

Patient information

Upper Limb Bypass Surgery

Vascular Department

Your Consultant /Doctor has advised you to have Upper Limb bypass surgery

What is upper limb surgery?

A bypass operation places a new artery around a blocked artery to restore the circulation and relieve symptoms.

Upper limb bypass surgery connects two arteries in the arm and/or neck with a bypass graft to overcome a blockage in the blood supply to the arm.

A common upper limb vascular operation is to connect the carotid (main artery to the head) artery in the neck to the subclavian (main artery to the arm) artery above the collar bone to overcome a blockage at the beginning of the subclavian artery in the upper chest. This is called a carotid-subclavian bypass.

The brachial artery lies in the upper arm between the shoulder and the elbow – the radial and ulnar arteries lie between the elbow and the wrist. Bypass surgery in the arm is not anywhere near as common as bypass surgery in the leg but any of these arteries can be bypassed if the arterial circulation is blocked.

The bypass grafts can be made from a piece of your own vein from the leg or arm or manufactured from an artificial material called Dacron.

What are the benefits of upper limb surgery?

If the major arteries of the arm become blocked by atheroma (hardening of the arteries) or thrombosis (blood clot) the blood supply to the hand and fingers may be severely affected. The initial symptoms may be of loss of strength in the arm or hand and pain when the arm is used to carry or lift.

If the ischaemia (lack of blood) is severe the fingers may be more painful with blue or pale colour changes. If this has been present for longer than two weeks this is called critical limb ischaemia.

Other symptoms of critical limb ischaemia in the arm include ulcer and gangrene of the finger tips. Critical limb ischaemia means that the fingers and even the arm are threatened leading to a risk of amputation.



The aim of the operation is to restore the blood supply in the arm, hand and fingers to relieve pain, allow healing of ulcers and areas that have become damaged by gangrene and remove the immediate risk of upper limb amputation.

What are the risks?

Common risks (greater than 1 in 10) include bruising and possible bleeding from the wound.

Occasional risks (between 1 in 10 and 1 in 100) include embolism (moving debris or blood clot) from an artery into the hand or fingers or thrombosis of the bypass graft leading to lack of blood supply to the arm, hand and fingers. Additional procedures may be needed to avoid loss of a limb.

As with any operation, you may develop a chest infection. This is more likely if you smoke. It may need treatment with antibiotics and physiotherapy.

Occasionally, a collection of blood forms around the wound. This is called a haematoma. If this is small it may disperse by itself, but larger haematomas will need to be evacuated in a second operation. There may be more serious internal bleeding from the bypass graft itself requiring further surgery.

Infection of the wound is a small risk (1 in 100) – infection of the bypass graft is less common than this but is a serious complication.

A heart attack or disturbance of heart rhythm may also occur in 1 in 100 patients. This may lead to medical treatment especially if the heart is weakened (heart failure).

Less common, rare risks (less than 1 in 100) include superficial nerve injury to the arm causing an area of permanent numbness or weakness/paralysis of the arm, hand or fingers.

Swelling of an arm or leg may occur with the possibility of deep vein thrombosis or pulmonary embolism.

Internal bleeding from damage to an internal artery is possible – this may require further open surgery.

Risks of stroke, transient ischaemic attack (stroke symptoms lasting less than 24 hours) and kidney failure requiring dialysis are small risks but may be fatal.

The immediate fatal risk of open vascular surgery is 5 in 100.

Are there any alternatives available?

If the blockage to the arm arteries has occurred because of a moving blood clot (embolism) the blood clot in the arm arteries can be removed by a balloon catheter – this is also an open operation called embolectomy.



The main alternative to open bypass surgery is balloon angioplasty or stenting of the arm arteries. This is a radiological keyhole procedure and has fewer risks and complications than open aortic surgery. Unfortunately not every case is suitable for this easier procedure.

What happens if I decide not to have treatment?

The decision to operate on an arm artery is never taken lightly because of the possible consequence of major amputation of an arm or hand.

What sort of anaesthetic will be given to me?

You will be given a general anaesthetic. General anaesthesia is drug-induced unconsciousness: it is always provided by an anaesthetist, who is a doctor with specialist training.

Unfortunately, general anaesthesia can cause side effects and complications. Side effects are common, but are usually short-lived: they include nausea, confusion and pain.

Complications are very rare, but can cause lasting injury: they include awareness, paralysis and death.

There is a risk of damage to teeth, particularly caps or crowns and veneers. Your anaesthetist will take every care, but occasionally damage can occur.

The risks of anaesthesia and surgery are lower for those who are undergoing minor surgery, and who are young, fit, active and well.

For more information, please ask for a copy of the leaflet **“You and Your Anaesthetic”** (PIF 344).

You will be given an opportunity to discuss anaesthetic options and risks with your anaesthetist before your surgery.

If you are worried about any of these risks, please speak to your Consultant or a member of their team.

Getting ready for your operation

- You will usually be seen in the pre-operative clinic before you are admitted to hospital. Here you will have blood tests, and sometimes a heart trace or a chest X-ray. You will be assessed to see if you are fit for the anaesthetic.
- The staff will ask routine questions about your health, the medicine you take at the moment and any allergies you may have.
- You will be given instructions on eating and drinking before your operation.
- You will be able to discuss the operation with a doctor. You will be asked to sign a consent form to say that you understand the procedure, and what the operation involves.
- If you smoke, you should stop completely. The risks of stroke are greatly increased in smokers and there are additional risks of heart attack and lung disease with surgery.



Advice and help is available via your physician, family doctor (GP) and through NHS 111.

The day of your operation

- You will come into hospital on the day of your operation. Please make sure you contact the ward before you leave home to check bed availability.
- Please leave all cash and valuables at home. If you need to bring valuables into hospital, these can be sent to General Office for safekeeping. General Office is open between 8.30 and 4.30 Monday to Friday. Therefore, if you are discharged outside these times we will not be able to return your property until General Office is open. The Trust does not accept responsibility for items not handed in for safekeeping.
- Please bring any medication you take into hospital with you.
- Please bring in toiletries, nightwear and towels.
- You will be asked to remove jewellery - plain band rings can be worn but they will be taped.
- Please leave body piercings at home. False nails and nail polish will also need to be removed if worn.
- If you are on regular medication, you will be told to take this if necessary.
- You will be asked to put on a gown and disposable underwear.
- A bracelet with your personal details will be attached to your wrist.
- You may be prescribed some medication to take before your operation by the anaesthetist. A member of the nursing staff will give this to you.
- A nurse and porters will take you to the operating theatre.
- Your dentures, glasses or hearing aid can stay with you on your journey to the operating theatre.
- When you arrive in the theatre area, the ward nurse will leave you, and you will be asked to put on a disposable hat.
- You will then be taken to the anaesthetic room and a member of theatre staff will check your details with you.

What should I expect after my operation?

- After your operation you will be kept in the theatre recovery room enhanced recovery unit on the vascular ward.
- A nurse will check your pulse, blood pressure, breathing rate and urine output regularly. We will also carefully monitor your wound for any bleeding or swelling.



- The colour, temperature and pulses in the limbs will be checked regularly after the operation.
- **It is important that if you feel any pain you must tell the nursing staff, who can give you painkillers to help.**
- The nursing staff will also advise you when you can start taking sips of water. Anaesthetics can make some people sick. If you feel sick we advise you not to drink until this feeling has passed. The nursing staff may offer you an injection to help this sick feeling go away.
- After a few days, you will be allowed to sit out, drink and eat. Return to mobility can take a few more days.

Going Home

You will normally be allowed home after four to seven days depending on the extent of the operation. This may be longer if you have had surgery to remove areas of gangrene.

Discharge Information

Pain relief and medication

The nursing staff will advise you about painkillers before you leave the hospital. Please tell the nurses what painkilling tablets you have at home.

Your wound

The surgeon usually uses a dissolvable suture in which case you may not require the District Nurse. Staple clips (if used) are usually removed on the eighth day.

Getting back to normal

You will probably feel tired for several weeks after the operation. Build up your activity level slowly and ensure you get enough rest. You should avoid strenuous activity for about six weeks.

You will be safe to drive when you can do an emergency stop and drive without discomfort.

This will normally be at about two to four weeks but if in doubt, check with your doctor. Avoid long distances and motorway driving at first.

Returning to work

Depending on your job, you will be able to resume in one to two months. If in doubt, please ask your doctor. Avoid any heavy exercise or lifting for six weeks.

Further Appointments

You will have a follow up appointment in outpatients about six weeks after the operation.



Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further information

LiVES Contact Numbers

During your contact with us, it is important that you are happy with your care and treatment. Please speak to a member of staff and/or the ward/department Sister/Charge Nurse if you have any questions or concerns.

Vascular Ward

Ward 3

Aintree University Hospital

Tel: 0151 529 2028/2262

Vascular Nurses:

Aintree via switchboard

Tel: 0151 525 5980 Bleep 5609/5594 or extensions 4691/4692

Royal Liverpool Hospital via switchboard

Tel: 0151 706 2000 Bleep 4212 or extension 4675

Text phone number: 18001 0151 706 2000 Bleep 4212

Southport via switchboard

Tel: 01704 705124

Whiston Hospital

0151 290 4508/ 430 4199

Secretaries:

Aintree University Hospital

Tel: 0151 706 3691/ 3523/3524/3481/3457/11813

0151 529 4950/4953

Southport/Ormskirk Tel: 01704 704665



**Whiston Hospital
St. Helens and Knowsley NHS Trust
Tel: 0151 430 1499**

**NHS 111
Tel: 111**

**Circulation Foundation:
www.circulationfoundation.org.uk/vascular-disease/**

Smoking cessation:

Liverpool	Tel: 0800 061 4212/ 0151 374 2535
Sefton	Tel: 0300 100 1000
West Lancashire	Tel: 0800 328 6297

**Liverpool Vascular and Endovascular Service
Aintree University Hospital
Lower Lane
Liverpool
L9 7AL
Tel: 0151 525 5980
vascsecs@liverpoolft.nhs.uk**

Participating Hospitals in LiVES are:

- **Liverpool University Hospitals NHS Foundation Trust**
- **Southport District General Hospital**
- **Ormskirk District General Hospital**
- **Whiston and St Helens Hospitals**

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All Trust approved information is available on request in alternative formats, including other languages, easy read, large print, audio, Braille, moon and electronically.

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