

# Brain starts shrinking nearly a decade before Alzheimer's appears

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ST. PAUL, Minn.—Areas of the brain affected by Alzheimer's disease may start shrinking up to a decade before dementia is diagnosed, according to a new study published in the April 13, 2011, issue of *Neurology*, the medical journal of the American Academy of Neurology.

For the study, researchers used MRI scans to measure areas of the brain in people with no memory problems or other signs of Alzheimer's, then followed them for years to see who developed the disease. The researchers specifically focused their measurements on areas known to be involved in AD. Those with smaller brain size in the Alzheimer's-related areas of the brain were much more likely to develop the disease than those with larger measurements.

"This measure is potentially an important imaging marker of early changes in the brain associated with Alzheimer's disease that could help predict who might develop the dementia associated with this disease and possibly even how long it would be before dementia develops," said study author Bradford Dickerson, MD, of Harvard Medical School in Boston and a member of the American Academy of Neurology.

The study involved two separate groups of people with no signs of Alzheimer's. In the first group, 33 people were followed for an average of 11 years. During that time, eight of the participants developed Alzheimer's disease dementia. In the second group, 32 people were followed for an average of seven years, and seven of them developed the disease.

The participants were divided into three groups based on the brain scans: those with low, average and high measurements in the Alzheimer's-related areas. Of the 11 people who had the lowest MRI measurements, 55 percent developed Alzheimer's, while none of the nine people with the highest measurements developed dementia. Of those with average measurements, 20 percent developed the disease.

"We also found that those who express this MRI marker of the Alzheimer's disease in the brain were three times more likely to develop dementia over the following 10 years than those with higher measurements," Dickerson said. "These are preliminary results that are not ready to be applied outside of research studies right now, but we are optimistic that this marker will be useful in the future."

Provided by American Academy of Neurology

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