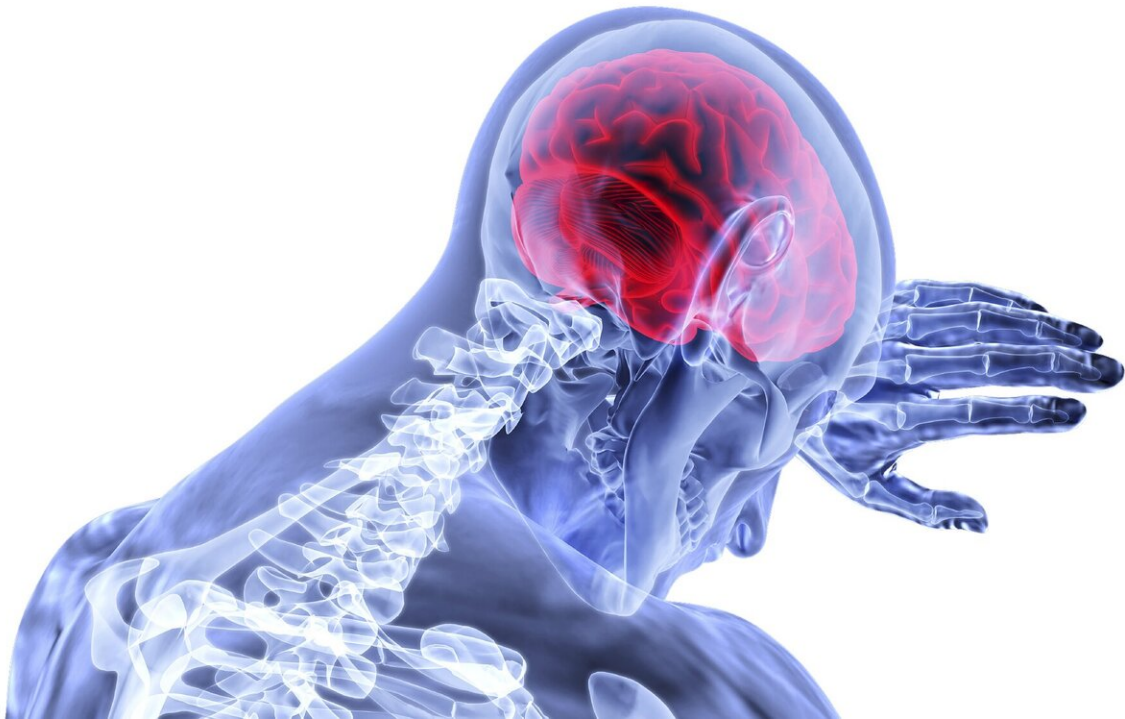


Low stroke risk in patients with very narrowed neck arteries

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The risk of having a future stroke caused by a severe blockage in an artery in the neck that is not currently causing any symptoms is so low that most patients with this condition—**asymptomatic carotid stenosis**—could potentially be treated with the newest medications and may not require surgery, new Kaiser Permanente research suggests.

"The question of how to best treat patients with narrowing of the carotid artery without symptoms has been a long-standing research priority," said Robert Chang, MD, a physician researcher at the Kaiser Permanente Division of Research and a vascular surgeon with The Permanente Medical Group. "We decided to take a step back and to begin our study by asking how likely is it that these patients will actually have a [stroke](#) related to their severe stenosis. Our analyses showed that this risk is so low that it appears that, for most patients, [surgery](#) may not be necessary."

The study, published May 24 in *JAMA*, is believed to be the largest and most current assessment of long-term stroke risk in this population.

Carotid stenosis occurs when plaque—fatty cholesterol deposits—builds up in one or both of the large arteries on either side of the neck that carry blood to the brain, face, and head. This narrowing in the artery is typically diagnosed after a patient has experienced symptoms of a stroke, but it can also be found during a routine physical examination.

Randomized [clinical trials](#) conducted prior to 2010 concluded that surgery to remove the blockage was the best option for reducing stroke risk in patients with severe stenosis. But as [medical treatments](#) for reducing stroke risk have improved, physicians have begun to wonder whether surgery should remain the preferred treatment for asymptomatic patients.

To answer that question, Dr. Chang and his colleagues identified 3,737 Kaiser Permanente members in Northern California who had been diagnosed between 2008 and 2012 with severe (70% to 99% blockage) [asymptomatic carotid stenosis](#). None of these patients had previously had surgery.

The research team first looked to see how the stenosis had been treated. Reviewing the patients' medical records showed 1,423 patients had had

surgery to treat the stenosis, and 2,314 had not. The team also tracked which patients were taking a statin, a drug used to help [lower cholesterol](#) in the blood, or medication to reduce [high blood pressure](#). Next, the team looked to see how many patients had a carotid-related stroke on the same side as the severe carotid stenosis, following the patients through 2019.

Overall, 133 strokes were diagnosed in 129 patients during the follow-up period. Statistical analyses showed that the patients who did not have surgery had a 4.7% cumulative risk of having a stroke within 5 years of their carotid stenosis diagnosis.

The study's senior author, Mai N. Nguyen-Huynh, MD, a research scientist at the Kaiser Permanente Division of Research and regional medical director for primary stroke with The Permanente Medical Group, said the findings did not surprise her. "We suspected that we may find a low risk of stroke in these patients because there are now better stroke-prevention treatments, including medications to control blood pressure, prevent [blood clots](#), and reduce cholesterol, than when the original randomized trials were done," she said. "I think our study will make many patients and their doctors think twice about surgery if they can instead be on an effective aggressive [medical management](#) program to lower their stroke risk from asymptomatic carotid disease."

Dr. Chang and Dr. Nguyen-Huynh also currently lead a team at the Division of Research affiliated with a national randomized clinical trial, called CREST2, that is enrolling patients in a study comparing surgery or stenting to medical management in patients with asymptomatic severe carotid stenosis. "This head-to-head comparison of carotid surgery versus medical management in a clinical trial is what we need to help us determine the appropriate approach," said Dr. Nguyen-Huynh.

More information: Robert W. Chang et al, Incidence of Ischemic

Stroke in Patients With Asymptomatic Severe Carotid Stenosis Without Surgical Intervention, *JAMA* (2022). [DOI: 10.1001/jama.2022.4835](https://doi.org/10.1001/jama.2022.4835)

Provided by Kaiser Permanente

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