

Unique Brain Exercise Shown in Study to Lower Risk of Dementia

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Researchers announced breakthrough study results today -- indicating that a particular form and dose of brain training can reduce the risk of dementia by 48 percent over a ten-year period in cognitively healthy, community-dwelling older adults. The computerized exercise found effective in the study is currently marketed by Posit Science to subscribers in Canada and French-speaking countries globally as BrainHQ online service.

Dr. Jerri Edwards of the University of South Florida revealed the results from a 10-year, longitudinal study at the Alzheimer's Association International Conference in Toronto. These are the latest results reported from the Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE) study, a multi-site, randomized controlled trial funded by the National Institute on Aging.

The ACTIVE Study enrolled 2,802 healthy adults aged 65 and older, who were randomized into four groups: 1) a strategy-based memory training, 2) a strategy-based reasoning training, 3) a perceptual-based, computerized speed of processing training, and 4) a no-contact control group measured at the same time as the intervention arms of the study.

Participants in the three intervention arms were asked to complete 10 hours of training over a five-week period. To collect dosing data, a subset of participants were asked to complete additional booster sessions of training after 11 and 35 months.

Participants in the ACTIVE Study were measured on an extensive battery of standardized assessments, including primary outcomes related to speed, memory, reasoning, and functional performance, and secondary outcomes related to mood, confidence, self-rated health, predicted healthcare costs, and driving. Participants were assessed at the beginning of the study, after five weeks of training, and at one, two, three, five and 10 years after training.

Numerous journal articles have previously been published on primary and secondary outcomes at each measurement period. This is the first report of results on the incidence of dementia at the 10-year mark.

Researchers found no significant difference in incidence of dementia for the memory or reasoning training groups as compared to the control group. However, as compared to the control group, the speed of processing training group had a 33 percent reduction in risk of dementia, a statistically significant difference ($p=0.012$).

The researchers further saw a significant dose-response function. After adjusting for other variables indicating risk for dementia (e.g., race, sex, mental status, physical status, depressive symptoms), participants who were asked to engage in more than

10 sessions of the computerized brain training showed a 48 percent reduction in the risk of dementia as compared to the control group ($p=.005$).

Participants in the speed of processing training engaged in a task designed to improve speed and accuracy of visual attention, including both divided and selective attention. To perform the divided attention training task, a user identified an object at the center of gaze while simultaneously locating a target in the periphery. With each correct response, the presentation time became faster, and the targets became more similar. At more advanced levels, distractors obscured the peripheral target, engaging selective attention.

In prior reports from the ACTIVE study, participants using this exercise have been shown to have better performance than the controls on a number of measures, including, performance in standard measures of every day activities, mood, confidence, self-rated health, predicted healthcare costs, and driving. "Clearly, the time spent on effective brain training has potential long lasting benefits for many aspects of older adults' lives," Dr. Edwards said.

The exercise was developed by Dr. Karlene Ball of the University of Alabama Birmingham and Dr. Dan Roenker of Western Kentucky University. It is now exclusively licensed to Posit Science Corporation, and is available in Canada and French-speaking countries as the "Double Decision" exercise of the dynamicbrain.BrainHQ.com in English and « Double décision » of the dynamicbrain-fr.BrainHQ.com in French brain training program.

"I am thrilled about the news and its potential," said Frieda Fanni, President of DynamicBrain Inc., the Canadian partner of Posit Science Corporation. "We have been working tirelessly in the past several years to educate the public on brain health and fitness through presentations and partnerships with numerous organizations and health institutions. We have also recently begun running Brain Fitness classes at community centres and public places. This news is yet another confirmation that our efforts can make a difference in the lives of Canadians and French-speaking people around the globe."

"This is an exciting new study result," said Dr. Henry Mahncke, the CEO of Posit Science. "It fits nicely with results on our exercises and assessments reported in other studies on cognition and aging, as well as with studies on clinical populations. With the help of new and existing investors, we plan to continue our efforts to improve performance among healthy adults, while accelerating our efforts with regulatory authorities to gain clearance to market products which address cognitive diseases and disorders."

"Brain speed has been described as the signature deficit of aging -- the speed of brain processes reaches its peak in the middle of life, then in the average older individual inexorably declines decade by decade," said Dr. Michael Merzenich, co-founder of Posit Science and recently-named Kavli Laureate. "Processing speed is a key index of brain health status—akin, in its diagnostic value, to blood pressure measurements for cardiovascular health."

Posit Science takes a unique and patented bottom-up approach to refining sensory and perceptual processing as the foundation to enhanced cognitive performance. Its exercises and assessments have shown benefit in more than 130 peer-reviewed articles, demonstrating gains in standard measures of cognition (such as speed, attention, memory, executive function), as well as in real world activities (such as, driving, balance, gait, everyday tasks).

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