

Language skills in your twenties may predict risk of dementia decades later

July 8 2009

People who have superior language skills early in life may be less likely to develop Alzheimer's disease decades later, despite having the hallmark signs of the disease, according to research published in the July 9, 2009, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

"A puzzling feature of Alzheimer's disease is how it affects people differently," said study author Juan C. Troncoso, MD, with Johns Hopkins University in Baltimore. "One person who has severe plaques and tangles, the telling signs of Alzheimer's disease in their brains, may show no symptoms affecting their memory. Another person with those same types of plaques and tangles in the same areas of the brain might end up with a full-blown case of Alzheimer's disease. We looked at how language ability might affect the onset of symptoms."

Researchers examined the brains of 38 Catholic nuns after death. The participants were part of the Nun Study, an ongoing clinical study of Catholic sisters of the School Sisters of Notre Dame congregation living in the United States. Scientists determined two groups: women with [memory problems](#) and Alzheimer's disease hallmarks in the brain and women with normal memory with or without signs of Alzheimer's disease in the brain.

The researchers analyzed essays that 14 participants wrote as they entered the convent in their late teens or early 20's. They studied the average number of ideas expressed for every 10 words. The analysis also

measured how complex the grammar was in each essay.

The study found that language scores were 20 percent higher in the women without memory problems compared to those with memory problems. The grammar score, however, did not show any difference between the two groups.

"Despite the small number of participants in this portion of the study, the finding is a fascinating one," Troncoso said. "Our results show that an intellectual ability test in the early 20s may predict the likelihood of remaining cognitively normal five or six decades later, even in the presence of a large amount of Alzheimer's disease pathology."

The study also measured how growth in brain cells might be part of the brain cell's early response to Alzheimer's disease or how these cells may prevent memory impairment despite a large amount of Alzheimer's disease lesions. The study found significant increases in the size of [brain cells](#) in nuns with normal thinking skills and Alzheimer's disease hallmarks compared to people with memory problems and those with normal thinking skills and without the signs of Alzheimer's disease.

"Perhaps mental abilities at age 20 are indicative of a brain that will be better able to cope with diseases later in life," said Troncoso.

Source: American Academy of Neurology ([news](#) : [web](#))

Citation: Language skills in your twenties may predict risk of dementia decades later (2009, July 8) retrieved 28 April 2024 from <https://medicalxpress.com/news/2009-07-language-skills-twenties-dementia-decades.html>

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