

Pericytes in mechanisms linking type 2 diabetes to increased risk of dementia.

<https://neurodegenerationresearch.eu/survey/pericytes-in-mechanisms-linking-type-2-diabetes-to-increased-risk-of-dementia/>

Principal Investigators

Wennström

Institution

Lund University

Contact information of lead PI

Country

Sweden

Title of project or programme

Pericytes in mechanisms linking type 2 diabetes to increased risk of dementia.

Source of funding information

Swedish Research Council

Total sum awarded (Euro)

€ 707,291

Start date of award

01-01-2014

Total duration of award in years

5

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Research Abstract

Convincing evidence links the incidence of type 2 diabetes (T2D) to increased risk of developing Alzheimer's disease (AD) and vascular dementia (VaD). The underlying mechanisms remain elusive but several clinical and preclinical studies highlight insulin resistance in the brains, a condition termed type 3 diabetes (T3D), as the responsible culprit. Herein we propose studies in which we will thoroughly investigate whether inflammatory events and high cortisol levels, two

denominators of T2D, AD and VaD, induce insulin resistance in pericytes and consequently cause the vascular changes commonly seen T2D, AD and VaD. We will use a translational research approach based on collaborative expertise from both clinics and experimental research. At the outset we will study functional and metabolic changes in pericytes isolated from postmortem AD and non-demented control brains. To reinforce our in vitro findings we will study pericyte alterations in rat models of diabetes and stress and investigate whether these changes can be linked to cognitive decline. Finally, we will perform case-control studies where we analyze pericyte derived biomarkers in CSF from individuals tested for glucose tolerance as well as cognitive and vascular alterations. The results will provide essential knowledge and shed new light on mechanisms underlying the increased risk of dementia in T2D patients and thereby help us to develop new therapeutic strategies and diagnostic tools.

Lay Summary

Further information available at:

Types:

Investments > €500k

Member States:

Sweden

Diseases:

Alzheimer's disease & other dementias

Years:

2016

Database Categories:

N/A

Database Tags:

N/A