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Push to Detect Alzheimer's Earlier

Scientists Make Progress in Hunt for Disease Signposts, Looking at Chemical Tracers, Retina Changes, Propensity to Fall

By SHIRLEY S. WANG

PARIS—Treatments to halt or reverse Alzheimer's disease remain elusive, but researchers reported progress Sunday in early diagnosis, including the use of a chemical marker, visible via brain scan, to detect substances associated with the disease.



Associated Press

Australian scientist Shaun Frost photographs a woman's retina as part of research into early detection of Alzheimer's.

Other researchers are working on less invasive techniques, such as measuring physical or sensory changes to smell and vision that occur during early stages of the disease. In one study, scientists are gauging the width of blood vessels in the retina.

The data were presented Sunday at the Alzheimer's Association International Conference on Alzheimer's Disease.

Among the possible advances in early detection are chemical tracers, some of which tag clumps of a sticky substance in the brain called amyloid, and others that mark amyloid and a protein called tau—both thought to contribute to the disease.

These tracers make Alzheimer's pathology visible in a living brain, which until now could only be seen upon autopsy. The

new findings show the presence of amyloid on a PET scan might lead to greater memory loss or other cognitive troubles.

In the study, researchers examined 31 Alzheimer's patients, 51 with mild cognitive impairment and 69 said to be healthy, using Eli Lilly & Co.'s florbetapir, one of several tracers under development, with a PET scan. They found that patients who had more amyloid in the brain on the PET scan exhibited a steeper decline in cognitive symptoms than people who had none over an 18-month period.



Among people with mild cognitive impairment—considered an early stage in the disease—those with more amyloid on brain scans were more likely to develop full-blown Alzheimer's over the same period.

The results suggest "the presence or absence of amyloid detected by PET scan may help identify individuals at increased risk for future cognitive decline or progression to Alzheimer's," said P. Murali Doraiswamy, a professor at Duke University who

Associated Press

Jim Ellison plays the drums with Kaity Emerson, while Annie O'Shea watches as a seniors group in Oregon learns to manage memory loss.

was a consultant to Avid Radiopharmaceuticals, which developed the tracer, at the time the research was conducted. Avid has since been acquired by Lilly.

"It's still early days" in the research, said Daniel Skovronsky, founder of Avid who remains the head of the Lilly subsidiary. More patients need to be tested for a longer period of time. But the hope, he said, is that identifying patients early will allow them to benefit from treatments that one day may slow or prevent the disease.

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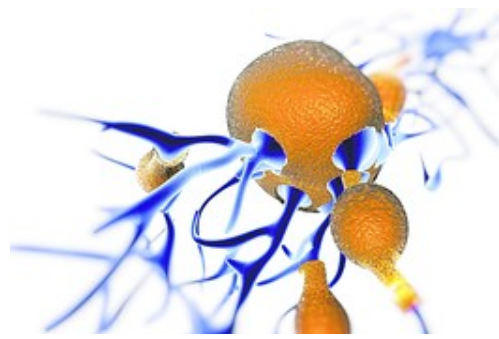
Reliable early diagnosis may also be critical to developing drugs against the disease. Some experts believe recent clinical trials have failed because patients enrolled in the studies had already progressed too far for the tested drugs to do much good.

Some physicians question whether patients will want to know if they are at risk for the disease when there currently no effective treatments.

Florbetapir is awaiting approval at the Food and Drug Administration. The agency recently sent Lilly a so-called complete response letter, saying that before it would grant approval, Lilly would need to set up a training program to make sure readers of the scans interpret them accurately. PET scans can cost thousands of dollars per patient.

Another study presented Sunday examined the potential of identifying characteristics of the eye as a quick and noninvasive way of detecting the disease. Because the eye is closely linked to the brain, some Alzheimer's pathology also affects the eye.

In a preliminary study, Australian researchers examined the photographs of the light-sensitive part of the eye called the retina in 13 people with Alzheimer's, 13 with mild cognitive impairment and 110 healthy individuals. They found that the width of some blood vessels in the retina of people with Alzheimer's was greater than in those who were healthy, according to study author Shaun Frost, of Australia's national science agency, CSIRO. This was also linked to the presence of amyloid plaques in the brain as measured by a PET scan, he said.



Getty Images

A depiction of amyloid plaque in the brain.

The goal is that one day for it to be used in conjunction with other tests to help clinicians identify patients at risk of Alzheimer's, Dr. Frost said. They are continuing to collect data on the test.

A third study examined falls, which are another potential early sign of Alzheimer's. Researchers found that falls are more common in people with signs of amyloid in the brain but who aren't yet showing cognitive symptoms, suggesting that falls could be an early physical sign that Alzheimer's changes are occurring well before the cognitive decline.

Though it's too early to make clinical recommendations, the work is important to help researchers understand other physical changes other than memory are occurring in the disease, said Susan Stark, a professor of occupational therapy and neurology at Washington University in St. Louis.

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