

# Simple test predicts 6-year risk of dementia

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A simple test that can be given by any physician predicts a person's risk for developing dementia within six years with 87 percent accuracy, according to a study led by researchers at San Francisco VA Medical Center (SFVAMC).

The test, developed in the study by the researchers, is a 14-point index combining medical history, cognitive testing, and physical examination. It requires no special equipment and can be given in a clinical setting such as a doctor's office or at a patient's bedside.

The new index is the "bedside" version of a longer, more technically comprehensive "best" test, also developed during the study, that is 88 percent accurate.

These are the first tools to accurately predict dementia, according to lead author Deborah E. Barnes, PhD, a mental health researcher at SFVAMC. Barnes described the tests in a presentation at the 2007 International Conference on Prevention of Dementia, in Washington, DC, sponsored by the Alzheimer's Association.

"There are tests that accurately predict an individual's chances of developing cardiovascular disease and other maladies, but, until now, no one has developed similar scales for dementia," says Barnes, who also is an assistant professor of psychiatry at the University of California, San Francisco (UCSF).

As measured by the "bedside" index, the risk factors for developing

dementia are an age of 70 or older, poor scores on two simple cognitive tests, slow physical functioning on everyday tasks such as buttoning a shirt or walking 15 feet, a history of coronary artery bypass surgery, a body mass index of less than 18, and current non-consumption of alcohol.

People who score 0 to 3 on the “bedside” test have a 6 percent chance of developing dementia within six years. A score of 4 to 6 indicates a 25 percent chance.

People with a score of 7 or higher have a 54 percent chance of developing dementia within six years.

The 18-point comprehensive, or “best,” test measures for all “bedside” risk factors plus factors that would be more difficult to measure as part of a routine clinical visit. These include brain magnetic resonance imaging (MRI) findings of enlarged ventricles — the fluid-filled cavities between brain tissue -- or diseased white matter — the nerve cells that transmit signals between grey matter; thickening of the internal carotid artery, which brings blood to the head and neck; and the presence of one or two copies of the e4 allele, or subtype, of APO-E, the gene that codes for the protein known as Apolipoprotein. The presence of APO-E e4 alleles is a known risk factor for Alzheimer’s disease.

A “best” test score of 0 to 4 indicates a 4 percent chance of developing dementia within six years. A score of 5 to 8 indicates a 25 percent chance.

A score of 9 or higher indicates a 52 percent chance of developing dementia within six years.

To develop the tests, the study authors tracked a broad range of physical, mental, demographic and other variables for six years among 3,375

participants in the Cardiovascular Health Cognition Study, a national prospective study sponsored by the National Heart, Lung, and Blood Institute (NHLBI).

At the beginning of the study, none of the subjects were demented.

Their mean age was 76. Fifty-nine percent were women and 15 percent were African-American. By the end of the study, 14 percent of the subjects had developed dementia. The variables that were predictive of dementia in a statistically significant way became the basis of the tests.

The authors caution that there were no Hispanics or Asian-Americans included in the study population, and that the new scales need validation in other study groups before they can become standard clinical tools.

“We certainly plan to look at other groups to see if these results are valid across a variety of populations,” says Barnes.

Source: University of California - San Francisco

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