Daily Stroll Protects Memory Lane

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December 19, 2007

MedPage Today Action Points

- Explain to interested patients that this study demonstrates an association between moderate-intensity exercise and reduced incidence of vascular dementia, but cannot prove causality.

- Caution patients that although the study did not find an association between moderate activity and Alzheimer's disease risk, it could not rule out a small effect.

Review

BOLOGNA, Italy, Dec. 19 -- Walking, gardening, and other nonstrenuous activities may substantially reduce older adults' risk of vascular dementia but not of Alzheimer's disease.

Men and women 65 and older who got the most moderate-intensity exercise were 71% to 73% less likely to develop vascular dementia over a four-year period than those who had the least physical activity, according to a study published in the Dec. 19 online issue of the journal Neurology.

Higher total weekly energy expenditure did not, however, appear to offer an additional advantage, reported Giovanni Ravaglia, M.D., of the University Hospital S. Orsola Malpighi here, and colleagues.

"It is important to note that, in terms of lowering vascular dementia risk," they wrote, "an easy-to-perform moderate activity like walking provided the same benefits as other, more demanding activities of similar intensity."

The study was the first to find a longitudinal link between regular exercise and vascular dementia, they said. Their findings bolster those of observational and interventional studies that have consistently found better cognitive performance in more active older adults.

The researchers analyzed data from the Conselice Study of Brain Aging, a population-based study in the Conselice region of Italy examining epidemiology and risk factors for cognitive impairment.

Dementia prevalence in the region was similar to that in the United States and Europe for rural areas with low education levels (37.8 per 1,000 person-years for any
dementia and 11.0 for vascular dementia).

At baseline in 1999 and 2000, the study included 749 individuals 65 and older who did not have dementia or sensory-motor deficits that precluded physical activity.

All but 23.2% reported walking and only 21.2% did no stair climbing for exercise or in their daily routine. The most common moderate-intensity activities reported by the cohort were house and yard work, gardening, light carpentry, and bicycling.

More than 99% reported no regular sports or group physical activities and 87.8% reported no vigorous activity, but less than 1% of the cohort was completely sedentary.

Over a mean of 3.9 years of follow-up, 86 cases of dementia developed. This included 27 cases of vascular dementia, all with neuroimaging-proven brain infarction.

Compared with participants who did not develop dementia, incident cases were older, less educated, more frequently women, had a lower Mini-Mental State Examination score, and were more likely to have hyperhomocysteinemia, ADL motor impairment, and comorbidity.

The risk of dementia of any type was significantly lower for those in the highest tertile of moderate exercise ($P=0.037$ for trend) and total physical activity ($P=0.020$ for trend) compared with those in the lowest tertile.

Men and women in the top tertile for moderate activity of more than 6,749 Kcal/week were 49% (hazard ratio: 0.51, 95% confidence interval: 0.28 to 0.95) less likely to develop any dementia than those in the lowest tertile activity level of less than 3,455 Kcal/week.

Likewise, participants with the highest total activity were 48% less likely to develop any dementia (more than 8,090 versus less than 4,774 Kcal/week, HR: 0.52, 95% CI: 0.29 to 0.93).

However, vascular risk factors and overall health status were more important predictors of dementia as both associations disappeared after further controlling for these factors.

For vascular dementia, walking was associated with 73% reduction in risk for participants in the top and middle tertiles compared with those who expended less than 209 Kcal/week walking (HR: 0.27, 95% CI: 0.12 to 0.63).

Other moderate exercise also reduced risk of vascular dementia 71% (HR: 0.29 for more versus less than 3,455 Kcal/week, 95% CI: 0.12 to 0.66).

Vascular dementia risk was similarly lower with total activity above 4,774 Kcal/week (HR: 0.24, 95% CI: 0.11 to 0.56).

All three associations remained significant after adjustment for sociodemographic and
genetic factors, as well as vascular risk factors and overall health status.

But, no significant associations were found for vigorous exercise or for Alzheimer's disease risk.

Dr. Ravaglia and colleagues cautioned, though, that the study could not establish causal relationships or rule out a small benefit for Alzheimer's disease, particularly from sports and other forms of exercise infrequently reported by the cohort.

"Therefore, we cannot exclude that other types of physical activities may actually protect against Alzheimer's disease," they wrote, "and our results might even indirectly support the hypothesis that lack of social and intellectual engagement counteracts the beneficial effect of physical activity on Alzheimer's disease risk."

The researchers suggested that exercise's cognitive benefits may stem from improved cerebral blood flow, protection against brain damage through secretion of trophic factors and other effects, and reduction in cortisol and other "brain-toxic" stress hormones.

Or, they added, exercise may protect the mind simply through the mental and social stimulation of an active lifestyle.

The authors pointed out a number of limitations of the study, including the fact that the study design cannot establish causal relationships and that the follow-up was too short an interval to completely rule out the possibility that lower physical activity was not an early symptom of dementia rather than a cause.

They also noted that regular physical activity might only represent a marker of good health rather than having a protective effect on cognitive function.

"The small number of incident dementia cases and the wide CIs represent a third limitation," the researchers said, noting, too, the problems inherent in self-reported data and the fact that all but one of the cases of dementia were documented using CT imaging, which is "inferior to MRI in detecting vascular lesions."

"Finally," the researchers said, "the poor educational background and rural upbringing that characterize this cohort may make our results not applicable to other populations."

The study was supported by grants from the Italian Ministry of University and Scientific Research. The researchers reported no conflicts of interest.

**Primary source:** Neurology  

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