



Languages

Learning another language appears to slow brain ageing, scientists say

Study finds those who speak two languages have brains that appear around six years younger than those who speak one

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Learning another language could slow ageing in the brain by up to 13 years, according to research.

People who speak more than one language seem to have younger brains and the more languages you speak and the earlier you speak them, the better, according to findings from a study being presented at the Federation of European Neuroscience Societies conference in Barcelona.

The study found that those who spoke two languages had brains that appeared around six years younger than those who spoke only one language. People who

spoke three languages had brains that appeared around seven years younger, and for those who spoke four languages, their brains appeared about 13 years younger.

Our brains are made up of billions of nerve cells that communicate with one another. But as we get older, the connectivity in our brains often deteriorates, causing memory and speed of thought to decline.

While **previous research** had observed that people from European countries with greater language proficiency tended to age more slowly, this study measured the impact of speaking languages on individual brains. Scientists in Spain, Chile, Argentina and Dublin compared people living in the Basque region - characterised by high levels of multilingualism - who spoke Spanish, Basque, French and/or English.

To measure neurological age, the scientists used magnetoencephalography to measure the brain activity of 728 people with varying ages and levels of linguistic ability. They then used AI to process the results to calculate a normal level of brain connectivity at any given age. A second unrelated group of 144 people were then scanned and compared, comprising equal numbers of people speaking one, two, three or four languages.

Dr Lucia Amoruso, from the Basque Center on Cognition, Brain and **Language** in San Sebastián, said: “In simple terms, people who spoke more languages tended to have brains that looked younger than expected for their chronological age. The effect was not only related to the number of languages spoken. Higher language proficiency and earlier acquisition of a second language were also associated with more delayed brain ageing. This suggests that multilingual experience matters as a gradient: it is not simply about being bilingual or not, but about the depth and duration of language experience.”

The researchers took account of factors such as people’s age, sex and education, but cautioned that they could not rule out the potential influence of other factors that may have an impact on the brain, such as lifestyle and social engagement.

Responding to the findings, Prof Christina Dalla, a neuroscientist from the National and Kapodistrian University of Athens, said: “This study suggests that learning a second, third or fourth language could help our brains to stay younger for longer, and the earlier we start, the better. There are many good reasons for learning another language at any age - social, cultural and for the health of your brain - so we should support language-learning at school and throughout life, even if it’s hard.”

But Eef Hogervorst, a professor of biological psychology at Loughborough University, urged caution. While the evidence did suggest being multilingual was associated with better brain resilience, she said, “it may be the case that people who speak multiple languages also engage in healthier lifestyles and/or have better

access to other protective environments and activities, such as reading, lifelong learning and playing musical instruments”.

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