Alzheimers Disease Genetics Consortium

https://neurodegenerationresearch.eu/survey/alzheimers-disease-genetics-consortium/

Principal Investigators

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Contact information of lead PI
Country

USA

Title of project or programme

Alzheimers Disease Genetics Consortium

Source of funding information

NIH (NIA)

Total sum awarded (Euro)

€ 19,694,707.34

Start date of award

01/04/2009

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)... Biotechnology... Brain Disorders... Clinical Research... Clinical Research - Extramural... Dementia... Genetics... Human Genome... Minority Health for IC Use... Neurodegenerative

Research Abstract

? DESCRIPTION (provided by applicant): This proposal describes future work of the Alzheimer’s Disease Genetics Consortium (ADGC). The goal is to deconstruct the complete

genetic architecture of Alzheimer’s disease (AD), and to determine how all inherited factors contribute to the AD phenotype. To this end we will identify, annotate, replicate, and validate all DNA variants that increase risk or protect against AD, determine what genes are connected to these variants, and evaluate the contribution of each to total AD risk. The rationale for the following genetics/genomics project is to: 1) Predict who will develop AD. 2) Fully reveal all AD genetics in all ethnic groups. 3) Understand the pathogenesis of AD. 4) Identify novel therapeutic targets for AD. Therefore, we will identify new genes/therapeutic targets for AD using methods that make use of data from not only genotyping arrays but also massively parallel DNA sequence approaches. Because much of what we know about AD genetics comes from Caucasians AD studies, we will focus future analysis on not only Caucasians but also on African Americans, Latinos, and Asians. To resolve AD genetics, we will: in AIM 1, use functional genomics to identify AD risk and protective variants in cis- acting regulatory elements, and identifying the genes affected by these CREs; in AIM 2, we will use in silico systems biology approaches to integrate information from all AD genes to identify interaction networks and pathways relevant to AD; in AIM 3, we will identify additional AD rare-variant genes using gene-based (including CREs) analyses. All ethnic groups will be analyzed by these methods; in AIM 4, we will perform whole exome sequencing on African American subjects to generalize findings made on Caucasians, to refine gene localization, to identify novel variants, and to identify novel genes found only in other ethnic groups. This will be followed up by targeted sequencing in African Americans and Latinos; in AIM 5 we will assemble and harmonize phenotypes available in multiple cohorts to identify subtypes of AD and genes associated with variants associated with those subtypes.

Lay Summary
PUBLIC HEALTH RELEVANCE: Alzheimer’s disease (AD) affects 3-5 million people costing the US over $100 billion dollars/year. By 2050, there will be 16 million people with AD costing the US $1 trillion dollars/year. There is no way to prevent AD, and current therapies are marginally effective and do not halt disease progression. More fundamental knowledge on disease mechanism is needed and will come in part from the genetic studies proposed here.

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