Dokumenttyp: journal article

Autor(en) des Beitrags:
Pfitzner, Rebecca; Gorzelniak, Lukas; Heinrich, Joachim; von Berg, Andrea; Klümper, Claudia; Bauer, Carl P; Koletzko, Sibylle; Berdel, Dietrich; Horsch, Alexander; Schulz, Holger; GINIplus Study Group

Titel des Beitrags:
Physical activity in German adolescents measured by accelerometry and activity diary: introducing a comprehensive approach for data management and preliminary results.

Abstract:
Survey of physical activity (PA) is increasingly based on accelerometry. However, data management guidelines are lacking. We propose an approach for combining accelerometry and diary based PA information for assessment of PA in adolescents and provide an example of this approach using data from German adolescents. The 15-year-old participants comprised a subsample the GINIplus birth cohort (n = 328, 42.4% male). Data on PA was obtained from hip-worn accelerometers (ActiGraph GT3X) for seven consecutive days, combined with a prospective activity diary. Major aspects of data management were validity of wear time, handling of non-wear time and diary comments. After data cleaning, PA and percentage of adolescents meeting the recommendations for moderate-to-vigorous activity (MVPA) per day were determined. From the 2224 recorded days 493 days (25%) were invalid, mainly due to uncertainties relating to non-wear time (322 days). Ultimately, 269 of 328 subjects (82%) with valid data for at least three weekdays and one weekend day were included in the analysis. Mean MVPA per day was 39.1 minutes (SD ±25.0), with boys
being more active than girls (41.8±21.5 minutes vs. 37.1±27.8 minutes, p<0.001). Accordingly, 24.7% of boys and 17.2% of girls (p<0.01) met the WHO recommendations for PA. School sport accounted for only 6% of weekly MVPA. In fact, most MVPA was performed during leisure time, with the majority of adolescents engaging in ball sports (25.4%) and endurance sports (19.7%). Girls also frequently reported dancing and gymnastics (23%). For assessment of PA in adolescents, collecting both accelerometry and diary-based information is recommended. The diary is vital for the identification of invalid data and non-compliant participants. Preliminary results suggest that four out of five German adolescents do not meet WHO recommendations for PA and that school sport contributes only little to MVPA.