Omega-3, isoflavones & amyloid deposition in cognitively normal elderly Japanese

https://www.neurodegenerationresearch.eu/survey/omega-3-isoflavones-amyloid-deposition-in-cognitively-normal-elderly-japanese/

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Country

USA

Title of project or programme

Omega-3, isoflavones & amyloid deposition in cognitively normal elderly Japanese

Source of funding information

NIH (NIA)

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€ 1,636,511.93

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15/05/2016

Total duration of award in years

1

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... Brain Disorders... Clinical Research... Clinical Research - Extramural... Complementary and Alternative Medicine... Dementia... Diagnostic Radiology... Dietary Supplements... Epidemiology And Longitudinal Studies... Neurodegenerative... Neurosciences... Nutrition... Prevention

Research Abstract
? DESCRIPTION (provided by applicant): Recent progress in neuroimaging has made it possible to evaluate amyloid deposition in the brain with Pittsburgh compound B (PiB). Amyloid deposition is an independent risk factor for Alzheimer’s disease (AD). The majority of elderly aged 80-89 with normal cognition (NC) have amyloid deposition. No studies have found a population where prevalence of amyloid deposition is low among elderly with NC. Finding such a population is a first step to identifying risk factors for AD. Japanese have the greatest longevity; while their prevalence of apolipoprotein E4, the major genetic risk factor for AD, is similar to the US, Japanese have a considerably different diet characterized by markedly high dietary intake of marine omega-3 fatty acids (omega-3 FAs) and soy isoflavones (ISF) (both are >10x higher than in the US) for the past 50 years. Many observational studies reported that dietary intake of omega-3 FAs is inversely associated with incident dementia and AD. A recent study in Japan reported that high dietary intake of soy, which is the source of ISF, is inversely associated with incident dementia and AD. Suggested evidence from a small number of elderly volunteers with NC shows that Japanese have very low prevalence of amyloid deposition. We hypothesize that 1) Japanese elderly aged 80- 89 with NC have significantly lower prevalence of amyloid deposition in the brain than in the US and 2) in Japanese elderly aged 80-89 with NC, midlife serum levels of each of omega-3 FAs and ISF have significant inverse associations with late-life amyloid deposition. To test our hypotheses, we will enroll 200 Japanese men and women (100 each) aged 80-89 with NC randomly selected from the Suita Study in Japan: a population- based prospective cohort study of 6,406 subjects aged 30-79 at baseline in 1994. We will examine these 200 subjects for PiB standardized to US studies. We will also examine the association of midlife levels of each of omega-3 FAs and ISF with late-life amyloid deposition using stored serum samples. The findings of low prevalence of amyloid deposition in the brain and significant inverse associations of omega-3 FAs and/or ISF with amyloid deposition will have major impact on research into the etiology and potentially the prevention of AD.

Lay Summary
PUBLIC HEALTH RELEVANCE: Amyloid deposition in the brain in healthy elderly predicts incident Alzheimer’s Disease (AD). The findings of low prevalence of amyloid deposition in the brain and significant inverse associations of midlife serum levels of omega-3 fatty acids and isoflavones with late-life amyloid deposition in heathy elderly Japanese will have major impact on research into the etiology and potentially the prevention of AD.

Further information available at:

Types:
Investments > €500k

Member States:
United States of America

Diseases:
Alzheimer's disease & other dementias

Years:
2016

Database Categories:
N/A

Database Tags:
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