

## Publication

### Assessment of intensity, prevalence and duration of everyday activities in Swiss school children : a cross-sectional analysis of accelerometer and diary data

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**Author(s)** Bringolf-Isler, Bettina; Grize, Leticia; Mäder, Urs; Ruch, Nicole; Sennhauser, Felix H; Braun-Fahrländer, Charlotte

**Author(s) at UniBasel** [Bringolf, Bettina](#) ; [Braun-Fahrländer, Charlotte](#) ; [Grize, Leticia](#) ;

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**ABSTRACT:** BACKGROUND: Appropriately measuring habitual physical activity (PA) in children is a major challenge. Questionnaires and accelerometers are the most widely used instruments but both have well-known limitations. The aims of this study were to determine activity type/mode and to quantify intensity and duration of children's everyday PA by combining information of a time activity diary with accelerometer measurements and to assess differences by gender and age. METHODS: School children (n=189) aged 6/7 years, 9/10 years and 13/14 years wore accelerometers during one week in winter 2004 and one in summer 2005. Simultaneously, they completed a newly developed time-activity diary during 4 days per week recording different activities performed during each 15 min interval. For each specific activity, the mean intensity (accelerometer counts/min), mean duration per day (min/d) and proportion of involved children were calculated using linear regression models. RESULTS: For the full range of activities, boys accumulated more mean counts/min than girls. Adolescents spent more time in high intensity sports activities than younger children ( $p<0.001$ ) but this increase was compensated by a reduction in time spent playing vigorously ( $p=0.04$ ). In addition, adolescents spent significantly more time in sedentary activities ( $p<0.001$ ) and accumulated less counts/min during these activities than younger children ( $p=0.007$ ). Among moderate to vigorous activities, children spent most time with vigorous play (43 min/day) and active transportation (56 min/day). CONCLUSIONS: The combination of accelerometers and time activity diaries provides insight into age and gender related differences in PA. This information is warranted to efficiently guide and evaluate PA promotion

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