research update

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How Active Are Older Adults? Results of a Study Using Accelerometers

Sixty-two per cent of Canadians 65 years or older are inactive (National Advisory Council on Aging, 2006). Although the activity levels of other age groups have improved over the past years, the number of inactive seniors actually increased between 2001 and 2005 (NACA, 2006).

As the population ages, there is clearly a need to promote physical activity among seniors.

Using Accelerometers to Track Activity Levels

To plan appropriate interventions and programs, we need to know more about the typical physical activity patterns of older adults.

Accelerometers are an effective way to get detailed information about physical activity behaviour (Esliger, Copeland, Barnes, & Tremblay, 2005). Unlike pedometers, accelerometers can record your body's acceleration. Accelerometers can also measure the intensity of activities such as walking.

Many researchers have used accelerometers to monitor physical activity among adults and youth. But few studies have used accelerometers with older populations. The goal of our study was to use accelerometers to profile the activity patterns of a group of older adults.

Study Background

Thirty-three participants from southern Alberta (15 men and 18 women) between the ages of 64 and 77 wore an Actigraph accelerometer for one week.

Participants wore the device over their right hip and removed it only for sleeping, showering or swimming. We set the accelerometer to record activity every minute.

One advantage of accelerometers is that they can monitor physical activity patterns, including when and how people are active. We broke down the minutes of physical activity by days of the week, time of day and length of activity.

We defined a continuous bout of activity as 10 or more consecutive minutes. We labelled all remaining minutes of activity "sporadic."

What We Found

The older adults in our study did an average of 68 minutes of moderate and vigorous intensity physical activity per day.

Most (66 per cent) activity was sporadic. Thirty-four per cent of active time occurred in continuous bouts of 10 or more minutes.

More continuous bouts of activity took place in the morning, between 6 a.m. and noon. As most participants were retired, we weren't surprised to find that there was no difference in activity levels between weekdays and weekend days.

At first glance, these older adults seemed quite active, as 30 of the 33 participants were meeting or exceeding the recommendations of *Canada's Physical Activity Guide for Older Adults*, i.e., getting 30 to 60 minutes of moderate activity on most days of the week (Health Canada, ALCOA, & CSEP, 1999).

However, the Guide recommends that people be active for at least 10 minutes at a time. If we include only "good" (or continuous) minutes of physical activity and exclude sporadic activity, then only eight of the 33 subjects met the physical activity guidelines.

This suggests that many older adults are not getting enough continuous physical activity (activity in bouts of least 10 minutes). This may indicate a need for better education on the physical activity guidelines.

The health benefits associated with physical activity of less than 10 minutes are unknown (Hardman, 2001), but should be explored. This type of activity could make a major contribution to total daily energy expenditure.

Low intensity and sedentary activity made up almost 14 hours (or 90 per cent of the waking day) for these older adults. Meijer, Goris, Wouters, & Westerterp (2001) found that the 28 European older adults in their study spent 82 per cent of their time engaging in low-intensity activities such as sitting or standing.

The percentage of time spent in low-intensity activities also tends to increase with age.

Interestingly, Meijer et al. (2001) found that older adults seem to compensate for an exercise training program by reducing their physical activity during the rest of the day.

Practical Implications

These results suggest that interventions and programs for older adults may need to focus more on participating in activities of at least moderate intensity and on accumulating activity in bouts of at least 10 minutes.

Perhaps, more importantly, there needs to be an emphasis on reducing time spent in sedentary activities and on incorporating some physical activity into all aspects of daily life (even for older adults who already participate in structured exercise programs).

Jennifer L. Copeland, PhD (University of Lethbridge) and Dale W. Esliger, MSc (University of Exeter)

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