

Physical activity levels and patterns among the adolescents in HELENA

The need to understand different measurement modalities

by

Sjöström M¹

Objectives: The HELENA study offers, through its design, unique data and possibilities for an advanced discussion about the use of alternative methods for assessment of physical activity (PA) among young individuals (males and females). Focus in this report is on a) the levels and patterns of PA with increasing age, and b) the proportion of adolescents meeting the guidelines of 60 minutes of moderate or vigorous activity (MVPA) per day.

Methods: PA was assessed by subjective as well as objective methodology using questionnaires (IPAQ-A, which is a modified IPAQ) and accelerometers (Actigraph), respectively. About 3000 adolescents, 12.5 to 17.5 years old, completed the questionnaires. About 2400 of the adolescents wore an accelerometer for at least 3 days for 8 hours per day. Epoch was either 15 or 60 seconds.

Results: Self-reported total PA, moderate PA and vigorous PA, and both school-based and leisure time PA, were significantly lower with increasing age, both among males and females. Post hoc analyses revealed that the younger groups reported more PA than the older ones. More boys (56%) than girls (27%) met the guidelines of 60 min MVPA per day.

The objective data, on the other hand, did not show any change in total PA with increasing age, neither among boys nor among girls. Time in moderate intensity was reduced with age among the males, but was increased with females. Time spent in vigorous activity increased both among males and females. More boys (56%) than girls (27%) met the recommendation of 60 minutes of MVPA per day.

Time in inactivity was the same across the age-range, and did not differ between boys and girls.

Conclusions: The two methodologies gave different outcomes with gender and increasing age, both regarding A) the levels and patterns of PA, and b) the proportion of adolescents reaching 60 minutes of MVPA. There is an urgent need for a better understanding of the different measurements modalities, and determinants influencing the registrations.

¹ Unit for preventive nutrition, Dept Biosciences and nutrition, Karolinska Institute, Stockholm, Sweden
Correspondence: michael.sjostrom@ki.se