

Patients were recruited from the Cardiovascular Health Study. The researchers monitored how far each of the patients walked in a week. After 10 years, all patients underwent 3-D MRI exams to identify changes in brain volume.

"Volume is a vital sign for the brain," Dr. Raji said. "When it decreases, that means brain cells are dying. But when it remains higher, brain health is being maintained."

In addition, patients were given the mini-mental state exam (MMSE) to track cognitive decline over five years. Physical activity levels were correlated with MRI and MMSE results. The analysis adjusted for age, gender, body fat composition, head size, education and other factors.

The findings showed across the board that greater amounts of physical activity were associated with greater brain volume. Cognitively impaired people needed to walk at least 58 city blocks, or approximately five miles, per week to maintain brain volume and slow cognitive decline. The healthy adults needed to walk at least 72 city blocks, or six miles, per week to maintain brain volume and significantly reduce their risk for cognitive decline.

Over five years, MMSE scores decreased by an average of five points in cognitively impaired patients who did not engage in a sufficient level of physical activity, compared with a decrease of only one point in patients who met the physical activity requirement.

"Alzheimer's is a devastating illness, and unfortunately, walking is not a cure," Dr. Raji said. "But walking *can* improve your brain's resistance to the disease and reduce memory loss over time."

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