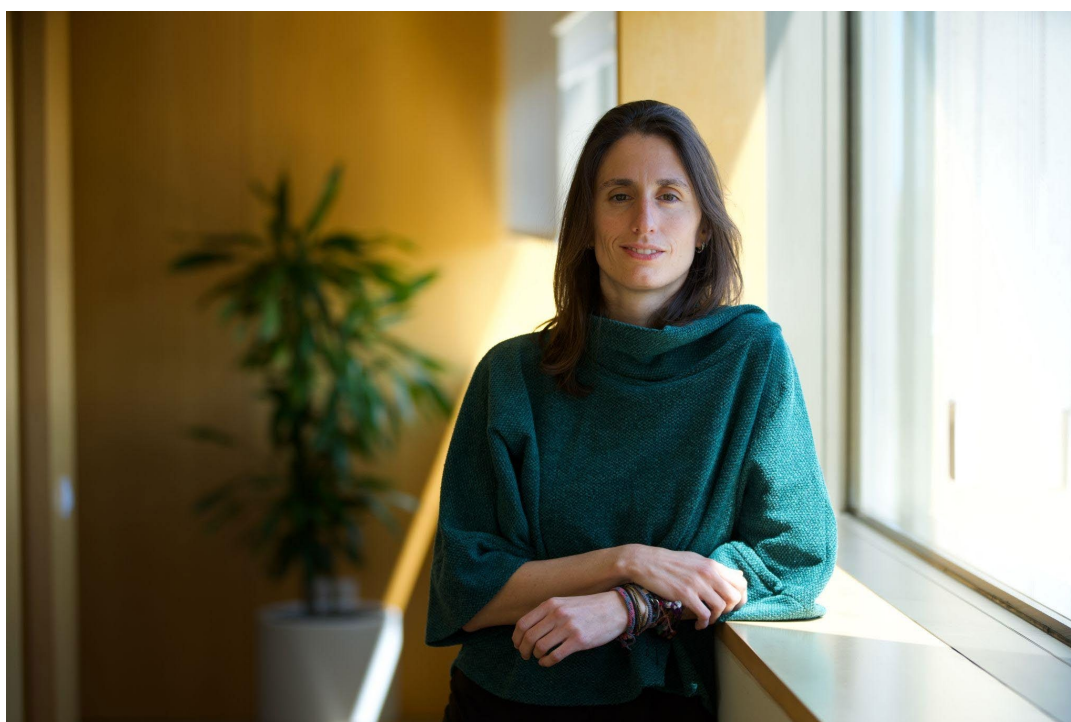


The Barcelonaβeta Brain Research Center strengthens research in Molecular Epidemiology and Data Science with a New Group Led by Dr. Natàlia Vilor-Tejedor

- The addition brings the total number of groups at the Pasqual Maragall Foundation's research center to nine and strengthens its capabilities in molecular epidemiology, biostatistics, and data science as applied to Alzheimer's disease and brain health
- The new group will integrate multi-omic data, exposome data, neuroimaging, and clinical information to advance the understanding of the biological and environmental mechanisms involved in dementia and other complex diseases
- Dr. Natàlia Vilor-Tejedor, doctor of Biomedical Sciences (UPF), leads the research group on molecular epidemiology and data science at Utrecht University and will now head a new team at the BBRC to develop advanced methodologies for prevention and precision medicine in brain health



Barcelona, June 29, 2026.- The Barcelonaβeta Brain Research Center (BBRC), the research center of the Pasqual Maragall Foundation, is strengthening its strategy in data science and molecular epidemiology with the launch of the new Molecular Epidemiology and Data Science Research Group, led by Dr. Natàlia Vilor-Tejedor, doctor in Biomedicine.

This new team was established with the goal of studying the biological and environmental mechanisms involved in neurodegenerative diseases, aging, and brain health, as well as the relationship between systemic health and the brain. Its work will focus on integrating multi-omic data, exposome data, neuroimaging, and clinical information to better understand the processes associated with the risk of dementia and other complex diseases.

The group will develop advanced methodologies in biostatistics, molecular epidemiology, and data science to identify biomarkers, stratify risk, and advance strategies for prevention and precision medicine. It will also work on applying computational models and analytical tools capable of integrating large volumes of biomedical and population-based data in order to improve our understanding of the factors involved in the development of Alzheimer's disease and other neurodegenerative disorders.

“The integration of biological, environmental, and clinical data allows us to better understand how the various factors involved in brain health interact and to move toward more precise and personalized preventive strategies,” **notes Dr. Natàlia Vilor-Tejedor.**

Integrating complex data to advance prevention and precision medicine

The group's work is organized into several complementary areas. The first will focus on multi-omics **integration and the study of biological mechanisms** through the joint analysis of genomic, transcriptomic, proteomic, metabolomic, and neuroimaging data, with the aim of identifying molecular pathways, biomarkers, and potential therapeutic targets related to neurodegenerative diseases and aging.

Another research area will focus on **the study of the exposome and the brain-body connection**, analyzing how environmental, social, and systemic factors interact with biological processes related to brain health. This research will help identify modifiable risk factors associated with dementia and pave the way for new preventive and public health strategies.

The group **will also develop advanced biostatistical and data science methodologies applied to the analysis of high-dimensional biomedical data.** The team will focus on data integration, causal inference, predictive modeling, and risk stratification in population cohorts and clinical studies, with a particular emphasis on the reproducibility, interpretability, and clinical application of the models.

In addition, it will promote more inclusive and representative **research by incorporating biological, social, and demographic diversity** into studies on brain health and dementia. It will also integrate the perspectives of gender, equity, and inclusion into biomedicine, promoting strategies involving artificial intelligence and data analysis applied to diverse cohorts and underrepresented populations.

A solid leadership position in molecular epidemiology and data science

The group is led by **Dr. Natàlia Vilor-Tejedor**, a specialist in the development and application of statistical and computational methodologies. She holds a doctorate in Biomedicine from Pompeu Fabra University (UPF), a master's degree in Omics Data Analysis (UVic), and a background in Mathematics and Applied Statistics (UAB). The group comprises a multidisciplinary team of specialists in epidemiology, statistics, computational biology, and population health.

Dr. Natàlia Vilor-Tejedor focuses her research on molecular epidemiology, biostatistics, and data science as applied to the study of neurodegenerative diseases, aging, and brain health. Her work focuses on the development and application of statistical and computational methodologies to integrate multi-omics, exposome, neuroimaging, and clinical data with the aim of identifying biological mechanisms involved in aging and dementia.

She currently heads the [Molecular Epidemiology and Data Science](#) group at Utrecht University and now also leads a team at the **Barcelonaβeta Brain Research Center (BBRC)**, with which she has been affiliated for years, thereby reinforcing her commitment to consolidating and fostering the center's own research talent. In addition, she coordinates the [UNITED Consortium](#). Throughout her career, she has held research and teaching positions at institutions such as the Erasmus Medical Center, the Center for Genomic Regulation, ISGlobal, and the University of Valencia, among others.

With the launch of this new line of research, the BBRC is strengthening its position as a leading center for Alzheimer's disease and brain health, expanding its capabilities in **molecular epidemiology and biomedical data analysis**, and reinforcing its commitment to methodological and technological innovation as a driver of scientific progress.

Alzheimer's in figures

Currently in Spain, it is estimated that Alzheimer's disease and other dementias affect between 850.000 and 950.000 people, a figure that translates to one in ten people over the age of 65 and one in three of those over 85. These conditions are among the leading causes of mortality, disability, and dependency. If no effective cure is found and, with life expectancy increasing, by 2050 the number of cases could triple worldwide, exceeding one and a half million people in Spain alone, a situation that could overwhelm healthcare and social care systems.

About the Barcelonaβeta Brain Research Center and the Pasqual Maragall Foundation

The Barcelonaβeta Brain Research Center (BBRC) is the research center of the Pasqual Maragall Foundation dedicated to the prevention of Alzheimer's disease and the study of cognitive functions affected in healthy and pathological aging. BBRC's research focuses on the preclinical stage of Alzheimer's, a period prior to the appearance of the first symptoms, when changes in the brain associated with the disease are already occurring. The BBRC, supported by the "la Caixa" Foundation since its creation, has more than 150 professionals dedicated to contributing to the forefront of research on Alzheimer's and other neurodegenerative diseases.

The Pasqual Maragall Foundation is a non-profit organization founded in April 2008 as a response to the commitment made by Pasqual Maragall, former mayor of Barcelona and former president of the Government of Catalonia, 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 and contribute to social transformation by improving the quality of life of affected individuals and their families, as well as raising public awareness about the disease.

The Pasqual Maragall Foundation has the support of more than 115.000 members and:



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