

Education does not protect against cognitive decline

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Credit: University College London

A European-wide study published today in the journal

Neuroepidemiology has found that whilst older people with a higher level of education have better memory function, it does not protect them from cognitive decline as they age.

In one of the largest and most comprehensive studies on education and cognitive decline to date, researchers at UCL and funded by the Medical Research Council and Alzheimer's Society, explored changes in [memory](#) and cognitive performance over an eight-year period in over 11,000 Europeans aged 65 and over from 10 different countries.

The participants were tested at first entry into the study, referred to as baseline, and then again at two-year intervals. Participants were asked to recall a 10-word list immediately (known as immediate recall) and then again after five minutes (known as delayed recall).

Previous studies have found that people with a higher level of education tend to have lower rates of dementia, but studies looking at the link between education and rates of cognitive decline in healthy older people have produced mixed results. With an ageing population across Europe, it is extremely important to identify factors that can help to support healthy cognitive ageing.

In this study, the level of education was determined by the number of years of education completed by each participant, and evaluated in association with memory performance and rate of change while accounting for income, general health, smoking, [body mass index](#) (BMI), gender, and baseline age.

In most countries, the more educated individuals performed better on both memory tests at baseline, compared to those who were less educated. However, when the same individuals were followed-up and asked to repeat the tests, their level of education did not have an effect on the rate that their memory declined over time.

Germany and the Netherlands had the best performance of memory recall at study entry, while Spain had the lowest performance. There was also a gender difference in recall with women performing better than men in most countries, but no gender difference was found in the rate of cognitive decline.

Dr Dorina Cadar, the lead author of the study and a research associate in dementia, (UCL Epidemiology and Public Health), said: "At a country level, variation in [cognitive performance](#) has rarely been investigated in healthy European older individuals. Despite significant differences in educational systems across countries, education remains a strong indicator of cognitive function in later life, but this study shows we are less clear on whether education can stop the declines in cognition that come naturally with ageing.

"What we do not know is whether those with lower education in this study had poorer memory at baseline because they have had poorer memories their whole lives, or because they have already experienced some declines in their [memory performance](#) due to ageing."

Dr Graciela Muniz-Terrera, senior author and former Alzheimer's Society research fellow said: "We adopted an integrative and coordinated perspective of cross-country analyses, employing a similar method of analysing the data, while taking into consideration a similar set of factors, to understand whether there are common patterns of cognitive decline in all individuals.

"Our work shows a consistent pattern of results across ten various European countries, where [education](#) showed a potential protective effect on memory in individuals aged 65 and older, but not on the rate of memory decline at ages when people start to exhibit accelerated signs of [cognitive decline](#)."

More information: Dorina Cadar et al. An International Evaluation of Cognitive Reserve and Memory Changes in Early Old Age in 10 European Countries, *Neuroepidemiology* (2017). [DOI: 10.1159/000452276](https://doi.org/10.1159/000452276)

Provided by University College London

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