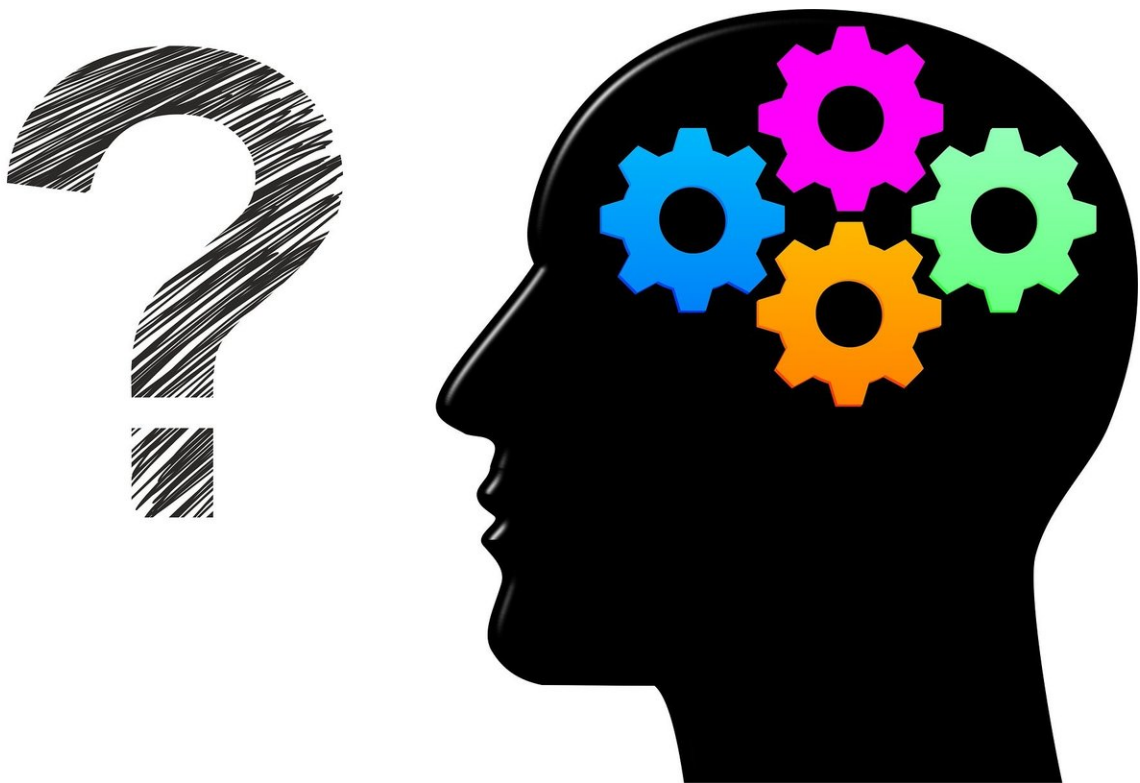


Research underscores value of cognitive training for adults with mild cognitive impairment

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Researchers at the Center for BrainHealth, part of The University of Texas at Dallas, investigated the effects of combining two non-pharmacological interventions for adults with Mild Cognitive

Impairment (MCI): eight semi-weekly sessions of Strategic Memory Advanced Reasoning Training (SMART), a cognitive training program shown to improve reasoning and ability to extract the bottom-line message from complex information; and Transcranial Direct Current Stimulation (tDCS) over the left frontal region, an area associated with cognitive control and memory recovery success in people with Alzheimer's disease.

Twenty-two (22) participants with a diagnosis of MCI—individuals who are at risk for Alzheimer's disease—were randomized into one of two groups: tDCS + SMART, versus sham + SMART. All participants completed a baseline cognitive assessment along with resting state [cerebral blood flow](#), followed by post-SMART training and 3-month post-training assessments.

All the participants in both groups showed immediate cognitive improvements in higher-order cognitive functions of executive functions (conceptual reasoning and fluency), sustained gains in objective episodic memory and subjective memory satisfaction. The sham + SMART group showed significant immediate gains after training on two measures of executive function—inhibition and innovation, and episodic memory. Counter to expectations, these gains were blocked in the active tDCS + SMART group. Thus, the hypothesis that neuroplasticity would be enhanced by brain stimulation to elevate training effects was not supported. The results are published in *Frontiers in Neuroscience-Neural Technology* (April 2019).

"People with Mild Cognitive Impairment are flooded with daily life information that can overwhelm a comprised brain. Fortunately, the present results suggest they can improve cognitive functions given certain trainings," said the study's lead author, Namrata Das, MD, MPH, who works in the lab of chief director Dr. Sandra B. Chapman. "This study adds to the compelling evidence that cognitive training provides an

intervention option to benefit people with MCI, to strengthen their cognitive capacity and even their daily memory function."

More information: [DOI: 10.3389/fnins.2019.00307](https://doi.org/10.3389/fnins.2019.00307) ,
www.frontiersin.org/articles/10.3389/fnins.2019.00307/abstract

Provided by Center for BrainHealth

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