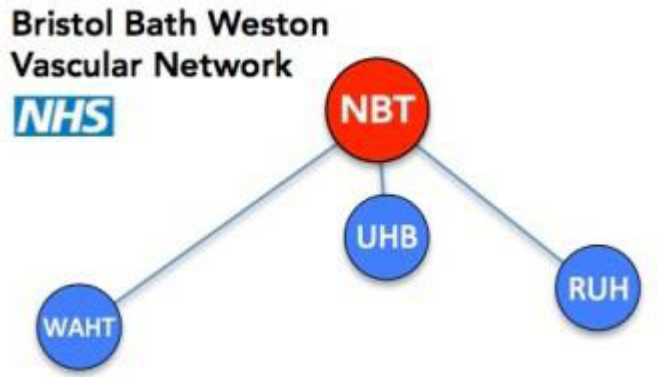
North Bristol NHS Trust

Carotid endarterectomy (stroke prevention surgery)



Exceptional healthcare, personally delivered

Ask 3 Questions

Preparation for your Appointments

We want you to be active in your healthcare. By telling us what is important to you and asking questions you can help with this. The three questions below may be useful:

Why do I require a carotid endarterectomy?

- The carotid arteries run up the neck to supply blood to the front and middle part of the brain, the eyes and the face.
- The carotid artery like every other artery can be affected by the disease process known as atherosclerosis, commonly termed 'furring up of the arteries'. This happens in everyone as part of ageing. Some factors increase this 'furring' e.g. smoking, high blood pressure, high cholesterol or diabetes.
- This disease in the "internal carotid" artery results in narrowing of the artery which can in turn lead to a sudden loss of vision in one eye, a mini-stroke (known as a transient ischaemic attack or TIA) or a major stroke.
- 1 in 10 strokes or TIAs are caused by carotid artery narrowings. Usually this is because a tiny fragment of the narrowing has broken off and gone up into the brain.
- All patients who have had a stroke, TIA or loss of vision due to carotid artery disease benefit from being on a blood thinner (anti-platelet drug like aspirin), a statin tablet and from having blood pressure tablets.
- If you have had these symptoms and you have a narrowing in the internal carotid artery of greater than 50%, studies have shown that patients may also benefit from surgery (CAROTID ENDARTERCTOMY).
- Carotid endarterectomy can reduce the risk of you having a stroke in the future. Large trials have shown that in some patients the risk of stroke over the next 4 years can be reduced from 1 in 3 (30%) down to 1 in 10 (10%).

- The risk of a further stroke or eye problem is highest in the days after you have had the initial symptoms. The sooner we operate after you have recovered from your problem (stroke, TIA or sudden loss of vision) the more likely we are to prevent further strokes. Ideally we want to operate within 14 days. The benefit for carotid surgery falls away sharply 3 months after the initial event.
- Occasionally a tight narrowing in the carotid artery is discovered with no symptoms whilst investigating for another problem. The benefit of surgery in this setting is supported by randomised trials but is controversial and is not offered by all vascular specialists.

Having carotid surgery

Admission

- You will be admitted on the day of your operation.
- You will need to be 'starved' before your operation, even if it is performed under local anaesthetic because of the small possibility that the procedure will need to be converted to a general anaesthetic.
- This means no food for six hours before you are admitted for the procedure, clear fluids (i.e. water or squash but not fruit juice or milk) up to 2 hours before you are admitted and nothing at all to eat or drink after that.
- You should bring with you all the medications that you are currently taking. You should continue to take your normal medication prior to the operation unless instructed otherwise.
- You will be admitted by one of the nurses who will also complete your nursing record.

- You will be visited by the surgeon and the anaesthetist. If you have any remaining questions about the operation please ask the doctors.
- It is important to understand that there will normally be more than one patient having an operation on that day, in the same theatre as you. As such, you may have a long wait before your surgery, even if we ask you to come in at 7am.
- Before we start the operation, we must always ensure that we have an in-patient bed for you to go to after the operation. Although these beds are booked in advance it is possible due to emergencies that there may not be a bed available. Sometimes we have to postpone the procedure. We recognise that this causes a lot of distress for patients and their carers, particularly around the anxious time of major surgery and try and keep it to a minimum.

The operation

The anaesthetic

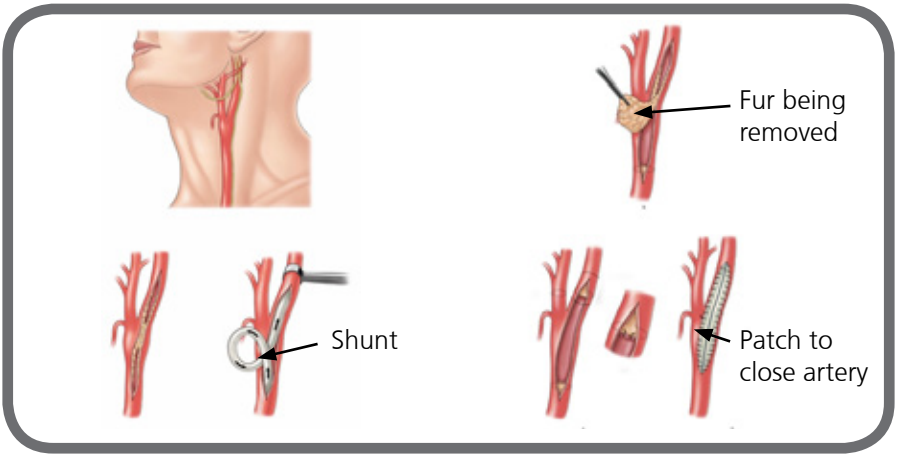
Carotid endarterectomy can be performed under either regional (local anaesthetic – "awake" surgery) or general anaesthetic. Not all people are suitable for regional anaesthetic. The specialist team will talk to you about the pros and cons of each method.

- For regional anaesthetic, the surgeon or anaesthetist will place a local anaesthetic injection into the skin of your neck to numb it. During the operation, if you become uncomfortable, the surgeon will inject more local anaesthetic. You may also be given some sedation, and as a result, you may not be very aware of all of the operation. Occasionally it may be necessary to convert to a short general anaesthetic during the operation (3/100).

- For a general anaesthetic, a needle or "drip" is placed in a vein in your arm or hand. The anaesthetic is injected through the needle and you will be asleep within a few seconds.
- With both types of anaesthetic the team will usually also insert a fine plastic tube into an artery in the arm ("arterial line") so that they can monitor your blood pressure continuously.

The surgery

- You will have a cut running vertically down from near the angle of your jaw / ear lobe towards your breastbone. The incision is usually around 10cm in length.
- Once the carotid artery is displayed, the branches of the artery are clamped to limit blood loss during the operation. A small incision is made along the artery and the plaque or narrowing is carefully removed.
- To protect the brain from interruption to its blood supply while the artery is clamped, a shunt (narrow plastic tube) is sometimes used to maintain blood flow. The shunt lies in a loop outside the artery, passing into the artery above and below at each end of the incision in the artery.



- When the inside of the artery has been cleared, it is closed with very fine stitches. A patch, (normally made from the lining of cow heart "bovine pericardium") may be used by your surgeon to close the artery if they are concerned that it might be narrowed by stitches alone.
- Your surgeon may place a small plastic drain in your neck for a short period to drain any blood and to reduce neck swelling after the operation. The wound is usually closed with a stitch under the skin that dissolves.

What happens after the operation

You will be moved to the recovery area. You will be closely monitored for at least 4 hours.

Once stable you will then be moved to the Vascular Ward. The main vascular ward in Southmead Hospital is **Gate 33B**. The vast majority of patients are cared for on this ward before they are discharged from hospital

You may feel sick initially but this will quickly subside and you will be allowed to eat and drink within 1-2 hours.

There is often some swelling in the neck, but this settles within 7-10 days.

The incision on your neck will initially be very visible and bruised, although this will subside to become virtually invisible within a few weeks.

The area around the incision and along the jaw line will feel numb and will probably stay numb for a few months afterward.

Most patients are discharged within 1-2 days of the operation.

You will typically have a dressing over the wound or you will have a layer of "glue" over the incision or both. We may change the dressing before you are discharged. But beyond that the dressing can be left on for 5-7 days. During this time, you can shower. You can take the dressing off yourself. After the dressing comes off you can have a bath. Any remaining glue can be scrubbed off. If you have any concerns with the wound please contact your GP or practice nurse.

After discharge

You should try and slowly get back to normal activity. You should try and be up and about the following day. Regular exercise such as a short walk combined with rest is recommended to provide a gradual return to normal activity.

If you have suffered a stroke or TIA you should not drive for one month. Otherwise you will be able to drive when you can perform an emergency stop safely and look over your shoulder easily. This will normally be 2-3 weeks after surgery.

Follow-up

We like to see all patients 6-8 weeks following surgery. We will always try to organise your follow-up at the hospital that is closest to you.

If you have concerns following your surgery, we are happy to hear from you. The best contact is via the vascular nurse specialist 0117 4145302.

What is "normal" after the procedure?

There are several things which normally occur after surgery which are important to highlight.

- It is ***normal*** for the wound to feel raised and a little lumpy for several days following the operation
- It is ***normal*** for the wound and the surrounding skin to feel numb. This usually lasts for a few months but can be permanent. Men should be especially careful while shaving.
- It is normal to have hoarse voice or a sore throat for a few days afterward.

What problems can occur after the procedure?

Any operation involving a general anaesthetic carries with it some risks. Patients who have diseases in their arteries are known to be at higher risk of heart attacks. All patients admitted to hospital have a small risk of DVT (Deep vein thrombosis). As such any operation on your arteries carries with it a very small risk of death.

Bleeding and bruising

- It is ***common*** to have some bruising around the wounds.
- ***Occasionally*** patients may develop a collection of blood (haematoma) which is felt as an uncomfortable lump. This can be underneath any of the wounds. Normally this requires no surgical treatment, but may require you to have a scan and take pain killers for a few weeks.
- ***Rarely*** you may need to return to theatre on the day of surgery or the day following surgery because of bleeding from the artery (1/40 patients). This can have an effect on your breathing.

Wounds

- *Occasionally* the wound can become a little red or the skin edges of the scar to come apart by a few millimetres. This can normally be easily managed with a dressing by your practice nurse.

Infections can occur in any wound

- If the infection is superficial this can be managed by your GP with a short course of tablet antibiotics
- *Rarely* the infection may be deeper. In this case the wound becomes more painful and mucky fluid may drain out of the wound. You may feel feverish or unwell. Deep wound infection is a rare, but serious complication. **You will need to return to hospital if this is suspected.**

Stroke

- **Between 1 and 5 in 100 (1% to 5%) of patients who have had no symptoms will suffer a stroke during this operation.** If you are unfortunate and suffer a stroke the severity can be very mild causing little or no disability, or may be severe causing major disability and even death.
- Overall 1 in 200 patients suffer a major disabling or fatal stroke related to carotid endarterectomy.

Nerves

- Skin nerves are often interrupted by the incision leading to some numbness in the neck and sometimes the earlobe, which may recover over time.
- There are a number of important nerves (called cranial nerves) that can be stretched, bruised or permanently damaged at surgery. **Most recover within 12 months. 1 in 14 are permanently damaged.**

– The vagus nerve which provides nerves to your vocal cord can be damaged. This can affect your voice which may be hoarse.
– The hypoglossal nerve supplies the muscles in your tongue. This may affect your tongue's mobility and may affect your speech.
– The nerve to the side of the mouth on the side of surgery can also be damaged (marginal mandibular branch of the facial nerve). If this happens the mouth on the side of surgery can appear "dropped".

The Vascular Society of Great Britain & Ireland asks surgeons to collect data on all patients having major arterial operations in the National Vascular Registry. This has given useful information about how common some complications are in the U.K. Hence data from your operation will be recorded on this registry. The data is secure and confidential and you will not be contacted.

You can find more information about your specialist at https://www.vsqip.org.uk/surgeon-outcomes/

Ask 3 QUESTIONS: Summary

What are the options?

Your options will depend on your symptoms and the severity and site of your arterial disease.

- Lifestyle changes and medication

  You will be prescribed a blood thinner such as aspirin or clopidogrel along with a statin. Whether you have surgery or not you should stay on these lifelong. You are strongly advised not to smoke. Lifelong treatment of blood pressure and diabetes as required is equally important

- Carotid endarterctomy

- Stenting

  The current evidence does not show any benefit of stenting over surgery. Stenting is currently done in the UK only as part of a clinical trial. We only consider stenting when surgery in the neck has already been performed or when there has been other treatment in that area (for example radiotherapy).

For most people the options are either medical management alone or medical management plus surgery.

What are the pros and cons of the options?

In patients with symptoms from carotid artery narrowings, surgery has been shown to reduce the risk of further strokes by as much as 20%. However, surgery can itself cause a stroke and other major complications (such as bleeding with return to theatre) can occur.

It is also important to consider other problems you might have that might make surgery more risky or may reduce your life expectancy and thus the reduce the benefit you would get from surgery.

What help do I need to make my decision?

The team involved in your healthcare want to help you become as involved as possible in making decisions by giving you information about your options. In giving you answers to these questions and therefore understanding what's important to you, the specialist team will then be in the best position to help you make any choices about treatment.

There are always pros and cons for each choice, it is a good idea to think about what is important to you. Your specialist and the wider team may have a strong recommendation for you; however we always want to come to a shared decision for your treatment.

If you have questions, we are happy to hear from you. The best contact is via the vascular nurse specialists on 0117 414 5302, or via your Consultant's Secretary whose name and number should be on your clinic letter.

PATIENT APPROVED

www.nbt.nhs.uk/vascularsurgery

If you or the individual you are caring for need support reading this leaflet please ask a member of staff for advice.

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Southmead Hospital Charity

southmeadhospitalcharity.org.uk

Southmead Hospital Charity raises funds for departments and wards throughout the Trust, meaning you can support an area close to your heart