

Movement behaviors and cardiometabolic risk in schoolchildren

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Growing evidence has accumulated in recent years showing that movement behaviors have important implications for health in children, especially for cardiovascular health, whose risk factors could track from childhood to adulthood. However, these findings are mixed and inconsistent in children. The aim of this study was to examine the relationship between different movement behaviors (sedentary behavior, physical activity and sleep duration) and cardiometabolic risk in schoolchildren. The study shows cross-sectional results of baseline measurement from 146 Spanish schoolchildren, aged 8-To-11 years old, participating in the MOVI-2 study. Movement behaviors were determined using accelerometry combined with self-reported sleep time. Cardiometabolic risk was assessed using a validated metabolic syndrome index. Logistic regression analysis showed that higher levels of vigorous physical activity (OR = 0.110, $p = 0.004$) and sleeping more than 9 hours (OR = 0.269, $p = 0.015$) could be protective factors against metabolic syndrome risk in children. ANCOVA analysis showed associations between vigorous physical activity and waist circumference ($p < 0.001$), and sleep time with insulin resistance ($p = 0.017$) and lipid profile ($p = 0.035$). No association was observed between light and moderate physical activity, sedentary behavior and metabolic syndrome (index and components). No statistically significant differences were found for blood pressure and any of the movement behaviors. Our data suggest that both the amount of vigorous physical activity accumulated and sleep duration are independently associated with higher cardiometabolic risk in children. © 2018 Lucas-de la Cruz et al. This is an open access article

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