



Carotid Artery Disease

Circulating the Facts About Peripheral Vascular Disease

*Brought to you by the Education Committee
of the Society for Vascular Nursing*

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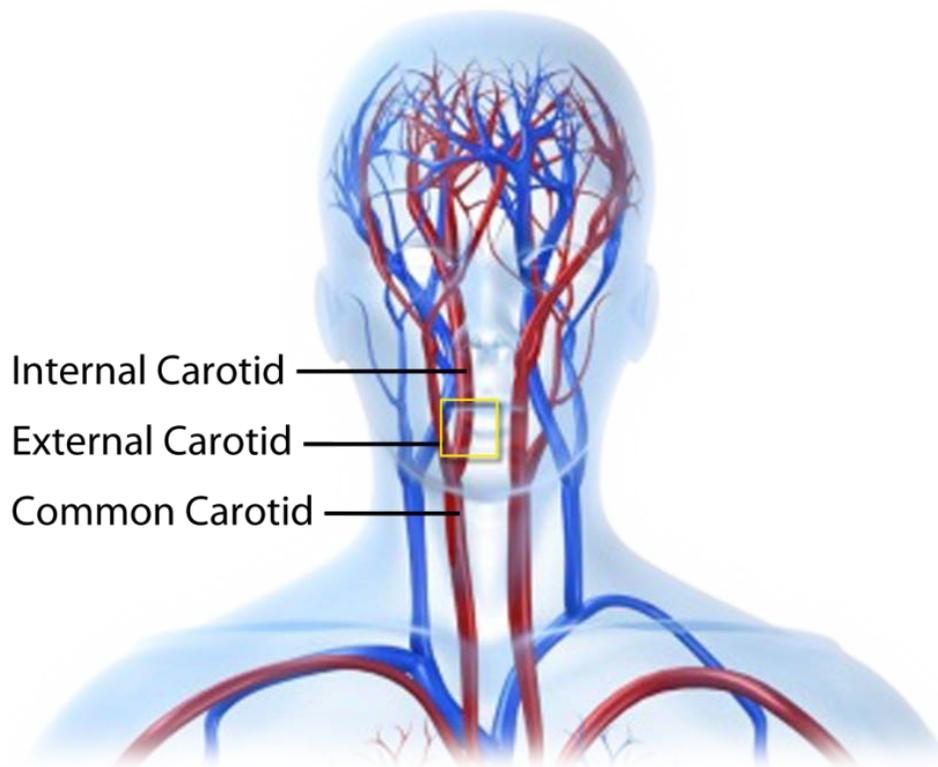
Carotid Artery Disease

This booklet will tell you and your family about carotid artery disease and treatments.

Your healthcare team (doctors, nurses and vascular technologists) will be involved in the assessment, diagnosis and treatment of your carotid artery disease.

This booklet will describe:

- The blood vessels involved
- Risk factors for carotid artery disease
- Tests done to diagnosis your disease
- Treatment options for carotid artery disease



What is Carotid Artery Disease?

The carotid arteries are blood vessels in the neck, on either side of the windpipe. They carry blood to the head and brain. Normally, the inner vessel walls are smooth (FIGURE 1). Over time, these arteries may become thickened and blocked due to atherosclerosis (FIGURE 2). Atherosclerosis is the buildup of cholesterol, protein and other substances together known as “plaque” to occur in the vessel. This buildup of plaque in the neck arteries over time causes the artery to become narrowed and blocked (called stenosis). This is known as carotid artery disease. Carotid artery disease may cause the following symptoms:

- Sudden weakness or numbness in the face or limbs, often on just one side of the body
- Unable to move one or more of limbs
- Trouble speaking or understanding speech
- Sudden trouble seeing in one or both eyes
- Dizziness or loss of balance
- A sudden, severe headache

The risk is that carotid artery disease may cause either a stroke or a transient ischemic attack (“mini-stroke”).

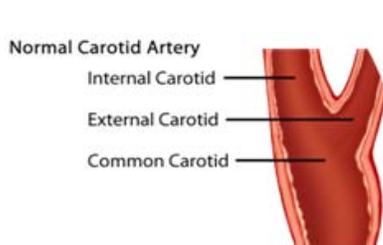


FIGURE 1

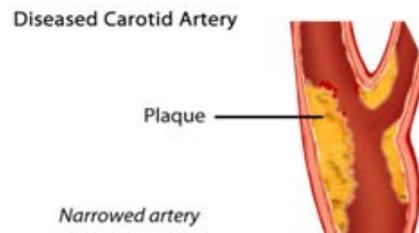


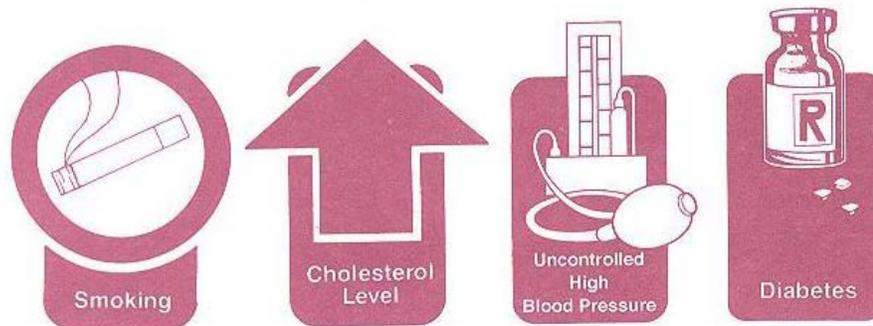
FIGURE 2

Who Will get Carotid Artery Disease?

Atherosclerosis may occur at any age, but is more common in people over the age of 45. It is not known who will develop this disease. Many people with atherosclerosis share certain risk factors. Some of these risk factors may be changed or treated and some may not.

Risk factors that can be changed or treated include:

- Tobacco use and exposure to second hand smoke
- High blood pressure (hypertension)
- High levels of blood lipids (cholesterol)
- Diabetes
- Heart disease
- Obesity
- Sedentary lifestyle (lack of exercise)
- Other problems (poor nutrition, high homocysteine level)



Risk factors that cannot be changed include:

- Aging
- Sex (male/female)
- Family history of arterial disease
- Race
- Genetic conditions

How Will my Doctor Know if I Have Carotid Artery Disease?

Your healthcare provider will ask questions and examine you. Your doctor may be able to hear a sound, known as a bruit, in your neck, which may indicate a narrowing in your carotid artery. This will help to decide if you need special tests. These tests may be non-invasive and/or invasive.

Non-invasive Testing

Non-invasive tests do not require use of needles, contrast, or x-ray. These tests are painless, with little risks or side effects. You do not need to do anything special before or after the test. These tests may be done as an outpatient.

Carotid Artery Ultrasound: This test uses sound waves. It shows the structure of the arteries in your neck. It is also used to check how blood flows to your brain. A gel will be placed on your neck. This allows sound waves to pass into your artery. The technologist will move a small instrument on your neck. Pictures of your blood flow will be seen on a monitor. This test will take about 30 to 60 minutes.

Invasive Testing: You may need to have tests that require the use of needles, contrast and/or x-ray. You will be told of any instructions needed before the test. Tell your healthcare provider if you have any allergies beforehand.

Magnetic Resonance Imaging (MRI): A x-ray procedure that does not use radiation. Strong magnetic fields and radio waves with a computer make detailed pictures of the body. If you have a pacemaker or other metal device, you cannot have a MRI.

Magnetic Resonance Angiography (MRA): A type of MRI that gives pictures of blood vessels in the body. The test uses a contrast medium to help see the blood vessels. An intravenous (IV) line is inserted in your arm and the contrast is injected through it. Pictures of blocked and narrowed arteries in your neck and head are created. If you have a pacemaker or other metal devices, you cannot have a MRA.

Computed Tomography Angiography (CTA): This test is similar to the MRA. Contrast is injected through an IV. The contrast creates images of blockages and/or narrowing of the arteries and x-ray pictures are taken.

Carotid Angiography/ Angiogram: This is an x-ray test that looks at the carotid arteries and other blood vessels in the head. The test is done in a specialized x-ray room. Contrast is injected through a catheter (hollow tube), put in into an artery in your groin or arm through a skin puncture site. The skin will be numbed so you will not feel the area being worked on. The contrast highlights the blood vessels while x-rays are taken. This will show narrowing or blockage of the arteries in a different way than a MRI or MRA. Afterwards, the tube will be removed and a bandage will be applied to the skin puncture. An angiogram will take between 30 to 60 minutes.

You cannot eat or drink before the study. You will be awake but will be given medication to help you relax. Depending upon the catheter location, after the study you may be asked to lie flat for a few hours. Your blood pressure and bandage over the skin puncture will be checked often.

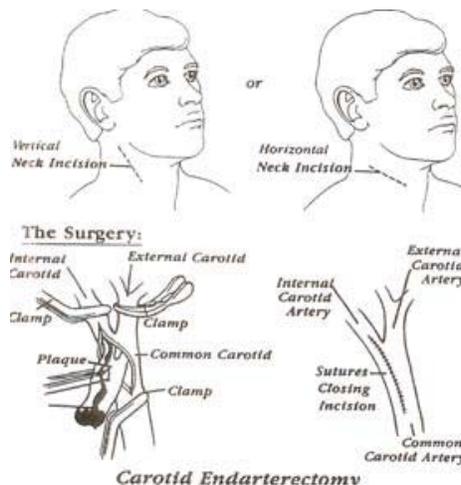
What Treatments are Available for Carotid Artery Disease?

The treatment for carotid artery disease depends upon:

- The location and/or degree of stenosis (blockage) found in the carotid artery
- The symptoms you may have experienced
- Your overall state of health

Mild or moderate carotid artery disease may be treated with medicines and control of risk factors. Regular scheduled follow up tests and appointments with your healthcare provider will be made.

Severe carotid artery disease may be treated with an operation known as carotid endarterectomy or in some cases a procedure called carotid angioplasty and/or stenting.



What is a Carotid Endarterectomy?

A carotid endarterectomy is a surgical procedure. An incision is made on the same side of the neck at the location of the carotid narrowing. The artery is exposed and the plaque is removed. The artery is then closed. The skin is then closed and a dressing is applied.

Anesthesia may be general or local. You will come into the hospital the morning of surgery. You may go home in 1-2 days after surgery.

Before surgery, your healthcare team will review your medicines with you. You may need to change how you take some of the medicines before the surgery. **If you smoke, you are advised to stop at this time.**

The day before surgery,

- You may be asked to take a shower with a special soap or use special cleaning wipes
- do not eat or drink anything after midnight or as instructed

The morning of surgery:

- You will wear a hospital gown
- Remove any jewelry, glasses, and dentures

What Happens After Surgery?

After surgery, you will be taken to the Post Anesthesia Care Unit or a monitored care unit. The nurses will:

- check your dressing
- pulse and blood pressure
- shine a flashlight at your eyes to check your pupil response
- ask you questions
- ask you to grip their hands
- move your arms and legs

You will be asked to cough, turn, and take deep breaths while you are in bed. These actions can prevent pneumonia or other breathing problems. Later in the day or the day after surgery, you will be able to get out of bed. You can eat your usual diet the day after surgery.

You will most likely be in the hospital for less than 48 hours. Please keep all follow up appointments with your healthcare team. You may have sutures or staples that need to be removed.

What Should I Expect after I go Home from the Hospital?

You may feel weak and tired when you are at home. This is normal. It may take a few weeks for you to feel like yourself again. Your healthcare team will tell you of activity restrictions. Do not do any heavy lifting and driving. If you are employed, your healthcare team will tell you when you may return to work. As you resume your usual activities at home, allow for rest periods. Do **NOT** smoke!

If you have questions or problems at home, contact your healthcare team. Slight dizziness, mild headache, mild swelling and/or numbness around the incision are common.

You should contact your doctor if you have:

- fever over 100 degrees Fahrenheit
- redness or any drainage from the incision
- weakness or numbness of an arm or leg
- changes in vision
- severe headaches
- difficulty breathing
- difficulty swallowing
- difficulty talking
- complaints of chest pain

What is Carotid Stenting and Angioplasty?

Carotid stenting and angioplasty, (or ballooning) is used to treat some patients. These procedures are performed in combination with an angiogram of the carotid arteries in a specialized x-ray room. Contrast is injected through a catheter (hollow tube), into an artery in your groin or arm through a skin puncture site. This will show narrowing or blockage of the arteries. After the blockage is identified, a balloon catheter is placed in the narrowed area of the carotid artery. The balloon is inflated to compress the plaque into the artery wall. This opens the artery. If a stent is used, it will then be placed to keep the artery open. These two procedures can be done alone or together. Afterwards, the catheter is removed from your groin/arm and a bandage placed over the skin puncture site.

Your healthcare team will tell you how to prepare for the procedure. The aftercare is similar to that following an angiogram. In addition, the nurses will be doing the same checks that were described above after a carotid endarterectomy. You will need to stay overnight in the hospital. You may be started on new medicine(s) to help keep the stent open. Do **NOT** smoke! Discharge activity instructions and follow up appointments with your doctor are similar to that of a carotid endarterectomy with the skin assessments focusing on the catheter puncture site.

Carotid artery disease is treatable. Control of modifiable risk factors and seeing your doctor at regular scheduled follow up appointments are essential to reduce the disease progression.

For More Information:

American Stroke Association www.strokeassociation.org

Society for Vascular Nursing www.svnnet.org