Carotid Endarterectomy
Information for patients
What is a carotid endarterectomy?

A carotid endarterectomy is a procedure to remove excess plaque from the inside of the carotid artery in order to get back a healthy blood flow to the brain.

The carotid artery is in your neck and supplies blood to your brain. Narrowing (stenosis) of this blood vessel is usually due to a build-up of plaque of the arteries (atherosclerosis). This is similar to the plaque which builds up on your teeth and is made up of calcium and fatty deposits, such as cholesterol. A carotid endarterectomy may be performed if you have had one of the following:

- a mini-stroke (called a transient ischaemic attack (TIA))
- a sudden loss of vision in one eye
- a major stroke.

In a small number of people a slight narrowing of the carotid artery may be discovered before they have symptoms. This could be while they are having tests for another problem.

A narrowing in the carotid artery increases the chances of suffering a stroke in the future. Performing a carotid endarterectomy (to correct the narrowing) can significantly reduce the chances of a stroke and/or death.

If you have already had symptoms as a result of disease in your carotid artery, the risk of a further event (usually a stroke) is highest in the two weeks following those symptoms. It is therefore important to carry out the carotid endarterectomy as soon as possible.
Before the treatment

Before you have carotid surgery, you will have tests to find out if you should have the operation or not.

These tests may include:

• ultrasound scan/s
• MRA (magnetic resonance angiography) or a dye X-ray (digital subtraction angiogram) of the arteries
• blood tests
• ECG (a heart tracing test which measures the electrical activity of your heart)
• echocardiogram (an ultrasound test of the heart)
• breathing test
• CT scan (special X-ray scan) of your brain.

You may also have an MRI (magnetic resonance imaging) scan of your brain at the same time as the MRA.

These tests should be done within a couple of days of your symptoms, if possible. If you are fit enough we will try to offer you an operation within two weeks of your symptoms starting.
Before the operation

You will be admitted to hospital for one to two days. You may be seen in the pre-assessment clinic before your admission. At this appointment, a nurse will ask you some questions about your medical history, arrange blood tests and an ECG. If these tests show there are no problems with having the procedure, you will then be able to come directly to theatre on the day of surgery. The nurse in the pre-assessment clinic will give you clear instructions about when to stop eating and drinking and where to go.

Before the operation, you will be seen by the anaesthetist and one of the surgical team. They will explain anything that you are not sure about. You can ask any questions you might have about the procedure and your care. You will then be asked to sign a consent form to confirm you are happy for the operation to go ahead.

We usually also rescan your artery just before the operation. This is to make sure that there have been no changes and also to mark the site of operation.

Please bring with you all the medications that you are currently taking.

The operation

Carotid endarterectomy is usually performed under local anaesthetic (to make the area go numb), but occasionally a general anaesthetic is used (where you are asleep).

If you are having a local anaesthetic, the anaesthetist will give you an injection into the skin of your neck to make it go numb. If you become uncomfortable during the operation the surgeon will inject more local anaesthetic. You may also be given some sedation which will make you feel sleepy. This means you may not be very aware of the operation at all.
Very rarely, it may be necessary to change over to a short general anaesthetic during the operation. This will make you go into a deep sleep and we may need to use equipment to help you breathe.

When your neck has gone numb, the surgeon will make a cut on the side of your neck. This will usually be about 7-10cm long. Once they can see them, the branches of your carotid artery will be clamped to limit blood loss during the operation. A small cut will be made along the artery and the plaque or narrowing carefully removed.

A shunt (narrow plastic tube) is sometimes used to keep the blood supply going to your brain while the artery is clamped. During the operation the surgeon and the anaesthetist will check that your brain is working well by asking you simple questions, such as your name and date of birth. They will also ask you to squeeze their hand or wiggle your toes.

When the inside of the artery has been cleared it is closed with very fine stitches. A small piece of material called a ‘patch’ will sometimes be stitched to the artery. This will help to prevent further narrowing. This patch is normally made of a material called Dacron.

The wound in your neck is usually closed with a stitch under the skin. This will dissolve into your skin when your cut is healed.

Very rarely, there may be a problem during the procedure which means that you lose more blood than normal. If this happens you may need to have your lost blood replaced by a blood transfusion. This is when you are given replacement blood through a drip.
What happens after the operation?

After the operation you will spend two hours in the recovery room where nursing staff will monitor your condition closely. We will carry out checks of your pulse, temperature and blood pressure. We will check your neck wound and how well you respond to questions, your arm and leg strength and your pupil reactions (how your eyes react to light and dark). This is to check you are making a safe recovery from the operation.

We will then transfer you to the vascular ward (6A) where the checks will be continued for the next 24 hours.

You can eat and drink as soon as you feel like it, but it is advisable to start slowly with sips of water. If you are diabetic your blood sugars will be monitored and you can start taking your medications as soon as you are eating and drinking normally.

You can have painkillers if required.

You will be allowed out of bed the day after the operation and usually will be allowed to go home 24 hours after the operation.

Going home

Most people go home the day after their carotid endarterectomy.

Regular exercise such as a gentle, short walk combined with rest is recommended to help you make a gradual return to your normal activity. Avoid strenuous activity such as heavy lifting or vigorous sports like rugby for about 6 weeks.

Legally, you are not allowed to drive for one month after a stroke or TIA (mini-stroke). Your insurance will not cover you to drive. After the operation you will be safe to drive when you can move your neck freely to allow a good view of the road and behind you. This will normally be after about four to six weeks but if you are in doubt, wait for your follow up appointment with your
doctor. Avoid long distances and motorway driving at first as this may make your neck sore.

If you work you should be able to go back to your job in one to three months, but if you are not sure whether you are fit to return to work please check with your doctor.

**Wound care**

You will be given a leaflet which tells you how to look after your wound when you return home. You should try not to get the wound wet for three days after the operation; make sure that it is kept clean and dry. You will be given some spare dressings to change if it gets wet or looks grubby. Normally the wound will have dissolvable stitches or be glued closed; you will be told if you need to see the practice nurse to have stitches removed.

**Medicines**

You will usually be sent home on a small dose of aspirin. This makes your blood less sticky and helps to reduce your risk of a stroke. An alternative drug may be prescribed if you are allergic to aspirin or if it upsets your stomach. No other changes to your medication are required.

**Possible complications of the operation**

**Stroke**: A small number of people (1 to 3 in 100) who have a carotid endarterectomy will have a stroke during or soon after the operation. The severity of this stroke can be from very mild (causing little or no disability) through to severe (causing major disability or even death). All possible precautions will be taken to prevent this from happening.

**Other major complications**: As with any major operation there is a small risk of you having a medical complication such as a heart attack, kidney failure, breathing problems, or an infection in the wound. Each of these is rare, but there is still a 2% (2 people in 100) risk of death from this operation.
Bleeding from the operation site: Occasionally the wound can bleed, or bleeding beneath the wound can cause swelling. Usually the swelling will settle by itself, but occasionally a further operation may be needed.

Nerve injuries: These are uncommon. Symptoms include:

- Some numbness around the wound, caused by cut nerves. This usually recovers over time.
- Temporary or (rarely) permanent loss of nerve function near to the carotid artery, from bruising or damage during the operation. This could cause your face to droop on one side.
- A hoarse sounding voice from damage to a nerve near your voice box (larynx).
- A change to speech from damage to the hypoglossal nerve, which supplies the muscles of the tongue. This can affect how your tongue moves.
- Weakness at the corner of the mouth from damage to the facial nerve supplying the muscles of the face.

Most often these nerve injuries are temporary, but in a small number of cases they can be permanent.

There will be bruising and swelling around your neck, but this should settle within 7-10 days. The cut on your neck will be very visible to start with but it will fade within 2-3 months to become virtually invisible.
How you can help yourself

If you are a smoker you should make a determined effort to stop completely before the operation. Continued smoking will cause further damage to your arteries and increases the risks of heart attacks, strokes and problems with the circulation in your legs. If you need help, please ask to be referred to one of the smoking cessation nurses.

You should eat a low fat diet, avoiding food with high saturated fat content such as chips, crisps, cakes, chocolates and any type of deep fried food, as well as taking regular exercise. If you need help with which foods to eat and avoid please ask your GP to arrange for you to speak to a dietitian.

Please make sure you take any medication that has been prescribed for you, particularly those for high blood pressure or high cholesterol. Have regular blood pressure and cholesterol checks with your GP or practice nurse. Your daily dose of aspirin is important.

This information is only a general guide. Everyone is an individual with different needs so your treatment may vary slightly from what is written.
Points of contact

If you have any queries about how this operation may affect you or your relatives/carers, please contact the Vascular Nurse Practitioner:

Tel: **01865 572 626**

If you have any queries after your surgery when you have returned home, you should telephone the ward:

Tel: **01865 221 802**

**For further information and support:**

Vascular Nurse Practitioner Tel: 01865 572 626
Ward Sister Tel: 01865 221 802
Deputy Ward Sister Tel: 01865 221 802
Vascular Surgeons (Secretaries): Tel: 01865 221 285
Tel: 01865 221 284
Tel: 01865 221 288

**NHS 111:**

Non-emergency freephone medical helpline.
Tel: 111 (freephone from landline and mobiles)
Web site: www.nhsdirect.nhs.uk

**Circulation Foundation**

Tel: 020 7304 4779
Web site: www.circulationfoundation.org.uk

**For help giving up smoking:**

NHS Smoking Help-Line
Tel: 0800 022 4 332
Web site: smokefree.nhs.uk
Or contact the local service via your GP.
If you have a specific requirement, need an interpreter, a document in Easy Read, another language, large print, Braille or audio version, please call 01865 221 473 or email PALSJR@ouh.nhs.uk

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www.ouh.nhs.uk/patient-guide/leaflets/library.aspx

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