

Rhythm and Timing Exercises for Cerebral Vascular Disease in American Indians

<https://www.neurodegenerationresearch.eu/survey/rhythm-and-timing-exercises-for-cerebral-vascular-disease-in-american-indians/>

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Contact information of lead PI Country

USA

Title of project or programme

Rhythm and Timing Exercises for Cerebral Vascular Disease in American Indians

Source of funding information

NIH (NIA)

Total sum awarded (Euro)

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Start date of award

01/09/2015

Total duration of award in years

2

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease Related Dementias (ADRD)... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... American Indians / Alaska Natives... Behavioral and Social Science... Brain Disorders... Cerebrovascular... Clinical Research... Clinical Research - Extramural... Clinical Trials and Supportive Activities... Dementia... Depression... Health Disparities for IC Use... Mental Health...

Minority Health for IC Use... Neurodegenerative... Neurosciences... Physical Activity... Prevention... Rehabilitation... Rural Health... Stroke... Trans-NIH Collaboration for MCS... Translational Research... Vascular Cognitive Impairment/Dementia

Research Abstract

DESCRIPTION (provided by applicant): American Indians (AIs) experience a disproportionately high incidence of cerebrovascular disease (CBVD) relative to non-Indians with twice the stroke rate of the general US population. Neuroimaging techniques have shown CBVD-related brain abnormalities to be associated with disruption of neuropsychological performance. Therapy for post-stroke cognitive impairment has been challenging. Cognitive therapy involves intense, focused, regular mental activity, intellectual stimulation, and behaviora exercises that assist individuals to regain or maintain cognitive function. and reduce the risk of age-related cognitive decline and dementia after brain insult. Interactive Metronome (IM) therapy is a promising form of behavioral therapy for CBVD-related cognitive and motor function. This technology uses operant conditioning of an individual's responses through simple, repetitive motor tasks (e.g., clapping hands, tapping feet) in time with a set beat. Through visual and auditory feedback, IM addresses processing speed, attention, and immediate and delayed memory, all of which can be affected by CBVD. IM therapy can improve quality of life, physical mobility, gait, and CBVD-related cognitive deficits. The ongoing Strong Heart Stroke Study (SHSS) (1R01HL093086-01A1; Dedra Buchwald, PI) is investigating CBVD-related brain abnormalities through MRI scans on 1000 AIs from the original SHS cohort. The proposed study will capitalize on this current SHSS to conduct a randomized, controlled trial to ascertain the effects of a culturally tailored IM intervention on cognition, depression, and quality of life. We ill target SHSS participants with subclinical CVBD defined by impaired cognitive processing speed. We will select a sample of 180 American Indians age 68 to 80 years participating in the SHSS. The specific Aims for this study of older American Indians are as follows: 1) Determine if the culturally-adapted IM intervention can improve cognitive functioning among older AIs with CBVD; and 2) Estimate the impact of IM on health-related quality of life. This study will yield important insights into the relationships among cognitive and motor rehabilitation, neuropsychological assessment, and brain abnormalities that can inform treatment efforts as one way to reducing AI CBVD disparities.

Lay Summary

PUBLIC HEALTH RELEVANCE: The proposed study will further our knowledge of the relationships among of cognitive and motor rehabilitation, neuropsychological assessment, and CBVD-related brain abnormalities providing valuable direction for more effective screening, treatment, and prevention of CBVD-related cognitive impairment. Thus, this study has significant health disparities implications for American Indians who exhibit the highest rates of stroke and related risk factors.

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

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