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## Stroke Health Center

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## Carotid Endarterectomy for TIA and Stroke

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Carotid endarterectomy is surgery to remove [plaque](#) buildup in the [carotid arteries](#). During a carotid endarterectomy:

A small incision is made in the neck just below the level of the jaw. The narrowed carotid artery is exposed.

The [blood](#) flow through the narrowed area may be temporarily rerouted (shunted). Rerouting is done by placing a tube in the vessel above and below the narrowing. Blood flows around the narrowed area during the surgery.

The artery is opened and the plaque is carefully removed, often in one piece.

A vein from the leg may be sewn (grafted) on the carotid artery to widen or repair the vessel.

The shunt is removed, and the artery and [skin](#) incisions are closed.

For more information about making the decision to have surgery, see:



[Stroke: Should I Have Carotid Endarterectomy?](#)

### What To Expect After Surgery

The surgery often takes about an hour. Recuperation includes spending a short time in the recovery room and may include about 24 hours in the intensive care unit to watch for complications.

The hospital stay usually is 1 to 3 days. And normal activities can be resumed within a week as long as the activities are not physically demanding. There may be some aching in the neck for up to 2 weeks. It is important not to turn your head too often or too quickly during your recovery.

### Why It Is Done

Your doctor may suggest that you have this surgery if:

You have had a mild [stroke](#) or one or more [transient ischemic attacks](#) (TIAs) in the past 6 months **and** you have 70% or more narrowing in your carotid artery.

You have a low risk of complications from the surgery.

You have 50% to 69% narrowing and have had at least one of the following:

One or more TIAs in the past 6 months.

A series of small strokes in the past 6 months, and each small stroke has left you a little more disabled.

A mild or moderate stroke in the past 6 months.

### How Well It Works

#### Recommended Related to Stroke

##### [Surviving Stroke: A Personal Story](#)

It all started with a headache -- pounding pain behind the left eye -- that wouldn't go away. A healthy 37-year-old at the time, Jill Bolte Taylor tried to shake the pain with a cardio workout. But that didn't work. Feeling rocky, Taylor headed for her shower. She noticed herself losing coordination and struggling with balance -- she had to lean against her shower wall. The shower's roar startled her, and her sense of where her body began and ended was fading. "My perception of myself was that..."

[Read the Surviving Stroke: A Personal Story article >>](#)

You are most likely to benefit from surgery if you have had symptoms and if your carotid artery is narrowed by 70% or more. People with less than 50% narrowing do not seem to benefit from surgery.<sup>1</sup>

Carotid endarterectomy is more effective than treatment with medicine alone in [preventing stroke](#) for people who have symptoms that can be attributed to a 70% to 99% blockage of the carotid arteries.<sup>2</sup>

## Risks

The major risks associated with carotid endarterectomy are:

Stroke.

[Heart attack](#).

[Breathing problems](#).

[High blood pressure](#).

Infection.

Injury to nerves (usually causing vocal cord paralysis and problems with managing saliva and [tongue](#) movement).

Bleeding in the [brain](#).

Plaque buildup, which may redevelop as a late complication between 5 months and 13 years after surgery.

Death.

## What To Think About

Carefully weigh the benefits and risks of surgery, and compare them with the benefits and risks of medicine therapy. The success of medicine therapy will depend on how much narrowing (stenosis) is present in the arteries and the choice of medicine. Risks of surgery depend on your age, your overall health, the skill and experience of the surgeon, and the experience of the medical center where the surgery is done.

Tests such as carotid ultrasound, carotid arteriography, CT angiography, or magnetic resonance angiography (MRA) are needed before surgery to evaluate the amount of plaque buildup in the carotid arteries and the flow of blood through the narrowed area. (For more information, see the Exams and Tests section of the topic Stroke.) The blood vessels beyond the hardened area are also evaluated. If those vessels are severely damaged, surgery may not be helpful.

Carotid endarterectomy can be done several months after a stroke or TIA. But people benefit most from the surgery if it is done within 2 weeks of the stroke or TIA. Delaying surgery longer than 2 weeks increases the risk for stroke, because people are more likely to have a stroke in the first few days and weeks after a first stroke or a TIA.

The likelihood of complications from carotid endarterectomy varies, depending on the skill and experience of the surgeon. The American Heart Association Stroke Council recommends that surgery be done by a surgeon who has complications in less than 6% of the endarterectomy surgeries that he or she performs and that the hospital rate of complications be just as low.<sup>2</sup>

Before surgery, any medical condition that increases the risk for stroke, such as [high blood pressure](#) or [heart disease](#), needs to be controlled.

The benefits of surgery may be temporary if disease or causes are not also treated. Using long-term [aspirin](#) treatment, getting regular [exercise](#), [lowering cholesterol](#) levels, eating a low-fat [diet](#), and quitting [smoking](#) are important aspects of postsurgery treatment.

Complete the [surgery information form \(PDF\)](#) to help you prepare for this surgery.

## Citations

1. Biller J, et al. (1998). Guidelines for carotid endarterectomy: A statement for healthcare professionals from a special writing group of the Stroke Council of the American Heart Association. *Circulation*, 97(5): 501-509.
2. Furie KL, et al. (2011). Guidelines for the prevention of stroke in patients with stroke or [transient ischemic attack](#): A guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. Published online October 21, 2010 (doi: 10.1161/STR.0b013e3181f7d043).

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