



Tallaght
University
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Ospidéal
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An Academic Partner of Trinity College Dublin



TUH
Memory
Assessment
and Support
Service

CSF Biomarkers

Factsheet

What are Biomarkers?

Biomarkers are measures of what is happening inside the living body, shown by the results of laboratory tests on fluids such as urine, cerebrospinal fluid (CSF) - a clear fluid that surrounds the brain and spinal cord and blood e.g. increased cholesterol in the blood is a biomarker for heart-attack risk.

Changes in the brains of people with dementia often begin two decades before symptoms appear. CSF Biomarkers can help to detect these changes early in the disease process and identify those who are at a greater risk of Alzheimer's Disease (AD).

What will be measured?

The most widely used CSF biomarkers for AD are proteins called 'beta-amyloid' and 'Tau' that have a role in dementia.

In the brain of a person with AD, beta-amyloid 42 levels are low, and tau and phospho-tau levels are high, compared to those less at risk or without dementia.

When we combine the CSF results with all other tests that you have had done this tells us more about your brain. This helps to improve the accuracy of your diagnosis.

How is CSF tested?

We carry out a lumbar puncture and take some drops of CSF fluid and send them to the laboratory for review.

Why are these proteins measured?

To help us to give a more accurate risk percentage for progression to AD. Reduced Amyloid β and increased Tau (depending on the levels) can suggest 'Prodromal AD' with higher likelihood of changing from 'Mild Cognitive Impairment' to AD



- Identification of high-risk is important as we can target risk factors with e.g. support to make some lifestyle changes.
- To differentiate between different types of dementia and support a diagnosis of AD
- They give more information about the brain in cases where symptoms are unusual or 'atypical'
- To help determine which people might benefit most from a particular treatment.
- To identify people who may be suitable for clinical trials and research studies that may come along in the trial part of our service.