

Brief mental training sessions have long-lasting benefits for seniors' cognition and everyday function

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Older adults who received as few as 10 sessions of mental (cognitive) training showed improvements in reasoning ability and speed-of-processing when compared with untrained controls participants as long as 10 years after the intervention. These gains were even greater for those who got additional "booster" sessions over the next three years. Older adults who received brief cognitive training also reported that they had less difficulty in performing important everyday tasks. The findings are published today in the *Journal of the American Geriatrics Society*.

"Showing that [training](#) gains are maintained for up to 10 years is a stunning result because it suggests that a fairly modest [intervention](#) in practicing mental skills can have relatively long-term effects beyond what we might reasonably expect," said lead author Dr. George Rebok of Johns Hopkins University in Baltimore, MD.

Cognitive decline is prevalent in [older adults](#) and can seriously affect quality of life. To determine the potential benefits of [cognitive training](#) on cognition and daily functioning in older adults, researchers conducted the Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE) study.

The investigators now report on the 10-year follow-up results of 2832 participants (with an average age of 73.6 years at the start of the study) who were randomized to three intervention groups and an untrained

control group. Those in the memory training group were taught strategies for remembering word lists and sequences of items, text material, and the main ideas and details of stories. Participants in the reasoning group received instruction on how to solve problems that follow patterns, which is useful for tasks such as reading bus schedules or completing order forms. Individuals who received speed-of-processing training participated in a computer-based program that focused on the ability to identify and locate visual information quickly, which is useful when looking up phone numbers or reacting to changes in traffic when driving. Training was conducted in small groups in ten 60 to 75 minute sessions over five to six weeks.

Ten years later, participants in each [intervention group](#) reported having less difficulty with instrumental activities of daily living. About 60% of trained participants compared with 50% of controls were at or above their starting level of function regarding daily tasks such as using medications, cooking, and managing their finances. Memory performance improved up to five years following the intervention, but there was no longer a significant difference between trained participants and controls at 10 years. Importantly, reasoning and speed-of-processing trained participants still showed significant improvements relative to controls in the trained skills even at 10 years.

The team also found that a four-session booster training at 11 and at 35 months after the initial training sessions produced additional and durable improvements in the reasoning intervention group and in the speed-of-processing group.

"Our findings provide support for the development of other interventions for senior adults, particularly those that target cognitive abilities showing the most rapid decline with age and that can affect their everyday functioning and independence. Such interventions have potential to delay the onset of difficulties in daily functioning," said Dr.

Rebok. He added that even small delays in the onset of mental and functional impairments may have a large impact on public health and help reduce rising health care costs.

Additional studies are warranted to determine how even relatively brief interventions can have such lasting effects that transfer to self-reported everyday functioning. Dr. Rebok and his team are also interested in testing whether the training sessions help older adults maintain safe driving skills. They also hope to test whether more training over a longer period will have even stronger effects on elders' functioning.

More information: Ten-Year Effects of the ACTIVE Cognitive Training Trial on Cognition and Everyday Functioning in Older Adults. *Journal of the American Geriatrics Society*, 2014; [DOI: 10.1111/jgs.12607](https://doi.org/10.1111/jgs.12607)

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