YPAQ and CPAQ outcome derivation

Adapted from Corder K, Van Sluijs E, Wright A, Whincup P, Wareham N, Ekelund U: Is it possible to assess free-living physical activity and energy expenditure in young people by self-report? *Am J Clin Nutr* In press.

For the YPAQ and CPAQ, frequency and duration of listed physical activities were reported; these activities were assigned a MET value according to published values [1]. MET-minutes were calculated as follows: duration × frequency × MET-intensity.

Estimates of PAEE were derived from the YPAQ and CPAQ questionnaires, using a similar method to that described previously [2]. It was assumed that one MET is equivalent to an oxygen consumption rate of 4.00 $mL \cdot kg^{-1} \cdot min^{-1}$ for 16-17 year-old adolescents and 4.58 $mL \cdot kg^{-1} \cdot min^{-1}$ for 12-13 year-olds [3]. For the 4-5 year-old children, the published values for the older age groups [3] were extrapolated down for 5 year-old children, resulting in an estimate of 7.0 $mL \cdot kg^{-1} \cdot min^{-1}$ as the MET equivalent. The oxygen energy equivalent was assumed to be 0.0209 $kJ \cdot mL^{-1}$ and the formula used to estimate daily PAEE from the questionnaire data ($PAEE_Q$) was: $PAEE_Q$ $[kJ \cdot kg^{-1} \cdot day^{-1}]$ = 1440 × ((0.0209×MET equivalent) × (Total MET·min/Total time frame)). Self-reported minutes of MVPA per week were also summed from the YPAQ, CPAQ and SWAPAQ ($MVPA_Q$), for direct comparison with $MVPA_{ACC}$.

References

1. Ainsworth B, Haskell W, Whitt M, Irwin M, Swartz A, Strath S, O'Brien W, Bassett DJ, Schmitz K, Emplaincourt P, et al: **Compendium of physical activities: an update of activity codes and MET intensities.** *Med Sci Sports Exerc* 2000, **32:**S498-504.
2. Mahabir S, Baer D, Giffen C, Clevidence B, Campbell W, Taylor P: **Comparison of energy expenditure estimates from 4 physical activity questionnaires with doubly labeled water estimates in postmenopausal women.** *Am J Clin Nutr* 2006, **84:**230-236.
3. Harrell J, McMurray R, Baggett C, Pennell M, Pearce P, Bangdiwala S: **Energy Costs of Physical Activities in Children and Adolescents.** *Med Sci Sports Exerc* 2005, **37:**329-336.