

Swedish diagnostic method for Alzheimer's becomes international standard

2 November 2015, by Krister Svahn

Researchers at Gothenburg University have developed a reference method for standardized measurements that diagnose Alzheimer's disease decades before symptoms appear. The method has now formally been classified as the international reference method, which means that it will be used as the standard in Alzheimer's diagnostics worldwide.

Everyone naturally builds the beta amyloid protein in his or her [brain](#). The protein's normal function is not completely mapped, but one theory is that it participates in the formation and removal of synapses, which is vital in enabling the brain to form new memories.

Remain in the brain

Beta amyloid built by healthy people is quickly transported out to the [spinal fluid](#) and blood. But with Alzheimer's, the beta amyloids remain in the brain, where they clump together and begin to damage the synapses, which leads to brain, nerve cell death.

This process can begin in middle age and continue unnoticed for decades until the nerve cells are so damaged that symptoms take the form of a memory disorder and impaired cognitive abilities. At that point, the disease is felt to be too advanced to be treated, so intensive worldwide research is underway to find methods that diagnose Alzheimer's sooner.

Exact measure

After decades of research, Henrik Zetterberg and Kaj Blennow at Sahlgrenska Academy, Gothenburg University, were able to develop a [method](#) that measures the exact amount of beta amyloid in spinal fluid and diagnose Alzheimer's ten to thirty years before the disease becomes symptomatic.

"If the concentration of beta amyloid in the spinal fluid is abnormally low, it indicates that the protein is sticking in the brain, which is the earliest sign of Alzheimer's disease," says Henrik Zetterberg.

Global reference

The Gothenburg researchers' pioneering studies have gained wide international recognition since the measurement method they developed was approved as the global reference method.

"This means that the method will be used as the norm for standardizing beta amyloid measurements around the world. With the help of the standard, people who are worried about Alzheimer's disease can be tested, and get the same results regardless of whether it is done in San Francisco, Sao Paolo, London, Gothenburg or Cape town," says Kaj Blennow.

"We put a lot of effort into this project and it has been initiated and conducted, and now completed by us at Gothenburg within the framework of a global cooperation project that we head," says Henrik Zetterberg.

Promising result for drug candidates

This major advance coincides with recent studies that show promising results for different [drug candidates](#) that attack Alzheimer's disease and target beta amyloids.

"These new drugs will likely prove most effective for persons who have just begun to accumulate beta amyloids in their brain. Then a well-proven and standardized method becomes crucial, as it ensures that these people are identified in a diagnostically safe and precise manner," says Kaj Blennow.

Provided by University of Gothenburg

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