

Auditory Cognitive Training in Persons with Mild Cognitive Impairment

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2

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Research Abstract

? DESCRIPTION (provided by applicant): Older adults are expected to comprise approximately 20% of the US population by 2030 and approximately 5- 16% of such older adults will be

affected by mild cognitive impairment (MCI). The term MCI was created to define a transitional state between normal aging and dementia, and is associated with substantially higher medical costs, deteriorations in basic and instrumental activities of daily living, nursing home placement and conversion to dementia. If an intervention could delay the onset or progression of AD by one year there would be 9.2 million fewer cases of AD by 2050, lessening the impact of the disease; however, pharmacological treatments for MCI have been unsuccessful. Non-pharmacological interventions that target brain plasticity, such as cognitive training, have shown great promise in improving cognitive functioning in individuals with MCI but this research is underdeveloped. I propose a randomized controlled trial to investigate the effectiveness of auditory-cognitive training (ACT) in older adults with mild cognitive impairment to improve cognition and everyday function when compared to (a) auditory cognitive stimulation (to involve listening to audiobooks) and (b) a no-contact control group. I expect to find that participants MCI randomized to the ACT group will outperform their counterparts in both other groups on measures of cognitive, auditory, and everyday functioning. ACT has indicated promise as an intervention strategy in older adults with and without MCI. It may enhance central auditory processing (CAP) of information, which is fundamentally linked with executive functioning, memory, and everyday auditory function, domains implicated in global cognitive decline and risk of dementia, including AD. Inadequate upstream delivery of information due to age-related deficits in CAP may fundamentally affect cognitive function. Therefore, facilitating information processing at the initial, perceptual stage may be an ideal way to maximize brain's potential amid cognitive aging. The proposed study is innovative in (a) its focus on auditory function (via ACT) to improve cognitive function; (b) the focus on improvements in everyday function, which are more informative about real-world effects than laboratory tests; and (c) its investigation of CAP which is relatively novel in the field of cognitive aging. The ACT program is designed to be self-administered by older adults, and could be quickly, easily, and widely implemented, should it prove effective. This research will help advance the field by informing several theories of cognitive aging, such as the 'use it or lose it' hypothesis, the theory of adult cognitive plasticity, and the speed of processing theory. The obtained results will inform cognitive aging theories, direct future study of cognitive intervention, and advance clinical practice, thereby exerting a sustained influence in the field. The overarching goal of this research is to evaluate approaches to improve cognitive function and support functional independence in older adults with MCI. Incorporating an auditory component in the intervention may prove to be a crucial step toward the identification of an effective approach.

Further information available at:

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