

# Amyloid Neuropathology Underlying Sleep-dependent Memory Decline in Older Adults

<https://www.neurodegenerationresearch.eu/survey/amyloid-neuropathology-underlying-sleep-dependent-memory-decline-in-older-adults/>

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### Country

USA

## Title of project or programme

Amyloid Neuropathology Underlying Sleep-dependent Memory Decline in Older Adults

## Source of funding information

NIH (NIA)

## Total sum awarded (Euro)

€ 3,046,308.26

## Start date of award

01/08/2008

## Total duration of award in years

6

## 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)... Basic Behavioral and Social Science... Behavioral and Social Science... Brain Disorders... Clinical Research... Clinical Research - Extramural... Dementia... Neurodegenerative... Neurosciences... Sleep Research

## Research Abstract

? DESCRIPTION (provided by applicant): Cognitive decline is a problematic and disabling consequence of aging, with memory impairment being one of the most debilitating symptoms. These cognitive changes are paralleled by a dramatic decrease in non-rapid eye movement (NREM) sleep quality, indexed by a reduction in electroencephalographic (EEG) slow wave activity (SWA). Here, we propose that  $\beta$ -Amyloid accumulation-a leading candidate underlying cognitive decline both in aging and Alzheimer's disease-is one neuropathological factor contributing to disrupted NREM SWA and impaired memory consolidation in older adults. Specifically, we seek to test the hypothesis that  $\beta$ -Amyloid in a set of midline cortical brain regions disrupts the neural generation of NREM SWA-both cross-sectionally, and longitudinally-thereby impairing hippocampal-dependent memory consolidation in the elderly. As such, these experiments will determine whether or not  $\beta$ -Amyloid exerts an effect on memory through sleep, and if so, exactly how  $\beta$ - Amyloid disrupts NREM sleep physiology, resulting in memory impairment in older adults. Translationally, these experiments may reveal new treatment pathways targeting NREM SWA enhancements that improve memory, thereby moderating the cognitive burden associated with  $\beta$ -Amyloid aggregation.

### **Lay Summary**

**PUBLIC HEALTH RELEVANCE:** This proposal seeks to determine whether or not  $\beta$ -Amyloid exerts a longitudinal effect on memory through an impact on sleep, and if so, exactly how  $\beta$ -Amyloid disrupts NREM sleep physiology, resulting in memory impairment in older adults. Translationally, these experiments may reveal new treatment pathways targeting NREM SWA enhancements that improve memory, thereby moderating the cognitive burden associated with  $\beta$ -Amyloid aggregation.

### **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