

Building cognitive reserve could protect against memory and thinking decline, even with low childhood cognition scores



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New research suggests that people who develop high 'cognitive reserve' by the time they reach 69 years old may reduce their likelihood of memory and thinking decline, even with low childhood cognitive abilities. The study was published today in *Neurology*, the medical journal of the American Academy of Neurology.

Worsening memory and thinking abilities are common in people living with dementia, which is caused by physical diseases in the brain that damage nerve cells and the connections between them. Some people seem to be more resilient to this damage than others. This resilience is known as cognitive reserve and research suggests that education, mental stimulation and healthy living could help to boost it.

Researchers based at Brighton and Sussex Medical School in the UK measured the cognitive abilities of 1,184 British people born in the same week in March 1946.

The participants were part of the 1946 birth cohort, the oldest British birth cohort where people were monitored throughout their lives. This is the same cohort behind the Insight 46 study, funded by Alzheimer's Research UK. These participants have taken part in health research throughout their lives and have helped researchers to link several early and mid-life factors to brain health in later life.

The team had access to the participants' childhood cognitive

test scores as well as their educational and occupational history. They also knew the participants' lifestyle habits, hobbies, and leisure activities.

Participants were given a higher 'cognitive reserve index' score if they had higher educational qualifications at age 26, engaged in healthy leisure activities at 46, and had highly skilled occupations up to 53 years old.

Higher cognitive reserve index scores, stronger reading abilities at age 53 and better childhood cognition were all linked to better cognitive test scores when the participants were 69 years old. The researchers measured people's memory and thinking abilities using tests that indicate whether someone may have diseases like Alzheimer's, which cause dementia.

However, for people with the highest cognitive reserve scores and better reading abilities, childhood cognition scores had no significant impact on memory and thinking abilities at age 69. This suggests that higher educational qualifications, more highly skilled jobs and greater engagement in social and leisure activities could mitigate the effects of poor childhood cognition.

There is conflicting evidence as to how much childhood cognition influences brain health in later life. This study suggests that despite lower cognitive test scores in early life, people could still reduce their risk of cognitive decline in later life by having skilled occupations, higher levels of education and by undertaking healthy leisure activities.

"While our childhood can influence our memory and thinking skills later in life, this research underlines the message that it's never too late to take action to support cognitive health.

"The study followed participants until they were 69 years old, when they assessed their cognition. Several factors including education, social life, leisure activities and reading ability seemed to improve cognition in later life, even for people who had lower childhood cognitive test scores. The researchers assessed the participants' memory and thinking abilities, but did not look for biological signatures of diseases like

Alzheimer's, which can remain undetected for years before cognitive symptoms appear. It will be important to continue monitoring these people to see if – and how – their brain health changes in years to come.

“While mental stimulation and healthy living may reduce our risk of cognitive decline, there's no sure-fire way to prevent it. A mix of factors affect our brain health – some of these we can control, for example looking after our heart health, trying new activities and keeping connected with friends and family. We cannot control factors like our genes, which is why it is also important to consider the impact of risk genes for the diseases that cause dementia, as the researchers in this study did.

“The best current evidence suggests that not smoking, only drinking in moderation, staying mentally, physically and socially active, eating a balanced diet, and keeping cholesterol and blood pressure levels in check can all help to keep our brains healthy as we age. Find information and advice on brain health at www.thinkbrainhealth.org.uk”

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