

## IBTN Conference Abstract

**Title:** Adherence to the 24-Hour Movement Guidelines and Adiposity in a Cohort of at Risk Youth: A Longitudinal Analysis

**Authors:** Chemtob, Keryn. (1), Reid, Ryan. E. R. (2), Mathieu, Marie-Eve. (3,4), Van Hulst, Andraea.\* (1)

**Affiliations:** (1) Ingram School of Nursing, Faculty of Medicine, McGill University, Montreal, QC, Canada, (2) Human Kinetics Department, St Francis Xavier University, Antigonish, NS, (3) École de kinésiologie et des sciences de l'activité physique, Faculté de Médecine, Université de Montréal, (4) CHU Sainte Justine.

**Background:** The 24 hour (24hr) movement guidelines give recommendations for physical activity, screen time and sleep duration for children.

**Objectives:** To describe adherence to the guidelines and their cross-sectional and longitudinal associations with adiposity from childhood to adolescence.

**Methods:** Quebec children aged 8-10 years were followed at baseline (n=630), 10-12 years (n=564) and 15-17 years (n=377) in the QUALITY Cohort study. Physical activity, sleep duration and screen time were measured using accelerometry or questionnaires. Body mass index z-scores (zBMI), waist circumference, waist-to-height ratio and percent body fat were used to measure adiposity. Analyses consisted of descriptive statistics and multiple linear regressions.

**Results:** In childhood, early adolescence and adolescence, 14%, 6%, and 0% of children met the 24hr guidelines respectively. Cross-sectional analyses found that meeting fewer components of the guidelines was associated with higher adiposity at each visit. In longitudinal analyses, meeting fewer guideline components in childhood was associated with higher adiposity in early adolescence and adolescence. For example, compared to meeting all components at baseline, zBMI in early adolescence was 0.53 SD (95% CI:0.19, 0.87) higher among those meeting 2, 0.95 SD (95% CI:0.59,1.32) higher among those meeting 1, and 1.66 SD (95% CI:0.42, 2.89) higher among those meeting no components.

**Conclusion:** Few participants in this cohort meet the 24hr movement guidelines. Meeting less components of the guidelines in childhood is associated with higher adiposity 2 years and even 7 years later. These findings support the importance of early interventions to increase adherence to the 24hr movement guidelines.