Age, Gene/Environment Susceptibility Study

https://neurodegenerationresearch.eu/survey/age-gene-environment-susceptibility-study/

Principal Investigators

HARRIS, TAMARA

Institution

National Institute on Aging

Contact information of lead PI
Country

USA

Title of project or programme

Age, Gene/Environment Susceptibility Study

Source of funding information

NIH (NIA)

Total sum awarded (Euro)

218000

Start date of award
Total duration of award in years

11

Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease Related Dementias (ADRD)... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... Basic Behavioral and Social Science... Behavioral and Social Science... Brain Disorders... Cardiovascular... Cerebrovascular... Clinical Research... Dementia... Epidemiology And Longitudinal Studies... Genetics... Human Genome... Joints, Ligaments, and Connective Tissues... Musculoskeletal System... Neurodegenerative... Neurosciences... Obesity... Osteoporosis... Prevention... Sarcopenia... Skeletal Muscle... Skeletal System... Vascular Cognitive Impairment/Dementia... Women's Health for IC Use

Research Abstract

The Age, Gene/Environment Susceptibility (AGES) Study was initiated to examine genetic susceptibility and gene/environment interaction as these contribute to phenotypes common in old age. The study has four major focus areas: neurocognitive conditions (cognition, dementia, depression, neurosensory vision and hearing), cardiovascular health (atherosclerosis, arterial

distensibility, ventricular and valvular disease), musculoskeletal conditions (spine and hip osteoporosis, hip osteoarthritis, strength and function), and body composition and metabolic disease (obesity, sarcopenia, hyperglycemia/diabetes). Baseline enrollment of 5764 men and women is completed. A follow-up exam was completed in 3,411 participants approximately 4 to 5 years after their baseline exam. The follow-up exam included many of the same components as baseline. Follow-up continues for hospitalizations, nursing home and home care assessments, and deaths. The study is conceived of as a 3-part study. The major aspect of the study is an old-age examination of Reykjavik Study participants to examine longitudinal change in the focus areas, as well as define phenotypes for genomic studies. These phenotypes will also be used as end-points to be examined in relation to the earlier risk factors collected as part of the Reykjavik Study. This will allow enhanced understanding of factors contributing to disease in old age, apart from genetic factors. Lastly, these phenotypes can be examined in relation to selected outcomes cause-specific mortality, coronary heart disease, fractures, and cancers. The AGES Study has been designed to address many of the limitations of genetic epidemiology studies of late-life disease. These include sufficient power, the relatively genetically homogeneous Icelandic population along with the available information about familial relationships from genealogies. Most important is the emphasis on quantitative traits rather than either self-reported conditions or medical diagnosis. The focus areas for the AGES Study also share etiologic hypotheses regarding risk factors, therefore allowing complementary genetic studies of polymorphisms as these might pertain to multiple health conditions. For instance, atherosclerosis, osteoporosis, obesity and glucose abnormalities, Alzheimers Disease and vascular dementia, share hypotheses related to inflammation. We have identified this as one of the areas for genetic investigation in the AGES Study and pla to examine whether polymorphisms in the genes for proinflammatory cytokines such as tumor necrosis factor-alpha, interleukin-6, interleukin-1, or genetic variation in the anti-inflammatory cytokines, interleukin-4, will be associated with phenotypes of these diseases. Another such area involves cells derived from mesechymal stem cells including osteocytes, chondrocytes, myocytes, adipocytes and stroma. As subjects age and change physical activity, there appears to be deposition of fat within muscle and within bone, linked to sarcopenia and to osteoporosis. These processes may be regulated by PPAR-c; genotyping for one condition will allow efficient investigations of potentially related conditions. Although located in Iceland, Icelanders and many U.S. citizens share a common genetic heritage from Northern Europe. It is hoped that the results of this study, besides contributing to knowledge of genetic factors influencing diseases of old age, may also be generalize to the U.S. population.

Further information available at:

Types:
Investments < €500k

Member States:
United States of America

Diseases:
N/A

Years:
2016

Database Categories:
N/A

Database Tags:
N/A