

# Trouble with sentences may predict Alzheimer's

Cornell University

Having trouble finding the right word to say is a known side effect of healthy aging. But older adults with early Alzheimer's disease may find it especially difficult not only to find words but also to construct complex sentences, finds a Cornell pilot study.

Such language problems can make daily communication difficult and may be an early marker for Alzheimer's disease or other cognitive impairments, says Barbara Lust, professor of human development and director of the Cornell Language Acquisition Laboratory, who led the study in collaboration with neuropsychologist Janet Cohen Sherman at Massachusetts General Hospital and Professor Suzanne Flynn at the Massachusetts Institute of Technology. Its results have been presented at several conferences, most recently at the May 26-29 American Psychological Society convention in Washington, D.C., and at a May 11 Alzheimer's Association conference in Boston.



Lust

"There is a distinct gap in the research on language decline in those with clinical and prodromal (early symptom) conditions," said Lust. "Several studies have raised the possibility that very early Alzheimer's disease may be associated with deterioration in written language as seen in the works of popular authors such as Iris Murdoch. One unique contribution of our project is that we are looking at what is happening in spoken language. Another is that we are looking at sentence formation."

Lust and the other researchers in the Cornell Language Acquisition Lab and the Virtual Center for Language Acquisition at Cornell and colleagues are comparing language and cognitive abilities in three groups: healthy aging adults, adults with signs of mild cognitive impairment and young college-aged controls. Participants are asked to repeat a series of sentences that are experimentally designed and are

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tested on the accuracy of their repetition. So far they have tested 40 participants, and they plan to test more.

Preliminary results show that the declines found in language abilities may be separate from declines in overall cognition (e.g., memory). Specifically, those with mild cognitive impairment show particular challenges not only with vocabulary (e.g., word-finding difficulties, word substitutions) but also in certain types of complex sentence formation.

Results from this research may shed light on the mechanisms of language decline and lead to techniques for early diagnosis and interventions for both healthy and cognitively impaired older adults.

The researchers also plan to compare their findings in older adults to language development in young children to better determine how language decline is likely to occur with older adults and people with Alzheimer's disease relative to how language is first acquired.

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*Aileen Costigan is the project manager of the Alzheimer's language project and researcher in the Cornell Language Acquisition Laboratory.*

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