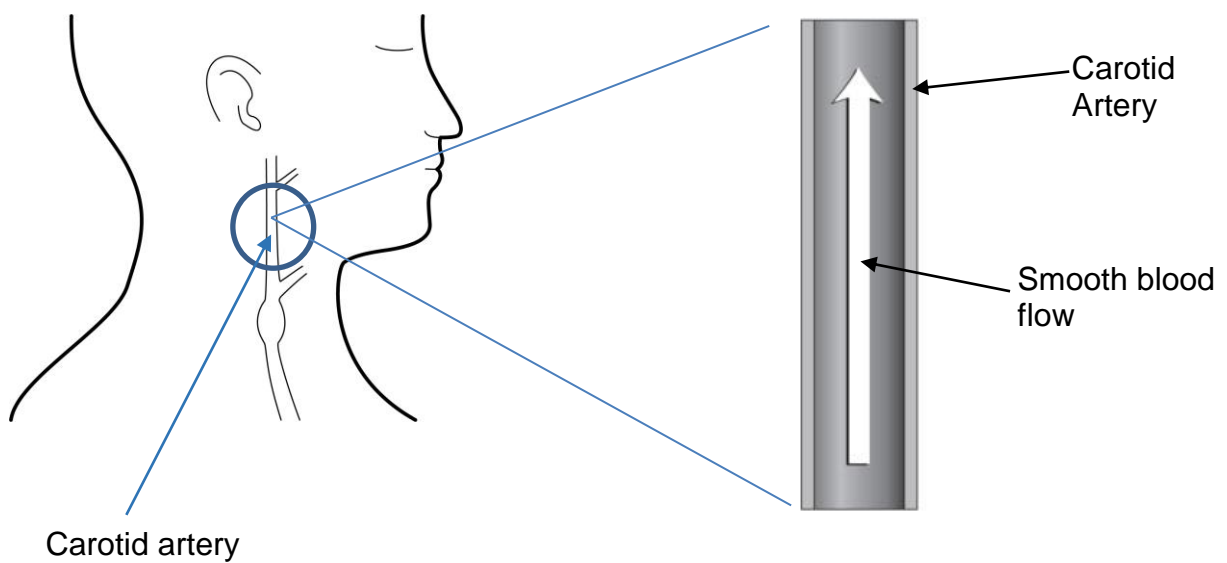


Carotid Stenosis

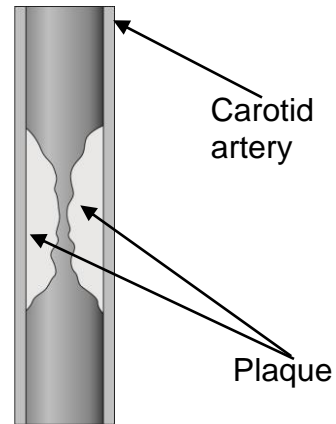
What are the carotid arteries?



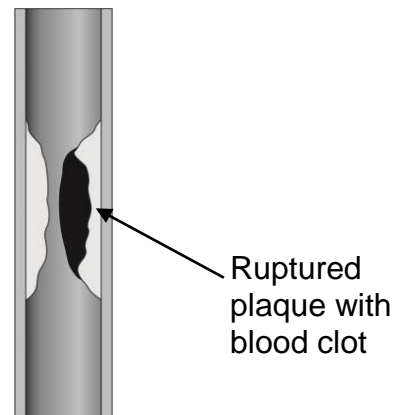
The carotid arteries are on the sides of your neck and supply blood to your brain.

What is carotid stenosis?

1. Carotid stenosis occurs when the carotid arteries become narrowed by fatty deposits called atherosclerotic plaque.

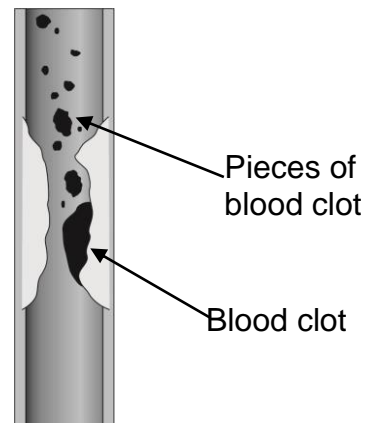


2. The plaque can rupture. If this happens, a blood clot will form.



3. The blood clot can break into smaller pieces and travel to a smaller artery causing a blockage of blood flow to the brain.

This can result in a TIA (transient ischemic attack) or stroke.



How do I know if I have carotid stenosis?

Your doctor will order a test to measure blood flow in your carotid arteries and to look for any plaque build-up. This test is called a Carotid Ultrasound or a Carotid Doppler.

You may also have a Computerized Tomography Angiography (CTA) or a Magnetic Resonance Angiography (MRA).

Test	What it does
CTA	You lay in a scanner. Contrast dye is injected into the arteries through an intravenous line. A CT scan is then used to take pictures of the blood vessels in your head and neck.
MRA	You lay in a scanner. You may or may not need contrast dye. Magnetic field and radio waves are used to take pictures of the blood vessels in your head and neck.

How is carotid stenosis treated?

A TIA or stroke is not always caused by carotid stenosis. Therefore, patients with carotid stenosis should be seen in a stroke prevention clinic by a stroke specialist to determine the best way to treat this condition.

The goal of treating carotid stenosis is to reduce your chances of having a TIA or stroke. For more information on the signs of TIA and stroke, see page 10.

Treatment of carotid artery disease usually involves a combination of **lifestyle changes**, **medication** and sometimes **surgery**.

Lifestyle changes

Making healthy lifestyle choices can reduce your risk of having a TIA or stroke.

Risk factor	What you can do....
Tobacco use	<ul style="list-style-type: none"> ✓ Quit tobacco products. This will help to reduce further plaque build-up in your carotid arteries and will also help to prevent blood from clotting or sticking to the plaque. You are more likely to be successful in quitting smoking if you plan ahead and have support: <ul style="list-style-type: none"> • Get help and counselling from your health care provider • Make your home and car smoke-free • Use quit smoking medications like the nicotine patches to manage your cravings and withdrawal symptoms ✓ Contact your health care provider or Smokers' Helpline for support and information on medications to help you quit: <ul style="list-style-type: none"> • Smokers' Helpline toll-free at 1-877-513-5333 or www.smokershelpline.ca
High blood pressure	<ul style="list-style-type: none"> ✓ Keep your blood pressure in check. This will help to reduce further plaque build-up in your carotid arteries. ✓ Check your blood pressure regularly. Your blood pressure should be less than 140/90, or less than 130/80 if you have diabetes. If your blood pressure is consistently above these numbers, follow up with your family doctor. ✓ Reduce alcohol intake. For women: less than 10 drinks per week and no more than 2 a day. For men: less than 15 drinks per week and no more than 3 a day
High blood fats	<ul style="list-style-type: none"> ✓ Aim for an LDL cholesterol level less than 2.0.

Risk factor	What you can do....
Diabetes	<ul style="list-style-type: none">✓ Keep your blood sugars within the normal range. This will help to reduce further plaque build-up in your carotid arteries.✓ If you have diabetes, see your family doctor every 3 months to have your bloodwork checked.✓ Aim for a 3 month average blood sugar, also called Hemoglobin A1C of less than 7%.
Unhealthy eating	<ul style="list-style-type: none">✓ Healthy eating can improve your blood pressure, blood fats and weight, decreasing your risk for stroke. See pages 6, 7 and 8 for more information.
Not enough physical activity	<ul style="list-style-type: none">✓ Include at least 30 minutes of physical activity most days of the week.✓ Regular physical activity can also help you lower blood pressure, cholesterol and improve your blood sugars.
Stress	<ul style="list-style-type: none">✓ Identify your stressors, be active, make time for yourself, and laugh often.✓ Try to find a balance in your work, personal time and activities.✓ Find someone you can talk to. This is an important way to reduce stress.

Eat healthy

- Eat mostly plant-based foods daily such as:
 - vegetables and fruit
 - legumes (such as kidney beans, black beans, chick peas and lentils)
 - nuts, nut butters and seeds (unsalted)
 - whole grains such as whole grain bread, brown rice or pasta, couscous, quinoa, barley, bulgur and wheat berries
- Eat fish a few times a week.
- Choose white meat such as chicken or turkey. Limit red meat. Avoid processed or cured meats.
- Include low fat dairy products such as milk, milk alternatives (fortified soy beverage) or yogurt daily.
- Limit cheese to portions the size of your thumb.
- Include healthy oils such as olive oil or canola oil.
- Limit sweets to once a week or less.
- Avoid soft drinks and juice. Drink water when thirsty and eat fruit instead.

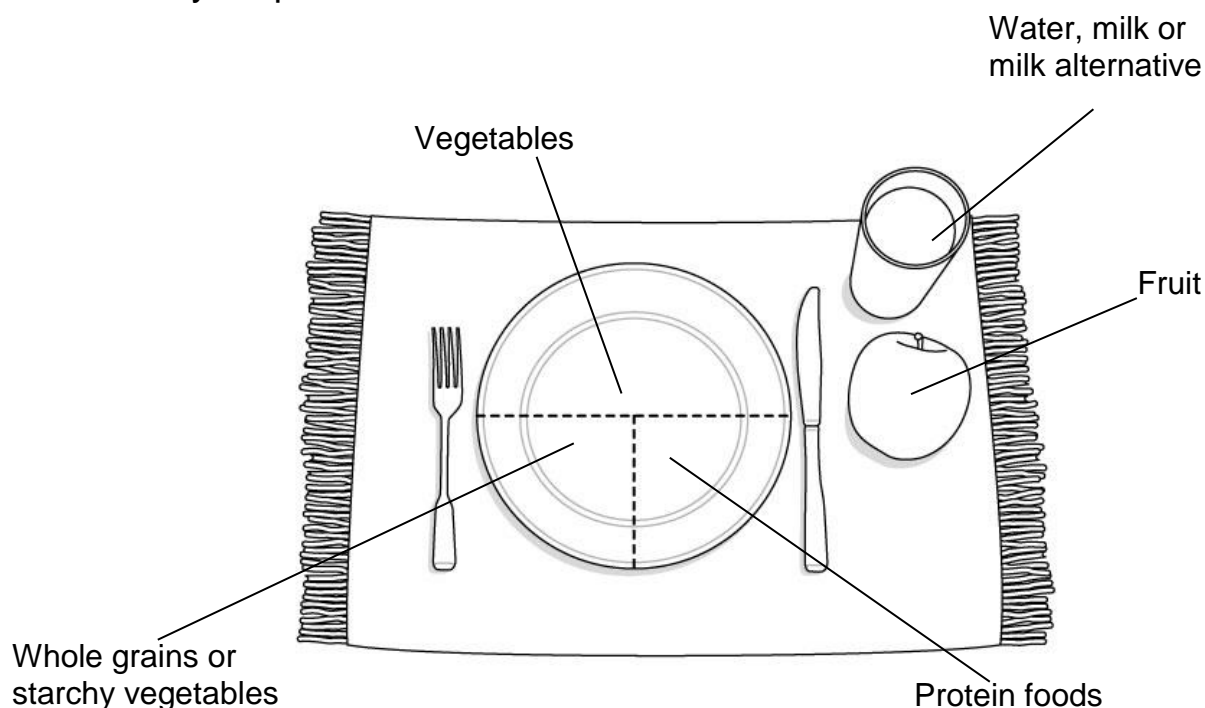


What do healthy servings look like?

Before you put food on your plate, in your mind divide your plate into 4 equal parts:

- Fill $\frac{1}{2}$ of your plate with vegetables (such as broccoli, asparagus, green beans, carrots, lettuce or other green leafy vegetables). Vegetables contain fibre, plenty of vitamins and minerals, and are low in calories.
- Fill $\frac{1}{4}$ of your plate with whole grains (see page 6) or starchy vegetables such as potatoes (white or sweet), or corn.
- Fill the other $\frac{1}{4}$ of your plate with protein foods such as fish, lean meats, eggs, meatless protein choices like legumes (such as kidney beans, black beans, chick peas or lentils) or tofu.
- Have a glass of water, milk or milk alternative (fortified soy beverage) and a piece of fruit to complete your meals.

Use this picture as a guideline to help you keep healthy servings on your plate.



Salt

Limit your intake of salt (sodium).

Most of the sodium in your diet comes from processed foods and restaurant or take-out meals.

Adults should have less than 2000 milligrams (mg) of sodium each day. It is important to read labels to find out the sodium content of foods.

The best thing you can do is to eat unprocessed and homemade foods more often. That way YOU control the sodium!



Use herbs, spices and lemon juice instead of salt containing seasonings to flavour food.

**Fibre**

Did you know most Canadians get ½ of the fibre they need every day?

To increase your fibre include whole grains (see page 6), fruits and vegetables, oats, oat bran, ground flax seed, psyllium, and dried or canned legumes such as kidney beans, black beans, chick peas or lentils.

**Medications**

Medication will often be prescribed to control blood pressure, lower cholesterol and to keep your blood sugars in the normal range. These medications can help to prevent the further build-up of plaque in the carotid arteries. Your doctor may also prescribe a daily aspirin or other blood-thinning medication to prevent blood clots from forming. Patients on blood-thinning medications may be prescribed a medication to prevent stomach ulcers.



Surgery

For some people carotid stenosis may be asymptomatic which means you have had no symptoms of TIA or stroke that can be linked to the carotid artery. Most of these patients are treated with medication and do not need surgery. However, surgery may be recommended for some patients.

For some people one or both of their carotid arteries may be 100% blocked. Surgery is not needed at this stage since blood clots cannot travel to the brain from an artery that is blocked. The blood has already found another way to the brain.

Surgery to remove the plaque in your carotid arteries will depend on factors that include:

- How much your artery is blocked
- Whether or not you had any stroke symptoms coming from the affected artery
- The length of time since you last had any stroke symptoms

There are two options for surgery:

1. Carotid Endarterectomy or
2. Carotid Stenting

Carotid Endarterectomy

A carotid endarterectomy is a surgery to remove the plaque from inside your carotid artery to improve blood flow and reduce the risk of TIA or stroke.

Carotid Stenting

Carotid stenting is a surgery to put a stent into one of your carotid arteries to improve blood flow and reduce the risk of TIA or stroke.

If you need to have surgery, the doctor will discuss the best option for you.

Watch for these warning signs of a stroke or TIA

FACE is it drooping?
ARM**S** can you raise both?
SPEECH is it slurred or jumbled?
TIME to call 9-1-1 right away.

ACT **F A S T** BECAUSE THE QUICKER YOU ACT,
THE MORE OF THE PERSON YOU SAVE.

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For more information on stroke and TIA, visit:

- www.heartandstroke.ca
 - www.csnstroke.ca
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