

Patient information and consent to surgery of the carotid arteries – carotid endarterectomy

Key messages for patients

- **Please read your admission letter carefully. It is important to follow the instructions we give you about not eating or drinking or we may have to postpone or cancel your operation.**
- **You must not have anything to eat six hours before and no clear fluids two hours before your operation.**
- Please bring with you any medications you use (including patches, creams and herbal remedies) and any information that you have been given relevant to your care in hospital, such as x rays or test results.
- Take your medications as normal on the day of the procedure **unless** you have been specifically told not to take a drug or drugs before or on the day by a member of your medical team. **Do not** take any medications used to treat diabetes.
- Please call the vascular surgery nurse practitioner **01223 245151** ext **6382** if you have any questions or concerns about this procedure or your appointment.

Please read this information carefully, you and your health professional will sign it to document your consent.

After the procedure we will file the consent form in your medical notes and you may take this information leaflet home with you.

Important things you need to know

Patient choice is an important part of your care. You have the right to change your mind at any time, even after you have given consent and the procedure has started (as long as it is safe and practical to do so). If you are having an anaesthetic you will have the opportunity to discuss this with the anaesthetist, unless the urgency of your treatment prevents this.

We will also only carry out the procedure on your consent form unless, in the opinion of the responsible health professional, a further procedure is needed in order to save your life or prevent serious harm to your health. However, there may be procedures you do not wish us to carry out and these can be recorded on the consent form. We are unable to guarantee that a particular person will perform the procedure. However the person undertaking the procedure will have the relevant experience.

All information we hold about you is stored according to the Data Protection Act 1998.

About surgery of the carotid arteries

Carotid endarterectomy is an operation to treat a narrowed artery in the neck (the carotid artery), which supplies blood to the brain. The narrowing is caused by a build up of material within the artery wall. During the operation this is removed, thus clearing out the artery.

Clearing out the artery prevents strokes by preventing bits of the artery breaking off and lodging in the brain. Without surgery, patients with a severe stenosis of the carotid artery have at least a 26% chance (1 in 4) of having a stroke in the next two years.

With surgery, the risks over the same time period are reduced to 9% (less than 1 in 10).

Before your procedure

Depending on the arrangements made for you, you will be admitted to the ward the day before or on the day of surgery.

The ward nursing staff will show you to bed and help you settle in. They will explain the preparations for the operating theatre, and show you where everything is.

You must not have anything to eat six hours before and no clear fluids two hours before your operation.

Your surgeon will visit you before your operation to explain the procedure again and to answer any questions. We will mark on your body the side of the operation (ie left or right).

This procedure involves the use of anaesthesia. We explain about the different types of anaesthesia or sedation we may use at the end of this leaflet. You will see an anaesthetist before your procedure.

During the procedure

We make an incision (cut) that runs obliquely (at an angle) along the side of your neck from just below your ear lobe to just below the side of your Adam's apple.

During the operation, we expose (make visible) the carotid arteries. We will give you heparin to thin your blood. We then temporarily stop the blood flow through the carotid artery and make a cut in the wall of the artery to expose the diseased area.

We then place a specialised piece of plastic tubing (known as a shunt) inside the artery to by-pass the diseased part of the artery and, therefore, restore blood flow to the brain.

We then remove the diseased area inside the artery (this is called endarterectomy). Then we repair the cut in the wall of the artery using a small patch of Dacron™ material, which prevents narrowing after the operation.

At the end of the operation, we remove the plastic shunt tubing and allow the blood to flow again through the repaired artery.

The final stage is to close the wound with self-dissolving stitches.

After the procedure

Once your surgery is completed you will usually be transferred to the recovery ward where you will be looked after by specially trained nurses, under the direction of your anaesthetist. You will be monitored in the theatre recovery area for one to two hours. The nurse looking after you will make careful measurements of your pulse, blood pressure and breathing. Every few minutes, the nurse will ask you questions to check you are awake and ask you to perform certain tasks, for example 'squeeze my hand', 'stick out your tongue'. The nurses will monitor you closely until the effects of any general anaesthetic have adequately worn off and you are conscious. You may be given oxygen via a facemask, fluids via your drip and appropriate pain relief until you are comfortable enough to return to your ward.

If there is not a bed in the necessary unit on the day of your operation, your operation may be postponed as it is important that you have the correct level of care after major surgery.

The side of your neck will feel stiff and swollen.

When you first wake up, there might be a small probe attached to the side of your head with an elasticated band. This probe monitors the blood supply to the brain, which ensures that the repaired artery remains clear.

At this time, you might find there is a urinary catheter inserted into your bladder, which allows your urine to drain into a bag. This is a temporary measure to prevent urine becoming retained which can cause your blood pressure to become unstable.

After a few hours, if all the measurements are fine and you have recovered sufficiently from the anaesthetic, you will be returned to the ward where you will continue to be monitored closely for 24 hours. Alternatively, we may continue to monitor you within the theatre recovery area overnight.



Eating and drinking. If all is well in recovery, you will be allowed to start to eat and drink.



Getting about after the procedure. The day after the operation, if all is well, the monitors, catheters and drains will be removed. We will help you to become mobile as soon as possible after the procedure. This helps improve your recovery and reduces the risk of certain complications.

If you have any mobility problems, we can arrange nursing or physiotherapy help.



Leaving hospital. While you are staying with us, the surgical team will visit you every day and can answer any questions you might have about your surgery. On each visit, we will assess your progress and work out the best time for you to be discharged from hospital. Most people are discharged two to three days after the operation.



Resuming normal activities including work. You will probably need two to four weeks off work or study, please return when you feel comfortable. You should avoid driving for at least two to four weeks ie, until you regain the full range of pain-free movement in your neck. Gentle exercise (for example, walking) is good but avoid any heavy lifting or straining for as long as possible. You may resume sex after two to four weeks.



Special measures after the procedure: We will give you more detailed information about any special measures you need to take after the procedure. We will also give you information about things to watch out for that might be early signs of problems (for example, infection).



Check-ups and results: We will make arrangements to review you in the outpatient clinic six to eight weeks after the operation. At this appointment, we may perform a (check) ultrasound scan of the operated artery. If all is well, you can be discharged back to the care of your GP.

Intended benefits

To remove the diseased area from the affected carotid arteries; this can prevent a stroke occurring in the future.

Who will perform my procedure?

This procedure will be performed by the consultant or the specialist registrar under the direct supervision of the consultant.

Alternative procedures that are available

You may be treated medically rather than with surgery. However, we have no evidence that medical treatment alone can reduce the risk of stroke in people who have narrowed carotid arteries.

Carotid stenting is a new treatment that is currently undergoing clinical trials. As yet, it has not been shown to be a safer or more effective treatment than carotid endarterectomy surgery.

Significant, unavoidable or frequently occurring risks of this procedure

There is a small risk of stroke at the time of operation (approximately 2 to 3%).

To keep this risk as low as possible, we monitor your brain function throughout the surgery with a variety of techniques.

We also thin the blood using heparin during surgery, and give you aspirin which reduces the 'stickiness' of the platelets in the blood.

All major operations carry general risks including problems with the heart. On average there is a 1 to 2% risk of a heart attack following surgery. Often, this is related to problems with unstable blood pressure in the first 24 hours following surgery. For this reason, we monitor your blood pressure very carefully during this period, and give medications to prevent your blood pressure becoming too high or too low.

Surgery on the arteries of the neck is very complex not only because the carotid arteries supply blood to the brain but also because there are a number of important nerves that lie near to the carotid arteries. Permanent damage to these nerves is relatively uncommon (in only 2 to 3% of patients), however, temporary nerve problems are more common. These usually recover completely. This temporary damage to the nerves can result from stretching them slightly to expose the disease in the arteries. This can affect the nerve to the voice box, which results in a hoarse voice. The nerve to the tongue can be affected resulting in a numb tongue that feels 'clumsy'. Occasionally, the nerve responsible for swallowing can be affected. Also, the nerve to the corner of the mouth can be affected causing temporary drooping of the side of the mouth.

Surgery on the carotid arteries always produces bruising and soreness. Occasionally, blood can collect in the wound in the hours after surgery, which causes the neck to swell: in some patients (5%) this haematoma (blood clot) needs to be removed under local anaesthetic. The wound to the neck is usually red and sore immediately after the operation; however, this should improve in the days after your surgery. If the wound becomes increasingly red and sore, this might indicate the presence of infection, which requires prompt treatment with antibiotics and assessment by your surgeon. This risk of wound infection is small (1 to 5% chance).

Anaesthesia

Anaesthesia means 'loss of sensation'. There are three types of anaesthesia: general, regional and local. **The type of anaesthesia chosen by your anaesthetist depends on the nature of your surgery as well as your health and fitness.** Sometimes different types of anaesthesia are used together.

Before your operation

Before your operation you will meet an anaesthetist who will discuss with you the most appropriate type of anaesthetic for your operation, and pain relief after your surgery.

To inform this decision, he/she will need to know about:

- your general health, including previous and current health problems
- whether you or anyone in your family has had problems with anaesthetics

- any medicines or drugs you use
- whether you smoke
- whether you have had any abnormal reactions to any drugs or have any other allergies
- your teeth, whether you wear dentures, or have caps or crowns.

Your anaesthetist may need to listen to your heart and lungs, ask you to open your mouth and move your neck and may review your test results.

Pre-medication

You may be prescribed a 'premed' prior to your operation. This a drug or combination of drugs which may be used to make you sleepy and relaxed before surgery, provide pain relief, reduce the risk of you being sick, or have effects specific for the **procedure that you are going to have or for any medical conditions that you may** have. Not all patients will be given a premed or will require one and the anaesthetist will often use drugs in the operating theatre to produce the same effects.

Moving to the operating room or theatre

You will usually change into a gown before your operation and we will take you to the operating suite. When you arrive in the theatre or anaesthetic room, monitoring devices may be attached to you, such as a blood pressure cuff, heart monitor (ECG) and a monitor to check your oxygen levels (a pulse oximeter). An intravenous line (drip) may be inserted and you may be asked to breathe oxygen through a face mask.

It is common practice nowadays to allow a parent into the anaesthetic room with children; as the child goes unconscious, the parent will be asked to leave.

Before starting your anaesthesia the medical team will perform a check of your name, personal details and confirm the operation you are expecting.

General anaesthesia

During general anaesthesia you are put into a state of unconsciousness and you will be unaware of anything during the time of your operation. Your anaesthetist achieves this by giving you a combination of drugs.

While you are unconscious and unaware your anaesthetist remains with you at all times. He or she monitors your condition and administers the right amount of anaesthetic drugs to maintain you at the correct level of unconsciousness for the period of the surgery. Your anaesthetist will be monitoring such factors as heart rate, blood pressure, heart rhythm, body temperature and breathing. He or she will also constantly watch your need for fluid or blood replacement.

What will I feel like afterwards?

How you will feel will depend on the type of anaesthetic and operation you have had, how much pain relieving medicine you need and your general health.

Most people will feel fine after their operation. Some people may feel dizzy, sick or have general aches and pains. Others may experience some blurred vision, drowsiness, a sore throat, headache or breathing difficulties.

You may have fewer of these effects after local or regional anaesthesia. When the effects of the anaesthesia wear off you may need pain relieving medicines.

What are the risks of anaesthesia?

In modern anaesthesia, serious problems are uncommon. Risks cannot be removed completely, but modern equipment, training and drugs have made it a much safer procedure in recent years. The risk to you as an individual will depend on whether you have any other illness, personal factors (such as smoking or being overweight) or surgery which is complicated, long or performed in an emergency.

Very common (1 in 10 people) and common side effects (1 in 100 people)

- Feeling sick and vomiting after surgery
- Sore throat
- Dizziness, blurred vision
- Headache
- Bladder problems
- Damage to lips or tongue (usually minor)
- Itching
- Aches, pains and backache
- Pain during injection of drugs
- Bruising and soreness
- Confusion or memory loss

Uncommon side effects and complications (1 in 1000 people)

- Chest infection
- Muscle pains
- Slow breathing (depressed respiration)
- Damage to teeth
- An existing medical condition getting worse
- Awareness (becoming conscious during your operation)

Rare (1 in 10,000 people) and very rare (1 in 100,000 people) complications

- Damage to the eyes
- Heart attack or stroke
- Serious allergy to drugs
- Nerve damage
- Death
- Equipment failure

Deaths caused by anaesthesia are very rare. There are probably about five deaths or very million anaesthetics in the UK.

Information about important questions on the consent form

1 Creutzfeldt Jakob Disease ('CJD')

We must take special measures with hospital instruments if there is a possibility you have been at risk of CJD or variant CJD disease. We therefore ask all patients undergoing any surgical procedure if they have been told that they are at increased risk of either of these forms of CJD. This helps prevent the spread of CJD to the wider public. A positive answer will not stop your procedure taking place, but enables us to plan your operation to minimise any risk of transmission to other patients.

2 Photography, Audio or Visual Recordings

As a leading teaching hospital we take great pride in our research and staff training. We ask for your permission to use images and recordings for your diagnosis and treatment, they will form part of your medical record. We also ask for your permission to use these images for audit and in training medical and other healthcare staff and UK medical students; you do not have to agree and if you prefer not to, this will not affect the care and treatment we provide. We will ask for your separate written permission to use any images or recordings in publications or research.

3 Students in training

Training doctors and other health professionals is essential to the NHS. Your treatment may provide an important opportunity for such training, where necessary under the careful supervision of a registered professional. You may, however, prefer not to take part in the formal training of medical and other students without this affecting your care and treatment.

4 Use of Tissue

As a leading bio-medical research centre and teaching hospital, we may be able to use tissue not needed for your treatment or diagnosis to carry out research, for quality control or to train medical staff for the future. Any such research, or storage or disposal of tissue, will be carried out in accordance with ethical, legal and professional standards. In order to carry out such research we need your consent. Any research will only be carried out if it has received ethical approval from a Research Ethics Committee. You do not have to agree and if you prefer not to, this will not in any way affect the care and treatment we provide. The leaflet '*Donating tissue or cells for research*' gives more detailed information. Please ask for a copy.

If you wish to withdraw your consent on the use of tissue (including blood) for research, please contact our Patient Advice and Liaison Service (PALS), on **01223 216756**.

Information and support



The Circulation Foundation: <http://www.circulationfoundation.org.uk/>



Privacy & Dignity

Same sex bays and bathrooms are offered in all wards except critical care and theatre recovery areas where the use of high-tech equipment and/or specialist one to one care is required.



We are currently working towards a smoke free site. Smoking is only permitted in the designated smoking areas. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169

Help with this leaflet



If you would like this information in large print, another language or in audio format, please ask the department to contact Patient Information on 01223 216032 or

patient.information@addenbrookes.nhs.uk



Document history

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Consent Form

Carotid endarterectomy

For staff use only:

Hospital number:

Surname:

First names:

Date of birth:

NHS no: _ _ _ / _ _ _ / _ _ _ _

Use hospital identification label

A Patient's side left / right or N/A

Consultant or other responsible health professional

Name and job title:

Any special needs of the patient (e.g. help with communication)?

Please use 'Procedure completed' stamp here on completion:

B Statement of health professional (details of treatment, risks and benefits)

1 I confirm I am a health professional with an **appropriate knowledge of the proposed procedure**, as specified in the hospital's consent policy. I have explained the procedure to the patient. In particular, I have explained:

a) the intended benefits of the procedure (please state)

To remove the diseased area from the affected carotid arteries; this can prevent a stroke occurring in the future.

b) the possible risks involved. Addenbrooke's always ensures any risks are minimised. However all procedures carry some risk and I have set out below any significant, unavoidable or frequently occurring risks including those specific to the patient

- a small risk of stroke at the time of operation
- all major operations carry general risks including problems with the heart and always produce bruising and soreness

c) what the treatment or procedure is likely to involve, the benefits and risks of any available alternative treatments (including no treatment) and any particular concerns of this patient:

Consent Form

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First names:

Date of birth:

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Use hospital identification label

d) any extra procedures that might become necessary during the procedure such as:

Blood transfusion

Other procedure (please state)

The following information leaflet has been provided:

Carotid endarterectomy

Version, reference and date: V5, CF201, April 2012

or I have offered the patient information about the procedure but this has been declined.

3 This procedure will involve:

General and/or regional anaesthesia

Local anaesthesia

Sedation

None

Signed (Health professional): Date: D D / M M / Y Y Y Y

Name (PRINT): Time (24hr): H H : M M

Designation: Contact/bleep no:

C Consent of patient / person with parental responsibility

I confirm that the risks, benefits and alternatives of this procedure have been discussed with me and that my questions have been answered to my satisfaction and understanding.

Important: please read the patient information about this procedure and then put a tick in the relevant boxes for the following questions:

1 Creutzfeldt Jakob disease (CJD)

Have you ever been notified that you are at risk of CJD or variant CJD for public health purposes? If yes, please inform your health professional.

Yes No

2 Photography, Audio or Visual Recording

a) I agree to the use of any of the above type of recordings for the purpose of diagnosis and treatment.

Yes No

b) I agree to unidentified versions of any of the above recordings being used for audit and medical teaching in a healthcare setting.

Yes No

3 Students in training

I agree to the involvement of medical and other students as part of their formal training.

Yes No

Consent Form

Carotid endarterectomy

For staff use only:

Hospital number:

Surname:

First names:

Date of birth:

NHS no: _ _ _ / _ _ _ / _ _ _ _

Use hospital identification label

4 Use of Tissue

a) I agree that tissue (including blood) not needed for my own diagnosis or treatment can be used and stored for ethically approved research which may include ethically approved genetic research.

Yes No

b) Where additional clinical information is needed for the purposes of ethically approved research, I agree that relevant sections of my medical record may be looked at by researchers or by relevant regulatory authorities. I give permission for these individuals to have access to my records.

Yes No

I have listed below any procedures that I do not wish to be carried out without further discussion.

I have read and understood the Patient Information about this procedure and the above additional information. I agree to the procedure or treatment.

Signed (Patient): Date: D.D./M.M./Y.Y.Y.Y.

Name of patient (PRINT):

If signing for a child or young person; delete if not applicable.

I confirm I am a person with parental responsibility for the patient named on this form.

Signed: Date: D.D./M.M./Y.Y.Y.Y.

Relationship to patient:

If the patient is unable to sign but has indicated his/her consent, a witness should sign below.

Signed (Witness): Date: D.D./M.M./Y.Y.Y.Y.

Name of witness (PRINT):

Address:

Consent Form

Carotid endarterectomy

For staff use only:

Hospital number:

Surname:

First names:

Date of birth:

NHS no: _ _ _ / _ _ _ / _ _ _ _

Use hospital identification label

D Confirmation of consent

Confirmation of consent (where the treatment/procedure has been discussed in advance)

On behalf of the team treating the patient, I have confirmed with the patient that she/he has no further questions and wishes the treatment/procedure to go ahead.

Signed (Health professional): Date: ..D.D./M.M./Y.Y.Y.Y.....

Name (PRINT): Job title:

Please initial to confirm all sections have been completed:

E Interpreter's statement (if appropriate)

I have interpreted the information to the best of my ability, and in a way in which I believe the patient can understand:

Signed (Interpreter): Date: ..D.D./M.M./Y.Y.Y.Y.....

Name (PRINT):

Or, please note the language line reference ID number:

F Withdrawal of patient consent

The patient has withdrawn consent (ask patient to sign and date here)

Signed (Patient): Date: ..D.D./M.M./Y.Y.Y.Y.....

Signed (Health professional): Date: ..D.D./M.M./Y.Y.Y.Y.....

Name (PRINT): Job title: