

Publication

Associations between domains of physical activity, sitting time, and different measures of overweight and obesity

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OBJECTIVE: To describe 1) cross-sectional associations between domain-specific physical activity, sitting time and different measures of overweight/obesity and 2) longitudinal associations between patterns of change in physical activity and overweight/obesity ten years later. **METHODS:** Cross-sectional and longitudinal analyses based on the first and second follow-up of the Swiss cohort study SAPAL-DIA (SAP) were conducted (SAP2 in 2002/03, SAP3 in 2010/11). Physical activity was assessed by self-report using the long International Physical Activity Questionnaire (IPAQ) and four short questions regarding moderate and vigorous activities. Overweight/obesity were defined based on body mass index (BMI), waist circumference (WC), waist-to-hip ratio (WHR), waist-to-height ratio (WHtR) and percent body fat based on bioelectric impedance analysis (BIA), all measured objectively. Multivariable logistic regression was used for analyses. **RESULTS:** Cross-sectionally, leisure-time and vigorous physical activity were inversely associated with all obesity parameters. Most consistent associations were found with BIA percent body fat. There were no associations between work-related and domestic activities and overweight/obesity. Sitting time was positively associated with BIA percent body fat, but not with BMI, WHR and WHtR. Longitudinally, remaining inactive from SAP2 to SAP3 was associated with obesity and BIA percent body fat at SAP3 and with weight increase, becoming inactive with BIA percent body fat and weight increase. **CONCLUSIONS:** The results support associations between physical activity and overweight/obesity cross-sectionally and longitudinally. Most consistent associations were found for BIA percent body fat. For prevention purposes, the results indicate that physical activity can have an important contribution to weight management.

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