

# The New York Times

## Frequent, Brisk Walks May Aid Those With Early Alzheimer's

Phys Ed

By GRETCHEN REYNOLDS MARCH 1, 2017



For some people with early-stage Alzheimer's disease, frequent, brisk walks may help to bolster physical abilities and slow memory loss, according to one of the first studies of physical activity as an experimental treatment for dementia.

But the study's results, while encouraging, showed that improvements were modest and not universal, raising questions about just how and why exercise helps some people with dementia and not others.

Alzheimer's disease affects more than five million people in the United States and more than 35 million worldwide, a number that is expected to double within 20 years.

There are currently no reliable treatments for the disease.

But past studies of healthy elderly people have found relationships between regular exercise and improved memories. Physically active older people are, for instance, significantly less likely than those who are sedentary to develop mild cognitive impairment, a frequent precursor to Alzheimer's disease.

Physically fit older people also tend to have more volume in their brain's hippocampus than do sedentary people of the same age, brain scans show. The hippocampus is the portion of the brain most intimately linked with memory function.

But most of this research has examined whether exercise might prevent Alzheimer's disease.

Little has been known about whether it might change the trajectory of the disease in people who already have the condition.

So for the new study, published in February in PLoS One, researchers at the University of Kansas decided to work directly with people who had previously been given a diagnosis of Alzheimer's disease. Because the disease can affect coordination as it progresses, the researchers focused on men and women in its early stages, who were still living at home and could safely walk by themselves or perform other types of light exercise.

Eventually, the researchers recruited about 70 men and women with Alzheimer's. These volunteers visited a lab at the university, where the scientists scanned their brains and tested their memories and thinking skills, aerobic endurance, and physical abilities, such as how well they could rise from chairs, lift objects and so on.

Then the volunteers were divided into two groups.

One began a supervised walking program that was supposed to raise their physical fitness. They walked progressively longer and faster over the course of several weeks, until they were briskly walking for at least 150 minutes each week. In earlier experiments, the Kansas scientists had found that this routine significantly improved aerobic endurance and memory performance among older people without Alzheimer's.

The second group, serving as a control, began stretching and toning classes. These sessions were designed to be light exercise that would not increase aerobic endurance but would mimic the time commitment and social interactions of the walkers.

Both groups continued their regimens for six months and then returned to the lab for repeat testing. By then, a few participants from each group had reported slight injuries and dropped out. But most had tolerated the exercise well.

Encouragingly, many also now showed gains in physical functioning, particularly among the walkers. Almost all of them had significantly improved their scores on the tests of everyday physical skills.

But the effects of the experiment on thinking and memory were more mixed.

Most of those in the control group were now slightly less able to think clearly and remember than they had been six months before, new tests showed. The toning had not slowed the progression of their disease much, if at all.

Similarly, many of the walkers performed no better and some scored worse on the cognitive tests than at the start.

But some of the walkers were thinking and remembering much better now, according to their cognitive tests. These volunteers also generally showed slight increases in the size of their brain's hippocampus, an area of the brain affected early in the course of Alzheimer's disease, whereas the other participants did not.

Trying to determine why some of the walkers showed benefits and others did not, the researchers delved more deeply into their data and found that the walkers who had increased their aerobic fitness had also improved their ability to remember and think and bulked up the volume of their brains.

What surprised the scientists was how few of the walkers with Alzheimer's had actually gained endurance. The same exercise program that previously had increased the aerobic capacity of almost every healthy, older participant now had benefits for the bodies of only a few of the walkers with Alzheimer's.

This finding suggests that “there may be physiological differences between people with and without Alzheimer’s that reach to the cellular level,” says Jill Morris, a senior scientist at the University of Kansas Alzheimer’s Disease Center, who led the study.

In effect, the bodies as well as the brains of people with Alzheimer’s disease may be unusual compared to those of healthy older people and may respond differently, if at all, to exercise, she says.

But the potentially positive news from her study, she points out, is that when people with Alzheimer’s did gain endurance, they also generally improved their ability to think. Disease progression slowed as people’s fitness rose.

“It seems likely that the right exercise programs could be disease modifying,” she says. “We just don’t know yet what the ideal exercise programs are.”

She and her colleagues have studies underway and planned, however, that look at many different types and amounts of exercise among people with Alzheimer’s.