

## Fast Memory Decline Tied to Fatal Stroke

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NEW ORLEANS -- People who died from stroke had the most severe and rapid memory loss prior to the event compared with stroke-free individuals and those who survived a stroke, a large study found.

In a cohort of more than 12,000 people, the average memory score each year dropped linearly in relation to the risk of non-fatal and fatal stroke, according to M. Maria Glymour, ScD, of the Harvard School of Public Health in Boston, and colleagues.

At the time of stroke, memory function dropped an average 0.321 points, a difference that was about the same as the average memory decline associated with growing 4.1 years older among those who remained stroke-free, Glymour said at a press conference here at the American Stroke Association's International Stroke Conference.

"A quick decline in memory might be a signal for a need to assess atherosclerotic disease," Carolyn D. Brockington, MD, director of the stroke center at St. Luke's-Roosevelt Hospital Center in New York City, told *MedPage Today*.

Vascular disease assessment is in order as long as other risk factors, such as high blood pressure, anemia, or thyroid disease, have been ruled out, said Brockington, a spokesperson for the American Heart Association.

Advanced imaging technology such as MRI and CT can examine the vasculature in great detail, she said. "If there is significant cerebrovascular disease, it could be linked to hypoperfusion, which could be linked to memory decline."

There have been studies that suggested links between stroke and cognitive decline. So, Glymour and colleagues wanted to assess the relationship of memory decline in those who didn't have a stroke with those who survived a stroke and those who died from a stroke.

Led by graduate student Qianyi Wang, the Harvard researchers used the Health and Retirement Study to follow 11,814 people older than 50, with 10 years of follow-up. No one with a history of stroke at baseline was included.

Participants were interviewed every two years for signs of declining memory and tested with a standard word-recall list. For participants whose memory loss became too severe to use the word lists, researchers interviewed spouses or other caregivers.

During the follow-up, there were 1,820 strokes, including 364 participants who died following stroke.

Baseline memory score was highest among those who remained stroke-free (2.63) compared with stroke survivors (1.83) and those who had fatal strokes (1.21). Stroke-free participants were also younger at 63 years, versus 70 and 75 for stroke survivors and stroke decedents, respectively.

Although memory declined rapidly each year prior to stroke onset for stroke survivors, it declined even faster for those who did not survive stroke. In contrast, memory decline for stroke-free participants occurred annually but at a much slower pace, Wang reported.

Average decreases in memory score each year were as follows:

- 0.078 points in those who didn't have a stroke while in the study
- 0.137 points before stroke in those who later survived a stroke
- 0.205 points before stroke in those who later died from stroke

### Action Points

This study was published as an abstract and presented at a conference. These data and conclusions should be considered to be preliminary until published in a peer-reviewed journal.

In this study of individuals over the age of 50 who were stroke free at baseline, individuals who later survived a stroke had lower memory functioning at baseline than those who remained stroke-free throughout follow-up.

Individuals who later died after stroke had significantly faster pre-stroke memory declines.

"We're most surprised that people who died after strokes had such sharp memory declines years before stroke onset," said Wang.

She also noted that more than half of the memory gap between recent stroke survivors and stroke-free adults of similar age was evident before the stroke.

"People who die after stroke may have worse underlying disease prior to stroke. This suggests early disease is accumulating and that something is happening to these people before they are diagnosed with clinical stroke," Glymour said.

The study was limited because there was no medical verification of stroke or stroke data and no detection of silent stroke. There also was no distinction in stroke subtype, severity, or location.

The next step in this line of research, Wang said, is to determine if these results vary by race, sex, age, and region of country.

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The authors reported they had no conflicts of interest.

**From the American Heart Association:**

[Science News from International Stroke Conference 2012](#)

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