

Researchers seek simple Alzheimer's test

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Twice in six months, Bobbie Wilburn walked home from the grocery store because her car had been stolen. It hadn't. She just couldn't remember where she parked.

Those incidents and others in an escalating series of memory lapses and questionable judgment calls led the family to take away Wilburn's car keys, disconnect her oven and stove, and eventually decide that she could no longer live alone safely, said her daughter Barrie Page Hill of Arlington, Texas. Wilburn, 79, who was diagnosed with Alzheimer's disease about six years ago, now lives with Hill's family and requires constant care.

"It was excruciating for us. I've always seen my mom as the lady who could do anything," Hill said. "It's a horrible, horrible disease. I hate what it's done to my mom. I hate what it's done to my family."

Though Wilburn has coherent days, Hill called the disease a "time bomb" ticking away in her mother's brain.

"This is a long-term illness that she will have for the rest of her life. It would be tremendous if they could find a cure for this," Hill said.

There is no known cure. But researchers, including those at the University of North Texas Health Science Center in Fort Worth, are developing blood tests designed to help doctors more quickly detect Alzheimer's disease, dementia and mild cognitive impairment such as Parkinson's disease. Advance detection helps patients begin taking better

care of themselves, researchers say, and such breakthroughs will boost efforts to develop medications to delay or even reverse the effects of Alzheimer's.

"In the Alzheimer's world, we don't detect the disease until it's pretty advanced. If someone is clinically diagnosable with Alzheimer's, it has been going on for years," said Sid O'Bryant, interim director of the Institute for Aging and Alzheimer's Disease Research at the health science center. "We need to be able to detect it earlier and earlier so we can create new ways to prevent the disease itself and do early treatment so we can be most effective in treating our patients."

An estimated half-million Americans each year are affected by Alzheimer's, a [degenerative brain disease](#), which researchers believe is surpassed only by heart disease and cancer as the leading cause of death in the United States, according to a study published this month.

"It robs patients of their memories. I find that particularly disturbing," said O'Bryant, whose grandmother died with Alzheimer's. "Our memories are intimately linked to who we are. It slowly erodes away the person himself. ... Toward the end of the disease, it's not the same person. That takes a huge toll on families."

Alzheimer's research is decades behind cardiovascular and cancer research, and new medications haven't hit the market in years, some neurologists say, partly because of the difficulty in diagnosing patients and enrolling them in clinical trials early enough to test the effectiveness of new medications and treatments, researchers say.

"It's been a decade since we've had a new medication come available so we can treat the disease. It's very frustrating," said Dr. Kevin Conner, neurologist and medical director at Texas Health Arlington Memorial's Stroke Center.

New blood tests may change all that one day.

In a study published in *Nature Medicine* this month, researchers made international headlines after unveiling a first-of-its-kind blood test they say can predict with 90 percent accuracy whether a healthy person will develop Alzheimer's within two to three years. The test is based on whether the person has lowered levels of particular fatty lipids.

In the Rochester Aging Study, launched in 2007, the researchers collected blood samples from more than 500 healthy people older than 70. Five years later, they further examined the samples from the people who had developed Alzheimer's or other mild cognitive problems and found that 10 specific lipids were at lower levels than normal, possibly an early signal that the disease has begun breaking down brain cells, according an article about the study on the University of Rochester Medical Center website.

"The ability to identify individuals who are at risk of developing Alzheimer's before the clinical manifestation of cognitive impairment has long been a holy grail of the neuromedicine community," said Dr. Mark Mapstone, a neuropsychologist at the University of Rochester School of Medicine and Dentistry, and lead author of the study. "Current efforts to develop a treatment for this disease are coming up short because they are probably being used too late. Biomarkers that can allow us to intervene early in the course of the disease could be a game-changer."

While neurologists say a predictive blood test for Alzheimer's won't be available to the public anytime soon, it could help researchers identify at-risk candidates for clinical trials.

"This is a good step to say that this might be used to identify someone at higher risk that we might enroll in therapy or give medication," said Dr.

Diana Kerwin, director of Texas Alzheimer's and Memory Disorders and chief of geriatrics at Texas Health Presbyterian Hospital Dallas.

Kerwin and O'Bryant both caution that the Rochester study population was small and that the researchers' work needs to be replicated by other laboratories.

"This is a solid first step but it's still a first step and a lot of work remains to be done," O'Bryant said.

In Texas, other researchers are preparing to launch their own five-year study to evaluate a different type of blood test they said primary-care physicians could one day use to screen elderly patients faster and less expensively for signs of neurological disease.

O'Bryant, an associate professor at the health science center, leads a team of researchers who've spent a decade developing and refining the serum protein-based blood test.

The proposed screening tool, which researchers hope can identify neurological diseases through certain blood proteins, would help primary-care physicians more accurately and easily determine whether patients should be referred to a specialist. Currently, Alzheimer's is diagnosed through expensive, invasive procedures such as spinal taps and brain imaging.

"It's difficult and cumbersome to get the diagnosis," O'Bryant said.

O'Bryant's team is awaiting word from the National Institutes of Health on whether the researchers will receive a \$6 million grant to study the test further. If approved, the study would launch this year and involve 3,000 older patients from the Fort Worth area.

The goal is for the test to become standard, like cholesterol screening, for people over 65 who go in for their annual physical, O'Bryant said.

A simple blood test would be more objective and effective than relying on patients to bring up memory concerns on their own or count on primary-care physicians to ask about them specifically, O'Bryant said

"When you consider the average length of time (for an annual exam) is 18 minutes, even brief cognitive assessments are difficult to fit into that," O'Bryant said. "At the annual exam, when people are getting their normal blood work, this [blood test](#) can be added to it. It doesn't change the physician's or the patient's time."

Even if the predictive test were available in a doctor's office today, Hill said, she isn't sure she would want to know whether she faces the same disease as her mother.

"For some families, it might be helpful to know what is up ahead. Do I want to know right now? Honestly, probably not," said Hill, who also has a daughter in college. "I'm dealing with all I can deal with. I'm caring for my mom. I wouldn't want to worry about me."

But knowing about a risk could help someone decide to eat better, exercise and address other health issues, such as diabetes, to fight the effects of Alzheimer's, she said.

"If people could prepare, then maybe this study is incredible for us. If you can take preventive measures and stave off the inevitability, that is key," Hill said.

Hill said she said saw signs of trouble four or five years before her mother was diagnosed with Alzheimer's. Putting the wrong type of soap in the dishwasher was one thing. Walking a mile and a half home

through road construction on busy North Collins Street because the car was lost at the grocery store was too much, Hill said.

"We enabled her a lot longer than we should have," Hill said. "We were trying to respect her independence and her dignity."

An estimated 5.1 million Americans have Alzheimer's disease, according to the National Institute on Aging. In 2010, the average annual cost to care for an elderly person with dementia was projected at \$41,000 to \$56,000.

The changes Hill and her family have made include switching from full-time work to part time, moving into a larger home and hiring assistants to help with her mother's care.

"I understand from research, we're about to reach some epidemic proportions," Hill said. "As baby boomers age, we are seeing more and more cases and more cases of early onset. That is troubling to me.

"The cost and effort associated with caring for someone with Alzheimer's is astronomical," she said. "It's physically demanding but the challenges emotionally and mentally are draining, too."

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