Older Adults' Memory Lapses Linked to Problems Processing Everyday Events

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Some memory problems common to older adults may stem from an inability to segment daily life into discrete experiences, according to a new study published in *Psychological Science*, a journal of the Association for Psychological Science.

The study suggests that problems processing everyday events may be the result of age-related atrophy to a part of the brain called the medial temporal lobe (MTL).

"When you think back on what you did yesterday, you don't just press 'play' and watch a continuous stream of 24 hours," says psychological scientist Heather Bailey of Washington University in St. Louis, who led the study. "Your brain naturally chunks the events in your day into discrete parts."

Bailey and her colleagues hypothesized that older adults may have difficulty with memory for everyday events because they don't segment them in the same way as they're happening.

In the study, older adults — some of whom had Alzheimer's type dementia — watched short movies of people doing everyday tasks, such as a woman making breakfast or a man building a Lego ship. They were told to separate the movie into chunks by pressing a button whenever they thought one part of the activity in the movie was ending and a new part was beginning.

Afterward, the researchers asked the older adults to recall what happened in the movie. They also measured the size of the older adults' MTL using structural magnetic resonance imaging (MRI).

"The older adults who showed atrophy in the MTL weren't as good at remembering the everyday activities, and they weren't as good at segmenting and chunking the events as they were happening," says Bailey. "MTL size accounted for a huge portion of the relationship that we saw between participants' ability to segment and their memory for the events."

These findings suggest that the characteristic forgetfulness of the aging mind isn't just a problem with recalling memories later, but also with how we view and chunk events as they unfold, a process that depends on MTL functioning.

In light of this, focusing on how to better form new memories may be one way to improve older adults' memory for everyday events, even for those adults who have clinical diagnoses like Alzheimer's.

"Alzheimer's disease attacks the MTL in the early stages of the disease," says Bailey. "But even with MTL atrophy you may be able to train people to chunk better, which might help them to remember their everyday activities better, too."

As part of their future research, Bailey and colleagues hope to further investigate the link between event perception and memory to see if they can combat memory impairments in older adults.

Co-authors on the research include Jeffrey M. Zacks and Denise Head of Washington University in St. Louis; David Z. Hambrick and Rose T. Zacks of Michigan State University; Christopher A. Kurby and Jesse Q. Sargent of Francis Marion University.

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