

NEW noninvasive blood test can predict early on-set of Alzheimer's

This new blood test is so precise it can predict onset Alzheimer's up to 30 years in advanced. This new test means better care and preventative measures can be taken much earlier for patients.

The key to this new method is detecting the presence of amyloid beta (A β) deposits, which is thought to be one of the main drivers of Alzheimer's. However, detecting these plaques has been tricky in the past, and impossible to test in a blood test before now.

Colin Masters, a laureate professor of neuroscience at the Melbourne-based Florey Institute, says the blood test is more than 90% accurate at predicting Alzheimer's, based on a study involving 252 Australian and 121 Japanese patients that analyzed for amyloid beta build-up.

"From a tiny blood sample, our method can measure several amyloid-related proteins, even though their concentration is extremely low," Koichi Tanaka says as one of the members of the team from Shimadzu Corporation in Japan. "We found that the ratio of these proteins was an accurate surrogate for brain amyloid burden."

Even though this new test can predict Alzheimer's much earlier, scientists are still not sure how the disease develops. However, abnormal levels of amyloid beta and another protein, Tau (τ), seem to play a significant role. These proteins start to congregate long before noticeable Alzheimer's symptoms like memory loss appear, around 20 to 30 years prior to

diagnosis.

Costly brain scans or difficult spinal fluid extraction are currently used to measure amyloid beta levels, but the diagnosis of the disease often just rely on looking for visible symptoms of Alzheimer's. Unfortunately, with this practice, the disease is already well developed and most time beyond help.

Therefore, this early detection test is a big deal, and the fact that this test only requires a small blood sample makes it revolutionary.

The blood test uses mass spectrometry to ionize and scan for a particular peptide or amino acid compound that is thought to be linked to amyloid beta concentrations.

This is a huge step forward on the path to a cure for Alzheimer's, and an immediate success as it allows for those diagnosed so early on to consider lifestyle changes in sleep, diet, and exercise, that might help reduce the symptoms of the disease.

"I can see in the future, five years from now, where people have a regular checkup every five years after the age of 55 or 60 to determine whether they are on the Alzheimer's pathway or not," says Masters.

In the US alone, there are more than 5 million people who live with Alzheimer's, and it's the sixth leading cause of death in the United States.

"This new test has the potential to eventually disrupt the expensive and noninvasive scanning and spinal fluid technologies. In the first instance, however, it will be an invaluable tool in increasing the speed of screening potential patients for new drug trials," says Masters.

Even though more tests, studies, and trials will be needed, this is truly a breakthrough!

The research was initially published in *Nature, International Journal of Science*.

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Summary



Article Name

New Alzheimer's Early Diagnosis Blood Test of Amyloid Beta Deposits

Description

A new and invasive blood test can detect early on set Alzheimer's by looking for amyloid beta deposits, which are known to be present with the disease.