

## Summary

The aim of the present study was to investigate the validity of the Global Physical Activity Questionnaire (GPAQ) in German, French and Italian in different age groups in Switzerland using accelerometers. The participants completed the GPAQ in a written format and wore an accelerometer during seven days. 354 participants were included in the analyses regarding physical activity, 366 regarding sitting time. The proportion of women was 50.6% and the mean age was 47.0 years. Total physical activity was 2.8 times higher, sitting time 1.2 times lower according to GPAQ than objectively measured. Regarding validity, the correlations were highest for vigorous physical activity ( $r=0.46$ ) and sitting time ( $r=0.47$ ). Modest correlations were found for total activity (MET-minutes/week based on GPAQ versus counts/minute and number of steps, respectively, based on accelerometry,  $r=0.22$  resp.  $r=0.25$ ), for moderate activities (GPAQ) versus light activities (accelerometry,  $r=0.30$ ), and for leisure-time physical activity (GPAQ) versus minutes/week spent in moderate and vigorous activities according to accelerometer data ( $r=0.28$ ). The correlations were generally lower for participants aged 60 years and older. Based on the results of the present study, the GPAQ in written format as used in this study can be classified as valid. This is true for all language regions, both sexes and the age categories up to 60 years. For those aged 60 years and older, the GPAQ seems to capture well leisure-time physical activity and sitting time, while a careful interpretation of total and moderate physical activity is required. Furthermore, even though the validity is acceptable, it needs to be taken into account that the physical activity levels were significantly higher according to the GPAQ than according to accelerometers.