

Poorer teen mental ability linked to as much as tripling in stroke risk before age of 50

June 27 2024



Credit: CC0 Public Domain

A lower level of mental ability during the teenage years may be linked to as much as a tripling in the risk of having a stroke before the age of 50, finds research published online in the *Journal of Epidemiology and*

Community Health.

The observed associations held true even after factoring in current diabetes and limiting the age of a first [stroke](#) up to 40, prompting the researchers to suggest that more comprehensive assessments beyond traditional stroke [risk factors](#) are now needed to stave off disability and death.

Recent evidence suggests that cases of stroke among the under 50s years are on the rise. And around half of all stroke survivors can expect to live with long term physical and psychological impairments, say the researchers.

Lower levels of mental ability in childhood and adolescence—to include powers of concentration, problem solving, and learning—have been associated with higher risks of future cardiovascular and metabolic diseases. But the findings are inconsistent, note the researchers.

To strengthen the [evidence base](#), they wanted to find out if mental ability in adolescence might be associated with a heightened risk of early onset stroke in a nationally representative sample of 1.7 million young Israelis.

Before starting [military service](#), 16–20 year old Israelis undergo extensive evaluation to assess their suitability, and this study includes all those assessed between 1987 and 2012.

As well as weight, [blood pressure](#), current diabetes, other factors assessed included [educational attainment](#), socioeconomic background, and mental ability.

This last includes tests to measure the ability to understand and carry out verbal instructions; verbal abstraction and categorization (word grouping); mathematical ability, concentration, and conceptual thinking;

non-verbal abstract reasoning and visual-spatial [problem solving](#).

The study participants' results were then linked to the Israeli national stroke database, for which mandatory reporting only began in 2014, up until the end of 2018, the first recorded stroke, or death, whichever came first.

The final analysis is based on 1,741,345 people, 738,720 (42%) of whom were women. Out of the total, 12% (312,769) were scored as having a high level of mental ability, 70% (1,220,514) as having a medium level, and 18% (208,062) as having a low level.

Compared with those whose scores indicated a high level of mental ability, those at the other end of the scale were more likely to be overweight or obese (17% vs. 12%), less likely to have completed [secondary school education](#) (82% vs. 99%), and more likely to have lived in a socially and economically deprived neighborhood (35% vs. 19%)—all risk factors for cardiovascular disease.

Between 2014 and 2018, 908 cases of stroke were recorded, of which 767 were caused by a blood clot (ischemic) and 141 by a bleed on the brain (intracerebral hemorrhage).

The average age of a first stroke was 39.5 (maximum age 50). And 45 people died as a result (5% of all stroke cases), nearly two thirds of whom (62%) did so within 30 days of the event.

Among those scoring low to medium on mental ability, the incidence of both types of stroke was higher, particularly that of ischemic stroke.

After accounting for potentially influential factors, those with low mental ability were more than 2.5 times as likely to have a stroke before the age of 50 as those with a high level, while those with a medium level

were 78% more likely to do so.

Of the 767 cases of ischemic stroke, 311 (41%) occurred before the age of 40. After accounting for potentially influential factors this risk was almost double (96% higher) among those with a medium level of mental ability and more than three-times higher among those with a low level in their teenage years.

Heightened risk rose in tandem with the mental ability score, such that for every 1 unit decrease in the score (scale of 1 to 9), the risk rose by 33%. However, when the analysis was based on categories of [mental ability](#) alone, no such associations emerged for a stroke involving a bleed on the brain.

These associations held true even after further in-depth analyses, including factoring in current diabetes and limiting the age of first stroke up to the age of 40.

This is an observational study, and therefore can't establish cause and effect. The researchers also acknowledge various limitations to their findings, including the lack of information on lifestyle, such as smoking, physical activity, and diet; higher education; and several potentially important social determinants of health.

But they write, "Without risk factor intervention in early adulthood, stroke risk accumulates." They conclude, "Cognitive function may serve as a means of stratifying individuals at greater risk for stroke and for intervention via possible mediators such as health illiteracy, education, and health-related behaviors.

"Provision of early social and health support for individuals with lower cognitive function might be essential for mitigating their elevated risk."

More information: Cognitive function in adolescence and the risk of early-onset stroke, *Journal of Epidemiology and Community Health* (2024). [DOI: 10.1136/jech-2024-222114](https://doi.org/10.1136/jech-2024-222114)

Provided by British Medical Journal

Citation: Poorer teen mental ability linked to as much as tripling in stroke risk before age of 50 (2024, June 27) retrieved 30 June 2024 from <https://medicalxpress.com/news/2024-06-poorer-teen-mental-ability-linked.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.