suggesting a high test-retest reliability and commitment of the participants. The present study demonstrates that smartphones can be used to assess cognitive functions outside a laboratory setting.

Timms, K. P.; Rivera, D. E.; Collins, L. M.; Piper, M. E. (2013):

A Dynamical Systems Approach to Understand Self-Regulation in Smoking Cessation Behavior Change.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt149.

Abstract:

INTRODUCTION: Self-regulation, a key component of the addiction process, has been challenging to model precisely in smoking cessation settings, largely due to the limitations of traditional methodological approaches in measuring behavior over time. However, increased availability of intensive longitudinal data (ILD) measured through ecological momentary assessment facilitates the novel use of an engineering modeling approach to better understand self-regulation. METHODS: Dynamical systems modeling is a mature engineering methodology that can represent smoking cessation as a self-regulation process. This article shows how a dynamical systems approach effectively captures the reciprocal relationship between day-to-day changes in craving and smoking. Models are estimated using ILD from a smoking cessation randomized clinical trial. RESULTS: A system of low-order differential equations is presented that models cessation as a self-regulatory process. It explains 87.32% and 89.16% of the variance observed in craving and smoking levels, respectively, for an active treatment group and 62.25% and 84.12% of the variance in a control group. The models quantify the initial increase and subsequent gradual decrease in craving occurring postquit as well as the dramatic quit-induced smoking reduction and postquit smoking resumption observed in both groups. Comparing the estimated parameters for the group models suggests that active treatment facilitates craving reduction and slows postquit smoking resumption. CONCLUSIONS: This article illustrates that dynamical systems modeling can effectively leverage ILD in order to understand self-regulation within smoking cessation. Such models quantify group-level dynamic responses in smoking cessation and can inform the development of more effective interventions in the future

Tims, Maria; Bakker, Arnold B.; Xanthopoulou, Despoina (2011):

Do transformational leaders enhance their followers' daily work engagement?

In: *The Leadership Quarterly* 22 (1), S. 121–131.

Abstract:

This diary study investigated whether and how supervisors' leadership style influences followers' daily work engagement. On the basis of leadership theories and the job demands–resources model, we predicted that a transformational leadership style enhances employees' work engagement through the mediation of self-efficacy and optimism, on a day-to-day basis. Forty-two employees first filled in a general questionnaire, and then a diary survey over five consecutive workdays. The results of multilevel analyses offered partial support for our hypotheses. Daily transformational leadership related positively to employees' daily engagement, and day-levels of optimism fully mediated this relationship. However, daily self-efficacy did not act as a mediator. These findings expand theory and previous research by illuminating the role of transformational leaders in fostering employee work engagement.

To, March L.; Fisher, Cynthia D.; Ashkanasy, Neal M.; Rowe, Patricia A. (2011):

Within-person relationships between mood and creativity.

In: *J Appl Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-25018-001&site=ehost-live.

Abstract:

State mood has been proposed as a facilitator of creative behavior. Whereas positive mood compared to neutral mood generally facilitates creative performance, mood effects are weaker and less consistent when positive mood is compared to negative mood. These inconsistent results may be due to focusing only on mood valence, while neglecting or confounding mood activation. The current study is based on the dual-pathway model, which describes separate roles for mood valence and mood activation in facilitating creativity. We used experience sampling methodology to investigate the concurrent and lagged effects of mood valence and activation on creative process engagement (CPE) within-person over time among individuals working on a long-term project requiring creativity. We also investigated the moderating effects of individual differences in goal orientation and supervisory support on within-person mood–creativity relationships. As expected, we found that activating positive and activating negative moods were positively associated with concurrent CPE, whereas deactivating moods of both valences were negatively related to CPE. Activating negative mood had a significant lagged effect on CPE, whereas activating positive mood did not. We also found that activating positive mood was more strongly related to concurrent CPE among individuals with high rather than low learning goal orientation. Further, activating positive mood interacted with prove goal orientation and supervisory support for creativity, such that activating positive mood had the strongest association with CPE when both prove goal orientation and supervisory support were high. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Tobin, Erin T.; Kane, Heidi S.; Saleh, Daniel J.; Naar-King, Sylvie; Poowuttikul, Pavadee; Secord, Elizabeth et al. (2014):

Naturalistically Observed Conflict and Youth Asthma Symptoms.

In: *Health Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-37737-001%26site%3dehost-live.

Abstract:

Objective: To investigate the links between naturalistically observed conflict, self-reported caregiver−youth conflict, and youth asthma symptoms. Method: Fifty-four youth with asthma (age range: 10–17 years) wore the Electronically Activated Recorder (EAR) for a 4-day period to assess interpersonal conflict and caregiver−youth conflict as they occur in daily life. Conflict also was assessed with baseline self-report questionnaires and daily diaries completed by youth participants and their caregivers. Asthma symptoms were assessed using daily diaries, baseline self-reports, and wheezing, as coded from the EAR. Results: EAR-observed measures of conflict were strongly associated with self-reported asthma symptoms (both baseline and daily diaries) and wheezing coded from the EAR. Further, when entered together in regression analyses, youth daily reports of negative caregiver−youth interactions and EAR-observed conflict uniquely predicted asthma symptoms; only EAR-observed conflict was associated with EAR-observed wheezing. Conclusion: These findings demonstrate the potential impact of daily conflict on youth asthma symptoms and the importance of assessing conflict as it occurs in everyday life. More broadly, they point to the importance of formulating a clear picture of family interactions outside of the lab, which is essential for understanding how family relationships “get under the skin” to affect youth health. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Toet, Alexander; van Schaik, Martin G. (2012):

Effects of signals of disorder on fear of crime in real and virtual environments.

In: *Journal of Environmental Psychology* 32 (3), S. 260–276. DOI: 10.1037/t02469-000;

Abstract:

Despite the fact that virtual environments are increasingly deployed to study the relation between urban planning, physical and social disorder, and fear of crime, their ecological validity for this type of research has not been established. This study compares the effects of similar signs of public disorder (litter, warning signs, cameras, signs of vandalism and car burglary) in an urban neighborhood and in its virtual counterpart on the subjective perception of safety and livability of the neighborhood. Participants made a walking tour through either the real or the virtual neighborhood, which was either in an orderly (baseline) state or adorned with numerous signs of public disorder. During their tour they reported the signs of disorder they noticed and the degree to which each of these affected their emotional state and feelings of personal safety. After finishing their tour they appraised the perceived safety and livability of the environment. Both in the real and in the simulated urban neighborhood, signs of disorder evoked associations with social disorder. In all conditions, neglected greenery was spontaneously reported as a sign of disorder. Disorder did not inspire concern for personal safety in reality and in the virtual environment with a realistic soundscape. However, in the absence of sound disorder compromised perceived personal safety in the virtual environment. Signs of disorder were associated with negative emotions more frequently in the virtual environment than in its real-world counterpart, particularly in the absence of sound. Also, signs of disorder degraded the perceived livability of the virtual, but not of the real neighborhood. Hence, it appears that people focus more on details in a virtual environment than in reality. We conclude that both a correction for this focusing effect and realistic soundscapes are required to make virtual environments an appropriate medium for both etiological (e.g. the effects of signs of disorder on fear of crime) and intervention (e.g. CPTED) research. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Tomkins-Lane, C. C.; Haig, A. J. (2012):

A review of activity monitors as a new technology for objectifying function in lumbar spinal stenosis.

In: *J Back.Musculoskelet.Rehabil.* 25 (3), S. 177–185. DOI: 10.3233/BMR-2012-0325.

Abstract:

The purpose of this review article is to introduce the concept of activity monitoring, and to discuss the application of accelerometry in rehabilitation research and clinical practice using lumbar spinal stenosis as a model. Function is a complex concept, and changes in function have historically been challenging to measure. The International Classification of Functioning (ICF) defines two distinct components of function: capacity and performance. Capacity, the ability to perform a given task in a controlled environment can be measured through any number of existing functional measures. Performance, defined as activities performed on a day to day basis in the context of real life is challenging to measure, yet important in identifying the impact of pathology on real life. Recent advances in technology have allowed us to begin to measure performance, using activity monitors (accelerometers). Activity monitoring has the potential to change our concepts of outcomes, and as a result, expand our ideas about appropriateness of interventions in rehabilitation. Researchers and clinicians might benefit from using the new technology of activity monitors to measure the impact of intervention and to assess function. Therefore, this review will discuss the concept of activity monitoring and highlight potential uses for activity monitors in spine research and clinical care

Tomko, R. L.; Brown, W. C.; Tragesser, S. L.; Wood, P. K.; Mehl, M. R.; Trull, T. J. (2012):

Social Context of Anger in Borderline Personality Disorder and Depressive Disorders: Findings from a Naturalistic Observation Study.

In: *J Pers.Disord.* (0885-579X (Linking)). DOI: 10.1521/pedi_2012_26_064.

Abstract:

Anger and affective instability are key features of borderline personality disorder (BPD). Given the dynamic nature of affect, it is ideally studied using ambulatory assessment (AA). Recently, several major studies have examined affective instability via momentary self-report, using electronic diaries, which participants can use throughout their daily routine. The present study sought to complement this research by using an unobtrusive naturalistic observation method, the Electronically Activated Recorder (EAR). The EAR, which captures interpersonal behavior by periodically recording 50-second snippets of ambient sounds, was worn by 25 participants with BPD who also met the specific affective instability (AI) criterion as well as 13 participants with a depressive disorder (who did not meet criteria for AI or BPD) for three days. Trained coders listened to the captured recordings and rated participants' affect during each 50-second clip (i.e., in naturally varying social contexts). Results

suggested that there were differences between diagnostic groups regarding the social context of anger, such that anger at a previous time interval predicted spending time alone in the subsequent time interval for the depressed group, but not for the BPD group. As an ambulatory observational method, the EAR offers an alternative to self-report and can provide insight into the naturalistic expression of emotions in BPD

Tomko, Rachel L.; Solhan, Marika B.; Carpenter, Ryan W.; Brown, Whitney C.; Jahng, Seungmin; Wood, Phillip K.; Trull, Timothy J. (2013):

Measuring Impulsivity in Daily Life: The Momentary Impulsivity Scale.

In: *Psychological Assessment*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-41144-001%26site%3dehost-live.

Abstract:

Impulsivity is a core feature of many psychiatric disorders. Traditionally, impulsivity has been assessed using retrospective questionnaires or laboratory tasks. Both approaches neglect intraindividual variability in impulsivity and do not capture impulsivity as it occurs in real-world settings. The goal of the current study was to provide a method for assessing impulsivity in daily life that provides both between-individual and within-individual information. Participants with borderline personality disorder (BPD; n = 67) or a depressive disorder (DD; n = 38) carried an electronic diary for 28 days and responded to 9 impulsivity items up to 6 times per day. Item distributions and iterative exploratory factor analysis (EFA) results were examined to select the items that best captured momentary impulsivity. A brief 4-item scale was created that can be used for the assessment of momentary impulsivity. Model fit was good for both within- and between-individual EFA. As expected, the BPD group showed significantly higher scores on our Momentary Impulsivity Scale than the DD group, and the resulting scale was moderately correlated with common trait impulsivity scales. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Tončić, Marko; Anić, Petra (2014):

Everyday activities: Beneficial effects of eudaimonic and hedonic motivation on subjective well-being.

In: *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-41860-001%26site%3dehost-live.

Abstract:

The study focuses on the impact of time and motives for everyday activities on mood and daily satisfaction. One hundred twenty-one undergraduate students participated in study using experience sampling method. The short PANAS scale, one item momentary satisfaction measure and state orientation to happiness scale were used. The measures were administered five times a day for 7 days via hand-held devices. The data were modeled using a linear mixed-effects approach. The models fitted the data reasonably well, especially for satisfaction and positive affect (PA) sharing similar parameter estimates. Both showed a nonlinear increase through the week while PA showed a similarly shaped circa-diurnal rhythm too. Negative affect (NA) showed almost no rhythm at all. Both hedonic and eudaimonic motives increased satisfaction and PA. Hedonic motives had a negative impact on NA. Generally, on momentary level, hedonic motives have a greater impact while longer intervals seem to emphasize the importance of eudaimonic motives. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Tong, Eddie M. W. (2010):

Personality influences in appraisal-emotion relationships: the role of neuroticism.

In: *J Personality* 78 (2), S. 393–417. DOI: 10.1111/j.1467-6494.2010.00620.x.

Abstract:

Although appraisal theorists have pointed out that appraisal-emotion relationships should vary as a function of personality traits, evidence demonstrating this is limited and inconsistent. To examine this issue, Ecological Momentary Assessment was employed in which undergraduates indicated their negative emotions and appraisals at regular intervals for 2 days in natural contexts. The results revealed that individuals higher in Neuroticism showed more negative appraisal styles than those lower in Neuroticism. More important, higher Neuroticism was associated with stronger appraisal-emotion relationships of 4 negative emotions

(anger, sadness, fear, and guilt). These findings imply that Neuroticism affects not only how people appraise their environments but also the reactivity of their negative emotions to appraisals.

Török, Katalin; Pálfi, Anita; Szelényi, Zoltán; Molnár, Dénes (2008):

Circadian variability of blood pressure in obese children.

In: *Nutr Metab Cardiovasc Dis* 18 (6), S. 429–435.

Abstract:

BACKGROUND AND AIMS:

The aim of the present study was to evaluate the circadian rhythm of blood pressure pattern in obese children, and to investigate if the lack of normal diurnal rhythm of blood pressure is associated with cardiovascular risk factors.

METHODS AND RESULTS:

73 obese children (body weight [mean+/-SD]: 89.0+/-17.8 kg; age [mean+/-SD]: 14.2+/-2.3 years), 42 dippers and 31 non-dippers were investigated. Following ambulatory blood pressure monitoring (ABPM), physical fitness testing was performed on a treadmill. Physical working capacity at 130, -150, -170 beat/min (PWC-130, -150, -170), resting and peak oxygen consumption (VO(2)rest, VO(2)peak) were determined. Forty-two percent of obese children were non-dipper. PWC-130 (74.8+/-48.8 watts; 48.0+/-38.5 watts), PWC-150 (132.9+/-52.1 watts; 104.2+/-49.3 watts), PWC-170 (185.9+/-49.5 watts; 154.9+/-53.4 watts) and VO(2)rest, ([mean+/-SD]: 0.29+/-0.08 L/min; 0.26+/-0.07 L/min), and VO(2) peak (2.77+/-0.61 L/min; 2.44+/-0.62 L/min) were significantly lower in the non-dipper group, as compared to dippers ($p<0.05$). The prevalence of hypertension, on the basis of ABPM, was significantly higher in the non-dipper group (45.2% vs 83.9%, $p<0.001$). This is due to increased prevalence of masked hypertension in the non-dipper group (19.0% vs 32.3%, $p<0.001$).

CONCLUSION:

The normal circadian variation of the blood pressure is frequently absent in obese children. Most of the non-dipper obese children are hypertensive, and their physical fitness is decreased.

Tortella-Feliu, M.; Aguayo, B.; Sese, A.; Morillas-Romero, A.; Balle, M.; Gelabert, J. M. et al. (2012):

Effects of temperament and emotion regulation styles in determining negative emotional states.

In: *Actas Esp.Psiquiatr.* 40 (6), S. 315–322. Online verfügbar unter PM:23165414.

Abstract:

INTRODUCTION: The interplay of reactive and regulatory temperamental processes appears to be essential for a better understanding of emotional states and disorders. In this study we explored the prospective relationship between reactive temperament (negative affect), regulatory temperament (effortful control), negative emotion regulation styles (rumination and suppression) and self-recorded anxiety, worry, and avoidance in naturalistic conditions. METHOD: Thirty-two young adults were first assessed through questionnaires on negative affectivity, effortful control, and two forms of negative emotion regulation (rumination and suppression). After this they recorded anxiety, worry, and avoidance three times a day over 50 consecutive days through an on-line access electronic diary. RESULTS: High levels of negative affect and low levels of effortful control were associated with higher levels of anxiety, worry, and avoidance ($p<.01$). The prospective association between negative affectivity and avoidance was moderated by effortful control (Total $R(2)=.49$). Moreover, the brooding facet of rumination totally mediated the association between negative affect and anxiety with a significant indirect effect (Effect=.30, Boot CI95%=.09 to .69). CONCLUSIONS: Avoidance patterns are significantly determined by negative affect--effortful control interaction and rumination, especially brooding, totally mediates the relationship between negative affect and anxiety

Toschke, Julia Anna; Kries, Rüdiger; Rosenfeld, Eva; Toschke, André Michael (2007):

Reliability of physical activity measures from accelerometry among preschoolers in free-living conditions.

In: *Clinical nutrition* 26 (4), S. 416–420.

Abstract:

Background & aims

Physical activity (PA) is a major determinant of obesity. Accelerometers have been reported to provide valid measures among adults. However, studies among preschoolers rarely report positive findings. To assess the day-to-day variability of accelerometers in preschoolers.

Methods

Uni-axial accelerometer (Actigraph monitor AM 7164-2.2) counts including one weekend from the time of getting up in the morning until bedtime.

Results

On average, boys showed 899 counts per minute (cpm) compared to 764 for girls ($p<0.01$; overall mean 828 cpm). Intra-individual correlation for accelerometry data between single days of examination was low with Pearson correlation coefficients between r=0.31 and 0.51. Furthermore, child's body mass index (BMI) and accelerometer measures were not related to each other (Pearson's correlation coefficient r=−0.06). Subsequent analyses showed higher measures (+50% cpm; $p<0.01$) for instruments placed in front of the umbilicus compared to instruments placed at the right hip.

Conclusions

Measurements of uni-axial accelerometers showed a low reliability among preschoolers. Uni-axial accelerometers placed on elastic belts might measure PA with low precision among preschoolers under free-living conditions possibly due to slipping instruments. This might explain lacking findings of an association between PA and obesity in studies among preschoolers.

Tossell, Chad C.; Kortum, Philip; Shepard, Clayton W.; Rahmati, Ahmad; Zhong, Lin (2012):

Getting real: A naturalistic methodology for using smartphones to collect mediated communication.

In: *Advances in Human-Computer Interaction* 2012. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-15760-001%26site%3dehost-live;chad.tossell@rice.edu.

Abstract:

This paper contributes an intentionally naturalistic methodology using smartphone logging technology to study communications in the wild. Smartphone logging can provide tremendous access to communications data from real environments. However, researchers must consider how it is employed to preserve naturalistic behaviors. Nine considerations are presented to this end. We also provide a description of a naturalistic logging approach that has been applied successfully to collecting mediated communications from iPhones. The methodology was designed to intentionally decrease reactivity and resulted in data that were more accurate than self-reports. Example analyses are also provided to show how data collected can be analyzed to establish empirical patterns and identify user differences. Smartphone logging technologies offer flexible capabilities to enhance access to real communications data, but methodologies employing these techniques must be designed appropriately to avoid provoking naturally occurring behaviors. Functionally, this methodology can be applied to establish empirical patterns and test specific hypotheses within the field of HCI research. Topically, this methodology can be applied to domains interested in understanding mediated communications such as mobile content and systems design, teamwork, and social networks. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Toth, Kalman (2014):

Antihypertensive Efficacy of Triple Combination Perindopril/Indapamide Plus Amlodipine in High-Risk Hypertensives: Results of the PIANIST Study (Perindopril-Indapamide plus AmlodipiNe in high rISk hyperTensive patients).

In: *Am J Cardiovasc Drugs* 14 (2), S. 137–145. DOI: 10.1007/s40256-014-0067-2.

Abstract:

OBJECTIVE: Our objective was to evaluate a triple-drug antihypertensive strategy for blood pressure control in patients with difficult-to-treat hypertension. DESIGN: The Perindopril-Indapamide plus AmlodipiNe in high rISk hyperTensive patients (PIANIST) trial was an observational, 4-month, open-label study. PATIENTS AND INTERVENTIONS: A total of 4,731 patients at high or very high cardiovascular risk with hypertension that was not properly controlled despite antihypertensive therapy, and for whom study treatment (fixed-dose perindopril 10 mg/indapamide 2.5 mg + amlodipine 5 or 10 mg) was consistent with their

existing therapeutic plan, were included. OUTCOMES: One-sample t tests and Chi-squared tests were performed to evaluate changes in blood pressure. RESULTS: Mean baseline office blood pressure (OBP) was 160.5 +/- 13.3/93.8 +/- 8.7 mmHg. After 4 months of therapy, OBP decreased by 28.3 +/- 13.5/13.8 +/- 9.4 to 132.2 +/- 8.6/80.0 +/- 6.6 mmHg ($p < 0.0001$). Blood pressure targets were reached by 72.0 % of patients and by 81 and 91 % of patients previously treated with an angiotensin-converting enzyme inhibitor/hydrochlorothiazide or an angiotensin receptor blocker/hydrochlorothiazide, respectively. Changes in OBP were 18.7 +/- 8.3/9.7 +/- 7.2 mmHg for grade 1 (n = 1,679), 30.4 +/- 10.1/14.7 +/- 8.6 mmHg for grade 2 (n = 2,397), and 45.4 +/- 15.1/20.7 +/- 12.1 mmHg for grade 3 patients (n = 655; all $p < 0.0001$). In patients who underwent ambulatory blood pressure monitoring (n = 104), 24-h mean blood pressure decreased from 147.4 +/- 13.8/82.1 +/- 11.9 to 122.6 +/- 9.1/72.8 +/- 7.4 mmHg ($p < 0.0001$). Ankle edema was infrequent (0.2 % of patients). CONCLUSION: Triple combination perindopril/indapamide/amlodipine was effectively and safely administered to a large population of high- and very high-risk hypertensive patients who had not reached target OBP values with previous treatment.

Treuth, Margarita S.; Baggett, Chris D.; Pratt, Charlotte A.; Going, Scott B.; Elder, John P.; Charneco, Eileen Y.; Webber, Larry S. (2009):

A longitudinal study of sedentary behavior and overweight in adolescent girls.

In: *Obesity* 17 (5), S. 1003–1008.

Abstract:

The aim of this study is to examine sedentary and light activity in relation to overweight in adolescent girls. Adolescent girls were randomly recruited from 36 schools participating in the Trial of Activity for Adolescent Girls (TAAG). Assessments included age, ethnicity, socioeconomic status, and body composition estimated from weight, height, and triceps skinfold. Sedentary and light activity was measured for 6 days using accelerometry in 6th and in 8th grade among two randomly sampled cross-sections of girls. Sedentary activity increased from the 6th to 8th grade by 51.5 min/day. In the 8th grade, a significantly higher number of hours in sedentary activity for each of the 6-days of measurement were evident with higher tertiles of percent body fat (30–35%, >35% fat) ($P < 0.05$), but not across all increasing tertiles of BMI (5th to 85th, 85th to 95th, and >95th percentiles). The increase in sedentary activity was observed on weekdays, but not on weekends for percent body fat tertiles. In the cohort of girls measured in both 6th and 8th grades, the mean cross-sectional coefficient estimates were significant for percent body fat, but not BMI for sedentary and light activities. Adolescent girls from the 6th to 8th grade are shifting their time from light to more sedentary activity as measured by accelerometers. In addition, the increase in sedentary activity is not associated with an adverse effect on BMI or percent body fat. The eventual impact of this shift to a more sedentary lifestyle on body composition and other outcomes needs to be evaluated further.

Treuth, Margarita S.; Catellier, Diane J.; Schmitz, Kathryn H.; Pate, Russell R.; Elder, John P.; McMurray, Robert G. et al. (2007):

Weekend and Weekday Patterns of Physical Activity in Overweight and Normal-weight Adolescent Girls.

In: *Obesity* 15 (7), S. 1782–1788.

Abstract:

Objective

To describe the patterns (specifically comparing weekdays and weekends classified by intensities) of physical activity (PA) measured by accelerometry in adolescent girls.

Research Methods and Procedures

Healthy sixth grade girls (n = 1603), 11 to 12 years old, were randomly recruited from 36 schools participating in the Trial of Activity in Adolescent Girls. Age, ethnicity, socioeconomic status, weight, and height were taken. PA patterns were measured for 6 days using accelerometry.

Results

Adolescent girls spend most of their time in sedentary (52% to 57% of the day) and light activity (40% to 45% of the day) on weekdays and weekends. In all girls, total PA comprised 44.5% of the day (41.7% light, 2.2% moderate, and 0.7% vigorous) with sedentary activity comprising 55.4%. Moderate-to-vigorous PA (MVPA) was higher ($p < 0.001$) on weekdays than weekends in all girls, but MVPA was lower in at-risk of overweight + overweight girls ($p < 0.001$) on both weekdays and weekends compared with normal-weight girls.

Discussion

Adolescent girls are more active at moderate and vigorous intensities on weekdays than on weekends, and at-risk of overweight and those overweight spend less time engaging in MVPA than normal-weight girls.

Keywords: activity monitors, physical activity assessment, sedentary activity, accelerometry

Trivedi, Ranak; Sherwood, Andrew; Strauman, Timothy J.; Blumenthal, James A. (2008):

Laboratory-based blood pressure recovery is a predictor of ambulatory blood pressure.

In: *Biol Psychol* 77 (3), S. 317–323.

Abstract:

The recovery phase of the stress response is an individual difference characteristic that may predict cardiovascular risk. The purpose of this study was to examine whether laboratory-based blood pressure (BP) recovery predicts ambulatory BP (ABP). One hundred and eighty-two participants underwent a standard laboratory stress protocol, involving a 20-min baseline rest period, and four stressors presented in a counterbalanced order, each followed by a 10-min recovery period. Participants also wore an ABP monitor for 24 h during a typical workday. Hierarchical regression analyses showed that BP recovery accounted for significant additional variance for daytime SBP ($p < 0.001$), nighttime SBP ($p < 0.001$), daytime DBP ($p < 0.001$), and nighttime DBP ($p < 0.001$), after controlling for baseline and reactivity BP. Results suggest that persistence of the BP response following stress may be a more salient characteristic of the stress response in understanding its potential impact on longer term cardiovascular regulation.

Tropeano, Anne-Isabelle; Boutouyrie, Pierre; Pannier, Bruno; Joannides, Robinson; Balkestein, Elisabeth; Katsahian, Sandrine et al. (2006):

Brachial pressure-independent reduction in carotid stiffness after long-term angiotensin-converting enzyme inhibition in diabetic hypertensives.

In: *Hypertension* 48 (1), S. 80–86. DOI: 10.1161/01.HYP.0000224283.76347.8c.

Abstract:

Hypertension and diabetes are associated with an increased arterial stiffness. A direct blood pressure-independent effect of angiotensin-converting enzyme inhibitors on arterial stiffness has never been unequivocally demonstrated. In this mechanistic study, we used an experimental design in which patients responding to 1 month treatment with 4 mg perindopril were randomized double-blind to either 4 mg perindopril or 8 mg perindopril for 6 months. We determined carotid distensibility with echotracking and applanation tonometry at baseline and after the 7-month treatment period in 57 essential hypertensive patients with type 2 diabetes (age 63+/-7 years). We monitored ambulatory blood pressure at baseline and after treatment. After 7 months treatment, 24-hour ambulatory blood pressure significantly decreased, with no significant difference between 4 mg and 8 mg perindopril. Carotid distensibility increased more after 8 mg perindopril compared with 4 mg perindopril (8 mg: from 13.1+/-5.9 to 16.0+/-6.7 kPa(-1)x10(-3); 4 mg: from 13.2+/-5.2 to 12.7+/-5.9 kPa(-1)x10(-3); ANOVA, dose-period interaction, $P<0.05$). Carotid internal diameter and elastic modulus were significantly lower after 8 mg perindopril compared with 4 mg perindopril, independent of blood pressure reduction. These results indicate a dose-dependent and blood pressure-independent reduction in carotid stiffness under chronic treatment with an angiotensin-converting enzyme inhibitor. They suggest that arterial distensibility was increased through an inward remodeling, leading to a reduction in wall stress, thus reducing elastic modulus. They also suggest that long-term administration of high doses (8 mg) of perindopril is required to improve carotid structure and function in hypertensive patients with type 2 diabetes.

Trudeau, Jeremiah; van Inwegen, Richard; Eaton, Thomas; Bhat, Gajanan; Paillard, Florence; Ng, Dik et al. (2014):

Assessment of Pain and Activity Using an Electronic Pain Diary and Actigraphy Device in a Randomized, Placebo-Controlled Crossover Trial of Celecoxib in Osteoarthritis of the Knee.

In: *Pain Pract. DOI:* 10.1111/papr.12167.

Abstract:

OBJECTIVE: The primary goal was to determine whether a composite measure of pain and activity is a more responsive assessment of analgesic effect than pain alone or activity alone in patients with osteoarthritis (OA) of the knee. DESIGN: We

conducted a randomized, double-blind, placebo-controlled, 2-period, crossover study of celecoxib vs. placebo in subjects with chronic pain due to knee OA. Patients with knee OA and baseline pain intensity score >/=4 on a 0-10 numerical rating scale (NRS) before each period were randomized. Pain endpoints included in-clinic pain score (24-hour and 1-week recall), daily paper diary pain score, current pain on an electronic pain diary (each on NRS), and WOMAC pain subscale. Activity measures included WOMAC function subscale and actigraphy using a device. Three composite pain-activity measures were prespecified. RESULTS: Sixty-three patients were randomized and 47 completed the study. The WOMAC pain subscale was the most responsive of all five pain measures. Pain-activity composites resulted in a statistically significant difference between celecoxib and placebo but were not more responsive than pain measures alone. However, a composite responder defined as having 20% improvement in pain or 10% improvement in activity yielded much larger differences between celecoxib and placebo than with pain scores alone. Actigraphy was more responsive than the WOMAC function scale, possibly due to lower placebo responsiveness. CONCLUSION: We have identified composite pain-activity measures that are similarly or more responsive than pain-alone measures in patients with OA. Further research is warranted to determine the optimal method for computing these composites.

Trudel, Xavier; Brisson, Chantal; Larocque, Brigitte; Milot, Alain (2009):

Masked hypertension: different blood pressure measurement methodology and risk factors in a working population.

In: *J Hypertens* 27 (8), S. 1560–1567. DOI: 10.1097/HJH.0b013e32832cb036.

Abstract:

OBJECTIVES\r\nTo estimate the prevalence of masked hypertension when the same ambulatory device is used for both manual and ambulatory blood pressure measurements and to measure associations with lifestyle risk factors in a working population.\r\nMETHODS\r\nWhite-collar workers were recruited from three public organizations. Blood pressure was measured at the workplace using Spacelabs 90207 for manual measurements (mean of the first three readings taken by a trained assistant) followed by ambulatory measurements (mean of every other reading obtained during the working day). Masked hypertension was defined as manual blood pressure measurement of less than 140/90 mmHg and ambulatory blood pressure measurement of at least 135/85 mmHg. Smoking, alcohol intake, BMI and leisure physical activity were also assessed.\r\nRESULTS\r\nBlood pressure measurements were obtained from 2370 workers (80% participation, 61% women; mean age = 44 years). Masked hypertension was diagnosed in 15.02% of the participants. The prevalence was higher in men [adjusted odds ratio (OR) = 2.38, 95% confidence interval (CI) = 1.86-3.05]. The prevalence in men increased with age (adjusted OR = 2.08 for 40-49 years, 95% CI = 1.33-3.26 and adjusted OR = 1.91 for > or =50 years, 95% CI = 1.20-3.04) and BMI (adjusted OR = 1.78 for BMI > or = 27, 95% CI = 1.21-2.64). The prevalence in women increased with BMI (adjusted OR = 1.65 for BMI > or =27, 95% CI = 1.14-2.39) and alcohol intake (adjusted OR = 2.12 for at least six drinks per week, 95% CI = 1.34-3.35).\r\nCONCLUSION\r\nMasked hypertension is frequent and still present when blood pressure is measured out of the office, using the same device for manual and ambulatory measurements. Sex, age, BMI and alcohol intake are associated with masked hypertension.

Trujillo, Matthew D.; Garcia, Randi L.; Shelton, J. Nicole (2014):

“I Thought You Were Japanese”: Ethnic Miscategorization and Identity Assertion.

In: *Cultural Diversity and Ethnic Minority Psychology*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-45472-001%26site%3dehost-live.

Abstract:

Across 2 studies we examined how ethnic minorities respond to ethnic miscategorization. Using a 21-day experience sampling procedure (Study 1), we found that ethnic minorities exhibited greater ethnic identity assertion when they had reported being ethnically miscategorized the previous day. Similarly, we found that ethnic minorities who were ethnically miscategorized (vs. not) by a White partner in the laboratory exhibited greater ethnic identity assertion and expressed greater dislike of their partner (Study 2). In both studies, these effects were stronger for individuals whose ethnic identity was central to their self-concept. The implications of these findings for ethnic identity development and intergroup relations are discussed. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Trull, Timothy J.; Ebner-Priemer, Ulrich W. (2009):

Using experience sampling methods/ecological momentary assessment (ESM/EMA) in clinical assessment and clinical research: introduction to the special section.

In: *Psychological Assessment* 21 (4), S. 457–462. DOI: 10.1037/a0017653.

Abstract:

This article introduces the special section on experience sampling methods and ecological momentary assessment in clinical assessment. We review the conceptual basis for experience sampling methods (ESM; Csikszentmihalyi & Larson, 1987) and ecological momentary assessment (EMA; Stone & Shiffman, 1994). Next, we highlight several advantageous features of ESM/EMA as applied to psychological assessment and clinical research. We provide a brief overview of the articles in this special section, each of which focuses on 1 of the following major classes of psychological disorders: mood disorders and mood dysregulation (Ebner-Priemer & Trull, 2009), anxiety disorders (Alpers, 2009), substance use disorders (Shiffman, 2009), and psychosis (Oorschot, Kwapil, Delespaul, & Myin-Germeys, 2009). Finally, we discuss prospects, future challenges, and limitations of ESM/EMA.

Trull, T. J.; Ebner-Priemer, U. (2012):

Ambulatory Assessment.

In: *Annu.Rev.Clin.Psychol.* (1548-5943 (Linking)). DOI: 10.1146/annurev-clinpsy-050212-185510.

Abstract:

Ambulatory assessment (AA) covers a wide range of assessment methods to study people in their natural environment, including self-report, observational, and biological/physiological/behavioral. AA methods minimize retrospective biases while gathering ecologically valid data from patients' everyday life in real time or near real time. Here, we report on the major characteristics of AA, and we provide examples of applications of AA in clinical psychology (a) to investigate mechanisms and dynamics of symptoms, (b) to predict the future recurrence or onset of symptoms, (c) to monitor treatment effects, (d) to predict treatment success, (e) to prevent relapse, and (f) as interventions. In addition, we present and discuss the most pressing and compelling future AA applications: technological developments (the smartphone), improved ecological validity of laboratory results by combined lab-field studies, and investigating gene-environment interactions. We conclude with a discussion of acceptability, compliance, privacy, and ethical issues. Expected final online publication date for the Annual Review of Clinical Psychology Volume 9 is March 26, 2013. Please see http://www.annualreviews.org/catalog/pubdates.aspx for revised estimates

Trull, Timothy J.; Ebner-Priemer, Ulrich (2014):

The Role of Ambulatory Assessment in Psychological Science.

In: *Curr Dir Psychol Sci* 23 (6), S. 466–470. DOI: 10.1177/0963721414550706.

Abstract:

We describe the current use and future promise of an innovative methodology, ambulatory assessment (AA), that can be used to investigate psychological, emotional, behavioral, and biological processes of individuals in their daily life. The term AA encompasses a wide range of methods used to study people in their natural environment, including momentary self-report, observational, and physiological. We emphasize applications of AA that integrate two or more of these methods, discuss the smart phone as a hub or access point for AA, and discuss future applications of AA methodology to the science of psychology. We pay particular attention to the development and application of Wireless Body Area Networks (WBANs) that can be implemented with smart phones and wireless physiological monitoring devices, and we close by discussing future applications of this approach to matters relevant to psychological science.

Trull, Timothy J.; Ebner-Priemer, Ulrich W.; Brown, Whitney C.; Tomko, Rachel L.; Scheiderer, Emily M. (2012):

Clinical psychology. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 620–635. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-035%26site%3dehost-live.

Abstract:

(from the chapter) Contemporary clinical psychology emphasizes empirically supported approaches to the assessment, prevention, and treatment of conditions that lead to human suffering (Trull, 2007). This wide-ranging definition reflects the broad array of activities that characterize clinical psychologists; they may serve as assessment specialists, consultants, researchers, or clinicians, to name just a few of the possibilities. In this chapter, we highlight the application of experience sampling methods (ESM; Csikszentmihalyi & Larson, 1987) and ecological momentary assessment methods (EMA; Stone & Shiffman, 1994) to the field of clinical psychology. Specifically, we discuss how these methods can shed light on the nature of mental illness and its symptoms, monitor treatment progress and outcome, and assist in the delivery of treatment in daily life. Finally, we conclude with a discussion of future applications and challenges in using these methods. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Tryon, W. W.; Tryon, G. S.; Kazlausky, T.; Gruen, W.; Swanson, J. M. (2006):

Reducing Hyperactivity with a Feedback Actigraph: Initial Findings.

In: *Clinical Child Psychology and Psychiatry* 11 (4), S. 607–617. DOI: 10.1177/1359104506067881.

Abstract:

Schulman and colleagues demonstrated that classroom activity level can be reduced in hyperactive boys using activity-level feedback and positive reinforcement. This article reports preliminary results using a device that combines modern beeper and actigraphy technology for the purpose of measuring, monitoring, and modifying motor excess in children with confirmed diagnoses of Attention Deficit Hyperactivity Disorder (ADHD). Nine boys ranging in age from 8 to 9 years with the ADHD Combined Type wore prototype BuzzBee® feedback actigraphs during school periods and were reinforced for activity-level reductions in the context of a simple pre/post research design. The findings indicated that 7 of the 9 boys reduced their activity level from 20 to 47% of baseline levels while the activity levels of the two remaining boys increased from 2 to 7% of baseline levels. These changes were statistically significant and constitute a large effect.

Tseng, Wen Chih (2010):

The quality of subjective experience in daily lives of college students: The effect of perceived challenges and skills.

In: *Chinese Journal of Psychology* 52 (2), S. 133–153. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-09517-002&site=ehost-live;wenchih@mail.nhcue.edu.tw.

Abstract:

This study conducted two major examinations. First, the present study examined whether varying ratios of perceived challenge and skill can explain the range of negative to positive variations in daily experience. Second, the article investigated the effects that perceived challenges and skills in activities have on the quality of everyday life experience. The design of the study involved an experience sampling methodology; 101 college students completed experience surveys at eight times during the day for a period of one week, resulting in a total 5,640 observations. The experience surveys measure daily variations in five dimensions of experience (concentration, control, interest, enjoyment, and involvement) in four contexts. Findings showed that the quality of experience in high-challenge/high-skill conditions was characterized by high concentration, control, interest, and involvement of the situation. Results from hierarchical linear modeling analyses showed that prediction of flow theory that the interaction of challenges and skills has a positive effect on the quality of experience. Yet some differences of parameter estimates were found between dimensions of experience and between social contexts of activity. The perceived challenges, skills, and their interaction explained 11%-39% of the with-individual variance in dimensions of experience. These findings suggest implications for improving the quality of Taiwanese college students' life and call for a further improvement of the flow model. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Tsukasaki, Keiko; Makimoto, Kiyoko; Kido, Teruhiko (2008):

The impact of sleep on ambulatory blood pressure of female caregivers providing home care in Japan: an observational study.

In: *International journal of nursing studies* 45 (12), S. 1721–1730. DOI: 10.1016/j.ijnurstu.2008.04.006.

Abstract:

BACKGROUND\r\nElderly family caregivers are presumed to be susceptible to having various health problems. However, biomedical indicators of health in these caregivers are rarely examined.\r\nOBJECTIVE\r\nTo examine the effect of sleep quality, measured by hours of sleep and the number of times leaving bed, on various blood pressure parameters in elderly caregivers.\r\nDESIGN\r\nObservational study.\r\nSETTING\r\nNorthern Japan.\r\nPARTICIPANTS\r\nSeventy-eight female family caregivers.\r\nMETHODS\r\nAmbulatory blood pressure was monitored at 30-60-min intervals for a 24-h period. An actigraph was used to determine sleep/wake status. Face-to-face interviews were conducted to obtain home care and demographic information, and self-administered questionnaires were used to collect information on activities in a 24-h period.\r\nRESULTS\r\nThe mean age of the caregivers was 62.5+/-9.6 years, and the mean hours of sleep were 7.3. Out of 78 caregivers, 19 were on antihypertensive medication. Of the remaining 59, this study found 45.8% to be hypertensive, with the mean maximum systolic pressure exceeding 180mmHg. The hours of sleep at night and for the 24-h period were inversely associated with the mean systolic blood pressure. The majority of caregivers on antihypertensive medication also had high blood pressure.\r\nCONCLUSIONS\r\nThis study suggests the importance of 24-h ambulatory blood pressure monitoring for elderly caregivers, so as to screen for hypertension as well as to monitor the effectiveness of antihypertensive medication.

Tuan Nguyen, D. M.; Lecoultre, V.; Sunami, Y.; Schutz, Y. (2012):

Assessment of Physical Activity and Energy Expenditure by GPS Combined with Accelerometry in Real-Life Conditions.

In: *J Phys.Act.Health* (1543-3080 (Linking)). Online verfügbar unter PM:23072762.

Abstract:

BACKGROUND. Physical activity (PA) and related energy expenditure (EE) is often assessed by means of a single technique. Because of inherent limitations, single techniques may not allow for an accurate assessment both PA and related EE. The aim of this study was to develop a model to accurately assess common PA types and durations and thus EE in free-living conditions, combining data from global positioning system (GPS) and two accelerometers. METHODS. Forty-one volunteers participated in the study. First, a model was developed and adjusted to measured EE with a first group of subjects (Protocol I, n=12) who performed six structured and supervised PA. Then, the model was validated over 2 experimental phases with two groups (n=12 and n=17) performing scheduled (Protocol I) and spontaneous common activities in real-life condition (Protocol II). Predicted EE was compared to actual EE as measured by portable indirect calorimetry. RESULTS. In protocol I, performed PA types could be recognized with little error. The duration of each PA type could be predicted with an accuracy below 1 minute. Measured and predicted EE were strongly associated (r=0.97, P<0.001). CONCLUSION. Combining GPS and two accelerometers allows for an accurate assessment of PA and EE in free-living situations

Tudor-Locke, Catrine; Barreira, Tiago V.; Schuna, John M.; Mire, Emily F.; Katzmarzyk, Peter T. (2014):

Fully automated waist-worn accelerometer algorithm for detecting children's sleep-period time separate from 24-h physical activity or sedentary behaviors.

In: *Appl Physiol Nutr Metab* 39 (1), S. 53–57. DOI: 10.1139/apnm-2013-0173.

Abstract:

Analysis of 24-h waist-worn accelerometer data for physical activity and sedentary behavior requires that sleep-period time (from sleep onset to the end of sleep, including all sleep epochs and wakefulness after onset) is first identified. To identify sleep-period time in children in this study, we evaluated the validity of a published automated algorithm that requires nonaccelerometer bed- and wake-time inputs, relative to a criterion expert visual analysis of minute-by-minute waist-worn accelerometer data, and validated a refined fully automated algorithm. Thirty grade 4 schoolchildren (50% girls) provided 24-h waist-worn accelerometry data. Expert visual inspection (criterion), a published algorithm (Algorithm 1), and 2 additional automated refinements (Algorithm 2, which draws on the instrument's inclinometer function, and Algorithm 3, which focuses on bedtime and wake time points) were applied to a standardized 24-h time block. Paired t tests were used to evaluate differences in mean sleep time (expert criterion minus algorithm estimate). Compared with the criterion, Algorithm 1 and Algorithm 2 significantly overestimated sleep time by 43 min and 90 min, respectively. Algorithm 3 produced the smallest mean difference (2 min), and was not significantly different from the criterion. Relative to expert visual inspection, our automated Algorithm 3 produced an estimate that was precise and within expected values for similarly aged children. This fully automated algorithm for 24-h waist-worn accelerometer data will facilitate the separation of sleep time from sedentary behavior and physical activity of all intensities during the remainder of the day.

Tudor-Locke, Catrine; Brashear, Meghan M.; Johnson, William D.; Katzmarzyk, Peter T. (2010):

Accelerometer profiles of physical activity and inactivity in normal weight, overweight, and obese U.S. men and women.

In: *Int J Behav Nutr Phys Act* 7. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-32472-001%26site%3dehost-live;Tudor-Locke@pbrc.edu.

Abstract:

BACKGROUND:

The 2005-2006 National Health and Nutrition Examination Survey (NHANES) is used to describe an accelerometer-derived physical activity/inactivity profile in normal weight (BMI < 25 kg/m2), overweight (25 </= BMI < 30 kg/m2), and obese (BMI >/= 30 kg/m2) U.S. adults.

METHODS:

We computed physical activity volume indicators (activity counts/day, uncensored and censored steps/day), rate indicators (e.g., steps/minute), time indicators (employing NHANES activity counts/minute cut points to infer time in non-wear, sedentary, low, light, moderate, and vigorous intensities), the number of breaks in sedentary time (occasions when activity counts rose from < 100 activity/counts in one minute to >/= 100 activity counts in the subsequent minute), achievement of public health guidelines, and classification by step-defined physical activity levels. Data were examined for evidence of consistent and significant gradients across BMI-defined categories.

RESULTS:

In 2005-2006, U.S adults averaged 6,564 +/- SE 107 censored steps/day, and after considering non-wear time, they spent approximately 56.8% of the rest of the waking day in sedentary time, 23.7% in low intensity, 16.7% in light intensity, 2.6% in moderate intensity, and 0.2% in vigorous intensity. Overall, approximately 3.2% of U.S. adults achieved public health guidelines. The normal weight category took 7,190 +/- SE 157 steps/day, and spent 25.7 +/- 0.9 minutes/day in moderate intensity and 7.3 +/- 0.4 minutes/day in vigorous intensity physical activity. The corresponding numbers for the overweight category were 6,879 +/- 140 steps/day, 25.3 +/- 0.9 minutes/day, and 5.3 +/- 0.5 minutes/day and for the obese category 5,784 +/- 124 steps/day, 17.3 +/- 0.7 minutes/day and 3.2 +/- 0.4 minutes/day. Across BMI categories, increasing gradients and significant trends were apparent in males for sedentary time and decreasing gradients and significant trends were evident in time spent in light intensity, moderate intensity, and vigorous intensity. For females, there were only consistent gradients and significant trends apparent for decreasing amounts of time spent in moderate and vigorous intensity.

CONCLUSIONS:

Simple indicators of physical activity volume (i.e., steps/day) and time in light, moderate or vigorous intensity physical activity differ across BMI categories for both sexes, suggesting that these should continue to be targets for surveillance.

Tudor-Locke, C.; Camhi, S. M.; Troiano, R. P. (2012):

A catalog of rules, variables, and definitions applied to accelerometer data in the national health and nutrition examination survey, 2003-2006.

In: *Prev.Chronic.Dis.* 9 (1545-1151 (Electronic)), S. E113. Online verfügbar unter PM:22698174.

Abstract:

INTRODUCTION: The National Health and Nutrition Examination Survey (NHANES) included accelerometry in the 2003-2006 data collection cycles. Researchers have used these data since their release in 2007, but the data have not been consistently treated, examined, or reported. The objective of this study was to aggregate data from studies using NHANES accelerometry data and to catalogue study decision rules, derived variables, and cut point definitions to facilitate a more uniform approach to these data. METHODS: We conducted a PubMed search of English-language articles published (or indicated as forthcoming) from January 2007 through December 2011. Our initial search yielded 74 articles, plus 1 article that was not indexed in PubMed. After excluding 21 articles, we extracted and tabulated details on 54 studies to permit comparison among studies. RESULTS: The 54 articles represented various descriptive, methodological, and inferential analyses. Although some decision rules for treating data (eg, criteria for minimal wear-time) were consistently applied, cut point definitions used for accelerometer-derived variables (eg, time spent in various intensities of physical activity) were especially diverse. CONCLUSION: Unique research questions may require equally unique analytical approaches; some inconsistency in approaches must be tolerated if scientific discovery is to be encouraged. This catalog provides a starting point for researchers to consider relevant and/or comparable accelerometer decision rules, derived variables, and cut point definitions for their own research questions

Tudor-Locke, Catrine; Johnson, William D.; Katzmarzyk, Peter T. (2011):

Relationship between accelerometer-determined steps/day and other accelerometer outputs in US adults.

In: *J Phys Act Health* 8 (3), S. 410–419.

Abstract:

BACKGROUND:

The purpose of this study was to examine the relationship between 2005-2006 National Health and Nutrition Examination Survey (NHANES) accelerometer-determined steps/day and activity counts/day, and between steps/day and estimates of nonwear time (as an indicator of the unmonitored day) and time spent in sedentary behaviors as well as a range of physical activity intensities.

METHODS:

Linear regression models were used to characterize the relationship between steps/day, activity counts/day, estimates of wear time, and intensity categories.

RESULTS:

1781 males (mean age = 46.5 years) and 1963 females (mean age = 47.7 years) wore accelerometers 14.0 ± SEM0.06 hours/day. The relationship between steps/day and activity counts/day was positive and strong (R2 = .87). The relationship between steps/day and time spent in sedentary behaviors was inverse and moderate (R2 = .25). Stronger and positive relationships were apparent between steps/day and time in light (R2 = .69) and moderate (R2 = .63) intensity activities. There was no discernable relationship between steps/day and time spent in low or vigorous intensity activities or with wear time.

CONCLUSIONS:

Assessed by accelerometer, steps/day explains 87% of the variation in activity counts/day, 25% of the variation in time in sedentary behaviors, 69% of time in light intensity, and 63% of time in moderate intensity.

Tully, Laura M.; Lincoln, Sarah Hope; Hooker, Christine I. (2014):

Lateral prefrontal cortex activity during cognitive control of emotion predicts response to social stress in schizophrenia.

In: *Neuroimage Clin* 6, S. 43–53. DOI: 10.1016/j.nicl.2014.08.012.

Abstract:

LPFC dysfunction is a well-established neural impairment in schizophrenia and is associated with worse symptoms. However, how LPFC activation influences symptoms is unclear. Previous findings in healthy individuals demonstrate that lateral prefrontal cortex (LPFC) activation during cognitive control of emotional information predicts mood and behavior in response to interpersonal conflict, thus impairments in these processes may contribute to symptom exacerbation in schizophrenia. We investigated whether schizophrenia participants show LPFC deficits during cognitive control of emotional information, and whether these LPFC deficits prospectively predict changes in mood and symptoms following real-world interpersonal conflict. During fMRI, 23 individuals with schizophrenia or schizoaffective disorder and 24 healthy controls completed the Multi-Source Interference Task superimposed on neutral and negative pictures. Afterwards, schizophrenia participants completed a 21-day online daily-diary in which they rated the extent to which they experienced mood and schizophrenia-spectrum symptoms, as well as the occurrence and response to interpersonal conflict. Schizophrenia participants had lower dorsal LPFC activity (BA9) during cognitive control of task-irrelevant negative emotional information. Within schizophrenia participants, DLPFC activity during cognitive control of emotional information predicted changes in positive and negative mood on days following highly distressing interpersonal conflicts. Results have implications for understanding the specific role of LPFC in response to social stress in schizophrenia, and suggest that treatments targeting LPFC-mediated cognitive control of emotion could promote adaptive response to social stress in schizophrenia.

Tuomisto, M. T.; Terho, T.; Korhonen, I.; Lappalainen, R.; Tuomisto, T.; Laippala, P.; Turjanmaa, V. (2006):

Diurnal and weekly rhythms of health-related variables in home recordings for two months.

In: *Physiol Behav* 87 (4), S. 650–658. DOI: 10.1016/j.physbeh.2005.12.012.

Abstract:

Several telecare systems for long-term monitoring of the well-being of patients at home have been developed as an aid in healthcare and to reduce hospitalization costs. Most of the systems have been designed to measure only one or two variables. Because well-being is a combination of both psychological and physiological wellness, there is a need to monitor several psychophysiological variables simultaneously in out-of-hospital conditions for a long period. To understand better the variability of patients' wellness-related variables in long-term recordings, the knowledge of the normal variation in health-related variables in healthy people is necessary. In our study, 14 healthy working middle-aged men were studied daily for 24 h and periods of 50 to 79 days. The variables measured were beat-to-beat heart rate, motor activity, blood pressure, body weight, and temperature. At night respiratory frequency, time of movements, amount of quiet sleep, and ballistocardiographic respiratory variation were also measured. Heart rate variability in the waking period was calculated later (standard deviation of the 5 min average of the successive normal to normal beat to beat intervals). Daily self-reported well-being, activities, and consumption of alcohol were monitored by keeping a behavioral diary. After normalizing the physiological data, the diurnal and weekly variability was calculated for each variable. In several variables the most notable diurnal and weekly variability was found between working time and free time. In conclusion, diurnal and weekly rhythms in several wellness-related physiological and psychological variables were identified, depending on working and free-time in healthy middle-aged men.

Turner, James E.; Markovitch, Daniella; Betts, James A.; Thompson, Dylan (2010):

Nonprescribed physical activity energy expenditure is maintained with structured exercise and implicates a compensatory increase in energy intake.

In: *Am J Clin Nutr* 92 (5), S. 1009–1016.

Abstract:

BACKGROUND:

Exercise interventions elicit only modest weight loss, which might reflect a compensatory reduction in nonprescribed physical activity energy expenditure (PAEE).

OBJECTIVE:

The objective was to investigate whether there is a reduction in nonprescribed PAEE as a result of participation in a 6-mo structured exercise intervention in middle-aged men.

DESIGN:

Sedentary male participants [age: 54 ± 5 y; body mass index (in kg/m^2): 28 ± 3] were randomly assigned to a 6-mo progressive exercise (EX) or control (CON) group. Energy expenditure during structured exercise (prescribed PAEE) and nonprescribed PAEE were determined with the use of synchronized accelerometry and heart rate before the intervention, during the intervention (2, 9, and 18 wk), and within a 2-wk period of detraining after the intervention.

RESULTS:

Structured prescribed exercise increased total PAEE and had no detrimental effect on nonprescribed PAEE. Indeed, there was a trend for greater nonprescribed PAEE in the EX group ($P = 0.09$). Weight loss in the EX group (-1.8 ± 2.2 kg compared with +0.2 ± 2.2 kg in the CON group, $P < 0.02$) reflected only ≈40% of the 300-373 kcal/kg body mass potential energy deficit from prescribed exercise. Serum leptin concentration decreased by 24% in the EX group (compared with 3% in the CON group, $P < 0.03$), and we estimate that this was accompanied by a compensatory increase in energy intake of ≈100 kcal/d.

CONCLUSIONS:

The adoption of regular structured exercise in previously sedentary, middle-aged, and overweight men does not result in a negative compensatory reduction in nonprescribed physical activity. The less-than-predicted weight loss is likely to reflect a compensatory increase in energy intake in response to a perceived state of relative energy insufficiency.

Uchino, Bert N.; Berg, Cynthia A.; Smith, Timothy W.; Pearce, Gale; Skinner, Michelle (2006):

Age-related differences in ambulatory blood pressure during daily stress: evidence for greater blood pressure reactivity with age.

In: *Psychology and Aging* 21 (2), S. 231–239. DOI: 10.1037/0882-7974.21.2.231.

Abstract:

Prior research on age and emotions has found that older adults may show better physiological regulation to stressful stimuli than do younger adults. However, the stress reactivity literature has shown that age is associated with higher cardiovascular reactivity to laboratory stress (J. R. Jennings et al., 1997). The authors investigated these conflicting findings further by examining daily ambulatory blood pressure in 428 middle-aged to older adults. Consistent with the age and reactivity literature, relatively old individuals showed significantly greater increases in ambulatory diastolic blood pressure compared with younger individuals when dealing with daily stressors. However, results also revealed that relatively old individuals reported less of an increase in negative affect during daily stress compared with their younger counterparts. The results of this study are consistent with the age-related increase in cardiovascular risk but highlight the complex links between stress and different facets of the aging process.

Uchino, Bert N.; Sanbonmatsu, David M.; Birmingham, Wendy (2013):

Knowing your partner is not enough: Spousal importance moderates the link between attitude familiarity and ambulatory blood pressure.

In: *Journal of Behavioral Medicine* 36 (6), S. 549–555. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-40215-001%26site%3dehost-live;Wendy.Birmingham@hci.utah.edu;david.sanbonmatsu@psych.utah.edu;bert.uchino@psych.utah.edu.

Abstract:

Close relationships have been linked to cardiovascular morbidity and mortality. More research is needed, however, on the social and biological processes responsible for such links. In this study, we examined the role of relationship-based attitudinal processes (i.e., attitude familiarity and partner importance) on ambulatory blood pressure during daily life. Forty-seven married couples completed a questionnaire regarding their own attitudes, perceptions of their partner's attitudes, and perceptions of partner importance. They also underwent a 1-day ambulatory assessments of daily spousal interactions and blood pressure. Partner importance was related to better interpersonal functioning (e.g., partner responsiveness) and lower ambulatory systolic blood pressure. More interestingly, partner importance moderated the links between attitude familiarity and both ambulatory systolic and diastolic blood pressure. This statistical interaction revealed that simply knowing a partner's attitudes was not enough as partner knowledge was primarily related to lower ambulatory blood pressure when they were also viewed as more important. These data are discussed in light of how attitude familiarity and spousal importance may jointly influence health outcomes and the social-cognitive mechanisms potentially responsible for such links. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Udachina, Alisa; Thewissen, Viviane; Myin-Germeys, Inez; Fitzpatrick, Sam; O'Kane, Aisling; Bentall, Richard P. (2009):

Understanding the relationships between self-esteem, experiential avoidance, and paranoia: structural equation modelling and experience sampling studies.

In: *The Journal of nervous and mental disease* 197 (9), S. 661–668. DOI: 10.1097/NMD.0b013e3181b3b2ef.

Abstract:

Hypothesized relationships between experiential avoidance (EA), self-esteem, and paranoia were tested using structural equation modeling in a sample of student participants (N = 427). EA in everyday life was also investigated using the Experience Sampling Method in a subsample of students scoring high (N = 17) and low (N = 15) on paranoia. Results showed that paranoid students had lower self-esteem and reported higher levels of EA than nonparanoid participants. The interactive influence of EA and stress predicted negative self-esteem: EA was particularly damaging at high levels of stress. Greater EA and higher social stress independently predicted lower positive self-esteem. Low positive self-esteem predicted engagement in EA. A direct association between EA and paranoia was also found. These results suggest that similar mechanisms may underlie EA and thought suppression. Although people may employ EA to regulate self-esteem, this strategy is maladaptive as it damages self-esteem, incurs cognitive costs, and fosters paranoid thinking.

Udachina, A.; Varese, F.; Oorschot, M.; Myin-Germeys, I.; Bentall, R. P. (2012):

Dynamics of self-esteem in "poor-me" and "bad-me" paranoia.

In: *J Nerv.Ment.Dis.* 200 (9), S. 777–783. DOI: 10.1097/NMD.0b013e318266ba57.

Abstract:

ABSTRACT: The dynamics of self-esteem and paranoia were examined in 41 patients with past or current paranoia and 23 controls using questionnaires and the Experience Sampling Method (a structured diary technique). For some analyses, patients were further divided into three groups: a) individuals who believed that persecution is underserved ("poor me"; PM), b) individuals who believed that persecution is justified ("bad me"; BM), and c) remitted patients. The results revealed that PM and especially BM patients had highly unstable psychological profiles. Beliefs about deservedness of persecution fluctuated over 6 days. BM beliefs were associated with low self-esteem and depression. Measured concurrently, paranoia predicted lower self-esteem in the BM patients. Prospectively, paranoia predicted lower subsequent self-esteem in BM patients but higher subsequent self-esteem in PM patients. Our results suggest that paranoia can serve a defensive function in some circumstances. The reasons for inconsistencies in self-esteem research in relation to paranoia are discussed

Udachina, Alisa; Varese, Filippo; Myin-Germeys, Inez; Bentall, Richard P. (2014):

The role of experiential avoidance in paranoid delusions: An experience sampling study.

In: *British Journal of Clinical Psychology* 53 (4), S. 422–432. DOI: 10.1037/t20074-000;

Abstract:

Objectives. The study examined (1) the role of experiential avoidance (EA), conceptualized as intolerance towards aversive mental states, in paranoid delusions and (2) the mechanisms underlying EA. Design. A 6-day prospective momentary assessment study. Methods. Paranoid patients (N = 41) were studied using the experience sampling method (ESM), a structured diary technique, assessing psychopathology and current context in daily life. Results. The results showed that both low self-esteem and EA contributed to paranoid thinking. The relationship between low self-esteem and paranoia was partially mediated by EA and the relationship between EA and paranoia was partially mediated by low self-esteem. The detrimental effect of EA on self-esteem was more pronounced under high activity-related stress. Both EA and social stress were independently associated with low self-esteem. EA was associated with self-esteem instability. Conclusions. Our results implicate mental control strategies in the development of paranoia and are compatible with the attributional model of paranoia, which suggests that persecutory delusions arise as a result of dysfunctional attempts to avoid unpleasant thoughts about the self. Practitioner points. Interventions for paranoid individuals should target low tolerance towards negative mental states, for example using mindfulness and ACT therapeutic approaches. Interventions designed for individuals suffering from persecutory delusions should also address unfavourable views about the self. Limitations. Avoidance of unpleasant mental states may operate outside the individual's awareness and self-report measures of EA may be unable to adequately tap this process. Self-reflection abilities of psychotic patients may be impaired. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Uebel, Henrik; Albrecht, Bjorn; Kirov, Roumen; Heise, Alexander; Dopfner, Manfred; Joseph Freisleder, Franz et al. (2010):

What can actigraphy add to the concept of labschool design in clinical trials?

In: *Current pharmaceutical design* 16 (22), S. 2434–2442.

Abstract:

Pharmacological intervention with methylphenidate (MPH) is very common and helpful in the treatment of attention-deficit/hyperactivity disorder (ADHD). It ameliorates inattention, impulsivity and hyperactivity and improves psychosocial functioning. The core symptoms of ADHD are problematic mainly in demanding structured situations such as in the classroom. It was argued that MPH does not only lead to a decrease of hyperactivity in these situations but may also result in a general dampening of motor activity during non-structured leisure time. Unfortunately, only few clinical trials have investigated this practically important issue and thus it is still a matter of debate. It follows that many parents hesitate to accept psychotropic drugs for their children. To elucidate this problem in the current study, not only overall behavioral ratings (half-day blocks) but also day-long actigraphy was applied during an analogue classroom setting, where structured and non-structured situations alternated over time. Fourty-nine children with ADHD were assessed for treatment effects of once-daily extended-release and twice daily immediate-release methylphenidate (MPH) as well as placebo. Both MPH regimes yielded improved behavioral ratings during morning and afternoon, while actigraphy showed reduced motor activity in structured situations, but not during leisure time. Furthermore, the movement information obtained with actigraphy during structured situations could be differentiated from the one gained with overall behavioral ratings. Thus, while behavioral ratings provide a valid estimate of the overall symptomatology, additional information gathered with actigraphy may help to differentiate the impact of medication on hyperactive movement in different situations during the day. This may reflect a more valid picture of a child's real life and improve the quality of clinical trials. Thus, both methods may be regarded as complementary for the assessment of drug effects in children with ADHD and should be a standard of further laboratory school protocols in clinical trials.

Uen, Sakir; Fimmers, Rolf; Brieger, Miriam; Nickenig, Georg; Mengden, Thomas (2009):

Reproducibility of wrist home blood pressure measurement with position sensor and automatic data storage.

In: *BMC cardiovascular disorders* 9, S. 20. DOI: 10.1186/1471-2261-9-20.

Abstract:

BACKGROUND\r\nWrist blood pressure (BP) devices have physiological limits with regards to accuracy, therefore they were not preferred for home BP monitoring. However some wrist devices have been successfully validated using established validation protocols. Therefore this study assessed the reproducibility of wrist home BP measurement with position sensor and automatic data storage.\r\nMETHODS\r\nTo compare the reproducibility of three different(BP) measurement methods: 1) office BP, 2) home BP (Omron wrist device HEM- 637 IT with position sensor), 3) 24-hour ambulatory BP(24-h ABPM) (ABPM-04, Meditech, Hun)conventional sphygmomanometric office BP was measured on study days 1 and 7, 24-h ABPM on study days 7 and 14 and home BP between study days 1 and 7 and between study days 8 and 14 in 69 hypertensive and 28 normotensive subjects. The correlation coefficient of each BP measurement method with echocardiographic left ventricular mass index was analyzed. The schedule of home readings was performed according to recently published European Society of Hypertension (ESH)-guidelines.\r\nRESULTS\r\nThe reproducibility of home BP measurement analyzed by the standard deviation as well as the squared differences of mean individual differences between the respective BP measurements was significantly higher than the reproducibility of office BP ($p < 0.001$ for systolic and diastolic BP) and the reproducibility of 24-h ABPM ($p < 0.001$ systolic BP, $p = 0.127$ diastolic BP). The reproducibility of systolic and diastolic office versus 24-h ABPM was not significantly different ($p = 0.80$ systolic BP, $p = 0.1$ diastolic BP). The correlation coefficient of 24-h ABMP ($r = 0.52$) with left ventricular mass index was significantly higher than with office BP ($r = 0.31$). The difference between 24-h ABPM and home BP ($r = 0.46$) was not significant.\r\nCONCLUSION\r\nThe short-term reproducibility of home BP measurement with the Omron HEM-637 IT wrist device was superior to the reproducibility of office BP and 24- h ABPM measurement. Furthermore, home BP with the wrist device showed similar correlations to targeted organ damage as recently reported for upper arm devices. Although wrist devices have to be used cautious and with defined limitations, the use of validated devices with position sensor according to recently recommended measurement schedules might have the potential to be used for therapy monitoring.

Unsworth, Nash; McMillan, Brittany D.; Brewer, Gene A.; Spillers, Gregory J. (2013):

Individual differences in everyday retrospective memory failures.

In: *Journal of Applied Research in Memory and Cognition* 2 (1), S. 7–13. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-09216-002%26site%3dehost-live;nashu@uoregon.edu.

Abstract:

The present study examined individual differences in everyday retrospective memory failures. Undergraduate students completed various cognitive ability measures in the laboratory and recorded everyday retrospective memory failures in a diary over the course of a week. The majority of memory failures were forgetting information pertaining to exams and homework, forgetting names, and forgetting login and ID information. Using latent variable techniques the results also suggested that individual differences in working memory capacity and retrospective memory were related to some but not all everyday memory failures. Furthermore, everyday memory failures predicted SAT scores and partially accounted for the relation between cognitive abilities and SAT scores. These results provide important evidence for individual differences in everyday retrospective memory failures as well as important evidence for the ecological validity of laboratory measures of working memory capacity and retrospective memory. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Urbin, M. A.; Hong, Xin; Lang, Catherine E.; Carter, Alex R. (2014):

Resting-State Functional Connectivity and Its Association With Multiple Domains of Upper-Extremity Function in Chronic Stroke.

In: *Neurorehabil Neural Repair. DOI:* 10.1177/1545968314522349.

Abstract:

BACKGROUND: Recent work has shown that resting-state functional connectivity (rsFC) between homotopic, motor-related brain regions is associated with upper-extremity control early after stroke. OBJECTIVES: This study examined various patterns of rsFC in chronic stroke, a time at which extensive neural reorganization has occurred. Associations between homotopic somatomotor connectivity and clinical measures, representing separate domains of upper-extremity function, were determined. METHODS: A total of 19 persons >/=6 months poststroke participated. Four connectivity patterns within a somatomotor network were

quantified using functional magnetic resonance imaging. Upper-extremity gross muscle activation, control, and real-world use were evaluated with the Motricity Index, Action Research Arm Test, and accelerometry, respectively. RESULTS: Connectivity between homotopic regions was stronger than that in the contralesional and ipsilesional hemispheres. No differences in connectivity strength were noted between homotopic pairs, indicating that a specific brain structure was not driving somatomotor network connectivity. Homotopic connectivity was significantly associated with both upper-extremity control (r = 0.53; P= .02) and real-world use (r = 0.54; P= .02); however, there was no association with gross muscle activation (r = 0.23; P=.34). The combination of clinical measures accounted for 40% of the variance in rsFC (= .05). CONCLUSIONS: The results reported here expand on previous findings, indicating that homotopic rsFC persists in chronic stroke and discriminates between varying levels of upper-extremity control and real-world use. Further work is needed to evaluate its adequacy as a biomarker of motor recovery following stroke.

Uswatte, Gitendra; Giuliani, Carol; Winstein, Carolee; Zeringue, Angelique; Hobbs, Laura; Wolf, Steven L. (2006):

Validity of accelerometry for monitoring real-world arm activity in patients with subacute stroke: evidence from the extremity constraint-induced therapy evaluation trial.

In: *Arch Phys Med Rehabil* 87 (10), S. 1340–1345.

Abstract:

OBJECTIVE:

To examine the psychometric properties of an objective method for assessing real-world arm activity in a large sample with subacute stroke.

DESIGN:

Validation study.

SETTING:

Community.

PARTICIPANTS:

Persons 3 to 9 months poststroke (N=169) with mild to moderate motor impairment of their hemiparetic arm enrolled in a multisite, randomized clinical trial of constraint-induced movement therapy.

INTERVENTIONS:

Not applicable.

MAIN OUTCOME MEASURES:

Participants wore an accelerometer on each arm outside the laboratory for 3 days before and after treatment or an equivalent no-treatment period. They also completed the Actual Amount of Use Test (AAUT), which is an observational measure of spontaneous more-impaired arm use, and the Motor Activity Log (MAL), which is an interview assessing more-impaired arm use in daily life.

RESULTS:

Low-pass-filtered accelerometer recordings were reliable (r range, >.8) and stable (P range, >.48). Their validity was also supported. Correlations calculated across all participants at baseline between the ratio of more-impaired to less-impaired arm accelerometer recordings and AAUT and MAL scores were .60 and .52, respectively.

CONCLUSIONS:

Accelerometry provides an objective, real-world index of more-impaired arm activity with good psychometric properties.

Uswatte, Gitendra; Hobbs Qadri, Laura (2009):

A behavioral observation system for quantifying arm activity in daily life after stroke.

In: *Rehabilitation Psychology* 54 (4), S. 398–403. DOI: 10.1037/a0017501.

Abstract:

OBJECTIVE\r\nEvaluate psychometric properties of the Functional Arm Activity Behavioral Observation System (FAABOS) for measuring hemiparetic arm use.\r\nPARTICIPANTS AND MEASURES\r\nAll participants acquired their brain injury > 1 year prior to study entry; most had mild-to-moderate upper-extremity hemiparesis. In Study 1, 9 stroke survivors wore accelerometers and

were videotaped for 15 min in the hospital or at home after they were asked to behave as usual. In Study 2, 1 traumatic brain injury and 8 stroke survivors wore accelerometers and were videotaped at home for 3 days with a motion-triggered camera. Observers independently rated 15-min segments of the Study 1 and 2 videotapes in 2-s blocks with a 4-step arm-activity coding scheme.\r\nRESULTS\r\nInterrater reliability was excellent; the mean Cohen's kappa in each study was > or = .84. For data from both studies combined, validity was supported by a strong correlation between amount of hemiparetic arm functional activity, as determined by the observers, and the ratio of hemiparetic to other arm movement, as determined by accelerometry.\r\nCONCLUSION\r\nFAABOS reliably and validly quantifies amount of spontaneous hemiparetic arm activity outside the laboratory.

Uswatte, Gitendra; Taub, Edward; Morris, Dppt; Light, Kppt; Thompson, P. A. (2006):

The Motor Activity Log-28 assessing daily use of the hemiparetic arm after stroke.

In: *Neurology* 67 (7), S. 1189–1194.

Abstract:

Data from monkeys with deafferented forelimbs and humans after stroke indicate that tests of the motor capacity of impaired extremities can overestimate their spontaneous use. Before the Motor Activity Log (MAL) was developed, no instruments assessed spontaneous use of a hemiparetic arm outside the treatment setting.

OBJECTIVE:

To study the MAL's reliability and validity for assessing real-world quality of movement (QOM scale) and amount of use (AOU scale) of the hemiparetic arm in stroke survivors.

METHODS:

Participants in a multisite clinical trial completed a 30-item MAL before and after treatment (n = 106) or an equivalent no-treatment period (n = 116). Participants also completed the Stroke Impact Scale (SIS) and wore accelerometers that monitored arm movement for three consecutive days outside the laboratory. All were 3 to 12 months post-stroke and had mild to moderate paresis of an upper extremity.

RESULTS:

After an item analysis, two MAL tasks were eliminated. Revised participant MAL QOM scores were reliable (r =0.82). Validity was also supported. During the first observation period, the correlation between QOM and SIS Hand Function scale scores was 0.72. The corresponding correlation for QOM and accelerometry values was 0.52. Participant QOM and AOU scores were highly correlated (r = 0.92).

CONCLUSIONS:

The participant Motor Activity Log is reliable and valid in individuals with subacute stroke. It might be employed to assess the real-world effects of upper extremity neurorehabilitation and detect deficits in spontaneous use of the hemiparetic arm in daily life.

Uy, Marilyn A.; Foo, Maw-Der; Aguinis, Herman (2010):

Using experience sampling methodology to advance entrepreneurship theory and research.

In: *Organizational Research Methods* 13 (1), S. 31–54.

Abstract:

The authors propose the use of experience sampling methodology (ESM) as an innovative methodological approach to address critical questions in entrepreneurship research. ESM requires participants to provide reports of their thoughts, feelings, and behaviors at multiple times across situations as they happen in the natural environment. Thus, ESM allows researchers to capture dynamic person-by-situation interactions as well as between- and within-person processes, improve the ecological validity of results, and minimize retrospective biases. The authors provide a step-by-step description of how to design and implement ESM studies beginning with research design and ending with data analysis, and including issues of implementation such as time and resources needed, participant recruitment and orientation, signaling procedures, and the use of computerized devices and wireless technologies. The authors also describe a cell phone ESM protocol that enables researchers to monitor and interact with participants in real time, reduces costs, expedites data entry, and increases convenience. Finally, the authors discuss implications of ESMbased research for entrepreneurs, business incubators, and entrepreneurship educators.

Uys, A. S.; Malan, L.; van Rooyen, J. M.; Steyn, H. S.; Reimann, M.; Ziemssen, T. (2014):

Attenuated NOx responses and myocardial ischemia, a possible risk for structural vascular disease in African men: the SABPA study.

In: *J Hum Hypertens. DOI:* 10.1038/jhh.2013.128.

Abstract:

Chronically elevated blood pressure has been associated with impaired NO-mediated vasodilation and structural vascular disease risk. This study aimed to determine whether significant associations exist regarding NO metabolite (NOx) responses, cardiovascular function and structural vascular disease in a cohort of African and Caucasian men. The study included 81 African and 94 Caucasian male teachers stratified via median splits into low and high NOx ethnic groups. Ambulatory blood pressure, electrocardiogram monitoring and ultrasound carotid intima-media thickness (CIMT) images were obtained. Cardiovascular measurements and fasting blood for NOx responses were measured during rest and on challenging the cardiovascular system with the Stroop colour-word conflict test. African men displayed significantly higher resting NOx as well as higher number of 24 h silent ischemic events than their Caucasian counterparts. Low NOx African men displayed enhanced alpha-adrenergic and ECG ST segment depression acute mental stress responses as well as 24 h silent ischemic events associated with CIMT (adjusted R2=0.47; beta=0.25; confidence interval (CI)=0.13, 0.41). African men demonstrated a vulnerable cardiovascular profile. Novel findings revealed alpha-adrenergic-driven blood pressure responses and less NO bioavailability during acute stress. The association between myocardial ischemia and CIMT in this group emphasized their risk for future coronary artery disease and cerebrovascular events.Journal of Human Hypertension advance online publication, 9 January 2014; doi:10.1038/jhh.2013.128.

Vahabzadeh, Massoud; Lin, Jia-Ling; Mezghanni, Mustapha; Epstein, David H.; Preston, Kenzie L. (2009):

Automation in an addiction treatment research clinic: computerised contingency management, ecological momentary assessment and a protocol workflow system.

In: *Drug and Alcohol Review* 28 (1), S. 3–11. DOI: 10.1111/j.1465-3362.2008.00007.x.

Abstract:

INTRODUCTION AND AIMS\r\nA challenge in treatment research is the necessity of adhering to protocol and regulatory strictures while maintaining flexibility to meet patients' treatment needs and to accommodate variations among protocols. Another challenge is the acquisition of large amounts of data in an occasionally hectic environment, along with the provision of seamless methods for exporting, mining and querying the data.\r\nDESIGN AND METHODS\r\nWe have automated several major functions of our outpatient treatment research clinic for studies in drug abuse and dependence. Here we describe three such specialised applications: the Automated Contingency Management (ACM) system for the delivery of behavioural interventions, the transactional electronic diary (TED) system for the management of behavioural assessments and the Protocol Workflow System (PWS) for computerised workflow automation and guidance of each participant's daily clinic activities. These modules are integrated into our larger information system to enable data sharing in real time among authorised staff.\r\nRESULTS\r\nACM and the TED have each permitted us to conduct research that was not previously possible. In addition, the time to data analysis at the end of each study is substantially shorter. With the implementation of the PWS, we have been able to manage a research clinic with an 80 patient capacity, having an annual average of 18,000 patient visits and 7300 urine collections with a research staff of five. Finally, automated data management has considerably enhanced our ability to monitor and summarise participant safety data for research oversight.\r\nDISCUSSION AND CONCLUSIONS\r\nWhen developed in consultation with end users, automation in treatment research clinics can enable more efficient operations, better communication among staff and expansions in research methods.

Vahlkvist, S.; Pedersen, S. (2009):

Fitness, daily activity and body composition in children with newly diagnosed, untreated asthma.

In: *Allergy* 64 (11), S. 1649–1655. DOI: 10.1111/j.1398-9995.2009.02081.x.

Abstract:

BACKGROUND\r\nInformation about how the asthma disease affects the life style and health in children is sparse.\r\nAIM\r\nTo measure fitness, daily physical activity and body composition in children with newly diagnosed, untreated asthma and healthy controls, and to assess the association between the level of asthma control and these parameters.\r\nMETHODS\r\nDaily physical activity measured using accelerometry, cardiovascular fitness and body composition (per cent fat, per cent lean tissue and bone mineral density) were measured in 57 children with newly diagnosed, untreated asthma and in 157 healthy age- and

sex-matched controls. The level of asthma control was assessed by measurements of a variety of asthma outcomes.\r\nRESULTS\r\nChildren with asthma were less fit (35.1 vs 39.3 ml O(2)/min/kg) (P < 0.001), had a higher body per cent fat (22.8 vs 19.5%) (P < 0.01) and a higher frequency of overweight (24.6 vs 14.2%) (P < 0.05) than healthy controls. Per cent body fat correlated negativly to overall daily activity (P < 0.001) and to time spent in high or vigorous activity (P < 0.001). Fitness corrrelated positively to time spent in high and vigorous activity (P < 0.001). Within the asthma group, the level of asthma control, fitness and the time spent in vigorous activity correlated positively (P < 0.02).\r\nCONCLUSION\r\nChildren with untreated asthma are less fit and have a higher body per cent fat and frequency of obesity than their healthy peers. Uncontrolled asthma is associated with a reduced fitness and daytime spent in intensive activity. Overweight children are physically less active than normal weight children.

Vakil, N.; Bjorck, K.; Denison, H.; Halling, K.; Karlsson, M.; Paty, J. et al. (2012):

Validation of the reflux symptom questionnaire electronic diary in partial responders to proton pump inhibitor therapy.

In: *Clin.Transl.Gastroenterol.* 3 (2155-384X (Electronic)), S. e7. DOI: 10.1038/ctg.2012.1.

Abstract:

OBJECTIVES: We aimed to develop and validate the Reflux Symptom Questionnaire electronic Diary (RESQ-eD) for use in clinical trials in patients with a partial response to proton pump inhibitor (PPI) therapy, using methods that meet US Food & Drug Administration (FDA) regulatory standards. METHODS: Patient interviews were performed to elicit new items and evaluate existing items from the Reflux Disease Questionnaire. The instrument's measurement properties were evaluated, based on data from two clinical trials of patients with gastroesophageal reflux disease (GERD) with a partial response to PPIs who received lesogaberan or placebo as an add-on to PPI therapy. RESULTS: The content validity phase resulted in 13 RESQ-eD items. Principal component analysis supported a four-domain structure. All domains had a high inter-item correlation (Cronbach's alpha lower 95% confidence limit: 0.87-0.95). Test-retest reliability was good to excellent (intraclass correlation coefficient: 0.65-0.85). Convergent and discriminant validity was confirmed by correlation assessments referencing the Gastrointestinal Symptom Rating Scale. The RESQ-eD demonstrated a good ability to capture change in mean intensity and proportion of symptom-free days. Confirmatory psychometric evaluation verified internal consistency reliability, test-retest reliability, and ability to capture change. CONCLUSIONS: The RESQ-eD demonstrated good content validity and psychometric properties in the clinical trial setting in patients with GERD who have a partial response to PPI therapy. To our knowledge, the RESQ-eD is the first electronic symptom diary for use in partial responders to PPI that has been developed in line with the FDA guidance on patient-reported outcomes

Valdivieso-Lopez, E.; Flores-Mateo, G.; Molina-Gomez, J. D.; Rey-Renones, C.; Barrera Uriarte, M. L.; Duch, J.; Valverde, A. (2013):

Efficacy of a mobile application for smoking cessation in young people: study protocol for a clustered, randomized trial.

In: *BMC Public Health* 13 (1471-2458 (Linking)), S. 704. DOI: 10.1186/1471-2458-13-704.

Abstract:

BACKGROUND: Tobacco consumption is the most preventable cause of morbidity-mortality in the world. One aspect of smoking cessation that merits in-depth study is the use of an application designed for smartphones (app), as a supportive element that could assist younger smokers in their efforts to quit. To assess the efficacy of an intervention that includes the assistance of a smoking cessation smartphone application targeted to young people aged 18 to 30 years who are motivated to stop smoking. METHODS/DESIGN: Cluster randomised clinical trial. Setting: Primary Health Care centres (PHCCs) in Catalonia. Analyses based on intention to treat. Participants: motivated smokers of 10 or more cigarettes per day, aged 18 to 30 years, consulting PHCCs for any reason and who provide written informed consent to participate in the trial. Intervention group will receive a 6-month smoking cessation programme that implements recommendations of a Clinical Practice Guideline, complemented with a smartphone app designed specifically for this programme. Control group will receive the usual care. The outcome measure will be abstinence at 12 months confirmed by exhaled-air carbon monoxide concentration of at least 10 parts per million at each control test. DISCUSSION: To our knowledge this is the first randomised controlled trial of a programme comparing the efficacy of usual care with a smoking cessation intervention involving a mobile app. If effective, the modality could offer a universal public health management approach to this common health concern. TRIAL REGISTRATION: NCT01734421

Vallée-Smejda, Sophie; Hahn, Marion; Aubin, Nathalie; Rosmus, Christina (2009):

Recording practices and satisfaction of hemophiliac patients using two different data entry systems.

In: *Comput Inform Nurs* 27 (6), S. 372–378. DOI: 10.1097/NCN.0b013e3181bcad12.

Abstract:

Record keeping is integral to home treatment for hemophilia. Identified problems with paper diaries include suboptimal compliance and questionable data validity and quality. The effects of an electronic data recording system, Advoy, on data quality, patient adherence, and satisfaction were examined. An exploratory approach was used to examine the sequential use of paper diaries and e-diaries by 38 patients. Data were obtained from paper records for the 6 months preceding the introduction of the electronic record and from the first 6 months of use of Advoy. Completion of mandatory and additional treatment details was also compared. More mandatory information (27.57%) was recorded with the e-diary. As well, the amount of completed additional fields nearly doubled (19.9%-36.5%). Patients tended to complete a greater variety of additional fields with the e-diary than with paper records. Finally, a higher percentage of survey respondents (29.4%) indicated that they were \"very satisfied\" with Advoy compared with paper records (6.7%). Most survey respondents (94.4%) had a previous experience with electronic programs. The use of the e-diary significantly improved patient adherence in recording mandatory treatment information; the increase in additional data provided by the patients was also found to be an added benefit of this technology.

van Cauwenberghe, Eveline; Gubbels, Jessica; Bourdeaudhuij, Ilse; Cardon, Greet (2011):

Feasibility and validity of accelerometer measurements to assess physical activity in toddlers.

In: *Int J Behav Nutr Phys Act* 8. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-31387-001%26site%3dehost-live;eveline.vancauwenberghe@ugent.be.

Abstract:

Background

Accelerometers are considered to be the most promising tool for measuring physical activity (PA) in free-living young children. So far, no studies have examined the feasibility and validity of accelerometer measurements in children under 3 years of age. Therefore, the purpose of the present study was to examine the feasibility and validity of accelerometer measurements in toddlers (1- to 3-year olds).

Methods

Forty-seven toddlers (25 boys; 20 ± 4 months) wore a GT1M ActiGraph accelerometer for 6 consecutive days and parental perceptions of the acceptability of wearing the monitor were assessed to examine feasibility. To investigate the validity of the ActiGraph and the predictive validity of three ActiGraph cut points, accelerometer measurements of 31 toddlers (17 boys; 20 ± 4 months) during free play at child care were compared to directly observed PA, using the Observational System for Recording Physical Activity in Children-Preschool (OSRAC-P). Validity was assessed using Pearson and Spearman correlations and predictive validity using area under the Receiver Operating Characteristic curve (ROC-AUC).

Results

The feasibility examination indicated that accelerometer measurements of 30 toddlers (63.8%) could be included with a mean registration time of 564 ± 62 min during weekdays and 595 ± 83 min during weekend days. According to the parental reports, 83% perceived wearing the accelerometer as 'not unpleasant and not pleasant' and none as 'unpleasant'. The validity evaluation showed that mean ActiGraph activity counts were significantly and positively associated with mean OSRAC-P activity intensity ($r = 0.66$; $p < 0.001$; $n = 31$). Further, the correlation among the ActiGraph activity counts and the OSRAC-P activity intensity level during each observation interval was significantly positive ($\rho = 0.52$; $p < 0.001$; $n = 4218$). Finally, the three sedentary cut points exhibited poor to fair classification accuracy (ROC-AUC: 0.56 to 0.71) while the three light PA (ROC-AUC: 0.51 to 0.62) and the three moderate-to-vigorous PA cut points (ROC-AUC: 0.53 to 0.57) demonstrated poor classification accuracy with respect to detecting sedentary behavior, light PA and moderate-to-vigorous PA, respectively.

Conclusions

The present findings suggest that ActiGraph accelerometer measurements are feasible and valid for quantifying PA in toddlers. However, further research is needed to accurately identify PA intensities in toddlers using accelerometry.

van de Leemput, I. A.; Wichers, M.; Cramer, A. O.; Borsboom, D.; Tuerlinckx, F.; Kuppens, P. et al. (2014):

Critical slowing down as early warning for the onset and termination of depression.

In: *Proc.Natl.Acad.Sci.U.S.A* 111 (1), S. 87–92. DOI: 10.1073/pnas.1312114110.

Abstract:

About 17% of humanity goes through an episode of major depression at some point in their lifetime. Despite the enormous societal costs of this incapacitating disorder, it is largely unknown how the likelihood of falling into a depressive episode can be assessed. Here, we show for a large group of healthy individuals and patients that the probability of an upcoming shift between a depressed and a normal state is related to elevated temporal autocorrelation, variance, and correlation between emotions in fluctuations of autorecorded emotions. These are indicators of the general phenomenon of critical slowing down, which is expected to occur when a system approaches a tipping point. Our results support the hypothesis that mood may have alternative stable states separated by tipping points, and suggest an approach for assessing the likelihood of transitions into and out of depression

van den Berg-Emons, Rita J; Bussmann, Johannes B.; Haisma, Janneke A.; Sluis, Tebbe A.; van der Woude, Lucas H; Bergen, Michael P.; Stam, Henk J. (2008):

A prospective study on physical activity levels after spinal cord injury during inpatient rehabilitation and the year after discharge.

In: *Arch Phys Med Rehabil* 89 (11), S. 2094–2101. DOI: 10.1016/j.apmr.2008.04.024.

Abstract:

OBJECTIVES\r\nTo assess the change over time in the physical activity level after a spinal cord injury (SCI), to explore its determinants, and to compare the physical activity level 1 year after discharge from the rehabilitation center with the level in able-bodied persons.\r\nDESIGN\r\nProspective cohort study. Measurements were obtained at the start of active rehabilitation, 3 months later, at discharge, 2 months after discharge, and 1 year after discharge.\r\nSETTING\r\nRehabilitation center in The Netherlands and the participant's home.\r\nPARTICIPANTS\r\nPersons (n=40) with SCI.\r\nINTERVENTIONS\r\nNot applicable.\r\nMAIN OUTCOME MEASURES\r\nThe physical activity level, as indicated by the duration of dynamic activities (ie, wheelchair driving, walking, cycling, noncyclic movement) per day, and the intensity of everyday activity; both were measured with an accelerometry-based activity monitor during 2 consecutive weekdays.\r\nRESULTS\r\nRandom coefficient analyses showed that the duration of dynamic activities and the intensity of everyday activity increased during inpatient rehabilitation at rates of 41% and 19%, respectively (P<.01). Shortly after discharge, there was a strong decline (33%; P<.001) in the duration of dynamic activities. One year after discharge, this decline was restored to the discharge level but was low in comparison with levels in able-bodied persons. The level of lesion and completeness of lesion were determinants of the change in the physical activity level after discharge.\r\nCONCLUSIONS\r\nThe physical activity level increased during inpatient rehabilitation, but this increase did not continue after discharge, and the level 1 year after discharge was distinctly lower than the level in able-bodied persons. Subpopulations had a different change over time in the physical activity level after discharge.

van den Berg-Emons, Rita J; Schasfoort, Fabiënne C.; Vos, Leonard A.; Bussmann, Johannes B.; Stam, Henk J. (2007):

Impact of chronic pain on everyday physical activity.

In: *Eur J Pain* 11 (5), S. 587–593.

Abstract:

Although patients with chronic pain are often considered to have reduced levels of everyday physical activity, data on their activity levels are scarce and inconclusive. Therefore, this study explored whether patients with chronic pain have reduced activity levels, as objectively measured with an activity monitor. The activity monitor is based on long-term ambulatory monitoring of signals from body-fixed accelerometers during everyday life, aimed at assessment of mobility-related activities. Measurements with the monitor were performed during a weekday (24 h) in 18 patients with chronic pain and compared with measurements obtained from 18 gender and age matched healthy comparison subjects.

The mean (SD) age of the patients was 44 (11) years, and the mean (SD) duration of their complaints was 8 (7) years. Compared with the healthy subjects, the duration of dynamic activities was not significantly reduced (p = 0.10) in the patient group. Mean (SD) intensity of everyday physical activity was lower (p = 0.03) in the patients than in the healthy comparison subjects (0.021 [0.006] g versus 0.026 [0.004] g), and patients spent more time lying down (47.0 [10.2]% versus 34.3 [5.6] %; p = 0.000) and less time sitting (29.2 [8.9]% versus 36.4 [9.3]%; p = 0.03) than the healthy comparison subjects.

In spite of significant differences between patients and healthy comparison subjects for some aspects of the activity pattern (which may reflect pain behaviour), the impact of chronic pain on everyday physical activity was relatively small.

van der Kuip, Martijn; Meer, Kees; Westerterp, Klaas R.; Gemke, Reinoud J. (2007):

Physical activity as a determinant of total energy expenditure in critically ill children.

In: *Clinical nutrition* 26 (6), S. 744–751.

Abstract:

For adequate nutritional support of critically ill children, knowledge of the patient's energy expenditure is required. Steady state measurement by a metabolic monitor are defined as resting energy expenditure and may underestimate total energy expenditure in clinical practise. The aim of this study was to investigate total energy expenditure, resting energy expenditure and the relation with physical activity during critical illness and initial recovery.

METHODS:

We enrolled 20 patients (0-16 yr) with sepsis or following surgery. During the first week following admission, total energy expenditure was measured with doubly labelled water, and compared with daily resting energy expenditure measurements (metabolic monitor). Activity levels were independently determined by tri-axial accelerometry.

RESULTS:

Resting energy expenditure was not different from Schofield's predicted basal metabolic rate, but was 20% lower than total energy expenditure (P=0.006). Overall physical activity level (=total energy expenditure divided by resting energy expenditure) was 1.22 (95%CI: 1.08-1.36) and activity related energy expenditure (=total energy expenditure minus resting energy expenditure) was associated with accelerometry recordings (R(2)=0.72, P=0.02).

CONCLUSIONS:

During the week following pediatric intensive care admission, in the individual critically ill patient, activity related energy expenditure should be taken into account to prevent a negative energy balance.

van der Weegen, Sanne; Verwey, Renee; Tange, Huibert J.; Spreeuwenberg, Marieke D.; Witte, Luc P. (2014):

Usability testing of a monitoring and feedback tool to stimulate physical activity.

In: *Patient Prefer Adherence* 8, S. 311–322. DOI: 10.2147/PPA.S57961.

Abstract:

INTRODUCTION: A MONITORING AND FEEDBACK TOOL TO STIMULATE PHYSICAL ACTIVITY, CONSISTING OF AN ACTIVITY SENSOR, SMARTPHONE APPLICATION (APP), AND WEBSITE FOR PATIENTS AND THEIR PRACTICE NURSES, HAS BEEN DEVELOPED: the 'It's LiFe!' tool. In this study the usability of the tool was evaluated by technology experts and end users (people with chronic obstructive pulmonary disease or type 2 diabetes, with ages from 40-70 years), to improve the user interfaces and content of the tool. PATIENTS AND METHODS: THE STUDY HAD FOUR PHASES: 1) a heuristic evaluation with six technology experts; 2) a usability test in a laboratory by five patients; 3) a pilot in real life wherein 20 patients used the tool for 3 months; and 4) a final lab test by five patients. In both lab tests (phases 2 and 4) qualitative data were collected through a thinking-aloud procedure and video recordings, and quantitative data through questions about task complexity, text comprehensiveness, and readability. In addition, the post-study system usability questionnaire (PSSUQ) was completed for the app and the website. In the pilot test (phase 3), all patients were interviewed three times and the Software Usability Measurement Inventory (SUMI) was completed. RESULTS: After each phase, improvements were made, mainly to the layout and text. The main improvement was a refresh button for active data synchronization between activity sensor, app, and server, implemented after connectivity problems in the pilot test. The mean score on the PSSUQ for the website improved from 5.6 (standard deviation [SD] 1.3) to 6.5 (SD 0.5), and for the app from 5.4 (SD 1.5) to 6.2 (SD 1.1). Satisfaction in the pilot was not very high according to the SUMI. DISCUSSION: The use of laboratory versus real-life tests and expert-based versus user-based tests revealed a wide range of usability issues. The usability of the It's LiFe! tool improved considerably during the study.

van Deutekom, A. W.; Chinapaw, M. J.; Vrijkotte, T. G.; Gemke, R. J. (2013):

Study protocol: the relation of birth weight and infant growth trajectories with physical fitness, physical activity and sedentary behavior at 8-9 years of age - the ABCD study.

In: *BMC Pediatr* 13 (1471-2431 (Linking)), S. 102. DOI: 10.1186/1471-2431-13-102.

Abstract:

BACKGROUND: Low birth weight and accelerated infant growth have been identified as independent risk factors for childhood and adult obesity and cardiovascular disease. This led to the 'Developmental Origins of Health and Disease' (DOHaD) hypothesis, stating that environmental factors during pregnancy and early postnatal life affect disease risk in later life. There is growing evidence that perinatal factors may influence adult health through the programming of energy balance regulation, including sedentary behavior and physical activity. The present study focuses on the influence of birth weight and infant growth on physical fitness, physical activity and sedentary behavior in 8-9 year old children, as this might partly explain the higher obesity and cardiovascular risk associated with low birth weight and accelerated infant growth. In addition, this study provides the opportunity for a validation study of a linguistic and cross-cultural translated physical activity questionnaire compared to accelerometer data. This article describes the study protocol for this study. METHODS/DESIGN: This is a study embedded in the Amsterdam Born Children and their Development (ABCD) birth cohort. In 200 children of Dutch ethnicity, physical fitness, physical activity and sedentary behavior were assessed at age 8-9. We measured aerobic fitness using the 20 meter multistage shuttle run test, and neuromuscular fitness using the standing broad jump and handgrip strength test. Sedentary behavior and physical activity levels were measured using accelerometry. All children also completed a translated physical activity questionnaire, the scores of which will be compared to accelerometry data to assess the construct validity of the questionnaire in Dutch school-aged children. DISCUSSION: This study will be the first population-based prospective cohort study to address the association of both prenatal and postnatal growth with physical fitness and objectively-assessed physical activity and sedentary behavior. This will contribute to a better understanding of the way perinatal growth relate to lifestyle and obesity in later life. The results may guide both future studies in the field of DOHaD, and public health strategies in the prevention of childhood obesity

van Dijk, A. E.; Van, Lien R.; Van, Eijsden M.; Gemke, R. J.; Vrijkotte, T. G.; Geus, E. J. (2013):

Measuring cardiac autonomic nervous system (ANS) activity in children.

In: *J Vis.Exp.* (74), S. e50073. DOI: 10.3791/50073.

Abstract:

The autonomic nervous system (ANS) controls mainly automatic bodily functions that are engaged in homeostasis, like heart rate, digestion, respiratory rate, salivation, perspiration and renal function. The ANS has two main branches: the sympathetic nervous system, preparing the human body for action in times of danger and stress, and the parasympathetic nervous system, which regulates the resting state of the body. ANS activity can be measured invasively, for instance by radiotracer techniques or microelectrode recording from superficial nerves, or it can be measured non-invasively by using changes in an organ's response as a proxy for changes in ANS activity, for instance of the sweat glands or the heart. Invasive measurements have the highest validity but are very poorly feasible in large scale samples where non-invasive measures are the preferred approach. Autonomic effects on the heart can be reliably quantified by the recording of the electrocardiogram (ECG) in combination with the impedance cardiogram (ICG), which reflects the changes in thorax impedance in response to respiration and the ejection of blood from the ventricle into the aorta. From the respiration and ECG signals, respiratory sinus arrhythmia can be extracted as a measure of cardiac parasympathetic control. From the ECG and the left ventricular ejection signals, the preejection period can be extracted as a measure of cardiac sympathetic control. ECG and ICG recording is mostly done in laboratory settings. However, having the subjects report to a laboratory greatly reduces ecological validity, is not always doable in large scale epidemiological studies, and can be intimidating for young children. An ambulatory device for ECG and ICG simultaneously resolves these three problems. Here, we present a study design for a minimally invasive and rapid assessment of cardiac autonomic control in children, using a validated ambulatory device (1-5), the VU University Ambulatory Monitoring System (VU-AMS, Amsterdam, the Netherlands, www.vu-ams.nl)

van Dooren, Miesje; Staals, Julie; Leeuw, Peter W.; Kroon, Abraham A.; Henskens, Leon H.; van Oostenbrugge, Robert J. (2014):

Progression of Brain Microbleeds in Essential Hypertensive Patients: A 2-Year Follow-up Study.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpu032.

Abstract:

BACKGROUND: Brain microbleeds (BMBs) are common in hypertensive patients and are associated with higher blood pressure (BP) levels. Little is known about risk factors for progression of BMBs, in particular the contribution of ambulatory BP levels. We aimed to determine BMB progression and the association with BP levels in a cohort of essential hypertensive patients. METHODS: At baseline and after 2 years of follow-up, 193 participants underwent brain magnetic resonance imaging (MRI) and 24-hour ambulatory BP measurement in addition to office BP measurement. The relation between BMB progression and baseline untreated BP characteristics was tested in logistic regression analyses. RESULTS: Progression of BMBs on follow-up MRI was seen in 12 (6%) participants. Patients with progression were significantly older, and the prevalence as well as total number of BMBs at baseline was greater. With correction for age and sex, baseline 24-hour systolic and diastolic BP and 24-hour pulse pressure significantly predicted progression. Similar results were seen for baseline awake and asleep BP. On additional adjustments for baseline presence of BMBs, the associations remained significant for 24-hour, awake, and asleep systolic BP, awake diastolic BP, and awake and asleep pulse pressure. Office systolic BP was also associated with progression of BMBs, whereas office diastolic BP was not. CONCLUSIONS: High ambulatory BP levels are important and possibly modifiable predictors for progression of BMBs. This warrants further study, with an adequately long follow-up period and early adequate treatment of hypertension.

van Hedel, Hubertus J A; Dietz, Volker (2009):

Walking during daily life can be validly and responsively assessed in subjects with a spinal cord injury.

In: *Neurorehabilitation and Neural Repair* 23 (2), S. 117–124. DOI: 10.1177/1545968308320640.

Abstract:

OBJECTIVE\r\nThis study assessed the validity and responsiveness of the Spinal Cord Independence Measure (SCIM II) items indoor mobility, mobility for moderate distances, and outdoor mobility.\r\nMETHODS\r\nThe data of 886 spinal cord injury subjects were derived from the European Multicenter Study for Human Spinal Cord Injury (EM-SCI) and analyzed at 2 weeks and 1, 3, 6, and 12 months after injury. The SCIM II items were compared using the preferred walking speed and the Walking Index for Spinal Cord Injury (WISCI II). The responsiveness to assess differences over time was determined. The analyses were performed for subjects with varying impairment scales according to the American Spinal Injury Association (ASIA).\r\nRESULTS\r\nAn initially moderate correlation between walking capacity and the SCIM II mobility items improved to excellent at 6 and 12 months after injury. The correlations were higher for indoor mobility compared with outdoor mobility. These correlations increased in ASIA C, but decreased over time in ASIA D subjects. The SCIM II mobility items showed initially positive responsiveness in ASIA A and B subjects. In ASIA C and D subjects, SCIM II responsiveness was significant within the first 6 months.\r\nCONCLUSIONS\r\nThe SCIM II items assess mobility (wheelchair and walking) during daily life. They show good validity and responsiveness, including postdischarge. They can be considered appropriate for evaluating the efficacy of new interventions on ambulatory function. Depending on the severity of the initial lesion and time of assessment, clinically applied walking tests can accurately predict walking performance during daily life.

van Mulder, Timothi; Verwulgen, Stijn; Beyers, Koen; Scheelen, Linda; Elseviers, Monique; van Damme, Pierre; Vankerckhoven, Vanessa (2014):

Assessment of acceptability and usability of new delivery prototype device for intradermal vaccination in healthy subjects.

In: *Hum Vaccin Immunother*, S. 0. DOI: 10.4161/21645515.2014.979655.

Abstract:

Abstract Background The objectives of this study was to assess the acceptability and usability of a newly developed intradermal prototype device, VAX-ID, in healthy subjects. Materials & Methods In April 2012 an investigational study was conducted in healthy subjects aged 18 to 65 years. To compare injection site and route of administration, subjects were allocated to four subgroups, either receiving subsequently two intradermal (ID) injections (one in the forearm & one in the deltoid) or an ID (forearm) and an intramuscular (IM) (deltoid) injection. All injections contained saline solution. Acceptability was assessed with a subjects' questionnaire and a daily electronic diary for 5 days. Usability was assessed with a vaccinators' questionnaire and an expert panel. A 10-point Visual Analogue Scale was used to score several statements on usability and acceptability. Results A total of 102 healthy subjects were enrolled in the study (age: 19-63). No statistically significant differences were seen in demographic characteristics between the ID and IM groups. Anxiety before injection, pain during injection and duration of injection were rated significantly lower for ID compared to IM. One day after the injections, redness was reported more often after ID injection in the forearm versus ID in the deltoid; pain at injection site was reported significantly more often after IM versus ID injection. The new VAX-ID prototype device was found easy to handle, easy to use and safe. Conclusion The new VAX-ID prototype device was shown to have a high degree of acceptability as well as usability. Further studies with VAX-ID will be

conducted using vaccine antigen allowing assessment of immunogenicity and safety. Additionally, these studies will help to further improve VAX-ID in terms of accuracy of delivered dose and feedback to the vaccinator. (NCT01963338).

van Os, Jim; Delespaul, Philippe; Barge, Daniela; Bakker, Roberto P. (2014):

Testing an mHealth Momentary Assessment Routine Outcome Monitoring Application: A Focus on Restoration of Daily Life Positive Mood States.

In: *PLoS One* 9 (12), S. e115254. DOI: 10.1371/journal.pone.0115254.

Abstract:

BACKGROUND: Routine Outcome Monitoring (ROM) is used as a means to enrich the process of treatment with feedback on patient outcomes, facilitating patient involvement and shared decision making. While traditional ROM measures focus on retrospective accounts of symptoms, novel mHealth technology makes it possible to collect real life, in-the-moment ambulatory data that allow for an ecologically valid assessment of personalized and contextualized emotional and behavioural adjustment in the flow daily life (mROM). METHOD: In a sample of 34 patients with major depressive disorder, treated with antidepressants, the combined effect of treatment and natural course was examined over a period of 18 weeks with Ecological Momentary Assessment (EMA). EMA consisted of repeated, within-subject, mini-measurements of experience (eg positive affect, negative affect, medication side effects) and context (eg stressors, situations, activities) at 10 unselected semi-random moments per day, for a period of six days, repeated three times over the 18-week period (baseline, week 6 and week 18). RESULTS: EMA measures of emotional and behavioural adjustment were sensitive to the effects of treatment and natural course over the 18-week period, particularly EMA measures focussing on positive mood states and the ability to use natural rewards (impact of positive events on positive mood states), with standardized effect sizes of 0.4-0.5. EMA measures of activities, social interaction, stress-sensitivity and negative mood states were also sensitive to change over time. CONCLUSION: This study supports the use of mROM as a means to involve the patient in the process of needs assessment and treatment. EMA data are meaningful to the patient, as they reflect daily life circumstances. Assessment of treatment response with mROM data allows for an interpretation of the effect of treatment at the level of daily life emotional and social adjustment - as an index of health, obviating the need for an exclusive focus on traditional measures of 'sickness'.

van Reijen, Miriam; Vriend, Ingrid I.; Zuidema, Victor; van Mechelen, Willem; Verhagen, Evert A. (2014):

The implementation effectiveness of the 'Strengthen your ankle' smartphone application for the prevention of ankle sprains: design of a randomized controlled trial.

In: *BMC Musculoskelet Disord* 15, S. 2. DOI: 10.1186/1471-2474-15-2.

Abstract:

BACKGROUND: Ankle sprains continue to pose a significant burden to the individual athlete, as well as to society as a whole. However, despite ankle sprains being the single most common sports injury and despite an active approach by various Dutch organisations in implementing preventive measures, large-scale community uptake of these preventive measures, and thus actual prevention of ankle sprains, is lagging well behind. In an attempt to bridge this implementation gap, the Dutch Consumer Safety Institute VeiligheidNL developed a freely available interactive App ('Strenghten your ankle' translated in Dutch as: 'Versterk je enkel; available for iOS and Android) that contains - next to general advice on bracing and taping - a proven cost-effective neuromuscular program. The 'Strengthen your ankle' App has not been evaluated against the 'regular' prevention approach in which the neuromuscular program is advocated through written material. The aim of the current project is to evaluate the implementation value of the 'Strengthen your ankle' App as compared to the usual practice of providing injured athletes with written materials. In addition, as a secondary outcome measure, the cost-effectiveness will be assessed against usual practice. METHODS/DESIGN: The proposed study will be a randomised controlled trial. After stratification for medical caregiver, athletes will be randomised to two study groups. One group will receive a standardized eight-week proprioceptive training program that has proven to be cost-effective to prevent recurrent ankle injuries, consisting of a balance board (machU/MSG Europe BVBA), and a traditional instructional booklet. The other group will receive the same exercise program and balance board. However, for this group the instructional booklet is exchanged by the interactive 'Strengthen your ankle' App. DISCUSSION: This trial is the first randomized controlled trial to study the implementation effectiveness of an App for proprioceptive balance board training program in comparison to a traditional printed instruction booklet, with the recurrence of ankle sprains among athletes as study outcome. Results of this study could possibly lead to changes in practical guidelines on the treatment of ankle sprains and in the use of mobile applications for injury prevention. Results will become available in 2014. TRIAL REGISTRATION: The Netherlands National Trial Register NTR4027. The NTR is part of the WHO Primary Registries.

van Remoortel, Hans; Camillo, Carlos Augusto; Langer, Daniel; Hornikx, Miek; Demeyer, Heleen; Burtin, Chris et al. (2013):

Moderate intense physical activity depends on selected Metabolic Equivalent of Task (MET) cut-off and type of data analysis.

In: *PLoS One* 8 (12), S. e84365. DOI: 10.1371/journal.pone.0084365.

Abstract:

BACKGROUND: Accelerometry data are frequently analyzed without considering whether moderate-to-vigorous physical activities (MVPA) were performed in bouts of >10 minutes as defined in most physical activity guidelines. We aimed i) to quantify MVPA by using different commonly-applied physical activity guidelines, ii) to investigate the effect of bouts versus non-bouts analysis, and iii) to propose and validate a MVPA non-bouts cut-point to classify (in-) active subjects. METHODS: Healthy subjects (n=110;62+/-6yrs) and patients with Chronic Obstructive Pulmonary Disease (COPD) (n=113;62+/-5yrs) wore an activity monitor for 7 days. Three Metabolic Equivalent of Task (MET) cut-offs and one individual target (50% VO(2) reserve) were used to define MVPA. First, all minutes of MVPA were summed up (NON-BOUTS). Secondly, only minutes performed in bouts of >10 minutes continuous activity were counted (BOUTS). Receiver operating characteristic (ROC) curve analyses were used to propose and (cross-) validate new MVPA non-bout cut-points based on the criterion of 30 minutes MVPA per day (BOUTS). Likelihood ratios (sensitivity/[1-specificity]) were used to express the association between the proposed MVPA non-bout target and the MVPA bout target of 30 min*day(-)(1). RESULTS: MVPA was variable across physical activity guidelines with lowest values for age-specific cut-offs. Selecting a METs cut-point corresponding to 50% VO(2) reserve revealed no differences in MVPA between groups. MVPA's analyzed in BOUTS in healthy subjects were 2 to 4 fold lower than NON-BOUTS analyses and this was even 3 to 12 fold lower in COPD. The MVPA non-bouts cut-point of 80 min*day(-)(1) using a 3 METs MVPA threshold delivered positive likelihood ratios of 5.1[1.5-19.6] (healthy subjects) and 2.3[1.6-3.3] (COPD). CONCLUSION: MVPA varies upon the selected physical activity guideline/targets and bouts versus non-bouts analysis. Accelerometry measured MVPA non-bouts target of 80 min*day(-)(1), using a 3 METs MVPA threshold, is associated to the commonly-used MVPA bout target of 30 min*day(-)(1).

van Rijsbergen, Gerard D.; Burger, Huibert; Hollon, Steven D.; Elgersma, Hermien J.; Kok, Gemma D.; Dekker, Jack et al. (2014):

How do you feel? Detection of recurrent Major Depressive Disorder using a single-item screening tool.

In: *Psychiatry Res* 220 (1-2), S. 287–293. DOI: 10.1037/t04757-000.

Abstract:

Mood is a key element of Major Depressive Disorder (MDD), and is perceived as a highly dynamic construct. The aim of the current study was to examine whether a single-item mood scale can be used for mood monitoring. One hundred thirty remitted out-patients were assessed using the Structured Clinical Interview for DSM-IV Axis-I Disorders (SCID-I), Visual Analogue Mood Scale (VAMS), 17-item Hamilton Depression Rating Scale (HAM-D_{17}), and Inventory of Depressive Symptomatology-Self Report (IDS-SR). Of all patients, 13.8% relapsed during follow-up assessments. Area under the curves (AUCs) for the VAMS, HAM-D_{17} and IDS-SR were 0.94, 0.91, and, 0.86, respectively. The VAMS had the highest positive predictive value (PPV) without any false negatives at score 55 (PPV = 0.53; NPV = 1.0) and was the best predictor of current relapse status (variance explained for VAMS: 60%; for HAM-D_{17}: 49%; for IDS-SR: 34%). Only the HAM-D_{17} added significant variance to the model (7%). Assessing sad mood with a single-item mood scale seems to be a straightforward and patient-friendly avenue for life-long mood monitoring. Using a diagnostic interview (e.g., the SCID) in case of a positive screen is warranted. Repeated assessment of the VAMS using Ecological Momentary Assessment (EMA) might reduce false positives. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

van Schooten, Kimberley S.; Rispens, Sietse M.; Elders, Petra J. M.; van Dieen, Jaap H.; Pijnappels, Mirjam (2014):

Toward ambulatory balance assessment: estimating variability and stability from short bouts of gait.

In: *Gait Posture* 39 (2), S. 695–699.

Abstract:

Stride-to-stride variability and local dynamic stability of gait kinematics are promising measures to identify individuals at increased risk of falling. This study aimed to explore the feasibility of using these metrics in clinical practice and ambulatory assessment, where only a small number of consecutive strides are available. The concurrent validity and reliability were assessed compared to more continuous walking. Twenty young adults walked continuously for 500 m, as well as 36 bouts of 20 m while wearing an accelerometer (DynaPort MiniMod) on the trunk. Within-day reliability was high for stride time variability,

mediolateral trunk variability and local dynamic stability, while between-day reliability was low for both variability estimates and moderate for local dynamic stability. Stride time variability and mediolateral trunk variability were increased when walking short bouts and did not correlate well with the longer walking trials. Local dynamic stability did correlate highly between the long and short bouts trials, and 15 bouts of eight strides appeared to be sufficient for valid estimation. These results imply task-specific differences and low reliability of variability estimates rendering them unsuitable for application to short bouts of gait, while local dynamic stability can be readily employed.

van Sluijs, E M F; Page, A.; Ommundsen, Y.; Griffin, S. J. (2010):

Behavioural and social correlates of sedentary time in young people.

In: *British Journal of Sports Medicine* 44 (10), S. 747–755. DOI: 10.1136/bjsm.2008.049783.

Abstract:

OBJECTIVE\r\nIn this study, behavioural and social correlates of objectively measured sedentary time in young people were identified.\r\nDESIGN\r\nCross-sectional analysis of data from the European Youth Heart Study (EYHS).\r\nSETTING\r\nSchools in Denmark, Estonia, Portugal and Norway.\r\nPARTICIPANTS\r\nRespondents were invited using a twostage cluster sampling procedure. Analyses include 2107 children (9-10 years old) and adolescents (14-15 years old). ASSESSMENT OF INDEPENDENT VARIABLES: Seven behavioural and 15 social variables assessed by parental and computerised child questionnaires.\r\nMAIN OUTCOME MEASURE\r\nSedentary activity as assessed by accelerometry (10 min blocks at <200 counts/min). Analyses were stratified by country, and interactions with grade and sex were investigated.\r\nRESULTS\r\nAdolescents were more sedentary than children (335.4 (90.4 min/day) vs 217.2 (75.6 min/day), p<0.001). Patterns of associations differed across countries. High computer use and no television viewing before school in Norway, and being sedentary during school breaks in Estonia were positively associated with sedentary time. No behavioural variables were associated with sedentary time in the Danish and Portuguese models. Socioeconomic position was positively associated with sedentary time in Portugal and Estonia, father's body mass index negatively in the Estonian model. Norwegian participants with a game console at home and Portuguese participants with a television in their bedroom were more sedentary.\r\nCONCLUSIONS\r\nA single strategy aimed at reducing sedentary behaviour is unlikely to be effective across Europe as the target populations and behaviours of focus differ between countries. Targeting high socioeconomic groups in Portugal and Estonia or focusing on reducing computer use in Norway might be effective intervention strategies to reduce overall sedentary time.

van Sluijs, Esther M F; van Poppel, Mireille N M; Twisk, Jos W. R.; van Mechelen, Willem (2006):

Physical activity measurements affected participants' behavior in a randomized controlled trial.

In: *Journal of clinical epidemiology* 59 (4), S. 404–411. DOI: 10.1016/j.jclinepi.2005.08.016.

Abstract:

BACKGROUND AND OBJECTIVE\r\nAssessing levels and determinants of physical activity as outcome measurements might have an independent effect on participant's physical activity behavior. The objective is to study this effect in a randomized controlled trial (RCT) promoting regular physical activity in Dutch general practice.\r\nMETHODS\r\nUsing a Solomon four-group design, participants were randomized twice. After randomization to a control or intervention-condition at general practice level (N = 29), participants were randomized to a group participating in measurements at baseline, 2 and 6 months (3M-group, N = 361), or a group only participating in measurements at 6 months (1M-group, N = 356). Outcome measures assessed at 6 months included: level of physical activity (self-reported and objectively measured with accelerometry), meeting ACSM/CDC guideline for regular physical activity, stage of change, and determinants of physical activity.\r\nRESULTS\r\nFollow-up data on 635 participants (89%) was collected. Statistically significant measurement effects were found for meeting the ACSM/CDC guideline (self-reported), self-efficacy for resisting relapse, knowledge, and on awareness. Other outcome measures showed positive trends, except stages of change.\r\nCONCLUSION\r\nMeasurements of physical activity affect participant's physical activity behavior, possibly triggered by a raised awareness about their own physical activity level. Implications for future research are discussed, as well as methodologic limitations of the study design.

van Voorhees, E. E.; Dennis, M. F.; McClernon, F. J.; Calhoun, P. S.; Buse, N. A.; Beckham, J. C. (2013):

The Association of Dehydroepiandrosterone and Dehydroepiandrosterone Sulfate With Anxiety Sensitivity and Electronic Diary Negative Affect Among Smokers With and Without Posttraumatic Stress Disorder.

In: *J Clin.Psychopharmacol.* (0271-0749 (Linking)). DOI: 10.1097/JCP.0b013e3182968962.

Abstract:

Posttraumatic stress disorder (PTSD) is associated with increased smoking initiation, maintenance, and relapse. Dehydroepiandrosterone (DHEA) and DHEA sulfate (DHEAS) are neurosteroids that have been associated with mood measures as well as smoking status, and nicotine is associated with increased DHEA and DHEAS levels. Given the difficulties with mood experienced by smokers with PTSD, the purpose of the current study was to evaluate the association between negative affect and anxiety sensitivity with DHEA and DHEAS levels. Ninety-six smokers with and without PTSD provided blood samples for neurosteroid analyses and completed self-report measures of anxiety sensitivity and electronic diary ratings of negative affect. As expected, PTSD smokers reported higher levels of anxiety sensitivity (F1,94 = 20.67, partial eta = 0.18, P < 0.0001) and negative affect (F1,91 = 7.98, partial eta = 0.08, P = 0.006). After accounting for age and sex, DHEAS was significantly inversely associated with both anxiety sensitivity (F3,92 = 6.97, partial eta = 0.07, P = 0.01) and negative affect (F3,87 = 10.52, partial eta = 0.11, P = 0.002) across groups. Effect sizes indicated that these effects are moderate to high. No significant interactions of diagnosis and DHEA(S) levels with mood measures were detected. Given that nicotine is known to elevate DHEA(S) levels, these results suggest that DHEAS may serve as a biomarker of the association between mood and nicotine among smokers. Implications for the results include (1) the use of DHEAS measurement across time and across quit attempts and (2) the potential for careful use of DHEA supplementation to facilitate abstinence during smoking cessation

van Weering, M G H; Vollenbroek-Hutten, M. M. R.; Tönis, T. M.; Hermens, H. J. (2009):

Daily physical activities in chronic lower back pain patients assessed with accelerometry.

In: *Eur J Pain* 13 (6), S. 649–654. DOI: 10.1016/j.ejpain.2008.07.005.

Abstract:

BACKGROUND\r\nNormalization of activities in daily living is an important goal in rehabilitation treatment of chronic lower back pain (CLBP) patients. Clinicians indicate that CLBP patients often show deconditioning but also CLBP patients who seem to be too active are seen. The objective of the present cross-sectional study was to gain more insight into the daily activity pattern of CLBP patients compared to controls, using accelerometry.\r\nMETHODS\r\nDaily activities were assessed by measuring body movement with a tri-axial accelerometer that was worn for seven consecutive days during waking hours. Measurements were performed in the daily environment (in-doors and out-doors) of the participant. Differences between activity level, time of day and work status were tested.\r\nRESULTS\r\nData were obtained from 29 CLBP patients and 20 controls. Results show that the overall activity levels of patients (mean 0.75; SD 0.43) are not significantly different from those of controls (mean 0.71; SD 0.44). However, patients show significantly higher activity levels in the morning (p<0.001) and significantly lower activity levels in the evening (p<0.01) compared to controls. No significant differences in activity levels were found between leisure time and working days within either group; furthermore no significant differences in activity levels were found between patients with different work status.\r\nCONCLUSION\r\nOverall activity levels do not differ significantly between CLBP patients and controls, but the distribution of activities over the day differs significantly.

van Weering, M. G. H.; Vollenbroek-Hutten, M. M. R.; Hermens, H. J. (2011):

The relationship between objectively and subjectively measured activity levels in people with chronic low back pain.

In: *Clinical Rehabilitation* 25 (3), S. 256–263. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-06634-006&site=ehost-live;m.vanweering@rrd.nl.

Abstract:

Objective: To compare self-report measures of daily activities with objective activity data to determine whether patients with chronic lower back pain report their activity levels as accurately as controls do. Design: A cross-sectional study was performed in patients and controls. Setting: The study was carried out in the daily environment of the subjects. Subjects: Thirty-two chronic lower back pain patients with symptoms more than three months and 20 healthy controls from the Netherlands, aged 18–65 years. Main measures: A tri-axial accelerometer was worn for five weekdays and the Baecke Physical Activity Questionnaire was

filled in. Pearson's correlation was calculated to get insight in the awareness of patients and controls. Comparisons of the relationship between the objective and subjective scores of each individual patient with those of the group of controls were used to allocate each patient into subgroups: overestimators, underestimators and aware patients. Physical and psychological characteristics of these groups were explored. Results: Patients showed weak correlations between the objective and subjective scores of physical activity and appear to have problems in estimating their activity levels (r = −0.27), in contrast to controls who showed strong correlations between the objective and subjective scores (r = 0.66). Comparison of the individual relationships of patients with those of controls showed that 44% of the patients were not aware of their activity level. There were relatively more underestimators (30%) than overestimators (14%). Physical characteristics between the three groups tended to be different. Conclusions: Patient self-reports about their activity level are relatively inaccurate when compared to objective measurements. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

van Winkel, Ruud; Henquet, Cécile; Rosa, Araceli; Papiol, Sergi; Fananás, Lourdes; Hert, Marc et al. (2008):

Evidence that the COMT(Val158Met) polymorphism moderates sensitivity to stress in psychosis: an experience-sampling study.

In: *American journal of medical genetics. Part B, Neuropsychiatric genetics : the official publication of the International Society of Psychiatric Genetics* 147B (1), S. 10–17. DOI: 10.1002/ajmg.b.30559.

Abstract:

Gene-environment interactions involving the catechol-O-methyltransferase Val(158)Met polymorphism (COMT(Val158Met)) have been implicated in the causation of psychosis. Evidence from general population studies suggests that Met/Met subjects are sensitive to stress, a trait associated with psychosis. We hypothesized that the Met allele would moderate the effects of stress on negative affect (NA) in controls, and on NA and psychosis in patients with a psychotic disorder. Thirty-one patients with a psychotic disorder and comorbid cannabis misuse and 25 healthy cannabis users were studied with the experience sampling method (ESM), a structured diary technique assessing current context and emotional and psychotic experiences in daily life. A significant interaction between COMT(Val158Met) genotype and ESM stress in the model of NA was found for patients (interaction chi(2) = 7.4, P = 0.02), but not for controls (interaction chi(2) = 3.8, P = 0.15). In the model of ESM psychosis, a significant interaction between COMT(Val158Met) genotype and ESM stress was also apparent (interaction chi(2) = 11.6, P < 0.01), with Met/Met patients showing the largest increase in psychotic experiences as well as NA in reaction to ESM stress. The findings suggest that the COMT(Val158Met) polymorphism moderates affective and psychotic responses to stress in patients with psychosis, providing evidence for gene-environment interaction mechanisms in the formation of psychotic symptoms.

van Winkel, Mark; Peeters, Frenk; van Winkel, Ruud; Kenis, Gunter; Collip, Dina; Geschwind, Nicole et al. (2014):

Impact of variation in the BDNF gene on social stress sensitivity and the buffering impact of positive emotions: Replication and extension of a gene-environment interaction.

In: *Eur Neuropsychopharmacol. DOI:* 10.1016/j.euroneuro.2014.02.005.

Abstract:

A previous study reported that social stress sensitivity is moderated by the brain-derived-neurotrophic-factorVal66Met (BDNF rs6265) genotype. Additionally, positive emotions partially neutralize this moderating effect. The current study aimed to: (i) replicate in a new independent sample of subjects with residual depressive symptoms the moderating effect of BDNFVal66Met genotype on social stress sensitivity, (ii) replicate the neutralizing impact of positive emotions, (iii) extend these analyses to other variations in the BDNF gene in the new independent sample and the original sample of non-depressed individuals. Previous findings were replicated in an experience sampling method (ESM) study. Negative Affect (NA) responses to social stress were stronger in "Val/Met" carriers of BDNFVal66Met compared to "Val/Val" carriers. Positive emotions neutralized the moderating effect of BDNFVal66Met genotype on social stress sensitivity in a dose-response fashion. Finally, two of four additional BDNF SNPs (rs11030101, rs2049046) showed similar moderating effects on social stress-sensitivity across both samples. The neutralizing effect of positive emotions on the moderating effects of these two additional SNPs was found in one sample. In conclusion, ESM has important advantages in gene-environment (GxE) research and may attribute to more consistent findings in future GxE research. This study shows how the impact of BDNF genetic variation on depressive symptoms may be explained by its impact on subtle daily life responses to social stress. Further, it shows that the generation of positive affect (PA) can buffer social stress sensitivity and partially undo the genetic susceptibility.

van Zundert, R. M.; Kuntsche, E.; Engels, R. C. (2012):

In the heat of the moment: Alcohol consumption and smoking lapse and relapse among adolescents who have quit smoking.

In: *Drug Alcohol Depend* (0376-8716 (Linking)). DOI: 10.1016/j.drugalcdep.2012.05.016.

Abstract:

BACKGROUND: The present study tested the co-occurrence of alcohol use and the first lapse and relapse into smoking among daily smoking adolescents who quit smoking. METHODS: In this ecological momentary assessment study, participants completed web-based questionnaires three times a day during one week prior to and three weeks after a quit attempt in their own natural environments. Participants were 134 daily smoking adolescents in the aged 15-19. Hierarchical linear modeling was applied to test whether alcohol use was related to the first lapse and relapse. Lapse was defined as the first incidence of smoking after achieving 24-h abstinence, relapse was defined as smoking at least five cigarettes on three consecutive days. RESULTS: The first lapse was strongly associated with alcohol use. Individual characteristics (age, sex, and baseline smoking status) did not predict the first lapse nor did they moderate the association between alcohol use and the first lapse. Progression from lapse to relapse did not seem to be associated with alcohol consumption, although this association appeared to be moderated by baseline smoking status. More specifically, alcohol use only posed a significant risk factor for relapse among those who smoked less frequently before the start of the study than others who relapsed. Intermittent smoking between the first lapse and relapse (or end of data) was strongly associated with alcohol use. CONCLUSIONS: Adolescent drinking during smoking cessation seems to be associated with the first lapse into smoking after quitting and subsequent intermittent smoking and should be targeted in adolescent smoking cessation interventions

Van Zundert, Rinka M P; Boogerd, Emiel A.; Vermulst, Ad A.; Engels, Rutger C M E (2009):

Nicotine withdrawal symptoms following a quit attempt: an ecological momentary assessment study among adolescents.

In: *Nicotine Tob Res* 11 (6), S. 722–729. DOI: 10.1093/ntr/ntp055.

Abstract:

INTRODUCTION\r\nThe present study describes growth curves of withdrawal symptoms among 138 daily smoking adolescents before, during, and after a quit attempt.\r\nMETHODS\r\nParticipants reported their levels of withdrawal symptoms (craving, negative affect, and hunger) three times a day over a period of 28 days: 1 week prior to and 3 weeks following a quit attempt.\r\nRESULTS\r\nAll withdrawal symptoms were quite stable at a relatively low level during the 5 days prior to the quit day. At Day 8, withdrawal symptoms (especially craving) increased substantially. A significant decrease in symptoms was visible during the week following the quit day, and within 2 weeks postquit, both abstinent and relapsed adolescents had reverted to levels comparable to those during the prequit period. The course over time for craving and hunger were best described by a quadratic term, and a linear model best suited negative affect. Individual intercepts and slopes of the growth curves were used to predict abstinence during the last week of the study and at the 2-month follow-up. Analyses revealed that higher levels of craving at the beginning of the prequit week and on the target quit day (intercepts) decreased the odds of being abstinent during the last week of the study. In addition, the quadratic term for hunger predicted abstinence during the last week. Finally, among all three symptoms, none of the growth model characteristics predicted abstinence at follow-up.\r\nDISCUSSION\r\nThe findings generally suggest that smoking cessation among daily smoking adolescents does not largely depend on how their withdrawal symptoms evolve over time after achieving abstinence.

Van Zundert, Rinka M P; Engels, Rutger C M E (2009):

Parental factors in association with adolescent smoking relapse.

In: *Eur Addict Res* 15 (4), S. 209–215. DOI: 10.1159/000231884.

Abstract:

The present study examined the role of parents in smoking relapse among adolescents who embarked on a serious attempt to quit. Participants were 135 adolescents aged 15-20 years who smoked daily and participated in an ecological momentary assessment study. Daily questions about their quitting experiences were administered during 4 weeks. Longitudinal logistic regression analyses were applied to test whether parental smoking, expected parental support, parental norms about cessation, and smoking cessation-specific parenting at baseline predicted the first lapse into smoking as well as mild and heavy relapse during the 4-week period, and abstinence at follow-up 2 months later. Neither parental smoking nor hardly any of the parenting variables explained successful smoking cessation among adolescents, except for expected parental support. Although parents

have been found to be influential in the development of adolescent smoking, our findings suggest that parents' influence is limited when it concerns actual smoking cessation and relapse.

Van Zundert, Rinka M P; Ferguson, Stuart G.; Shiffman, Saul; Engels, Rutger C M E (2010):

Dynamic effects of self-efficacy on smoking lapses and relapse among adolescents.

In: *Health Psychol* 29 (3), S. 246–254. DOI: 10.1037/a0018812.

Abstract:

OBJECTIVE\r\nThe present study examined whether dynamic day-to-day variations in self-efficacy predicted success in quit attempts among daily smoking adolescents.\r\nDESIGN\r\nA sample of 149 adolescents recorded their smoking and self-efficacy three times per day during 1 week prior to and 3 weeks after a quit attempt.\r\nMAIN OUTCOME MEASURES\r\nThe first lapse, second lapse, and relapse after at least 24 hours of abstinence from smoking were the main outcome measures.\r\nRESULTS\r\nSelf-efficacy was relatively high and moderately variable prior to the first lapse, but decreased and became more variable thereafter. Lower self-efficacy as measured at the lapse assessment significantly increased the risk that a second lapse and relapse would occur. Individual differences in baseline self-efficacy did not predict any of the treatment outcomes. The time-varying analyses, however, showed that lower self-efficacy on a given day predicted the first lapse, the second lapse, and relapse on the succeeding day. Daily concomitant smoking (any smoking on the preceding day) was not significantly related to relapse.\r\nCONCLUSION\r\nThe present results emphasize the importance of self-efficacy among adolescents in cessation and highlight the need for dynamic formulations and assessments of adolescents' self-efficacy and relapse.

Van Zundert, Rinka M P; Nijhof, Linda M.; Engels, Rutger C M E (2009):

Testing Social Cognitive Theory as a theoretical framework to predict smoking relapse among daily smoking adolescents.

In: *Addict Behav* 34 (3), S. 281–286. DOI: 10.1016/j.addbeh.2008.11.004.

Abstract:

Predictors of adolescent smoking relapse are largely unknown, since studies either focus on relapse among adults, or address (long-term) smoking cessation but not relapse. In the present study, Social Cognitive Theory (SCT) was used as a theoretical framework to examine the first and second lapses, as well as mild and heavy relapse into smoking among 135 daily smoking adolescents who embarked on a serious quit attempt. Baseline predictors were pros of smoking, pros of quitting, self-efficacy, and intensity of smoking. Using an ecological momentary assessment (EMA) study design, participants were monitored three times a day during 4 weeks. A follow-up was administered 2 months after the monitoring period. Perceiving many pros of smoking, reporting a low self-efficacy to quit, and high levels of baseline smoking significantly predicted relapse within 3 weeks after quitting. The effects of pros of smoking and self-efficacy on relapse, however, appeared to be accounted for by differences in intensity of smoking. Besides that pros of quitting showed a marginal effect on abstinence at the 2-month follow-up, no long-term effects were detected.

Van, Cauwenberghe E.; De,Bourdeaudhuij,I; Maes, L.; Cardon, G. (2012):

Efficacy and feasibility of lowering playground density to promote physical activity and to discourage sedentary time during recess at preschool: A pilot study.

In: *Prev.Med.* (0091-7435 (Linking)). DOI: 10.1016/j.ypmed.2012.07.014.

Abstract:

OBJECTIVE: This pilot study examined if lowering playground density is feasible and effective in improving preschoolers' activity and sedentary levels during recess. METHOD: Between November and December 2011, a within-subject design was used to study preschoolers' activity via accelerometry during recesses in the usual conditions (baseline) and with lower playground density (intervention). During the intervention, preschools scheduled extra recesses so that the number of classes usually sharing the playground was halved. Effects were investigated, using two-level linear regression models, in 1

Van, Cauwenberghe E.; Jones, R. A.; Hinkley, T.; Crawford, D.; Okely, A. D. (2012):

Patterns of physical activity and sedentary behavior in preschool children.

In: *Int.J Behav.Nutr.Phys.Act.* 9 (1), S. 138. DOI: 10.1186/1479-5868-9-138.

Abstract:

ABSTRACT: BACKGROUND: Little is known about patterns of sedentary behavior (SB) and physical activity among preschoolers. Therefore, in this observational study patterns of SB and moderate-to-vigorous physical activity (MVPA) were examined in detail throughout the week in preschool-aged boys and girls. METHODS: A sample of 703 Melbourne preschool children (387 boys; 4.6 +/- 0.7 y) were included in data analysis. SB and MVPA data were collected using accelerometry over an eight-day period. Percentage of time per hour in SB and in MVPA between 08:00h and 20:00h was calculated. Multi-level logistic regression models were created to examine the hour-by-hour variability in SB and MVPA for boys and girls across weekdays and weekend days. Odds ratios (OR) were calculated to interpret differences in hour-by-hour SB and MVPA levels between boys and girls, and between weekdays and weekend days. RESULTS: The highest SB levels co-occurred with the lowest MVPA levels from the morning till the early afternoon on weekdays, and during the morning and around midday on weekends. Besides, participation in SB was the lowest and participation in MVPA was the highest from the mid afternoon till the evening on weekdays and weekend days. The variability across the hours in SB and, especially, in MVPA was rather small throughout weekdays and weekends. These patterns were found in both boys and girls. During some hours, girls were found to be more likely than boys to demonstrate higher SB levels (OR from 1.08 to 1.16; all $p<0.05$) and lower MVPA levels (OR from 0.75 to 0.88; all $p<0.05$), but differences were small. During weekends, hour-by-hour SB levels were more likely to be lower (OR from 0.74 to 0.98; all $p<0.05$) and hour-by-hour MVPA levels were more likely to be higher (OR from 1.15 to 1.50; all $p<0.05$), than during weekdays, in boys and girls. CONCLUSION: Entire weekdays, especially from the morning till the early afternoon, and entire weekend days are opportunities to reduce SB and to promote MVPA in preschool-aged boys and girls. Particularly weekdays hold the greatest promise for improving SB and MVPA. No particular time of the week was found where one sex should be targeted

Van, Roekel E.; Verhagen, M.; Scholte, R. H.; Kleinjan, M.; Goossens, L.; Engels, R. C. (2013):

The Oxytocin Receptor Gene (OXTR) in Relation to State Levels of Loneliness in Adolescence: Evidence for Micro-Level Gene-Environment Interactions.

In: *PLoS.One.* 8 (11), S. e77689. DOI: 10.1371/journal.pone.0077689.

Abstract:

Previous research has shown that the rs53576 variant of the oxytocin receptor gene (OXTR) is associated with trait levels of loneliness, but results are inconsistent. The aim of the present study is to examine micro-level effects of the OXTR rs53576 variant on state levels of loneliness in early adolescents. In addition, gene-environment interactions are examined between this OXTR variant and positive and negative perceptions of company. Data were collected in 278 adolescents (58% girls), by means of the Experience Sampling Method (ESM). Sampling periods consisted of six days with nine assessments per day. A relation was found between the OXTR rs53576 variant and state loneliness, in girls only. Girls carrying an A allele had higher levels of state loneliness than girls carrying the GG genotype. In addition, adolescents with an A allele were more affected by negative perceptions of company than GG carriers, on weekend days only. No significant gene-environment interactions were found with positive company. Adolescents carrying an A allele were more susceptible to negative environments during weekend days than GG carriers. Our findings emphasize the importance of operationalizing the phenotype and the environment accurately

Vandercammen, Leen; Hofmans, Joeri; Theuns, Peter (2014):

Relating specific emotions to intrinsic motivation: on the moderating role of positive and negative emotion differentiation.

In: *PLoS One* 9 (12), S. e115396. DOI: 10.1371/journal.pone.0115396.

Abstract:

Despite the fact that studies on self-determination theory have traditionally disregarded the explicit role of emotions in the motivation eliciting process, research attention for the affective antecedents of motivation is growing. We add to this emerging research field by testing the moderating role of emotion differentiation -individual differences in the extent to which people can differentiate between specific emotions- on the relationship between twelve specific emotions and intrinsic motivation. To this end, we conducted a daily diary study (N = 72) and an experience sampling study (N = 34). Results showed that the relationship between enthusiasm, cheerfulness, optimism, contentedness, gloominess, miserableness, uneasiness (in both studies 1 and 2), calmness, relaxation, tenseness, depression, worry (only in Study 1) on one hand and intrinsic motivation on the other hand was moderated by positive emotion differentiation for the positive emotions and by negative emotion differentiation for the

negative emotions. Altogether, these findings suggest that for people who are unable to distinguish between different specific positive emotions the relationship between those specific positive emotions and intrinsic motivation is stronger, whereas the relationship between specific negative emotions and intrinsic motivation is weaker for people who are able to distinguish between the different specific negative emotions. Theoretical and practical implications are discussed.

Vanhaebost, Jessica; Faouzi, Mohamed; Mangin, Patrice; Michaud, Katarzyna (2014):

New reference tables and user-friendly Internet application for predicted heart weights.

In: *Int J Legal Med. DOI:* 10.1007/s00414-013-0958-9.

Abstract:

BACKGROUND: Knowledge of normal heart weight ranges is important information for pathologists. Comparing the measured heart weight to reference values is one of the key elements used to determine if the heart is pathological, as heart weight increases in many cardiac pathologies. The current reference tables are old and in need of an update. AIMS: The purposes of this study are to establish new reference tables for normal heart weights in the local population and to determine the best predictive factor for normal heart weight. We also aim to provide technical support to calculate the predictive normal heart weight. METHODS: The reference values are based on retrospective analysis of adult Caucasian autopsy cases without any obvious pathology that were collected at the University Centre of Legal Medicine in Lausanne from 2007 to 2011. We selected 288 cases. The mean age was 39.2 years. There were 118 men and 170 women. Regression analyses were performed to assess the relationship of heart weight to body weight, body height, body mass index (BMI) and body surface area (BSA). RESULTS: The heart weight increased along with an increase in all the parameters studied. The mean heart weight was greater in men than in women at a similar body weight. BSA was determined to be the best predictor for normal heart weight. New reference tables for predicted heart weights are presented as a web application that enable the comparison of heart weights observed at autopsy with the reference values. CONCLUSIONS: The reference tables for heart weight and other organs should be systematically updated and adapted for the local population. Web access and smartphone applications for the predicted heart weight represent important investigational tools.

Vanhelst, J.; Baquet, G.; Gottrand, F.; Beghin, L. (2012):

Comparative interinstrument reliability of uniaxial and triaxial accelerometers in free-living conditions.

In: *Percept.Mot.Skills* 114 (2), S. 584–594. Online verfügbar unter PM:22755462.

Abstract:

The aim of this study was to measure the inter-instrument reliability of the ActiGraph and RT3 accelerometers in free-living conditions. 15 healthy adults wore eight ActiGraph accelerometers and five RT3 accelerometers fastened to their back with an elastic belt and adjustable buckle in free-living conditions. For both accelerometers, the inter-instrument coefficient of variation (CV) decreased with increasing physical activity intensity. The inter-instrument CV of the ActiGraph (3% to 10.5%) was significantly lower than that of the RT3 (12.6% to 35.5%; $p < 0.05$). This finding demonstrates that the ActiGraph has higher inter-instrument reliability than the RT3. For both accelerometers, the inter-instrument reliability was higher for moderate and vigorous physical activity, the two intensities recommended for public health purposes. Studies using these devices can be compared with a low risk of misclassification of participants who meet the recommendation to perform moderate to vigorous physical activity

Vanhelst, J.; Beghin, L.; Duhamel, A.; Bergman, P.; Sjotrom, M.; Gottrand, F. (2012):

Comparison of uniaxial and triaxial accelerometry in the assessment of physical activity among adolescents under free-living conditions: the HELENA study.

In: *BMC.Med.Res.Methodol.* 12 (1), S. 26. DOI: 10.1186/1471-2288-12-26.

Abstract:

ABSTRACT: BACKGROUND: Different types of devices are available and the choice about which to use depends on various factors: cost, physical characteristics, performance, and the validity and intra- and interinstrument reliability. Given the large number of studies that have used uniaxial or triaxial devices, it is of interest to know whether the different devices give similar information about PA levels and patterns. The aim of this study was to compare physical activity (PA) levels and patterns

obtained simultaneously by triaxial accelerometry and uniaxial accelerometry in adolescents in free-living conditions. METHODS: Sixty-two participants, aged 13-16 years, were recruited in this ancillary study, which is a part of the Healthy Lifestyle in Europe by Nutrition in Adolescence (HELENA). All participants wore a uniaxial accelerometer (ActiGraph GT1M(R), Pensacola, FL) and a triaxial accelerometer (RT3(R), Stayhealthy, Monrovia, CA) simultaneously for 7 days. The patterns were calculated by converting accelerometer data output as a percentage of time spent at sedentary, light, moderate, and vigorous PA per day. Analysis of output data from the two accelerometers were assessed by two different tests: Equivalence Test and Bland & Altman method. RESULTS: The concordance correlation coefficient between the data from the triaxial accelerometer and uniaxial accelerometer at each intensity level was superior to 0.95. The ANOVA test showed a significant difference for the first three lower intensities while no significant difference was found for vigorous intensity. The difference between data obtained with the triaxial accelerometer and the uniaxial monitor never exceeded 2.1% and decreased as PA level increased. The Bland & Altman method showed good agreement between data obtained between the both accelerometers ($p < 0.05$). CONCLUSIONS: Uniaxial and triaxial accelerometers do not differ in their measurement of PA in population studies, and either could be used in such studies

Vanhelst, J.; Fardy, P. S.; Duhamel, A.; Beghin, L. (2013):

How many days of accelerometer monitoring predict weekly physical activity behaviour in obese youth?

In: *Clin.Physiol Funct.Imaging* (1475-0961 (Linking)). DOI: 10.1111/cpf.12109.

Abstract:

The aim of this study was to determine the type and the number of accelerometer monitoring days needed to predict weekly sedentary behaviour and physical activity in obese youth. Fifty-three obese youth wore a triaxial accelerometer for 7 days to measure physical activity in free-living conditions. Analyses of variance for repeated measures, Intraclass coefficient (ICC) and regression linear analyses were used. Obese youth spent significantly less time in physical activity on weekends or free days compared with school days. ICC analyses indicated a minimum of 2 days is needed to estimate physical activity behaviour. ICC were 0.80 between weekly physical activity and weekdays and 0.92 between physical activity and weekend days. The model has to include a weekday and a weekend day. Using any combination of one weekday and one weekend day, the percentage of variance explained is >90%. Results indicate that 2 days of monitoring are needed to estimate the weekly physical activity behaviour in obese youth with an accelerometer. Our results also showed the importance of taking into consideration school day versus free day and weekday versus weekend day in assessing physical activity in obese youth

Vanhelst, Jeremy; Fardy, Paul S.; Beghin, Laurent (2014):

Technical variability of the Vivago wrist-worn accelerometer.

In: *J Sports Sci*, S. 1–7. DOI: 10.1080/02640414.2014.918643.

Abstract:

Abstract The aim was to assess the technical variability of a new wrist-worn accelerometer under controlled conditions with a shaker device and during normal daily physical activities (PAs). In the first experiment, 10 wrist-worn accelerometers (Vivago(R) Wellness, Paris, France) were attached to the shaker device. Variability was tested at five shaking frequencies (1.1, 2.1, 3.1, 4.1, and 10 Hz) for 10 min at each frequency. In the second experiment, 21 participants wore wrist-worn accelerometers and performed six consecutive 10-min periods of activity at increasing levels of intensity from sedentary to vigorous. Results from the first experiment show a modest inter- and intra-instrument reliability at low frequencies and that reliability improved as frequency increased. The inter-instrument coefficient of variation (CV) was 2.6-18.3%. The intra-instrument CV was 4.1-23.2%. Variability was similar in the second experiment with a CV inversely related to PA intensity. The inter- and intra-instrument CV varied from 24.2% and 19.9% for sedentary activities to 3.7% and 4.3% for vigorous PA, respectively. Results suggest that reliability was higher at high intensities, corresponding to moderate and vigorous PA, intensities generally recommended for public health purposes.

Vanhelst, J.; Hurdiel, R.; Mikulovic, J.; Bui-Xuan, G.; Fardy, P.; Theunynck, D.; Beghin, L. (2012):

Validation of the Vivago Wrist-Worn accelerometer in the assessment of physical activity.

In: *BMC.Public Health* 12 (1), S. 690. DOI: 10.1186/1471-2458-12-690.

Abstract:

ABSTRACT: BACKGROUND: Most accelerometers are worn around the waist (hip or lower back) to assess habitual physical activity. Wrist-worn accelerometers may be an alternative to the waist-worn monitors and may improve compliance in studies with prolonged wear. The aim of this study was to validate the Vivago[REGISTERED SIGN] Wrist-Worn Accelerometer at various intensities of physical activity (PA) in adults. METHODS: Twenty-one healthy adults aged 20--34 years were recruited for the study. Accelerometer data and oxygen uptake (VO2) were measured at sedentary, light, moderate and vigorous levels of PA. RESULTS: Activity categories and accelerometer counts were: sedentary, 0--15 counts[DOT OPERATOR]min[MINUS SIGN]1; light, 16--40 counts[DOT OPERATOR]min[MINUS SIGN]1; moderate, 41--85 counts[DOT OPERATOR]min[MINUS SIGN]1; and vigorous activity, > 85 counts[DOT OPERATOR]min[MINUS SIGN]1. ANOVA repeated measures was used to determine the relationship between accelerometry data output and oxygen consumption (r = .89; p < .001). The Bland and Altman method showed good agreement in the assessment of energy expenditure between the indirect calorimetry and the data obtained by the accelerometer. CONCLUSIONS: Results of the study suggest that the Vivago[REGISTERED SIGN] wrist-worn accelerometer is a valid measure of PA at varying levels of intensity. The study has also defined threshold values at four intensities and hence the Vivago[REGISTERED SIGN] accelerometer may be used to quantify PA in free living conditions among adults. This device has possible application in treating a variety of important health concerns

Vankipuram, M.; McMahon, S.; Fleury, J. (2012):

ReadySteady: app for accelerometer-based activity monitoring and wellness-motivation feedback system for older adults.

In: *AMIA.Annu.Symp.Proc.* 2012 (1559-4076 (Linking)), S. 931–939. Online verfügbar unter PM:23304368.

Abstract:

Increased physical activity and exercise have been found to reduce falls and decrease mortality and age-related morbidity in older adults. However, a large percentage of this population fail to achieve the necessary levels of activity needed to support health living. In this work, we present a mobile app developed on the iOS platform that monitors activity levels using accelerometry. The data captured by the sensor is utilized to provide real-time motivational feedback to enable reinforcement of positive behaviors in older adults. Pilot experiments (conducted with younger adults) performed to assess validity of activity measurement showed that system accurately measures sedentary, light, moderate and vigorous activities in a controlled lab setting. Pilot tests (conducted with older adults) in the user setting showed that while the app is adept at capturing gross body activity (such as sitting, walking and jogging), additional sensors may be required to capture activities involving the extremities

Vansteelandt, K.; Claes, L.; Muehlenkamp, J.; De, Cuyper K.; Lemmens, J.; Probst, M. et al. (2012):

Variability in Affective Activation Predicts Non-suicidal Self-injury in Eating Disorders.

In: *Eur.Eat.Disord.Rev.* (1072-4133 (Linking)). DOI: 10.1002/erv.2220.

Abstract:

We examined whether affective variability can predict non-suicidal self-injury (NSSI) in eating disorders. Affect was represented by valence (positive versus negative) and activation (high versus low). Twenty-one patients with anorexia nervosa-restricting type, 18 patients with anorexia nervosa-binge-purging type and 20 patients with bulimia nervosa reported their momentary affect at nine random times a day during a one week period using a hand-held computer. Affective variability was calculated as the within-person standard deviation of valence and activation over time. Results indicate that patients displaying greater variability in activation and using selective serotonin reuptake inhibitors have a higher probability to engage in lifetime NSSI after adjustment for depression and borderline personality disorder. Neither variability of valence nor mean level of valence and activation had any predictive association with engaging in NSSI. It is suggested that the treatment of NSSI should focus on affect stabilization rather than reducing negative affect. Copyright (c) 2012 John Wiley & Sons, Ltd and Eating Disorders Association

Varela, Manuel; Cuesta, David; Madrid, Juan Antonio; Churruca, Juan; Miro, Pau; Ruiz, Raul; Martinez, Carlos (2009):

Holter monitoring of central and peripheral temperature: possible uses and feasibility study in outpatient settings.

In: *Journal of clinical monitoring and computing* 23 (4), S. 209–216. DOI: 10.1007/s10877-009-9184-x.

Abstract:

BACKGROUND\r\nConventional clinical thermometry has important limitations. A continuous monitoring of temperature may offer significant advantages, including the use of chronobiological and complexity analysis of temperature profile and eventually the identification of a \"pre-febrile\" pattern.\r\nOBJECTIVE\r\nWe present a clinical model designed to measure, store and/or transmit in real time a central and a peripheral temperature reading. The results of its use in a healthy, free-living population is reported.\r\nMETHODS\r\nThirty subjects (15 women, 15 men, 20-70 years old), were monitored for 24 h while following their normal life. Temperatures were recorded every minute at the external auditory channel (EAC) and on the skin, at the intersection of the 5th intercostal space and the anterior axillary line. A Cosinor analysis and Approximate Entropy (ApEn) (m = 2, r = 0.15*SD, N = 180) were calculated for both temperatures.\r\nRESULTS\r\nMedian temperature was 35.55 degrees C [interquartile range (IR) 0.77 degrees C] in the external auditory channel (EAC) and 34.62 degrees C (IR 1.61) in the specified skin location. Median gradient between AEC and skin was 0.93 (IR 1.57). A circadian rhythm was present both in EAC and skin temperature, with a mean amplitude of 0.44 degrees C and an acrophase at 21:02 for the EAC and 0.70 degrees C and 00:42 for the skin. During the night there was a sizable increase in peripheral temperature, with a decrease in gradient and a loss of complexity in the temperature profile, most significantly in the peripheral temperature.\r\nCONCLUSIONS\r\nContinuous monitoring of central and peripheral temperature may be a helpful tool in both ambulatory and admitted patients and may offer new approaches in clinical thermometry.

Vasilenko, Sara A.; Piper, Megan E.; Lanza, Stephanie T.; Liu, Xiaoyu; Yang, Jingyun; Li, Runze (2014):

Time-varying processes involved in smoking lapse in a randomized trial of smoking cessation therapies.

In: *Nicotine Tob Res* 16 Suppl 2, S. S135-43. DOI: 10.1093/ntr/ntt185.

Abstract:

INTRODUCTION: Researchers have increasingly begun to gather ecological momentary assessment (EMA) data on smoking, but new statistical methods are necessary to fully unlock information from such data. In this paper, we use a new technique, the logistic time-varying effect model (logistic TVEM), to examine the odds of smoking in the 2 weeks after a quit attempt. METHODS: Data are from a subsample of participants from a randomized, placebo-controlled trial of smoking cessation pharmacotherapies who achieved initial abstinence (N = 1,106, 58% female). Participants completed up to 4 EMA assessments per day during the 2 weeks after their quit day. Predictors include baseline nicotine dependence, EMA measures of craving and negative affect, and whether an individual was assigned to a placebo, monotherapy, or combination therapy condition. Time-varying effects of these predictors were estimated using logistic TVEM. RESULTS: Cravings were a significant predictor of smoking throughout the entire 2 weeks postquit, whereas the effect of baseline dependence became nonsignificant by the second week, and the effect of negative affect increased over time. Individuals in the monotherapy and combination therapy conditions had decreased odds of smoking compared with placebo in the first week postquit, but these differences were nonsignificant in the second week. CONCLUSIONS: Findings suggest that pharmacotherapies are more effective compared with placebo earlier in a quit attempt, when the effect of baseline nicotine dependence on smoking is stronger, whereas the effect of craving and negative affect increased over time. Future cessation therapies may be more successful by providing additional support in the second week after quit attempt.

Vaz Fragoso, Carlos A.; Beavers, Daniel P.; Hankinson, John L.; Flynn, Gail; Berra, Kathy; Kritchevsky, Stephen B. et al. (2014):

Respiratory Impairment and Dyspnea and Their Associations with Physical Inactivity and Mobility in Sedentary Community-Dwelling Older Persons.

In: *J Am Geriatr Soc. DOI:* 10.1111/jgs.12738.

Abstract:

OBJECTIVES: To evaluate the prevalence of respiratory impairment and dyspnea and their associations with objectively measured physical inactivity and performance-based mobility in sedentary older persons. DESIGN: Cross-sectional. SETTING: Lifestyle Interventions and Independence for Elders Study. PARTICIPANTS: Community-dwelling older persons (n = 1,635, mean age 78.9) who reported being sedentary (<20 min/wk of regular physical activity and <125 min/wk of moderate physical activity in past month). MEASUREMENTS: Respiratory impairment was defined as low ventilatory capacity (forced expiratory volume in 1 second less than lower limit of normal (LLN)) and respiratory muscle weakness (maximal inspiratory pressure <LLN). Dyspnea was defined as moderate to severe ratings on the modified Borg index, immediately after a 400-m walk test (400-MWT). Physical inactivity was defined according to high sedentary time as the highest quartile of participants with accelerometry-measured activity of <100 counts/min. Performance-based mobility was evaluated using the Short Physical Performance Battery (</=7 defined as moderate to severe mobility impairment) and 400-MWT gait speed (<0.8 m/s defined as slow). RESULTS: Prevalence rates were 17.7% for low ventilatory capacity, 14.7% for respiratory muscle weakness, 31.6% for dyspnea, 44.7% for moderate to

severe mobility impairment and 43.6% for slow gait speed. Significant associations were found between low ventilatory capacity and slow gait speed (adjusted odds ratio (aOR) = 1.41, 95% confidence interval (CI) = 1.03-1.92), between respiratory muscle weakness and moderate to severe mobility impairment (aOR = 1.42, 95% CI = 1.03-1.95), and between dyspnea and high sedentary time (aOR = 1.98, 95% CI = 1.28-3.06) and slow gait speed (aOR = 1.70, 95% CI = 1.22-2.38). CONCLUSION: Respiratory impairment and dyspnea are prevalent in sedentary older persons and are associated with objectively measured physical inactivity and poor performance-based mobility. Because they are modifiable, respiratory impairment and dyspnea should be considered in the evaluation of sedentary older persons.

Vazire, Simine; Mehl, Matthias R. (2008):

Knowing me, knowing you: the accuracy and unique predictive validity of self-ratings and other-ratings of daily behavior.

In: *Journal of Personality and Social Psychology* 95 (5), S. 1202–1216. DOI: 10.1037/a0013314.

Abstract:

Many people assume that they know themselves better than anyone else knows them. Recent research on inaccuracies in self-perception, however, suggests that self-knowledge may be more limited than people typically assume. In this article, the authors examine the possibility that people may know a person as well as (or better than) that person knows himself or herself. In Study 1, the authors document the strength of laypeople's beliefs that the self is the best expert. In Study 2, the authors provide a direct test of self- and other-accuracy using an objective and representative behavioral criterion. To do this, the authors compared self- and other-ratings of daily behavior to real-life measures of act frequencies assessed unobtrusively over 4 days. Our results show that close others are as accurate as the self in predicting daily behavior. Furthermore, accuracy varies across behaviors for both the self and for others, and the two perspectives often independently predict behavior. These findings suggest that there is no single perspective from which a person is known best and that both the self and others possess unique insight into how a person typically behaves.

Vella, Elizabeth J.; Kamarck, Thomas W.; Shiffman, Saul (2008):

Hostility moderates the effects of social support and intimacy on blood pressure in daily social interactions.

In: *Health Psychol* 27 (2S), S. S155.

Abstract:

This study sought to determine the role of hostility in moderating the effects of positive social interactions on ambulatory blood pressure (ABP).

DESIGN:

Participants (341 adults) completed the Cook-Medley Hostility Scale and underwent ABP monitoring, assessed every 45 min during waking hours across 6 days. An electronic diary measuring mood and social interactions was completed at each ABP assessment.

MAIN OUTCOME MEASURES:

The dependent variables from the ABP monitor included systolic blood pressure, diastolic blood pressure, and heart rate.

RESULTS:

Different patterns of ambulatory diastolic blood pressure (ADBP) responding to social interactions perceived as intimate or supportive among high- versus low-hostile individuals were observed. Higher intimacy ratings were linked to reductions in ADBP among low-hostile but not high-hostile individuals. Conversely, high-hostile, but not low-hostile, individuals showed increases in ADBP to situations rated high in social support. Although findings for ambulatory systolic blood pressure were nonsignificant, the pattern of results was similar to ADBP.

CONCLUSION:

Hostile individuals may find offers of support stressful and may fail to benefit from intimacy during daily life. The pathogenic effects of hostility may be mediated in part by responses to social interactions, both positive and negative.

Vella, Elizabeth J.; Kamarck, Thomas W.; Flory, Janine D.; Manuck, Stephen (2012):

Hostile mood and social strain during daily life: A test of the transactional model.

In: *Annals of Behavioral Medicine* 44 (3), S. 341–352. DOI: 10.1037/t02043-000;

Abstract:

Background: Hostility is a multidimensional construct related to cardiovascular (CV) disease risk. Daily hostile mood and social interactions may precipitate stress-related CV responses in hostile individuals. Purpose: Determine whether trait cognitive hostility best predicts daily hostile mood and social interactions relative to other trait hostility factors and explore the temporal links between these daily measures. Methods: One hundred seventy-one participants completed assessments of four trait hostility scales. Participants completed an electronic diary across 3 days, assessing current hostile mood and social interaction quality. Results: Multiple regression analyses revealed both affective and cognitive hostility to be significant predictors of daily hostile mood, and cognitive hostility alone to predict daily social strain. Additional analyses revealed previous social strain to predict elevated subsequent hostile mood. Conclusions: Episodes of social strain may give rise to elevated hostile mood. Trait cognitive hostility may be an important factor in predicting daily social strain. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Vella, E. J.; Kamarck, T. W.; Flory, J. D.; Manuck, S. (2012):

Hostile Mood and Social Strain During Daily Life: A Test of the Transactional Model.

In: *Ann.Behav.Med.* (0883-6612 (Linking)). DOI: 10.1007/s12160-012-9400-7.

Abstract:

BACKGROUND: Hostility is a multidimensional construct related to cardiovascular (CV) disease risk. Daily hostile mood and social interactions may precipitate stress-related CV responses in hostile individuals. PURPOSE: Determine whether trait cognitive hostility best predicts daily hostile mood and social interactions relative to other trait hostility factors and explore the temporal links between these daily measures. METHODS: One hundred seventy-one participants completed assessments of four trait hostility scales. Participants completed an electronic diary across 3 days, assessing current hostile mood and social interaction quality. RESULTS: Multiple regression analyses revealed both affective and cognitive hostility to be significant predictors of daily hostile mood, and cognitive hostility alone to predict daily social strain. Additional analyses revealed previous social strain to predict elevated subsequent hostile mood. CONCLUSIONS: Episodes of social strain may give rise to elevated hostile mood. Trait cognitive hostility may be an important factor in predicting daily social strain

Vella, Chantal A.; Ontiveros, Diana; Zubia, Raul Y.; Bader, Julia O. (2011):

Acculturation and metabolic syndrome risk factors in young Mexican and Mexican–American women.

In: *Journal of immigrant and minority health* 13 (1), S. 119–126.

Abstract:

Little is known about effects of acculturation on disease risk in young Mexican and Mexican–American women living in a border community. The purpose of this study was to examine relationships between acculturation and features of metabolic syndrome (MetS) in Mexican and Mexican–American women (n = 60) living in the largest US-Mexico border community. Acculturation was measured by the short acculturation scale for Hispanics and birthplace. Body composition was measured by Bod Pod and daily physical activity was measured by questionnaire and accelerometer. Increased acculturation was related to individual features of MetS and increased risk of MetS. These relationships were mediated by fat mass rather than inactivity. Fat mass mediates the relationships between acculturation and individual features of MetS in young Mexican and Mexican–American women. These findings suggest that fat mass, rather than inactivity, is an important contributor to disease risk in young Mexican and Mexican–American women living in a large US/Mexico border community.

Ven Dyck, Delfien; Cardon, Greet; Deforche, Benedicte; Giles-Corti, Billie; Sallis, James F.; Owen, Neville; Bourdeaudhuij, Ilse (2011):

Environmental and psychosocial correlates of accelerometer-assessed and self-reported physical activity in Belgian adults.

In: *International Journal of Behavioral Medicine* 18 (3), S. 235–245. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-16658-009&site=ehost-live;Delfien.VanDyck@UGent.be.

Abstract:

Background: Despite the well-known benefits of physical activity (PA) on overall health, the majority of the adult population does not engage in sufficient PA. To develop effective interventions to increase PA, it is necessary to understand the most important PA correlates and to investigate whether correlates are similar in different population subgroups. Purpose: This study examined associations between physical environmental perceptions and self-reported and objectively assessed PA in Belgian adults. Moreover, associations between psychosocial factors and PA, and the moderating effects of sociodemographic factors were investigated. Method: A sample of 1,200 Belgian adults (20–65 years; 47.9% males) completed a survey measuring sociodemographic variables and psychosocial correlates, the Neighborhood Environmental Walkability Scale and the long-version International Physical Activity Questionnaire. They wore an accelerometer for 7 days. Results: Perceiving neighborhoods to be high walkable (high residential density, high land use mix access, and high land use mix diversity) and recreation facilities to be convenient, and the availability of home PA equipment were the most consistent physical environmental correlates of PA. The strongest psychosocial correlates were social support from friends and family and self-efficacy. The psychosocial associations were most consistent for self-reported leisure-time PA and less clear for self-reported active transportation and accelerometer-assessed PA. Few significant sociodemographic moderators were found. Conclusion: Both physical environmental and psychosocial factors were associated with PA in adults, with psychosocial factors being important especially for leisure-time PA. Correlates of PA were similar regardless of gender, age, or socio-economic status, so interventions to change these factors could have population-wide effects. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Ver, C.; Hofgart, G.; Szima, G.; Kovacs, G.; Nyisztor, Z.; Kardos, L.; Csiba, L. (2013):

[Experiences with a self developed accelerometer].

In: *Ideggyogy.Sz* 66 (1-2), S. 29–34. Online verfügbar unter PM:23607227.

Abstract:

OBJECTIVE: In neurology the objective evaluation of improvement of paresis on every-day practice. The aim of this study was to develop and test a small 3-d acceleration measuring device and validate its usefulness. PATIENTS AND METHODS: We collected data from 17 mild and medium severity hemiparetic, bedridden acute ischaemic and hemorrhagic stroke patients and compared with data of 22 control subjects. The devices were attached to the paretic and non-paretic extremities and any movements (m/s2) and movement-durations were registered (24h). The data of movement-monitors were compared also with the changes of National Institute of Health Stroke Scale and European Stroke Scale. The electromyograph-sensor of polysomnograph was used for validation. RESULTS: Mild differences could be found in the use of dominant and non-dominant upper extremities of control persons. The control persons used their upper extremities more frequently than the stroke patients. Our data showed significant correlation with National Institute of Health Stroke Scale. Higher values on the scores were accompanied with less intensive use of extremities. We found a correlation between the consiousness level of patients and their activity of upper extremities. If the patients had severe consiousness disturbances they used significantly less their upper extremities. CONCLUSION: Our device sensitively detected the movement-differences between paretic and non-paretic extremities and can be used for quantitative evaluation of patient's neurological and consciousness status

Verberk, Willem J.; Kroon, Abraham A.; Lenders, Jacques W. M.; Kessels, Alfons G. H.; van Montfrans, Gert A.; Smit, Andries J. et al. (2007):

Self-Measurement of Blood Pressure at Home Reduces the Need for Antihypertensive Drugs A Randomized, Controlled Trial.

In: *Hypertension* 50 (6), S. 1019–1025.

Abstract:

It is still uncertain whether one can safely base treatment decisions on self-measurement of blood pressure. In the present study, we investigated whether antihypertensive treatment based on self-measurement of blood pressure leads to the use of less medication without the loss of blood pressure control. We randomly assigned 430 hypertensive patients to receive treatment

either on the basis of self-measured pressures (n=216) or office pressures (OPs; n=214). During 1-year follow-up, blood pressure was measured by office measurement (10 visits), ambulatory monitoring (start and end), and self-measurement (8 times, self-pressure group only). In addition, drug use, associated costs, and degree of target organ damage (echocardiography and microalbuminuria) were assessed. The self-pressure group used less medication than the OP group (1.47 versus 2.48 drug steps; P<0.001) with lower costs ($3222 versus $4420 per 100 patients per month; P<0.001) but without significant differences in systolic and diastolic OP values (1.6/1.0 mm Hg; P=0.25/0.20), in changes in left ventricular mass index (−6.5 g/m2 versus −5.6 g/m2; P=0.72), or in median urinary microalbumin concentration (−1.7 versus −1.5 mg per 24 hours; P=0.87). Nevertheless, 24-hour ambulatory blood pressure values at the end of the trial were higher in the self-pressure than in the OP group: 125.9 versus 123.8 mm Hg (P<0.05) for systolic and 77.2 versus 76.1 mm Hg (P<0.05) for diastolic blood pressure. These data show that self-measurement leads to less medication use than office blood pressure measurement without leading to significant differences in OP values or target organ damage. Ambulatory values, however, remain slightly elevated for the self-pressure group.

Verdecchia, Paolo; Angeli, Fabio; Cavallini, Claudio; Mazzotta, Giovanni; Repaci, Salvatore; Pede, Silvia et al. (2009):

The voltage of R wave in lead aVL improves risk stratification in hypertensive patients without ECG left ventricular hypertrophy.

In: *J Hypertens* 27 (8), S. 1697–1704. DOI: 10.1097/HJH.0b013e32832c0031.

Abstract:

OBJECTIVES\r\nWe tested the hypothesis that the voltages of QRS on ECG improve risk stratification in hypertensive patients without left ventricular hypertrophy on ECG.\r\nMETHODS AND RESULTS\r\nWe studied 2042 initially untreated patients with hypertension (mean age 49 years, 46% women) without left ventricular hypertrophy on ECG and no history of cardiovascular disease. At entry, all patients underwent diagnostic tests, including 24-h ambulatory blood pressure monitoring and echocardiography. Among the different ECG voltages, the R wave in lead aVL showed the closest association with left ventricle (LV) mass (r = 0.31; P < 0.001), followed by the R wave in D1 (r = 0.25) and the S wave in V3 (r = 0.22). Patients were followed up for a mean of 7.7 years (range 1-22 years), and treatment was tailored individually. During follow-up, there were 188 major cardiovascular events. The relationship between LV voltage and outcome was assessed using a Cox model with adjustment for age, sex, diabetes, smoking, total cholesterol, serum creatinine, LV mass on echocardiography and average 24-h ambulatory blood pressure. A 0.1 mV higher R wave voltage in lead aVL was associated with a 9% higher risk of cardiovascular disease (95% confidence interval = 0.04-0.15%; P < 0.001). Other ECG voltages and minor repolarization changes were not related to clinical outcome.\r\nCONCLUSION\r\nOur results show for the first time that the voltage of the R wave in lead aVL improves cardiovascular risk stratification in hypertensive patients without left ventricular hypertrophy on ECG. Its prognostic value is independent of LV mass on echocardiography and 24-h ambulatory blood pressure.

Verduyn, Philippe; Delvaux, Ellen; van Coillie, Hermina; Tuerlinckx, Francis; van Mechelen, Iven (2009):

Predicting the duration of emotional experience: two experience sampling studies.

In: *Emotion* 9 (1), S. 83–91. DOI: 10.1037/a0014610.

Abstract:

The authors present 2 studies to explain the variability in the duration of emotional experience. Participants were asked to report the duration of their fear, anger, joy, gratitude, and sadness episodes on a daily basis. Information was further collected with regard to potential predictor variables at 3 levels: trait predictors, episode predictors, and moment predictors. Discrete-time survival analyses revealed that, for all 5 emotions under study, the higher the importance of the emotion-eliciting situation and the higher the intensity of the emotion at onset, the longer the emotional experience lasts. Moreover, a reappearance, either physically or merely mentally, of the eliciting stimulus during the emotional episode extended the duration of the emotional experience as well. These findings display interesting links with predictions within N. H. Frijda's theory of emotion, with the phenomenon of reinstatement (as studied within the domain of learning psychology), and with the literature on rumination.

Verwey, Renee; van der Weegen, Sanne; Spreeuwenberg, Marieke; Tange, Huibert; van der Weijden, Trudy; Witte, Luc (2014):

A pilot study of a tool to stimulate physical activity in patients with COPD or type 2 diabetes in primary care.

In: *J Telemed Telecare* 20 (1), S. 29–34. DOI: 10.1177/1357633X13519057.

Abstract:

We tested the performance, acceptance and user satisfaction of a tool to stimulate physical activity. The tool consisted of an accelerometer, a smartphone app and a server/web application. Patients received feedback concerning their physical activity relative to a goal, which was set in dialogue with their practice nurse. Nurses could monitor their patients' physical activity via a website. Twenty patients with COPD or type 2 diabetes used the tool for three months, combined with behaviour change counselling. Physical activity data were collected at the server and a log file was used to record technical problems. We interviewed patients and nurses after every consultation. At baseline, and after the intervention, patients completed questionnaires. Participants were positive about the tool, although motivation dropped when technical problems occurred caused by log-in and connectivity errors. On average, physical activity increased from 29 (SD 21) min per day in the first two weeks to 39 (SD 24) min per day in the last two weeks (P = 0.02), and quality of life scores increased from 0.76 (SD 0.21) to 0.84 (SD 0.17) (P = 0.04). Provided that no connectivity problems occur, the tool is a feasible intervention when embedded in primary care, and has a positive effect on physical activity levels.

Verwey, Renee; van der Weegen, Sanne; Spreeuwenberg, Marieke; Tange, Huibert; van der Weijden, Trudy; Witte, Luc (2014):

Upgrading physical activity counselling in primary care in the Netherlands.

In: *Health Promot Int. DOI:* 10.1093/heapro/dau107.

Abstract:

The systematic development of a counselling protocol in primary care combined with a monitoring and feedback tool to support chronically ill patients to achieve a more active lifestyle. An iterative user-centred design method was used to develop a counselling protocol: the Self-management Support Programme (SSP). The needs and preferences of future users of this protocol were identified by analysing the literature, through qualitative research, and by consulting an expert panel. The counselling protocol is based on the Five A's model. Practice nurses apply motivational interviewing, risk communication and goal setting to support self-management of patients in planning how to achieve a more active lifestyle. The protocol consists of a limited number of behaviour change consultations intertwined with interaction with and responses from the It's LiFe! monitoring and feedback tool. This tool provides feedback on patients' physical activity levels via an app on their smartphone. A summary of these levels is automatically sent to the general practice so that practice nurses can respond to this information. A SSP to stimulate physical activity was defined based on user requirements of care providers and patients, followed by a review by a panel of experts. By following this user-centred approach, the organization of care was carefully taken into account, which has led to a practical and affordable protocol for physical activity counselling combined with mobile technology.

Vilardaga, Roger (2013):

An experience sampling study of psychological processes and their relation to functional outcome among individuals with severe psychopathology.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 74 (2-B(E)). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-99160-333%26site%3dehost-live.

Abstract:

Background. The functional relations between daily contextual factors, psychological coping and functional outcome among individuals with severe psychopathology are still largely unexamined as compared to other aspects in this population, such as the genetic makeup of these individuals, their performance on cognitive tests, or their retrospective self-reports. Aims and method. To compare the role of cognitive and emotional regulation strategies versus contextual and behavioral regulation strategies in predicting different types of functional outcome after controlling for the occurrence of positive psychotic events and other negative stressors. A group of 31 individuals diagnosed with severe psychopathology from a Program for Assertive Community Treatment (PACT) of the Northern Nevada Adult Mental Health Services (NNAMHS) were recruited for this study. The study design was observational, with the added feature of an experience sampling method; 685 experience sampling moments were gathered during the course of six days. Additional psychological processes were examined in this study such as empathy, perspective taking ability and values. Results The study suggests that the occurrence of positive psychotic symptoms and stressful events had a negative impact on functional outcome, but not after accounting for the role of some contextual and behavioral regulation strategies. More specifically, behavioral regulation strategies such as experiential acceptance and overt avoidance had a superior association with functional outcome than emotional regulation strategies such as cognitive reappraisal. Moreover, data suggests that cognitive reappraisal tended to increase individual's distress, although not after accounting for cognitive suppression and overt avoidance. Finally, due to small sample size and design considerations it was not possible to reliably explore the association between perspective taking, values and functional outcome, however, additional exploratory analysis were conducted in order to test the direction and strength of these associations. Conclusions. Behavioral and contextual

regulation strategies seem to have a superior effect on functional outcome as compared to cognitive and emotional regulation strategies among individuals with severe psychopathology that regularly experience psychotic and/or negative experiences. (PsycINFO Database Record (c) 2013 APA, all rights reserved)

Vilardaga, Roger; Hayes, Steven C.; Atkins, David C.; Bresee, Christie; Kambiz, Alaei (2013):

Comparing experiential acceptance and cognitive reappraisal as predictors of functional outcome in individuals with serious mental illness.

In: *Behav Res Ther* 51 (8), S. 425–433. DOI: 10.1037/t16491-000;

Abstract:

Background: Two psychological regulation strategies to cope with psychotic symptoms proposed by the cognitive behavioral tradition were examined in this study: cognitive reappraisal and experiential acceptance. Although cognitive behavior therapy for psychosis has increasing empirical support, little is known about the role of these two strategies using methods of known ecological validity. Methods: Intensive longitudinal data was gathered from 25 individuals diagnosed with a psychiatric disorder with psychotic features. During the course of six days we measured contextual factors, psychotic and stressful events, psychological regulation strategies and functional outcome. Results: Positive psychotic symptoms and stressful events had negative associations with quality of life and affect, whereas experiential acceptance had positive associations with them. Cognitive reappraisal had inconsistent associations with quality of life and no association with affect. Social interactions and engagement in activities had a positive association with quality of life. Results were supported by additional and exploratory analyses. Conclusions: Across measures of functional outcome, experiential acceptance appears to be an effective coping strategy for individuals facing psychotic and stressful experiences, whereas cognitive reappraisal does not. In order to inform treatment development efforts, results suggest the need to further investigate the role of these psychological regulation strategies using ecologically valid methods. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Villars, C.; Bergouignan, A.; Dugas, J.; Antoun, E.; Schoeller, D. A.; Roth, H. et al. (2012):

Validity of combining heart rate and uniaxial acceleration to measure free-living physical activity energy expenditure in young men.

In: *J Appl.Physiol* (0161-7567 (Linking)). DOI: 10.1152/japplphysiol.01413.2011.

Abstract:

Background: Combining accelerometry (ACC) with heart rate (HR) monitoring is thought to improve activity energy expenditure (AEE) estimations compared to ACC alone. Objective: To evaluate the validity of ACC and HR used alone or combined to estimate AEE in free living conditions, compared to doubly-labeled water (DLW). Methods: Ten-day free-living AEE was measured by a DLW protocol in thirty-five 18-55 y men (11 lean active, 12 lean sedentary, 12 overweight sedentary) wearing an Actiheart (combining ACC and HR) and a RT3 accelerometer. AEE was estimated using group- or individual-calibration of the HR/AEE relationship, based on an exercise tolerance test. In a subset (n=21), AEE changes were measured after one month of detraining (active subjects) or an 8-week training (sedentary subjects). Results: Actiheart combined ACC/HR estimates were more accurate than estimates from HR or ACC alone. Accuracy of the Actiheart group-calibrated ACC/HR estimates was modest (intra-class correlation coefficient [ICC]=0.62), with no bias but high root mean square error (RMSE) and limits of agreement (LOA). The mean bias of the estimates was reduced by one third, like RMSE and LOA, by individual calibration (ICC=0.80). Contrasting with group-calibrated estimates, the Actiheart individual-calibrated ACC/HR estimates explained 38% of the variance of the DLW-AEE change (ICC=0.63). Conclusion: This study supports a good level of agreement between the Actiheart ACC/HR estimates and DLW-measured AEE in lean and overweight men with varying fitness levels. Individual calibration of the HR/AEE relationship is necessary for AEE-estimations at individual level rather than at group scale and for AEE change evaluation

Vinyoles, Ernest; La Sierra, Alejandro; Roso, Albert; de la Cruz, Juan J; Gorostidi, Manuel; Segura, Julian et al. (2014):

Night-time heart rate cut-off point definition by resting office tachycardia in untreated hypertensive patients: data of the Spanish ABPM registry.

In: *J Hypertens* 32 (5), S. 1016–1024. DOI: 10.1097/HJH.0000000000000124.

Abstract:

OBJECTIVE: Epidemiological studies have shown that an elevated resting heart rate (HR) is a risk factor for both total and cardiovascular mortality. Our aim was to estimate the night-time HR cut-off point that best predicts cardiovascular risk office tachycardia in hypertensive patients. DESIGN AND METHOD: Untreated hypertensive patients without concomitant cardiovascular diseases were included. Office and ambulatory HRs were measured. Cardiovascular risk office tachycardia was defined by office HR at least 85 beats per minute (bpm). Different night-time HR cut-offs were estimated by receiver operating characteristic curve analyses to predict cardiovascular risk office tachycardia. The best cut-off was selected on the basis of its combined sensitivity and specificity. RESULTS: A total of 32 569 hypertensive patients were included: 46.5% women, mean age (SD) 52 (14) years, office blood pressure 146 (16)/89 (11) mmHg, diabetes 10.3%, smoking 19.2%, BMI 29 (6.8) kg/m, office HR 77 (11.2) bpm, and night-time HR 64.9 (9.3) bpm. A total of 7070 (21.7%) patients were found to have cardiovascular risk office tachycardia. The night-time HR value that better predicted cardiovascular risk office tachycardia was more than 66 bpm. In comparison with patients with night HR below this value, those with night-time tachycardia were predominantly women, younger, with higher ambulatory blood pressure, greater BMI, and higher prevalence of diabetes and smoking. All comparisons were statistically significant (P less than 0.001). CONCLUSION: A mean night-time HR more than 66 bpm is a good predictor of cardiovascular risk office tachycardia in untreated hypertensive patients and could be considered a variable associated with an increased cardiovascular risk.

Virtanen, Marko P. O.; Kööbi, Tiit; Turjanmaa, Väinö M. H.; Majahalme, Silja; Tuomisto, Martti T.; Nieminen, Tuomo; Kähönen, Mika (2008):

Predicting arterial stiffness with ambulatory blood pressure: an 11-year follow-up.

In: *Clinical physiology and functional imaging* 28 (6), S. 378–383.

Abstract:

No prospective data have been published on whether ambulatory blood pressure (BP) works better than casual measurements in predicting arterial stiffness. This study with 11-year follow-up was launched to evaluate the usefulness of ambulatory intra-arterial BP in predicting pulse wave velocity (PWV). Ninety-seven previously healthy men were recruited from a routine physical check-up at baseline. BP was measured with standard cuff and intra-arterial ambulatory methods. Sixty-seven subjects with no antihypertensive medication were enrolled for a visit after a follow-up of 11 years. Arterial stiffness was estimated with PWV derived with impedance cardiography. Ambulatory 24-h systolic blood pressure (SBP) (r = 0·30, P = 0·01), 24-h mean arterial pressure (r = 0·27, P = 0·03), 24-h pulse pressure (r = 0·27, P = 0·03) and daytime SBP (r = 0·26, P = 0·03) were the best BP variables in predicting future PWV. Casual BP values did not bear significant correlations with future PWV. In hierarchical regression analysis, the best predictive value for future PWV was achieved with the model including ambulatory 24-h SBP, smoking (number of cigarettes) and age (adjusted R2 = 0·26). In conclusion, to our knowledge, this is the only prospective follow-up study to show that ambulatory BP is superior to casual BP measurement in predicting future PWV.

Volmer, J.; Binnewies, C.; Sonnentag, S.; Niessen, C. (2012):

Do social conflicts with customers at work encroach upon our private lives? A diary study.

In: *J Occup.Health Psychol.* 17 (3), S. 304–315. DOI: 10.1037/a0028454.

Abstract:

Social interactions at work can strongly influence people's well-being. Extending past research, we examined how social conflicts with customers at work (SCCs) are related to employees' well-being (i.e., state negative affect, NA) and nonwork experiences (i.e., psychological detachment from work and negative work reflection at home) on a daily level. Using experience-sampling methodology, we collected data from 98 civil service agents over 5 working days. Hierarchical linear modeling revealed that on the daily level, SCCs were related to employees' NA as well as with their nonwork experiences. Specifically, SCCs were negatively related to psychological detachment from work and positively related to negative work reflection after work. Furthermore, results provide support for the mediating role of NA in the SCC-nonwork experiences relationship. The findings of the present study broaden the scope of workplace conflict research by showing that conflicts are not only associated with employees' impaired well-being but even encroach on their nonwork experiences

Volz, Sebastian; Andersson, Bert; Manhem, Karin; Haraldsson, Inger; Rundqvist, Bengt (2014):

Effect of catheter-based renal sympathetic denervation on 24-h ambulatory blood pressure in patients with resistant hypertension.

In: *Blood Press. DOI:* 10.3109/08037051.2013.867663.

Abstract:

We investigated the effect of renal denervation on office blood pressure (OBP) and 24-h ambulatory blood pressure (BP) measurement (ABPM) at baseline and 6 months after intervention in 25 consecutive patients with resistant hypertension. Mean baseline 24-h ABPM and OBP were 158/88 mmHg and 169/96 mmHg, respectively. Patients were treated with an average of 4 +/- 1 antihypertensive drugs. Among the 22 patients included in data analysis, mean ambulatory systolic and diastolic BP were reduced by 6 mmHg from 158 +/- 17 to 152 +/- 20 mmHg ($p < 0.05$) and by 3 mmHg from 88 +/- 12 to 85 +/- 14 mmHg (p = ns) after 6 months follow-up, respectively. Blood pressure reduction was most pronounced during daytime with a decrease of 9 mmHg from 164 +/- 17 to 155 +/- 19 ($p < 0.05$) in systolic (SBP) and 6 mmHg from 94 +/- 14 to 88 +/- 14 mmHg in diastolic BP (DBP) ($p < 0.05$). Night-time SBP mmHg and DBP were similar at baseline compared with follow-up. Systolic and diastolic OBP during follow-up were significantly reduced by 17 mmHg from 169 +/- 20 to 152 +/- 21 ($p < 0.05$) and by 9 mmHg from 96 +/- 16 to 87 +/- 13 mmHg ($p < 0.05$), respectively. These results provide new insight into the effect of renal denervation on ABPM day- and night-time blood pressure profile in comparison with OBP. The decrease in ABPM was identified during daytime registration and was less pronounced compared with reduction of OBP.

Volz, Angela R.; Dennis, Paul A.; Dennis, Michelle F.; Calhoun, Patrick S.; Wilson, Sarah M.; Beckham, Jean C. (2014):

The Role of Daily Hassles and Distress Tolerance in Predicting Cigarette Craving During a Quit Attempt.

In: *Nicotine Tob Res. DOI:* 10.1093/ntr/ntt286.

Abstract:

INTRODUCTION: Ecological momentary assessment (EMA) has shown that smoking behavior is linked to transient variables in the smoker's immediate context. Such research suggests that daily hassles (e.g., losing one's keys) may be more likely to lead to cigarette craving and eventual lapse than infrequent, large-scale stressors (e.g., death of a loved one) in individuals attempting to quit smoking. However, individual differences in distress tolerance (DT) may moderate the relationship between daily hassles and daily cigarette craving during a quit attempt. METHODS: A sample of 56 veterans and community members drawn from a larger smoking-cessation study completed structured interviews and paper-and-pencil questionnaires during an initial laboratory visit and, directly following a quit attempt, were monitored via EMA. Multilevel modeling was used to examine the relationship between daily hassles and daily cigarette craving, and to determine whether DT moderated this relationship. RESULTS: Daily hassles were positively associated with daily cigarette craving, and this association was moderated by individual differences in DT, such that the lower one's DT, the stronger the relationship between daily hassles and daily cigarette craving. This model explained 13% of the intraindividual variability and 8% of the interindividual variability in daily cigarette craving. CONCLUSIONS: Smoking-cessation interventions may be strengthened by targeting smokers' individual responses to contextual factors, such as by helping smokers develop skills to cope more effectively with distress prior to and during the quit phase.

Voogt, C. V.; Kuntsche, E.; Kleinjan, M.; Poelen, E. A.; Lemmers, L. A.; Engels, R. C. (2013):

Using ecological momentary assessment in testing the effectiveness of an alcohol intervention: a two-arm parallel group randomized controlled trial.

In: *PLoS.One.* 8 (11), S. e78436. DOI: 10.1371/journal.pone.0078436.

Abstract:

BACKGROUND: Alcohol consumption of college students has a fluctuating nature, which might impact the measurement of intervention effects. By using 25 follow-up time-points, this study tested whether intervention effects are robust or might vary over time. METHODS: Data were used from a two-arm parallel group randomized controlled trial applying ecological momentary assessment (EMA) with 30 data time-points in total. Students between 18 and 24 years old who reported heavy drinking in the past six months and who were ready to change their alcohol consumption were randomly assigned to the experimental (n = 456: web-based brief alcohol intervention) and control condition (n = 451: no intervention). Outcome measures were weekly alcohol consumption, frequency of binge drinking, and heavy drinking status. RESULTS: According to the intention-to-treat principle, regression analyses revealed that intervention effects on alcohol consumption varied when exploring multiple follow-up time-points. Intervention effects were found for a) weekly alcohol consumption at 1, 2, 3, 4, and 7 weeks follow-up, b) frequency of

binge drinking at 1, 2, 7, and 12 weeks follow-up, and c) heavy drinking status at 1, 2, 7, and 16 weeks follow-up. CONCLUSIONS: This research showed that the commonly used one and six month follow-up time-points are relatively arbitrary and not using EMA might bring forth erroneous conclusions on the effectiveness of interventions. Therefore, future trials in alcohol prevention research and beyond are encouraged to apply EMA when assessing outcome measures and intervention effectiveness. TRIAL REGISTRATION: Netherlands Trial Register NTR2665

Voogt, Carmen V.; Kuntsche, Emmanuel; Kleinjan, Marloes; Engels, Rutger C M E (2014):

The effect of the 'What Do You Drink' web-based brief alcohol intervention on self-efficacy to better understand changes in alcohol use over time: Randomized controlled trial using ecological momentary assessment.

In: *Drug Alcohol Depend. DOI:* 10.1016/j.drugalcdep.2014.02.009.

Abstract:

BACKGROUND: To examine whether (1) the 'What Do You Drink' (WDYD) intervention resulted in drinking refusal self-efficacy (DRSE) changes directly after the intervention, and if so, whether these changes sustained at six-months follow-up and (2) DRSE was related to alcohol use over time, and if so, whether the strength of these relationships differed across conditions. Insight herein can help explain the sustained preventive effects of the WDYD intervention on alcohol use, as reported previously. METHODS: Alcohol use and DRSE data were collected from 907 participants (60.3% male; M=20.8 (SD=1.7) in a two-arm parallel group randomized controlled trial applying ecological momentary assessment with 30 time-points. Participants were randomized to the experimental (n=456: WDYD intervention) or control condition (n=451: no intervention). RESULTS: Latent Growth Curve (LGC) analyses that modeled individual change in DRSE over time by condition revealed that participants in the experimental condition experienced a higher social pressure DRSE compared to participants in the control condition at six-months follow-up. Moreover, LGC analyses with time-varying covariates revealed that DRSE was negatively related to weekly alcohol consumption and social pressure DRSE to frequency of binge drinking. The WDYD intervention did not affect the strength of these relationships. CONCLUSIONS: The WDYD intervention increased the level of social pressure DRSE directly after the intervention that sustained at six-months follow-up. This change is likely to be responsible for the sustained preventive effects of the WDYD intervention on alcohol use, as reported previously.

Voogt, Carmen; Kuntsche, Emmanuel; Kleinjan, Marloes; Poelen, Evelien; Engels, Rutger (2014):

Using ecological momentary assessment to test the effectiveness of a web-based brief alcohol intervention over time among heavy-drinking students: randomized controlled trial.

In: *J Med Internet Res* 16 (1), S. e5. DOI: 10.2196/jmir.2817.

Abstract:

BACKGROUND: Web-based brief alcohol interventions are effective in reducing alcohol use among students when measured at limited follow-up time points. To date, no studies have tested Web-based brief alcohol intervention effectiveness over time by using a large number of measurements. OBJECTIVE: Testing whether the What Do You Drink (WDYD) Web-based brief alcohol intervention can sustain a reduction in alcohol use among heavy-drinking students aged 18-24 years at 1-, 3-, and 6-month follow-up intervals. METHODS: A purely Web-based, 2-arm, parallel-group randomized controlled trial applying an ecological momentary assessment approach with 30 weekly measurements was conducted in the Netherlands (2010-2011). Participants were recruited offline and online. A total of 907 participants were randomized into the experimental condition (n=456) including the single-session and fully automated WDYD intervention, or into the control condition (n=451) including assessment only. Weekly alcohol consumption and frequency of binge drinking were the self-assessed outcome measures. RESULTS: Attrition rates of the 907 participants were 110 (12.1%), 130 (14.3%), and 162 (17.9%) at 1-, 3-, and 6-month follow-up intervals, respectively. Latent growth curve analyses according to the intention-to-treat principle revealed that participants in the experimental condition had significantly lower weekly alcohol consumption compared to participants in the control condition that was sustained at 3-month follow-up (intercept=-2.60, P<.001; slope=0.16, P=.08). Additional linear regression analyses indicated that this intercept difference resulted from significantly higher levels of alcohol units per week for participants in the control condition compared to those in the experimental condition at 1-month (beta=-2.56, SE 0.74, Cohen's d=0.20, P=.001), 3-month (beta=-1.76, SE 0.60, Cohen's d=0.13, P=.003), and 6-month (beta=-1.21, SE 0.58, Cohen's d=0.09, P=.04) follow-up intervals. Latent growth curve analyses further indicated that participants in the experimental condition had a significantly lower frequency of binge drinking compared to participants in the control condition that was sustained at 6-month follow-up (intercept=-0.14, P=.01; slope=0.004, P=.19). This intercept difference resulted from higher levels in this outcome for participants in the control condition relative to participants in the experimental condition at 1-month (beta=-1.15, SE 0.06, Cohen's d=0.16,

P=.01), 3-month (beta=-0.12, SE 0.05, Cohen's d=0.09, P=.01), and 6-month (beta=-0.09, SE 0.05, Cohen's d=0.03, P=.045) follow-up intervals. CONCLUSIONS: The WDYD intervention was shown to be effective in preventing an increase in weekly alcohol consumption and frequency of binge drinking directly after the intervention. This effect was sustained 3 and 6 months after the intervention. TRIAL REGISTRATION: Netherlands Trial Register NTR2665; http://www.trialregister.nl/trialreg/admin/rctview.asp?TC=2665 (Archived by WebCite at http://webcitation.org/6LuQVn12M).

Vorwerg, Y.; Petroff, D.; Kiess, W.; Bluher, S. (2013):

Physical activity in 3-6 year old children measured by SenseWear Pro(R): direct accelerometry in the course of the week and relation to weight status, media consumption, and socioeconomic factors.

In: *PLoS.One.* 8 (4), S. e60619. DOI: 10.1371/journal.pone.0060619.

Abstract:

BACKGROUND: Data on objectively measured physical activity (PA) in preschoolers are controversial. Direct accelerometry was performed in children aged 3-6 years, and differences in PA patterns over the course of the week were evaluated. Data were analyzed with gender, BMI, lifestyle, and socioeconomic parameters as covariates. METHODS: PA was measured in 119 children by the SensewearPro(R) accelerometer and analyzed in the 92 (40 girls) that wore it for at least 4 days including one day of the weekend. Median measuring time in this group was 7 consecutive days (median/mean daily measuring time: 23.5 h/d and 21.8 h/d, respectively), corresponding to 834,000 analyzed minutes. PA questionnaires were completed by 103 parents and 87 preschool teachers to collect anthropometric, lifestyle, and socioeconomic data. RESULTS: Median daily PA (MET>3) was 4.3 hours (mean: 4.4 hours). Boys spent an estimated 52 min/week more being very active (MET>6) than girls (95% CI [6, 96] min/week, p = 0.02). PA was lower during the weekend (3.7 h/d) compared to weekdays (4.5 h/d), p = 3 x 10(-6)), where a 95% CI for the difference is [0.5, 1.0] h/d. PA levels did not differ between overweight/obese children (median 4.7 h/d) and normal-weight peers (median 4.2 h/d). Daily media consumption increased with decreasing social class on weekdays (p = 0.05) and during the weekend (p = 0.01), but was not related to the amount of daily PA. A multivariate regression with BMI-SDS as independent variable and gender, age, amount of PA>6 MET, parental BMI, media time and socioeconomic status as explanatory variables revealed that only SES had a significant contribution. CONCLUSION: The negative impact of obesity-promoting factors in older children is rather low for preschoolers, but there is evidently a gradient in PA between weekdays and weekends already in this age group. Weight status of preschoolers is already considerably influenced by SES, but not physical activity levels

Vouyioukas, Demosthenes; Maglogiannis, Ilias; Pasias, Vasilios (2007):

Pervasive e-health services using the dvb-rcs communication technology.

In: *J Med Syst* 31 (4), S. 237–246.

Abstract:

Two-way satellite broadband communication technologies, such as the Digital Video Broadcasting with Return Channel via Satellite (DVB-RCS) technology, endeavour to offer attractive wide-area broadband connectivity for telemedicine applications, taking into consideration the available data rates, Quality of Service (QoS) provision, survivability, flexibility and operational costs, even in remote areas and isolated regions where the terrestrial technologies suffer. This paper describes a wide-area tele-medicine platform, specially suited for homecare services, based on the DVB-RCS and Wi-Fi communication technologies. The presented platform combines medical data acquisition and transfer, patient remote monitoring and teleconference services. Possible operational scenarios concerning this platform and experimental results regarding tele-monitoring, videoconference and medical data transfer are also provided and discussed in the paper.

Vranceanu, Ana-Maria; Gallo, Linda C.; Bogart, Laura M. (2009):

Depressive symptoms and momentary affect: the role of social interaction variables.

In: *Depression and anxiety* 26 (5), S. 464–470. DOI: 10.1002/da.20384.

Abstract:

BACKGROUND\r\nInterpersonal functioning may be one important factor in the development and course of depression symptomatology. This study used ecological momentary assessment to test the associations among depressive symptoms, social experiences and momentary affect in women.\r\nMETHODS\r\nMiddle-aged women (N=108, M age: 41.6 years, 81% White)

completed diary questions on handheld computers for 2 days. Diary items assessed social (conflictive versus supportive) and affective (negative versus positive) experiences at random times during the day. Women also completed a self-report measure of recent depressive symptoms.\r\nRESULTS\r\nMultilevel modeling analyses showed that higher levels of symptoms of depression were related to higher negative affect and lower positive affect both directly and indirectly, through experiences of social conflict. Depressive symptoms were not significantly related to socially supportive interactions. In an alternative model testing the reverse association, neither positive nor negative affect significantly predicted social experiences. Generalizability is limited by the homogenous small sample and strict inclusionary criteria (working full-time or part-time, cohabitating or married, healthy). Due to the cross sectional nature of the data as well as the manner in which social and affective experiences were assessed, definitive conclusions regarding the temporal associations among depression symptoms, social functioning, and affect are not possible. Results are consistent with prior reports suggesting the salience of socially conflictive experiences, and the role of affect, in the etiology and maintenance of depression symptoms.\r\nCONCLUSIONS\r\nInterventions that attempt to decrease socially conflictive experiences via cognitive-behavioral skills training, whereas concomitantly targeting positive and negative affect, could help prevent the development of full-blown depressive episodes in vulnerable individuals.

Vrijheid, Martine (2014):

The exposome: a new paradigm to study the impact of environment on health.

In: *Thorax. DOI:* 10.1136/thoraxjnl-2013-204949.

Abstract:

Environmental factors, here taken to include pollutants, lifestyle factors and behaviours, can play an important role in serious, chronic pathologies with large societal and economic costs, including respiratory disease. However, measurement of the environmental component in epidemiological studies has traditionally relied on much more uncertain and incomplete assessments than measurement of the genome. The 'exposome' has therefore been proposed as a new paradigm to encompass the totality of human environmental (meaning all non-genetic) exposures from conception onwards, complementing the genome. Evidently, there are large challenges in developing the exposome concept into a workable approach for epidemiological research. These include: (1) the accurate and reliable measurement of many exposures in the external environment, (2) the measurement of a wide range of biological responses in the internal environment, and (3) addressing the dynamic, life course nature of the exposome. New tools and technologies that can be applied to address these challenges include exposure biomarker technologies, geographical mapping and remote sensing technologies, smartphone applications and personal exposure sensors, and high-throughput molecular 'omics' techniques. Prospective, population-based cohort studies have recently started to implement these methods using the exposome framework. The exposome thus offers a new and exciting paradigm for improvement and integration of currently scattered and uncertain data on the environmental component in disease aetiology. This should lead to a better understanding of the role of environmental risk factors in respiratory disease and other chronic pathologies, and ultimately to better primary prevention strategies.

Vyssoulis, Gregory; Karpanou, Eva; Adamopoulos, Dionysios; Kyvelou, Stella-Maria; Gymnopoulou, Elpida; Cokkinos, Dennis; Stefanadis, Christodoulos (2008):

Nocturnal blood pressure fall and metabolic syndrome score in patients with white coat hypertension.

In: *Blood Press Monit* 13 (5), S. 251–256.

Abstract:

Background: Accumulating data report that white coat hypertension (WCH) is associated with target organ damage. Metabolic syndrome (MS), and nondipping pattern is also associated with increased cardiovascular risk. The purpose of this study was to explore the nocturnal blood pressure fall in WCH patients according to their MS score.

Methods: The study comprised 2300 patients with WCH who attended our outpatient clinics. All underwent repeated office blood pressure measurements, 24-h ambulatory blood pressure monitoring, full clinical and laboratory evaluation. The diagnosis of MS was made according to the Adult Treatment Panel III criteria and patients were classified into five groups: group I (hypertension), group II (hypertension and any one component), group III (hypertension and any two components), group IV (hypertension and any three components), and group V (all five components). Dipping pattern was defined as ‘dippers’ with nocturnal systolic blood pressure (NSBP) fall greater than or equal to 10% but less than 20%, ‘nondippers’ with NSBP fall greater than or equal to 0% but less than 10%, ‘extreme dippers’ with NSBP fall greater than or equal to 20%, and ‘reverse dippers’ with NSBP increase.

Results: Patients were divided into two groups according to the presence (n=522) and absence (n=1778) of MS. The overall prevalence of MS in the study population was 22.7%. Comparing the non-MS group with the MS we observed significant

differences for nondippers (24.5% vs. 38.9%, P<0.001), dippers (54.4% vs. 43.5%, P<0.001), extreme dippers (17.8% vs. 11.3%, P<0.001), and reverse dippers (3.3% vs. 6.3%, P=0.007).

Conclusion: Patients with WCH and increased number of MS components present with elevated nighttime SBP levels. This observation is of a great significance in the assessment of the cardiovascular risk in these patients.

Wackel, Philip; Beerman, Lee; West, Laura; Arora, Gaurav (2014):

Tachycardia Detection Using Smartphone Applications in Pediatric Patients.

In: *J Pediatr. DOI:* 10.1016/j.jpeds.2014.01.047.

Abstract:

OBJECTIVES: To use smartphone applications (apps) to measure heart rates during supraventricular tachycardia (SVT) in pediatric patients and compare them with heart rates measured by standard electrocardiogram (ECG). STUDY DESIGN: Patients <18 years of age (n = 26) undergoing an electrophysiology study were enrolled. During the study, heart rates were measured at baseline and during SVT by the use of 2 smartphone apps. The obtained heart rates were compared with a simultaneous standard ECG. Pearson correlation coefficient (r) was used to compare the accuracy of the apps with ECG. RESULTS: At baseline, 33 heart rates were obtained with apps and all were within +/-4 beats per minute (bpm) of the ECG heart rate. During SVT, 38 heart rate measurements were attempted during 21 SVT events in 18 patients. App 1 failed to provide a measured heart rate in 11 of 21 attempts. The 10 heart rates obtained had an r of 0.56. When tachycardia rates were <210 bpm, accuracy increased (r = 0.86) and when tachycardia rates were <200 bpm, the accuracy increased further (r = 0.99). App 2 failed to provide a measured heart rate in 12 of 17 attempts. The 5 heart rates obtained had an r of -0.43. CONCLUSIONS: During tachycardia, neither of the 2 apps consistently determined an accurate heart rate at rates >200 bpm. The apps tested should not be considered an accurate tool for assessment of heart rates during SVT in pediatric patients. Select apps may have utility detecting slower SVT or confirming normal heart rates with further validation.

Waeber, Bernard; Wuerzner, Gregoire (2014):

Ambulatory blood pressure monitoring: essential for diagnosing and treating hypertension?

In: *Rev Med Suisse* 10 (412-413), S. 57-8, 60.

Abstract:

According to recent international guidelines, 24-h ambulatory blood pressure monitoring plays an important role in the diagnostic and therapeutic approach of arterial hypertension. Indications of this technique are multiple, concerning both day- and night-time blood pressures. Blood pressures provided by ambulatory monitoring may be used to stratify cardiovascular risk.

Wagner, David T.; Barnes, Christopher M.; Scott, Brent A. (2014):

Driving it home: How workplace emotional labor harms employee home life.

In: *Personnel Psychology* 67 (2), S. 487–516. DOI: 10.1037/t16260-000.

Abstract:

To date, the majority of research on emotional labor has focused on outcomes that occur in the workplace. However, research has yet to consider the possibility that the daily effects of emotional labor spill over to life outside of work, even though a large body of literature examining the spillover from work life to home life indicates that work experiences influence employees after they leave the workplace. Accordingly, we examined the influence of day-to-day surface acting on 3 types of theoretically derived stress outcomes experienced at home: emotional exhaustion, work-to-family conflict, and insomnia. In an experience sampling field study of 78 bus drivers, we found that daily surface acting was connected to increases in each of the outcomes noted above. Moreover, surface acting had an indirect effect on emotional exhaustion and insomnia via state anxiety. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Walerius, Danielle M.; Reyes, Rachel A.; Rosen, Paul J.; Factor, Perry I. (2014):

Functional Impairment Variability in Children With ADHD Due to Emotional Impulsivity.

In: *J Atten Disord. DOI:* 10.1177/1087054714561859.

Abstract:

OBJECTIVE: The present study utilized ecological momentary assessment (EMA) to examine the effects of emotional impulsivity on overall functional impairment and functional impairment variability (FIV) of children with and without ADHD. METHOD: Parents of 74 children, 8- to 12-year-olds (42 with ADHD, 32 without ADHD), completed EMA assessment protocol ratings of their child's mood (3 times daily) and functional impairment (1 time daily) over the course of 28 days. RESULTS: Hierarchical regression analyses supported the interaction of ADHD diagnostic status and greater EMA-derived emotional impulsivity in the estimation of total functional impairment (Total FI) and FIV. Thus, greater emotional impulsivity was found to be related to greater Total FI and FIV among children with ADHD but not among children without ADHD. CONCLUSION: This study suggests that children with ADHD and greater emotional impulsivity demonstrate greater overall levels of functional impairment, with the severity of their impairment varying significantly over time.

Walker, Paul P.; Burnett, Angela; Flavahan, Paul W.; Calverley, Peter M. A. (2008):

Lower limb activity and its determinants in chronic obstructive pulmonary disease.

In: *Thorax*.

Abstract:

Background: Patients with chronic obstructive pulmonary disease (COPD) walk less than healthy older people and their self-reported activity predicts exacerbation risk. The relationship between lower limb activity and total daily activity is not known, nor are there any data which relate objectively assessed daily activity to laboratory assessments made before and after rehabilitation.

Methods: Lower limb activity was measured by leg actigraphy over 3 days in 45 patients with moderate to severe COPD and 18 controls of similar age. Thirty-three patients with COPD entered an 8-week rehabilitation programme in which the change in leg activity was measured and related to other outcomes.

Results: In patients with COPD the mean level of activity measured by whole body and leg activity monitors was closely related ($r = 0.92$; $p < 0.001$), but leg activity was consistently reduced compared with controls of similar age ($p = 0.001$). Mean leg activity, mean intensity of leg activity and the time that patients spent mobile at home were all related to forced expiratory volume in 1 s (FEV1) ($r = 0.57$, $p = 0.001$; $r = 0.5$, $p = 0.003$; and $r = 0.51$, $p = 0.002$, respectively), but intensity of activity and time spent mobile were not related. Subjects completing pulmonary rehabilitation showed significant improvements in mean activity ($p = 0.001$) and spent more time moving ($p = 0.014$). These changes were unrelated to improvement in muscle strength or walking distance but correlated with baseline FEV1 ($r = 0.8$, $p < 0.001$).

Conclusions: Total daily activity in patients with COPD is closely related to leg activity which is reduced compared with controls of similar age. Individuals differ in the time spent mobile during the day, but subjective and objectively assessed activity improves after rehabilitation and is predicted by FEV1. The change in activity is unrelated to improvements in corridor walking and health status.

Wallace, Lorraine S.; Dhingra, Lara K. (2014):

A systematic review of smartphone applications for chronic pain available for download in the United States.

In: *J Opioid Manag* 10 (1), S. 63–68. DOI: 10.5055/jom.2014.0193.

Abstract:

OBJECTIVE: A Smartphone app could be useful in aiding patients in self-monitoring and self-managing their chronic pain-related symptoms. The purpose of this study was to systematically review English-language pain-related Smartphone apps available for download in the United States. DESIGN: During July 2012, official Android, BlackBerry, and iPhone Smartphone app platform stores were searched. "Pain" was entered into the search-bar of each Smartphone app store. Of the pain apps meeting inclusion criteria, the following were retrieved: release date, download cost (US dollars [US $], file size, documentation of a healthcare professional's (HCP) involvement in app development, primary purpose of the app (pain education, pain self-management, or a combination of pain education and self-management), targeted pain-related condition(s), and inclusion of features that addressed four common self-monitoring and/or management strategies. RESULTS: Of the 220 apps meeting inclusion criteria, the majority were available through the iPhone (80.0 percent). The cost for downloading each app ranged from US $0.00 to 89.99; however, the majority of apps were </=US $4.99. There was no evidence of HCP involvement in the development of the

majority of apps (65.0 percent). Chronic, nonspecific pain was the focus of half (50.5 percent) of the apps, followed by back and/or neck pain (25.9 percent). The primary purpose of the apps was categorized as follows: pain education (n = 53, 24.1 percent), pain self-management (n = 137, 62.3 percent), and both pain education and self management (n = 30, 13.6 percent). CONCLUSION: Overall, most of the pain-related apps included within our review not only lacked evidence of HCP input regarding development but also contained few evidence-based pain management features.

Waller, Jennifer M.; Silk, Jennifer S.; Stone, Lindsey B.; Dahl, Ronald E. (2014):

Co-rumination and co-problem solving in the daily lives of adolescents with major depressive disorder.

In: *J Am Acad Child Adolesc Psychiatry* 53 (8), S. 869–878. DOI: 10.1016/j.jaac.2014.05.004.

Abstract:

OBJECTIVE: This study examines differences in the prevalence and nature of co-rumination during real-world social interactions with peers and parents among adolescents with major depressive disorder (MDD) compared to healthy controls. METHOD: A total of 60 youth (29 with current MDD and 31 controls without psychopathology) completed a self-report measure of co-rumination and a 3-week ecological momentary assessment (EMA) protocol that measured the nature of face-to-face social interactions with peers and parents after a negative event in the adolescents' daily lives. Specifically, EMA was used to assess rates of problem talk, including both co-rumination and co-problem solving. Group differences in self-report and EMA measures were examined. RESULTS: Adolescents with MDD reported co-ruminating more often than adolescents with no Axis 1 disorders during daily interactions with both parents (Cohen's d = 0.78) and peers (d = 1.14), and also reported more co-rumination via questionnaire (d = 0.58). Adolescents with MDD engaged in co-problem solving with peers less often than did healthy controls (d = 0.78), but no group differences were found for rates of co-problem solving with parents. CONCLUSIONS: Results are consistent with previous research linking co-rumination and depression in adolescence and extend these self-report-based findings to assessment in an ecologically valid context. Importantly, the results support that MDD youth tend to co-ruminate more and to problem-solve less with peers in their daily lives compared to healthy youth, and that co-rumination also extends to parental relationships. Interventions focused on decreasing co-rumination with peers and parents and improving problem-solving skills with peers may be helpful for preventing and treating adolescent depression.

Walter, K.; Von, Haaren B.; Loffler, S.; Hartel, S.; Jansen, C. P.; Werner, C. et al. (2013):

Acute and medium term effects of a 10-week running intervention on mood state in apprentices.

In: *Front Psychol* 4 (1664-1078 (Electronic)), S. 411. DOI: 10.3389/fpsyg.2013.00411.

Abstract:

Exercise and physical activity have proven benefits for physical and psychological well-being. However, it is not clear if healthy young adults can enhance mood in everyday life through regular exercise. Earlier studies mainly showed positive effects of acute exercise and exercise programs on psychological well-being in children, older people and in clinical populations. Few studies controlled participants' physical activity in daily life, performed besides the exercise program, which can impact results. In addition the transition from mood enhancement induced by acute exercise to medium or long-term effects due to regular exercise is not yet determined. The purpose of this pilot study was to examine the acute effects of an aerobic running training on mood and trends in medium term changes of mood in everyday life of young adults. We conducted a 10-week aerobic endurance training with frequent mood assessments and continuous activity monitoring. 23 apprentices, separated into experimental and control group, were monitored over 12 weeks. To control the effectiveness of the aerobic exercise program, participants completed a progressive treadmill test pre and post the intervention period. The three basic mood dimensions energetic arousal, valence and calmness were assessed via electronic diaries. Participants had to rate their mood state frequently on 3 days a week at five times of measurement within 12 weeks. Participants' physical activity was assessed with accelerometers. All mood dimensions increased immediately after acute endurance exercise but results were not significant. The highest acute mood change could be observed in valence (p = 0.07; eta(2) = 0.27). However, no medium term effects in mood states could be observed after a few weeks of endurance training. Future studies should focus on the interaction between acute and medium term effects of exercise training on mood. The decreasing compliance over the course of the study requires the development of strategies to maintain compliance over longer periods

Walther, Sebastian; Horn, Helge; Razavi, Nadja; Koschorke, Philipp; Müller, Thomas J.; Strik, Werner (2009):

Quantitative motor activity differentiates schizophrenia subtypes.

In: *Neuropsychobiology* 60 (2), S. 80–86. DOI: 10.1159/000236448.

Abstract:

BACKGROUND\r\nMotor symptoms are frequent in schizophrenia and relevant to the diagnosis of subtypes. However, the assessment has been limited to observations recorded in scales and experimental designs. The aim of this study was to use wrist actigraphy to obtain motor activity data in 3 schizophrenia subtypes.\r\nMETHODS\r\nIn total, 60 patients with schizophrenia (35 paranoid, 12 catatonic, 13 disorganized) were investigated using continuous wrist actigraphy over 24 h in an inpatient setting on average 38 days after admission. Data of the wakeful hours of the day were analyzed.\r\nRESULTS\r\nThe activity level was predicted by schizophrenia subtype and by the type of antipsychotic medication. The movement index and mean duration of uninterrupted immobility were found to be predicted only by the schizophrenia subtype. Age, gender, duration of illness and chlorpromazine equivalents did not contribute to the variance of the activity data. A MANOVA demonstrated the significant differences in the 3 parameters between schizophrenia subtypes (p = 0.001). Patients with catatonic schizophrenia had lower activity levels, a lower movement index and a longer duration of immobility than those with paranoid schizophrenia.\r\nCONCLUSIONS\r\nSchizophrenia subtypes can be differentiated using objective measures of quantitative motor activity. The increased duration of immobility appears to be the special feature of catatonic schizophrenia.

Walther, S.; Hugli, S.; Hofle, O.; Federspiel, A.; Horn, H.; Bracht, T. et al. (2012):

Frontal white matter integrity is related to psychomotor retardation in major depression.

In: *Neurobiol.Dis.* (0969-9961 (Linking)). DOI: 10.1016/j.nbd.2012.03.019.

Abstract:

Altered frontal white matter integrity has been reported in major depression. Still, the behavioral correlates of these alterations are not established. In healthy subjects, motor activity correlated with white matter integrity in the motor system. To explore the relation of white matter integrity and motor activity in major depressive disorder, we investigated 21 medicated patients with major depressive disorder and 21 matched controls using diffusion tensor imaging and wrist actigraphy at the same day. Patients had lower activity levels (AL) compared with controls. Fractional anisotropy (FA) differed between groups in frontal white matter regions and the posterior cingulum. AL was linearly associated with white matter integrity in two clusters within the motor system. Controls had an exclusive positive association of FA and AL in white matter underneath the right dorsal premotor cortex. Only patients had a positive association within the posterior cingulum. Furthermore, patients had negative associations of FA and AL underneath the left primary motor cortex and within the left parahippocampal gyrus white matter. These differences in the associations between structure and behavior may contribute to well-known impaired motor planning or gait disturbances in major depressive disorder. Therefore, signs of psychomotor slowing in major depressive disorder may be linked to changes of the white matter integrity of the motor system

Walther, Sebastian; Koschorke, Philipp; Horn, Helge; Strik, Werner (2009):

Objectively measured motor activity in schizophrenia challenges the validity of expert ratings.

In: *Psychiatry Res* 169 (3), S. 187–190. DOI: 10.1016/j.psychres.2008.06.020.

Abstract:

Motor symptoms are frequent in schizophrenia and relevant to diagnosis. They are usually assessed by clinical observation and ratings based on psychometric scales. However, investigations with quantitative measurements are rare. To understand the relationship between the objective parameters of a quantitative motor activity measurement and the items related to motor symptoms of the Positive and Negative Syndrome Scale (PANSS), 55 schizophrenia patients were studied with 24-h continuous wrist actigraphy. Activity level, movement index, and mean duration of uninterrupted immobility periods were analyzed for wakeful periods. Actigraphic parameters were strongly inter-correlated. High PANSS negative syndrome subscale scores predicted low activity levels. Single PANSS items, such as suspiciousness, hallucinatory behavior, and emotional withdrawal, contributed largely to the variance in activity level and movement index. Age, gender, medication, and duration of illness had no significant impact on the actigraphic parameters. Interestingly, correlations between the specific motor symptoms of the PANSS and the actigraphic parameters were only found as a non-significant trend. We conclude that the objectively measured quantity of movement is related to the clinically assessed negative syndrome in schizophrenia. In contrast, PANSS items related to psychomotor behavior imprecisely reflect real quantitative motor activity.

Walther, S.; Ramseyer, F.; Horn, H.; Strik, W.; Tschacher, W. (2013):

Less Structured Movement Patterns Predict Severity of Positive Syndrome, Excitement, and Disorganization.

In: *Schizophr.Bull* (0586-7614 (Linking)). DOI: 10.1093/schbul/sbt038.

Abstract:

Disorganized behavior is a key symptom of schizophrenia. The objective assessment of disorganized behavior is particularly challenging. Actigraphy has enabled the objective assessment of motor behavior in various settings. Reduced motor activity was associated with negative syndrome scores, but simple motor activity analyses were not informative on other symptom dimensions. The analysis of movement patterns, however, could be more informative for assessing schizophrenia symptom dimensions. Here, we use time series analyses on actigraphic data of 100 schizophrenia spectrum disorder patients. Actigraphy recording intervals were set at 2 s. Data from 2 defined 60-min periods were analyzed, and partial autocorrelations of the actigraphy time series indicated predictability of movements in each individual. Increased positive syndrome scores were associated with reduced predictability of movements but not with the overall amount of movement. Negative syndrome scores were associated with low activity levels but unrelated with predictability of movement. The factors disorganization and excitement were related to movement predictability but emotional distress was not. Thus, the predictability of objectively assessed motor behavior may be a marker of positive symptoms and disorganized behavior. This behavior could become relevant for translational research

Walz, Laura C.; Nauta, Maaike H.; Aan Het Rot, Marije (2014):

Experience sampling and ecological momentary assessment for studying the daily lives of patients with anxiety disorders: A systematic review.

In: *J Anxiety Disord* 28 (8), S. 925–937. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-52177-025%26site%3dehost-live.

Abstract:

Anxiety disorders are highly prevalent. Symptoms may occur unpredictably (e.g., panic attacks) or predictably in specific situations (e.g., social phobia). Consequently, it may be difficult to assess anxiety and related constructs realistically in the laboratory or by traditional retrospective questionnaires. Experience sampling methods (ESM) and ecological momentary assessment (EMA) can deepen the understanding of the course of anxiety disorders by frequently assessing symptoms and other variables in the natural environment. We review 34 ESM/EMA studies on adult panic disorder, generalized anxiety disorder, social phobia, post-traumatic stress disorder, and obsessive–compulsive disorder, as well as anxiety disorders in youth. Benefits of ESM/EMA for the study of anxiety disorders include generating insight into the temporal variability of symptoms and into the associations among daily affect, behaviors, and situational cues. Further, ESM/EMA has been successfully combined with ambulatory assessment of physiological variables and with treatment evaluations. We provide suggestions for future research, as well as for clinical applications. (PsycINFO Database Record (c) 2015 APA, all rights reserved). (journal abstract)

Wang, Chao; Chen, Peijie; Zhuang, Jie (2013):

A national survey of physical activity and sedentary behavior of Chinese city children and youth using accelerometers.

In: *Res Q Exerc Sport* 84 Suppl 2, S. S12-28.

Abstract:

PURPOSE: The purpose of this study was to objectively assess levels of physical activity (PA) and sedentary behavior (SB) of Chinese city children and youth aged 9 to 17 years old using accelerometers and to examine their differences by gender, age, grade, and weight status. METHOD: The PA and SB of 2,163 students in 4th grade through 11th grade (M(age) = 160.87 +/- 27.00 months [13.41 +/- 2.25 years], 50.21% boys) from 11 cities in China were measured by accelerometers. The amount of time spent in SB, light PA, moderate PA, vigorous PA, and moderate-to-vigorous PA (MVPA) was computed based on cutoff points developed specifically for the Chinese children and youth. The participants were classified into normal-weight, overweight, and obese groups based on their body mass index (BMI). Paired-sample t tests were conducted to examine the differences in PA and SB between weekdays and weekend days. Multivariate analysis of variance was used to test the differences in PA and SB variables by gender, age, grade, and weight status, respectively. RESULTS: Chinese city children and youth spent an average of 28.26 +/- 17.66 min/day in MVPA and 521.50 +/- 110.02 min/day in SB. Only 9.4% of boys and 1.9% of girls met the

recommendation of 60 min/day of MVPA. Chinese city children and youth were more active during weekdays than during weekend days, and boys were more active than girls; older children and youth spent more daily time in MVPA, but also spent more time being sedentary. No differences in PA and SB were found across different BMI categories. CONCLUSION: The findings warn of the insufficiency of PA and the excess of SB in Chinese city children and youth.

Wang, Chao; Chen, Peijie; Zhuang, Jie (2013):

Validity and reliability of International Physical Activity Questionnaire-Short Form in Chinese youth.

In: *Res Q Exerc Sport* 84 Suppl 2, S. S80-6.

Abstract:

PURPOSE: The psychometric profiles of the widely used International Physical Activity Questionnaire-Short Form (IPAQ-SF) in Chinese youth have not been reported. The purpose of this study was to examine the validity and reliability of the IPAQ-SF using a sample of Chinese youth. METHOD: One thousand and twenty-one youth (M(age) = 14.26 +/- 1.63 years, 52.8% boys) from 11 cities in China wore accelerometers for 7 consecutive days and completed the IPAQ-SF on the 8th day to recall their physical activity (PA) during accelerometer-wearing days. A subsample of 92 youth (M(age) = 15.90 +/- 1.35 years, 46.7% boys) completed the IPAQ-SF again a week later to recall their PA during accelerometer-wearing days. Differences in PA estimated by the IPAQ-SF and accelerometer were examined by paired-sample t test. Spearman correlation coefficients were used to examine the correlation between the IPAQ-SF and accelerometer. Test-retest reliability of the IPAQ-SF was determined by the intraclass correlation coefficient (ICC). RESULTS: Compared with accelerometer, the IPAQ-SF overestimated sedentary time, moderate PA (MPA), vigorous PA (VPA), and moderate-to-vigorous PA (MVPA). Correlations between PA (total PA, MPA, VPA, and MVPA) and sedentary time measured by 2 instruments ranged from "none" to "low" (p = .08-.31). Test-retest ICC of the IPAQ-SF ranged from "moderate" to "high" (ICC = .43-.83), except for sitting in boys (ICC = .06), sitting for the whole sample (ICC = .32), and VPA in girls (ICC = .35). CONCLUSION: The IPAQ-SF was not a valid instrument for measuring PA and sedentary behavior in Chinese youth.

Wang, Jijun; Fan, Xiaoduo; Liu, Dengtang; Yi, Zhenghui; Freudenreich, Oliver; Goff, Donald; Henderson, David C. (2012):

Both physical activity and food intake are associated with metabolic risks in patients with schizophrenia.

In: *Schizophrenia Research* 140 (1-3), S. 260–261. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-26705-016%26site%3dehost-live;xfan@partners.org.

Abstract:

This study assessed the relationship between physical activity, food intake and metabolic risks in a sample of schizophrenia patients. The study was approved by the institutional review board of the Massachusetts General Hospital (MGH). Subjects were recruited from the Freedom Trial Clinic at the Erich Lindemann Mental Health Center and were studied at the Clinical Research Center (CRC) at MGH. They were instructed to record 4-day physical activity and dietary food intake. Data of day-to-day physical activity were collected using a uniaxial accelerometer, which measures and records the amount and intensity of activity over a given period of time. Accelerometer data were recorded in 1-min epochs. Specific food intake variables, including total energy, percent of calories from saturated fat acids, percent of calories from monounsaturated fat acids and percent of calories from polyunsaturated fat acids were derived. Relationships between physical activity, food intake and metabolic parameters were examined using Pearson correlation analysis controlling for age, gender, race and antipsychotic agent. Our data suggested that both physical activity and dietary food intake were associated with metabolic abnormalities in schizophrenia patients. A lack of physical activity and low monounsaturated fat intake may place patients at a high risk for metabolic abnormalities. Anti-inflammatory effects of both physical activity and monounsaturated fatty acid intake have been associated with decreased levels of CRP in the general population. Similar effects presumably could be extended to patients with schizophrenia. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Wang, Ning; Redmond, Stephen J.; Ambikairajah, Eliathamby; Celler, Branko G.; Lovell, Nigel H. (2010):

Can triaxial accelerometry accurately recognize inclined walking terrains?

In: *IEEE transactions on bio-medical engineering* 57 (10), S. 2506–2516. DOI: 10.1109/TBME.2010.2049357.

Abstract:

The standard method for the analysis of body accelerations cannot accurately estimate the energy expenditure (EE) of uphill or downhill walking. The ability to recognize the grade of the walking surface will most likely improve upon the accuracy of the EE estimates for daily physical activities. This paper investigates the benefits of automatic gait analysis approaches including step-by-step gait segmentation and heel-strike recognition of the accelerometry signal in classifying various gradients. Triaxial accelerometry signals were collected from 12 subjects, performing walking on seven different gradient surfaces: 1) 92 m of 0(°) flat ground; 2) 85 m of ±2.70(°) inclined ramp; 3) 24 m of ±9.86(°) inclined ramp; and 4) 6-m pitch line of ±28.03(°) rake of stairway. Validity studies performed on a group of randomly selected healthy subjects showed high agreement scores between the automated heel-strike recognition markers, manual gait annotation markers, and video-based gait-segmentation markers. Thirteen subset features were found using a subset-selection search procedure from 57 extracted features which maximize the classification accuracy, performed with a Gaussian mixture model classifier, as estimated using sixfold cross-validation. An overall walking pattern-recognition accuracy of 82.46% was achieved on seven different inclined terrains using the 13 selected features. This system should, therefore, improve the accuracy of daily EE estimates with accurate measures on terrain inclinations.

Wani, Shabeer Ahmad; Rabah, Sari M.; Alfadil, Sara; Dewanjee, Nancy; Najmi, Yahya (2013):

Efficacy of communication amongst staff members at plastic and reconstructive surgery section using smartphone and mobile WhatsApp.

In: *Indian J Plast Surg* 46 (3), S. 502–505. DOI: 10.4103/0970-0358.121990.

Abstract:

OBJECTIVE: The objective of this study is to assess the efficacy of smartphone and its WhatsApp application as a communication method amongst the staff of plastic and reconstructive surgery section at tertiary care health facility. MATERIALS AND METHODS: From January 2012 onwards, the authors used smartphones and its WhatsApp application as a communication method amongst their team for various aspects of patient management and as a tool for academic endorsements. RESULTS: During the period of this study, there were 116 episodes regarding patient management, which were handled, in a timely fashion by using this application. In addition opinion of rotating residents in the section was sought regarding the efficacy of this method of communication. Overall majority of residents were satisfied with this mode of communication. CONCLUSIONS: This new method of communication is an effective method for clinical and academic endorsements. The method is cheap and quick and easy to operate.

Wannag, Ebba; Eriksson, Ann-Sofie; Larsson, Pål Gunnar (2010):

Attention-deficit hyperactivity disorder and nocturnal epileptiform activity in children with epilepsy admitted to a national epilepsy center.

In: *Epilepsy & Behavior* 18 (4), S. 445–449.

Abstract:

The aim of this study was to determine if there exists a relationship between attention-deficit hyperactivity disorder (ADHD) and the quantity of focal nocturnal epileptiform activity on the EEG (FNEA) measured as the percentage of epileptiform activity during non-REM sleep (spike index). This was accomplished with a prospective study of children aged 6–14 years consecutively admitted to our center. Of 362 patients, 44 (12.2%) had previously been diagnosed with ADHD. Twenty-four-hour ambulatory EEG recording and assessment of ADHD according to DSM-IV were performed in 46 children suspected of having ADHD. ADHD was diagnosed in 30. We could not find any correlation between the spike index in 8 children with FNEA and the severity of their ADHD symptoms. This study is underpowered and should be considered a pilot study. There is a need for further investigation of a possible causal effect of FNEA on ADHD symptoms in larger cohorts of patients with FNEA.

Ward, Jamie A.; Lukowicz, Paul; Troster, Gerhard; Starner, Thad E. (2006):

Activity recognition of assembly tasks using body-worn microphones and accelerometers.

In: *Pattern Analysis and Machine Intelligence, IEEE Transactions on* 28 (10), S. 1553–1567.

Abstract:

In order to provide relevant information to mobile users, such as workers engaging in the manual tasks of maintenance and assembly, a wearable computer requires information about the user's specific activities. This work focuses on the recognition of activities that are characterized by a hand motion and an accompanying sound. Suitable activities can be found in assembly and maintenance work. Here, we provide an initial exploration into the problem domain of continuous activity recognition using on-body sensing. We use a mock "wood workshop" assembly task to ground our investigation. We describe a method for the continuous recognition of activities (sawing, hammering, filing, drilling, grinding, sanding, opening a drawer, tightening a vise, and turning a screwdriver) using microphones and three-axis accelerometers mounted at two positions on the user's arms. Potentially "interesting" activities are segmented from continuous streams of data using an analysis of the sound intensity detected at the two different locations. Activity classification is then performed on these detected segments using linear discriminant analysis (LDA) on the sound channel and hidden Markov models (HMMs) on the acceleration data. Four different methods at classifier fusion are compared for improving these classifications. Using user-dependent training, we obtain continuous average recall and precision rates (for positive activities) of 78 percent and 74 percent, respectively. Using user-independent training (leave-one-out across five users), we obtain recall rates of 66 percent and precision rates of 63 percent. In isolation, these activities were recognized with accuracies of 98 percent, 87 percent, and 95 percent for the user-dependent, user-independent, and user-adapted cases, respectively

Warms, Catherine A.; Belza, Basia L.; Whitney, Joanne D. (2007):

Correlates of physical activity in adults with mobility limitations.

In: *Family & community health* 30, S. S5-S16.

Abstract:

This study identified the correlates of objectively and subjectively measured physical activity in adult wheelchair users. Fifty participants wore an activity monitor for a week and completed a questionnaire about factors associated with physical activity. Objectively measured activity correlated significantly with body mass index. Subjectively measured activity correlated significantly with age, stage of change, health, healthcare providers discussing exercise, and social support for exercise. Research on the effect of body mass index on activity in this population is needed. Intervention planners should plan programs that place emphasis on modifying the social environment (including healthcare providers) and removing attitudinal barriers.

Warner, Erica T.; Wolin, Kathleen Y.; Duncan, Dustin T.; Heil, Daniel P.; Askew, Sandy; Bennett, Gary G. (2012):

Differential accuracy of physical activity self-report by body mass index.

In: *American Journal of Health Behavior* 36 (2), S. 168–178. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-02829-003&site=ehost-live;wolink@wustl.edu.

Abstract:

Objectives: To examine whether agreement between self-reported and accelerometer-measured physical activity varies by BMI category in a low-income black sample. Methods: Participants completed a questionnaire and wore an accelerometer for 4-6 days. Using one- and 10-minute bouts, accelerometers measured light, moderate, and vigorous physical activity time. Results: Correlations varied by obesity (nonobese: one-minute r = 0.41; 10-minute r = 0.47; obese: one-minute r = 0.21; 10-minute r = 0 .14). Agreement was highest among nonobese persons (one-minute kappa = 0.48, 10-minute kappa = 0.023; obese: one-minute kappa = -0.024, 10-minute kappa = -0.020). Conclusions: We found compromised questionnaire performance among obese participants.

Warren, Roderick E.; Marshall, Tom; Padfield, Paul L.; Chrubasik, Sigrun (2010):

Variability of office, 24-hour ambulatory, and self-monitored blood pressure measurements.

In: *Br J Gen Pract* 60 (578), S. 675–680.

Abstract:

BACKGROUND:

The diagnosis of hypertension is difficult when faced with several different blood pressure measurements in an individual. Using the average of several office measurements is recommended, although considerable uncertainty remains. Twenty-four-hour ambulatory monitoring is often considered the gold standard, but self-monitoring of blood pressure has been proposed as a superior method.

AIM:

Determination of within-individual variability of blood pressure measured in the office, by ambulatory monitoring, and by a week of self-monitoring.

DESIGN OF STUDY:

Retrospective analysis of a clinical trial of 163 subjects.

METHOD:

Within-patient variability of office and ambulatory blood pressure was determined from measurements at 0 and 6 weeks. Subjects had performed self-monitoring of blood pressure twice each morning and evening, for at least 6 weeks; variability was determined from the means of week 1 and week 6.

RESULTS:

The within-individual coefficients of variation (CVs) for systolic blood pressure were: office, 8.6%; ambulatory, 5.5%; self, 4.2%. Equivalent values for diastolic blood pressure were 8.6%, 4.9%, and 3.9%. CVs tended to be lower with longer self-monitoring duration, and higher with longer intervals between self-monitoring.

CONCLUSION:

Office blood pressure is impractical for precise assessment, as 10-13 measurements are required to give the accuracy required for rational titration of antihypertensive drugs. Twenty-four-hour ambulatory monitoring is better than a single office measurement, but considerable uncertainty remains around the estimate. A week of self-monitoring appears to be the most accurate method of measuring blood pressure, but remains imperfect. Further research may identify superior self-monitoring schedules. Given the inherent accuracy in blood pressure measurement, the importance of considering overall cardiovascular risk is emphasised.

Warthen, Matthew W.; Tiffany, Stephen T. (2009):

Evaluation of cue reactivity in the natural environment of smokers using ecological momentary assessment.

In: *Experimental and Clinical Psychopharmacology* 17 (2), S. 70–77. DOI: 10.1037/a0015617.

Abstract:

The cue reactivity (CR) paradigm has been used extensively to assess smokers' craving responses to smoking-related stimuli. To date, nearly all CR research has been conducted in laboratory settings; there has been no experimental research of the impact of smoking cues on smokers' craving in their natural environment. The present research combined CR procedures with ecological momentary assessment (CREMA); the latter has been used successfully to monitor a variety of behaviors in real time using handheld personal digital assistants (PDAs). Participants were 43 daily, heavy smokers ages 18 and older. PDAs were sent home with participants over an 8-day CREMA period. PDAs were used to record each cigarette smoked and to administer daily CR trials. CR stimuli consisted of photographs and imagery scripts that were either smoking related or neutral. CR trials were also administered in the laboratory, by means of PDAs, at the beginning and end of the CREMA period. Results from CREMA trials indicated that smoking-related cues significantly increased craving, compared with neutral cues for both photographs and imagery scripts. This pattern was also observed in the laboratory-based trials. Findings indicate that CREMA is well suited for the investigation of cue-elicited craving under real-world conditions.

Wasielewska, Anna; Rudzinska, Monika; Tomaszewski, Tomasz; Banaszkiewicz, Krzysztof; Wojcik-Pedziwiatr, Magdalena; Dec-Cwiek, Malgorzata et al. (2013):

Tremor in neuropathies of different origin.

In: *Neurol Neurochir Pol* 47 (6), S. 525–533.

Abstract:

BACKGROUND AND PURPOSE: Tremor accompanies some poly-neuropathies, but its prevalence and its clinical and electrophysiological manifestations are not well known. The aim of the study was to assess the occurrence and characteristics of hand tremor in patients with polyneuropathy of different origins, as well as relations between the occurrence of tremors and

clinical and neurographic findings of polyneuropathy. MATERIAL AND METHODS: Eighty-nine patients diagnosed with polyneuropathy of known aetiology, and 50 age- and sex-matched healthy volunteers were included in the study. All subjects were interviewed regarding the occurrence of tremor. Tremor was assessed clinically and objectively using a triaxial accelerometer and electromyographic (EMG) recordings. A load test with a weight of 500 gamma was performed in order to differentiate between enhanced physiological tremor (EPT) and essential tremor-like (ET-L) tremor. RESULTS: Tremor was found in 59.5% of patients in clinical assessment and in 74% of patients in objective evaluation, significantly more often than in controls (12%). Tremor was detected in all types of polyneuropathy apart from paraproteinaemic IgM polyneuropathy. Tremor was postural (70%), but resting (51%) or kinetic (32%) tremor was also present. In the majority of cases, the severity of the tremor was mild. Essential tremor-like tremor prevailed in the study group. The occurrence of hand tremor was not related to the axonal or demyelinating type of polyneuropathy, nor to the conduction velocity or other electrophysiological findings of the investigated upper limb nerves. CONCLUSION: Tremor accompanies 60-70% of patients with polyneuropathy; it is mostly postural, ET-L type with mild severity, and unrelated to other typical clinical and electrophysiological findings of neuropathy.

Waters, Andrew J.; Li, Yisheng (2008):

Evaluating the utility of administering a reaction time task in an ecological momentary assessment study.

In: *Psychopharmacology* 197 (1), S. 25–35.

Abstract:

RATIONALE:

Cognitive processes underlying drug use have typically been assessed in laboratory settings. More detailed and ecologically valid data may be possible if assessments were conducted in an ecological momentary assessment (EMA) setting.

OBJECTIVES:

We evaluated the feasibility and utility of administering a reaction time task on a hand-held computer (personal digital assistant, PDA) in an EMA setting.

MATERIALS AND METHODS:

Twenty-two smokers and 22 non-smokers carried around the PDA for 1 week as they went about their daily lives. They were beeped at random times four times per day (random assessments, RAs). Participants were also instructed to press an "anxiety assessment" (AA) button on the PDA whenever they felt suddenly anxious. At each assessment (RA, AA), participants responded to items assessing subjective, pharmacological, and contextual variables, and subsequently completed a Stroop task (classic-Stroop, emotional-Stroop, or smoking-Stroop task).

RESULTS:

Participants responded to 81.2% of RAs, completed assessments in an average of 4.44 min, reported no interruptions on the majority of assessments (62.4%), and produced data with adequate reliability. Using generalized estimating equation (GEE) analyses, age was associated with the classic-Stroop effect, state anxiety was associated with the emotional-Stroop effect, and Fagerstrom Test for Nicotine Dependence scores were associated with the smoking-Stroop effect.

CONCLUSIONS:

The study provided evidence for the feasibility and utility of the approach.

Waters, Andrew J.; Marhe, Reshmi; Franken, Ingmar H. A. (2012):

Attentional bias to drug cues is elevated before and during temptations to use heroin and cocaine.

In: *Psychopharmacology* 219 (3), S. 909–921. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-01789-020&site=ehost-live;andrew.waters@usuhs.mil.

Abstract:

Rationale: Relapse is an important problem in substance dependence treatment. When drug users try to abstain from drug use, they often report strong temptations to use drugs. Temptation episodes have commonalities with relapse episodes, and assessment of temptation episodes may help to identify individuals at risk of relapse. Objectives: This study aims to examine affect and cognition prior to and during temptation episodes by administering self-report and implicit cognitive assessments on a handheld computer (PDA) using Ecological Momentary Assessment. Methods: Heroin-dependent patients (N = 68) attending a

drug detoxification unit completed up to four random assessments (RAs) per day on a PDA for 1 week. They also completed an assessment when they experienced a temptation to use drugs (temptation assessment; TA). Results: Participants completed 1,482 assessments (353 TAs, 1,129 RAs). The rate of TAs was maximal during the first 2 days. Participants reported higher levels of negative affect, anxiety, and difficulty concentrating, and more positive explicit attitudes to drugs, at TAs compared to RAs. In addition, they exhibited elevated attentional bias to drug cues (assessed using the modified Stroop task) at TAs compared to RAs. Implicit affective associations with drug cues (assessed using the Implicit Association Test) were not different at TAs compared to RAs. Attentional bias was elevated in the 1 h prior to the entry of a temptation episode. Conclusions: Elevated attentional bias may be a harbinger of temptation episodes. Interventions that target cognitions prior to or during temptation episodes may reduce the probability or severity of a temptation episode. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Waters, A. J.; Szeto, H.; Wetter, D. W.; Cinciripini, P. M.; Robinson, J. D.; Li, Y. (2013):

Cognition and Craving During Smoking Cessation: An Ecological Momentary Assessment Study.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt108.

Abstract:

INTRODUCTION: Some studies using ecological momentary assessment (EMA) have revealed an association between craving for cigarettes and relapse. It is, therefore, important to understand the correlates of craving during smoking cessation. Attentional bias to smoking cues is a potential correlate of craving, but it has not previously been assessed using EMA during smoking cessation. METHODS: Smokers enrolled in a research smoking cessation study were offered the opportunity to take part in an EMA study. Volunteers carried around a personal digital assistant (PDA) for the first week of their quit attempt. They completed up to 4 random assessments (RAs) per day as well as assessments when they experienced a temptation to smoke and when they relapsed. Craving for cigarettes was assessed with a single item (1-7 scale). Attentional bias was assessed with a smoking Stroop task (a reaction time task) at every other assessment, as was self-reported attention to cigarettes. RESULTS: Data were available from 119 participants. Across 882 assessments, participants exhibited a significant smoking Stroop effect. Linear mixed models revealed a significant between-subject association between craving and the smoking Stroop effect. Individuals with higher levels of craving exhibited greater attentional bias. The within-subject association was not significant. Similar results were obtained for the relationship between self-reported attention to cigarettes and attentional bias. CONCLUSIONS: Attentional bias can be assessed in the natural environment using EMA during smoking cessation, and attentional bias is a correlate of craving during the early stages of a quit attempt

Watkins, K. L.; Regan, S. D.; Nguyen, N.; Businelle, M. S.; Kendzor, D. E.; Lam, C. et al. (2013):

Advancing Cessation Research by Integrating EMA and Geospatial Methodologies: Associations Between Tobacco Retail Outlets and Real-time Smoking Urges During a Quit Attempt.

In: *Nicotine Tob.Res* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt135.

Abstract:

INTRODUCTION: Residential tobacco retail outlet (TRO) density and proximity have been associated with smoking behaviors. More research is needed to understand the mechanisms underlying these relations and their potential relevance outside of the residential setting. This study integrates ecological momentary assessment (EMA) and geo-location tracking to explore real-time associations between exposure to TROs and smoking urges among 47 economically disadvantaged smokers in a cessation trial (59.6% female; 36.2% White). METHODS: EMA data were collected for 1 week postquit via smartphone, which recorded smoking urge strength </=4 random times daily along with real-time participant location data. For each assessment, the participants' proximity to the closest TRO and the density of TROs surrounding the participant were calculated. Linear mixed model regressions examined associations between TRO variables and smoking urges, and whether relations varied based on participants' distance from their home. Covariates included sociodemographics, prequit tobacco dependence, treatment group, and daily smoking status. RESULTS: Main effects were nonsignificant; however, the interaction between TRO proximity and distance from home was considered significant (p = .056). Specifically, closer proximity to TROs was associated with stronger smoking urges </=1 mile of home (p = .001) but not >1 mile from home (p = .307). Significant associations were attributable to assessments completed at participants' home addresses. All density analyses were nonsignificant. CONCLUSIONS: Technological challenges encountered in this study resulted in a significant amount of missing data, highlighting the preliminary nature of these findings, and limiting the inferences that can be drawn. However, results suggest that closer residential proximity to tobacco outlets may trigger stronger urges to smoke among economically disadvantaged smokers trying to quit, perhaps due to

enhanced cigarette availability and accessibility. Therefore, limiting tobacco sales in close proximity to residential areas may complement existing tobacco control efforts and facilitate cessation

Wearing, Jessica R.; Nollen, Nikki; Befort, Christie; Davis, Ann M.; Agemy, Carolina K. (2014):

iPhone App Adherence to Expert-Recommended Guidelines for Pediatric Obesity Prevention.

In: *Child Obes. DOI:* 10.1089/chi.2013.0084.

Abstract:

Abstract Background: Pediatric obesity is a serious and prevalent problem. Smartphone technology, which is becoming increasingly available to children of diverse backgrounds, presents a unique opportunity to instill healthy behaviors before the onset of obesity. Past studies have examined the use of smartphone applications as tools of health behavior modification for adults. The present study examines the content of children's exercise and nutrition smartphone apps. Method: Sixty-two iPhone apps were identified and coded by two independent raters for adherence to expert-recommended behaviors (e.g., five fruits/vegetables per day) and strategies (e.g., self-monitoring diet/physical activity) for the prevention of pediatric obesity. Results: App behavioral and strategy index scores were uniformly low. Apps were more likely to address expert-recommended behaviors for the prevention of pediatric obesity (93.5%), whereas few apps addressed recommended strategies (20.9%). The most common behaviors addressed included physical activity (53.2%) and fruit/vegetable consumption (48.3%). Other important behaviors (e.g., screen time [1.6%] and family meals together [1.6%]) were rarely addressed. Conclusions: Current children's diet and exercise apps could be improved with increased adherence to expert-recommended guidelines, especially expert-recommended strategies.

Webb, Alastair John Stewart; Rothwell, Peter Malcolm (2014):

Physiological correlates of beat-to-beat, ambulatory, and day-to-day home blood pressure variability after transient ischemic attack or minor stroke.

In: *Stroke* 45 (2), S. 533–538. DOI: 10.1161/STROKEAHA.113.003321.

Abstract:

BACKGROUND AND PURPOSE: Visit-to-visit and day-to-day variability in systolic blood pressure (SBP) are associated with an increased risk of stroke, more strongly than variability on 24-hour ambulatory BP monitoring, but underlying physiological mechanisms are unclear. We related potentially relevant physiological characteristics to beat-to-beat, ambulatory, and day-to-day BP variability to identify underlying mechanisms and potential therapeutic targets. METHODS: BP variability (coefficient of variation [CV]) on 1-month home BP monitoring (3 sitting readings, 3x daily), on 24-hour ambulatory BP monitoring, and on 5-minute beat-to-beat monitoring was related to BP reactivity (to mental arithmetic), arterial aging (aortic stiffness: carotid-femoral pulse wave velocity; aortic pulsatility), heart rate variability (CV of normal-to-normal R-R interval), and orthostatic responses. RESULTS: In 223 patients within 6 weeks of a transient ischemic attack or minor stroke, beat-to-beat and home SBP-CVs were associated with response to arithmetic (beat-to-beat odds ratio per SD=1.64; P<0.0001 and home BP monitoring, 1.41; P=0.025), aortic stiffness (1.84; P<0.0001 and 1.31; P=0.04), aortic pulsatility (1.98; P<0.0001 and 1.61; P<0.0001), and heart rate variability-CV of normal-to-normal R-R interval (1.34; P=0.03 and 1.35; P=0.03), independently of age, sex, and aortic BP. Orthostatic BP changes were associated only with SBP-CV on home BP monitoring (0.62; P=0.002). In contrast, no physiological measures were associated with within-day BP variability on awake ambulatory BP monitoring except response to mental arithmetic (1.40; P=0.01). CONCLUSIONS: Beat-to-beat and day-to-day SBP variability, but not variability on ambulatory BP monitoring, had similar physiological correlates, suggesting common underlying mechanisms and identifying potentially treatable targets that may be responsible for the relationship between SBP variability and stroke risk.

Webber, Larry S.; Catellier, Diane J.; Lytle, Leslie A.; Murray, David M.; Pratt, Charlotte A.; Young, Deborah R. et al. (2008):

Promoting physical activity in middle school girls: Trial of Activity for Adolescent Girls.

In: *Am J Prev Med* 34 (3), S. 173–184.

Abstract:

Background

Physical activity is important for weight control and good health; however, activity levels decline in the adolescent years, particularly in girls.

Design

Group randomized controlled trial

Setting/participants

Middle school girls with English-speaking skills and no conditions to prevent participation in physical activity in 36 schools in six geographically diverse areas of the United States. Random, cross-sectional samples were drawn within schools: 6th graders in 2003 (n=1721) and 8th graders in 2005 (n=3504) and 2006 (n=3502).

Intervention

A 2-year study-directed intervention (fall 2003 to spring 2005) targeted schools, community agencies, and girls to increase opportunities, support, and incentives for increased physical activity. Components included programs linking schools and community agencies, physical education, health education, and social marketing. A third-year intervention used school and community personnel to direct intervention activities.

Main outcome measures

The primary outcome, daily MET-weighted minutes of moderate-to-vigorous physical activity (MET-weighted MVPA), was assessed using accelerometry. Percent body fat was assessed using anthropometry.

Results

After the staff-directed intervention (pre-stated primary outcome), there were no differences (mean= −0.4, 95% CI= CI= −8.2 to 7.4) in adjusted MET-weighted MVPA between 8th-grade girls in schools assigned to intervention or control. Following the Program Champion–directed intervention, girls in intervention schools were more physically active than girls in control schools (mean difference 10.9 MET-weighted minutes of MVPA, 95% CI=0.52–21.2). This difference is about 1.6 minutes of daily MVPA or 80 kcal per week. There were no differences in fitness or percent body fat at either 8th-grade timepoint.

Conclusion

A school-based, community-linked intervention modestly improved physical activity in girls.

Webber, Sandra C.; Porter, Michelle M. (2009):

Monitoring mobility in older adults using global positioning system (GPS) watches and accelerometers: a feasibility study.

In: *J Aging Phys Act* 17 (4), S. 455–467.

Abstract:

This exploratory study examined the feasibility of using Garmin global positioning system (GPS) watches and ActiGraph accelerometers to monitor walking and other aspects of community mobility in older adults. After accuracy at slow walking speeds was initially determined, 20 older adults (74.4 +/- 4.2 yr) wore the devices for 1 day. Steps, distances, and speeds (on foot and in vehicle) were determined. GPS data acquisition varied from 43 min to over 12 hr, with 55% of participants having more than 8 hr between initial and final data-collection points. When GPS data were acquired without interruptions, detailed mobility information was obtained regarding the timing, distances covered, and speeds reached during trips away from home. Although GPS and accelerometry technology offer promise for monitoring community mobility patterns, new GPS solutions are required that allow for data collection over an extended period of time between indoor and outdoor environments.

Weber, Michael A.; White, William B.; Sica, Domenic; Bakris, George L.; Cao, Charlie; Roberts, Andrew; Kupfer, Stuart (2014):

Effects of combining azilsartan medoxomil with amlodipine in patients with stage 2 hypertension.

In: *Blood Press Monit* 19 (2), S. 90–97. DOI: 10.1097/MBP.0000000000000027.

Abstract:

OBJECTIVE: The aim of the study was to measure the effects on blood pressure (BP) of the angiotensin receptor blocker azilsartan medoxomil, in 40 and 80 mg doses, combined with 5 mg of the calcium channel blocker amlodipine and to compare these effects with placebo plus amlodipine 5 mg. METHODS: This was a randomized, controlled, double-blind study of 6 weeks' duration in 566 patients with stage 2 hypertension. The primary endpoint was 24-h systolic BP by ambulatory monitoring.

RESULTS: The mean age of the participants was 58 years; men and women were equally represented, and baseline 24-h BP (153-154/93 mmHg) and clinic BP (165-166/94-95 mmHg) were similar across the three treatment groups. After 6 weeks, 24-h BP decreased by 25/15 mmHg in both the azilsartan medoxomil/amlodipine 40/5 and 80/5 mg groups. These reductions were each greater than the 14/8 mmHg decrease with placebo plus amlodipine 5 mg (P</=0.001 for both comparisons). All treatments were well tolerated, and adverse events did not increase with the azilsartan medoxomil doses. Edema or fluid retention was less common in both combination groups (2.6 and 2.7%) than with placebo plus amlodipine (7.6%). CONCLUSION: Coadministration of azilsartan medoxomil with amlodipine was well tolerated and led to meaningful additional BP reductions compared with placebo plus amlodipine.

Webster, Gregory D.; Kirkpatrick, Lee A.; Nezlek, John B.; Smith, C. Veronica; Paddock, E. Layne (2007):

Different slopes for different folks: Self-esteem instability and gender as moderators of the relationship between self-esteem and attitudinal aggression.

In: *Self and Identity* 6 (1), S. 74–94.

Abstract:

The present research examined the relationships among self-esteem level, temporal self-esteem instability, gender, and self-reported aggression. Self-esteem level was negatively related to attitudinal aggression, although this relationship varied as a joint function of self-esteem instability and gender. It was strongest among men with unstable self-esteem and among women with stable self-esteem. Although self-esteem instability and narcissism (Study 3) were each positively related to behavioral aggression, the relationship between narcissism and attitudinal aggression varied as a function of self-esteem instability. The relationship between narcissism and attitudinal aggression was positive among people with stable self-esteem, but negative among people with unstable self-esteem, regardless of gender. The importance of considering gender, self-esteem instability, and narcissism in the self-esteem/aggression debate is discussed.

Weering, M. G. H.; Vollenbroek-Hutten, M. M. R.; Tönis, T. M.; Hermens, H. J. (2009):

Daily physical activities in chronic lower back pain patients assessed with accelerometry.

In: *Eur J Pain* 13 (6), S. 649–654.

Abstract:

BACKGROUND:

Normalization of activities in daily living is an important goal in rehabilitation treatment of chronic lower back pain (CLBP) patients. Clinicians indicate that CLBP patients often show deconditioning but also CLBP patients who seem to be too active are seen. The objective of the present cross-sectional study was to gain more insight into the daily activity pattern of CLBP patients compared to controls, using accelerometry.

METHODS:

Daily activities were assessed by measuring body movement with a tri-axial accelerometer that was worn for seven consecutive days during waking hours. Measurements were performed in the daily environment (in-doors and out-doors) of the participant. Differences between activity level, time of day and work status were tested.

RESULTS:

Data were obtained from 29 CLBP patients and 20 controls. Results show that the overall activity levels of patients (mean 0.75; SD 0.43) are not significantly different from those of controls (mean 0.71; SD 0.44). However, patients show significantly higher activity levels in the morning ($p<0.001$) and significantly lower activity levels in the evening ($p<0.01$) compared to controls. No significant differences in activity levels were found between leisure time and working days within either group; furthermore no significant differences in activity levels were found between patients with different work status.

CONCLUSION:

Overall activity levels do not differ significantly between CLBP patients and controls, but the distribution of activities over the day differs significantly.

Wegerer, M.; Blechert, J.; Kerschbaum, H.; Wilhelm, F. H. (2013):

Relationship between Fear Conditionability and Aversive Memories: Evidence from a Novel Conditioned-Intrusion Paradigm.

In: *PLoS.One.* 8 (11), S. e79025. DOI: 10.1371/journal.pone.0079025.

Abstract:

Intrusive memories - a hallmark symptom of posttraumatic stress disorder (PTSD) - are often triggered by stimuli possessing similarity with cues that predicted or accompanied the traumatic event. According to learning theories, intrusive memories can be seen as a conditioned response to trauma reminders. However, direct laboratory evidence for the link between fear conditionability and intrusive memories is missing. Furthermore, fear conditioning studies have predominantly relied on standardized aversive stimuli (e.g. electric stimulation) that bear little resemblance to typical traumatic events. To investigate the general relationship between fear conditionability and aversive memories, we tested 66 mentally healthy females in a novel conditioned-intrusion paradigm designed to model real-life traumatic experiences. The paradigm included a differential fear conditioning procedure with neutral sounds as conditioned stimuli and short violent film clips as unconditioned stimuli. Subsequent aversive memories were assessed through a memory triggering task (within 30 minutes, in the laboratory) and ambulatory assessment (involuntary aversive memories in the 2 days following the experiment). Skin conductance responses and subjective ratings demonstrated successful differential conditioning indicating that naturalistic aversive film stimuli can be used in a fear conditioning experiment. Furthermore, aversive memories were elicited in response to the conditioned stimuli during the memory triggering task and also occurred in the 2 days following the experiment. Importantly, participants who displayed higher conditionability showed more aversive memories during the memory triggering task and during ambulatory assessment. This suggests that fear conditioning constitutes an important source of persistent aversive memories. Implications for PTSD and its treatment are discussed

Wei, Fang-Fei; Li, Yan; Zhang, Lu; Xu, Ting-Yan; Ding, Feng-Hua; Wang, Ji-Guang; Staessen, Jan A. (2014):

Beat-to-Beat, Reading-to-Reading, and Day-to-Day Blood Pressure Variability in Relation to Organ Damage in Untreated Chinese.

In: *Hypertension* 63 (4), S. 790–796. DOI: 10.1161/HYPERTENSIONAHA.113.02681.

Abstract:

Whether target organ damage is associated with blood pressure (BP) variability independent of level remains debated. We assessed these associations from 10-minute beat-to-beat, 24-hour ambulatory, and 7-day home BP recordings in 256 untreated subjects referred to a hypertension clinic. BP variability indices were variability independent of the mean, maximum-minimum difference, and average real variability. Effect sizes (standardized beta) were computed using multivariable regression models. In beat-to-beat recordings, left ventricular mass index (n=128) was not (P>/=0.18) associated with systolic BP but increased with all 3 systolic variability indices (+2.97-3.53 g/m(2); P<0.04); the urinary albumin-to-creatinine ratio increased (P</=0.03) with systolic BP (+1.14-1.17 mg/mmol) and maximum-minimum difference (+1.18 mg/mmol); and pulse wave velocity increased with systolic BP (+0.69 m/s; P<0.001). In 24-hour recordings, all 3 indices of organ damage increased (P<0.03) with systolic BP, whereas the associations with BP variability were nonsignificant (P>/=0.15) except for increases in pulse wave velocity (P<0.05) with variability independent of the mean (+0.16 m/s) and maximum-minimum difference (+0.17 m/s). In home recordings, the urinary albumin-to-creatinine ratio (+1.27-1.30 mg/mmol) and pulse wave velocity (+0.36-0.40 m/s) increased (P<0.05) with systolic BP, whereas all associations of target organ damage with the variability indices were nonsignificant (P>/=0.07). In conclusion, while accounting for BP level, associations of target organ damage with BP variability were readily detectable in beat-to-beat recordings, least noticeable in home recordings, with 24-hour ambulatory monitoring being informative only for pulse wave velocity.

Weikert, Madeline; Motl, Robert W.; Suh, Yoojin; McAuley, Edward; Wynn, Daniel (2010):

Accelerometry in persons with multiple sclerosis: measurement of physical activity or walking mobility?

In: *J Neurol Sci* 290 (1), S. 6–11.

Abstract:

Objective

Motion sensors such as accelerometers have been recognized as an ideal measure of physical activity in persons with MS. This study examined the hypothesis that accelerometer movement counts represent a measure of both physical activity and walking mobility in individuals with MS.

Methods

The sample included 269 individuals with a definite diagnosis of relapsing–remitting MS who completed the Godin Leisure-Time Exercise Questionnaire (GLTEQ), International Physical Activity Questionnaire (IPAQ), Multiple Sclerosis Walking Scale-12 (MSWS-12), Patient Determined Disease Steps (PDDS), and then wore an ActiGraph accelerometer for 7 days. The data were analyzed using bivariate correlation and confirmatory factor analysis.

Results

The results indicated that (a) the GLTEQ and IPAQ scores were strongly correlated and loaded significantly on a physical activity latent variable, (b) the MSWS-12 and PDDS scores strongly correlated and loaded significantly on a walking mobility latent variable, and (c) the accelerometer movement counts correlated similarly with the scores from the four self-report questionnaires and cross-loaded on both physical activity and walking mobility latent variables.

Conclusion

Our data suggest that accelerometers are measuring both physical activity and walking mobility in persons with MS, whereas self-report instruments are measuring either physical activity or walking mobility in this population.

Wells, Nancy M.; Myers, Beth M.; Henderson, Charles R. (2014):

School gardens and physical activity: A randomized controlled trial of low-income elementary schools.

In: *Prev Med* 69 Suppl 1, S. 27–33. DOI: 10.1016/j.ypmed.2014.10.012.

Abstract:

OBJECTIVE: This study examines effects of a school garden intervention on elementary school children's physical activity (PA). METHOD: Twelve schools in New York were randomly assigned to receive the school garden intervention (n=6) or to the waitlist control group that later received gardens (n=6). PA was measured by self-report survey (Girls Health Enrichment Multi-site Study Activity Questionnaire) (N=227) and accelerometry (N=124, 8 schools) at baseline (Fall 2011) and follow-up (Spring 2012, Fall 2012, Spring 2013). Direct observation (N=117, 4 schools) was employed to compare indoor (classroom) and outdoor (garden) PA. Analysis was by general linear mixed models. RESULTS: Survey data indicate garden intervention children's reports of usual sedentary activity decreased from pre-garden baseline to post-garden more than the control group children's (Delta=-.19, p=.001). Accelerometry data reveal that during the school day, children in the garden intervention showed a greater increase in percent of time spent in moderate and moderate-to-vigorous PA from baseline to follow-up than the control group children (Delta=+.58, p=.010; Delta=+1.0, p=.044). Direct observation within-group comparison of children at schools with gardens revealed that children move more and sit less during an outdoor garden-based lesson than during an indoor, classroom-based lesson. CONCLUSION: School gardens show some promise to promote children's PA. CLINICAL TRIALS REGISTRATION: clinicaltrials.gov # NCT02148315.

Wenze, S. J.; Gunthert, K. C.; German, R. E. (2012):

Biases in affective forecasting and recall in individuals with depression and anxiety symptoms.

In: *Pers.Soc.Psychol.Bull.* 38 (7), S. 895–906. DOI: 10.1177/0146167212447242.

Abstract:

The authors used experience sampling to investigate biases in affective forecasting and recall in individuals with varying levels of depression and anxiety symptoms. Participants who were higher in depression symptoms demonstrated stronger (more pessimistic) negative mood prediction biases, marginally stronger negative mood recall biases, and weaker (less optimistic) positive mood prediction and recall biases. Participants who were higher in anxiety symptoms demonstrated stronger negative mood prediction biases, but positive mood prediction biases that were on par with those who were lower in anxiety. Anxiety symptoms were not associated with mood recall biases. Neither depression symptoms nor anxiety symptoms were associated with bias in event prediction. Their findings fit well with the tripartite model of depression and anxiety. Results are also consistent with the conceptualization of anxiety as a "forward-looking" disorder, and with theories that emphasize the importance of pessimism and general negative information processing in depressive functioning

Wenze, Susan J.; Miller, Ivan W. (2010):

Use of ecological momentary assessment in mood disorders research.

In: *Clinical Psychology Review* 30 (6), S. 794–804.

Abstract:

Ecological momentary assessment (EMA) entails repeated, intensive sampling of respondents' current experiences while they are engaged in their typical daily routines, in their natural environments. In this article we discuss benefits of using EMA techniques in mood disorders research, provide an overview of the various specific EMA techniques that have been used with mood-disordered populations to date, and summarize the diverse range of research questions that EMA has been used to explore in this field. In addition, we evaluate the feasibility and acceptability of using EMA techniques with this population and suggest additional areas that might be fruitful to investigate, with a focus on the extension of EMA techniques into treatment research. Overall, data suggest that using EMA techniques in mood disorders research is feasible, generally acceptable, and highly promising. We conclude with a discussion of caveats, limitations, and ethical considerations.

Wenzel, Mario; Kubiak, Thomas; Ebner-Priemer, Ulrich W. (2014):

Ambulatory assessment as a means of longitudinal phenotypes characterization in psychiatric disorders.

In: *Neuroscience Research*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-54627-001%26site%3dehost-live.

Abstract:

Ambulatory Assessment (AA) comprises the use of in-field methods to assess individuals' behavior, physiology, and the experience as they unfold in naturalistic settings. We propose that AA is favorable for the investigation of gene–environment interactions and for the search for endophenotypes, being able to assess the experienced environment and to track basic regulatory processes, such as stress reactivity, affective instability, and reward experience, which are potential common factors that underlie psychiatric disorders. In this article, we (a) first describe briefly the rationale of AA and summarize the key advantages of the approach, (b) highlight within-subject regulatory processes, such as stress reactivity, affective instability, and reward experience, (c) describe studies that used AA to examine genetic influences in psychiatric disorders, and (d) briefly review longitudinal studies that have investigated phenotypes of psychiatric disorders. The reported studies yielded promising, although sometimes inconclusive evidence for genetic effects on endophenotypes of psychiatric disorders. Moreover, most studies were twin or family studies, especially in stress-sensitivity research; thus, it is unclear which specific single nucleotide polymorphisms contribute to the endophenotypes of psychiatric disorders. We do hope that within-subject regulatory processes will enable us to clarify the fundamental psychological dimensions that cut across traditional disorders and link them to their genetic underpinnings. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

West, Stephen G.; Ryu, Ehri; Kwok, Oi-Man; Cham, Heining (2011):

Multilevel modeling: Current and future applications in personality research.

In: *J Personality* 79 (1), S. 2–50.

Abstract:

Traditional statistical analyses can be compromised when data are collected from groups or multiple observations are collected from individuals. We present an introduction to multilevel models designed to address dependency in data. We review current use of multilevel modeling in 3 personality journals showing use concentrated in the 2 areas of experience sampling and longitudinal growth. Using an empirical example, we illustrate specification and interpretation of the results of series of models as predictor variables are introduced at Levels 1 and 2. Attention is given to possible trends and cycles in longitudinal data and to different forms of centering. We consider issues that may arise in estimation, model comparison, model evaluation, and data evaluation (outliers), highlighting similarities to and differences from standard regression approaches. Finally, we consider newer developments, including 3-level models, cross-classified models, nonstandard (limited) dependent variables, multilevel structural equation modeling, and nonlinear growth. Multilevel approaches both address traditional problems of dependency in data and provide personality researchers with the opportunity to ask new questions of their data.

Whalen, Christopher J.; Donnell, Deborah; Tartakovsky, Michael (2014):

Supporting research sites in resource-limited settings: challenges in implementing information technology infrastructure.

In: *J Acquir Immune Defic Syndr* 65 Suppl 1, S. S44-9. DOI: 10.1097/QAI.0000000000000039.

Abstract:

As information and communication technology infrastructure becomes more reliable, new methods of electronic data capture, data marts/data warehouses, and mobile computing provide platforms for rapid coordination of international research projects and multisite studies. However, despite the increasing availability of Internet connectivity and communication systems in remote regions of the world, there are still significant obstacles. Sites with poor infrastructure face serious challenges participating in modern clinical and basic research, particularly that relying on electronic data capture and Internet communication technologies. This report discusses our experiences in supporting research in resource-limited settings. We describe examples of the practical and ethical/regulatory challenges raised by the use of these newer technologies for data collection in multisite clinical studies.

Whalen, Carol K.; Henker, Barbara; Ishikawa, Sharon S.; Emmerson, Natasha A.; Swindle, Ralph; Johnston, Joseph A. (2010):

Atomoxetine versus stimulants in the community treatment of children with ADHD: an electronic diary study.

In: *J Atten Disord* 13 (4), S. 391–400. DOI: 10.1177/1087054708325118.

Abstract:

OBJECTIVE\r\nTo compare the morning and afternoon/evening functioning of children with ADHD treated in the community with either atomoxetine or long-acting stimulants and reported to be doing well.\r\nMETHOD\r\n109 8- to 12-year-olds and their mothers participated in one of three groups: stimulants (STIM, N = 26), atomoxetine (ATMX, N = 25), or comparison (COMP, N = 58). Mothers completed morning and evening electronic diaries installed on personal digital assistants throughout an entire week, rating the child's behaviors and moods as well as their own moods and perceptions.\r\nRESULTS\r\nThere was no evidence that ongoing pharmacotherapy fully normalized the behaviors of children with ADHD: Mothers in both ADHD groups reported higher rates of child inattention, hyperactivity/impulsivity, oppositionality, and negative affect and lower levels of parenting efficacy and positive affect than did COMP mothers. Although the behavioral profiles were generally comparable for the STIM and ATMX groups, there were indications of better functioning in the ATMX group during mornings only.\r\nCONCLUSION\r\nChildren treated in the community with either STIM or ATMX appear to have similar behavioral profiles, suggesting that medication decisions be guided by other factors such as comorbid disorders, child and parent preferences, and effects on nontargeted behaviors and moods.

Wharton, Christopher M.; Johnston, Carol S.; Cunningham, Barbara K.; Sterner, Danielle (2014):

Dietary self-monitoring, but not dietary quality, improves with use of smartphone app technology in an 8-week weight loss trial.

In: *J Nutr Educ Behav* 46 (5), S. 440–444. DOI: 10.1016/j.jneb.2014.04.291.

Abstract:

OBJECTIVE: Dietary self-monitoring is linked to improved weight loss success. Mobile technologies, such as smartphone applications (apps), might allow for improved dietary tracking adherence. The authors assessed the use of a popular smartphone app for dietary self-monitoring and weight loss by comparing it with traditional diet counseling and entry methods. METHODS: Diet tracking and weight loss were compared across participants during an 8-week weight loss trial. Participants tracked intake using 1 of 3 methods: the mobile app "Lose It!", the memo feature on a smartphone, or a traditional paper-and-pencil method. RESULTS: App users (n = 19) recorded dietary data more consistently compared with the paper-and-pencil group (n = 15; P = .042) but not the memo group (n = 13). All groups lost weight over the course of the study (P = .001), and no difference in weight loss was noted between groups. CONCLUSIONS AND IMPLICATIONS: Smartphone apps could represent a novel and feasible dietary self-monitoring method for individuals.

White, Andrew J.; Umpfenbach, Katja; Alpers, Georg W. (2014):

Where have they gone? Tracking movement patterns to document the process of situational exposure in agoraphobia.

In: *Professional Psychology: Research and Practice* 45 (3), S. 171–179. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-24102-003%26site%3dehost-live.

Abstract:

Therapists typically have limited information about how unaccompanied situational exposure is undertaken. To address this issue, we present a method of assessing movement patterns and concurrent arousal collected during situational exposure. We illustrate how this provides both objective and useful accounts of this important treatment component. In this case study, recordings of global positioning system-derived position and heart rate were obtained from a 47-year-old female patient suffering from panic disorder with agoraphobia who received treatment through an outpatient clinic. Ambulatory assessment of movement and accompanying physiology (heart rate) during situational exposure is described. Visualizations of positional and physiological data recorded during exposure sessions revealed (a) that the patient actually confronted feared environmental cues, (b) that she experienced elevated physiological arousal, and (c) good therapeutic compliance. These depictions were used to plan subsequent exposure sessions and we discuss how this information provided unique insights into the process of exposure. Assessment of movement patterns using commercially available technology can yield clinically relevant information about treatment progress. We conclude that this method could extend traditional self-report measures of agoraphobic avoidance. Future directions, such as the possibility of using movement information to refine follow-up assessment, and the limitations of this approach are discussed. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Wichers, M. (2013):

The dynamic nature of depression: a new micro-level perspective of mental disorder that meets current challenges.

In: *Psychol.Med* (0033-2917 (Linking)), S. 1–12. DOI: 10.1017/S0033291713001979.

Abstract:

The examination of moment-to-moment, 'micro-level' patterns of experience and behaviour using experience sampling methodology has contributed to our understanding of the 'macro-level' development of full-blown symptoms and disorders. This paper argues that the micro-level perspective can be used to identify the smallest building blocks underlying the onset and course of mental ill-health. Psychopathology may be the result of the continuous dynamic interplay between micro-level moment-to-moment experiences and behavioural patterns over time. Reinforcing loops between momentary states may alter the course of mental health towards either a more or less healthy state. An example with observed data, from a population of individuals with depressive symptoms, supports the validity of a dynamic network model of psychopathology and shows that together and over time, this continuous interplay between momentary states may result in the cluster of symptoms we call major depressive disorder. This approach may help conceptualize the nature of mental disorders, and generate individualized insights useful for diagnosis and treatment in psychiatry

Wichers, Marieke; Aguilera, Mari; Kenis, Gunter; Krabbendam, Lydia; Myin-Germeys, Inez; Jacobs, Nele et al. (2008):

The catechol-O-methyl transferase Val158Met polymorphism and experience of reward in the flow of daily life.

In: *Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology* 33 (13), S. 3030–3036. DOI: 10.1038/sj.npp.1301520.

Abstract:

Genetic moderation of experience of reward in response to environmental stimuli is relevant for the study of many psychiatric disorders. Experience of reward, however, is difficult to capture, as it involves small fluctuations in affect in response to small events in the flow of daily life. This study examined a momentary assessment reward phenotype in relation to the catechol-O-methyl transferase (COMT) Val(158)Met polymorphism. A total of 351 participants from a twin study participated in an Experience Sampling Method procedure to collect daily life experiences concerning events, event appraisals, and affect. Reward experience was operationalized, as the effect of event appraisal on positive affect (PA). Associations between COMT Val(158)Met genotype and event appraisal on the one hand and PA on the other were examined using multilevel random regression analysis. Ability to experience reward increased with the number of 'Met' alleles of the subject, and this differential effect of genotype was

greater for events that were experienced as more pleasant. The effect size of genotypic moderation was quite large: subjects with the Val/Val genotype generated almost similar amounts of PA from a 'very pleasant event' as Met/Met subjects did from a 'bit pleasant event'. Genetic variation with functional impact on cortical dopamine tone has a strong influence on reward experience in the flow of daily life. Genetic moderation of ecological measures of reward experience is hypothesized to be of major relevance to the development of various behavioral disorders, including depression and addiction.

Wichers, M.; Lothmann, C.; Simons, C. J.; Nicolson, N. A.; Peeters, F. (2012):

The dynamic interplay between negative and positive emotions in daily life predicts response to treatment in depression: a momentary assessment study.

In: *Br.J Clin.Psychol.* 51 (2), S. 206–222. DOI: 10.1111/j.2044-8260.2011.02021.x.

Abstract:

OBJECTIVES: Although the treatment of depressive illness aims to restore the imbalance between an excess of negative affect (NA) and a shortage of positive affect (PA), no study has examined how NA and PA may influence each other in depression. This study examines how NA and PA dynamically influence each other in depression and how this may impact on treatment response. DESIGN: Depressed help-seeking individuals participated in the Experience Sampling Method (ESM), which enables visualization of subtle dynamic alterations of momentary affective states over time. Thereafter, participants received a combination of antidepressant treatment and psychotherapy, and were followed up each month. METHODS: NA and PA were assessed during ESM at 10 random moments per day for 6 days. Depressive symptoms were assessed at baseline and at monthly intervals during treatment. RESULTS: Future response to treatment was associated with altered baseline NA-PA dynamics in individuals with previous depressive episodes. Their daily life boosts of PA were followed by a stronger suppression of NA over subsequent hours than in other depressed groups or controls. CONCLUSIONS: Subtle individual differences in daily life emotional dynamics predict future treatment outcome in depression

Wichers, Marieke; Myin-Germeys, Inez; Jacobs, Nele; Peeters, Frenk; Kenis, Gunter; Derom, Catherine et al. (2007):

Genetic risk of depression and stress-induced negative affect in daily life.

In: *The British Journal of Psychiatry* 191 (3), S. 218–223.

Abstract:

BACKGROUND:

A bias to develop negative affect in response to daily life stressors may be an important depression endophenotype, but remains difficult to assess.

AIMS:

To assess this mood bias endophenotype, uncontaminated by current mood, in the course of daily life.

METHOD:

The experience sampling method was used to collect multiple appraisals of daily life event-related stress and negative affect in 279 female twin pairs. Cross-twin, cross-trait associations between dailylife mood bias and DSM-IV depression were conducted.

RESULTS:

Probands whose co-twins were diagnosed with lifetime depression showed a stronger mood bias to stress than those with co-twins without such a diagnosis, independent of probands' current depressive symptoms and to a greater extent in monozygotic twins than in dizygotic twins.

CONCLUSIONS:

Genetic liability to depression is in part expressed as the tendency to display negative affect in response to minor stressors in daily life. This trait may represent a true depression endophenotype.

Wichers, M.; Peeters, F.; Geschwind, N.; Jacobs, N.; Simons, C. J. P.; Derom, Cathérine et al. (2010):

Unveiling patterns of affective responses in daily life may improve outcome prediction in depression: a momentary assessment study.

In: *J Affect Disord* 124 (1), S. 191–195.

Abstract:

Objective

Daily life affective responses are closely linked to vulnerability and resilience in depression. Prediction of future clinical course may be improved if information on daily life emotional response patterns is taken into account.

Method

Female subjects with a history of major depression (n = 83), recruited from a population twin register, participated in a longitudinal study using momentary assessment technology with 4 follow-up measurements. The effect of baseline daily life emotional response patterns (affect variability, stress-sensitivity and reward experience) on follow-up depressive symptomatology was examined.

Results

Both reward experience (B = −0.30, p = 0.001) and negative affect variability (B = 0.46, p = 0.001) predicted future negative affective symptoms independent of all other dynamic emotional patterns and conventional predictors.

Conclusion

Daily life information on dynamic emotional patterns adds to the prediction of future clinical course, independent of severity of symptoms and neuroticism score. Better prediction of course may improve decision-making regarding quantitative and qualitative aspects of treatment.

Wichers, Marieke; Peeters, Frenk; Rutten, Bart P. F.; Jacobs, Nele; Derom, Catherine; Thiery, Evert et al. (2011):

A time-lagged momentary assessment study on daily life physical activity and affect.

In: *Health Psychol*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-22910-001&site=ehost-live.

Abstract:

Objective: Novel study designs using within-subject methodology and frequent and prospective measurements are required to unravel direction of causality and dynamic processes of behavior over time. The current study examined the effects of physical activity on affective state. A primary and within-study replication sample was derived from twin pairs. Methods: Female twins (n = 504) participated in an experience sampling method study at baseline. Positive and negative affective changes were examined before and following daily life increases in physical activity. Neuroticism was measured at baseline and depressive symptoms were assessed at baseline and at each of four follow-up assessments. Diagnoses, derived by Structured Clinical Interview for Diagnostic and Statistical Manual for Mental Health–IV axis I disorders, (A. P. A., 1994) were obtained at baseline. Results: A significant increase in positive affect (PA) following the moment of increase in physical activity was replicated across both samples up to 180 min after physical activity. There was no effect of physical activity on negative affect (NA). Across the two samples, a history of fulfilling diagnostic criteria for depression at least once moderated the effect of physical activity on PA, in that the effect was lost more rapidly. Conclusions: The study supports a causal effect of physical activity on PA. However, people with past experience of clinical depression may benefit less from the PA-inducing effect of physical activity. These findings have implications for the use of physical exercise in clinical practice. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Wichers, M.; Peeters, F.; Rutten, B. P.; Jacobs, N.; Derom, C.; Thiery, E. et al. (2012):

A time-lagged momentary assessment study on daily life physical activity and affect.

In: *Health Psychol* 31 (2), S. 135–144. DOI: 10.1037/a0025688.

Abstract:

OBJECTIVE: Novel study designs using within-subject methodology and frequent and prospective measurements are required to unravel direction of causality and dynamic processes of behavior over time. The current study examined the effects of physical activity on affective state. A primary and within-study replication sample was derived from twin pairs. METHODS: Female twins (n = 504) participated in an experience sampling method study at baseline. Positive and negative affective changes were examined

before and following daily life increases in physical activity. Neuroticism was measured at baseline and depressive symptoms were assessed at baseline and at each of four follow-up assessments. Diagnoses, derived by Structured Clinical Interview for Diagnostic and Statistical Manual for Mental Health-IV axis I disorders, (A. P. A., 1994) were obtained at baseline. RESULTS: A significant increase in positive affect (PA) following the moment of increase in physical activity was replicated across both samples up to 180 min after physical activity. There was no effect of physical activity on negative affect (NA). Across the two samples, a history of fulfilling diagnostic criteria for depression at least once moderated the effect of physical activity on PA, in that the effect was lost more rapidly. CONCLUSIONS: The study supports a causal effect of physical activity on PA. However, people with past experience of clinical depression may benefit less from the PA-inducing effect of physical activity. These findings have implications for the use of physical exercise in clinical practice

Wichers, M.; Schrijvers, D.; Geschwind, N.; Jacobs, N.; Myin-Germeys, I.; Thiery, E. et al. (2009):

Mechanisms of gene-environment interactions in depression: evidence that genes potentiate multiple sources of adversity.

In: *Psychological Medicine* 39 (7), S. 1077–1086. DOI: 10.1017/S0033291708004388.

Abstract:

BACKGROUND\r\nPrevious work suggests that daily life stress-sensitivity may be an intermediary phenotype associated with both genetic risk for depression and developmental stress exposures. In the current analysis we hypothesized that genetic risk for depression and three environmental exposures over the course of development [prenatal stress, childhood adversity and adult negative life events (NLEs)] combine synergistically to produce the phenotype of stress-sensitivity.\r\nMETHOD\r\nTwin pairs (n=279) participated in a momentary assessment study using the Experience Sampling Method (ESM), collecting appraisals of stress and negative affect (NA) in the flow of daily life. Prospective data on birthweight and gestational age, questionnaire data on childhood adversity and recent NLEs, and interview data on depression were used in the analyses. Daily life stress-sensitivity was modelled as the effect of ESM daily life stress appraisals on ESM NA.\r\nRESULTS\r\nAll three developmental stress exposures were moderated by genetic vulnerability, modelled as dizygotic (DZ) or monozygotic (MZ) co-twin depression status, in their effect on daily life stress-sensitivity. Effects were much stronger in participants with MZ co-twin depression and a little stronger in participants with DZ co-twin depression status, compared to those without co-twin depression. NLE main effects and NLE genetic moderation were reducible to birthweight and childhood adversity.\r\nCONCLUSIONS\r\nThe findings are consistent with the hypothesis that adult daily life stress-sensitivity is the result of sensitization processes initiated by developmental stress exposures. Genes associated with depression may act by accelerating the process of stress-induced sensitization.

Wichers, M.; Simons, C. J.; Kramer, I. M.; Hartmann, J. A.; Lothmann, C.; Myin-Germeys, I. et al. (2011):

Momentary assessment technology as a tool to help patients with depression help themselves.

In: *Acta Psychiatr.Scand.* 124 (4), S. 262–272. DOI: 10.1111/j.1600-0447.2011.01749.x.

Abstract:

OBJECTIVE: Given high relapse rates and residual symptoms in depression, new strategies to increase treatment effectiveness are required. A promising avenue is to investigate how electronic momentary assessment technology may contribute to clinical assessment and interventions in depression. METHOD: A literature search was conducted focusing on the potential contribution of momentary assessments to clinical applications in depression. RESULTS: Momentary assessments are able to reveal subtle, small but repetitive and relevant patterns of emotional expression that predict future course of depression. A momentary assessment tool may expose manageable pieces of daily life behaviour contributing to the depressive experience that patients can influence. The use of this explicit knowledge of daily life experience is understudied with regard to its contribution to diagnostic assessment, monitoring of treatment effects and feedback interventions in depressed patients. The clinical application of momentary assessments may stimulate a shift from passive consumption of treatment to an active role for patients in their recovery and increased patient ownership. CONCLUSION: The precise, prospective and fine-grained information that momentary assessment technology provides may contribute to clinical practice in various ways. Future studies should examine the clinical impact of its use and the feasibility of its implementation in mental health care

Wigman, J. T.; Collip, D.; Wichers, M.; Delespaul, P.; Derom, C.; Thiery, E. et al. (2013):

Altered Transfer of Momentary Mental States (ATOMS) as the Basic Unit of Psychosis Liability in Interaction with Environment and Emotions.

In: *PLoS One* 8 (2), S. e54653. DOI: 10.1371/journal.pone.0054653.

Abstract:

Psychotic disorders are thought to represent altered neural function. However, research has failed to map diagnostic categories to alterations in neural networks. It is proposed that the basic unit of psychotic psychopathology is the moment-to-moment expression of subtle anomalous experiences of subclinical psychosis, and particularly its tendency to persist from moment-to-moment in daily life, under the influence of familial, environmental, emotional and cognitive factors.In a general population twin sample (n = 579) and in a study of patients with psychotic disorder (n = 57), their non-psychotic siblings (n = 59) and unrelated controls (n = 75), the experience sampling paradigm (ESM; repetitive, random sampling of momentary mental states and context) was applied. We analysed, in a within-person prospective design, (i) transfer of momentary anomalous experience at time point () to time point () in daily life, and (ii) moderating effects of negative affect, positive affect, daily stressors, IQ and childhood trauma. Additionally, (iii) familial associations between persistence of momentary anomalous experience and psychotic symptomatology were investigated. Higher level of schizotypy in the twins (but not higher level of psychotic symptoms in patients) predicted more persistence of momentary anomalous experience in daily life, both within subjects and across relatives. Persistence of momentary anomalous experience was highest in patients, intermediate in their siblings and lowest in controls. In both studies, persistence of momentary anomalous experience was moderated by higher levels of negative affect, daily stressors and childhood trauma (only in twins), and by lower levels of positive affect. The study of alterations in the moment-to-moment transfer of subtle anomalous experience of psychosis, resulting in their persistence, helps to explain psychotic and emotional dysregulation tend to cluster in a single phenotype such as schizophrenia, and familial and environmental risks increase the risk of expression of psychosis from, first, subtle momentary anomalous experience to, second, observable clinical symptoms

Wilcox, T. K.; Chen, W. H.; Howard, K. A.; Wiklund, I.; Brooks, J.; Watkins, M. L. et al. (2013):

Item selection, reliability and validity of the Shortness of Breath with Daily Activities (SOBDA) questionnaire: a new outcome measure for evaluating dyspnea in chronic obstructive pulmonary disease.

In: *Health Qual.Life Outcomes.* 11 (1), S. 196. DOI: 10.1186/1477-7525-11-196.

Abstract:

BACKGROUND: Chronic obstructive pulmonary disease (COPD) is characterized by irreversible, progressive obstruction of lung airflow. Dyspnea (shortness of breath [SOB]) is the COPD symptom which most negatively impacts patients' daily activities. To assess how SOB affects daily activities, 37 items were drafted through focus group discussions and cognitive interviews with COPD patients to develop a patient-reported outcome instrument: the Shortness of Breath with Daily Activities questionnaire (SOBDA). Psychometric analysis was conducted to reduce the number of items and evaluate the measurement properties of the final SOBDA. METHODS: Prospective, observational study of 334 COPD patients, recruited from 24 pulmonology and internal medicine clinics in the United States. The 37-item SOBDA was administered to patients each evening for 28 days using an electronic diary. Patients answered every item and rated their level of SOB experienced that day during specific activities. Item selection was conducted by examining item characteristics, dimensionality, and Rasch model analysis results. The decision to delete an item was based on psychometric evidence, content validity, and expert clinical input. The final SOBDA instrument was evaluated for internal consistency, reproducibility, convergent validity, known-groups validity, and responsiveness. RESULTS: Twenty-four items from the 37-item pool were removed following the item selection process: nine items were removed due to high item-to-item correlations; five due to floor effects; three due to infrequent activity; one due to gender bias; two due to low factor loadings; three due to unordered response options; and one due to expert's discretion. Internal consistency and reproducibility of the final SOBDA were demonstrated by Cronbach Alpha = 0.87, and intra-class correlation coefficient = 0.91. Convergent validity was demonstrated by high correlation with the CRQ-SAS (0.60) and SGRQ-C (0.61). Known groups validity was demonstrated by significant difference between ratings of the mMRC and clinical global rating of severity. Evaluation of the ability to detect change was not performed owing to too few responders at the end of the study. CONCLUSIONS: Through the empirical item reduction process, 13 items were selected from the 37-item pool generated during qualitative development. The final 13-item SOBDA is a reliable and valid instrument for use in clinical trials

Wile, Daryl J.; Ranawaya, Ranjit; Kiss, Zelma H. T. (2014):

Smart watch accelerometry for analysis and diagnosis of tremor.

In: *J Neurosci Methods* 230, S. 1–4. DOI: 10.1016/j.jneumeth.2014.04.021.

Abstract:

BACKGROUND: Distinguishing the postural re-emergent tremor of Parkinson disease from essential tremor can be difficult clinically. Use of accelerometry to aid diagnosis is limited to laboratory settings. We sought to record and differentiate these tremors using a smart watch device in an outpatient clinic. NEW METHOD: 41 patients were enrolled. Recordings were made with a smart watch device on the predominantly affected hand (all patients), and simultaneously with an analog accelerometer (10 patients) with hands at rest and outstretched. Tremor peak frequency, peak power, and power of the first four harmonics was calculated and compared between the two devices. Mean power at the first four harmonics was calculated and used to classify tremor as parkinsonian or essential. Test characteristics were calculated to compare the device and clinical diagnoses. RESULTS: Mean harmonic peak power was both highly sensitive and specific for distinction of Parkinson disease postural tremor from essential tremor with an optimal threshold for our sample (sensitivity 90.9%, 95% CI 58.7-99.8%; specificity 100%, 95% CI 76.8-100%; Cohen's kappa=0.91, SE=0.08). COMPARISON WITH EXISTING METHODS: The smart watch and analog devices had nearly perfect concordance of peak frequency and proportional harmonic power. The smart watch recordings in clinic took 3-6 min. CONCLUSIONS: A smart watch device can provide accurate and diagnostically relevant information about postural tremor. Its portability and ease of use could help translate such techniques into routine clinic use or to the community.

Wilhelm, Frank H.; Grossman, Paul (2010):

Emotions beyond the laboratory: theoretical fundaments, study design, and analytic strategies for advanced ambulatory assessment.

In: *Biol Psychol* 84 (3), S. 552–569. DOI: 10.1016/j.biopsycho.2010.01.017.

Abstract:

Questionnaire and interview assessment can provide reliable data on attitudes and self-perceptions on emotion, and experimental laboratory assessment can examine functional relations between stimuli and reactions under controlled conditions. On the other hand, ambulatory assessment is less constrained and provides naturalistic data on emotion in daily life, with the potential to (1) assure external validity of laboratory findings, (2) provide normative data on prevalence, quality and intensity of real-life emotion and associated processes, (3) characterize previously unidentified emotional phenomena, and (4) model real-life stimuli for representative laboratory research design. Technological innovations now allow for detailed ambulatory study of emotion across domains of subjective experience, overt behavior and physiology. However, methodological challenges abound that may compromise attempts to characterize biobehavioral aspects of emotion in the real world. For example, emotional effects can be masked by social engagement, mental and physical workloads, as well as by food intake and circadian and quasi-random variation in metabolic activity. The complexity of data streams and multitude of factors that influence them require a high degree of context specification for meaningful data interpretation. We consider possible solutions to typical and often overlooked issues related to ambulatory emotion research, including aspects of study design decisions, recording devices and channels, electronic diary implementation, and data analysis.

Wilhelm, Frank H.; Grossman, Paul; M&#65533;Ller, Maren I. (2012):

Bridging the gap between the laboratory and the real world: Integrative ambulatory psychophysiology. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 210–234. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-012%26site%3dehost-live.

Abstract:

(from the chapter) In this chapter, shortly we introduce the scientific discipline of psychophysiology before we give an overview of psychophysiological assessment in real life. We then contrast the paradigms of ambulatory assessment and field experimentation with the very common laboratory experimentation. We consider the differential benefits of these approaches, as well as their unique pitfalls and difficulties, and argue for use of laboratory and field approaches in conjunction, as they are fundamentally complementary research approaches (Patry, 1982). We point out the necessity of (1) more frequent use of ambulatory approaches and (2) development of new, combined research strategies in order to gain data and insight from

different angles—strategies that are validated in the laboratory and close to daily life conditions at the same time (Fahrenberg, Myrtek, Pawlik, & Perrez, 2007). Finally, methods and instruments of ambulatory physiological measurement are presented. Difficulties of data collection and interpretation that are unique to each method are discussed, and possibilities to obviate them are presented. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Wilhelm, Peter; Perrez, Meinrad; Pawlik, Kurt (2012):

Conducting research in daily life: A historical review. In: Matthias R. Mehl und Tamlin S. Conner: Handbook of research methods for studying daily life.

Hg. v. Matthias R. Mehl und Tamlin S. Conner. New York, NY US: Guilford Press, S. 62–86. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-05165-004%26site%3dehost-live.

Abstract:

(from the chapter) Our aim in this chapter is to highlight the origins and important developments of major approaches for conducting research in daily life. Our focus is on different methods that have often been combined under the umbrella terms ecological momentary assessment (EMA; Stone & Shiffman, 1994; Stone, Shiffman, Atienza, & Nebeling, 2007) or ambulatory assessment (Fahrenberg, 1996a; Fahrenberg et al., 2007). Characteristic of these methods is that people's current experiences and behaviors are assessed repeatedly, in their natural environments, without or only with minimal latency. It would hardly be possible to give a comprehensive historical overview. Therefore, we have narrowed our focus on the development of three major approaches used to conduct research in daily life: (1) diaries and related methods to record everyday experiences and behaviors, (2) (psycho)physiological monitoring of heart activity, and (3) monitoring of physical activity and body movements. For these approaches, we have tried to capture technological beginnings, the circumstances under which they were first used, and factors that led to their further refinement. For more recent stages of research, we give selected examples or refer to literature reviews. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (chapter)

Willett, L. L.; Estrada, C. A.; Wall, T. C.; Coley, H. L.; Ngu, J.; Curry, W. et al. (2011):

Use of ecological momentary assessment to guide curricular change in graduate medical education.

In: *J Grad.Med.Educ.* 3 (2), S. 162–167. DOI: 10.4300/JGME-D-10-00165.1.

Abstract:

PURPOSE: To assess whether a novel evaluation tool could guide curricular change in an internal medicine residency program. METHOD: The authors developed an 8-item Ecological Momentary Assessment tool and collected daily evaluations from residents of the relative educational value of 3 differing ambulatory morning report formats (scale: 8 = best, 0 = worst). From the evaluations, they made a targeted curricular change and used the tool to assess its impact. RESULTS: Residents completed 1388 evaluation cards for 223 sessions over 32 months, with a response rate of 75.3%. At baseline, there was a decline in perceived educational value with advancing postgraduate (PGY) year for the overall mean score (PGY-1, 7.4; PGY-2, 7.2; PGY-3, 7.0; P < .01) and for percentage reporting greater than 2 new things learned (PGY-1, 77%; PGY-2, 66%; PGY-3, 50%; P < .001). The authors replaced the format of a lower scoring session with one of higher cognitive content to target upper-level residents. The new session's mean score improved (7.1 to 7.4; P = .03); the adjusted odds ratios before and after the change for percentage answering, "Yes, definitely" to "Area I need to improve" was 2.53 (95% confidence interval [CI], 1.45-4.42; P = .001) and to "Would recommend to others," it was 2.08 (95% CI, 1.12-3.89; P = .05). CONCLUSIONS: The Ecological Momentary Assessment tool successfully guided ambulatory morning report curricular changes and confirmed successful curricular impact. Ecological Momentary Assessment concepts of multiple, frequent, timely evaluations can be successfully applied in residency curriculum redesign

Willett, L.; Houston, T. K.; Heudebert, G. R.; Estrada, C. (2012):

Use of ecological momentary assessment to determine which structural factors impact perceived teaching quality of attending rounds.

In: *J Grad.Med Educ* 4 (3), S. 322–328. DOI: 10.4300/JGME-D-11-00265.1.

Abstract:

INTRODUCTION: Providing high-quality teaching to residents during attending rounds is challenging. Reasons include structural factors that affect rounds, which are beyond the attending's teaching style and control. OBJECTIVE: To develop a new evaluation tool to identify the structural components of ward rounds that most affect teaching quality in an internal medicine (IM) residency program. METHODS: The authors developed a 10-item Ecological Momentary Assessment (EMA) tool and collected daily evaluations for 18 months from IM residents rotating on inpatient services. Residents ranked the quality of teaching on rounds that day, and questions related to their service (general medicine, medical intensive care unit, and subspecialty services), patient census, absenteeism of team members, call status, and number of teaching methods used by the attending. RESULTS: Residents completed 488 evaluation cards over 18 months. This found no association between perceived teaching quality and training level, team absenteeism, and call status. We observed differences by service ($P < .001$) and patient census ($P = .009$). After adjusting for type of service, census was no longer significant. Use of a larger variety of teaching methods was associated with higher perceived teaching quality, regardless of service or census (P for trend < .001). CONCLUSIONS: The EMA tool successfully identified that higher patient census was associated with lower perceived teaching quality, but the results were also influenced by the type of teaching service. We found that, regardless of census or teaching service, attendings can improve their teaching by diversifying the number of methods used in daily rounds

Williamson, Pamela; Koro-Ljungberg, Mirka E.; Bussing, Regina (2009):

Analysis of critical incidents and shifting perspectives: transitions in illness careers among adolescents with ADHD.

In: *Qualitative health research* 19 (3), S. 352–365. DOI: 10.1177/1049732308329683.

Abstract:

Adolescence represents a developmental period during which the severity of mental health problems for children with attention deficit/hyperactivity disorder (ADHD) might change. It is a time when teens are consolidating their self-identity and possibly questioning the label of an ADHD diagnosis, treatment, and types of interventions. In this study we investigated the shared critical events related to help seeking reported by 8 teenagers with ADHD, their mothers, and their teachers and how the reported events and constructed shared focus on specific problems might explain teenagers' transitions in their illness careers. Data collected through a qualitative application of the experience sampling method illuminated diverse illness career transitions, including continuing treatment, transitioning from being treated to untreated or from being untreated to treated, and remaining untreated. Our findings support a model of shifting perspectives on illness and wellness among adolescents with ADHD, rather than a progression of adaptation to a chronic disorder.

Wilson, Sarah M.; Dedert, Eric A.; Dennis, Paul A.; Dennis, Michelle F.; Calhoun, Patrick S.; Kirby, Angela C.; Beckham, Jean C. (2014):

Do ethnicity and gender moderate the influence of posttraumatic stress disorder on time to smoking lapse?

In: *Addict Behav* 39 (7), S. 1163–1167. DOI: 10.1016/j.addbeh.2014.03.016.

Abstract:

BACKGROUND: Following a smoking cessation attempt, smokers with posttraumatic stress disorder (PTSD) experience smoking relapse at a higher and faster rate. Black ethnicity and female gender are also associated with lower success rates following smoking cessation. No study to date has prospectively examined how ethnicity and gender may moderate the effect of PTSD on smoking relapse. It was hypothesized that female gender and Black ethnicity would significantly predict early lapse after quitting; further, it was predicted that ethnicity and gender would moderate the effect of PTSD on relapse rate. METHODS: Smokers with PTSD (n=48) and without PTSD (n=56) completed ecological momentary assessment (EMA) the week after a quit date, and self-initiated EMA entries after smoking lapse. Smoking abstinence was biologically verified. The sample included Black (62%) and White (38%) participants, and was 50% female. Study hypotheses were tested with Cox proportional hazards regression modeling time to first smoking lapse. RESULTS: Study results confirmed the main hypothesis, with a significant PTSD x Ethnicity interaction emerging. The effect of PTSD on smoking relapse was significant for White participants but not for Black participants. No significant gender moderation was found. CONCLUSION: Taken together, study results support previous research, and suggest that the relationship between smoking and PTSD is stronger for White smokers than for minorities. This study has significant implications for research in smoking and mental disease, as well as for smoking cessation treatments for Black smokers.

Wilson, S. J.; Smyth, J. M.; MacLean, R. R. (2013):

Integrating Ecological Momentary Assessment and Functional Brain Imaging Methods: New Avenues for Studying and Treating Tobacco Dependence.

In: *Nicotine.Tob.Res.* (1462-2203 (Linking)). DOI: 10.1093/ntr/ntt129.

Abstract:

INTRODUCTION: Ecological momentary assessment (EMA) and related methods typically entail repeatedly and intensively sampling behavior as it occurs over time and under naturalistic conditions. Although the methodological features of EMA make it a highly valuable research technique in its own right, EMA can also be a potent counterpart to other approaches. One methodological partnership with substantial, yet largely untapped, potential for the study of tobacco dependence is the pairing of EMA with functional brain imaging. METHODS: The goal of this review is to outline the promise of this approach, with a focus on the combined use of EMA and functional magnetic resonance imaging (fMRI). Due to the unique and complementary strengths of each method, the merger of EMA and fMRI methods has the potential to advance the understanding of tobacco dependence in ways difficult or impossible to achieve through the use of either method in isolation. RESULTS: In addition to describing a conceptual basis for combining EMA with fMRI, we provide a preliminary empirical illustration of this integrative approach using data from an ongoing study. CONCLUSIONS: EMA and fMRI have independently yielded important findings regarding the nature and treatment of tobacco dependence. The integration of these powerful research methods, however, holds even greater potential for the field of tobacco research. In addition, recent advances are paving the way for the synergistic use of fMRI and EMA-based methods to develop innovative approaches to tobacco cessation

Winters, Meghan; Voss, Christine; Ashe, Maureen C.; Gutteridge, Kaitlyn; McKay, Heather; Sims-Gould, Joanie (2014):

Where do they go and how do they get there? Older adults' travel behaviour in a highly walkable environment.

In: *Soc Sci Med. DOI:* 10.1016/j.socscimed.2014.07.006.

Abstract:

Mobility-the ability to move about in one's neighbourhood and maintain independence-is essential for older adults' wellbeing. Neighbourhood environments support or hinder mobility especially as health declines and physical vulnerability increases with age. Linkages between mobility and planning and policy are key to designing age-friendly neighbourhoods with destinations that encourage older adults to get out and be physically active. We describe the mobility of older adults who live in a highly walkable neighbourhood. Specifically, we address the questions of 'where do older adults go?' (destinations) and 'how they get there?' (travel mode, physical activity). We recruited older adults (age 60+) who live in Vancouver's downtown core, an area acknowledged to be highly walkable (Walk Score(R): 94-97/100), and who leave their houses most days of the week. Participants (n = 184) recorded travel in diaries and wore an ActiGraph GT3X + accelerometer for 7 days during September to October 2012. We classified reported destinations according to the North American Industry Classification System, and analysed mobility [trip rates (overall and walking), steps, moderate to vigorous physical activity (MVPA)] and associations between travel and physical activity-related mobility measures. Key destinations were grocery stores (13.6% of trips), restaurants (7.2%), malls/marketplaces (5.5%), and others' homes (5.4%). Participants made 4.6 (std: 2.5) one-way trips/day, took 7910.1 (3871.1) steps/day, and accrued 39.2 (32.9) minutes/day of MVPA. Two-thirds of trips were by active modes (62.8% walk, 3.2% bike) and 22.4% were by car. Trip rates were significantly associated with physical activity outcomes. Older adults living in highly walkable neighbourhoods were very mobile and frequently used active transportation. Travel destinations signify the importance of nearby commercial and social opportunities, even in a highly walkable environment. The high rates of active travel and physical activity in a walkable neighbourhood suggest that when provided compelling destinations, community dwelling older adults walk more and may achieve health benefits through daily travel.

Withall, Janet; Stathi, Afroditi; Davis, Mark; Coulson, Jo; Thompson, Janice L.; Fox, Kenneth R. (2014):

Objective indicators of physical activity and sedentary time and associations with subjective well-being in adults aged 70 and over.

In: *Int J Environ Res Public Health* 11 (1), S. 643–656. DOI: 10.3390/ijerph110100643.

Abstract:

This study explored the associations of the volume and intensity of physical activity and the volume of sedentary time with subjective well-being in a diverse group of 228 older adults in the UK (111 female, mean age 78.2 years (SD 5.8)). Physical activity (PA) and sedentary behaviour were assessed by accelerometry deriving mean steps per day, mean moderate/vigorous PA

minutes per hour (MVPA min . h(-1)) and minutes of sedentary time per hour (ST min . h(-1)). Lower limb function was assessed by the Short Physical Performance Battery. Subjective well-being was assessed using the SF-12 health status scale, the Ageing Well Profile and the Satisfaction with Life Scale. Linear regressions were used to investigate associations between the independent variables which included physical activity (steps and MVPA), sedentary time, participant characteristics (gender, age, BMI, education, number of medical conditions), and lower limb function and dependent variables which included mental and physical well-being. Steps, MVPA and lower limb function were independently and moderately positively associated with perceived physical well-being but relationships with mental well-being variables were weak. No significant associations between sedentary behaviours and well-being were observed. The association between objectively evaluated physical activity and function and subjective evaluations of physical well-being suggest that improving perceptions of physical health and function may provide an important target for physical activity programmes. This in turn may drive further activity participation.

Witham, Miles D.; Donnan, Peter T.; Vadiveloo, Thenmalar; Sniehotta, Falko F.; Crombie, Iain K.; Feng, Zhiqiang; McMurdo, Marion E. T. (2014):

Association of day length and weather conditions with physical activity levels in older community dwelling people.

In: *PLoS One* 9 (1), S. e85331. DOI: 10.1371/journal.pone.0085331.

Abstract:

BACKGROUND: Weather is a potentially important determinant of physical activity. Little work has been done examining the relationship between weather and physical activity, and potential modifiers of any relationship in older people. We therefore examined the relationship between weather and physical activity in a cohort of older community-dwelling people. METHODS: We analysed prospectively collected cross-sectional activity data from community-dwelling people aged 65 and over in the Physical Activity Cohort Scotland. We correlated seven day triaxial accelerometry data with daily weather data (temperature, day length, sunshine, snow, rain), and a series of potential effect modifiers were tested in mixed models: environmental variables (urban vs rural dwelling, percentage of green space), psychological variables (anxiety, depression, perceived behavioural control), social variables (number of close contacts) and health status measured using the SF-36 questionnaire. RESULTS: 547 participants, mean age 78.5 years, were included in this analysis. Higher minimum daily temperature and longer day length were associated with higher activity levels; these associations remained robust to adjustment for other significant associates of activity: age, perceived behavioural control, number of social contacts and physical function. Of the potential effect modifier variables, only urban vs rural dwelling and the SF-36 measure of social functioning enhanced the association between day length and activity; no variable modified the association between minimum temperature and activity. CONCLUSIONS: In older community dwelling people, minimum temperature and day length were associated with objectively measured activity. There was little evidence for moderation of these associations through potentially modifiable health, environmental, social or psychological variables.

Witham, Miles D.; Ireland, Sheila; Houston, J. Graeme; Gandy, Stephen J.; Waugh, Shelley; MacDonald, Thomas M. et al. (2014):

Vitamin d therapy to reduce blood pressure and left ventricular hypertrophy in resistant hypertension: randomized, controlled trial.

In: *Hypertension* 63 (4), S. 706–712. DOI: 10.1161/HYPERTENSIONAHA.113.02177.

Abstract:

Low 25-hydroxyvitamin D levels are associated with higher prevalent blood pressure. We tested whether high-dose intermittent oral vitamin D therapy could reduce blood pressure and left ventricular mass in patients with hypertension resistant to conventional treatment. We conducted a parallel-group, double-blind, randomized placebo-controlled trial. Patients with supine office blood pressure >140/90 mm Hg on >/=3 antihypertensive agents received 100 000 U oral vitamin D3 or matching placebo every 2 months. Office and 24-hour ambulatory blood pressure, glucose, and cholesterol were measured at baseline, 2, 4, and 6 months; left ventricular mass index was measured by cardiac MRI on a subgroup at baseline and 6 months. The primary outcome was mean 24-hour ambulatory blood pressure at 6 months. A total of 68 participants were randomized, 34 in each group. Mean age was 63 (SD 11) years, mean baseline office blood pressure was 154/84 (13/10) mm Hg, and mean baseline 25-hydroxyvitamin D level was 42 (16) nmol/L. Treatment with vitamin D did not reduce 24-hour ambulatory blood pressure (adjusted treatment effects: systolic, +3 mm Hg; 95% confidence interval, -4 to +11; P=0.33; diastolic, -2 mm Hg; 95% confidence interval, -6 to +2; P=0.29); similar results were seen for office blood pressure. Left ventricular mass index was measured in a subgroup (n=25); no reduction was seen with vitamin D treatment (adjusted treatment effect, +4 g/m(2); 95% confidence interval, 0 to +7; P=0.04). There was no significant change in cholesterol or glucose levels. Thus, 6 months of intermittent, high-dose oral vitamin D3 did not reduce blood pressure or left ventricular mass in patients with resistant hypertension.

Witkiewitz, Katie; Desai, Sruti A.; Bowen, Sarah; Leigh, Barbara C.; Kirouac, Megan; Larimer, Mary E. (2014):

Development and evaluation of a mobile intervention for heavy drinking and smoking among college students.

In: *Psychol Addict Behav* 28 (3), S. 639–650. DOI: 10.1037/a0034747.

Abstract:

Nearly all college student smokers also drink alcohol, and smoking and heavy episodic drinking (HED) commonly co-occur. However, few studies have examined the factors that concurrently influence smoking and HED among college students and, to date, no interventions have been developed that target both HED and smoking in this population. The objective of the current study was to develop and evaluate a mobile feedback intervention that targets HED and smoking. Participants (N = 94) were non-treatment-seeking college students (Mage = 20.5 years, SD = 1.7) who engaged in at least a single HED episode in the past 2 weeks and reported concurrent smoking and drinking at least once a week. Participants were randomized to receive either the mobile intervention for 14 days, complete mobile assessments (without intervention) for 14 days, or complete minimal assessments (without intervention or mobile assessments). At a 1-month follow-up, compared with the minimal assessment condition, we observed significant reductions in the number of cigarettes per smoking day in both the mobile intervention (d = 0.55) and mobile assessment (d = 0.45) conditions. Among those randomized to the mobile intervention, receiving more modules of the intervention was significantly associated with a lower likelihood of any drinking during the 14-day assessment period and significant reductions in smoking at 1-month follow-up. The mobile intervention did not result in significant reductions in HED or concurrent smoking and drinking. Future research should continue to examine ways of using technology and the real-time environment to improve interventions for HED and smoking. (PsycINFO Database Record (c) 2014 APA, all rights reserved).

Wittmeier, Kristy Diane Marie; Mollard, Rebecca Christine; Kriellaars, Dean Johannes (2007):

Objective assessment of childhood adherence to Canadian physical activity guidelines in relation to body composition.

In: *Applied Physiology, Nutrition, and Metabolism* 32 (2), S. 217–224.

Abstract:

Low levels of childhood physical activity (PA) are a contributing factor to obesity. The objective of this study was to determine the adherence of children to PA guidelines in relation to body composition. Body fat (Slaughter equation) and body mass index (BMI) were determined during the school year (n = 251, ages 8-11 y). Daily energy expenditure (EE, kcal.kg-1.d-1) and activity time (AT, min.d-1) above moderate and vigorous intensity thresholds were assessed (accelerometry). Using EE criteria, 35.9% expended < 3.0 kcal.kg-1.d-1, 27.9% expended between 3.0 and 5.9 kcal.kg-1.d-1, 13.5% expended between 6.0 and 7.9 kcal.kg-1.d-1, and 22.9% expended >or= 8.0 kcal.kg-1.d-1. Using AT criteria, 52.2% accumulated < 30.0 min, 31.1% accumulated 30.0-59.9 min, 12.7% accumulated 60.0-89.9 min, and 4.0% accumulated >or=90.0 min of AT. The EE corresponding to accumulation of AT > 90 min was 14.8 kcal.kg-1.d-1. The AT corresponding to >or= 8 kcal.kg-1.d-1 was 73.0 min. Inverse relationships were observed between EE and body fat (p = 0.0004), BMI (p = 0.002), mass (p = 0.008), and fat mass index (FMI) (p = 0.001), as well as between AT and body fat (p = 0.001), BMI (p = 0.008), mass (p = 0.017), and FMI (p = 0.002). Controlling for BMI, FMI was inversely related to EE (p = 0.049) and AT (p = 0.039). Fat-free mass index and AT were positively related (p = 0.038). Physical activity had beneficial effects on body composition for children independent of BMI. The relationship between AT and daily EE guidelines was rationalized (60 min.d-1 with 8 kcal.kg-1.d-1) and demonstrated association with acceptable body composition. The 60 min.d-1 of moderate activity may be a more suitable initial target than 90 min.d-1, as so few children met the upper tiers of PA guidelines.

Wolfenstetter, A.; Simonetti, G. D.; Poschl, J.; Schaefer, F.; Wuhl, E. (2012):

Altered Cardiovascular Rhythmicity in Children Born Small for Gestational Age.

In: *Hypertension* (0194-911X (Linking)). DOI: 10.1161/HYPERTENSIONAHA.112.196949.

Abstract:

Low birth weight is frequently associated with a disproportionately high incidence of cardiovascular disease, diabetes mellitus, and kidney disease in adulthood. Epidemiological studies have identified an inverse association between low birth weight or being small for gestational age and hypertension in adulthood. We hypothesized that children born with low birth weight might have altered circadian and ultradian cardiovascular rhythmicity independent of the prevailing blood pressure level. Twenty-four-hour ambulatory blood pressure and heart rate rhythmicity was prospectively evaluated by Fourier analysis in a cohort of healthy children born with low birth weight and compared with normative pediatric data. Seventy-five children born small for gestational

age (mean age, 8.1+/-2.2 years) and 139 controls matched for age and sex were investigated. In addition to increased 24-hour, daytime, and especially nighttime blood pressure levels (P<0.05), children born small for gestational age exhibited blunted circadian (24-hour) and ultradian (12-, 8-, and 6-hour) blood pressure rhythmicity (P<0.05). In a multivariate analysis including children born with low birth weight and controls, being born with low birth weight independently influenced ultradian blood pressure rhythmicity, whereas in a multivariate analysis including children born with low birth weight only, circadian and ultradian rhythms were independently influenced by catch-up growth, gestational age, and blood pressure level. This study demonstrates blunted circadian and ultradian cardiovascular rhythmicity in prepubertal children born small for gestational age, independent from the presence of arterial hypertension. Circadian and ultradian rhythms may be sensitive indicators for detecting subtle early abnormalities of cardiovascular regulation

Wolfram, M.; Bellingrath, S.; Feuerhahn, N.; Kudielka, B. M. (2012):

Cortisol Responses to Naturalistic and Laboratory Stress in Student Teachers: Comparison with a Non-stress Control Day.

In: *Stress Health* (1532-3005 (Linking)). DOI: 10.1002/smi.2439.

Abstract:

Ambulatory assessments of hypothalamus-pituitary-adrenal axis responses to acute natural stressors yield evidence on stress regulation with high ecological validity. Sampling of salivary cortisol is a standard technique in this field. In 21 healthy student teachers, we assessed cortisol responses to a demonstration lesson. On a control day, sampling was repeated at analogous times. Additionally, the cortisol awakening response (CAR) was assessed on both days. Participants were also exposed to a laboratory stressor, the Trier Social Stress Test, and rated their individual levels of chronic work stress. In pre-to-post-stress assessment, cortisol levels declined after the lesson. However, post-stress cortisol levels were significantly higher compared with those on the control day. Also, the Trier Social Stress Test yielded higher cortisol responses when using the control day as reference baseline. Associations between the CAR and chronic stress measures were observed solely on the control day. There were no significant associations between cortisol responses to the natural and laboratory stressors. Our results indicate that a control day might be an important complement in laboratory but especially in ambulatory stress research. Furthermore, associations between chronic stress measures and the CAR might be obscured by acute stress exposure. Finally, responses to the laboratory stressor do not seem to mirror natural stress responses. Copyright (c) 2012 John Wiley & Sons, Ltd

Wonderlich, Stephen A.; Crosby, Ross D.; Engel, Scott G.; Mitchell, James E.; Smyth, Joshua; Miltenberger, Raymond (2007):

Personality-based clusters in bulimia nervosa: differences in clinical variables and ecological momentary assessment.

In: *Journal of Personality Disorders* 21 (3), S. 340–357.

Abstract:

The present study examined whether personality-based subgroups of bulimic individuals differed in eating disorder behavior, comorbid psychopathology, treatment history, and momentary assessments of mood and behavior. Participants completed an Ecological Momentary Assessment (EMA) protocol for a period of 2 weeks. Latent profile analysis on the Dimensional Assessment of Personality Pathology revealed 3 groupings of bulimic participants: Interpersonal-emotional, Stimulus seeking-hostile, and Low personality pathology. The personality-based groups differed in histories of mood, anxiety, substance use disorders, features of borderline personality disorder, treatment history, and several momentary measures. These findings suggest that personality variation within the bulimia nervosa diagnostic construct may be associated with meaningful conceptual and clinical differences, including daily experiences in the natural environment.

Wonderlich, Joseph A.; Lavender, Jason M.; Wonderlich, Stephen A.; Peterson, Carol B.; Crow, Scott J.; Engel, Scott G. et al. (2014):

Examining convergence of retrospective and ecological momentary assessment measures of negative affect and eating disorder behaviors.

In: *Int J Eat Disord*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-37436-001%26site%3dehost-live.

Abstract:

ABSTRACT Objective Data gathered via retrospective forms of assessment are subject to various recall biases. Ecological momentary assessment (EMA) is an alternative approach involving repeated momentary assessments within a participant's natural environment, thus reducing recall biases and improving ecological validity. EMA has been used in numerous prior studies examining various constructs of theoretical relevance to eating disorders. Method This investigation includes data from three previously published studies with distinct clinical samples: (a) women with anorexia nervosa (N = 118), (b) women with bulimia nervosa (N = 133), and (c) obese men and women (N = 50; 9 with current binge eating disorder). Each study assessed negative affective states and eating disorder behaviors using traditional retrospective assessments and EMA. Spearman rho correlations were used to evaluate the concordance of retrospective versus EMA measures of affective and/or behavioral constructs in each sample. Bland–Altman plots were also used to further evaluate concordance in the assessment of eating disorder behaviors. Results There was moderate to strong concordance for the measures of negative affective states across all three studies. Moderate to strong concordance was also found for the measures of binge eating and exercise frequency. The strongest evidence of concordance across measurement approaches was found for purging behaviors. Discussion Overall, these preliminary findings support the convergence of retrospective and EMA assessments of both negative affective states and various eating disorder behaviors. Given the advantages and disadvantages associated with each of these assessment approaches, the specific questions being studied in future empirical studies should inform decisions regarding selection of the most appropriate method. © 2014 Wiley Periodicals, Inc. (Int J Eat Disord 2014) (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Wonderlich, Stephen A.; Rosenfeldt, Steven; Crosby, Ross D.; Mitchell, James E.; Engel, Scott G.; Smyth, Joshua; Miltenberger, Raymond (2007):

The effects of childhood trauma on daily mood lability and comorbid psychopathology in bulimia nervosa.

In: *Journal of Traumatic Stress* 20 (1), S. 77–87.

Abstract:

A study of bulimic women examined the relationship between histories of childhood trauma and psychiatric disorders, as well as daily measures of mood and behavior. One hundred twenty-three women with bulimia nervosa were assessed with interviews and completed an Ecological Momentary Assessment (EMA) protocol in which they carried a palmtop computer for 2 weeks. Sexual abuse was associated with a history of mood and anxiety disorders, and emotional abuse with eating disorder psychopathology. In the EMA assessment, sexual abuse was associated with daily purging frequency and self-destructive behavior. Emotional abuse was associated with average daily mood and mood lability. These findings support the idea that child maltreatment may be associated with various aspects of bulimia-related psychopathology.

Woodiwiss, Angela J.; Molebatsi, Nomonde; Maseko, Muzi J.; Libhaber, Elena; Libhaber, Carlos; Majane, Olebogeng H. I. et al. (2009):

Nurse-recorded auscultatory blood pressure at a single visit predicts target organ changes as well as ambulatory blood pressure.

In: *J Hypertens* 27 (2), S. 287–297. DOI: 10.1097/HJH.0b013e328317a78f.

Abstract:

AIM\r\nTo determine whether high-quality nurse-recorded auscultatory blood pressure (BP) values obtained at a single visit predict cardiovascular target organ changes as closely as ambulatory BP measurements.\r\nMETHODS\r\nIn a randomly selected population sample (n = 458, 21% receiving antihypertensive treatment; approximately 40% hypertensive), we compared high-quality single visit nurse-recorded auscultatory BP values to same-day 24-h ambulatory BP in their ability to predict multiple target organ changes [left ventricular mass index (LVMI), left ventricle (LV) mean wall thickness (MWT), early-to-late transmitral velocity ratios (E/A), (echocardiography); log of urinary albumin-to-creatinine ratios (log ACR) (24-h urine samples); large artery dysfunction [carotid-femoral pulse wave velocity (PWV) and central augmentation index (AIc) (applanation tonometry)].\r\nRESULTS\r\nNurse-recorded systolic BP (SBP) measurements obtained at a single visit were as closely associated with LVMI (r = 0.44), LV MWT (r = 0.44), E/A (r = -0.55), log ACR (r = 0.20), PWV (r = 0.62) and AIc (r = 0.41) (P < 0.0001 for all relations) as was 24-h SBP (LVMI; r = 0.33, LV MWT; r = 0.37, E/A; r = -0.35, log ACR; r = 0.24, PWV; r = 0.41, and AIc; r = 0.18, P < 0.001 for all relations) and either day or night SBP. On multivariate regression analysis with both nurse-recorded SBP and 24-h SBP in the same model, nurse-recorded SBP was independently associated with LVMI (P = 0.006), LV MWT (P = 0.03), E/A (P < 0.02), PWV (P < 0.0001) and AIc (P = 0.0002), and 24-h SBP was independently and positively associated with log ACR (P < 0.005), and PWV (P = 0.01).\r\nCONCLUSION\r\nOne or more, high-quality single visit nurse-recorded auscultatory BP

measurements may be equally as effective as ambulatory BP in predicting target organ damage in a population sample of African ancestry.

Woodward, Steven H.; Arsenault, Ned J.; Voelker, Karin; Nguyen, Tram; Lynch, Janel; Leskin, Greg; Sheikh, Javaid (2007):

Estimating heart rate and RSA from the mattress-recorded kinetocardiogram.

In: *Psychophysiology* 44 (4), S. 635–638.

Abstract:

This article describes a method for extracting heart rate (HR) and respiratory sinus arrhythmia (RSA) from the kinetocardiogram (KCG) recorded from accelerometers embedded in a mattress topper. Validation has been performed via comparison with simultaneously recorded ECG. All-night estimates of HR and RSA magnitude derived from both methods were highly correlated. KCG-derived estimates of HR were slightly lower, and those of RSA magnitude higher, than those derived from ECG. These biases are consistent with the need to constrain KCG estimation to periods free of body movement. Mattress actigraphy represents a zero-burden method of obtaining intensive longitudinal indices of cardiac status.

Wright, L. B.; Gregoski, M. J.; Tingen, M. S.; Barnes, V. A.; Treiber, F. A. (2011):

Impact of Stress Reduction Interventions on Hostility and Ambulatory Systolic Blood Pressure in African American Adolescents.

In: *J Black.Psychol.* 37 (2), S. 210–233. DOI: 10.1177/0095798410380203.

Abstract:

This study examined the impact of breathing awareness meditation (BAM), life skills (LS) training, and health education (HE) interventions on self-reported hostility and 24-hour ambulatory blood pressure (ABP) in 121 African American (AA) ninth graders at increased risk for development of essential hypertension. They were randomly assigned to BAM, LS, or HE and engaged in intervention sessions during health class for 3 months. Before, after, and 3 months following intervention cessation, self-reported hostility and 24-hour ABP were measured. Results indicated that between pre- and postintervention, BAM participants displayed significant reductions in self-reported hostility and 24-hour systolic ABP. Reductions in hostility were significantly related to reductions in 24-hour systolic ABP. Between postintervention and follow-up, participants receiving LS showed a significant reduction in hostility but not in 24-hour ABP. Significant changes were not found for the HE group in 24-hour ABP or self-reported hostility, but these change scores were significantly correlated. The implications of the findings are discussed with regard to behavioral stress reduction programs for the physical and emotional health of AAs

Wright, Kim A.; Lam, Dominic; Brown, Richard G. (2008):

Dysregulation of the behavioral activation system in remitted bipolar I disorder.

In: *Journal of Abnormal Psychology* 117 (4), S. 838–848. DOI: 10.1037/a0013598.

Abstract:

The current study tests a prediction of the behavioral activation system (BAS) dysregulation theory of bipolar disorder, namely that following high levels of reward or frustration, individuals with bipolar disorder will take longer than will healthy controls to recover to baseline levels of BAS activity. Eighty individuals (40 with bipolar I disorder, currently euthymic; 40 with no history of affective disorder) completed a daily diary over a 28 day period. No differences were found between the 2 groups in terms of the relation among levels of reward or frustration experienced, magnitude of initial response, or time taken to recover. However, examination of the relation between number of previous episodes and time to recover revealed that history of mania was associated with prolonged activation following reward, whereas history of both mania and depression were associated with prolonged recovery following frustration. The findings do not support an association between lifetime diagnosis of bipolar disorder and slow recovery of BAS activity. Nevertheless, they offer tentative support for an association between number of previous episodes and slow recovery of BAS activity.

Wrzus, C.; Brandmaier, A. M.; Von, Oertzen T.; Muller, V.; Wagner, G. G.; Riediger, M. (2012):

A new approach for assessing sleep duration and postures from ambulatory accelerometry.

In: *PLoS One* 7 (10), S. e48089. DOI: 10.1371/journal.pone.0048089.

Abstract:

Interest in the effects of sleeping behavior on health and performance is continuously increasing-both in research and with the general public. Ecologically valid investigations of this research topic necessitate the measurement of sleep within people's natural living contexts. We present evidence that a new approach for ambulatory accelerometry data offers a convenient, reliable, and valid measurement of both people's sleeping duration and quality in their natural environment. Ninety-two participants (14-83 years) wore acceleration sensors on the sternum and right thigh while spending the night in their natural environment and following their normal routine. Physical activity, body posture, and change in body posture during the night were classified using a newly developed classification algorithm based on angular changes of body axes. The duration of supine posture and objective indicators of sleep quality showed convergent validity with self-reports of sleep duration and quality as well as external validity regarding expected age differences. The algorithms for classifying sleep postures and posture changes very reliably distinguished postures with 99.7% accuracy. We conclude that the new algorithm based on body posture classification using ambulatory accelerometry data offers a feasible and ecologically valid approach to monitor sleeping behavior in sizable and heterogeneous samples at home

Wrzus, Cornelia; Luong, Gloria; Wagner, Gert G.; Riediger, Michaela (2014):

Can’t Get It Out of My Head: Age Differences in Affective Responsiveness Vary With Preoccupation and Elapsed Time After Daily Hassles.

In: *Emotion*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-41985-001%26site%3dehost-live.

Abstract:

To better understand age differences in negative affective responses to daily hassles, the current study investigated how responses may depend on how much time has elapsed after the hassle and how much one still thinks about the hassle. In an experience-sampling approach with mobile phones, 397 participants aged 12 to 88 years reported their momentary activating (e.g., angry) and deactivating (e.g., disappointed) negative affect and occurrences of hassles, on average 55 times over 3 weeks. On measurement occasions when a hassle had occurred, participants also reported how long ago it occurred and how much they were currently preoccupied with thoughts about the hassle. Multilevel modeling results showed that, compared with more recent hassles, people across the entire age-range of the sample reported lower activating, yet higher deactivating, negative affect when hassles occurred a longer time ago. Age differences only emerged in situations when individuals were still preoccupied with a past hassle. In these situations, deactivating negative affect was higher with stronger preoccupation and more elapsed time after the hassles; these effects were more pronounced with older age. Activating negative affect was higher the more people reported being preoccupied with the hassle and this effect was also more pronounced with age. The results foster an understanding of age differences in negative affective responses to daily hassles by considering preoccupation with hassles and investigating activating and deactivating negative affect separately. We discuss under which circumstances affective responsiveness and age differences therein are more or less pronounced. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Wrzus, Cornelia; Wagner, Gert G.; Riediger, Michaela (2014):

Feeling good when sleeping in? Day-to-day associations between sleep duration and affective well-being differ from youth to old age.

In: *Emotion* 14 (3), S. 624–628. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-04653-001%26site%3dehost-live.

Abstract:

The current study investigated how night-to-night variations in sleep duration relate to affective well-being the next morning as well as how the relationship varies for people of different ages. Using an Experience Sampling approach, 397 participants aged 12 to 88 years reported their sleep duration and their momentary affect on 9 mornings, on average. Associations between sleep

duration during the previous night and morning affect differed depending on the participants' age. For adolescents, for example, affective well-being in the morning was worse the shorter participants had slept the previous night. For adults aged over 20 years, however, affective well-being was worse following nights with shorter or longer than average sleep duration. This effect was more pronounced the older the participants were. The findings demonstrate that the importance of sleep duration for daily affective well-being is better understood when considering the age of the sleeper. In adults, but not adolescents, not only sleeping less but also sleeping more than one's average can be associated with lower affective well-being. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)

Wu, Shaowei; Deng, Furong; Hao, Yu; Wang, Xin; Zheng, Chanjuan; Lv, Haibo et al. (2014):

Fine particulate matter, temperature, and lung function in healthy adults: Findings from the HVNR study.

In: *Chemosphere. DOI:* 10.1016/j.chemosphere.2014.01.032.

Abstract:

Both ambient particulate air pollution and temperature alterations have been associated with adverse human health effects, but the interactive effect of ambient particulate and temperature on human health remains uncertain. The present study investigated the effects of ambient particulate matter with an aerodynamic diameter2.5mum (PM2.5) and temperature on human lung function simultaneously in a panel of 21 healthy university students from the Healthy Volunteer Natural Relocation (HVNR) study in the context of suburban/urban air pollution in Beijing, China. Each study subject used an electronic diary meter to record peak expiratory flow (PEF) and forced expiratory volume in 1s (FEV1) twice a day for 6months in three periods before and after relocating from a suburban area to an urban area with changing ambient PM2.5 and temperature levels in Beijing. Hourly-averaged environmental data were obtained from central air-monitoring sites. Exposure effects were estimated using generalized linear mixed models controlling for potential confounders. Study subjects provided 6494 daily measurements on PEF and 6460 daily measurements on FEV1 over the study. PM2.5 was associated with reductions in evening PEF and morning/evening FEV1 whereas temperature was associated with reductions in morning PEF. The estimated PM2.5 effects on evening PEF and morning/evening FEV1 in the presence of high temperature were generally stronger than those in the presence of low temperature, and the estimated temperature effects on morning/evening PEF and morning FEV1 in the presence of high PM2.5 were also generally stronger than those in the presence of low PM2.5. For example, there were a 2.47% (95% confidence interval: -4.24, -0.69) reduction and a 0.78% (95% confidence interval: -1.59, 0.03) reduction in evening PEF associated with an interquartile range increase (78.7mug/m3) in PM2.5 at 4-d moving average in the presence of high temperature (21.6 degrees C) and low temperature (<21.6 degrees C), respectively. Our findings suggest that ambient particulate and temperature may interact synergistically to cause adverse respiratory health effects.

Wu, Cheng-Jung; Wu, Sheng-Yu; Chen, Po-Chun; Lin, Yaoh-Shiang (2014):

An innovative smartphone-based otorhinoendoscope and its application in mobile health and teleotolaryngology.

In: *J Med Internet Res* 16 (3), S. e71. DOI: 10.2196/jmir.2959.

Abstract:

BACKGROUND: The traditional otorhinoendoscope is widely used in the diagnosis of a variety of ear and nose diseases, but only one doctor can use it at a time. It is also very difficult to share observations from one doctor with another doctor. With advances in electronic health technology, the extended potential application of smartphones to support medical practice or mobile health has grown steadily. OBJECTIVE: The first phase of the study discussed how smartphones may be used for otorhinoscopic imaging and image management via an innovative adaptor. The second phase of the study was to evaluate the diagnostic capability of the smartphone-based otorhinoendoscope, as compared to the traditional otorhinoendoscope, and its application in mobile health and teleotolaryngology. METHODS: We designed a unique adaptor to connect the otorhinoendoscope and smartphone in order to perform smartphone-based otorhinoendoscopy. The main aim was to transform the smartphone into an otorhinoendoscope. We devised a method that would allow us to use the smartphone's camera to capture otorhinoscopic images. Using a freely available Web-based real-time communication application platform and the 3G (or WIFI) network, the smartphone-based otorhinoendoscope could synchronize the smartphone-based otorhinoscopic image with smartphones, tablet PCs, computer notebooks, or personal computers. RESULTS: We investigated the feasibility of telemedicine using a smartphone, tablet PC, and computer notebook. Six types of clinical otorhinoscopic images were acquired via the smartphone-based otorhinoendoscope from six patients, which were examined in this study. Three teleconsultants (doctors A, B, and C) reviewed the six types of clinical otorhinoscopic images and made a telediagnosis. When compared to the face-to-face diagnosis, which was made in-person via a traditional otorhinoendoscope, the three teleconsultants obtained scores of a correct primary telediagnosis 83% (5/6), 100% (6/6), and 100% (6/6) of the time, respectively. When the clinical data were provided, the

three teleconsultants obtained a correct secondary telediagnosis score of 100% (6/6), 100% (6/6), and 100% (6/6) of the time, respectively. CONCLUSIONS: The use of previously available technologies in the absence of any additional expensive devices could significantly increase the quality of diagnostics while lowering extraneous costs. Furthermore, this could also increase the connectivity between most isolated family doctors and remote referral centers.

Wuerzner, G.; Bochud, M.; Zweiacker, C.; Tremblay, S.; Pruijm, M.; Burnier, M. (2013):

Step Count is Associated With Lower Nighttime Systolic Blood Pressure and Increased Dipping.

In: *Am J Hypertens* 26 (4), S. 527–534. DOI: 10.1093/ajh/hps094.

Abstract:

BACKGROUND Higher nighttime blood pressure (BP) and the loss of nocturnal dipping of BP are associated with an increased risk for cardiovascular events. However, the determinants of the loss of nocturnal BP dipping are only beginning to be understood. We investigated whether different indicators of physical activity were associated with the loss of nocturnal dipping of BP. METHODS We conducted a cross-sectional study of 103 patients referred for 24-hour ambulatory monitoring of BP. We measured these patients' step count (SC), active energy expenditure (AEE), and total energy expenditure simultaneously, using actigraphs. RESULTS In our study population of 103 patients, most of whom were hypertensive, SC and AEE were associated with nighttime systolic BP in univariate (SC, r = -0.28, P < 0.01; AEE, r = -0.20, P = 0.046) and multivariate linear regression analyses (SC, coefficient beta = -5.37, P < 0.001; AEE, coefficient beta = -0.24, P < 0.01). Step count was associated with both systolic (r = 0.23, P = 0.018) and diastolic (r = 0.20, P = 0.045) BP dipping. Nighttime systolic BP decreased progressively across the categories of sedentary, moderately active, and active participants (125mm Hg, 116mm Hg, 112mm Hg, respectively; P = 0.002). The degree of BP dipping of BP increased progressively across the same three categories of activity (respectively 8.9%, 14.6%, and 18.6%, P = 0.002, for systolic BP and respectively 12.8%, 18.1%, and 22.2%, P = 0.006, for diastolic BP). CONCLUSIONS Step count is continuously associated with nighttime systolic BP and with the degree of BP dipping independently of 24-hour mean BP. The combined use of an actigraph for measuring indicators of physical activity and a device for 24-hour measurement of ambulatory BP may help identify patients at increased risk for cardiovascular events in whom increased physical activity toward higher target levels may be recommended

Wundersitz, Daniel W. T.; Netto, Kevin J.; Aisbett, Brad; Gastin, Paul B. (2013):

Validity of an upper-body-mounted accelerometer to measure peak vertical and resultant force during running and change-of-direction tasks.

In: *Sports Biomech* 12 (4), S. 403–412.

Abstract:

This study assessed the validity of a tri-axial accelerometer worn on the upper body to estimate peak forces during running and change-of-direction tasks. Seventeen participants completed four different running and change-of-direction tasks (0 degrees, 45 degrees, 90 degrees, and 180 degrees; five trials per condition). Peak crania-caudal and resultant acceleration was converted to force and compared against peak force plate ground reaction force (GRF) in two formats (raw and smoothed). The resultant smoothed (10 Hz) and crania-caudal raw (except 180 degrees) accelerometer values were not significantly different to resultant and vertical GRF for all running and change-of-direction tasks, respectively. Resultant accelerometer measures showed no to strong significant correlations (r = 0.00-0.76) and moderate to large measurement errors (coefficient of variation [CV] = 11.7-23.9%). Crania-caudal accelerometer measures showed small to moderate correlations (r = -0.26 to 0.39) and moderate to large measurement errors (CV = 15.0-20.6%). Accelerometers, within integrated micro-technology tracking devices and worn on the upper body, can provide a relative measure of peak impact force experienced during running and two change-of-direction tasks (45 degrees and 90 degrees) provided that resultant smoothed values are used.

Xia, Y.; Cheung, V.; Garcia, E.; Ding, H.; Karunaithi, M. (2011):

Development of an automated physical activity classification application for mobile phones.

In: *Stud.Health Technol.Inform.* 168 (0926-9630 (Linking)), S. 188–194. Online verfügbar unter PM:21893928.

Abstract:

BACKGROUND: Physical activity classification is an objective approach to assess levels of physical activity, and indicates an individual's degree of functional ability. It is significant for a number of the disciplines, such as behavioural sciences, physiotherapy, etc. Accelerometry is found to be a practical and low cost method for activity classification that could provide an objective and efficient measurement of people's daily activities. METHODS: This paper utilises a mobile phone with a built-in tri-axial accelerometer sensor to automatically classify normal physical activities. A rule-based activity classification model, which can recognise 4 common daily activities (lying, walking, sitting, and standing) and 6 transitions between postural orientations, is introduced here. In this model, three types of statuses (walking/ transition, lying, and sitting/standing) are first classified based on the kinetic energy and upright angle. Transitions are then separated from walking and assigned to the corresponding type using upright angle algorithm. To evaluate the performance of this developed application, a trial is designed with 8 healthy adult subjects, who are required to perform a 6-minute activity routine with an iPhone fixed at the waist position. RESULTS: Based on the evaluation result, our application measures the length of time of each activity accurately and the achieved sensitivity of each activity classification exceeds 90% while the achieved specificity exceeds 96%. Meanwhile, regarding the transition identification, the sensitivities are high in stand-to-sit (80%) and low in sit-to-stand (56%)

Xu, Hong; Huang, Xiaoyan; Riserus, Ulf; Cederholm, Tommy; Lindholm, Bengt; Arnlov, Johan; Carrero, Juan Jesus (2014):

Urinary albumin excretion, blood pressure changes and hypertension incidence in the community: effect modification by kidney function.

In: *Nephrol Dial Transplant. DOI:* 10.1093/ndt/gfu057.

Abstract:

BACKGROUND: Both increased albuminuria and reduced kidney function may predict blood pressure (BP) progression in the community, while they exacerbate each other's effects. We investigated associations and interactions between these two risk factors, BP changes and hypertension incidence in community-dwelling elderly men. METHODS: Observational study from the Uppsala Longitudinal Study of Adult Men, which included 1051 men (all aged 71 years) with assessments on urinary albumin excretion rate (UAER), 24-hour ambulatory BP monitoring (ABPM) and cystatin-C estimated glomerular filtration rate (eGFR). Of these, 574 men attended re-examination after 6 years, and ABPM measurements were again recorded to assess blood pressure changes and hypertension incidence. RESULTS: UAER was found to be associated with ABPM measurements both at baseline and longitudinally. In longitudinal analysis, there were significant interactions between UAER and kidney function in its association with the changes of systolic BP, mean arterial pressure and pulse pressure. After stratification for renal function state, UAER independently predicted BP changes only in those who had eGFR <60 mL/min/1.73 m2. At re-examination, 71 new cases of hypertension were recorded. In multivariable logistic models, similar interactions were observed on hypertension incidence: UAER was an independent predictor of incident hypertension only in those with reduced renal function. These associations were evident also in the subpopulation of non-diabetics and in participants with normal range UAER (<20 microg/min). CONCLUSIONS: In community-dwelling elderly men, UAER associates with BP progression and hypertension incidence, even within the normal range. Concurrent reduction of renal function modifies and exacerbates these associations.

Yakhia, Maja; Konig, Alexandra; van der Flier, Wiesje M; Friedman, Leah; Robert, Philippe H.; David, Renaud (2014):

Actigraphic Motor Activity in Mild Cognitive Impairment Patients Carrying Out Short Functional Activity Tasks: Comparison between Mild Cognitive Impairment with and without Depressive Symptoms.

In: *J Alzheimers Dis. DOI:* 10.3233/JAD-131691.

Abstract:

Background: Individuals with mild cognitive impairment (MCI) may exhibit changes in motor activity in conducting their activities of daily living. Depression, one of the most frequent neuropsychiatric symptoms, might affect motor activity in MCI. Objective: To assess motor activity in MCI subjects carrying out short functional activity tasks using ambulatory actigraphy. Secondly, we sought to investigate the influence of depressive symptoms on motor activity. Methods: 20 MCI and 14 healthy subjects carried out a 30-minute standardized scenario while wearing a chest actigraph. The protocol consisted of directed activities (execution of motor tasks), semi-directed activities (execution of Instrumental Activities of Daily Living, IADL), and undirected 'free' activities. Several common assessment scales (GDS, MADRS, and NPI) were used to diagnose depression. Results: MCI subjects had significantly reduced mean motor activity while carrying out directed and semi-directed activities, compared to healthy control subjects. No difference was found in motor activity between MCI subjects with or without depression. Conclusion: Actigraphic measurement of motor activity during the evaluation of IADLs and motor tasks is a potential objective tool in detecting early changes in MCI. Depressive symptoms seem not to be associated with motor activity in MCI subjects.

Yalachkov, Yavor; Kaiser, Jochen; Naumer, Marcus J. (2012):

Functional neuroimaging studies in addiction: Multisensory drug stimuli and neural cue reactivity.

In: *Neuroscience and Biobehavioral Reviews* 36 (2), S. 825–835. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-02186-007&site=ehost-live;Yalachkov@med.uni-frankfurt.de.

Abstract:

Neuroimaging studies on cue reactivity have substantially contributed to the understanding of addiction. In the majority of studies drug cues were presented in the visual modality. However, exposure to conditioned cues in real life occurs often simultaneously in more than one sensory modality. Therefore, multisensory cues should elicit cue reactivity more consistently than unisensory stimuli and increase the ecological validity and the reliability of brain activation measurements. This review includes the data from 44 whole-brain functional neuroimaging studies with a total of 1168 subjects (812 patients and 356 controls). Correlations between neural cue reactivity and clinical covariates such as craving have been reported significantly more often for multisensory than unisensory cues in the motor cortex, insula and posterior cingulate cortex. Thus, multisensory drug cues are particularly effective in revealing brain–behavior relationships in neurocircuits of addiction responsible for motivation, craving awareness and self-related processing. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Yamaguchi, Yoshitaka; Wada, Manabu; Sato, Hidenori; Nagasawa, Hikaru; Koyama, Shingo; Takahashi, Yoshimi et al. (2014):

Impact of Ambulatory Blood Pressure Variability on Cerebral Small Vessel Disease Progression and Cognitive Decline in Community-Based Elderly Japanese.

In: *Am J Hypertens. DOI:* 10.1093/ajh/hpu045.

Abstract:

BACKGROUND: Recent epidemiological studies reported a relationship between 24-hour ambulatory blood pressure (ABP) variability and cardiovascular events. However, the impact of ABP variability on small vessel disease (SVD) progression or cognitive decline in the elderly has seldom been investigated in community-based longitudinal studies. METHODS: Subjects (n = 210) underwent ABP monitoring, brain magnetic resonance imaging (MRI), and cognitive testing at baseline and 4 years later. ABP variability was quantified by the SD, weighted SD, coefficient of variation (CV), and average real variability (ARV). ABP variability parameters were divided into 2 groups by median values. RESULTS: Multivariable logistic regression analyses showed that higher systolic CV, diastolic weighted SD, and diastolic CV were significant predictors of SVD progression (P = 0.02, 0.03, and 0.02, respectively). In subjects with SVD on the first MRI, higher systolic and diastolic ARV also predicted progression (P = 0.04 and 0.03, respectively). Higher quartiles of systolic weighted SD and CV had higher incidences of SVD progression (P trend = 0.03 and 0.03, respectively, Cochran-Armitage test), and higher quartiles of systolic ARV had higher incidences of SVD progression in subjects with SVD on the first MRI (P trend = 0.03). Higher systolic ARV was an independent predictor of cognitive decline (P < 0.01), and higher tertiles of systolic ARV had higher incidences of cognitive decline (P trend = 0.02). CONCLUSIONS: This community-based longitudinal study found that increased ABP variability was associated with SVD progression, particularly in individuals with SVD at baseline. Higher systolic ARV predicted SVD progression and cognitive decline.

Yamasaki, Akira; Kawasaki, Yuji; Takeda, Kenichi; Harada, Tomoya; Fukushima, Takehito; Takata, Miki et al. (2014):

The relationships among sleep efficiency, pulmonary functions, and quality of life in patients with asthma.

In: *Int J Gen Med* 7, S. 505–512. DOI: 10.2147/IJGM.S72713.

Abstract:

BACKGROUND: Sleep disturbance is commonly observed in patients with asthma, especially in those with poorly controlled asthma. Evaluating sleep quality to achieve good control of asthma is important since nocturnal asthmatic symptoms such as cough, wheezing, and chest tightness may disturb sleep. Actigraphy is an objective, ambulatory monitoring method for tracking a patient's sleep and wake activities and for assessing sleep quality, as reflected by total sleep time, sleep efficiency, duration of awakening after sleep onset (WASO), and sleep onset latency. PATIENTS AND METHODS: Fifty patients with asthma were enrolled in this study. Sleep quality was assessed employing wristwatch-type actigraphy (Actiwatch 2). The level of asthma control was assessed by the Asthma Control Questionnaire (ACQ), and asthma-related quality of life was assessed by the Asthma Quality of Life Questionnaire (AQLQ). The parameters for sleep quality were compared using ACQ scores, AQLQ scores, and pulmonary function test results. RESULTS: The total sleep time was 387.2 minutes, WASO was 55.8 minutes, sleep efficiency was

87.01%, sleep onset latency was 8.17 minutes, and the average ACQ was 0.36. Neither sleep efficiency nor WASO correlated with respiratory functions, ACQ scores, or AQLQ scores. CONCLUSION: Sleep-related parameters assessed by actigraphy in well-controlled asthma do not correlate with pulmonary functions, the asthma control level, or daytime quality of life. Sleep quality should be evaluated independently when asthma is well-controlled.

Yamazaki, Toshiaki; Gen-No, Hirokazu; Kamijo, Yoshi-Ichiro; Okazaki, Kazunobu; Masuki, Shizue; Nose, Hiroshi (2009):

A new device to estimate VO2 during incline walking by accelerometry and barometry.

In: *Med Sci Sports Exerc* 41 (12), S. 2213–2219. DOI: 10.1249/MSS.0b013e3181a9c452.

Abstract:

PURPOSE\r\nTo examine whether the biased estimation of oxygen consumption rate (VO2, mL x kg(-1) x min(-1)) by accelerometry during incline walking can be improved by the addition of altitude changes as measured by barometry.\r\nMETHODS\r\nWe measured VO2 by respiratory gas analysis and vector magnitude (VM, G) from triaxial accelerations in 42 healthy people (mean +/- SD age = 63 +/- 7 yr) during graded walking on a treadmill while the incline was varied from -15% to +15%. They walked at subjectively slow, moderate, and fast speeds on level and uphill inclines and, in addition to these, at their fastest speed at 0% incline. They then walked at approximately 3, 4, and 5 km x h(-1) on downhill inclines for 3 min each. We determined a regression equation to estimate VO2 from VM and theoretical vertical upward (Hu, m x min(-1)) and downward speeds (Hd, m x min(-1)) for the last 1 min of each trial. To validate the precision of the equation, we measured VM and altitude changes with a portable device equipped with a triaxial accelerometer and a barometer in 11 of the 42 subjects walking on an outdoor hill and compared the estimated VO2 with the value simultaneously measured by respiratory gas analysis.\r\nRESULTS\r\nVO2 above resting was estimated from VO2 = 0.044 VM + 1.365 Hu + 0.553 Hd (r = 0.93, P < 0.001) and the estimated V O2(y) was almost identical to the measured VO2(x) (y = 0.97x, r = 0.88, P < 0.001) with a mean difference of -0.20 +/- 3.47 (mean +/- SD) by Bland-Altman analysis in the range of 2.0-33.0 mL x kg(-1) x min(-1).\r\nCONCLUSIONS\r\nVO2 during walking on various inclines can be precisely estimated by using the device equipped with a triaxial accelerometer and a barometer.

Yameogo, N. V.; Samadoulougou, A. K.; Kagambega, L. J.; Millogo, G. R. C.; Yameogo, A. A.; Kologo, K. J. et al. (2014):

Epidemiological characteristics and clinical features of black African subject's resistant hypertension.

In: *Ann Cardiol Angeiol (Paris). DOI:* 10.1016/j.ancard.2014.01.002.

Abstract:

INTRODUCTION: Few studies in sub-Saharan Africa were interested in resistant hypertension. The objectives of this study were to determine the frequency of resistant hypertension in hypertensive black African population, and to describe its clinical and therapeutic features. PATIENTS AND METHODS: From May 1, 2010 to May 31, 2012, we included consecutively hypertensive followed in two hospitals in the city of Ouagadougou, under antihypertensive treatment at optimum dose and observant. Patients whose blood pressure was uncontrolled despite a triple antihypertensive therapy at the optimal dose including a diuretic associated with dietary measures have received ambulatory blood pressure monitoring. Following this examination, patients whose blood pressure was >/=135/85mmHg during the day and/or >/=120/70mmHg at night were considered resistant hypertension. We investigated the cardiovascular risk factors as well as target organ damages. We combined spironolactone 50mg in treatment when absence of contra-indication appreciated the evolution of blood pressure under this treatment. The measurement of plasma renin activity was not performed. Statistical analysis was performed using SPSS Version 17 for Windows. RESULTS: We included 692 patients with 14.6% of resistant hypertension. The average age of patients was 54.8+/-11.1years in the general population, 56.5+/-11.8years in the subgroup of non-resistant hypertension and 64.2+/-5.4years in the subgroup of resistant hypertension. The symptoms were represented by headache (11.9%), dizziness (9.9%) and chest pain (8.9%). Modifiable cardiovascular risk factors were dominated by dyslipidemia, diabetes and obesity/overweight. These risk factors were significantly more frequent in the subgroup of resistant hypertension. The global cardiovascular risk was high in 24.9% of cases in the general population, 22.5% in the subgroup of non-resistant hypertension and 38.6% in the subgroup of resistant hypertension. The target organ damages were significantly more frequent in the same subgroup of resistant hypertension. After addition of spironolactone, 21.8% of resistant hypertensive patients were controlled. CONCLUSION: This study shows that resistant hypertension is common in black Africans. It is mostly subjects of the sixth decade, with limited economic income and living in rural areas. In the absence of contra-indication, spironolactone contributed to decrease the morbidity of this pathology.

Yan, Iris Renfei; Poon, Carmen Chung Yan; Zhang, Yuan-Ting (2009):

Evaluation scale to assess the accuracy of cuff-less blood pressure measuring devices.

In: *Blood Press Monit* 14 (6), S. 257–267. DOI: 10.1097/MBP.0b013e328330aea8.

Abstract:

OBJECTIVE\r\nThe call for early detection of hypertension and cardiac events creates a heavy demand for devices that can be used for blood pressure (BP) monitoring at home and in ambulatory settings. An emerging type of BP monitors without an occluding cuff has drawn great attentions for this application because it is comfortable and capable of providing continuous readings. For the development the cuff-less devices, it is crucial for the clinicians and engineers to joint efforts in establishing an evaluation standard.\r\nMETHODS\r\nThis study attempts to contribute to its initiation in two ways. First, a new distribution model for measurement differences between the test device and the reference was proposed. We verified the model using evaluation results from 40 devices, of which 80% of the American Association for the Advancement of Medical Instrumentation and British Hypertension Society reporting results were in agreement, as compared with 50%, if the original normal model was used. We further tested a cuff-less device on 85 patients for 999 datasets and found that the differences between the proposed distribution and that of the device were nonsignificant for systolic BP measurements (Kolmogorov-Smirnov = 0.036, P = 0.15). Second, some evaluation scales were studied for their capability to assess the accuracy of cuff-less devices. For mean absolute difference, a map was developed to relate it with the criteria of American Association for the Advancement of Medical Instrumentation, British Hypertension Society, and European Society of Hypertension protocols, on the basis of the proposed distribution model; for mean absolute percentage difference, it is prominent in evaluating devices that have measurement errors often increasing with BP, which is an issue has not been fully explored in existing standards.\r\nCONCLUSION\r\nThis study focused on the statistical aspect of establishing standard to assess the accuracy of cuff-less BP measuring devices. The results of our study on the validation reports of various cuff-based devices and an experimental study on a cuff-less device showed that the t4 distribution is better than the normal distribution in portraying the underlying error distribution of both kinds of devices. Moreover, based on both the theoretical and experimental studies, mean absolute difference or mean absolute percentage difference is recommended as continuous scale to assess the accuracy of cuff-less devices for their own distinctive advantages.

Yang, Che-Chang; Hsu, Yeh-Liang (2009):

Development of a wearable motion detector for telemonitoring and real-time identification of physical activity.

In: *Telemed J E Health* 15 (1), S. 62–72. DOI: 10.1089/tmj.2008.0060.

Abstract:

Characteristics of physical activity are indicative of one's mobility level, latent chronic diseases, and aging process. Current research has been oriented to provide quantitative assessment of physical activity with ambulatory monitoring approaches. This study presents the design of a portable microprocessor-based accelerometry measuring device to implement real-time physical activity identification. An algorithm was developed to process real-time tri-axial acceleration signals produced by human movement to identify targeted still postures, postural transitions, and dynamic movements. Fall detection was also featured in this algorithm to meet the increasing needs of elderly care in free-living environments. High identification accuracy was obtained in performance evaluation. This device is technically viable for telemonitoring and real-time identification of physical activity, while providing sufficient information to evaluate a person's activity of daily living and her/his status of physical mobility. Limitations regarding real-time processing and implementation of the system for telemonitoring in the home environment were also observed.

Yang, C. C.; Hsu, Y. L.; Shih, K. S.; Lu, J. M. (2011):

Real-Time Gait Cycle Parameter Recognition Using a Wearable Accelerometry System.

In: *Sensors.(Basel)* 11 (8), S. 7314–7326. DOI: 10.3390/s110807314.

Abstract:

This paper presents the development of a wearable accelerometry system for real-time gait cycle parameter recognition. Using a tri-axial accelerometer, the wearable motion detector is a single waist-mounted device to measure trunk accelerations during walking. Several gait cycle parameters, including cadence, step regularity, stride regularity and step symmetry can be estimated in real-time by using autocorrelation procedure. For validation purposes, five Parkinson's disease (PD) patients and five young healthy adults were recruited in an experiment. The gait cycle parameters among the two subject groups of different mobility can be quantified and distinguished by the system. Practical considerations and limitations for implementing the autocorrelation procedure in such a real-time system are also discussed. This study can be extended to the future attempts in real-time

detection of disabling gaits, such as festinating or freezing of gait in PD patients. Ambulatory rehabilitation, gait assessment and personal telecare for people with gait disorders are also possible applications

Yano, Y.; Kario, K. (2012):

Nocturnal blood pressure and cardiovascular disease: a review of recent advances.

In: *Hypertens.Res.* (0916-9636 (Linking)). DOI: 10.1038/hr.2012.26.

Abstract:

The accurate measurement, prediction and treatment of high blood pressure (BP) are essential issues in the management of hypertension. Ambulatory blood pressure monitoring (ABPM) has been shown to be superior to clinic BP measurements as ABPM can provide the following important information: (i) the mean BP levels, (ii) the diurnal variation in BP and (iii) the short-term BP variability. Among these parameters, there is increasing evidence that the mean nocturnal BP level is the most sensitive predictor of cardiovascular morbidity and mortality. Furthermore, several studies have shown that less nocturnal BP dipping, defined as less nocturnal BP decline relative to daytime BP, or a high night-day BP ratio was associated with poor prognosis irrespective of the 24-hour BP levels. These findings can be interpreted in at least two ways: namely, high nocturnal BP or less nocturnal BP dipping might be not only a potent risk factor for cardiovascular disease (CVD), but also a marker of pre-existing or concurrent diseases that can lead to nocturnal BP elevation. In this review, we consider the clinical utility of ABPM and in particular focus on the nocturnal BP levels or nocturnal BP dipping as a potent risk factor for CVD. In addition, the clinical management of high nocturnal BP and blunted nocturnal BP dipping with antihypertensive medications is discussed.Hypertension Research advance online publication, 1 March 2012; doi:10.1038/hr.2012.26

Yeh, V. M.; McCarthy, D. E.; Baker, T. B. (2012):

An Ecological Momentary Assessment Analysis of Prequit Markers for Smoking-Cessation Failure.

In: *Exp.Clin.Psychopharmacol.* (1064-1297 (Linking)). DOI: 10.1037/a0029725.

Abstract:

This study aimed to identify correlates of smoking-cessation failure, a failure to establish abstinence during a quit-smoking attempt. Identifying risk factors for early failure could facilitate the development of tailored interventions to promote cessation. The current study used existing ecological momentary assessment (EMA) data to investigate the extent to which prequit craving, negative affect, and recent smoking were associated with cessation failure in 374 smokers (189, 50.5% female). Subjects were prompted to complete 4-7 real-time reports of craving, negative affect, and recent smoking daily in the four days prior to quitting. Multilevel models of craving and negative affect (mean level, growth, volatility, and association with smoking) were estimated. Results indicated that recent smoking was associated with significantly lower craving among smokers who failed to quit than those who achieved a full day of cessation, but this held only among smokers who reduced smoking by at least 10% in the days preceding the quit attempt. Smokers who failed to quit on the quit day also experienced slower increases in negative affect in the days preceding the quit attempt than did initial abstainers, but delayed quitters and delayed cessation failures did not differ in negative-affect trajectories. These results suggest that successful abstainers and cessation failures can be differentiated by specific dimensions of prequit craving and negative-affect experiences, but the effects hold only in certain circumstances. (PsycINFO Database Record (c) 2012 APA, all rights reserved)

Yeung, Dannii Y.; Fung, Helene H. (2012):

Impacts of suppression on emotional responses and performance outcomes: An experience-sampling study in younger and older workers.

In: *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences* 67B (6), S. 666–676. DOI: 10.1037/t06463-000;

Abstract:

Objectives: Past studies have demonstrated that older adults used less emotional suppression to regulate their emotions than did younger adults, but the effectiveness of using this emotion regulatory strategy on psychosocial well-being across age remains largely unexplored. The present study adopted an experience-sampling method to examine whether the impacts of momentary employment of emotional suppression on momentary positive and negative emotions and job performance would be different by age. Method: Eighty-seven Chinese insurance workers, aged between 18 and 61 years, participated in a 5-day

sampling study. Their affective responses at work, momentary task performance, and sales productivity were recorded. Results: Results showed that older workers' greater use of suppression at work was associated with lower intensity of negative emotions, whereas such association was not found among younger workers. Moreover, greater use of suppression over the sampling period was significantly predictive of sales productivity of older workers, but such a positive association was not shown in younger workers. Discussion: These findings reveal that the use of suppression at work may be more effective for older workers than for younger workers. (PsycINFO Database Record (c) 2012 APA, all rights reserved) (journal abstract)

Yeung, D. Y.; Fung, H. H. (2012):

Impacts of Suppression on Emotional Responses and Performance Outcomes: An Experience-Sampling Study in Younger and Older Workers.

In: *J.Gerontol.B Psychol.Sci.Soc.Sci.* (1079-5014 (Linking)). DOI: 10.1093/geronb/gbr159.

Abstract:

Objectives.Past studies have demonstrated that older adults used less emotional suppression to regulate their emotions than did younger adults, but the effectiveness of using this emotion regulatory strategy on psychosocial well-being across age remains largely unexplored. The present study adopted an experience-sampling method to examine whether the impacts of momentary employment of emotional suppression on momentary positive and negative emotions and job performance would be different by age.Method.Eighty-seven Chinese insurance workers, aged between 18 and 61 years, participated in a 5-day sampling study. Their affective responses at work, momentary task performance, and sales productivity were recorded. RESULTS: Results showed that older workers' greater use of suppression at work was associated with lower intensity of negative emotions, whereas such association was not found among younger workers. Moreover, greater use of suppression over the sampling period was significantly predictive of sales productivity of older workers, but such a positive association was not shown in younger workers.Discussion.These findings reveal that the use of suppression at work may be more effective for older workers than for younger workers

Yeung, D. Y.; Fung, H. H.; Chan, D. K. (2013):

Positive Effect of Social Work--Related Values on Work Outcomes: The Moderating Role of Age and Work Situation.

In: *J.Gerontol.B Psychol.Sci.Soc.Sci.* (1079-5014 (Linking)). DOI: 10.1093/geronb/gbt094.

Abstract:

Objectives. This study investigated the effect of social work-related values on job performance through job satisfaction and tested whether age and work situation would moderate such associations.Methods. This study consists of two parts: Part 1 is a cross-sectional survey among 299 Chinese clerical employees aged 19-60 years and Part 2 is a 14-day experience sampling study in a subsample of Part 1 (N = 67).Results and Discussion. Part 1 revealed that age moderated the effect of social work-related values on job performance through job satisfaction, with a stronger positive effect in older workers than in younger workers. Part 2 demonstrated that the moderating effect of age shown in Part 1 also varied across work situations. In particular, holding momentary social work-related values was beneficial to the task performance of older workers, and the effect was significantly stronger when they were in social situations than in nonsocial situations, whereas the effect remained weak among younger workers regardless of work context. Moreover, the moderating effect of age could be accounted for by future time perspective. This study supports socioemotional selectivity theory that goal orientation shifts toward the emphasis of interpersonal closeness when one perceives future time as increasingly limited

Yip, Gabriel W. K.; Li, Albert M.; So, Hung-Kwan; Choi, Kai C.; Leung, Lettie C. K.; Fong, Nai-Chung et al. (2014):

Oscillometric 24-h ambulatory blood pressure reference values in Hong Kong Chinese children and adolescents.

In: *J Hypertens* 32 (3), S. 606–619. DOI: 10.1097/HJH.0000000000000062.

Abstract:

OBJECTIVES: We aimed to establish community-based normal reference values of 24-h ambulatory blood pressure monitoring (ABPM) for Chinese children and adolescents. Furthermore, we investigated how excluding overweight children affects BP percentiles and compared them with German references. METHODS: In this territory-wide cross-sectional prospective cohort

study, 1445 Hong Kong Chinese children and adolescents aged 8-17 years with body height between 119 and 185 cm were recruited. Their ABPM assessment was performed using validated arm oscillometric recorders (A&D TM-2430) and complied with American Heart Association's recommendations. The reference tables were constructed using the LMS method to normalize skewed distribution of ABP data to sex and age or height. RESULTS: The ambulatory BP was higher among boys and the difference between boys and girls progressively widened with age. An increasing trend in daytime and night-time SBP and DBP with age and height was observed in both sexes. The age-specific and sex-specific 95th percentiles from nonoverweight children (n=1147; 79%) were lower than the whole cohort by up to 2.5 and 1 mmHg for SBP and DBP, respectively. In comparison, our overall and nonoverweight reference standards were generally higher than corresponding German references. CONCLUSION: The study provides ambulatory BP standards for Chinese children, with sex-related age-specific and height-specific percentiles. Further longitudinal studies are required for investigating its clinical utility in Chinese.

Yogarajah, M.; Powell, H. W. R.; Heaney, D.; Smith, S. J. M.; Duncan, J. S.; Sisodiya, S. M. (2009):

Long term monitoring in refractory epilepsy: the Gowers Unit experience.

In: *Journal of neurology, neurosurgery, and psychiatry* 80 (3), S. 305–310. DOI: 10.1136/jnnp.2008.144634.

Abstract:

INTRODUCTION\r\nGuidelines from the National Institute for Health and Clinical Excellence (NICE) and the International League Against Epilepsy recommend long term EEG monitoring (LTM) in patients for whom seizure or syndrome type is unclear, and in patients for whom it is proving difficult to differentiate between epilepsy and non-epileptic attack disorder (NEAD). The purpose of this study was to evaluate this recommended use of LTM in the setting of an epilepsy tertiary referral unit.\r\nMETHODS\r\nThis study reviewed the case notes of all admissions to the Sir William Gowers Unit at the National Society for Epilepsy in the years 2004 and 2005. A record was made of the type, duration and result of all LTM performed both prior to and during the admission. Pre- and post-admission diagnoses were compared, and patients were divided according to whether LTM had resulted in a change in diagnosis, refinement in diagnosis or no change in diagnosis. The distinction between change and a refinement in the diagnosis was made on the basis of whether or not this alteration resulted in a change in management.\r\nRESULTS\r\n612 patients were admitted during 2004 and 2005, 230 of whom were referred for diagnostic clarification. Of these, LTM was primarily responsible for a change in diagnosis in 133 (58%) and a refinement of diagnosis in 29 (13%). In 65 (29%) patients the diagnosis remained the same after LTM. In those patients in whom there was a change in diagnosis, the most common change was in distinguishing epilepsy from NEAD in 73 (55%) and in distinguishing between focal and generalised epilepsy in 47 (35%). LTM was particularly helpful in differentiating frontal lobe seizures from generalised seizures and non-epileptic attacks. Inpatient ambulatory EEG proved as effective as video telemetry in helping to distinguish between NEAD, focal and generalised epilepsy.\r\nDISCUSSION\r\nThe study revealed that LTM led to an alteration in the diagnosis of 71% of patients referred to a tertiary centre for diagnostic clarification of possible epilepsy. Although LTM is relatively expensive, time consuming and of limited availability, this needs to be balanced against the considerable financial and social cost of misdiagnosed and uncontrolled seizures. This service evaluation supports the use of performing LTM (either video or ambulatory) in a specialist setting in patients who present diagnostic difficulty.

Yonekawa, Chikara; Suzukawa, Masayuki; Yamashita, Keisuke; Kubota, Katsuaki; Yasuda, Yasuharu; Kobayashi, Akihiro et al. (2014):

Development of a first-responder dispatch system using a smartphone.

In: *J Telemed Telecare* 20 (2), S. 75–81. DOI: 10.1177/1357633X14524152.

Abstract:

We constructed a prototype community first responder (CFR) dispatch system. The system sends incident information, including a map, to the chosen CFR's mobile phone. We tested it in a simulation of 30 out-of-hospital cardiac arrest incidents which had occurred in the town of Motegi during the previous year. Thirty off-duty firefighters acted as CFRs and were sent to the same locations. The mean response time (from the CFR receiving dispatch information to arrival at the scene) was 3 min 37s faster than the actual response time in the corresponding historical control, i.e. the response time was reduced by 36% ($P < 0.01$). The median travel distance of the CFRs was 3.4 km and there was a positive correlation between response time and travel distance. The study showed that interactive communication between dispatcher and CFR was important for effective operation and that CFRs could reach an OHCA patient before the Emergency Medical Service arrives.

Yoon, Youngzoon; Cho, Jung H.; Yoon, Gilwon (2009):

Non-constrained blood pressure monitoring using ECG and PPG for personal healthcare.

In: *J Med Syst* 33 (4), S. 261–266.

Abstract:

Blood pressure (BP) is one of the important vital signs that need to be monitored for personal healthcare. Arterial blood pressure (BP) was estimated from pulse transit time (PTT) and PPG waveform. PTT is a time interval between an R-wave of electrocardiography (ECG) and a photoplethysmography (PPG) signal. This method does not require an aircuff and only a minimal inconvenience of attaching electrodes and LED/photo detector sensors on a subject. PTT computed between the ECG R-wave and the maximum first derivative PPG was strongly correlated with systolic blood pressure (SBP) (R = −0.712) compared with other PTT values, and the diastolic time proved to be appropriate for estimation diastolic blood pressure (DBP) (R = −0.764). The percent errors of SBP using the individual regression line (4–11%) were lower than those using the regression line obtained from all five subjects (9–14%). On the other hand, the DBP estimation did not show much difference between the individual regression (4–10%) and total regression line (6–10%). Our developed device had a total size of 7 × 13.5 cm and was operated by single 3-V battery. Biosignals can be measured for 72 h continuously without external interruptions. Through a serial network communication, an external personal computer can monitor measured waveforms in real time. Our proposed method can be used for non-constrained, thus continuous BP monitoring for the purpose of personal healthcare.

Yoshiuchi, Kazuhiro; Cook, Dane B.; Ohashi, Kyoko; Kumano, Hiroaki; Kuboki, Tomifusa; Yamamoto, Yoshiharu; Natelson, Benjamin H. (2007):

A real-time assessment of the effect of exercise in chronic fatigue syndrome.

In: *Physiol Behav* 92 (5), S. 963–968.

Abstract:

Patients with chronic fatigue syndrome (CFS) report substantial symptom worsening after exercise. However, the time course over which this develops has not been explored. Therefore, the objective of this study was to investigate the influence of exercise on subjective symptoms and on cognitive function in CFS patients in natural settings using a computerized ecological momentary assessment method, which allowed us to track the effects of exercise within and across days. Subjects were 9 female patients with CFS and 9 healthy women. A watch-type computer was used to collect real-time data on physical and psychological symptoms and cognitive function for 1week before and 2weeks after a maximal exercise test. For each variable, we investigated temporal changes after exercise using multilevel modeling. Following exercise, physical symptoms did get worse but not until a five-day delay in CFS patients. Despite this, there was no difference in the temporal pattern of changes in psychological symptoms or in cognitive function after exercise between CFS patients and controls. In conclusion, physical symptoms worsened after several days delay in patients with CFS following exercise while psychological symptoms or cognitive function did not change after exercise.

Yoshiuchi, Kazuhiro; Yamamoto, Yoshiharu; Akabayashi, Akira (2008):

Application of ecological momentary assessment in stress-related diseases.

In: *BioPsychoSocial Medicine* 2 (1), S. 13.

Abstract:

Many physical diseases have been reported to be associated with psychosocial factors. In these diseases, assessment relies mainly on subjective symptoms in natural settings. Therefore, it is important to assess symptoms and/or relationships between psychosocial factors and symptoms in natural settings. Symptoms are usually assessed by self-report when patients visit their doctors. However, self-report by recall has an intrinsic problem; "recall bias". Recently, ecological momentary assessment (EMA) has been proposed as a reliable method to assess and record events and subjective symptoms as well as physiological and behavioral variables in natural settings. Although EMA is a useful method to assess stress-related diseases, it has not been fully acknowledged, especially by clinicians. Therefore, the present brief review introduces the application and future direction of EMA for the assessment and intervention for stress-related diseases.

Young, Deborah Rohm; Jerome, Gerald J.; Chen, Chuhe; Laferriere, Daniel; Vollmer, William M. (2009):

Peer Reviewed: Patterns of Physical Activity Among Overweight and Obese Adults.

In: *Preventing chronic disease* 6 (3).

Abstract:

Introduction

Little is known about patterns of physical activity in overweight and obese adults, although they are at high risk for chronic disease and can benefit from physical activity. We describe patterns of moderate-to-vigorous physical activity (MVPA) and MVPA in bouts of 10 minutes or longer in overweight and obese adults.

Methods

Overweight and obese participants (n = 1,648) who were screened for the multicenter Weight Loss Maintenance Trial wore RT3 accelerometers for at least 3 weekdays and 1 weekend day. We determined minutes spent in moderate physical activity, vigorous physical activity, and MVPA overall, by weekday vs weekend, and by time of day. We also measured bouts of at least 10 minutes of sustained MVPA.

Results

Participants were active for an average of 15.8 minutes per day. Among those who engaged in bouts of MVPA, the average bout was 33.3 minutes long. Participants who were younger than 50 years, male, non-African American, or overweight were more active than were those who were older than 50, female, African American, or obese. Participants were more active on weekends than on weekdays and in the morning than in the afternoon or evening. Only 2% of participants were active for 60 or more minutes per day.

Conclusion

We found differences in physical activity patterns by demographic characteristics, day, and time of day. Weekend mornings may be an opportune time to promote additional physical activity.

Young, K. P.; Lavender, J. M.; Wonderlich, S. A.; Crosby, R. D.; Engel, S. G.; Mitchell, J. E. et al. (2012):

Moderators of post-binge eating negative emotion in eating disorders.

In: *J Psychiatr.Res* (0022-3956 (Linking)). DOI: 10.1016/j.jpsychires.2012.11.012.

Abstract:

The purpose of this study was to test the impact of two variables on post-binge eating negative emotion in a combined sample of women with anorexia nervosa (AN; n = 47) and bulimia nervosa (BN; n = 121). Participants completed two weeks of an ecological momentary assessment protocol during which they provided multiple daily ratings of overall negative affect and guilt and reported eating disorder behaviors including binge eating and self-induced vomiting. The results indicate that both overall negative affect and guilt exhibited a statistically significantly decrease in the hour immediately following binge eating episodes. The decrease in guilt, but not overall negative affect, was moderated by eating disorder diagnosis and the tendency to engage in self-induced vomiting. Specifically, individuals with BN reported a greater reduction in guilt than those with AN, and individuals who did not typically engage in self-induced vomiting reported more decreases in guilt than those who typically engaged in self-induced vomiting. This study extends the existing literature on the relationship between negative affect and eating disorder behaviors, suggesting guilt as a potentially relevant facet of negative affect in the maintenance of binge eating. In addition, the findings indicate that two individual differences, eating disorder diagnosis and self-induced vomiting, may influence the trajectory of guilt following binge eating episodes

Young, K. P.; Lavender, J. M.; Steffen, K.; Wonderlich, S. A.; Engel, S. G.; Mitchell, J. E. et al. (2013):

Restrictive eating behaviors are a nonweight-based marker of severity in anorexia nervosa.

In: *Int.J Eat.Disord.* (0276-3478 (Linking)). DOI: 10.1002/eat.22163.

Abstract:

OBJECTIVE: The purpose of this study was to compare the type and frequency of restrictive eating behaviors across the two subtypes of anorexia nervosa (AN; restricting [ANr] and binge eating/purging [ANbp]) using ecological momentary assessment (EMA) and to determine whether subtype differences in restrictive eating behaviors were attributable to severity of the disorder or the frequency of binge eating. METHOD: Participants (N = 118) were women at least 18 years of age with full (n = 59) or

subthreshold (n = 59) AN who participated in a two week (EMA) protocol. RESULTS: General estimating equations revealed that individuals with ANbp generally reported more frequent restrictive eating behaviors than individuals with ANr. These differences were mostly accounted for by greater severity of eating psychopathology, indicating that the presence and frequency of restrictive eating behaviors in AN may be nonweight-based markers of severity. Binge eating frequency did not account for these findings. DISCUSSION: The present findings are especially interesting in light of the weight-based severity rating in the DSM-5. (c) 2013 Wiley Periodicals, Inc. (Int J Eat Disord 2013)

Young, Kyle P.; Lavender, Jason M.; Crosby, Ross D.; Wonderlich, Stephen A.; Engel, Scott G.; Mitchell, James E. et al. (2014):

Bidirectional associations between binge eating and restriction in anorexia nervosa. An ecological momentary assessment study.

In: *Appetite* 83C, S. 69–74. DOI: 10.1016/j.appet.2014.08.014.

Abstract:

This study examined the association between restrictive eating behaviors and binge eating in anorexia nervosa (AN) using data collected in the natural environment. Women (N = 118) with DSM-IV full or subthreshold AN reported eating disorder behaviors, including binge eating episodes, going >/= 8 waking hours without eating, and skipping meals, during 2 weeks of ecological momentary assessment (EMA). Time-lagged generalized estimating equations tested the following hypotheses: 1) dietary restriction would predict binge eating while controlling for binge eating the previous day; 2) binge eating would predict restriction the subsequent day while controlling for restriction the previous day. After controlling for relevant covariates, the hypotheses were not supported; however, there appeared to be a cumulative effect of repeatedly going 8 consecutive hours without eating (i.e. fasting) on the risk of binge eating among individuals who recently engaged in binge eating. In addition, skipping meals was associated with a lower risk of same day binge eating. The relationship between binge eating and dietary restriction appears to be complex and may vary by type of restrictive eating behavior. Future research should aim to further clarify the nature of the interaction of binge eating and restrictive eating among individuals with AN in order to effectively eliminate these behaviors in treatment.

Yu, F.; Albers, J.; Gao, T.; Wang, M.; Bilberg, A.; Stenager, E. (2012):

A smartphone application of alcohol resilience treatment for behavioral self-control training.

In: *Conf.Proc.IEEE Eng Med Biol.Soc.* 2012 (1557-170X (Linking)), S. 1976–1979. DOI: 10.1109/EMBC.2012.6346343.

Abstract:

High relapse rate is one of the most prominent problems in addiction treatment. Alcohol Resilience Treatment (ART), an alcohol addiction therapy, is based on Cue Exposure Treatment, which has shown promising results in preliminary studies. ART aims at optimizing the core area of relapse prevention, and intends to improve patients' capability to withstand craving of alcohol. This method emphasizes the interplay of resilience and resourcefulness. It contains 6 sessions with different topics according to the stage of treatment circuit, and each session consists of 6 steps. Due to the purity and structure of the treatment rationale, it is realistic, reasonable and manageable to transform the method into a smartphone application. An ART app in Android system and an accessory of bilateral tactile stimulation were developed and will be used in a study with behavioral self-control training. This paper presents the design and realization of the smartphone based ART application. The design of a pilot study, which is to examine the benefits of a smartphone application providing behavioral self-control training, is also reported in this paper

Yue, Wen-Wei; Yin, Jie; Chen, Bo; Zhang, Xin; Wang, Guangfu; Li, Huijuan et al. (2014):

Analysis of Heart Rate Variability in Masked Hypertension.

In: *Cell Biochem Biophys. DOI:* 10.1007/s12013-014-9882-y.

Abstract:

To investigate heart rate variability (HRV) in patients with masked hypertension (MH), participants were classified based on clinic and 24-h ambulatory blood-pressure monitoring: essential hypertension (EH, n = 40; MH, n = 36) and normotension (NT, n = 48). The HRV parameters were observed using a 24-h Holter monitor. Compared with NT controls, the parameters of HRV (SDNN, SDANN, SDNN Index, RMSSD, HF) and parameters in EH and MH patients had significantly decreased. No statistically

significant difference in the HRV parameters was found between the EH and MH groups. The changes in HRV parameters show cardiac autonomic nerve dysfunction in patients with MH.

Zakeri, Issa; Adolph, Anne L.; Puyau, Maurice R.; Vohra, Firoz A.; Butte, Nancy F. (2008):

Application of cross-sectional time series modeling for the prediction of energy expenditure from heart rate and accelerometry.

In: *Journal of Applied Physiology* 104 (6), S. 1665–1673.

Abstract:

Accurate estimation of energy expenditure (EE) in children and adolescents is required for a better understanding of physiological, behavioral, and environmental factors affecting energy balance. Cross-sectional time series (CSTS) models, which account for correlation structure of repeated observations on the same individual, may be advantageous for prediction of EE. CSTS models for prediction of minute-by-minute EE and, hence, total EE (TEE) from heart rate (HR), physical activity (PA) measured by accelerometry, and observable subject variables were developed in 109 children and adolescents by use of Actiheart and 24-h room respiration calorimetry. CSTS models based on HR, PA, time-invariant covariates, and interactions were developed. These dynamic models involve lagged and lead values of HR and lagged values of PA for better description of the series of minute-by-minute EE. CSTS models with random intercepts and random slopes were investigated. For comparison, likelihood ratio tests were used. Log likelihood increased substantially when random slopes for HR and PA were added. The population-specific model uses HR and 1- and 2-min lagged and lead values of HR, HR(2), and PA and 1- and 2-min lagged values of PA, PA(2), age, age(2), sex, weight, height, minimum HR, sitting HR, HR x height, HR x weight, HR x age, PA x weight, and PA x sex interactions ($P < 0.001$). Prediction error for TEE was 0.9 +/- 10.3% (mean +/- SD). Errors were not correlated with age, weight, height, or body mass index. CSTS modeling provides a useful predictive model for EE and, hence, TEE in children and adolescents on the basis of HR and PA and other observable explanatory subject characteristics of age, sex, weight, and height.

Zakeri, Issa F.; Adolph, Anne L.; Puyau, Maurice R.; Vohra, Firoz A.; Butte, Nancy F. (2010):

Multivariate adaptive regression splines models for the prediction of energy expenditure in children and adolescents.

In: *Journal of applied physiology (Bethesda, Md. : 1985)* 108 (1), S. 128–136. DOI: 10.1152/japplphysiol.00729.2009.

Abstract:

Advanced mathematical models have the potential to capture the complex metabolic and physiological processes that result in heat production or energy expenditure (EE). Multivariate adaptive regression splines (MARS) is a nonparametric method that estimates complex nonlinear relationships by a series of spline functions of the independent predictors. The specific aim of this study is to construct MARS models based on heart rate (HR) and accelerometer counts (AC) to accurately predict EE, and hence 24-h total EE (TEE), in children and adolescents. Secondarily, MARS models will be developed to predict awake EE, sleep EE, and activity EE also from HR and AC. MARS models were developed in 109 and validated in 61 normal-weight and overweight children (ages 5-18 yr) against the criterion method of 24-h room respiration calorimetry. Actiheart monitor was used to measure HR and AC. MARS models were based on linear combinations of 23-28 basis functions that use subject characteristics (age, sex, weight, height, minimal HR, and sitting HR), HR and AC, 1- and 2-min lag and lead values of HR and AC, and appropriate interaction terms. For the 24-h, awake, sleep, and activity EE models, mean percent errors were -2.5 +/- 7.5, -2.6 +/- 7.8, -0.3 +/- 8.9, and -11.9 +/- 17.9%, and root mean square error values were 168, 138, 40, and 122 kcal, respectively, in the validation cohort. Bland-Altman plots indicated that the predicted values were in good agreement with the observed TEE, and that there was no bias with increasing TEE. Prediction errors for 24-h TEE were not statistically associated with age, sex, weight, height, or body mass index. MARS models developed for the prediction of EE from HR monitoring and accelerometry were demonstrated to be valid in an independent cohort of children and adolescents, but require further validation in independent, free-living populations.

Zakeri, I. F.; Adolph, A. L.; Puyau, M. R.; Vohra, F. A.; Butte, N. F. (2013):

Cross-sectional time series and multivariate adaptive regression splines models using accelerometry and heart rate predict energy expenditure of preschoolers.

In: *J Nutr* 143 (1), S. 114–122. DOI: 10.3945/jn.112.168542.

Abstract:

Prediction equations of energy expenditure (EE) using accelerometers and miniaturized heart rate (HR) monitors have been developed in older children and adults but not in preschool-aged children. Because the relationships between accelerometer counts (ACs), HR, and EE are confounded by growth and maturation, age-specific EE prediction equations are required. We used advanced technology (fast-response room calorimetry, Actiheart and Actigraph accelerometers, and miniaturized HR monitors) and sophisticated mathematical modeling [cross-sectional time series (CSTS) and multivariate adaptive regression splines (MARS)] to develop models for the prediction of minute-by-minute EE in 69 preschool-aged children. CSTS and MARS models were developed by using participant characteristics (gender, age, weight, height), Actiheart (HR+AC_x) or ActiGraph parameters (AC_x, AC_y, AC_z, steps, posture) [x, y, and z represent the directional axes of the accelerometers], and their significant 1- and 2-min lag and lead values, and significant interactions. Relative to EE measured by calorimetry, mean percentage errors predicting awake EE (-1.1 +/- 8.7%, 0.3 +/- 6.9%, and -0.2 +/- 6.9%) with CSTS models were slightly higher than with MARS models (-0.7 +/- 6.0%, 0.3 +/- 4.8%, and -0.6 +/- 4.6%) for Actiheart, ActiGraph, and ActiGraph+HR devices, respectively. Predicted awake EE values were within +/-10% for 81-87% of individuals for CSTS models and for 91-98% of individuals for MARS models. Concordance correlation coefficients were 0.936, 0.931, and 0.943 for CSTS EE models and 0.946, 0.948, and 0.940 for MARS EE models for Actiheart, ActiGraph, and ActiGraph+HR devices, respectively. CSTS and MARS models should prove useful in capturing the complex dynamics of EE and movement that are characteristic of preschool-aged children

Zaki, Landon F.; Coifman, Karin G.; Rafaeli, Eshkol; Berenson, Kathy R.; Downey, Geraldine (2013):

Emotion differentiation as a protective factor against nonsuicidal self-injury in borderline personality disorder.

In: *Behav Ther* 44 (3), S. 529–540. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-22014-008%26site%3dehost-live;landon.fuhrman@gmail.com.

Abstract:

Evidence that nonsuicidal self-injury (NSSI) serves a maladaptive emotion regulation function in borderline personality disorder (BPD) has drawn attention to processes that may increase risk for NSSI by exacerbating negative emotion, such as rumination. However, more adaptive forms of emotion processing, including differentiating broad emotional experiences into nuanced emotion categories, might serve as a protective factor against NSSI. Using an experience-sampling diary, the present study tested whether differentiation of negative emotion was associated with lower frequency of NSSI acts and urges in 38 individuals with BPD who reported histories of NSSI. Participants completed a dispositional measure of rumination and a 21-day experience-sampling diary, which yielded an index of negative emotion differentiation and frequency of NSSI acts and urges. A significant rumination by negative emotion differentiation interaction revealed that rumination predicted higher rates of NSSI acts and urges in participants with difficulty differentiating their negative emotions. The results extend research on emotion differentiation into the clinical literature and provide empirical support for clinical theories that suggest emotion identification and labeling underlie strategies for adaptive self-regulation and decreased NSSI risk in BPD. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Zakopoulos, Nikolaos; Spengos, Konstantinos; Tsivgoulis, Georgios; Zis, Vassilios; Manios, Efstathios; Vemmos, Konstantinos (2006):

Assessment of blood pressure control in hypertensive stroke survivors: an ambulatory blood pressure monitoring study.

In: *Blood Press Monit* 11 (5), S. 235–241.

Abstract:

Background: We compared the sensitivity of office blood pressure and ambulatory blood pressure monitoring recordings in evaluating the effectiveness of antihypertensive treatment and identified factors related to inadequate blood pressure control among hypertensive stroke survivors.

Methods: Office blood pressure and ambulatory blood pressure monitoring measurements were performed at 120±30 days after ictus in 187 first-ever consecutive hypertensive stroke survivors who were receiving blood pressure-lowering medications according to international guidelines. Handicap was assessed by the modified Rankin Scale. Blood pressure was regarded as controlled if office and daytime ambulatory systolic and diastolic blood pressure values were <140/90 and <135/85 mmHg, respectively. Patients were subclassified according to the degree of their nocturnal systolic blood pressure fall [(mean daytime values−mean night-time values)100/mean daytime values] as dippers (≥10%), nondippers (≥0% and< 10%) and reverse dippers (<0%).

Results: Effective blood pressure control was documented in significantly (P<0.001) fewer patients using ambulatory blood pressure monitoring (32.1%) than those using office recordings (43.3%), whereas in 16% of the study population a masked lack of per-treatment blood pressure control (elevated ambulatory blood pressure in the presence of normal office blood pressure levels) was identified. The distribution of dipping patterns differed significantly (P=0.01) between controlled hypertensive individuals (normal office and ambulatory measurements) and patients with isolated ambulatory hypertension (dippers: 31.3 vs. 10.0%; nondippers:56.9 vs. 53.3%; reverse dippers: 11.8 vs. 36.7%). Logistic regression analysis revealed diabetes mellitus and functional independency (modified Rankin Scale score <2) as independent predictors of inadequate blood pressure control.

Conclusion: Ambulatory blood pressure monitoring detects a substantial number of treated hypertensive stroke survivors with a masked lack of per-treatment blood pressure control, who present a higher prevalence of abnormal circadian blood pressure patterns (reverse dipping). Diabetes mellitus and poststroke functional independency are the main factors contributing to inadequate blood pressure control.

Zanobetti, Antonella; Stone, Peter H.; Speizer, Frank E.; Schwartz, Joel D.; Coull, Brent A.; Suh, Helen H. et al. (2009):

T-wave alternans, air pollution and traffic in high-risk subjects.

In: *The American journal of cardiology* 104 (5), S. 665–670. DOI: 10.1016/j.amjcard.2009.04.046.

Abstract:

Particulate pollution has been linked to risk for cardiac death; possible mechanisms include pollution-related increases in cardiac electrical instability. T-wave alternans (TWA) is a marker of cardiac electrical instability measured as differences in the magnitude between adjacent T waves. In a repeated-measures study of 48 patients aged 43 to 75 years, associations of ambient and home indoor particulate pollution, including black carbon (BC) and reports of traffic exposure, with changes in 0.5-hourly maximum TWA (TWA-MAX), measured by 24-hour Holter electrocardiographic monitoring, were investigated. Each patient was observed up to 4 times within 1 year after percutaneous intervention for myocardial infarction, acute coronary syndromes without infarction, or stable coronary artery disease, for a total of 5,830 0.5-hour observations. Diary data for each 0.5-hour period defined whether a patient was home or not home, or in traffic. Increases in TWA-MAX were independently associated with the previous 2-hour mean ambient BC (2.1%, 95% confidence interval 0.9% to 3.3%) and with being in traffic in the previous 2 hours (6.1%, 95% confidence interval 3.4% to 8.8%). When subjects were home, indoor home BC effects were largest and most precise; when subjects were away from home, ambient central site BC effects were strongest. Increases in pollution increased the odds of TWA-MAX > or =75th percentile (odds ratio 1.4, 95% confidence interval 1.2 to 1.6 for a 1 microg/m(3) increase in 6-hour mean BC). In conclusion, after hospitalization for coronary artery disease, being in traffic and short-term ambient or indoor BC exposure increased TWA, a marker of cardiac electrical instability.

Zanstra, Ydwine Jieldouw; Johnston, Derek William (2011):

Cardiovascular reactivity in real life settings: Measurement, mechanisms and meaning.

In: *Biol Psychol* 86 (2), S. 98–105.

Abstract:

Cardiovascular reactivity to stress is most commonly studied in the laboratory. Laboratory stressors may have limited ecological validity due to the many constraints, operating in controlled environments. This paper will focus on paradigms that involve the measurement of cardiovascular reactions to stress in real life using ambulatory monitors. Probably the most commonly used paradigm in this field is to measure the response to a specific real life stressor, such as sitting an exam or public speaking. A more general approach has been to derive a measure of CV variability testing the hypothesis that more reactive participants will have more variable heart rate or blood pressure. Alternatively, self-reports of the participants' perceived stress, emotion or demands may be linked to simultaneously collected ambulatory measures of cardiovascular parameters.

This paper examines the following four questions: (1) What is the form and what are the determinants of stress-induced CV reactivity in real life? (2) What are the psychophysiological processes underlying heart rate and blood pressure reactivity in real life? (3) Does CV reactivity determined in the laboratory predict CV reactivity in real life? (4) Are ambulatory cardiovascular measures predictive of cardiovascular disease?

It is concluded that the hemodynamic processes that underlie the blood pressure response can reliably be measured in real life and the psychophysiological relationships seen in the laboratory have been obtained in real life as well. Studies examining the effects of specific real life stressors show that responses obtained in real life are often larger than those obtained in the laboratory. Subjective ratings of stress, emotion and cognitive determinants of real life stress (e.g. demand, reward and control) also relate to real life CV responses. Surprisingly, ambulatory studies on real life cardiovascular reactivity to stress as a predictor of cardiovascular disease are rare. Measuring the CV response to stress in real life may provide a better measure of the stress-related process that are hypothesized to cause disease than is possible in the laboratory. In addressing these questions, below we review the studies that we believe are representative of the field. Therefore, this review is not comprehensive.

Zarantonello, Lia; Luomala, Harri T. (2011):

Dear Mr Chocolate: Constructing a typology of contextualized chocolate consumption experiences through qualitative diary research.

In: *Qualitative market research: An international Journal* 14 (1), S. 55–82.

Abstract:

Purpose

– This paper aims to advance theory-building in the area of food consumption research, by exploring how consumers experience chocolate consumption in different contexts and by viewing these inductive findings in the light of the relevant existing body of knowledge.

Design/methodology/approach

– A qualitative study is conducted on a non-student sample of Italian consumers. The qualitative diary research technique is used as it is particularly suitable to capturing sensations, feelings, thoughts, and behaviours related to various chocolate consumption contexts. Content analytical and interpretive principles are followed in the production of the study findings.

Findings

– Chocolate generates rich and complex consumption experiences as a function of various contextual forces. Seven main contextual chocolate consumption categories are identified: context of physiological need, context of sensorial gratification, context of memories and nostalgia, context of escapism, context of materialism, context of chocoholism, and context of interpersonal and self-gifts. On the basis of these chocolate consumption categories and ideas from past consumer behaviour research, four more general contextualized chocolate consumption experience types are extracted: chocolate consumption experience as medicine, as mind manoeuvring, as regression and as ritual enhancement.

Originality/value

– Past research has not explored how different chocolate consumption contexts shape and define these experiences, even though contextual variation in food consumption experiences is recognized as important. The nuances of chocolate consumption in various contexts are explored to the unprecedented depth, a conceptually novel typology of contextualized chocolate consumption experiences is presented, the field of application of self-congruity theory is expanded and the profiles of chocolate consumer segments identified by past research are enriched.

Zawadzki, M. J.; Smyth, J. M.; Merritt, M. M.; Gerin, W. (2013):

Absorption in Self-Selected Activities Is Associated With Lower Ambulatory Blood Pressure but Not for High Trait Ruminators.

In: *Am J Hypertens* (0895-7061 (Linking)). DOI: 10.1093/ajh/hpt118.

Abstract:

BACKGROUND: A range of nonpharmacological interventions (e.g., meditation) have positive effects on blood pressure (BP) but tend to have poor adherence. These interventions may lower BP partly by absorbing and directing attention away from one's negative thoughts. We hypothesized that recurring self-selected activities (SSAs) that are attentionally absorbing may similarly lower BP. We examined the effect of reported engagement in SSAs during the previous month prior to participation on ambulatory BP (ABP) and whether those prone to rumination were less likely to show these effects. METHODS: Participants (n = 38) reported engagement in SSAs and how absorbing they were, responded to trait rumination and perceived stress questionnaires, wore an ABP monitor for 24 hours, and at each ABP measurement answered electronic diary questions assessing activity levels, affect, social interactions, and caffeine and tobacco use. RESULTS: Regression analyses tested whether the reported absorption of SSAs, trait rumination, and their interaction predicted daytime and nighttime systolic and diastolic ABP. Greater absorption predicted lower daytime and nighttime ABP (bs = -18.83 to -8.79; Ps < .05), but this relationship was moderated by trait rumination (bs = 3.72 to 9.97; Ps < .05). Follow-up analyses revealed that absorption was unrelated to ABP for those with high trait rumination but that more absorption predicted lower ABP for those less prone to rumination. CONCLUSIONS: Our results suggest that regular engagement in absorbing SSAs is related to lower ABP. These findings have implications for the development of nonpharmacological interventions and suggest SSAs may serve as an adjuvant intervention strategy to lower BP

Zdziechowska, Krystyna; Czy++Ak, Izabela; Murawiec, S. +.; Prot, Katarzyna (2012):

Characteristics of subjects with self reported history of psychosis who were interested in self-assessment of their functional status via online e-diaries.

In: *Archives of Psychiatry and Psychotherapy* 14 (4), S. 31–36. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-01920-004%26site%3dehost-live;murawiec@ipin.edu.pl.

Abstract:

Aim: To identify a profile of subjects with psychotic symptoms who were interested in self–monitoring of their functional status via an online electronic diary (e-diary). Method: The TacyJakJa.pl website was promoted by means of a standard online advertising and positioning methods together with limited traditional advertising activities (an article in press, a radio broadcast). Physicians were not involved in recruitment process. Registered users of the website were offered a simple and convenient self-assessment tool to monitor their functional status in the form of e-diary. E-diaries were designed by psychiatrists for the purpose of self-assessment of mental state, everyday activities, therapy and treatment tolerability, in a registered users group. Results: Over 18 months 450 individuals registered in the after psychotic crisis section of the website. Answering question of how did they found out about the website 86% of users pointed internet as the source of information, 8% – friends , 4% – their physician, 2% – the press. 70% of users, as they reported, were diagnosed with schizophrenia and paranoid disorders, 82% of them were hospitalized due to their condition. The group of users consisted mainly of people in their thirties, who completed their secondary education. 70% of them did not have paid job; majority of them were single (57% of women and as much as 77% of men; $p < 0.0001$). Despite significant life independence of users, as well as their understanding of the necessity of treatment (97% of registered users received outpatient psychiatric treatment), depressive mood was observed in the group. At registration the WHO-5 Well-being scale was completed by 239 subjects; and as much as 76% of them achieved total score below 13 ($Chi2(239.1) = 65$, $p < 0.0001$), what indicates depressive mood and higher risk for developing clinical depression. There were no statistically significant differences between results of men and women. Conclusions: Self-monitoring of functional status via e-diary generated a great deal of interest among younger users with psychotic experiences who received outpatient treatment, mostly singles, often with depressive mood. Self-assessment via e-diaries proved to be manageable and worthwhile. E-diary users were interested in active participation in their treatments, however without being encouraged by their physician, they discontinued regular self-assessment after several entries. Still, they visited other sections that the website, such as: ask a doctor corner, medical library, photo contests section, online chat rooms, and discussion forum they kept in touch, chatted and talked also with persons with no psychic disorders, who registered on the website. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Zeitzer, J. M.; David, R.; Friedman, L.; Mulin, E.; Garcia, R.; Wang, J. et al. (2012):

Phenotyping Apathy in Individuals With Alzheimer Disease Using Functional Principal Component Analysis.

In: *Am.J.Geriatr.Psychiatry* (1064-7481 (Linking)). DOI: 10.1097/JGP.0b013e318248779d.

Abstract:

OBJECTIVES:: To determine if there is a specific pattern of gross motor activity associated with apathy in individuals with Alzheimer disease (AD). DESIGN:: Examination of ad libitum 24-hour ambulatory gross motor activity patterns. SETTING:: Community-dwelling, outpatient. PARTICIPANTS:: Ninety-two individuals with AD, 35 of whom had apathy. MEASUREMENTS:: Wrist actigraphy data were collected and examined using functional principal component analysis (fPCA). RESULTS:: Individuals with apathy have a different pattern of gross motor activity than those without apathy (first fPCA component, $p < 0.0001$, $t = 5.73$, $df = 90$, t test) such that there is a pronounced decline in early afternoon activity in those with apathy. This change in activity is independent of depression ($p = 0.68$, $F[1, 89] = 0.05$, analysis of variance). The decline in activity is consistent with an increase in napping. Those with apathy also have an early wake and bedtime (second fPCA component, $t = 2.53$, $df = 90$, $p < 0.05$, t test). CONCLUSIONS:: There is a signature activity pattern in individuals with apathy and AD that is distinct from those without apathy and those with depression. Actigraphy may be a useful adjunctive measurement in the clinical diagnosis of apathy in the context of AD

Zenk, Shannon N.; Horoi, Irina; McDonald, Ashley; Corte, Colleen; Riley, Barth; Odoms-Young, Angela M. (2014):

Ecological momentary assessment of environmental and personal factors and snack food intake in African American women.

In: *Appetite. DOI:* 10.1016/j.appet.2014.09.008.

Abstract:

This study examined contributions of environmental and personal factors (specifically, food availability and expense, daily hassles, self-efficacy, positive and negative affect) to within-person and between-person variations in snack food intake in 100 African American women. Participants were signaled at random five times daily for seven days to complete a survey on a study-provided smartphone. Women reported consuming snack foods at 35.2% of signals. Easier food availability accounting for one's usual level was associated with higher snack food intake. Being near outlets that predominately sell snacks (e.g., convenience stores), while accounting for one's usual proximity to them, was associated with higher snack food intake. Accounting for one's usual daily hassle level, we found that on days with more frequent daily hassles snack food intake was higher. The positive association between within-person daily hassles frequency and snack food intake was stronger when foods were easily available. Public and private policies to curb ubiquitous food availability and mobile health interventions that take into account time-varying influences on food choices and provide real-time assistance in dealing with easy food availability and coping with stressors may be beneficial in improving African American women's day to day food choices.

Zettl, U. K.; Bauer-Steinhusen, U.; Glaser, T.; Hechenbichler, K.; Limmroth, V. (2013):

Evaluation of an electronic diary for improvement of adherence to interferon beta-1b in patients with multiple sclerosis: design and baseline results of an observational cohort study.

In: *BMC Neurol* 13 (1), S. 117. DOI: 10.1186/1471-2377-13-117.

Abstract:

BACKGROUND: Multiple sclerosis is a chronic, incurable, demyelinating disease that requires long-term treatment. Rates of non-adherence to prescribed therapy of up to 50% have been reported for chronic diseases. Strategies to improve treatment adherence are therefore of the utmost importance. This study will evaluate the effect of using electronic and paper diaries on treatment adherence to interferon beta-1b in patients with a first clinical isolated syndrome (CIS) or relapsing-remitting multiple sclerosis (RRMS). Here we report on the study design and results of baseline assessments. METHODS: Patients were recruited into a prospective national multicenter cohort study for an observational period of 2 years. At the start of the study, patients opted to use a digital (DiD) or paper diary (PD) to document self-administered injections of interferon beta-1b. Adherence to treatment will be assessed on the dropout rate at the end of the observation period and on the regularity of injections every other day at 6-month intervals. Patient-related health outcomes will also be evaluated. RESULTS: 700 patients with a mean age of 38.3 (SD 10.3) years and a mean duration of disease since diagnosis of 3.6 (SD 5.9) years were enrolled. 383 patients opted for the digital diary, 192 of which included an injection reminder. Significantly more male than female patients opted for the DiD. Only gender was identified as a factor influencing the decision for DiD or PD. Based on rating scales, a significantly higher proportion of women had depressive comorbidities at baseline. CONCLUSIONS: Demographic characteristics of the two cohorts were similar at baseline. More women chose a paper diary, and more had depression at baseline. These imbalances will be addressed in the analysis of the study as possible confounders influencing long-term treatment adherence in the digital and paper diary cohorts.Trial RegistrationClinicalTrials.gov Identifier: NCT00902135

Zhang, Wenwen; Cadilhac, Dominique A.; Churilov, Leonid; Donnan, Geoffrey A.; O'Callaghan, Christopher; Dewey, Helen M. (2014):

Does abnormal circadian blood pressure pattern really matter in patients with transient ischemic attack or minor stroke?

In: *Stroke* 45 (3), S. 865–867. DOI: 10.1161/STROKEAHA.113.004058.

Abstract:

BACKGROUND AND PURPOSE: Patients with stroke are more likely to have impaired autonomic nervous function and abnormal circadian blood pressure (BP) patterns. It remains unclear whether circadian BP patterns in patients with transient ischemic attack or minor stroke (National Institutes of Health Stroke Scale </=3) differ from those in the normal population. METHODS: Participants were assessed using a 24-hour ambulatory BP monitor and a short-term measurement of heart rate variability. RESULTS: There were 76 patients (mean age, 67.2 years; 57.9% men; and 61.8% transient ischemic attack) and 82 controls (65.6 years; 54.9% men). A history of hypertension was more prevalent in patients (72.4%; controls 48.8%). Circadian BP patterns were distributed similarly among patients and controls, and heart rate variability was also consistent between patients and controls. CONCLUSIONS: In contrast to previous findings among patients with acute stroke, patients with transient ischemic attack or minor stroke had similar BP patterns and autonomic nervous system function, when compared with controls.

Zhang, Melvyn Wb; Ho, Cyrus Sh; Fang, Pan; Lu, Yanxia; Ho, Roger Cm (2014):

Usage of social media and smartphone application in assessment of physical and psychological well-being of individuals in times of a major air pollution crisis.

In: *JMIR Mhealth Uhealth* 2 (1), S. e16. DOI: 10.2196/mhealth.2827.

Abstract:

BACKGROUND: Crisis situations bring about many challenges to researchers, public institutions, and governments in collecting data and conducting research in affected individuals. Recent developments in Web-based and smartphone technologies have offered government and nongovernment organizations a new system to disseminate and acquire information. However, research into this area is still lacking. The current study focuses largely on how new social networking websites and, in particular, smartphone technologies could have helped in the acquisition of crucial research data from the general population during the recent 2013 Southeast Asian Haze. This crisis lasted only for 1 week, and is unlike other crisis where there are large-scale consequential after-effects. OBJECTIVE: To determine whether respondents will make use of Internet, social media, and smartphone technologies to provide feedback regarding their physical and psychological wellbeing during a crisis, and if so, will these new mechanisms be as effective as conventional, technological, Internet-based website technologies. METHODS: A Web-based database and a smartphone application were developed. Participants were recruited by snowball sampling. The participants were recruited either via a self-sponsored Facebook post featuring a direct link to the questionnaire on physical and psychological wellbeing and also a smartphone Web-based application; or via dissemination of the questionnaire link by emails, directed to the same group of participants. Information pertaining to physical and psychological wellbeing was collated. RESULTS: A total of 298 respondents took part in the survey. Most of them were between the ages of 20 to 29 years and had a university education. More individuals preferred the option of accessing and providing feedback to a survey on physical and psychological wellbeing via direct access to a Web-based questionnaire. Statistical analysis showed that demographic variables like age, gender, and educational levels did not influence the mechanism of access. In addition, the participants reported a mean number of 4.03 physical symptoms (SD 2.6). The total Impact of Event Scale-Revised (IES-R) score was 18.47 (SD 11.69), which indicated that the study population did experience psychological stress but not post-traumatic stress disorder. The perceived dangerous Pollutant Standards Index (PSI) level and the number of physical symptoms were associated with higher IES-R Score ($P<.05$). CONCLUSIONS: This is one of the first few studies demonstrating the use of Internet in data collection during an air-pollution crisis. Our results demonstrated that the newer technological modalities have the potential to acquire data, similar to that of conventional technologies. Demographic variables did not influence the mechanism of usage. In addition, our findings also suggested that there are acute physical and psychological impacts on the population from an air-pollution crisis.

Zhang, Melvyn Wb; Tsang, Tammy; Cheow, Enquan; Ho, Cyrus Sh; Yeong, Ng Beng; Ho, Roger Cm (2014):

Enabling Psychiatrists to be Mobile Phone App Developers: Insights Into App Development Methodologies.

In: *JMIR Mhealth Uhealth* 2 (4), S. e53. DOI: 10.2196/mhealth.3425.

Abstract:

BACKGROUND: The use of mobile phones, and specifically smartphones, in the last decade has become more and more prevalent. The latest mobile phones are equipped with comprehensive features that can be used in health care, such as providing rapid access to up-to-date evidence-based information, provision of instant communications, and improvements in organization. The estimated number of health care apps for mobile phones is increasing tremendously, but previous research has highlighted the lack of critical appraisal of new apps. This lack of appraisal of apps has largely been due to the lack of clinicians with technical knowledge of how to create an evidence-based app. OBJECTIVE: We discuss two freely available methodologies for developing Web-based mobile phone apps: a website builder and an app builder. With these, users can program not just a Web-based app, but also integrate multimedia features within their app, without needing to know any programming language. METHODS: We present techniques for creating a mobile Web-based app using two well-established online mobile app websites. We illustrate how to integrate text-based content within the app, as well as integration of interactive videos and rich site summary (RSS) feed information. We will also briefly discuss how to integrate a simple questionnaire survey into the mobile-based app. A questionnaire survey was administered to students to collate their perceptions towards the app. RESULTS: These two methodologies for developing apps have been used to convert an online electronic psychiatry textbook into two Web-based mobile phone apps for medical students rotating through psychiatry in Singapore. Since the inception of our mobile Web-based app, a total of 21,991 unique users have used the mobile app and online portal provided by WordPress, and another 717 users have accessed the app via a Web-based link. The user perspective survey results (n=185) showed that a high proportion of students valued the textbook and objective structured clinical examination videos featured in the app. A high proportion of students concurred that a self-designed mobile phone app would be helpful for psychiatry education. CONCLUSIONS: These methodologies can enable busy clinicians to develop simple mobile Web-based apps for academic, educational, and research purposes, without any prior knowledge of programming. This will be beneficial for both clinicians and users at large, as there will then be more evidence-based mobile phone apps, or at least apps that have been appraised by a clinician.

Zhang, Shuyi; Wu, Qiong; van Velthoven,Michelle H. M. M.; Chen, Li; Car, Josip; Rudan, Igor et al. (2012):

Smartphone versus pen-and-paper data collection of infant feeding practices in rural China.

In: *J Med Internet Res* 14 (5), S. 156–167. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2012-32279-011%26site%3dehost-live;summyzh@yahoo.com.cn.

Abstract:

Background: Maternal, Newborn, and Child Health (MNCH) household survey data are collected mainly with pen-and-paper. Smartphone data collection may have advantages over pen-and-paper, but little evidence exists on how they compare. Objective: To compare smartphone data collection versus the use of pen-and-paper for infant feeding practices of the MNCH household survey. We compared the two data collection methods for differences in data quality (data recording, data entry, open-ended answers, and interrater reliability), time consumption, costs, interviewers' perceptions, and problems encountered. Methods: We recruited mothers of infants aged 0 to 23 months in four village clinics in Zhaozhou Township, Zhao County, Hebei Province, China. We randomly assigned mothers to a smartphone or a pen-and-paper questionnaire group. A pair of interviewers simultaneously questioned mothers on infant feeding practices, each using the same method (either smartphone or pen-and-paper). Results: We enrolled 120 mothers, and all completed the study. Data recording errors were prevented in the smartphone questionnaire. In the 120 pen-and-paper questionnaires (60 mothers), we found 192 data recording errors in 55 questionnaires. There was no significant difference in recording variation between the groups for the questionnaire pairs (P = .32) or variables (P = .45). The smartphone questionnaires were automatically uploaded and no data entry errors occurred. We found that even after double data entry of the pen-and-paper questionnaires, 65.0% (78/120) of the questionnaires did not match and needed to be checked. The mean duration of an interview was 10.22 (SD 2.17) minutes for the smartphone method and 10.83 (SD 2.94) minutes for the pen-and-paper method, which was not significantly different between the methods (P = .19). The mean costs per questionnaire were higher for the smartphone questionnaire (-€143, equal to US $23 at the exchange rate on April 24, 2012) than for the pen-and-paper questionnaire (-€83, equal to US $13). The smartphone method was acceptable to interviewers, and after a pilot test we encountered only minor problems (eg, the system halted for a few seconds or it shut off), which did not result in data loss. Conclusions: This is the first study showing that smartphones can be successfully used for household data collection on infant feeding in rural China. Using smartphones for data collection, compared with pen-and-paper, eliminated data recording and entry errors, had similar interrater reliability, and took an equal amount of time per interview. While the costs for the smartphone method were higher than the pen-and-paper method in our small-scale survey, the costs for both methods would be similar for a large-scale survey. Smartphone data collection should be further evaluated for other surveys and on a larger scale to deliver maximum benefits in China and elsewhere. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Zhao, Xiaoyi; Sun, Zhichao; Ruan, Yanping; Yan, Jianhua; Mukherjee, Bhramar; Yang, Fumo et al. (2014):

Personal Black Carbon Exposure Influences Ambulatory Blood Pressure: Air Pollution and Cardiometabolic Disease (AIRCMD-China) Study.

In: *Hypertension* 63 (4), S. 871–877. DOI: 10.1161/HYPERTENSIONAHA.113.02588.

Abstract:

Few prospective studies have assessed the blood pressure effect of extremely high air pollution encountered in Asia's megacities. The objective of this study was to evaluate the association between combustion-related air pollution with ambulatory blood pressure and autonomic function. During February to July 2012, personal black carbon was determined for 5 consecutive days using microaethalometers in patients with metabolic syndrome in Beijing, China. Simultaneous ambient fine particulate matter concentration was obtained from the Beijing Municipal Environmental Monitoring Center and the US Embassy. Twenty-four-hour ambulatory blood pressure and heart rate variability were measured from day 4. Arterial stiffness and endothelial function were obtained at the end of day 5. For statistical analysis, we used generalized additive mixed models for repeated outcomes and generalized linear models for single/summary outcomes. Mean (SD) of personal black carbon and fine particulate matter during 24 hours was 4.66 (2.89) and 64.2 (36.9) mug/m(3). Exposure to high levels of black carbon in the preceding hours was associated significantly with adverse cardiovascular responses. A unit increase in personal black carbon during the previous 10 hours was associated with an increase in systolic blood pressure of 0.53 mm Hg and diastolic blood pressure of 0.37 mm Hg (95% confidence interval, 0.17-0.89 and 0.10-0.65 mm Hg, respectively), a percentage change in low frequency to high frequency ratio of 5.11 and mean interbeat interval of -0.06 (95% confidence interval, 0.62-9.60 and -0.11 to -0.01, respectively). These findings highlight the public health effect of air pollution and the importance of reducing air pollution.

Zheng, Kai; Padman, Rema; Johnson, Michael P.; Diamond, Herbert S. (2009):

An interface-driven analysis of user interactions with an electronic health records system.

In: *Journal of the American Medical Informatics Association : JAMIA* 16 (2), S. 228–237. DOI: 10.1197/jamia.M2852.

Abstract:

OBJECTIVES\r\nThis study sought to investigate user interactions with an electronic health records (EHR) system by uncovering hidden navigational patterns in the EHR usage data automatically recorded as clinicians navigated through the system's software user interface (UI) to perform different clinical tasks.\r\nDESIGN\r\nA homegrown EHR was adapted to allow real-time capture of comprehensive UI interaction events. These events, constituting time-stamped event sequences, were used to replay how the EHR was used in actual patient care settings. The study site is an ambulatory primary care clinic at an urban teaching hospital. Internal medicine residents were the primary EHR users.\r\nMEASUREMENTS\r\nComputer-recorded event sequences reflecting the order in which different EHR features were sequentially accessed.\r\nMETHODS\r\nWe apply sequential pattern analysis (SPA) and a first-order Markov chain model to uncover recurring UI navigational patterns.\r\nRESULTS\r\nOf 17 main EHR features provided in the system, SPA identified 3 bundled features: \"Assessment and Plan\" and \"Diagnosis,\" \"Order\" and \"Medication,\" and \"Order\" and \"Laboratory Test.\" Clinicians often accessed these paired features in a bundle together in a continuous sequence. The Markov chain analysis revealed a global navigational pathway, suggesting an overall sequential order of EHR feature accesses. \"History of Present Illness\" followed by \"Social History\" and then \"Assessment and Plan\" was identified as an example of such global navigational pathways commonly traversed by the EHR users.\r\nCONCLUSION\r\nUsers showed consistent UI navigational patterns, some of which were not anticipated by system designers or the clinic management. Awareness of such unanticipated patterns may help identify undesirable user behavior as well as reengineering opportunities for improving the system's usability.

Zheng, Huan; Xie, Xiaoyun; Xie, Nanzi; Xu, Huifeng; Huang, Junling; Luo, Ming (2014):

Sphingomyelin levels in nondipper and dipper hypertensive patients.

In: *Exp Ther Med* 7 (3), S. 599–603. DOI: 10.3892/etm.2013.1455.

Abstract:

A number of studies have focused on the association between sphingomyelin (SM) levels and atherosclerosis, however, there are few data concerning the correlation of SM with nondipper hypertension. The present study aimed to investigate the correlation between plasma SM levels and nondipper status in patients with hypertension. A total of 200 hypertensive patients were enrolled and divided into two groups according to their ambulatory blood pressure monitoring (AMBP) results: Dipper group (84 patients) and nondipper group (116 patients). All patients were subjected to transthoracic echocardiography examination and laboratory tests. No statistically significant difference was observed between the two groups in terms of basic clinical characteristics. However, the plasma SM levels in the dipper group were significantly lower than those of the nondipper group (41.9+/-17.5 vs. 96.4+/-14.3 mg/dl, P=0.003). The left ventricular mass index (LVMI) was higher in the nondipper patients than in the dipper patients and the diastolic function parameters in the nondipper patients were less favorable. Correlation analysis showed that the SM level was negatively correlated with the magnitude of systolic blood pressure (SBP) fall at night (r=-0.42, P<0.01) and diastolic blood pressure (DBP) fall at night (r=-0.31, P<0.01). The nondipper status had contributory effects on hypertensive concentric hypertrophy and diastolic function impairment. In addition, the plasma SM level was associated with a nondipper pattern of hypertension.

Zhou, Sophia H.; Helfenbein, Eric D.; Lindauer, James M.; Gregg, Richard E.; Feild, Dirk Q. (2009):

Philips QT interval measurement algorithms for diagnostic, ambulatory, and patient monitoring ECG applications.

In: *Annals of noninvasive electrocardiology : the official journal of the International Society for Holter and Noninvasive Electrocardiology, Inc* 14 Suppl 1, S. S3-8. DOI: 10.1111/j.1542-474X.2008.00258.x.

Abstract:

BACKGROUND\r\nCommonly used techniques for QT measurement that identify T wave end using amplitude thresholds or the tangent method are sensitive to baseline drift and to variations of terminal T wave shape. Such QT measurement techniques commonly underestimate or overestimate the \"true\" QT interval.\r\nMETHODS\r\nTo find the end of the T wave, the new Philips QT interval measurement algorithms use the distance from an ancillary line drawn from the peak of the T wave to a point beyond the expected inflection point at the end of the T wave. We have adapted and optimized modifications of this basic approach for use in three different ECG application areas: resting diagnostic, ambulatory Holter, and in-hospital patient monitoring. The Philips DXL resting diagnostic algorithm uses an alpha-trimming technique and a measure of central tendency

to determine the median QT value of eight most reliable leads. In ambulatory Holter ECG analysis, generally only two or three channels are available. QT is measured on a root-mean-square vector magnitude signal. Finally, QT measurement in the real time in-hospital application is among the most challenging areas of QT measurement. The Philips real time QT interval measurement algorithm employs features from both Philips DXL 12-lead and ambulatory Holter QT algorithms with further enhancements.\r\nRESULTS\r\nThe diagnostic 12-lead algorithm has been tested against the gold standard measurement database established by the CSE group with results surpassing the industrial ECG measurement accuracy standards. Holter and monitoring algorithm performance data on the PhysioNet QT database were shown to be similar to the manual measurements by two cardiologists.\r\nCONCLUSION\r\nThe three variations of the QT measurement algorithm we developed are suitable for diagnostic 12-lead, Holter, and patient monitoring applications.

Zhou, J.; Liu, C.; Shan, P.; Zhou, Y.; Xu, E.; Ji, Y. (2012):

Prevalence and distinguishing features of masked hypertension in type 2 diabetic patients.

In: *J Diabetes Complications* (1056-8727 (Linking)). DOI: 10.1016/j.jdiacomp.2012.07.003.

Abstract:

OBJECTIVE: The prevalence and clinical features of masked hypertension (MH) in type 2 diabetes mellitus patients (T(2)DM) were investigated to define clinical indices which may aid diagnosis and treatment. METHODS: Clinical blood pressure (CBP) and ambulatory blood pressure (ABP) were measured in 856 T(2)DM patients to differentiate normotensive (NT), essential hypertensive (EH), and MH. Waist circumference (WC), abdominal circumference (AC), body mass index (BMI), waist to height ratio (WHtR), fasting blood glucose (FBG), and glycated hemoglobin levels were measured and compared between BP groups. RESULTS: In total, 359 patients had normal CBP, of which 13.37% were diagnosed with MH based on established criteria. Males had significantly higher rates of MH (15.30%) than females (11.36%) (P=0.036). The MH detection rate increased with age and T(2)DM duration. There were no significant differences in BMI, WC or WHtR between total MH and EH groups. MH females, however, had lower BMIs than female EH females (P=0.023). Smoking, alcohol, and familial EH history were lower in MH than EH patients (smoking, P=0.029; alcohol ,P=0.001; and EH history, P=0.000), while BMI (male, P=0.037, female, P=0.015), WC (male, P=0.012, female, P=0.021), WHtR (P=0.011), smoking (P=0.016), and alcohol consumption (P=0.000) were higher in MH than NT patients. BMI, WHtR, 6-15year disease course of diabetes, smoking and alcoholism were independent risk factors of T(2)DM complicated with MH. The dipper BP circadian pattern was significantly lower in MH than NT patients (P=0.001). The non-dipper pattern was lower in MH than EH (P=0.018) but higher than in NT (P=0.000). CONCLUSIONS: A significant fraction of T(2)DM patients were diagnosed with MH. Clinical presentation also contrasted sharply from EH, MH is a specific blood pressure status that may severely damage target organs in T(2)DM

Zhu, Zheng; Chen, Peijie; Zhuang, Jie (2013):

Intensity classification accuracy of accelerometer-measured physical activities in Chinese children and youth.

In: *Res Q Exerc Sport* 84 Suppl 2, S. S4-11.

Abstract:

PURPOSE: Many ActiGraph accelerometer cutoff points and equations have been developed to classify children and youth's physical activity (PA) into different intensity levels. Using a sample from the Chinese City Children and Youth Physical Activity Study, this study was to develop new ActiGraph cutoff points for moderate-to-vigorous physical activity (MVPA) and vigorous physical activity (VPA) for Chinese children and youth and to compare the classification accuracy to that of a set of existing cutoff points. METHOD: A total of 367 Chinese children and youth (179 boys, 188 girls, ages 9-17 years old) had their resting metabolic rate measured and completed six 5-min treadmill walking/running tests (tested at different speeds: 3 km x h(-1), 4 km x h(-1), 5 km x h(-1), 6 km x h(-1), 7 km x h(-1), and 8 km x h(-1)), one unit of the 3rd broadcast gymnastics (Version 3, Xi-Wang-Feng-Fan and Wu-Dong-Qing-Chun), and 2 sets of table tennis exercises (continuous attack and multiple balls). Participants wore 1 ActiGraph GT3X accelerometer on their right hip during each test, and their oxygen consumption and heart rate (HR) were measured using Cosmed K4b2 and Polar HR transmitter. The participants were randomly divided into a calibration group (n = 331, 90%) and a cross-validation group (n = 36, 10%). Using the receiver-operating characteristic curve, the data from the calibration group were used to determine the cutoff points for MVPA and VPA. Using the data from the cross-validation group, classification accuracy of different cutoff points was evaluated through kappa statistics, sensitivity, and specificity. RESULTS: A set of new cutoff points of counts per minute (CPM) was generated using the calibration data, and these cutoff points were proven to be more accurate compared with those developed in previous studies. CONCLUSION: When using ActiGraph accelerometers to measure the Chinese children and youth's PA, we recommended using the cutoff points of CPM > or = 2,800 to define MVPA and CPM > or = 4,000 for VPA.

Zhu, Zheng; Chen, Peijie; Zhuang, Jie (2013):

Predicting Chinese children and youth's energy expenditure using ActiGraph accelerometers: a calibration and cross-validation study.

In: *Res Q Exerc Sport* 84 Suppl 2, S. S56-63.

Abstract:

PURPOSE: The purpose of this study was to develop and cross-validate an equation based on ActiGraph accelerometer GT3X output to predict children and youth's energy expenditure (EE) of physical activity (PA). METHOD: Participants were 367 Chinese children and youth (179 boys and 188 girls, aged 9 to 17 years old) who wore 1 ActiGraph GT3X accelerometer on their right hip during the following tests/activities: resting metabolic rate (RMR), six 5-min treadmill walk/runs (tested at different speeds: 3 km x h(-1), 4 km x h(-1), 5 km x h(-1), 6 km x h(-1), 7 km x h(-1), and 8 km x h(-1)), 1 broadcast gymnastics, and 2 table-tennis exercises. Participants' oxygen consumption was measured using Cosmed K4b(2). The participants were randomly divided into a calibration group (n = 331, 90%) and a cross-validation group (n = 36, 10%). The calibration group's data were used to determine the relationship between EE and triaxial vector magnitude counts (VM) using the Pearson correlation and to derive the equation using a stepwise multiple regression. In the cross-validation group, differences between measured and predicted EE were evaluated using pairwise t tests. RESULTS: VM activity counts had a moderately high correlation with EE (r = .758, p < .01). An EE prediction equation was developed: EE (kcal x min(-1)) = 0.00083 x VM + 0.073 x weight-2.01 (R2 = .72, SEE = 1.45 kcal x min(-1)). According to the cross-validation study results, this equation could predict the EE within the range of known accuracy (i.e., about 20% error). CONCLUSIONS: An equation based on ActiGraph accelerometer VM activity counts was derived to predict EE of PA in Chinese children and youth within the range of known accuracy.

Zhuang, Jie; Chen, Peijie; Wang, Chao; Huang, Liang; Zhu, Zheng; Zhang, Wenjie; Fan, Xiang (2013):

Characteristics of missing physical activity data in children and youth.

In: *Res Q Exerc Sport* 84 Suppl 2, S. S41-7.

Abstract:

PURPOSE: The purpose of this study was to investigate the characteristics of missing physical activity (PA) data of children and youth. METHOD: PA data from the Chinese City Children and Youth Physical Activity Study (N = 2,758; 1,438 boys and 1,320 girls; aged 9-17 years old) were used for the study. After the data were sorted by the weekday (WD) and recording day (RD), the missing ratio (MR) was calculated by gender, age, and body mass index (BMI). Chi-square tests were used to determine the effect of WD and RD on missing data. The joint impact (WD x RD) on the MR, as well as their interactions with age, gender, and BMI, were also analyzed. RESULTS: Out of a total of 19,306 records, 5,400 (28.0%) were missing. The total MR significantly differed by WD and RD. There were more missing data during weekend days than during WDs, with the highest being on Sunday (36.2%). Older youth (aged 15-17 years old) had more missing data than did the 9- to 11-year-old group and 12- to 14-year-old group. In terms of RD, the 7th day had the most total missing data (36.0%), and again, older youth (15-17 years old) had more missing data than did the other 2 age groups. Gender and BMI had no impact on missing data by WD or RD. When the joint effect of WD and RD was examined, it was found that providing the measurement devices on Thursday and collecting data from Friday onward resulted in the lowest amount of missing data (18.5%). CONCLUSION: This study examined missing data characteristics with different sorting orders, which may help design more effective measures to prevent missing data in future PA measurement using accelerometers.

Zhuang, Jie; Chen, Peijie; Wang, Chao; Jin, Jing; Zhu, Zheng; Zhang, Wenjie (2013):

Recovering physical activity missing data measured by accelerometers: a comparison of individual and group-centered recovery methods.

In: *Res Q Exerc Sport* 84 Suppl 2, S. S48-55.

Abstract:

PURPOSE: The purpose of this study was to determine which method, individual information-centered (IIC) or group information-centered (GIC), is more efficient in recovering missing physical activity (PA) data. METHOD: A total of 2,758 Chinese children and youth aged 9 to 17 years old (1,438 boys and 1,320 girls) wore ActiGraph GT3X/GT3X+ accelerometers for 7 consecutive days. Those with no missing data (n = 900) were used to form a nonmissing sample, which, based on a semisimulation approach, was used to create a missing data set to evaluate a set of recovery methods, including 2 IIC and 22 GIC methods. Root mean square difference (RMSD), mean signed difference, and paired t test were used to determine the effectiveness of the recovery methods. RESULTS: The smallest RMSD values, which represent the most accurate recovery, were found with: (a) GIC-Expectation-maximization (GIC-EM) regardless of gender and by age (113,957.64); (b) GIC-EM regardless of

gender and age (114,367.88); (c) GIC-EM regardless of age and by gender (114,697.06); (d) GIC-EM by gender and age (116,178.34); and (e) IIC averaging of remaining days (125,851.23). CONCLUSION: To recover 7-day PA accelerometer-determined activity missing data, we recommend using the GIC-EM and IIC approaches.

Zhuo, Shang; Wen, Wang; Li-Yuan, Ma; Shu-Yu, Wang; Yi-Xin, Wang (2009):

Home blood pressure measurement in prehypertension and untreated hypertension: comparison with ambulatory blood pressure monitoring and office blood pressure.

In: *Blood Press Monit* 14 (6), S. 245–250. DOI: 10.1097/MBP.0b013e328332fd25.

Abstract:

OBJECTIVES\r\n(i) To explore blood pressure (BP) baseline characteristics in prehypertension (PH) and untreated essential hypertension (HT), and (ii) to evaluate whether simple home blood pressure (HBP) measurement can provide more reliable BP information than office blood pressure (OBP) in PH and untreated essential HT, and (iii) to investigate whether HBP measurement can also satisfactorily screen out masked hypertension (MH) and white-coat hypertension (WCH) by comparing with ambulatory blood pressure (ABP) monitoring.\r\nMETHODS\r\nWe recruited 122 Beijing community volunteers. According to OBP measurement, they were divided into three groups, including PH group (n=51), stage 1 HT group (HT-1, n=51) and stage 2 HT group (HT-2, n=20). We calculated average OBP, HBP, and ABP, detection rate of MH, WCH, and nondipper status percentage in each group.\r\nRESULTS\r\nNondipper status percentage of PH, HT-1, and HT-2 was 54.9, 45.1, and 75%, respectively. Except for diastolic blood pressure difference between HBP and ABP, the others did not reach statistical significance. ABP correlated more strongly with HBP than OBP. Detection rate of MH in PH participants by HBP and ABP was 49.0 and 52.9% (P=0.56), respectively, and MH diagnostic agreement between ABP and HBP was moderate (kappa=0.53, 95% confidence interval: 0.30-0.76). Detection rate of WCH in stage 1 HT participants by HBP and ABP was 9.8 and 11.8% (P=0. 65), respectively, and WCH diagnostic agreement between ABP and HBP was moderate (kappa=0.49, 95% confidence interval: 0.10-0.87).\r\nCONCLUSION\r\nNondipper status percentage was higher in PH and untreated HT, and detection rate of MH in PH participants was also higher. The simple HBP measurement can provide more reliable and actual BP information and may be a feasibility of screening out MH and WCH for the clinical practice.

Zielke, Desiree Joy (2014):

Ecological momentary assessment versus traditional retrospective self-reports as predictors of health-relevant outcomes.

In: *Dissertation Abstracts International: Section B: The Sciences and Engineering* 74 (7-B(E)). Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-99020-413%26site%3dehost-live.

Abstract:

Ecological momentary assessment (EMA) has been asserted by proponents of the technique as being superior to standard paper-and-pencil measurements in terms of the reliability and validity of the information obtained; however, this claim has not yet been fully evaluated in the literature. Accordingly, the purpose of this study was to evaluate one aspect of this assertion by comparing the utility of EMA and retrospective measures of depressive symptoms in predicting health-relevant biological and behavioral outcomes. It was hypothesized that (1) the EMA measure will have better predictive utility when examining objective sleep quality (a biological outcome), and that (2) the retrospective measure will have better predictive utility when examining blood donation intention (a behavioral outcome). Ninety-six undergraduate females participated in this 2-week study. Depressive symptoms were measured momentarily and retrospectively using the Center for Epidemiological Studies-Depression Scale (CES-D). The biological outcome was assessed by actigraphy, whereas the behavioral outcome was measured via a self-report questionnaire. Unfortunately, it was not possible to fully test these hypotheses due to the failure to observe relationships between the predictor variables and the outcomes. The reported results, although limited, did not provide support for the hypotheses. Supplemental analyses revealed a moderate to high amount of shared variance between the EMA and retrospective measures, a similar extent of random error in both measures, and potentially a greater degree of systematic error in the retrospective measure. Due to the paucity of literature examining the claim of superior reliability and validity of EMA versus retrospective measures, as well as the failure of the current study to evaluate this assertion sufficiently, it appears that this claim remains unfounded. Therefore, suggestions for future research are provided. (PsycINFO Database Record (c) 2014 APA, all rights reserved)

Zittrain, Jonathan (2008):

Ubiquitous human computing.

In: *Philosophical Transactions of the Royal Society of London A: Mathematical, Physical and Engineering Sciences* 366 (1881), S. 3813–3821.

Abstract:

Ubiquitous computing means network connectivity everywhere, linking devices and systems as small as a drawing pin and as large as a worldwide product distribution chain. What could happen when people are so readily networked? This paper explores issues arising from two possible emerging models of ubiquitous human computing: fungible networked brainpower and collective personal vital sign monitoring.

Zunker, Christie; Peterson, Carol B.; Crosby, Ross D.; Cao, Li; Engel, Scott G.; Mitchell, James E.; Wonderlich, Stephen A. (2011):

Ecological momentary assessment of bulimia nervosa: Does dietary restriction predict binge eating?

In: *Behav Res Ther* 49 (10), S. 714–717. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2011-20201-015&site=ehost-live;swonderlich@nrifargo.com.

Abstract:

The purpose of this study was to examine the relationship between caloric restriction (CR) and binge eating (BE) using ecological momentary assessment (EMA). Participants included 133 women with bulimia nervosa (BN) who completed an EMA protocol for 2 weeks. Logistic regression analyses tested whether CR increased the probability of BE episodes. The results revealed that the odds of BE increased on the day that restriction occurred as well as on the following day. In addition, both restriction and BE on one day predicted the likelihood of BE the subsequent day, but restriction for two days prior to the episode failed to add additional information for predicting BE. These findings support the cognitive behavioral therapy (CBT) model of BN, suggesting that self-reported dietary restriction is predictive of subsequent BE episodes, and that reducing dietary restriction in treatment may lead to improvements in bulimic symptoms. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Zuzanek, Jiri (2013):

Does being well-off make us happier? Problems of measurement.

In: *Journal of Happiness Studies* 14 (3), S. 795–815. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2013-22230-006%26site%3dehost-live;zuzanek@uwaterloo.ca.

Abstract:

The article uses General Social Survey data (GSS) collected by Statistics Canada from 1986 to 2005 and experience sampling data (ESM) collected in 1985 and 2003 at the University of Waterloo to examine relationships between economic growth, household income, and subjective sense of well-being. The article puts to a test two propositions made by Easterlin (Nations and households in economic growth: Essays in Honor of Moses Abramovitz. Academic Press, New York, NY,1974), namely that personal and household incomes correlate positively with subjective well-being, but this does not apply to the relationship between subjective well-being and societal economic growth. Analyses of GSS data reported in this article support Easterlin's findings. They show that higher household incomes correlate positively with respondents' retrospective assessments of life satisfaction, but economic growth has not been accompanied by a corresponding rise of subjective wellbeing. Analyses of ESM data suggest that when relationships between household income and subjective well-being are measured by "experiential" measures (Csikszentmihalyi and Larson in J Nerv Ment Dis 175: 526–537, 1987), these relationships are not statistically significant and subjective valuations of well-being taper off at the top of the income pyramid. (PsycINFO Database Record (c) 2013 APA, all rights reserved) (journal abstract)

Zuzanek, Jiri; Zuzanek, Tamara (2014):

Of happiness and of despair, is there a measure? Time use and subjective well-being.

In: *Journal of Happiness Studies*. Online verfügbar unter http://www.redi-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsyh%26AN%3d2014-24488-001%26site%3dehost-live.

Abstract:

Data from the 1975 U.S. time use survey, Canadian time use surveys (GSS) conducted from 1986 to 2010, and experience sampling surveys (ESM) conducted in 1985 and 2003 at the University of Waterloo (Canada) are used to examine well-being effects of time use. Indicators of subjective well-being (SWB) under investigation include: (a) generalised enjoyment ratings of selected daily activities; (b) reporting of the single most enjoyed activity performed on the time diary day; (c) affect ratings of daily activities recorded in ESM surveys at the time of their occurrence; (d) correlations between time use and levels of respondents' perceived happiness and life satisfaction, and (e) relationships between frequency of participation in different groups of daily activities and respondents' cumulative affect ratings during a survey week (ESM 1985, 2003). An argument is made that attempts to delineate indices of SWB as multiples of activity enjoyment ratings and their duration encounter considerable measurement and conceptual difficulties. It is suggested that prolonged exposure to highly enjoyed daily activities does not always foretell higher levels of cumulative subjective well-being, which is associated with balanced use of time rather than increased participation in individual activities. (PsycINFO Database Record (c) 2014 APA, all rights reserved). (journal abstract)