

# The Research File



Summary from the Canadian Fitness and Lifestyle Research Institute and ParticipACTION

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## Physical Activity and Alzheimer's Disease



Alzheimer's disease and other dementias are major public health concerns for older adults. Dementia generally brings about progressive impairment to a person's cognitive functions (e.g., decision-making, memory), behaviours (e.g., acting out of character), and physical abilities (e.g., reduced coordination). Some

form of dementia is estimated to affect one in eleven Canadians aged 65 or older, and as Canada's population ages the number of people living with dementia is expected to double, exceeding 1 million within 25 years<sup>1</sup>.

Evidence linking physical activity to cognitive health in older adults is mounting. As described in December 2010's *The Research File*<sup>2</sup>, research has found that physical activity may reduce the risk of developing Alzheimer's disease and other dementias during

later adulthood. Other evidence suggests that persons with Alzheimer's disease who are active may better maintain or improve their quality of life through improved physical functions, mood, behaviour, and cognitive skills<sup>3</sup>.

For some persons with Alzheimer's disease, however, participation in physical activity could be difficult. Impairments in thinking, memory, and judgement that characterize Alzheimer's disease can limit one's ability to be independently active. With the support of caregivers, supervised activity programs can provide an opportunity for persons with Alzheimer's disease to be active. But what factors determine continued participation in physical activity programs for persons with Alzheimer's disease? In a paper published in 2010, researchers at the University of Washington in Seattle sought to address this question<sup>3</sup>.

### The Program

McCurry and colleagues examined adherence to a prescribed walking program by community-dwelling older persons with Alzheimer's disease and their caregivers. The 66 participant-caregiver pairs were members of an eight week clinical trial examining



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treatments for sleep disturbances.

With caregiver supervision, participants were instructed to aim to walk for at least 30 minutes every day. Participants and caregivers were given information on walking safely and overcoming common obstacles to adherence to the walking program (e.g., determining strategies to deal with inclement weather, finding alternate walking “buddies”, overcoming dementia-related behaviour challenges). During the eight week trial, participants received several one hour in-home training visits and telephone calls.

Participant and caregiver demographics, participant-caregiver relationship, and clinical measures were determined at baseline. Caregivers provided information about the participant’s exercise habits before the trial. During the trial, caregivers kept a daily walking log for participants for eight weeks, and after this a calendar of days walked for four more months.

### The Results

After one week, participants increased the number of days on which they walked from an average of 2.9 days per week to 4.6 days per week. Most participants (85%) walked at least once per week, and three in five walked frequently (five or more days per week). At eight weeks and six months, however, the number of days per week walked, the proportion walking at least once per week, and the proportion walking five or more days a week dropped. Less than 20% of participants ever achieved the program goal of walking 30 minutes every day.

Among those who continued the walking program, however, the number of days per week walked and the average duration of walking on each of those days increased somewhat over six months.

Participants who did not adhere to the walking program at all were more likely to exhibit more disruptive behaviours at the beginning of the trial. Further, those who relapsed into inactivity after the first week of the walking program were more likely to have greater cognitive impairment. Participants with fewer symptoms of depression and having a spousal caregiver were more likely to walk

more frequently and for longer durations both initially and over six months.

### The Bottom Line

This study examined a small sample of persons with Alzheimer’s disease, so the authors caution that these results are exploratory. However, the findings suggest that a substantial proportion of community-dwelling persons with Alzheimer’s disease could achieve the benefits of physical activity through an independent structured walking program with strong caregiver support.

A structured at-home program may not suit all persons with Alzheimer’s disease. This study found that greater cognitive impairment or more depressive symptoms may challenge participation in structured physical activity, though strategies could be employed to overcome these obstacles.

Factors not examined in this research include daily life (e.g., competing caregiver demands, lack of time) and the physical environment (e.g., difficulty accessing suitable walking locations). For example, a small proportion of caregivers (14%) found that the walking program was “too much work”. These factors may strongly influence adherence to a walking program. The researchers suggest that finding an exercise “buddy” other than the primary caregiver may help to reduce the stress associated with participation in a structured walking program. Further research is required to determine the personal, social, clinical, and environmental factors that predict maintenance of physical activity among caregivers and persons with Alzheimer’s disease and other dementias.

### Reference List

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3. McCurry, S.M., Pike, K.C., Logsdon, R.G., Vitiello, M.V., Larson, E.B., & Teri L. (2010). Predictors of short and long-term adherence to a daily walking program in persons with Alzheimer’s disease. *American Journal of Alzheimers Disease and Other Dementias*, 25, 505-512.
4. Canadian Society for Exercise Physiology (2011). *Canadian Physical Activity Guidelines for Older Adults – 65 Years & Older*. Retrieved 18 November 2011 from <http://www.csep.ca/CMFiles/Guidelines/CSEP-InfoSheets-older%20adults-ENG.pdf>.

## What have we learned?

- Evidence suggests physical activity can reduce the risk of developing Alzheimer’s disease and dementia, and may also slow cognitive decline among those with dementia.
- The newly revised Canada’s Physical Activity Guidelines for Older Adults recommends at least 150 minutes of moderate to vigorous physical activity per week<sup>4</sup>. Some evidence suggests that many persons with Alzheimer’s disease may adhere to a structured physical activity program to reap benefits of physical activity with appropriate caregiver support. However, more impaired cognitive function and depressive symptoms may pose challenges.
- Further work is required to determine the factors associated with adherence to a physical activity program among persons with Alzheimer’s disease across the personal, social, clinical, and environmental domains.