Crossword puzzles beat computer video games in slowing memory loss
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Crossword puzzles are widely used but have not been studied systematically in mild cognitive impairment, which is associated with high risk for dementia, including Alzheimer's disease.

To conduct their study, researchers at Columbia and Duke randomly assigned 107 participants with mild cognitive impairment (MCI) at the two different sites to either crossword puzzles training or cognitive games training with intensive training for 12 weeks followed by booster sessions up to 78 weeks. Both interventions were delivered via a computerized platform with weekly compliance monitoring.

The most striking findings of the trial were:

- Crossword puzzles were superior to cognitive games on the primary cognitive outcome measure, ADAS-Cog, at both 12 weeks and 78 weeks. Crossword puzzles were superior on FAQ, a measure of daily functioning, at 78 weeks.
- Crossword puzzles were superior for participants at a later disease stage but both forms of training were equally effective in an earlier stage.
- Brain shrinkage (measured with MRI) was less for crossword puzzles at 78 weeks.

"The benefits were seen not only in cognition but also in daily activities with indications of brain shrinkage on MRI that suggests that the effects are clinically meaningful," Dr. Devanand said.

The study also highlights the importance of engagement. Based on remote electronic monitoring of computer use, participants at a later stage of impairment may have better engaged with the more familiar crossword puzzles than with computerized cognitive games.

Two strengths of the trial are the 28% participation rate of individuals from racial and ethnic minority
groups and the low drop-out rate (15%) for such a lengthy home-based trial. A study limitation was the absence of a control group that did not receive cognitive training.

While these results are highly encouraging, the authors stress the need for replication in a larger controlled trial with an inactive control group.

“The trifecta of improving cognition, function and neuroprotection is the Holy Grail for the field,” said Dr. Doraiswamy. “Further research to scale brain training as a home-based digital therapeutic for delaying Alzheimer’s should be a priority for the field.”


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