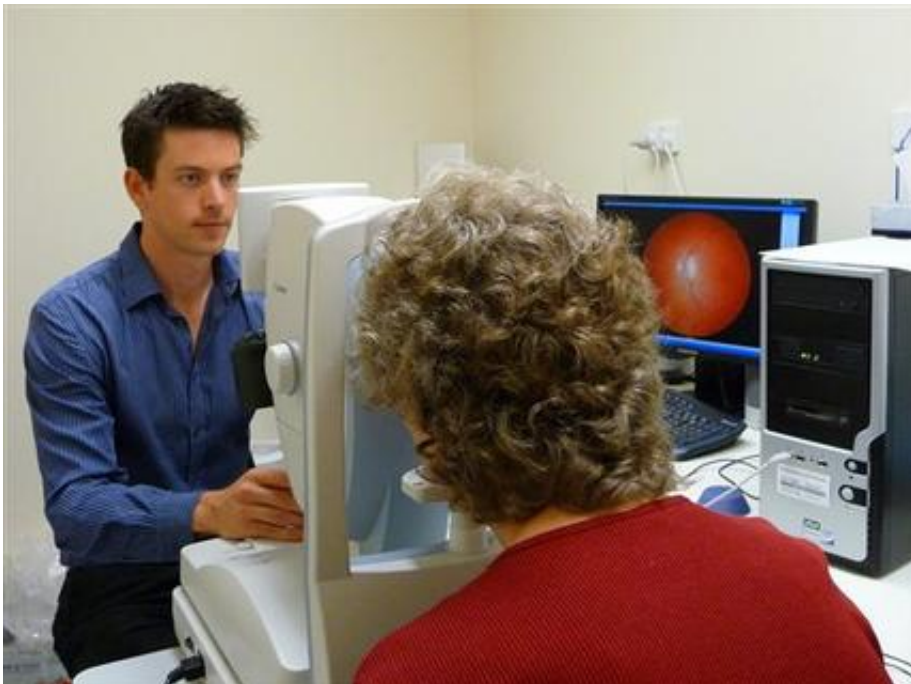


Falls, eye test may give clues to Alzheimer's

July 17 2011, By MARILYNN MARCHIONE , AP Medical Writer



In this undated photo provided by CSIRO Australia, researcher Shaun Frost of CSIRO Australia, that nation's science agency, photographs a woman's retina as part of a research project into early detection of Alzheimer's disease. (AP Photo/CSIRO Australia)

(AP) -- Scientists in Australia are reporting encouraging early results from a simple eye test they hope will give a noninvasive way to detect signs of Alzheimer's disease.

Although it has been tried on just a small number of people and more research is needed, the experimental test has a solid basis: Alzheimer's is

known to cause changes in the eyes, not just the [brain](#). Other scientists in the United States also are working on an eye test for detecting the disease.

A separate study found that falls might be an [early warning](#) sign of Alzheimer's. People who seemed to have healthy minds but who were discovered to have hidden plaques clogging their brains were five times more likely to fall during the study than those without these brain deposits, which are a hallmark of Alzheimer's.

Both studies were discussed Sunday at the Alzheimer's Association International Conference in France.

More than 5.4 million Americans and 35 million people worldwide have Alzheimer's, the most common form of dementia. It has no cure and drugs only temporarily ease symptoms, so finding it early mostly helps patients and their families prepare and arrange care.

Brain scans can find evidence of Alzheimer's a decade or more before it causes memory and thinking problems, but they're too expensive and impractical for routine use. A simple eye test and warning signs like falls could be a big help.

The eye study involved photographing blood vessels in the [retina](#), the [nerve](#) layer lining the back of the eyes. Most eye doctors have the cameras used for this, but it takes a special [computer program](#) to measure blood vessels for the experimental test doctors are using in the Alzheimer's research, said the study's leader, Shaun Frost of Australia's national science agency, CSIRO.

Researchers compared retinal photos of 110 healthy people, 13 people with Alzheimer's and 13 others with [mild cognitive impairment](#), or "pre-Alzheimer's," who were taking part in a larger study on aging. The

widths of certain [blood vessels](#) in those with Alzheimer's were different from vessels in the others and the amount of difference matched the amount of plaque seen on brain scans.

More study is planned on larger groups to see how accurate the test might be, Frost said.

Earlier work by Dr. Lee Goldstein of Boston University showed that amyloid, the protein that makes up Alzheimer's brain plaque, can be measured in the lens of the eyes of some people with the disease, particularly Down syndrome patients who often are prone to Alzheimer's.

A company he holds stock in, Neuroptix, is testing a laser eye scanner to measure amyloid in the eyes. Goldstein praised the work by the Australian scientists.

"It's a small study" but "suggestive and encouraging," he said. "My hat's off to them for looking outside the brain for other areas where we might see other evidence of this disease."

Eye doctors often are the first to see patients with signs of Alzheimer's, which can start with vision changes, not just the memory problems the disease is most known for, said Dr. Ronald Petersen, a Mayo Clinic dementia expert with no role in the new studies.

Other signs could be balance and gait problems, which may show up before mental changes do. Susan Stark of Washington University in St. Louis led the first study tying falls to a risk of developing Alzheimer's disease before mental changes show up.

It involved 125 people, average age 74, who had normal cognition and were taking part in a federally funded study of aging. They kept journals

on how often they fell, and had [brain scans](#) and spinal taps to look for various substances that can signal Alzheimer's disease.

In six months, 48 fell at least once. The risk of falling was nearly three times greater for each unit of increase in the sticky [plaque](#) that scans revealed in their brains.

"Falls are tricky" because they can be medication-related or due to dizziness from high blood pressure, a blood vessel problem or other diseases like Parkinson's, said Creighton Phelps, a neuroscientist at the National Institute on Aging.

Falls also can cause head injury or brain trauma that leads to cognitive problems, said Laurie Ryan, who oversees some of the institute's research grants but had no role in the study. Older people who hit their heads and suffer a small tear or bleeding in the brain might seem fine but develop symptoms a month later, she said.

The bottom line: "If you see somebody who's having falls for no particular reason," the person should be evaluated for [dementia](#), said William Thies, the Alzheimer's Association's scientific director.

The [warning signs](#) of Alzheimer's:

- Memory loss that disrupts daily life
- Trouble planning or solving problems
- Difficulty completing tasks
- Confusion with time or place
- Trouble understanding images and spatial relationships

- New problems with speaking or writing words
- Misplacing things and inability to retrace steps
- Decreased or poor judgment
- Social withdrawal
- Changes in mood or personality

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