

Association between objectively assessed physical activity and body fat in adolescents

The HELENA Study

by

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Objectives: To examine the association of objectively assessed physical activity (PA) with markers of total and central body fat in adolescents, and to determine whether meeting the current PA recommendations (≥ 60 min/day of at least moderate intensity PA) is associated with reduced levels of total and central body fat.

Methods: A total of 365 Spanish adolescents aged 12.5-17.5 years participated in this cross-sectional study. PA was assessed by accelerometry and expressed as average PA (counts/min), and min/day of low, moderate, moderate to vigorous (MVPA) and vigorous PA. MVPA was dichotomized into < 60 min/day and ≥ 60 . Total body fat was measured by DXA, BodPod, and sum of 6 skinfolds. Central body fat was measured by DXA at three regions (R1, R2, and R3), and waist circumference.

Results: All markers of central body fat were negatively associated with vigorous PA ($P < 0.01$) after controlling for sex, age and pubertal status. Abdominal adiposity measured at R1, R2, and R3 was also negatively associated with MVPA ($P \leq 0.001$), and with average PA ($P < 0.01$). All markers of total body fat were negatively associated with vigorous PA ($P < 0.01$), MVPA ($P < 0.01$), and average PA ($P < 0.05$). Adolescents engaged on at least 60 min/day MVPA presented lower levels of total ($P < 0.05$) and central body fat ($P \leq 0.01$).

Conclusion: The results suggest that vigorous PA may have a greater effect on preventing obesity in adolescents than does PA of lower intensity, whereas both average PA and at least moderate PA may have an impact on total and central body fat in youth.

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