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News Highlights

Better Tests Needed to Pinpoint Memory Problems, Study Shows

Tuesday, Mar. 3, 2009

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PULLMAN, Wash. □ There□s a lot more to memory than the ability to remember a story, who the President is, or what you ate for lunch.

Do you recall who told you the story? How about whether you heard it before or after the President□s inauguration? Do you remember that you planned to meet a friend for lunch tomorrow?

According to new research by scientists at Washington State University (WSU), aspects of memory that record the source of information and the relative timing of events are at least as important to our everyday functioning as the ability to recall specific content.

□These other aspects of memory may actually have greater contributions to what people are reporting in their everyday lives as causing problems,□ said Maureen Schmitter–Edgecombe, a WSU psychologist and leader of the study.

She and co–authors Ellen Woo of WSU (now at and the University of California, Los Angeles) and David R. Greeley of WSU Spokane and Northwest Neurological, PLLC found that some volunteers with good content memory had trouble with non–content aspects of memory, and that such problems affected the volunteers□ ability to perform complex activities like prepare a meal for six or manage finances. They concluded that tests used to diagnose dementia should be expanded to include non–content memory processes.

The study appears in the March issue of the journal *Neuropsychology*.

Currently, clinical evaluations of people with memory problems concentrate on content memory, said Schmitter–Edgecombe. □So we read them a list of words, or we ask them questions about what they had for breakfast and see if they can remember that information. But that□s really only one part of memory in our everyday lives.□

She said there has been little research on non–content aspects of memory, especially in the context of dementia and mild cognitive impairment (MCI). MCI is a diagnosis based on poor performance in tests of memory and routine thinking. It is often, but not always, an early sign of developing Alzheimer□s disease. Eighty–four people age 50 or older participated in the study. Half had been diagnosed with MCI and half had normal cognitive function. Among those with MCI, some had loss of content memory and some did not. The volunteers took a variety of tests that included word and shape recognition, recalling whether a test item was presented as a word or a picture, and a connect–the–dots puzzle in which numbers alternated with letters. At the end of an hour–long series of eight different tasks, they were asked to tell in what order the tasks had been done.

The researchers also explored whether specific kinds of memory loss were related to a volunteer□s ability to perform tasks such as telephone use, food preparation, social functioning and medication management.

They found that problems with non–content memory can hamper the ability to function even in people whose content memory is just fine.

□We□ve got this group [of volunteers] who□s not having content memory problems, but yet they□re reporting, or their significant others are reporting, just as many difficulties in their everyday lives,□ said Schmitter–Edgecombe.

She said content and non–content memory processes are handled by different parts of the brain, making it possible for problems to occur in one but not the other. One current hypothesis of aging suggests that the

frontal lobe, where non-content aspects of memory reside, is the first area in the brain to suffer age-related deterioration. In prior experiments Schmitter-Edgecombe and her colleagues found that temporal order memory shows significant age-related changes well before—sometimes years before—noticeable loss of content memory.

Schmitter-Edgecombe said physicians and therapists must take into account the ways that different types of memory loss affect people in their everyday lives.

“Until we really understand that link, it’s going to be hard to develop the best compensatory strategies to help people get around those difficulties,” she said.

The paper: “Characterizing multiple memory deficits and their relation to everyday functioning in individuals with mild cognitive impairment,” *Neuropsychology*, volume 23, issue 3.

To learn more about research on memory at WSU, see <http://wsm.wsu.edu/2009/Spring/remember.php>.

Keywords: Alzheimer's, memory, memory loss, dementia, diagnosing dementia



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