

# Diabetes, Defective Nutrient Signalling and Dementia: an Epidemiological Neuropathology Approach

<https://neurodegenerationresearch.eu/survey/diabetes-defective-nutrient-signalling-and-dementia-an-epidemiological-neuropathology-approach/>

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United Kingdom

## Title of project or programme

Diabetes, Defective Nutrient Signalling and Dementia: an Epidemiological Neuropathology Approach

## Source of funding information

Alzheimer's Society

## Total sum awarded (Euro)

€ 306,026

## Start date of award

01/10/2015

## Total duration of award in years

3

## Keywords

### Research Abstract

Diabetes, which is increasing in the population, is a risk factor for Alzheimer's and vascular pathology, but may also damage brain function through direct effects on cells of the neurovascular unit. We aim to define the contribution of diabetes and related molecular alterations to dementia and to determine cellular mechanisms. In addition to its role as a risk factor for classical dementia pathologies, we hypothesise that diabetes contributes to dementia

via cellular alterations in the neurovascular unit. Using autopsy brain tissue from the population-based resource of the MRC Cognitive Function and Ageing Study we will: 1. Determine the epidemiological neuropathology of diabetes to determine its relationship to Alzheimer's, brain vascular disease and cognitive decline; 2. Investigate the relationship of brain-expression of candidate nutrient signalling molecules to diabetes and dementia; 3. Use laser capture and gene expression microarrays to identify novel diabetes-associated cell pathways separately in the neurons, glia and endothelium of the neurovascular unit. Classical pathologies do not explain all of dementia in a population setting, particularly in the oldest old, and there is a pressing need to define additional mechanisms of dementia. This study will define the role of an important, modifiable risk factor for dementia. The use of microarray based methods to separately examine the 3 major constituents of the neurovascular unit will allow us to examine the interaction of these cell types in an integrated way and can potentially identify novel target mechanisms for further experimental investigation that may open new therapeutic and biomarker approaches.

**Further information available at:**

**Types:**

Investments < €500k

**Member States:**

United Kingdom

**Diseases:**

N/A

**Years:**

2016

**Database Categories:**

N/A

**Database Tags:**

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