

Causal relationship between a LC-omega-3-enriched diet and cognition

<https://neurodegenerationresearch.eu/survey/causal-relationship-between-a-lc-omega-3-enriched-diet-and-cognition/>

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Canada

Title of project or programme

Causal relationship between a LC-omega-3-enriched diet and cognition

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CIHR

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Total duration of award in years

5

Keywords

Research Abstract

Nutrition is key to healthy aging for a number of diseases but we have reported imbalances in the distribution of long chain omega-3 fatty acids (LC-omega-3) in the elderly and in the carriers of apolipoprotein E epsilon 4 (APOE4) isoform. Carrying APOE4 isoform is currently recognized as being the most important genetic risk factor of cognitive decline. We believe that dysregulation of LC-omega-3 metabolism is intimately link with higher risk of cognitive decline. The current project will investigate whether there is a causal relationship between LC-omega-3-enriched diet and cognition using, on the one hand, a randomized double-blind placebo-controlled design and on the other hand, transgenic mice carrying human APOE4. In both study,

we will focus specifically on the distribution (level) of LC-omega-3 into lipoproteins with age and/or APOE4 isoform to evaluate whether dysfunctional transport of LC-omega-3 is associated with lower cognitive scores on visuospatial capacity, verbal fluency or working memory. In ApoE4 mice, we will evaluate LC-omega-3 brain uptake together with the level of LC-omega-3 in the brain membranes and the level of APOE protein within the brain. The present investigation will provide key basis for understanding how to develop nutritional strategies for healthy aging and the preservation of cognitive functions.

Further information available at:

Types:

Investments < €500k

Member States:

Canada

Diseases:

N/A

Years:

2016

Database Categories:

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