

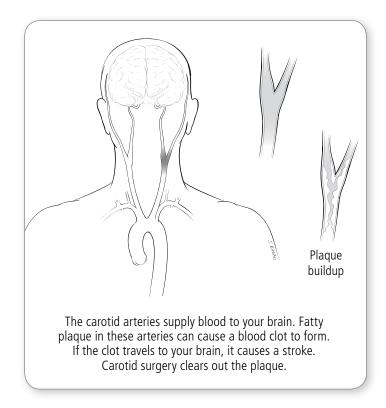
Carotid Surgery

Carotid surgery, also called **carotid endarterectomy**, treats carotid artery disease. This fact sheet explains the surgery and how to care for yourself afterward.

What is carotid artery disease?

There are two **carotid arteries**, one on each side of your neck. They are the main blood vessels in your neck that provide blood to your brain. In some people, a sticky substance called **plaque** can build up in the carotid arteries over time. In carotid artery disease, the plaque narrows and stiffens the artery.

Carotid artery disease can lead to a stroke. Rough plaque edges can cause blood to form a clot that travels toward the brain. Or, a piece of the plaque can break off and travel toward the brain. The clot or plaque can block the blood from getting to the brain. If it blocks a tiny artery, you experience a TIA (transient ischemic attack), or "ministroke." If it blocks a larger artery, you experience a stroke that can cause permanent brain damage or even death.



Talking with your doctor about carotid surgery

Before you are scheduled for carotid surgery, you will meet with your doctor to discuss it. The table below lists the most common potential benefits, risks and alternatives for carotid surgery, but other benefits and risks may apply in your unique medical situation. Talking with your doctor is the most important part of learning about the surgery. If you have questions, be sure to ask.

Potential benefits	Risks and potential complications	Alternatives
Carotid surgery removes the plaque from one or both carotid arteries, which can help prevent a stroke.	Like any surgery, carotid surgery has risks. Yet complications are rare. Risks and potential complications of carotid surgery include:	Alternatives to carotid surgery may include:
	 Negative reaction to the anaesthesia used during surgery Bleeding or infection at the surgery site Blood clots or bleeding in the brain Stroke, seizures, or brain damage (rare) 	 Medication and diet to lower cholesterol or prevent clots. Carotid stenting: a catheter is threaded through a blood vessel and places a stent (tiny wire mesh tube) to hold the carotid artery open.
	 Heart attack Injury to nerves, esophagus, or trachea (windpipe) Plaque building up again in the arteries 	

Why might I need carotid surgery?

Carotid surgery might be recommended if one or both carotid arteries are blocked or narrowed by plaque. Signs include:

- A TIA (mini-stroke) or stroke, with symptoms such as slurred speech, weakness, blurred vision, and confusion
- An abnormal sound in your artery (a bruit) that your doctor hears during a physical exam

Your doctor will do tests to locate the blockage or narrowing and see how bad it is. If you have had a stroke, your doctor will assess whether the surgery will increase your risk of another stroke or help prevent it. Your doctor will talk to you about the risks and benefits of carotid surgery for you.

How do I prepare for carotid surgery?

As you prepare, follow these guidelines to make the surgery go more smoothly:

- Tell your doctor about all medications you take. This includes prescription medications, over-the-counter drugs, herbal remedies, and vitamins.
- Follow your doctor's directions about medications. You will need to stop taking blood thinners, or any medication that makes it harder for your blood to clot, for two weeks before your surgery. You may need to adjust your medication if you have diabetes. Always check with your doctor before stopping medications.
- Plan to spend the night. You will spend a night or two in the hospital after your procedure. Bring items with you (such as a robe, slippers, and a toothbrush) that will make you more comfortable.
- Fast the night before. If directed by your doctor or nurse, don't eat or drink anything after midnight the night before the surgery.

- Tell your doctor or hospital staff if you:
 - have a cold, flu, or other illness the day of the surgery
 - may be pregnant
 - have allergies to any medications

What happens before the surgery?

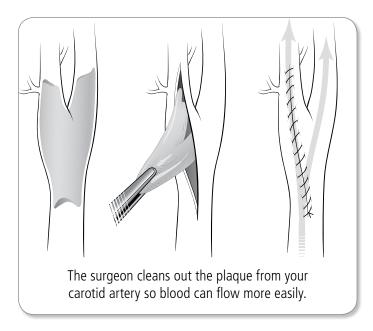
Here's what happens after you arrive at the hospital or clinic and register for the surgery:

- **Getting ready.** You'll change into a hospital gown. If necessary, hair on your neck near the surgery site will be clipped or shaved.
- Marking the correct site. Your doctor will mark the site for the surgery with "yes."
- **IV line.** An IV (intravenous) line will be placed in your arm or hand to give you medication.
- Arterial line. A catheter (thin tube) will be placed into an artery (usually in your wrist, elbow, groin, or foot) to monitor your blood pressure during the procedure.

What happens during the surgery?

The surgery usually takes about two to four hours. Here's what happens during the surgery:

- 1 Monitoring and medication.
 - Devices will be attached to keep track of your heart rate, blood pressure, breathing, and brain activity.
 - You will receive medication to make you sleep, so you don't feel or remember the surgery. You will also receive antibiotics to prevent infection.
- **Position.** You will lie on a surgical table, with your head turned to the side on a padded support.
- **3 Incision**. The surgeon will make an incision (cut) in your neck.
- 4 Accessing the artery. The surgery team will temporarily stop the blood flow through the artery by clamping it off. Or, a thin tube (shunt) will be used to change the route of blood to bypass the blockage. Your other carotid artery will continue to supply blood to your brain.



- **5 Opening the artery.** The surgeon will open up the artery at the blocked area.
- **6 Clearing the artery.** The surgeon will clear the plaque buildup from the artery.
- **7 Closing the artery.** The surgeon will close the clean artery with stitches, a special patch, or a section of one of your veins.
- **8 Closing the incision**. The surgeon will close the incision in your neck with stitches that will be absorbed into your skin later.

What happens after the surgery?

After the surgery, here's what will happen:

- Monitoring. After the surgery you'll be taken to an
 intensive care unit, where healthcare providers will
 check your blood pressure, breathing, and other signs.
 You may have a temporary tube that drains fluid from
 the incision.
- Hospital stay. You will stay in the hospital for a day, possibly two.

What should I do after I go home?

There are several ways you can take care of yourself and aid in your recovery:

• Follow your doctor's advice to manage pain.

At first your neck may be sore and it may be hard to swallow. Your doctor will prescribe medication for pain, and eating softer foods can help.

- Take medication as directed by your doctor. You may need to take an anticoagulant (medication that helps prevent blood clots).

 Keep taking it until your doctor tells you to stop.
- **Don't drive a car** until your doctor says it's okay to drive.
- Take precautions to limit swelling and pain. For the first week, when you lie down keep your head elevated on pillows to limit swelling. Gradually resume normal neck movement.
- **Limit strenuous activity** for a few weeks. Don't lift objects over 5 pounds, and don't do strenuous exercise. Follow your doctor's advice about going back to work and returning to your normal routine.
- Watch for symptoms. Pay attention to certain changes in how you feel, especially neck swelling or a headache on the side where the procedure was done. Let your doctor know if you notice any of the symptoms listed below.
- If you've had a stroke, you'll have further treatment such as medication or stroke rehab. See Intermountain's guide titled *Recovering from a Stroke* to learn more.

When should I call the doctor?

Call your doctor right away if you notice any of these symptoms:

- Signs of infection, including a fever over 101° F or symptoms near the incision, such as redness, swelling, discharge, or pain that gets worse
- Coughing or shortness of breath
- Chest pain discomfort
- Call 911 if you have any of these symptoms:
- Memory loss, dizziness, or difficulty speaking
- Weakness or difficulty moving
- Vision problems
- A headache that is on the side where the procedure was done
- Any other headache that is sudden or severe

How can I help lower my risk of stroke?

Even if the plaque has been cleaned out of your carotid arteries, it can build up again. To reduce your risk of a future stroke, you'll need a long-term prevention plan. Follow these guidelines:

- If you use tobacco, stop now. Intermountain's handout *Quitting Tobacco: Your Journey to Freedom* has strategies that can help.
- Monitor and manage your blood pressure. High blood pressure (also called hypertension) increases your risk. A healthy diet can help, and you may also need to take prescription medication to control your blood pressure.
- Lower your cholesterol. Cholesterol is a soft, waxy substance that can cause plaque to form in your arteries. You can control cholesterol with a healthy diet and regular physical activity. Your doctor may also prescribe medication to control your cholesterol.
- If you have diabetes, keep it under control.
 Diabetes (high blood glucose) can damage your arteries and increase your stroke risk. Follow your doctor's directions about diet, activity, and medication. An A1c test measures how well you control your blood glucose over several months, and it's a helpful test for you and your doctor as you manage diabetes.
- Eat a healthy diet (see the box at right) and enjoy regular activity to take off extra weight. Ask your doctor about Intermountain's handout Weigh to Health for tips and encouragement.
- Limit alcohol. A good rule is no more than 2 drinks a day for men and no more than one drink a day for women.

Healthy, delicious food

How can you lower your cholesterol, manage blood sugar, control blood pressure, and have a healthier future? Follow these six building blocks:

- 1 Eat lots of fruit and vegetables. Along with crunch and flavor, they give you healthy fiber and nutrients.
- 2 Eat more whole grains. Whole wheat, oatmeal, and brown rice are just a few examples of these tasty foods that give you fiber and complex carbohydrates.



3 Choose unsaturated fats and oils.
Unsaturated fat is liquid at room
temperature, and comes mostly
from plant sources. Examples
include olive and canola oils, nuts,
olives, avocados, and salmon.



4 Choose healthy proteins. Some sources of protein — fish, beans, soy, and nuts — can protect your heart and blood vessels over time.



5 Select low-fat dairy products. Stick with milk that's 1% or less fat, and enjoy low-fat or fat-free yogurt and cottage cheese.

