

Research finds risk of dementia nearly three times higher the first year after a stroke

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Having a stroke may significantly increase the risk of developing dementia. The risk of dementia was the highest in the first year after a stroke and remained elevated over a period of 20 years, according to

preliminary research presented at the [American Stroke Association's International Stroke Conference 2024](#), held in Phoenix, Feb. 7–9.

"Our findings show that stroke survivors are uniquely susceptible to dementia, and the risk can be up to three times higher in the first year after a stroke. While the risk decreases over time, it remains elevated over the long-term," said lead study author Raed Joundi, M.D., D.Phil., an assistant professor at McMaster University in Hamilton, Ontario, Canada, and an investigator at the Population Health Research Institute, a joint institute of McMaster University and Hamilton Health Sciences.

To evaluate [dementia risk](#) after stroke, the researchers used databases at the Institute for Clinical Evaluative Sciences (University of Toronto, Canada), which includes more than 15 million people in the Canadian province of Ontario.

They identified 180,940 people who had suffered a recent stroke—either an ischemic stroke (clot-caused) or intracerebral hemorrhage (bleeding within the brain)—and matched those stroke survivors to two control groups—people in the general population (who had not had a [heart attack](#) or stroke) and those who had had a heart attack and not a stroke.

Researchers evaluated the rate of new cases of dementia starting at 90 days after stroke over an average follow-up of 5.5 years. In addition, they analyzed the risk of developing dementia in the first year after the stroke and over time, up to 20 years.

The study found:

- The risk of dementia was highest in the first year after stroke, with a nearly three-fold increased risk, then decreasing to a 1.5-fold increased risk by the five-year mark and remaining

elevated 20 years later.

- Dementia occurred in nearly 19% of stroke survivors over an average follow-up of 5.5 years.
- The risk of dementia was 80% higher in stroke survivors than in the matched group from the general population. The risk of dementia was also nearly 80% higher in stroke survivors than in the matched control group who had experienced a heart attack.
- The risk of dementia in people who had an intracerebral hemorrhage (bleeding in the brain) was nearly 150% higher than those in the general population.

"We found that the rate of post-stroke dementia was higher than the rate of recurrent stroke over the same time period," Joundi said.

"Stroke injures the brain including areas critical for cognitive function, which can impact day-to-day functioning. Some people go on to have a recurrent stroke, which increases the risk of dementia even further, and others may experience a progressive cognitive decline similar to a neurodegenerative condition."

Each year, about 795,000 people experience a new or recurrent stroke. Approximately 610,000 of these are first attacks, and 185,000 are recurrent attacks, according to the [American Heart Association's Heart Disease and Stroke Statistics 2024 Update](#). According to the CDC, of those at least 65 years of age, there is an estimated 7 million adults with dementia in 2014 and projected to be nearly 14 million by 2060.

"Our study shows there is a large burden of dementia after acute stroke in Canada and identifies it is a common problem that needs to be addressed. Our findings reinforce the importance of monitoring people with stroke for cognitive decline, instituting appropriate treatments to address vascular risk factors and prevent recurrent stroke, and encouraging [lifestyle changes](#), such as smoking cessation and increased

physical activity, which have many benefits and may reduce the risk of dementia," Joundi said.

"More research is needed to clarify why some people who have a stroke develop dementia and others do not."

A 2023 American Heart Association scientific statement, "Cognitive Impairment After Ischemic and Hemorrhagic Stroke" [suggests](#) post-stroke screenings and comprehensive interdisciplinary care to support stroke survivors with cognitive impairment.

A limitation of the study is that administrative data, hospital records and medication dispensary data were used for the analysis. Researchers were not able to perform cognitive assessments or neuroimaging (noninvasive images of the brain) on stroke survivors, therefore, there is no way to confirm the dementia diagnosis or type of dementia. However, the dementia definition was previously validated and shown to be accurate when compared to medical charts.

Study background and details:

- The study examined data from 2002 to 2022 on a total population of 15 million adults in Ontario, Canada.
- Data was mined from all hospital admissions, pharmacies prescribing medications for dementia and emergency departments across the province of Ontario.
- The analysis included 180,940 [stroke survivors](#) (mean age of 69, and 45% women) who had either an [ischemic stroke](#) or [intracerebral hemorrhage](#) and survived without dementia for at least 90 days.
- The study population was matched 1:1 on age, sex, rural residence, neighborhood marginalization, hypertension, diabetes (including type 1 and type 2 together), [high cholesterol](#), [atrial](#)

[fibrillation](#), heart failure and [peripheral artery disease](#)—factors known to increase the risk of dementia.

More information: Abstract 67: www.abstractsonline.com/pp8/#!/...42/presentation/2385

Provided by American Heart Association

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