

Music aids Alzheimer's patients in remembering new information

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Researchers from Boston University School of Medicine (BUSM) have shown that patients with Alzheimer's disease (AD) are better able to remember new verbal information when it is provided in the context of music even when compared to healthy, older adults. The findings, which currently appear on-line in *Neuropsychologia*, offer possible applications in treating and caring for patients with AD.

AD, the most common form of [dementia](#), is characterized by a general, progressive decline in cognitive function that typically presents first as impaired episodic memory. The onset and rate of this decline tends to vary across cognitive domains, and some functions may be preferentially spared in patients with AD.

To determine whether music can enhance new learning of information, AD patients and healthy controls were presented with either the words spoken, or the lyrics sung with full musical accompaniment along with the printed lyrics on a computer screen. The participants were presented visually with the lyrics to 40 songs. Twenty of the song lyrics were accompanied by their corresponding sung recording and 20 were accompanied by their spoken recording.

After each presentation, participants were asked to indicate whether or not they were previously familiar with the song they had just heard. The BUSM researchers found accuracy was greater in the sung condition than in the spoken condition for AD patients but not for healthy older controls.

"Our results confirmed our hypothesis that patients with AD performed better on a task of [recognition memory](#) for the lyrics of songs when those lyrics were accompanied by a sung recording than when they were accompanied by a spoken recording," said senior author Brandon Ally, PhD, an assistant professor of [neurology](#) and director of Neuropsychology Research at the BUSM Center for Translational [Cognitive Neuroscience](#). "However, contrary to our hypothesis, healthy [older adults](#) showed no such benefit of music, he added.

These results suggest a fundamental difference in the encoding and retrieval processes for musical versus nonmusical stimuli between patients with AD and healthy older adults. "Music processing encompasses a complex neural network that recruits from all areas of the brain, that are affected at a slower rate in AD compared to the areas of the brain typically associated with memory. Thus, stimuli accompanied by music and a sung recording may create a more robust association at encoding than do stimuli accompanied by only a spoken recording in patients with AD," explained Ally.

According to the researchers understanding the nature of musical processing and memory in patients with AD may allow the development of effective and comprehensive therapies for this increasingly prevalent disease.

Provided by Boston University Medical Center

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