Summary

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. 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. 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). More than 3000 and almost 4500 individuals were included in the cross-sectional and longitudinal analyses, respectively.

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, waist circumference, waist-to-height ratio and percent body fat) than those in the lowest tertile. There were also some significant associations for moderate activities and walking, especially with percent body fat. More sitting was associated with a higher percent 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%. This study confirms associations between physical activity and body weight also for the population of Switzerland.