

**Conclusions:** Time trends of PA differ between different grades. PA decreased with more than a quarter in 8<sup>th</sup> grade and around one tenth in 5<sup>th</sup> grade. However 2<sup>nd</sup> graders PA seems stable.

**Variation of physical activity and sleep by gender and age among the general adult population in Finland**

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**Introduction:** Assessing physical activity over 24-h in large-scale population-based studies increases our understanding of people's activity profiles. We examined gender and age variation in objectively assessed physical activity and sleep among adults in Finland.

**Methods:** In the FinHealth 2017 Study, 940 participants aged 25-93 years wore an accelerometer (Actigraph GT9X Link) on the non-dominant wrist for 7 days. Physical activity information was extracted as vector magnitude counts per minute (VMcpm), divided into three levels, after excluding periods of sleep and non-wear. Sleep periods were based on wrist acceleration and diary information. Sufficient wear-time (≥10 hours) was found for 6 days or more in 95% of participants and data over 7 nights in 88%.

**Results:** Women accumulated more high VMcpm than men. Dividing overall wear-time into low, moderate and intensive activity levels, the distribution in women was 68%, 25% and 7% and in men 74%, 22%, and 5%. In the age groups of 65-74 and 75+ the gender differences disappeared and the VMcpm were overall lower than in younger participants. The mean sleep period lengths showed little variation in the population. The longest sleep periods were observed in women aged 25-34 years (7.2 hours) and the shortest (6.5 hours) in men aged 45-54 and 75+ years.

**Conclusions:** These results mirror previous large-scale observations using wrist-accelerometry. Whether the gender and age variation in activity output represent true differences in activity intensities and if it is reflected on health warrant further studying.

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**Theme: Mental Health**

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**24 hour movement behaviours in children with ADHD**

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**Objectives:** Studies have documented the benefits of physical activity for children with ADHD, yet these children are at increased risk for obesity and suboptimal movement behaviors. We sought to describe 24 hour movement behaviors in children with ADHD, determine risk factors, and compare outcomes to children with other neurodevelopmental or medical conditions.

**Methods:** 24 hour movement behaviors of children with ADHD (ages 6 to 18 years) were obtained using 2011 parent-reported data from the National Survey of Child Health, a cross-sectional, U.S. population-based sample, and compared to children with Autism Spectrum Disorder, asthma, and a normative group. Movement behaviors included physical activity (PA), sports participation, sleep, and screen time.

**Results:** Approximately 1/3 of children with ADHD participated in daily PA and half in sports in the past year. Older children with ADHD were less likely

to engage in daily PA, get enough sleep, and limit screen time to <2 hours/day. Girls with ADHD had lower odds of daily PA and enough sleep. Children who were obese, poor, or with severe ADHD, had lower odds of sports. Children with ADHD displayed 50% lower odds of sports participation than children with asthma, but seven times greater odds than children with autism.

**Conclusions:** Children with ADHD did not engage in recommended amounts of PA, sleep and screen time. Children with ADHD who are older, female, poor, obese and/or with more severe symptoms are at higher risk for suboptimal 24 hour movement behaviors. These domains represent novel treatment targets in ADHD.

**Does relocation to a neighbourhood built on active design principles improve self-rated mental health, well-being and neighbourhood perceptions? Evaluation of a natural experiment**

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**Introduction:** Evidence suggests that active living has potential benefits for mental health as well as physical health, especially in disadvantaged populations. The Examining Neighbourhood Activities in Built Living Environments in London study, a natural experiment, aimed to establish whether relocating to East Village - a new urban neighbourhood built on active design principles - improved adult physical, mental health and well-being.

**Methods:** 1278 adults seeking social, intermediate (affordable) and market-rent accommodation in East Village were recruited in 2013-2015, and followed up after 2 years. Self-reported mental-health, subjective well-being and neighbourhood perceptions were assessed by questionnaire. Multilevel linear regression models examined change in these outcomes adjusted for age, sex, ethnicity and household (random effect).

**Results:** 877 (69%) adults were followed up after 2 years; half (50%) had moved to East Village. There were marginally lower levels of depression and anxiety amongst those who moved to East Village compared with those who did not, but differences were not statically significant. Overall there were higher levels of life satisfaction, worthwhile and happiness, but differences were only statistically significant for life satisfaction amongst the intermediate sector (P=0.01). Marked improvements in neighbourhood perceptions were observed for all housing sectors (all P<0.01). There was a suggestion that less perceived crime was stronger in social and intermediate sectors compared with market-rent.

**Conclusion:** East Village, designed to encourage healthy active living, showed co-benefits for mental health, well-being and neighbourhood perceptions, which could plausibly affect physical activity.

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**Ecological momentary assessment of affect and physical activity in people with depression**

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**Introduction:** Evidence suggests that physical activity is effective at improving mood; however the optimum dose, including intensity,