

# Biological predictors of brain aging trajectories

<https://neurodegenerationresearch.eu/survey/biological-predictors-of-brain-aging-trajectories/>

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### Country

USA

## Title of project or programme

Biological predictors of brain aging trajectories

## Source of funding information

NIH (NIA)

## Total sum awarded (Euro)

€ 2,747,703.67

## Start date of award

01/09/2008

## Total duration of award in years

7

## 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)... Behavioral and Social Science... Brain Disorders... Clinical Research... Clinical Research - Extramural... Dementia... Mind and Body... Neurodegenerative... Neurosciences... Prevention

## Research Abstract

? DESCRIPTION (provided by applicant): There is considerable individual variability in how much and how quickly cognitive abilities change with age. The better we understand the

biological mechanisms that influences if and how aging affects brain structure and function, the more able we will be to intervene effectively. The overarching goal of this renewal application is to better understand the inflammatory, vascular, and neurodegenerative mechanisms that contribute to this clinically important diversity in brain aging trajectories. We propose to increase our current cohort from 200 to 265 older normals, and continue with our detailed cognitive, neuroimaging, and biometric phenotyping over two additional time points. In addition, we propose adding novel molecular neuroimaging methods to quantify amyloid and tau burden, and carry out exploratory analyses of specific candidate genes. Our specific aims are to determine the contributions of amyloid burden and inflammatory cytokines on brain aging, determine the contributions of vascular risks and inflammatory cytokines on brain aging in amyloid negative subjects, and explore genomic, proteomic, and lifestyle factors that increase or decrease risk of cognitive and brain aging. More precise specification of these relationships will lead to better prediction and prevention of adverse cognitive aging and inform person-specific interventions.

### **Lay Summary**

**PUBLIC HEALTH RELEVANCE:** There is considerable individual variability in how much and how quickly cognitive abilities change with age. The better we understand the biological mechanisms that influences if and how aging affects brain structure and function, the more able we will be to intervene effectively. The overarching goal of this proposal is to better understand the inflammatory, vascular, and neurodegenerative mechanisms that contribute to this clinically important diversity in brain aging trajectories since more precise specification of these relationships will lead to better prediction and prevention of adverse cognitive aging and inform person-specific interventions.

### **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:**

N/A