THE ASSOCIATIONS OF OBJECTIVELY MEASURED PHYSICAL ACTIVITY AND SEDENTARY TIME WITH COGNITIVE FUNCTIONS IN SCHOOL-AGED CHILDREN

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Objectives:
This study examined how objectively measured and self-reported physical activity and sedentary behaviour are associated with cognitive functions in children.

Methods:
230 Finnish children (mean age 12.2 years; 56% girls) participated in the study. Physical activity and sedentary time were measured objectively by using the ActiGraph GT1M/ GT3X accelerometer. Self-reported moderate to vigorous physical activity (MVPA) and screen time were evaluated with the questions used in the "WHO Health Behaviour in School-aged Children" study. Cognitive functions including visual memory, executive functions and attention (reaction time and sustained attention) were evaluated with a computerized Cambridge Neuropsychological Test Automated Battery. Structural equation modelling were applied to examine these associations.

Results:
High level of objectively measured MVPA was associated with good performance in the reaction time test (p=0.026), independently of sedentary time and gender. High level of objectively measured sedentary time was associated with good performance in the sustained attention test (p=0.003), independently of MVPA and mother’s education. Objectively measured MVPA or sedentary time were not associated with other measures of cognitive functions. Self-reported physical activity and screen time were not associated with any measures of cognitive functions.

Conclusion:
Objectively measured physical activity and sedentary time were only associated with attentional processes.