

# Mental performance of people who reach their nineties may be improving

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People who reach their nineties today show improved mental performance compared to people in the same age group born a decade earlier, according to the results of a study conducted in Denmark and published in *The Lancet*.

A group of researchers led by Professor Kaare Christensen, of the University of Southern Denmark in Odense, used information from the Danish Civil Register System to identify two groups (cohorts). The first cohort consisted of all people born in 1905, who were still living in 1998, aged 92 – 93 years, with 2262 people in this group participating in the study. The second cohort consisted of all people born in 1915, who were still living in 2010, aged 94 – 95 years, with 1584 people in this group participating in the study.

All [study participants](#) were surveyed via physical and [cognitive tests](#), and interviews, to assess [mental impairment](#) (mini mental state examination); fluency and recall abilities (cognitive composite score), [depression symptoms](#), and ability to carry out daily living tasks such as walking inside and outside. Where participants were not able to respond personally due to physical or mental handicap (around 20% of participants), tests were conducted via a proxy responder.

Not only were people born in 1915 nearly a third (32%) more likely to reach the age of 95 than those in the 1905 cohort, but members of the group born in 1915 performed better than members of the 1905 cohort in tests of both cognitive ability and activities of daily living. The 1915

cohort achieved better average test scores than the 1905 cohort, and a substantially higher proportion of participants in the 1915 cohort achieved maximum scores in cognition tests, even though they were older at the time of testing than the 1905 cohort.

While educational attainment was, on average, slightly higher in the 1915 cohort, the difference was only statistically significant in women, who had overall very low [educational attainment](#) in both groups, suggesting that the difference in [mental performance](#) observed between the two cohorts is unlikely to be attributable to improved education.

According to the authors, "Even after adjusting for the increase in education between the 1905 and 1915 cohorts, the 1915 cohort still performed better in the cognitive measures, which suggests that changes in other factors such as nutrition, burden of infectious disease, work environment, intellectual stimulation, and general living conditions also play an important part in the improvement of cognitive functioning."

"The study challenges speculations that the improving longevity is the result of the survival of very frail and disabled elderly people," says Professor Christensen.

"Our results suggest that the functioning of people who reach their nineties is improving in Denmark, and increasing longevity associated with improved living conditions and healthcare may result in not just longer lives, but also that elderly are functioning better for longer than in earlier generations."

Professor Marcel Olde Rikkert, and Rene Melis of Radboud University Medical Centre in Nijmegen, Netherlands, write in a linked Comment that, "The expectation of a continuing sharp rise in dementia prevalence in populations older than 80 or 90 years plays an important part in the alarming predictions about the future global burden of dementia, [but]

the evidence for improved cognition at very old age provided by Christensen and colleagues challenges these extrapolations."

**More information:** Paper: [www.thelancet.com/journals/lan ... \(13\)60777-1/abstract](http://www.thelancet.com/journals/lan/article/S0140-6736(13)60777-1/abstract)

Provided by Lancet

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