

# MRI, Genetics & Cognitive Precursors of AD and Dementia

<https://neurodegenerationresearch.eu/survey/mri-genetics-cognitive-precursors-of-ad-and-dementia/>

## Principal Investigators

AU, RHODA

## Institution

BOSTON UNIVERSITY MEDICAL CAMPUS

## Contact information of lead PI

### Country

USA

## Title of project or programme

MRI, Genetics & Cognitive Precursors of AD and Dementia

## Source of funding information

NIH (NIA)

## Total sum awarded (Euro)

€ 2,948,690.83

## Start date of award

01/12/1998

## Total duration of award in years

15

## The project/programme is most relevant to:

Alzheimer's disease & other dementias

## Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease... Alzheimer's Disease Related Dementias (ADRD)... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... Behavioral and Social Science... Brain Disorders... Cerebrovascular... Clinical Research... Clinical Research - Extramural... Dementia... Diagnostic Radiology... Neurodegenerative... Neurosciences... Vascular Cognitive Impairment/Dementia

## Research Abstract

DESCRIPTION (provided by applicant): This renewal application of the MRI, Genetics and Cognitive Precursors of AD and Dementia compares which of 3 approaches for diagnosing Mild Cognitive Impairment (MCI) is best at accurately predicting incident clinical dementia. Of the two primary diagnostic methods currently used, psychometrically defined and clinical determined, application of criteria for psychometrically defined has been most variable. Further, a novel algorithmic method is emerging as an alternative unbiased approach. Using commonly applied clinical tools of cognitive performance and brain structure obtained from baseline and repeat administration of neuropsychological (NP) tests and magnetic imaging resonance (MRI) scans, this proposed project will first determine what profile of cross-sectional or longitudinal neuropsychological tests and threshold performance levels, combined with imaging markers is the most efficacious in predicting progression to dementia, particularly Alzheimer's disease. Another set of analyses will test the algorithmic method. The diagnostic models that emerge from these two sets of analyses will then be compared to diagnoses of MCI using standard clinical criteria to determine which of the three methods best predicts incident dementia. The clinical diagnoses of MCI and dementia are available through a separately funded initiative. Also central to this grant proposal is the inclusion of external seasoned investigators, who will provide their expertise in definition and study of MCI and the factors influencing progression to disease. This effort aims to provide enhanced sensitivity in application of NP and MRI tools to detect subtle impairment at an earlier stage on the preclinical continuum and improved specificity in determining the MCI subtypes most highly associated with AD versus other types of dementia. Increased MCI diagnostic accuracy will enhance opportunity for more effective interventions, which have been largely disappointing to date, and could eventually leading to a delay in the onset or prevention of the clinical expression of AD.

### **Lay Summary**

The MRI, Genetics and Cognitive Precursors of AD and Dementia seeks to identify the most effective method and criteria for diagnosis of mild cognitive impairment (MCI) that is best predictive of incident Alzheimer's disease. Current efforts to treat AD have been ineffective because intervention occurs too late in the insidious process. The potential public health relevance of this proposed project is increased accuracy of diagnosis at the preclinical stage, where treatment opportunities may prove to be more successful and prevention is most feasible.

### **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