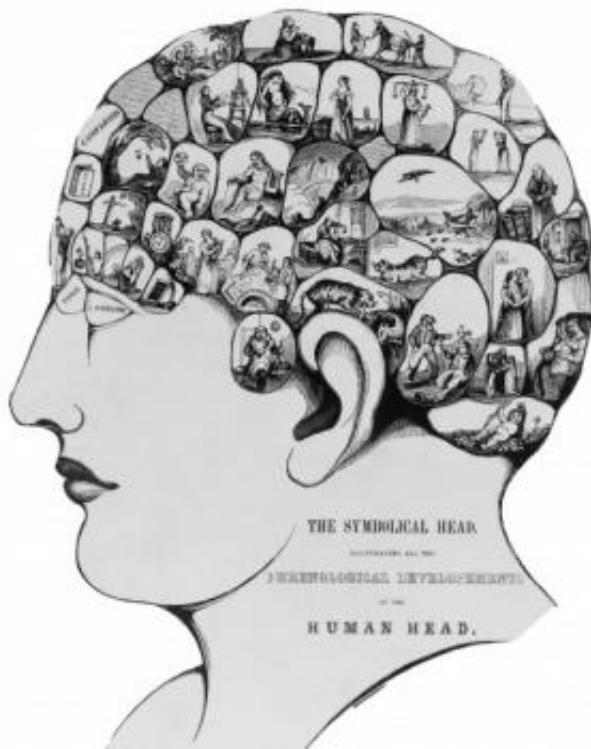


How will your thinking and memory change with age?

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Credit: Karen Arnold/Public Domain

How well eight-year-olds score on a test of thinking skills may be a predictor of how they will perform on tests of thinking and memory skills when they are 70 years old, according to a study published in the October 30, 2019, online issue of *Neurology*, the medical journal of the American Academy of Neurology. The study also found that education

level and socioeconomic status were also predictors of thinking and memory performance. Socioeconomic status was determined by people's occupation at age 53.

"Finding these predictors is important because if we can understand what influences an individual's cognitive performance in later life, we can determine which aspects might be modifiable by education or [lifestyle changes](#) like exercise, diet or sleep, which may in turn slow the development of cognitive decline," said study author Jonathan M. Schott, MD, FRCP, of University College London in the United Kingdom and a member of the American Academy of Neurology.

The study involved 502 people all born during the same week in 1946 in Great Britain who took [cognitive tests](#) when they were eight years old. Between the ages of 69 and 71, participants took thinking and memory tests again. One [test](#), similar to a test they completed as children, involved looking at various arrangements of geometric shapes and identifying the missing piece from five options. Other tests evaluated skills like memory, attention, orientation and language.

Participants had [positron emission tomography](#) (PET) scans to see if they had amyloid-beta plaques in the brain associated with Alzheimer's disease. They also had detailed brain [magnetic resonance](#) imaging scans (MRI).

Researchers found that childhood thinking skills were associated with scores on the cognitive tests taken more than 60 years later. For example, someone whose cognitive performance was in the top 25 percent as a child, was likely to remain in the top 25 percent at age 70. Even accounting for differences in childhood test scores, there was an additional effect of education. For example, participants who completed a college degree scored around 16 percent higher than participants who left school before the age of 16. Having a higher [socioeconomic status](#)

also predicted slightly better cognitive performance at age 70, but the effect was very small. For example, those who had worked in professional jobs tended to recall an average of 12 details from a short story, compared to 11 details for those who had worked in manual jobs. Women performed better than men in test of memory and thinking speed.

In addition, researchers found that participants with amyloid-beta plaques had lower scores on cognitive testing. For example, on the missing pieces test, they scored 8 percent lower on average. In other words, they got 23 out of 32 items correct on average—2 points lower than participants without amyloid-beta plaques. However the presence of these plaques was not associated with sex, childhood cognitive skills, education or socioeconomic status.

"Our study found that small differences in thinking and memory associated with amyloid plaques in the brain are detectable in older adults even at an age when those who are destined to develop dementia are still likely to be many years away from having symptoms," said Schott. "It also found that childhood cognitive skills, education and socioeconomic status all independently influence [cognitive performance](#) at age 70. Continued follow-up of these individuals, and future studies are needed to determine how to best use these findings to more accurately predict how a person's thinking and memory will change as they age."

A limitation of the study is that all participants were white, so the results may not represent the general population.

Provided by American Academy of Neurology

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