

Effects of a Multicomponent Intervention on Physical Activity During the School Day: The MOVESCHOOL Study

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Purpose: Increasing physical activity levels and reducing sedentary time among adolescents during the school day is an urgent priority, and innovative strategies have shown to be effective in achieving this while also offering additional benefits for students. The aim of this study was to examine the effects of a multicomponent school-based intervention during the school day on sedentary time and physical activity (PA) during the school day in adolescents.

Methods: This quasi-experimental study involved a total of 804 students aged 11–16 years ($M = 12.49$; standard deviation (SD) = 0.76) from 11 schools in South-Western Spain. Students were assigned to either an experimental group ($n = 387$) or a control group ($n = 417$). The evaluation included two independent assessments: pre-intervention and post-intervention. The 29-week intervention consisted of a multi-component programme that included one physically active lesson per week, two daily 5-minute active breaks, and one daily active recess. Primary outcomes included accelerometer-based measurements of sedentary time, light PA, moderate PA, and vigorous PA. For statistical analysis, repeated measures ANOVA was conducted to evaluate the effects of the intervention.

Results: Students in the experimental group significantly decreased sedentary time during the school day, while significantly increasing time spent in light, moderate, and vigorous physical activity (group $\times$ time interaction; $p < 0.05$). Specifically, the intervention reduced sedentary time by 12.9 minutes per school day, and increased light PA by 4.2 minutes, moderate PA by 7.6 minutes, and vigorous PA by 1.1 minutes.

Conclusion: This study demonstrates that a school-based multicomponent intervention can effectively reduce sedentary behaviour and increase PA levels among adolescents during the school day. Even modest increases in daily PA and reductions in sedentary time can have meaningful implications for students' overall health and wellbeing. These findings support the integration of structured active components, such as physically active lessons, short active breaks, and active recess, into the daily school routine as a viable and impactful strategy for promoting healthier lifestyles in youth.

