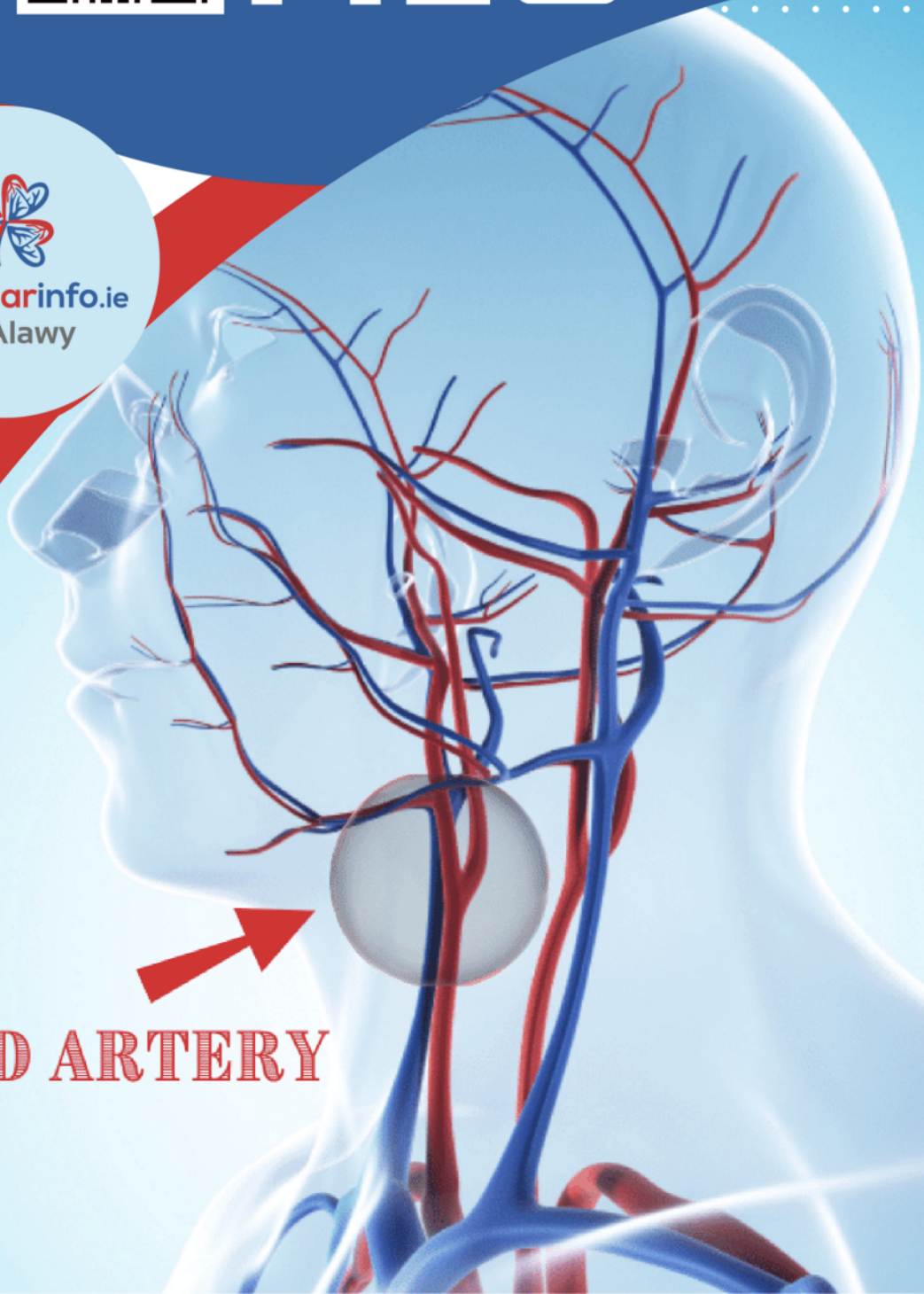


# CAROTID ENDARTERECTOMY

INFORMATION GUIDE FOR PATIENTS AND FAMILIES



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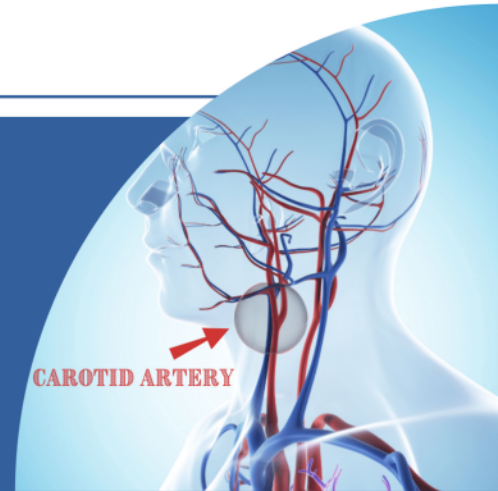
CAROTID ARTERY

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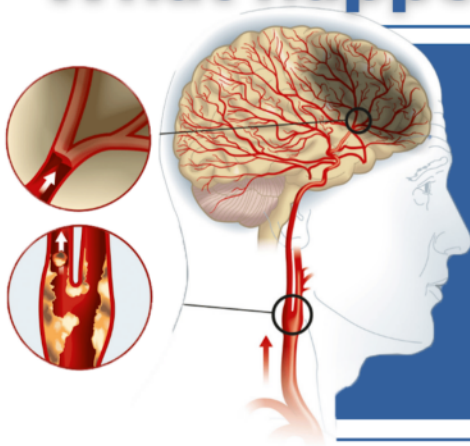
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# Why Carotid Artery is Important?

The carotid artery supplies blood to the head and neck tissues. You have two carotid arteries, each present on one side of the neck. They are vital because your brain receives nutrients through the branches of this artery. Therefore, any disease in this artery can directly or indirectly affect your brain and eyes



## ▶ What happens in Carotid Artery Disease?



The arterial disease involves the formation of atheroma. It is a plaque containing fat and other debris. Smokers or patients with high blood pressure and uncontrolled diabetes will likely develop plaques in their blood vessels. These plaques can form in any artery of the body.

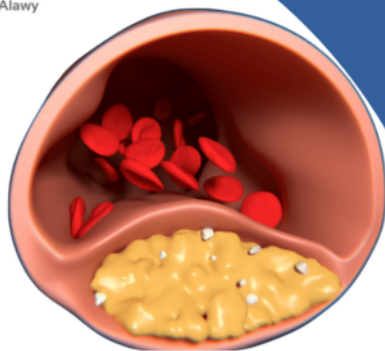
However, if this diseased process occurs in the carotid artery, the condition is known as carotid artery disease.

The clot formed in the carotid artery may get dislodged and trapped in a smaller artery supplying the brain tissue. This could result in either TIA or stroke. That is the reason why carotid artery disease is a dangerous condition.

## ▶ What Causes Carotid Artery Disease?

Atherosclerosis (fatty plaque formation in the blood vessels) is the main reason behind the development of carotid artery disease. Furthermore, atherosclerosis is an evil that damages arteries and can also lead to other debilitating conditions like heart attack and peripheral artery disease. Therefore, you must know about the potential risk factors that increase your likelihood of having atherosclerosis.

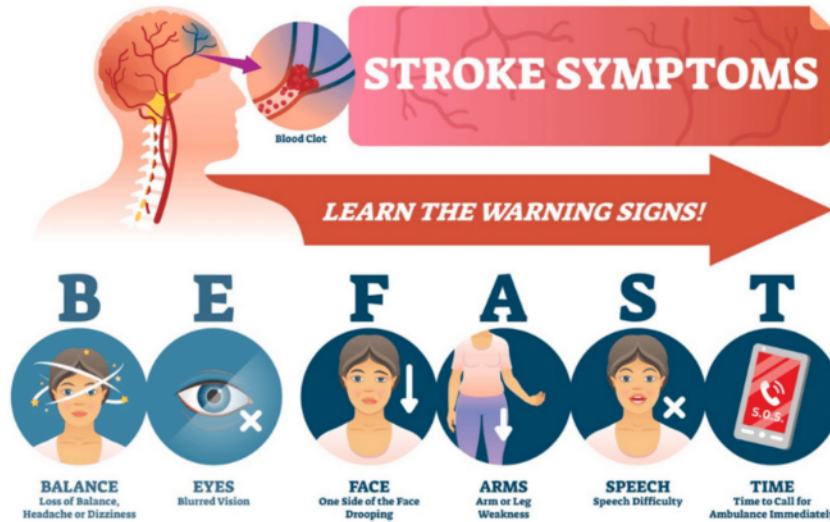
1. Smoking
2. High blood pressure
3. High blood cholesterol
4. Diabetes
5. Physical inactivity
6. Ageing
7. Family history of the disease



# What are the Symptoms of Carotid Artery Disease?

Patients usually don't know they have carotid artery disease until they have a TIA, stroke, or ultrasound screening test.

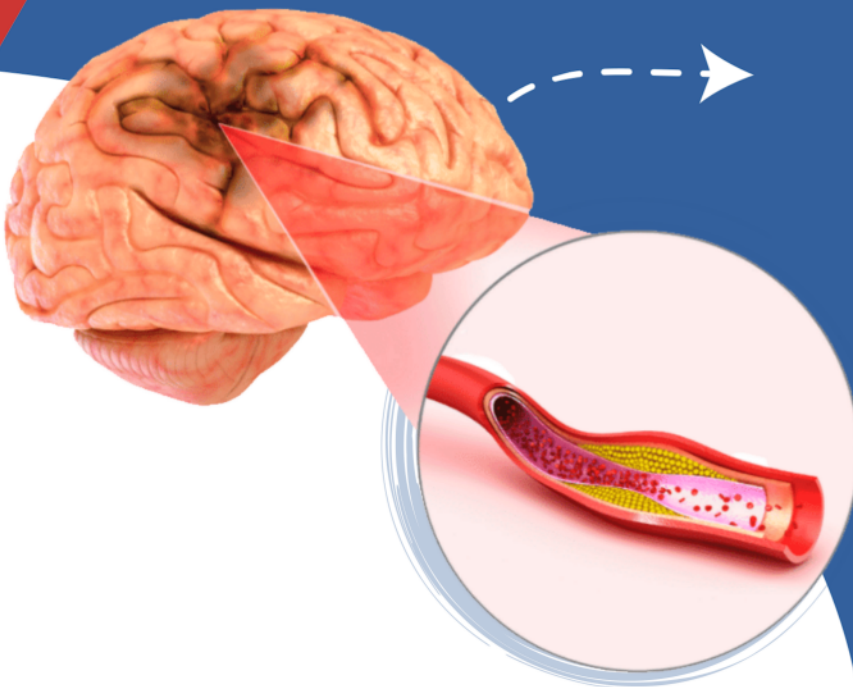
Significant signs of stroke that you need to know are the following.



1. Visual abnormalities, sometimes complete blindness
2. Facial abnormalities involving drooping of eyelids and deviation of lips
3. Weakening of muscles or numbness on the part of the body
4. Speech problems, patients usually can't find proper words while speaking
5. Loss of coordination during body movements

## How Does CAD Lead to Stroke?

In carotid artery disease, narrowing of the carotid arteries occurs due to plaque formation. Sometimes, plaque breaks off, and its pieces travel distally, resulting in the blockage of smaller arteries supplying the brain. If this blockage is resolved within 24 hours, you have suffered from a transient ischaemic attack (TIA). However, if the symptoms don't resolve even after 24 hours, your condition is referred to as a stroke.



# How to Diagnose a Case of Carotid Artery Disease?

Your GP develop the diagnosis of carotid artery disease using the same three steps that are important for diagnosing any medical condition.

- ▶ **Medical history:** It involves information about your health complaints, risk factors
- ▶ **Physical examination:** It involves the examination of your eyes, face and body parts to look for any signs relating to TIA or stroke
- ▶ **Investigations:** Finally, your GP advises you on some investigations to confirm the diagnosis. Critical investigations you will need for CAD are duplex ultrasound scan.



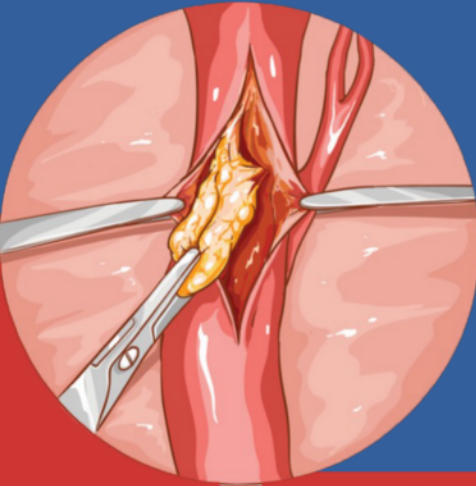
## What Does the Treatment of CAD Involve?

**Treatment of carotid artery disease depends upon the severity of the disease and the presence of symptoms such as stroke or TIA.**

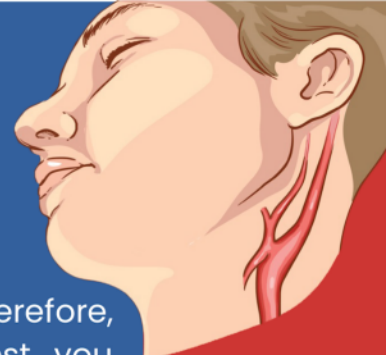
- ▶ **Medical treatment:** Decreasing your risk factors by eating a healthy diet and exercising regularly. In addition, smoking cessation and anti-platelet medications help minimise the risk of clot formation and stroke. If you have hypertension or diabetes, you will also require blood pressure and blood sugar management medication. However, conservative treatment is enough to manage the patients properly in mild to moderate diseases without symptoms.
- ▶ **Surgery:** In severe cases that usually present with symptoms such as stroke or TIA. Furthermore, for some asymptomatic patients with severe diseases who are at higher risk of stroke, to decrease the stroke risk, you need a surgical operation to remove plaques from your occluded artery, a procedure known as carotid endarterectomy.
- ▶ **Carotid Artery Stenting:** May be used if the patient is not a candidate for carotid artery endarterectomy surgery because it has a higher stroke risk than endarterectomy.

# What You Should Know About Carotid Endarterectomy?

As mentioned earlier, Carotid endarterectomy helps clean atherosclerotic plaques from the carotid artery. This procedure will reduce your risk of having a stroke in the future, and it does not affect the symptoms of a previous stroke.



But it also has some complications. Therefore, your vascular surgeon will only suggest you have a carotid endarterectomy if its benefits outweigh the risks of complications. Your surgeon will have a complete discussion about the procedure and guide you through all the details—the final decision of whether you want the operation or not will be yours.



Carotid Endarterectomy

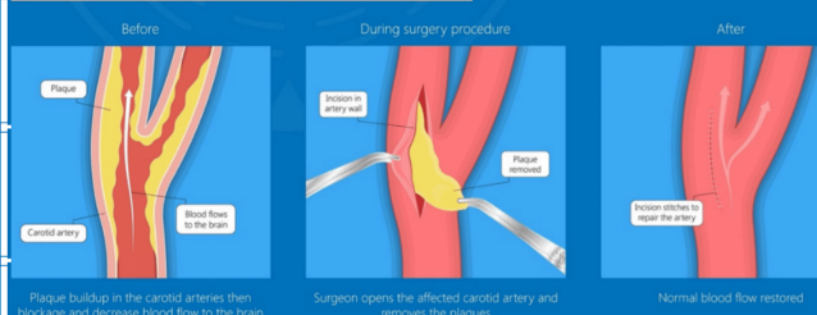
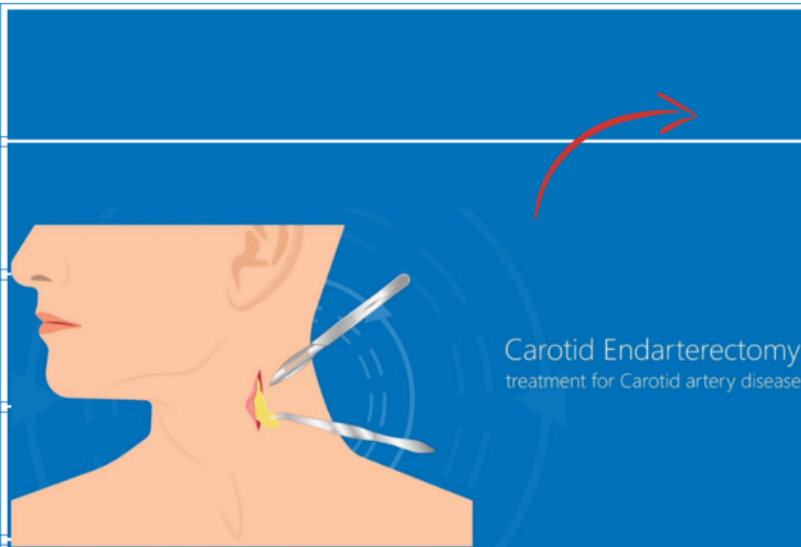
## What Happens Before the Surgery?

Before surgery, there will be a pre-assessment, including a detailed history and examination and investigations such as ECG and blood tests. Scans to assess your diseased artery and brain in case of stroke (ultrasound scan, CT scan or MRI). Before surgery, your vascular surgeon will explain the surgery and your risk-benefit ratio in detail. You can ask your surgeon about any of your concerns. The procedure usually takes 2 to 3 hours.



# What Are the Steps of the Surgery?

**Carotid endarterectomy can be performed under general or local-regional anaesthesia. The procedure involves the following steps.**



1. Your vascular surgeon will first make an incision of about 10-12 cm at the side of your neck on the skin over the carotid artery.

2. He will then carefully dissect the tissues to prevent damage to the surrounding structures.

3. He then applies a clamp to the artery to prevent blood loss.

4. He will then cut open the artery and clean the plaque from the inside wall.

5. Depending on your case, surgeons sometimes use a shunt to keep the circulation to your brain during surgery.

6. The next step usually involves placing a patch inside the artery to prevent future occlusion.

7. Your surgeon then removes the clamps, and the blood flow again begins.

8. In the end, he will apply stitches to close the skin.

## How the Recovery Occurs after Carotid Endarterectomy?

The medical recovery team will monitor your health status after the operation for the first few hours. Afterwards, you will be transferred to the High Dependency Units (HDU). Your nurse and medical staff will monitor your health status by assessing your blood pressure, heart rate, and respiratory rate and observing your wound and neurological status for early detection of any complications. They will also give you fluids until you start drinking and eating again. In most cases, patients will transfer to the ward after 24 hours of surgery and usually are allowed to go home after 48 hours.



# What Precautions to Take After Surgery?

It would be best to take certain precautions to prevent any complications at home and reduce your risk of another stroke.

1. Healthy diet, exercise regularly and stop smoking.
2. Usually, surgeons use absorbable sutures, which dissolve over time. It would be best to avoid washing the wound with soap, or else it may get irritated.
3. You may experience pain at the operation site. Take the prescribed painkillers to relieve pain.
4. You will feel fatigued during the first few days. But it would be best to try some exercises such as a short walk. It will speed up your recovery.
5. Take your medication as prescribed. It is very important to check your blood pressure in the first two weeks after surgery.
6. It would be best to avoid driving for two weeks after surgery. After that, do not drive except if it is safe to do. Again, you can ask your GP for advice.



## What are the Risks of the Carotid Endarterectomy Surgery?

Every procedure has its risks. Furthermore, risks can differ from one patient to another after the carotid endarterectomy.

1. Stroke: 1-2 cases per 100 have a slight risk of stroke.
2. Wound leakage: Bleeding in the wound can occur after the operation. In most cases, bleeding settles on its own. However, in some cases, bleeding would require another surgical intervention.
3. Nerve Injury: There are chances that nerves can be severed while making the incision. In that case, there will be numbness over the skin. Other nerves can be affected, but nerve function is recovered by themselves most of the time.
4. Wound infections: The risk of infection after surgery is usually 1%.
5. Clot formation: Clots can form in the lungs or legs after the surgery. It will result in pulmonary embolism or deep vein thrombosis.
6. Other complications: Patients with carotid artery disease frequently have underlying heart and chest diseases. As a result, additional complications include heart attacks and chest infections.