

New test takes guesswork out of diagnosing early-stage Alzheimer's disease

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A new test developed by Japanese scientists may revolutionize how and when physicians diagnose Alzheimer's disease. According to a research report published online in *The FASEB Journal*, the new test measures proteins in the spinal fluid known to be one of the main causes of brain degeneration and memory impairment in Alzheimer's patients: high molecular weight A-Beta oligomers. This tool, once fully implemented, would allow physicians to diagnose and treat Alzheimer's disease in its early stages, a time when diagnosing the disease is very difficult.

"Alzheimer's disease is a growing problem, due to aging of the population in all developed countries," said Takahiko Tokuda, M.D., Ph.D., a researcher from the Department of Neurology at the Kyoto Prefectural University of Medicine Graduate School of Medical Science in Japan who was involved in the work. "We hope that our new [diagnostic test](#) will, in the future, significantly improve the lives of people with Alzheimer's disease, and lead to much better ways of treating this devastating disorder."

Scientists developed a tool (enzyme-linked immunosorbent assay) that specifically measures A-Beta oligomers. They then compared the levels of these [protein](#) aggregates in human cerebrospinal fluid samples among three groups of people: 1) patients with diagnosed Alzheimer's disease; 2) patients with [mild cognitive impairment](#) who went on to develop Alzheimer's disease; and 3) a control group with no symptoms of Alzheimer's disease.

Results showed that the levels of the A β fragments being measured directly correlated to the extent of [memory impairment](#), with the highest levels found in those with confirmed Alzheimer's and intermediate levels in those with mild cognitive impairment. This shows that by measuring the levels of A-Beta oligomers in cerebrospinal fluid, physicians may be able to identify Alzheimer's disease before it can be clinically diagnosed using current methods.

"[Baby boomers](#) are getting older and Alzheimer's disease will have a tremendous impact on the memory of a generation and the lives of its children," said Gerald Weissmann, M.D., Editor-in-Chief of *The [FASEB Journal](#)*. "This test is not only useful for the early detection of Alzheimer's disease, but promises to be a marker for the efficacy of newer treatments that are already on the drawing board."

More information: <http://www.fasebj.org>

Provided by Federation of American Societies for Experimental Biology

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