

Black, Hispanic stroke survivors more likely to have changes in brain's blood vessels

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Intracerebral hemorrhage is a life-threatening type of stroke caused by bleeding within the brain tissue. Survivors are at high risk of having another bleeding stroke. Most of these strokes are caused by changes in the narrowest blood vessels in the brain, a condition known as cerebral small vessel disease. A new study has found that differences in the extent of one type of cerebral small vessel disease may contribute to differences in people's risk for a second bleeding stroke. The research is published in the April 21, 2021, online issue of *Neurology*.

Cerebral small vessel disease is an umbrella term for a number of conditions that involve changes in the smallest blood vessels in the brain. These changes become more common with age and can lead to [stroke](#). One type of cerebral small vessel disease is hypertensive arteriopathy, which is arterial degeneration resulting from [high blood pressure](#).

"While Black and Hispanic bleeding stroke survivors in the United States display greater hypertension severity and higher blood pressure variability, these differences in hypertension control

do not fully account for disparities in bleeding stroke recurrence risk," said study author Alessandro Biffi, M.D., of Massachusetts General Hospital in Boston, and a member of the American Academy of Neurology.

The study looked at 922 people who had survived a bleeding stroke. Of the group, 655 identified as white, 130 Black and 137 Hispanic. People were interviewed three months after their first stroke and every six months afterwards for an average of 18 months to about two years to determine if they had had a second stroke. Medical records were also reviewed.

During that time, 111 people had a second bleeding stroke, including 64 [white people](#), 24 Black people and 23 Hispanic people. After researchers adjusted for other factors that could affect stroke risk such as age and sex, they found that on average, Black people were 60% more likely to have another bleeding stroke than white people. Hispanic people were 50% more likely to have another bleeding stroke than their white counterparts.

Researchers looked at the people's brain scans for markers of cerebral small vessel disease and subtypes, including hypertensive arteriopathy. For this subtype, they rated the severity of four markers on a scale of zero to four. For example, one point was given for the presence of a certain type of white matter hyperintensities, which are brain lesions that are signs of brain damage; another point for a kind of cerebral microbleeds, which are small deposits of blood in the [brain](#).

The average score for white people was 1.5 points compared to an average of 2.5 points for Black people and Hispanic people.

Researchers found that people who had more small vessel disease markers right after their first stroke were at higher risk for a second stroke. They also found that people with greater severity of

hypertensive arteriopathy were at increased risk of second stroke.

"In the United States, people who are Black or Hispanic often do not have the same access to preventive and curative health care as white people do," Biffi said. "That may explain why in this study, Black and Hispanic people were more likely to have changes show up on their MRI that are markers for cerebral small vessel disease, particularly one associated with high blood pressure. This may also explain why those groups have a higher risk of a second stroke."

A limitation of the study is that most participants were from care centers with expertise in stroke care. As a result, the study may have included more people with more severe strokes and greater amounts of cerebral small [vessel](#) disease than the general population.

Provided by American Academy of Neurology

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