

New study identifies best tests for predicting Alzheimer's disease

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New research has identified the memory and brain scan tests that appear to predict best whether a person with cognitive problems might develop Alzheimer's disease. The research is published in the June 30, 2010, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

Memory and brain scan tests were performed on 85 people with [mild cognitive impairment](#) (MCI) who were part of a larger study called the Alzheimer's Disease Neuroimaging Initiative. The tests included an episodic [memory test](#), in which a participant must correctly recall a list of words. Blood tests were given to measure which form of the APOE gene people had, since one form of the gene is associated with Alzheimer's disease.

MRI [brain scans](#) were also used to measure the size of a participant's hippocampus, the part of the brain responsible for learning and memory. Proteins thought to play a role in Alzheimer's disease, called tau or beta-amyloid, were also measured. Finally, a PET brain scan was taken to detect [metabolic abnormalities](#) in the brain that might signal Alzheimer's disease.

"Each of these tests have independently shown promise in predicting [disease progression](#), however, prior to the Alzheimer's Disease Neuroimaging Initiative, they had never been compared to one another in the same study before," said study author Susan M. Landau, PhD, with the University of California-Berkeley and a member of the

American Academy of Neurology.

Participants were between the ages of 55 and 90 and were followed for an average of 1.9 years. During that time, 28 of the participants developed Alzheimer's disease.

People who showed abnormal results on both PET scans and episodic [memory](#) tests were nearly 12 times more likely to develop Alzheimer's disease than those who scored normally on both measures.

"Because people with MCI decline at different rates and some never go on to develop Alzheimer's disease, there is a need for tools that can better predict who might benefit most from treatment," said Landau. "When we compared all of the predictors, these two tests most accurately predicted who developed Alzheimer's."

Provided by American Academy of Neurology

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