

Youth Physical Activity as Measured by Pedometers

What Was the Question?

When measuring the physical activity levels of youths, there are many instruments that can be used. These include self-reports, interviews, direct observation, and electronic monitoring (heart rate monitors, pedometers). Pedometers have the potential to be an effective tool to measure youths' physical activity because they are inexpensive, easy to use, accurate, and objective in their measurement of accumulated physical activity. Le Masurier et al. (2005) set out "to describe the pedometer-determined physical activity levels" of students in first through 12th grade, who had been assessed using either the Yamax SW-200 or the Walk4Life LS 2525. Each of these pedometers is designed to measure total steps taken during a prescribed testing period. The study participants comprised 1,839 students (1,046 females, 793 males; ages 6 to 18) from schools in the Phoenix metropolitan area. The subjects consisted of 71 percent Caucasian, 19 percent Hispanic and African American, two percent Native American, one percent Pacific Island/Asian, and five percent other (mixed ethnicities).

What Was Done?

The researchers analyzed six existing data sets. The step-count data had been collected on four weekdays of monitoring in order to obtain an average number of the steps per day that each student was accumulating. Preceding the monitoring, students were taught how to properly attach the pedometer (at the waist, on the right side), when they should remove the pedometer (during swimming, bathing, showering, and sleeping), and told that it should be reattached each morning before going to school. Students were instructed to wear the pedometer from the time they woke up until the time they went to bed, exclud-

ing any water activities. Students were also told to maintain their normal activity patterns and refrain from tampering with the pedometer while being monitored. Trained researchers collected the pedometers each morning, recorded the steps, reset the pedometers to zero, resealed the pedometers, and returned them to students. Students responded to a brief survey to determine whether they had removed the pedometer for more than one hour during the day. Data collected from students who reported removing their pedometer for more than one hour per day were removed from the data set. For statistical analysis, the data were grouped in four sets (grades 1-3, 4-6, 7-9, 10-12).

What Was Found?

The researchers found that males in grades one through three and four through six accumulated significantly more steps per day (13,110 and 13,631, respectively) than females in the same grades (11,120 and 11,125, respectively). Males in grades seven through nine and 10 through 12 accumulated more steps per day (11,082 and 10,828) than females in the same grades (10,080 and 9,706). Additionally, the study found that pedometer-determined activity levels of youths, including secondary youths, are higher than those reported for adult populations (active adults accumulate between 7,000 to 10,000 steps/day).

What Does the Study Mean?

This study confirms previous research using other instruments, indicating that males are generally more physically active than females and that activity typically declines among secondary school students. These findings suggest that the recommended number of daily steps for youths should be higher than the standard for adults. A more reasonable stan-

dard for youths may be 12,000 steps per day for girls and 15,000 steps per day for boys.

Teachers can use pedometers not only to assess activity levels of students both at school and at home, but to motivate students to be more active in their daily lives. The pedometer is an exciting, nonintrusive method to get students excited about physical activity and to understand the importance of why staying physically fit can benefit their overall health and quality of living.

Reference

Le Masurier, G. C., Beighle, A., Corbin, C. B., Darst, P. W., Morgan, C., Pangrazi, R. P., Wilde, B., & Vincent, S. D. (2005). Pedometer-determined physical activity levels of youth. *Journal of Physical Activity and Health*, 2, 159-168.

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