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RELATIONSHIP BETWEEN DOMAINS OF PHYSICAL ACTIVITY, SITTING TIME, AND DIFFERENT MEASURES OF OVERWEIGHT/OBESITY IN SWISS ADUTS

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Background

Physical inactivity, overweight/obesity and poor nutrition are important risk factors for non-communicable diseases. While these factors have independent effects on health, there are also associations between them. However, little is known about the associations between different domains and patterns of physical activity and overweight, especially when taking energy intake into account.

Objective

The aim of this study was to investigate associations between physical activity and body weight cross-sectionally and longitudinally while taking into account total energy intake and other potential confounders.

Methods

The analyses were based on data from the first (SAP 2) and second (SAP 3) follow-up of the SAPALDIA cohort study (Swiss Cohort Study on Air Pollution and Lung and Heart Disease in Adults). For cross-sectional analyses, different domains of physical activity (at work, in house and garden, for transport, for leisure) based on the International Physical Activity Questionnaire (IPAQ) as well as different measures of overweight and obesity (BMI, waist circumference, waist-to-hip ratio, waist-to-height ratio, percent body fat) were included. For longitudinal analyses, four short questions regarding moderate and vigorous physical activity were available and could be put in relation to BMI and weight changes. More than 3000 and almost 4500 individuals were included in the cross-sectional and longitudinal analyses, respectively. Logistic regression models were used for analyses.

Results

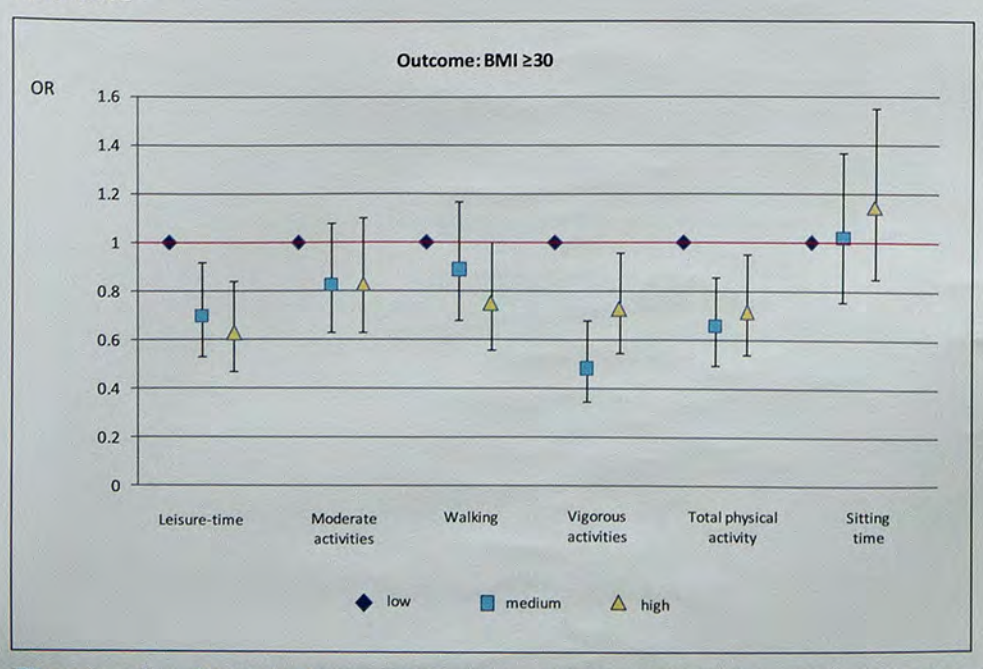

Figure 1. Associations between physical activity and obesity (BMI≥30), Odds ratios (OR) and 95% confidence intervals (95% CI)

In the cross-sectional analyses, individuals in the medium and highest tertiles of leisure-time, vigorous and total physical activity were significantly less affected by obesity (based on BMI (Figure 1), waist circumference, waist-to-height ratio and percent body fat (Figure 2)) than those in the lowest tertile.

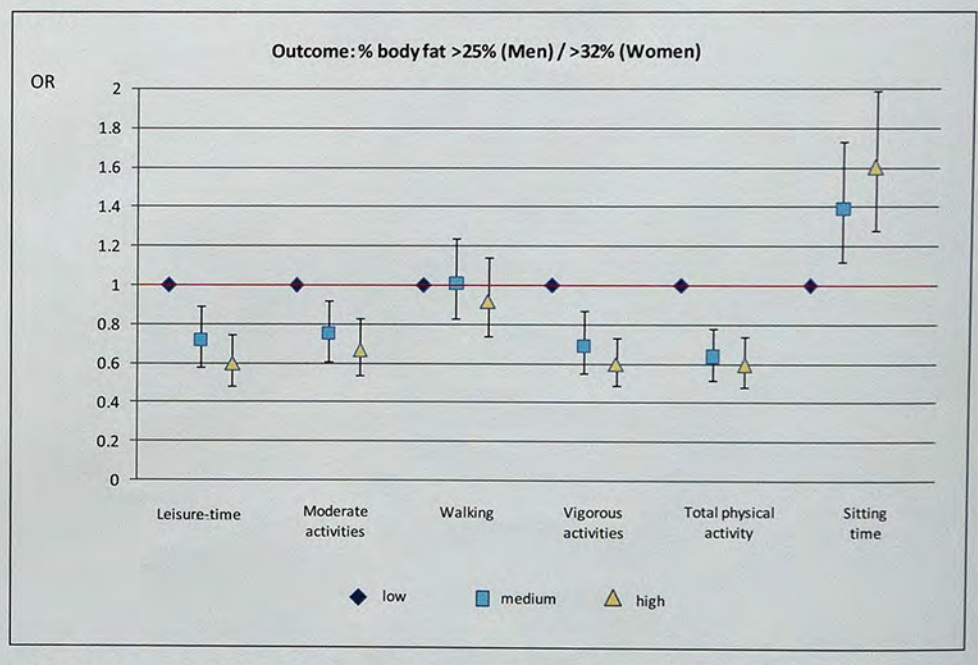

Figure 2. Associations between physical activity and overweight (body fat >25% (men) / >32% (women)), OR and 95% CI

There were also some significant associations for moderate activities and walking, especially with percent body fat. More sitting was associated with a higher percentage of body fat. There were no associations for physical activity at work or in house and garden. According to the longitudinal analyses, individuals inactive both at SAP 2 and 3 had an increased risk of a BMI≥30 or a weight gain of at least 3%.

Conclusions

This study confirms associations between physical activity and body weight also for the population of Switzerland, both in cross-sectional and in longitudinal analyses. However, associations differed by domain and intensity of physical activity and by outcome measure.

Acknowledgements

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