

Having an arteriovenous fistula formed

This leaflet explains more about having an arteriovenous fistula (AVF) formed, including the benefits, risks and any alternative forms of vascular access. It also lets you know what you can expect when you come into hospital, and includes important information on how to care for your AVF when you go home. If you have any further questions, please speak to the doctor or nurse caring for you, or the access nurse specialist.

What is an AVF?

In order to have haemodialysis treatment, dialysis nurses require access to your bloodstream. This is known as vascular access. One type of vascular access is an AVF.

A surgeon forms a fistula by joining an artery (a blood vessel transporting blood from the heart around the body) directly to a vein (a blood vessel taking blood back to the heart). This is usually done at the wrist or elbow. This causes more blood to flow through the vein. Because of this, the vein grows larger and stronger. This makes it possible to repeatedly insert the needles required for haemodialysis treatment. Your veins are the key to making a good AVF. If you have blood taken, please remember to ask for the blood to be taken from the back of your hands only, to preserve the arm veins for AVFs.

Why should I have an AVF?

We need to get access to your bloodstream so that the dialysis machine can clean your blood. There is evidence from many studies to suggest that an AVF is the best form of vascular access for haemodialysis. An AVF is likely to last longer, and you are likely to have fewer complications (such as infections) than with other types of vascular access.

Once the fistula is formed it usually takes 6-8 weeks for it to enlarge enough to be used for haemodialysis.

What are the risks?

A fistula is the preferred vascular access for dialysis because there is less likelihood of problems. However, you should be aware of problems that can happen and report any changes or concerns to the nursing team looking after you, so that they can be dealt with quickly.

Bleeding

The fistula may bleed. Very occasionally a blood transfusion may be needed.

Infection

A wound infection may develop, causing redness or heat. This can be treated with antibiotics.

Blocked fistula

The fistula may block and stop working. You can check that your fistula is working each day, by placing your hand over the fistula and feeling the 'thrill' which is a buzzing sensation. This 'thrill' is caused by the high flow of blood through the vein, and is a sign that your fistula is working well.

Swelling in the fistula arm following surgery

It is important to move the arm as much as possible after surgery. This movement may help swelling to resolve, and will prevent the arm from becoming stiff.

Reduced blood supply to the hand (steal syndrome)

Occasionally, too much blood may travel through the fistula vein and lead to reduced blood flow to your hand. This can cause pain, coldness or tingling in the fingers or hand on your fistula arm.

If you experience any of the above symptoms, you should contact the vascular access nurse (contact details are at the end of this leaflet).

Are there any alternatives?

For most people, a fistula is the best option for haemodialysis access, but for some people this may not be possible. The alternatives are:

- Arteriovenous graft – This is similar to a fistula, but instead of the artery being connected to the vein, a synthetic tube is used to join them together. The tube is placed under the skin. Grafts are usually ready to be used for dialysis more quickly than a fistula.
- Central venous catheter (usually referred to as a dialysis line – This is where a piece of synthetic tubing is inserted into one of the large veins, usually in the neck.

Your kidney care team and your surgeons will discuss these alternatives with you in more detail at the access clinic.

How can I prepare for a fistula formation?

If you are taking anticoagulant medication to thin your blood (for example warfarin, or injections such as heparin, dalteparin or enoxaparin), please tell the doctor or nurse who is responsible for your procedure. They will tell you when to stop these medications before the procedure and when it is safe to restart them after the procedure.

Please also tell the doctor or nurse if you are on antiplatelet medication (such as aspirin, clopidogrel or dipyridamole). They will advise you whether you should continue with this treatment or stop it temporarily before your procedure.

If you have any questions about your medication and what to do before the procedure, please contact the ward or vascular access nurse (contact details are at the end of this leaflet).

If you are having a general anaesthetic you will need to fast (not eat or drink anything) for six hours before your operation. However, you are allowed to drink still water up to two hours before your operation. You will be admitted on the morning of your operation and you will usually need to stay in hospital overnight.

If you have your operation under local anaesthetic, you can eat and drink normally. You will be admitted on the morning of your operation and should be able to go home the same day. The surgeon will discuss these options with you in the access clinic.

You may find it useful to read our leaflet, **Having an anaesthetic**. Please ask us for a copy if you don't already have one.

Giving my consent (permission)

We want to involve you in decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form. This states that you agree to have the treatment and you understand what it involves.

If you would like more information about our consent process, please speak to a member of staff caring for you.

Will I feel any pain?

You can expect some discomfort after the anaesthetic wears off. We will give you pain relief for this. It is important that you take these painkillers on a regular basis for the first few days. When taken regularly, the medicine is kept at a constant level in your body and will control your pain better. After a few days, you can gradually reduce the medicine until you do not need it any longer. Please contact the ward or your GP if you find the pain difficult to control.

We will explain any medicines given to you before you leave the hospital. If you are at all uncertain, please contact your ward or your GP for advice.

It is important that you do not exceed the recommended daily dose of any medicine you are given. Please make sure you read the label.

What happens after a fistula formation?

The operation will take about one hour to complete. If you have had a local anaesthetic you should be able to go home later that day. You will need to arrange for someone to take you home. If this is not possible please let us know in advance.

If you have had a general anaesthetic, you will usually need to stay in hospital overnight.

What do I need to do after I go home?

When you go home, you will need to check your fistula daily for a 'buzzing' sensation known as a 'thrill'. Before you leave the ward, the nurses looking after you will explain how to check your fistula.

You may notice a small amount of blood visible on the dressing and/or some bruising around the wound site. This is normal.

Your wound may be tender for a few days after your operation. Any pain can be relieved with regular painkillers.

Looking after your AVF

You can take care of your fistula by following these steps:

- Be careful not to knock your arm for the first few days after your fistula has been formed.
- Rest your arm – the wound needs time to heal.
- Do not lift anything heavy with your fistula arm for the week. You can start driving when you can safely move your arm without discomfort
- Within a few days of having your fistula formed you should be able to feel the “thrill” (see above). Check your fistula every day for the ‘thrill’. If you cannot feel the ‘thrill’, let your nursing team know straight away as this could mean that your fistula has stopped working.
- Do not let any medical professionals take blood from the veins in your arms. Blood should always be taken from the veins on the backs of your hands. Please let staff know this if you are having blood taken.
- Never let anyone check your blood pressure on the fistula arm.
- Do not wear any tight sleeves or watches that may restrict the flow of blood through your fistula arm.
- Be careful not to lie on your fistula arm.
- Do not loop shopping bags over your fistula or graft.

The stitches on your wound may be dissolvable or non-dissolvable, and we will advise you about this before you leave the ward. If they are non-dissolvable you can have them removed at your GP surgery seven to ten days after your operation. If they are dissolvable, you don't need to do anything (but please refer to the list above for general advice on how to look after your AVF).

You will have a dressing on the wound after your operation. Your GP can review this for you, or if you are coming to the hospital for an appointment the kidney care team will review it.

Keep the wound clean and dry until it is healed, to avoid infection.

You can help your fistula to develop by squeezing a rubber ball in your hand. You can do this exercise as often as you like.

How soon can my AVF be used for haemodialysis?

It usually takes 4-6 weeks for the vein to enlarge enough for the haemodialysis needles to be inserted. If you need haemodialysis during this time, you will usually have a haemodialysis line inserted into a neck vein.

When can I return to normal activities?

You should be able to return to normal activities within one to two weeks

Will I have a follow-up appointment?

We will contact you to arrange a follow-up appointment to have your fistula reviewed within 4-6 weeks. If you do not hear from us, please contact us using the contact details below.

What should I do if I have a problem at home?

A nurse will check your new fistula when you return to clinic. However, you should contact us (details below) if you experience any of the following symptoms:

- The fistula becomes red or swollen and/or painful.
- The appearance of the fistula changes, for example, a lump appears over the wound.
- You experience a tingling sensation in your hand and/or fingers.
- You can no longer feel a 'thrill' or 'buzzing' sensation.

If your fistula starts to bleed excessively, place a clean dressing or other clean material on the wound, apply pressure and get someone to dial 999 for an emergency ambulance.

Contact us

If you have any questions or concerns about your AVF, please contact the access nurse specialist, **t:** 020 7188 7488, Monday to Friday, 9am to 5pm, **mobile:** 07827 281 534, **bleep:** 020 7188 7188. Ask for the bleep desk, and then ask them to bleep 1414, wait for a response. This will connect you to the access nurse specialist directly, Monday to Friday, 9am to 5pm.

Out of hours, please contact:

Astley Cooper Dialysis Unit, **t:** 020 7188 8824, Monday to Saturday, 7am-9pm
Patience Ward, **t:** 020 7188 8838, overnight and on Sundays

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit **w:** www.guysandstthomas.nhs.uk/leaflets

Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline. **t:** 020 7188 8748, Monday to Friday, 9am to 5pm

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS). To make a complaint, contact the complaints department.

t: 020 7188 8801 (PALS) **e:** pals@gstt.nhs.uk
t: 020 7188 3514 (complaints) **e:** complaints2@gstt.nhs.uk

Language and accessible support services

If you need an interpreter or information about your care in a different language or format, please get in touch. **t:** 020 7188 8815 **e:** languagesupport@gstt.nhs.uk

NHS 111

Offers medical help and advice from fully trained advisers supported by experienced nurses and paramedics. Available over the phone 24 hours a day. **t:** 111

Leaflet number: 4137/VER2

Date published: November 2018

Review date: November 2021

© 2018 Guy's and St Thomas' NHS Foundation Trust

A list of sources is available on request