

# Zinc deficiency drives inflammation-dependent cognitive decline in Alzheimer's disease

<https://neurodegenerationresearch.eu/survey/zinc-deficiency-drives-inflammation-dependent-cognitive-decline-in-alzheimer%20s-disease/>

## Principal Investigators

Dr Catherine Lawrence

## Institution

University of Manchester

## Contact information of lead PI Country

United Kingdom

## Title of project or programme

Zinc deficiency drives inflammation-dependent cognitive decline in Alzheimer's disease

## Source of funding information

Alzheimer's Society

## Total sum awarded (Euro)

€ 350,882

## Start date of award

20/10/2014

## Total duration of award in years

3

## Keywords

### Research Abstract

Zinc (Zn<sup>2+</sup>) deficiency affects up to 2 billion people world-wide, and is particularly common in aged individuals. Low levels of Zn<sup>2+</sup> are suggested to contribute to the worsening of Alzheimer's disease (AD), and there is some evidence that dietary Zn<sup>2+</sup> supplements may be protective. Inflammation is also known to contribute to the progression of AD. The NLRP3-inflammasome complex is one of the most important regulators of inflammation, and is central to the development of inflammation, pathology and memory deficits in a mouse model of AD. The overall aim of this research is to build upon our preliminary data establishing a link between Zn<sup>2+</sup> deficiency and NLRP3 inflammasome activation. Using the APP/PS1 transgenic mouse

model of AD we will examine the effects of a Zn<sup>2+</sup> deficient diet on behaviour, memory and inflammation. We will breed APP/PS1 mice in which the gene for NLRP3 has been deleted and thus we will determine whether the effects of Zn<sup>2+</sup> deficiency in the AD model occur via the NLRP3 inflammasome. The outcome of this research could be the realisation that there is a cohort of AD patients whose lives could be improved by the simple addition of a Zn<sup>2+</sup> supplement to their diets. The experiments in this proposal may also provide further evidence that the process of inflammation represents a therapeutic target in AD.

**Further information available at:**

**Types:**

Investments < €500k

**Member States:**

United Kingdom

**Diseases:**

N/A

**Years:**

2016

**Database Categories:**

N/A

**Database Tags:**

N/A