

Changes in Sleep and Cognition in Older Women

<https://neurodegenerationresearch.eu/survey/changes-in-sleep-and-cognition-in-older-women/>

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Country

USA

Title of project or programme

Changes in Sleep and Cognition in Older Women

Source of funding information

NIH (NIA)

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01/07/2005

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9

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... Prevention... Sleep Research... Women's Health for IC Use

Research Abstract

DESCRIPTION (provided by applicant): In the first 5 years of the SOF Sleep and Cognition Study, we utilized objectively measured characteristics of sleep, including wrist actigraphy (n=3,161) and overnight in-home polysomnography (n=461) obtained in primarily community-dwelling older women. Among these women, a subset completed an expanded battery of cognitive function tests five years later and were classified as normal, mild cognitive impairment, or dementia. We demonstrated that several characteristics of sleep (including sleep disordered breathing, sleep quality, and circadian rest-activity rhythms) are associated with risk of incident mild cognitive impairment or dementia, and decline in cognitive function. These novel findings have important implications for the possible prevention and treatment of cognitive impairment. We now propose a cost-effective approach of extending the value of the initial collection of data and specimens supported by the SOF Sleep and Cognition Study to systematically address novel hypotheses focused on the mechanisms linking poor sleep and cognition. In addition, we will extend our follow-up of the initial cohort to identify the independent associations between sleep characteristics and cognitive function with other important age-related outcomes. Thus, the aims of our proposed renewal include: 1) To identify candidate -regions, -genes, and -pathways for both sleep characteristics and cognitive outcomes using recently obtained phenotypic and genome-wide genetic data from the SOF cohort; 2) To test the hypothesis that poor sleep is associated with both cross-sectional and longitudinal changes in metabolic dysfunction among older women, and that metabolic dysfunction mediates associations between poor sleep and cognitive outcomes; 3) To perform spectral analysis of the polysomnography EEG signal to explore associations between novel sleep exposures (including amounts of delta sleep, dissipation rates of slow wave activity, and spindle-frequency activity) with cross-sectional and longitudinal changes in metabolic dysfunction and inflammation, and with onset of cognitive impairment during 5 years of follow-up; and 4) To determine the independent associations of sleep characteristics and cognitive impairment with incident age-related outcomes including functional decline, nursing home placement, and risk of falls. The new information resulting from this renewal application has the potential to inform the development of new treatments to prevent decline in cognitive function in older adults. In addition, we will take advantage of ongoing follow-up for key age-related outcomes in the SOF study to determine whether sleep and cognition are independently related to risk for these conditions. Ultimately, our results may highlight the importance of maintaining healthy sleep characteristics in older adults to prevent the decline in cognitive and physical function associated with aging.

Lay Summary

We have previously shown that sleep disorders and/or disturbances are related to the risk of developing problems with cognitive function. Our new aims will explore several possible explanations for these findings, including common genetic factors, markers of metabolic function which can be measured in blood, and new measures generated from brain wave data obtained during overnight sleep studies. We will also link sleep and cognitive function with outcomes including falls, functional decline and nursing home placement.

Further information available at:

Types:

Investments > €500k

Member States:

United States of America

Diseases:

Alzheimer's disease & other dementias

Years:

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Database Categories:

N/A

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