Einstein Aging Study

https://neurodegenerationresearch.eu/survey/einstein-aging-study/

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Country

USA

Title of project or programme

Einstein Aging Study

Source of funding information

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0

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31

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Research Abstract

The Einstein Aging Study (EAS) renewal will explore risk factors and underlying biological mechanisms of age-related cognitive and locomotor dysfunction in a community residing elderly cohort. Cognitive decline and dementia are multifactorial in their clinical expression and

underlying pathology. At post-mortem, individuals may exhibit combinations of Alzheimer's pathology, ischemic lesions, and hippocampal sclerosis (HpScI), among other pathologies. These observations, coupled with strong preliminary data, have led us to a broader exploration of risk factors and biological pathways that influence quantitative indices of cognitive and locomotor decline and risk of dementia. We have shown that measures of pain, stress, salivary Cortisol, vascular risk, and locomotion are inter-related, remediable, and that they independently predict cognitive decline and dementia. This proposal examines the influence glucocorticoid and vascular mechanisms on cognitive and locomotor status and decline and on related brain substrates. Both glucocorticoid dysregulation and vascular disease influence brain regions involved in cognitive and locomotor function. We propose four thematically integrated Projects supported by five Cores using a shared community sample. Project 1 will assess the role of the pain and stress in cognitive decline and dementia and the mediating role of glucocorticoid dysregulation. Project 2 will obtain measures of microvascular structure (standard grading of retinal photographs) and function (vascular reactivity to C02 challenge measured by Transcranial Doppler) to test the hypothesis that microvascular disease and cerebral hypoperfusion precede cognitive decline. Project 3 will assess simple and complex locomotor function in relationship to the pathways that lead to cognitive decline, and their role in predicting cognitive and functional outcomes. Project 4 will assess the role of progranulin (GRN) deficiency in the development of hippocampal pathology in humans and in transgenic mice subjected to restraint stress. GRN deficiency may modify the influence of pain, stress, glucocorticoids, and vascular disease on cognitive status and neurodegeneration. Together, these Projects will help disentangle the multifactorial processes that lead to cognitive and locomotor decline and dementia.

Further information available at:

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Investments < €500k

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United States of America

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Years:
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