

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

<https://www.neurodegenerationresearch.eu/survey/zinc-deficiency-drives-inflammation-dependent-cognitive-decline-in-alzheimer%c2%92s-disease/>

Principal Investigators

Dr Catherine Lawrence

Institution

University of Manchester

Contact information of lead PI

Country

United Kingdom

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

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Alzheimer's Society

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Total duration of award in years

3

Keywords

Research Abstract

Zinc (Zn²⁺) deficiency affects up to 2 billion people world-wide, and is particularly common in aged individuals. Low levels of Zn²⁺ are suggested to contribute to the worsening of Alzheimer's disease (AD), and there is some evidence that dietary Zn²⁺ 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 Zn²⁺ deficiency and NLRP3 inflammasome activation. Using the APP/PS1 transgenic mouse

model of AD we will examine the effects of a Zn²⁺ 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 Zn²⁺ 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 Zn²⁺ 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

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