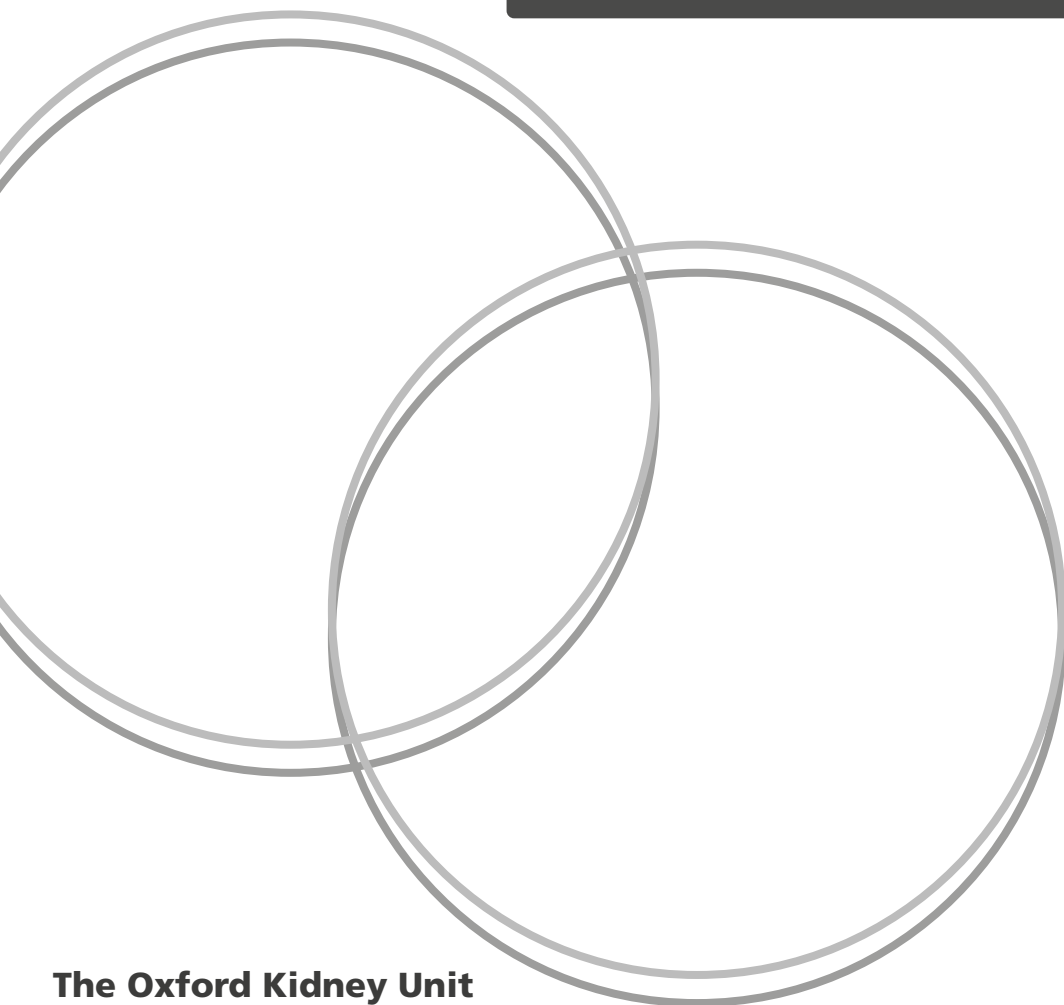


Access for Haemodialysis

Part 1

**Preparing for haemodialysis
and forming your new
dialysis fistula or graft**



This leaflet will provide you information on having a dialysis fistula or graft created.

What is haemodialysis?

Haemodialysis involves removing blood into an external machine, where it's filtered before being returned to the body. To remove some of your blood we will need access to a blood vessel, this can be through a dialysis line in your neck or through a fistula or graft.

When you are near to starting haemodialysis we will ask you to see a surgeon or vascular access nurse in the Dialysis Access Clinic. They will talk with you about the dialysis access that is best for you.

What will happen at the dialysis access clinic?

At the clinic we will talk with you about your dialysis access options and have a look at the veins in your arm. We will also carry out an ultrasound scan of the veins in your arms, to make sure we choose the best place to make a fistula. This involves having a cold gel on your arm, over which we roll a handheld probe.

Sometimes the veins look very small on the ultrasound machine, so we may need to send you for a further test. This test is called a venogram and is performed in the radiology department at the Churchill hospital.

A venogram involves a needle being placed in a vein in the back of your hand. A small amount of dye is pushed through the needle, whilst the radiographer takes some pictures using X-rays. The dye will help to show up your veins on the X-ray pictures.

These pictures will then be discussed with your surgeon and they will decide where to create your dialysis access. If you need to have one of these tests, an appointment will be sent to you in the post.

During your access clinic consultation a surgeon will talk with you about the best type of anaesthesia for you. There is also time for you to ask any questions you may have. We will let you know by letter the date for your operation.

What is a dialysis fistula?

A dialysis fistula is known as an arterio-venous fistula or AVF.

You will need a small operation to create a dialysis fistula. This involves joining an artery to a vein, either at the level of your wrist or at your elbow. This is known as a 'native' fistula.

This is usually performed whilst you are awake (local anaesthetic). The operation takes about an hour. You should be able to go home the same day.

When we join your vein to your artery, you will have an increased (arterial) blood flow through the vein, which over time makes the vein become thicker and stronger. This allows dialysis needles to be inserted regularly and makes it easier to transfer your blood into the dialysis machine and back again.

You will need to have the fistula created a few weeks before you need to start haemodialysis. Your fistula will take between 6 to 8 weeks to mature enough to insert needles into the vein.

Sometimes the veins can be quite deep making it difficult for the dialysis nurses to insert needles into the fistula. If this happens a surgeon may need to perform a second operation to bring the vein up to the surface. This is called "transposition".

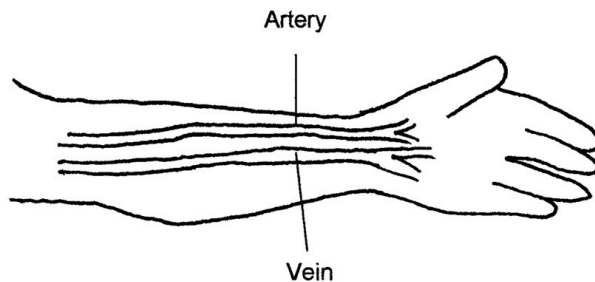
A transposition is usually carried out whilst you are asleep. This can be done under a general anaesthetic or a regional block with sedation (there is more information about this on page 7). It takes about one and a half hours to do this operation.

A transposition is often carried out about 2 to 3 months after your fistula has been created. You may need to stay in hospital overnight after the operation.

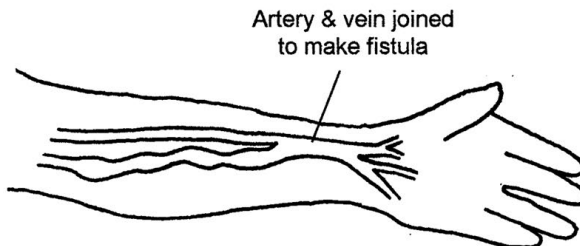
If your veins are thin or small you may need to have a graft inserted into your arm so will act as an artificial vein.

Pictorial showing the vein before surgery, after surgery and 6 weeks after surgery.

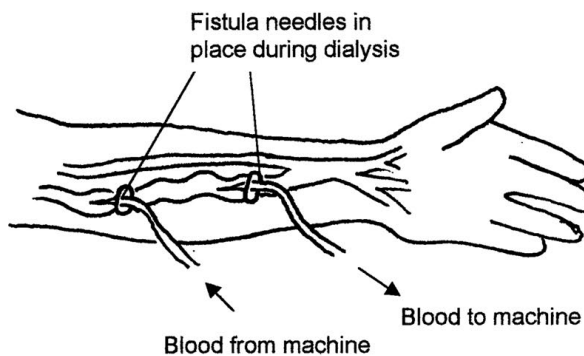
1. Forearm before access surgery



2. Forearm after surgery



3. Fistula in use 6 weeks after surgery



What is a graft?

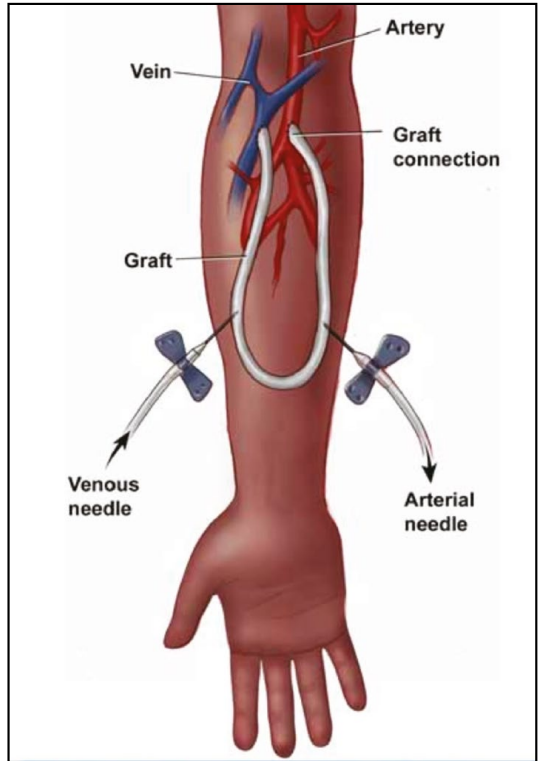
A graft is a synthetic material (see picture opposite) that is connected to your vein and artery in place of the blood vessel. The dialysis needles can be inserted into the graft in exactly the same way as we would insert needles into a fistula.

There are different types of grafts that can be used. These can be inserted in the forearm, upper arm and the legs. Your surgeon will discuss with you the most appropriate place to insert your graft and why.

A graft is usually created when you are asleep, this is either a general anaesthetic or a regional block and sedation. It takes about an hour and a half to create a graft.

You may need to stay in hospital overnight after your operation. This is to make sure the graft is working well.

Grafts are used in exactly the same way as a fistula but, because they do not need to develop as a fistula does, they can be needled sooner; usually after two weeks. Sometimes we will place a graft called an 'instant needling graft'. This type of graft can be needled within 24 to 48 hours.



When and where will I have the operation?

Your operation may take place at the Horton Hospital or Churchill Hospital.

Once we know the date we will be able to let you know what time you need to be at the hospital. It usually happens a few weeks after you have been to the Dialysis Access Clinic.

If you are on haemodialysis we may need to alter the days you dialyse around the operation time. Ideally you should have haemodialysis the day before your operation (or Saturday if your surgery is on a Monday). Please show the letter you will get about your operation to your dialysis nurse.

Important information before the operation

If you take a medication (warfarin, clopidogrel, apixiban) that thins your blood please phone 01865 225 792 at least a week before the operation. Aspirin is safe to continue as long as you don't take any other blood thinning medication.

You may need to stop or change some of these medications before your operation.

If you are not sure we would rather hear from you or we may need to cancel your operation if you have not stopped blood thinning medication.

Please continue any medications that you would normally take, unless we advise you otherwise. Especially blood pressure or diabetic medications. If your blood pressure or blood glucose is very high we may need to cancel your operation.

What type of anaesthesia will I need?

The anaesthesia you will have will depend on the type of surgery and your health condition or conditions. Anaesthesia has become safe. However with any operation or medical procedure there are potential complications. A surgeon will discuss this with you at the

Dialysis Access Clinic. If you have lots of health conditions we may ask an anaesthetist for advice. You may need to have a heart test (an ECHO, which is an ultrasound of the heart).

Local anaesthesia

A local anaesthesia involves injecting a special numbing injection into the area where we are creating the fistula. You shouldn't feel any pain but you may feel a little bit of pressure. You are fully awake during the operation.

General anaesthetic

A general anaesthetic is where you are unconscious and unaware of the operation. It is usually used for more serious or complex operations. An anaesthetist will put a small cannula (tube) in the back of your hand and give you some medication that makes you sleep. They may also ask you to breathe some oxygen or other gas through a mask that goes over your nose and mouth.

If you have other health conditions it may not be advisable for you to have a general anaesthetic, as this can make your health worse. In this situation we would talk with you about having a regional block and some sedation.

Regional block anaesthesia

Regional block anaesthesia involves an injection of local anaesthetic (numbing solution) into the nerves of the arm we are operating on. This takes about 10 to 20 minutes for your arm to go numb. We can also give you some medication that makes you feel very sleepy (sedation).

There is more information in the anaesthesia explained leaflet. Please ask your kidney team if you don't have a copy.

Before a general anaesthetic and regional block you would need to have a pre-operative assessment. This happens about two weeks before your operation. This is to make you are fit for the operation. We will also let you know what happens around the time of the operation.

What happens on the day of the operation?

If you are going home the same day should be ready to go home about four hours after your operation. The Day Surgery Unit can let you know what time this is planned for when you arrive.

If you need to stay in hospital you will go to the Transplant ward.

What happens after the operation?

Your wound is covered with waterproof glue and any stitches are inside you. You will be shown how to look after your new fistula by one of the nurses on the Day Surgery Unit, so that you know what to do at home.

The nurses will show you how to use a stethoscope, to listen to the blood flowing through your fistula.

- When the stethoscope is placed gently onto the small dressing you will be able to hear a 'whooshing' sound.
- If you place your fingers on top of the dressing, you should be able to feel a 'buzzing'. Both the buzzing and the whooshing are normal and this means that your fistula is working.

You may be given a 'squeezy ball' to help your new fistula to develop; squeeze and release this in your hand once a day for about 10 to 15 minutes. Don't worry if you do not receive a 'squeezy ball', a rolled up pair of socks or ball of wool will do the same job.

What can I expect immediately after my surgery?

Wound care

You shouldn't have any bleeding from the wound/s (see page 11 for more information). There are no stitches to be removed, as the wound is sealed with dissolvable stitches.

Bathing instructions

Keep your wounds dry for 24 hours. Don't pick at the glue, it will slowly wash off over the next 2 to 3 weeks.

Pain

You can take a mild pain killer such as paracetamol as prescribed on the packet. If you have pain that is severe or is getting worse please phone the Vascular Access Nurse or Transplant ward.

Driving

Day surgery using local or regional block anaesthetic

We would advise you not to drive on the day of your operation, as you may have some pain. You can resume normal activities as soon as you feel well enough.

If you have had sedation you must not drive for 48 hours. Please make sure you have someone who can pick you up, or that we have arranged transport for you.

Day surgery using general anaesthetic

You must not drive for 48 hours after your surgery. If your arm is painful you may wish to leave it a little longer before driving. You must be able to safely perform an emergency stop.

If you take a blood thinning medication (such as apixiban, clopidogrel) and we had asked you to stop it before surgery, the surgeon will tell you when to restart it before you leave the hospital. If you are on warfarin, please make sure you restart it at your usual dose and let the anticoagulation team who care for you know that you have had to stop your warfarin for a period of time as you have had an operation. They may want to see you a few days after the operation to check your INR. If you're not sure what this is then please ask before you leave the hospital.

What can I expect after surgery?

You may find that you have some arm or hand swelling (your forearm, upper arm or over your knuckles). We would advise that you raise your arm above chest level, to help reduce the swelling. A small amount of swelling is completely normal and should go down within a few days. If your swelling continues for longer than a few days, or is getting worse, then please contact the Vascular Access team or Transplant ward.

Do not worry if you develop an egg shaped swelling at the level of your elbow on the inside of your arm, but please do tell us and we will advise you on what to do. The egg shape is usually a collection of fluid.

It is also normal to have slight pins and needles or numbness in your thumb and first finger; this should improve within a few weeks following your operation. If it doesn't improve, or gets worse and you're concerned, please contact us.

What happens after the operation?

At two and six weeks after the operation, a pre-dialysis nurse (or dialysis nurse) will contact you to arrange to have your fistula or graft checked. You will continue to be seen by your kidney doctor and/or your pre-dialysis nurse, but it's important to keep checking your fistula between these appointments. We recommend that you check your fistula is working every day.

Signs to look out for

It's important to seek help immediately if you experience any of the following:

- **Excessive bleeding** – place a small clean towel over the area of bleeding and with your other hand press quite firmly for 5 minutes. Do not remove your hand before then. If you have done this twice and the bleeding continues please dial 999 and tell them you are bleeding from a dialysis fistula.
- **Redness and/or hot to touch or weeping wound** – you may have an infection requiring antibiotics.
- **Cold (blue) hand** – if your hand is cold, changes colour, or you lose feeling.

Monday to Friday contact the Vascular Access Team or Pre-Dialysis Nurse.

At weekends, evenings and bank holidays contact the Transplant ward.

How can I take care of my fistula?

Keep it clean, infections are rare but can still happen. Once it has healed wash your arm every day and always wash it before dialysis.

Keep it clear, do not wear a watch or tight clothing on your fistula arm. Try not to sleep on that side of your body.

Avoid tight clothing over the fistula which may reduce the blood flow to the fistula.

Take care when lifting heavy objects which put direct pressure on the fistula.

Check it every day, to make sure it is still working (buzzing when you touch it and listening with the stethoscope). If you don't feel this, contact the renal ward straight away as the fistula may be blocked.

Do not allow your blood pressure to be taken on your fistula arm because this will increase the risk of damage to the fistula.

Never have blood samples taken from your fistula unless we have advised you otherwise.

Now that you have your fistula a nurse will check it each time you come to clinic.

Once you are ready to start haemodialysis the dialysis nurses will check your fistula each time you have treatment.

Useful contact numbers

Vascular Access Nurses

Telephone: **01865 225 910** or **01865 225 373**

Please leave a message if no one is available to take your call.

Main Haemodialysis Unit, Churchill Hospital

Telephone: **01865 225 807**

(Monday to Saturday, 7.00am to 7.00pm)

Tarver Haemodialysis Unit, Churchill Hospital

Telephone: **01865 225 487**

(Monday to Saturday, 7.00am to 7.00pm)

Renal Ward, Churchill Hospital

Telephone: **01865 225 780**

24 hours, including weekends and bank holidays

Transplant ward, Churchill Hospital

Telephone: **01865 253 010**

24 hours a day, including bank holidays and weekends

Milton Keynes Dialysis Unit

Telephone: **01908 996 496**

Stoke Mandeville Dialysis Unit

Telephone: **01296 316 996**

Banbury Dialysis Unit

Telephone: **01295 229 812**

High Wycombe Dialysis Unit

Telephone: **01494 426 347**

Swindon Dialysis Unit

Telephone: **01793 605 286**

Whitehouse Dialysis Unit

(Monday to Saturday, 7.00am to 7.30pm)

Telephone: **01295 228 552** or **01295 228 553**

Useful websites

Oxford Kidney Unit

Lots of information about the Oxford Kidney Unit for patients and carers.

Website: www.ouh.nhs.uk/oku

Kidney Patient Guide

Information for patients with kidney failure and those who care for them.

Website: www.kidneypatientguide.org.uk

Kidney Care UK

A charity which has lots of practical support and information for people with kidney disease. There is a section all about fistula's.

Website:

www.kidneycareuk.org/about-kidney-health/treatments/dialysis/haemodialysis-access-arteriovenous-fistula

Six Counties Kidney Patients Association

The SCKPA is run for patients by patients or family members.

They offer support to people suffering from kidney disease or who are on dialysis. They work closely with the Oxford Kidney Unit and have branches in Oxfordshire, Northamptonshire, Buckinghamshire, and Milton Keynes, and parts of Wiltshire, Gloucestershire and Berkshire.

Website: www.sixcountieskpa.org.uk

National Kidney Federation

A charity which has lots of practical support and information for people with kidney disease.

Website: www.kidney.org.uk

OUH Patient Portal

Health for Me

Please ask a member of the renal team to sign you up to the patient portal.

Website: www.ouh.nhs.uk/patient-guide/patient-portal

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

Author: Jo Carter, Advanced Clinical Practitioner, Dialysis Access
and Mr Simon Knight, Transplant Consultant

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Oxford University Hospitals NHS Foundation Trust

www.ouh.nhs.uk/information



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