NeuroSync

Unravelling the Role of Glucose Dysregulation in Dementia Progression: A Multi-Centre Study Across Europe and Turkey (NeuroSync)

Dementia is a rapidly growing global challenge, with cases expected to nearly triple by 2050, placing enormous strain on families, caregivers, and health systems. While prevention research is advancing, there is a major lack of scalable, evidence-based interventions for people already living with dementia, particularly in the costly and demanding moderate-to-late stages, and especially among underserved populations. Metabolic dysfunction, including type 2 diabetes and broader glucose dysregulation, is strongly linked to dementia risk and progression. Yet, its role after diagnosis remains poorly modelled, leaving a critical gap in prediction and care. At the same time, psychosocial factors and caregiver support are known to shape quality of life and disease management, but current interventions rarely integrate biological and psychosocial care.

NeuroSync explores how problems with glucose control, such as insulin resistance and unstable blood sugar, shape the progression of moderate-to-late-stage dementia, a period marked by rapid cognitive decline, loss of independence, and reduced survival. Using large, diverse long-term cohorts, the project will develop transparent, data-driven models to predict dementia progression and identify causal pathways, laying the groundwork for personalised care. These insights will inform the co-design of a culturally sensitive intervention that combines tailored glucose management with psychological support for people with dementia and their caregivers. Finally, a small feasibility study will test whether this approach is acceptable and practical, helping prepare the way for future large-scale trials and real-world impact.

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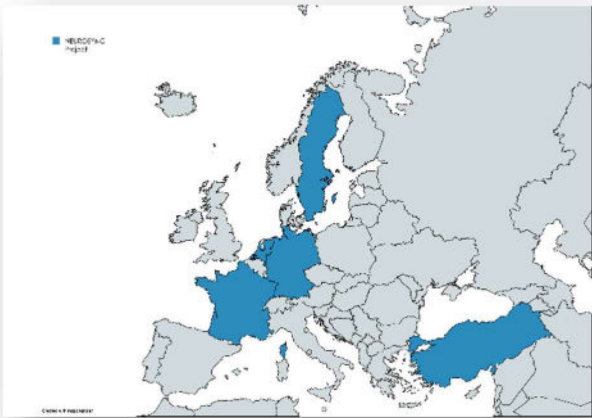
Coordinator : Dr. Fariba Ahmadizar
✉ : f.ahmadizar@amsterdamumc.nl



Consortium Members		
🇳🇱	Dr. Fariba Ahmadizar	Amsterdam University Medical Centre (AUMC), Amsterdam, Netherlands
🇩🇪	Prof. Barbara Thorand	Helmholtz Zentrum München, German Research Centre for Environmental Health GmbH, Germany
🇩🇪	Prof. Steffi G. Riedel-Heller	Leipzig University, Institute of Social Medicine, Germany
🇸🇪	Prof. Paul Franks	Lund University, Sweden
🇸🇪	Dr. Giulia Grande	Karolinska University, Sweden
🇫🇷	Dr. Catherine Helmer	University of Bordeaux, France
🇹🇷	Prof. Seval Akgün	Baskent University, Turkey