

## Study reveals gender inequalities in participation in clinical trials for Alzheimer's disease prevention

- The analysis conducted by the Barcelonaβeta Brain Research Center, a research centre of the Pasqual Maragall Foundation, and the Women's Brain Foundation reveals that single women with a high level of education are the least likely to undergo procedures such as lumbar puncture
- The study, published in *Alzheimer's Research & Therapy*, includes data from more than 2,500 cognitively healthy people from the Alpha cohort, supported by the "la Caixa" Foundation



**Barcelona, 27th March 2025** – A joint study by the [Barcelonaβeta Brain Research Center \(BBRC\)](#), a Pasqual Maragall Foundation's research centre, and the [Women's Brain Foundation](#) has revealed **significant differences in willingness to participate in clinical trials for Alzheimer's disease prevention between men and women**. Published in the scientific magazine *Alzheimer's Research & Therapy*, the study highlights the **need to adapt recruitment strategies to existing gender differences to ensure equitable representation in research**.

One of the most relevant findings is that **single women with a higher educational level show a lower willingness** to undergo invasive procedures such as lumbar puncture. These results highlight the need to **integrate women's specific needs into the information provided about clinical trials**, in addition to exploring less invasive alternatives, such as blood biomarkers.

Since Alzheimer's disease accounts for 60% to 80% of dementia cases<sup>1</sup> and is expected to exceed 150 million cases by 2050<sup>2</sup>, it is essential to identify and address gender barriers that hinder equitable participation in research. "Historically, women have been underrepresented in clinical trials across various areas of medicine, limiting our understanding of how diseases and treatments may affect them differently," says **Dr Anna Brugulat, a neuropsychologist and researcher at the BBRC and the study's leader.**

### Main conclusions of the study

The research team analysed the participation of more than 2,500 cognitively healthy individuals from the Alpha cohort, supported by the "la Caixa" Foundation, to assess their willingness to undergo medical procedures such as MRIs, lumbar punctures, PET scans, and cognitive assessments. Authors suggest that increased education could translate into **greater caution** in evaluating the procedure. Furthermore, personal or known **previous negative experiences**, such as the use of epidural anaesthesia during childbirth, could reinforce this perception of risk. Being single could lead to a **more limited support network**, which would make it difficult to seek help or care after the procedure, increasing the reluctance to participate.

In light of these results, Dr Brugulat states that "it is critical to address the specific concerns of women and provide clear and accessible information about the benefits and risks of participating in clinical trials. Furthermore, exploring less invasive alternatives, such as blood-based biomarkers, could foster greater equity in research."

### Sociocultural factors influence the decision

**Alzheimer's disease has a significantly greater impact on women**, not only in prevalence but also in severity, making equitable inclusion in studies even more relevant. At a global level, **two out of three people who suffer from the disease are women**. Women also take on the role of caregivers for family members with dementia more frequently.

The study highlights that gender differences in participation are not exclusively due to biological factors, but are also influenced by sociocultural factors. For example, women participating in the study **tend to take on roles as family caregivers** and have **slightly lower educational levels** compared to men, aspects that may influence their perception of clinical trials.

Study findings highlight the importance of designing more inclusive recruitment strategies that consider factors such as gender, marital status, and educational level. Promoting awareness campaigns and developing personalized approaches can also improve the representation of women in Alzheimer's disease clinical trials, ensuring that research fairly reflects the reality of those living with the disease.

### References

Canals-Gispert, L., Cañas-Martínez, A., Huesa, G. *et al.* Impact of gender on the willingness to participate in clinical trials and undergo related procedures in individuals from an Alzheimer's

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<sup>1</sup> Lobo A, Launer LJ, Fratiglioni L, *et al.* 'Prevalence of dementia and major subtypes in Europe: A collaborative study of population-based cohorts'. *Neurology*. 2000;54(11 Suppl 5):S4–9.

<sup>2</sup> The Alzheimer's Association. '2022 Alzheimer's Disease Facts and Figures'. *Alzheimer's & Dementia*. 2022;18(4):700–89.

prevention research cohort. *Alz Res Therapy* 16, 263 (2024). <https://doi.org/10.1186/s13195-024-01626-1>

### **Alzheimer's disease in numbers**

It is currently estimated that Alzheimer's disease and neurodegenerative diseases affect 900,000 people, a figure that translates to one in ten of those over 65 years of age and a third of those over 85. These diseases are one of the main causes of mortality, disability, and dependency. If an effective cure is not found and life expectancy continues to increase, the number of cases worldwide could triple by 2050, exceeding one and a half million people in Spain alone, a situation that could lead to the collapse of healthcare and care systems.

### **About the Barcelonaβeta Brain Research Center and the Pasqual Maragall Foundation**

The Barcelonaβeta Brain Research Center (BBRC) is the research centre of the Pasqual Maragall Foundation, supported by the "la Caixa" Foundation since its creation, dedicated to the prevention of Alzheimer's disease and the study of cognitive functions affected in healthy and pathological aging. BBRC research focuses on the preclinical phase of Alzheimer's disease, the period before the first symptoms appear, when changes in the brain associated with the disease already occur. The BBRC has more than 100 professionals dedicated to contributing to the forefront of research into Alzheimer's disease and other neurodegenerative diseases.

The Pasqual Maragall Foundation is a non-profit organization founded in April 2008 in response to the commitment made by Pasqual Maragall, former mayor of Barcelona and former president of the Generalitat de Catalunya, when he publicly announced that he had been diagnosed with Alzheimer's disease. The Foundation's mission is to promote research to prevent Alzheimer's disease and offer solutions that improve the quality of life of those affected and their families.

The Pasqual Maragall Foundation has the support of more than 93,000 members and of:



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