

Discovery of biomarker could help predict Alzheimer's years before symptoms emerge

18 February 2021



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A unique brain protein measured in the blood could be used to diagnose Alzheimer's disease decades before symptoms develop, according to new Edith Cowan University (ECU) research.

Published in *Nature* journal *Translational Psychiatry*, the study is the first to find that people with elevated glial fibrillary acidic protein (GFAP) in the blood also have increased amyloid beta in the brain, a known indicator of Alzheimer's [disease](#).

GFAP is a protein normally found in the brain, but it is released into the blood when the brain is damaged by early Alzheimer's disease.

Alzheimer's disease affects more than 340,000 Australians and more than 35 million people in the world. Current diagnosis involves a brain scan or spinal fluid tests.

The study's lead researcher, ECU Professor Ralph Martins AO, said the discovery offered a promising new avenue for [early diagnosis](#).

"Blood biomarkers are becoming an exciting

alternative to the existing expensive and invasive methods of diagnosing Alzheimer's disease," said Professor Martins.

"The GFAP biomarker could be used to develop a simple and quick blood test to detect if a person is at very high risk of developing Alzheimer's.

"Early diagnosis is critical to allow us to implement medication and [lifestyle interventions](#) that can help delay the progression of the disease and give people more time before symptoms develop."

A step forward

Alzheimer's disease is a degenerative brain condition that can develop silently over years. It leads to memory decline and loss of thinking skills. There is no known cure.

According to Professor Martins, the development of an early blood test for the disease will be revolutionary.

"The technology for detecting biomarkers has developed rapidly, so I think we will begin to see diagnostic blood tests being used for Alzheimer's in the next few years.

"The current [brain](#) imaging and lumbar puncture tests are expensive and invasive and not widely available to the general population. A [blood test](#) could open up possibilities for early diagnosis of millions of people and thereby enable earlier interventions."

Future hope

The study involved 100 Australians aged between 65 and 90 years of age with no symptoms of Alzheimer's disease.

Professor Martins said further research is needed to understand GFAP in Alzheimer's disease.

"Longitudinal studies will provide more insight into how GFAP relates to the progression of Alzheimer's, which may allow us to determine when symptoms will emerge."

Professor Martins is also part of a large study exploring interventions for Alzheimer's disease, with the ultimate goal of finding medications and lifestyle factors that can halt or delay the development of the disease.

"Diagnosis and intervention techniques go hand in hand—if we can use [blood biomarkers](#) to detect Alzheimer's sooner, we can also intervene sooner," he said.

More information: Pratishtha Chatterjee et al, Plasma glial fibrillary acidic protein is elevated in cognitively normal older adults at risk of Alzheimer's disease, *Translational Psychiatry* (2021). DOI: [10.1038/s41398-020-01137-1](https://doi.org/10.1038/s41398-020-01137-1)

Provided by Edith Cowan University

APA citation: Discovery of biomarker could help predict Alzheimer's years before symptoms emerge (2021, February 18) retrieved 23 April 2021 from <https://medicalxpress.com/news/2021-02-discovery-biomarker-alzheimer-years-symptoms.html>

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