

## U.S. researchers close to Alzheimer's blood test

July 26, 2010

By Todd Ackerman

HOUSTON — Texas scientists are on the verge of developing a blood test to identify patients with Alzheimer's disease, a potential major breakthrough in the still difficult-to-diagnose ailment.

The test, details of which were presented at an international conference on Alzheimer's in Hawaii this month, would give non-specialists, who often have trouble diagnosing the devastating disease, a tool to catch it earlier and make a referral when its progression can still be slowed.

“If it's confirmed, this test will offer millions of geriatric patients across the country and the planet the opportunity at least to be screened annually,” said Dr. Sid O'Bryant, a professor of neurology at Texas Tech Health Sciences Center and the primary investigator of the study reported in Hawaii. “Then, if it's positive they can go to a specialist and get a proper workup and start treatment.”

The test, which measures a mix of more than 100 blood proteins, accurately classified those participants who had the disease and those who didn't 95 per cent of the time. Blood samples were taken from about 600 people, split between those with and without the disease.

Many research teams are pursuing such a diagnostic tool, but Baylor College of Medicine team member Dr. Rachelle Doody said the Texas research is the most comprehensive and furthest along. The Texas team will publish a paper on the study in an undisclosed journal this fall, only the second ever such journal publication involving an Alzheimer's blood test.

Doody stressed that the study still needs to be replicated. The team has submitted a grant request to the National Institutes of Health that would not only attempt to replicate the results, but also assess its ability to distinguish different types of Alzheimer's and to predict people's risk of developing the disease.

More than 5 million Americans have the degenerative brain disease, according to the Alzheimer's Association, and experts predict the number will double over the next 15 years as baby boomers age. Texas has 340,000 people with Alzheimer's or other forms of dementia, an amount projected to grow to at least half a million by 2025.

The study was the product of the Texas Alzheimer's Research Consortium, a Legislature-created collaboration comprised of Baylor, Texas Tech, the University of Texas Southwestern Medical

Center in Dallas, the UT Health Science Center at San Antonio and the University of North Texas Health Science Center in Fort Worth.

The consortium estimates that the value of unpaid care for Texas Alzheimer's and dementia patients was \$11.2 billion in 2009.

The biggest news at the Hawaii conference was a small company's new brain scan for detecting plaque, the hallmark physical sign of Alzheimer's disease. But O'Bryant noted that test requires PET scans not easily accessible to most seniors.

O'Bryant said specialists have become adept at detecting Alzheimer's at an early stage, but many seniors get to them too late for helpful treatment because their first symptoms are often dismissed by primary-care doctors as age-related forgetfulness. A blood test available to all would change that.

O'Bryant's team looked at patients whose Alzheimer's and lack of Alzheimer's was diagnosed using standardized criteria — neuroimaging, blood work, neuropsychological testing and neurological exams. They found that proteins in Alzheimer's patients' blood serum revealed a kind of signature for the disease, 25 biomarkers consistently differentiating Alzheimer's from normal.

Doody said a research team from Australia using a different methodology had overlapping results, with many but not all of the same 25 proteins showing up in Alzheimer's patients.

In addition, a University of North Carolina researcher and consultant to the Texas consortium presented data that showed changes in the genes reflected the distinguishing biomarkers.

The mix of proteins and complementary genetic data contrast with previous failed blood tests, which usually relied only on one protein.

“This test is going to work,” O'Bryant said. “We'll add other biomarkers and continue to refine it and improve it, but it's held too strong for it to be simply working by chance.”

*New York Times news service*