

Title: Carotid Artery Stenosis: what you should know.

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Abstract:

This is a patient education tool explaining the risk factors, symptoms, and various treatment options for carotid artery stenosis. Patient's who are at high risk for surgery can benefit from a less invasive procedure called stenting.

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## **Patient Education Tool**

### **1. What is Carotid Artery Stenosis?**

Your carotid arteries carry oxygen rich blood to supply your brain. There are two carotid arteries (one on each side of your neck). These arteries carry blood to the large front part of your brain where thinking, speech, personality, sensory, and motor functions take place.

Carotid artery stenosis is a narrowing of the carotid arteries due to a buildup of cholesterol deposits called a plaque or atherosclerosis. This narrowing decreases the amount of blood flow to the brain and increases your risk of having a stroke.

### **2. What are the symptoms?**

Most people with carotid artery stenosis don't have any symptoms. Some people may get warning signs of a future stroke. A Transient Ischemic Attack (TIA) or "mini-stroke" is a very important warning sign that someone is at high risk of having a stroke in the future. A TIA occurs when a piece of fatty material breaks away from the plaque and temporarily blocks an artery that supplies blood to the brain.

The symptoms of a TIA are temporary lasting from a few minutes to a few hours, but usually last less than 30 minutes. These symptoms include sudden loss of vision or blurred vision, weakness and or numbness and tingling on one side of the face or body, slurred speech, dizziness or loss of coordination.

A TIA is a medical emergency. If you or someone you know experiences any of the symptoms above call 9-1-1 immediately.

### **3. What are the Risk Factors for Carotid Artery Stenosis?**

The Risk factors for carotid artery stenosis are similar to those for coronary artery disease. These include: family history of either coronary artery disease or carotid artery stenosis, age > 75 (although the risk is higher in men than in women before the age of 75), smoking, high blood pressure, diabetes, obesity, and sedentary lifestyle.

### **4. What are the risks associated with having carotid artery stenosis?**

There is a direct relationship between the amount of carotid artery stenosis and the risk of stroke. A stroke can occur when a piece of the fatty plaque in the carotid artery breaks off and lodges in a smaller blood vessel. This deprives the area of the brain supplied by that vessel of oxygen causing symptoms similar to those of a TIA except they are permanent. A stroke can also be the result of other medical conditions for example bleeding in the brain or atrial fibrillation.

## 5. How is it diagnosed?

Carotid artery stenosis is usually detected during a routine physical exam. A doctor will listen to the arteries in your neck with a stethoscope and hear an abnormal wooshing sound of blood flowing through the narrowed artery. This sound is called a bruit but may not be present in everyone with carotid artery stenosis so it is very important to tell your doctor if you have been experiencing any of the symptoms listed above. Other diagnostic tests include:

**-Carotid duplex ultrasound:** uses sound waves to create a picture of the carotid arteries and detect the presence of narrowing,

**-Carotid angiography:** this is a more invasive imaging procedure where a special dye is injected into the artery and x-ray movies are taken that show any narrowing of the arteries.

**-Computerized tomography (CT scan):** A CT of the brain may be performed if your doctor suspects you have experienced a stroke or TIA. This will show areas of the brain that are damaged.

**-MR and CT angiography:** This is a less invasive procedure that gives pictures similar to those of carotid angiography, however carotid angiography is still considered to give the best images.

## 5. What are the treatment options?

### Lifestyle changes

- Quit smoking
- Control of high blood pressure, high cholesterol, and diabetes.
- Diet low in saturated fats, trans fats, cholesterol, and sodium.
- Weight loss if necessary
- Regular exercise

### Medical Therapy

All people with carotid artery stenosis should take a an aspirin daily to reduce the risk of stroke from blood clots. IF for some reason you cannot take aspirin, ask your doctor about alternative antiplatelet medications such as Plavix (clopidogrel). In some cases your doctor may prescribe Coumadin (warfarin) which also helps to prevent blood clots.

### Surgical Therapy

#### -Carotid endarterectomy

This procedure involves removing the plaque from the carotid artery. You are placed under general anesthesia and a surgeon makes a small cut in your neck to expose the artery. He then makes a cut in the artery and removes the plaque deposits. Both cuts are repaired with stitches. It is important to note that there is a 1-2% risk of stroke with this procedure and therefore it is only recommended for patients whose carotid stenosis is severe enough that they have a higher risk of stroke from the stenosis than they do from the procedure.

### **-Carotid stenting**

This is a newer less invasive procedure that can be performed while you are awake. A specially designed guide wire with a filter is placed beyond the site of the narrowing or blockage in the carotid artery. Once the filter is in place, a small balloon catheter is guided to the area of the blockage. When the balloon is inflated, the fatty plaque or blockage is compressed against the artery walls and the diameter of the blood vessel is widened (dilated) to increase blood flow. The balloon is removed and the stent is placed inside the artery to widen the opening and support the artery wall.

## **6. Which treatment option is right for me?**

Deciding the optimal treatment for carotid artery stenosis is complicated and can patient specific. The following are some generally accepted recommendations from the American Heart Association and the American Stroke Association, however, only you and you're doctor can determine the treatment option that is best for you.

For symptomatic patients, Medical treatment is recommended for stenosis of 69% or less. Surgical treatment is recommended for a stenosis of 70% or greater. If the patient with a 70% or greater stenosis has a high surgical risk, carotid artery stenting may be considered as an alternative to carotid endarterectomy.

For asymptomatic patients, medical treatment is recommended for a stenosis of 59% or less. Surgical treatment is an acceptable option for stenosis of 60% or greater.

**For more information please talk to your primary care physician.**

References:

American Heart Association/American Stroke Association guidelines for treatment of carotid artery stenosis.

[www.aafp.org](http://www.aafp.org)

[www.webmd.com](http://www.webmd.com)

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