Cognitive Enhancement Through Transcranial Laser Therapy

https://neurodegenerationresearch.eu/survey/cognitive-enhancement-through-transcranial-laser-therapy/

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Country

USA

Title of project or programme

Cognitive Enhancement Through Transcranial Laser Therapy

Source of funding information

NIH (NIA)

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390646.789

Start date of award

01/09/2016

Total duration of award in years

1

Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease... Alzheimer's Disease Related Dementias (ADRD)... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... Atherosclerosis... Behavioral and Social Science... Brain Disorders... Cardiovascular... Cerebrovascular... Clinical Research... Clinical Research - Extramural... Clinical Trials and Supportive Activities... Dementia... Neurodegenerative... Neurosciences... Prevention... Translational Research... Vascular Cognitive Impairment/Dementia

Research Abstract

? DESCRIPTION (provided by applicant): Cardiovascular diseases are associated with

diminished cognitive function, even in patients without vascular dementia. Considering the high prevalence of these disorders in the United States, and the fact that cognition is the most important determinant of quality of life and functional ability in older age, early interventions t preserve cognitive function in patients at cardiovascular risk are crucial for ensuring the successful aging of our growing elderly population. While an ideal intervention would restore the original cardiovascular status, that is often not possible for a variety of reasons. An alternative approach is to support brain energy production by up-regulating mitochondrial respiration. One highly promising novel intervention is transcranial low-level laser therapy (LLLT) with directional low-power and high-fluence light energy from infrared lasers to stimulate brain energy production. LLLT is safe, non-invasive and therapeutically beneficial, promoting enhancement of energy production, gene expression and prevention of cell death. The goal of this project is to test the efficacy of LLLT to enhance neurocognitive function in middle-aged adults and examine the modulating influences of carotid atherosclerosis. The specific aims will be accomplished in a randomized controlled trial (RCT) by examining cognitive test performance and blood oxygen level-dependent (BOLD) response to a working memory task in middle-aged adults pre- and post- 8-week long intervention of LLLT or placebo. In addition, we will examine if carotid artery intima-media thickness (IMT) moderates the therapeutic effects of LLLT.

Further information available at:

Types:
Investments < €500k

Member States:
United States of America

Diseases:
N/A

Years:
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