Press release

PRESS RELEASE UNDER EMBARGO UNTIL APRIL 9, 11AM (BARCELONA TIME)

A blood test for early detection of Alzheimer's disease

- ***A study involving more than 1,700 people from five hospitals in Barcelona, Sweden and Italy has validated the usefulness of a biomarker in blood to detect Alzheimer's disease in the clinical setting. The study, published in the journal Nature Medicine, demonstrates that this test can be a useful and applicable tool in routine medical practice.***

- ***The automated analysis of this biomarker is more than 90% effective in identifying patients with Alzheimer's disease. It is an easy-to-use tool that can partly replace other, more complex diagnostic tests, such as lumbar puncture or positron emission tomography (PET).***

- ***The study has established cut-off points from which the patient's symptoms can be considered to be caused by Alzheimer's, if Alzheimer's disease can be ruled out, or if further tests are needed to determine the cause of the disease.***

Barcelona, April 9th, 2025. – The possibility of detecting Alzheimer's through a blood test is now a reality. A study led by researchers from the Hospital del Mar Research Institute and the BarcelonaBeta Brain Research Center (BBRC), research center of the Pasqual Maragall Foundation, in collaboration with the University of Gothenburg and Lund University in Sweden, has validated the ability to determine the risk of Alzheimer's in people with cognitive impairment symptoms through the detection in blood of a **biomarker called phospho-tau217**. The study, which also included participation from the hospital and university of Brescia in Italy, was recently published in the journal *Nature Medicine*.

Using data from four hospital-based cohorts—Hospital del Mar, Gothenburg Hospital, Malmö Hospital, and Brescia Hospital—and one primary care cohort in Sweden, the usefulness of detecting the biomarker in blood was analyzed **in 1,767 individuals**. This research group had already demonstrated in previous studies the biomarker's ability to identify the risk of developing Alzheimer's in the preclinical stage of the disease. Now, they have validated an automated and scalable blood test system, Lumipulse p-tau217, developed by the Japanese company Fujirebio, to determine the threshold levels above or below which it can be confirmed whether a person will develop the disease or is free of risk.

"This development may allow us to determine who needs to undergo further tests, such as a lumbar puncture or a PET scan, and who doesn't, as it enables the detection of Alzheimer's in its early stages with great accuracy," explains Dr. Marc Suárez-Calvet, neurologist at Hospital del Mar and researcher at its research institute and the BarcelonaBeta Brain Research Center. ***"We have been able to establish two cut-off points that help us determine this risk. People whose p-tau217 biomarker levels fall between these two thresholds are the ones who need further testing,"*** he adds. Despite the test's high level of precision, Dr. Suárez-Calvet stresses that ***"it is important to highlight that biomarker results must always be interpreted by a neurologist or other specialized healthcare professional after a proper neurological assessment, and never in isolation."***

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More than 90% accuracy

The study showed that, in hospital patients, the automated blood biomarker analysis achieves **an accuracy of over 90%,** comparable to that of a lumbar puncture. In reaching this conclusion, researchers considered patient comorbidities (such as diabetes and kidney function) as well as age. However, effectiveness is lower in primary care patients and in those over 80 years old.

"Our results, combined with the ease of use and implementation of this type of test, could facilitate its integration into clinical practice to achieve a more accurate diagnosis of Alzheimer's," notes Dr. Federica Anastasi, BBRC researcher and co-author of the study. The detection of phospho-tau217 levels in blood is simple and can be performed in any clinical laboratory. This could help, according to Dr. Pablo Villoslada, head of the Neurology Department at Hospital del Mar, ***"provide a tool for accurate and early diagnosis, ensuring equitable access to care and improved treatments."***

The study shows that this new diagnostic tool can significantly reduce the costs associated with diagnosing Alzheimer's, with savings ranging from 60% to 81% compared to current diagnostic tests**.** This economic impact, combined with its large-scale applicability, could help improve access to early diagnosis and enhance the clinical management of the disease. However, the authors caution that further studies will be needed before it can be implemented in clinical practice.

Reference article:

Sebastian Palmqvist, Noelle Warmenhoven, Federica Anastasi, Andrea Pilotto, Shorena Janelidze, Pontus Tideman, Erik Stomrud, Niklas Mattsson-Carlgren, Ruben Smith, Rik Ossenkoppele, Kubra Tan, Anna Dittrich, Ingmar Skoog, Henrik Zetterberg, Virginia Quaresima, Chiara Tolassi, Kina Hoglund, Duilio Brugnoni, Albert Puig-Pijoan, Aida Fernandez-Lebrero, Jose Contador, Alessandro Padovani, Mark Monane, Philip B. Verghese, Joel B. Braunstein, Silke Kern, Kaj Blennow, Nicholas J. Ashton , Marc Suarez-Calvet& Oskar Hansson. Plasma phospho-tau217 for Alzheimer's disease diagnosis in primary and secondary care using a fully automated platform. *Nat Med* (2025). doi: 10.1038/s41591-025-03622-w

More information

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