

ArterioVenous Fistula (AVF) Formation for Haemodialysis

This leaflet gives you information about having a fistula (AVF) made for your haemodialysis treatment. It briefly describes the benefits and risks of a fistula and any alternatives. It also explains what you can expect when you come to hospital. If you have any further questions, please speak to a doctor or nurse caring for you.

What is a fistula?

Before you start haemodialysis there needs to be a way to remove blood from your body, to allow it to be cleaned using the dialysis machine and then returned back to you. A fistula provides easy and reliable access to your bloodstream for haemodialysis. A fistula is made by connecting an artery to a vein under the skin.

Why is it done?

When the artery and vein are connected the pressure inside the vein increases which makes the vein bigger and stronger. When the vein has become strong two needles can be put into it. One needle is used to take blood out to the machine whilst the other needle returns blood back to the body.

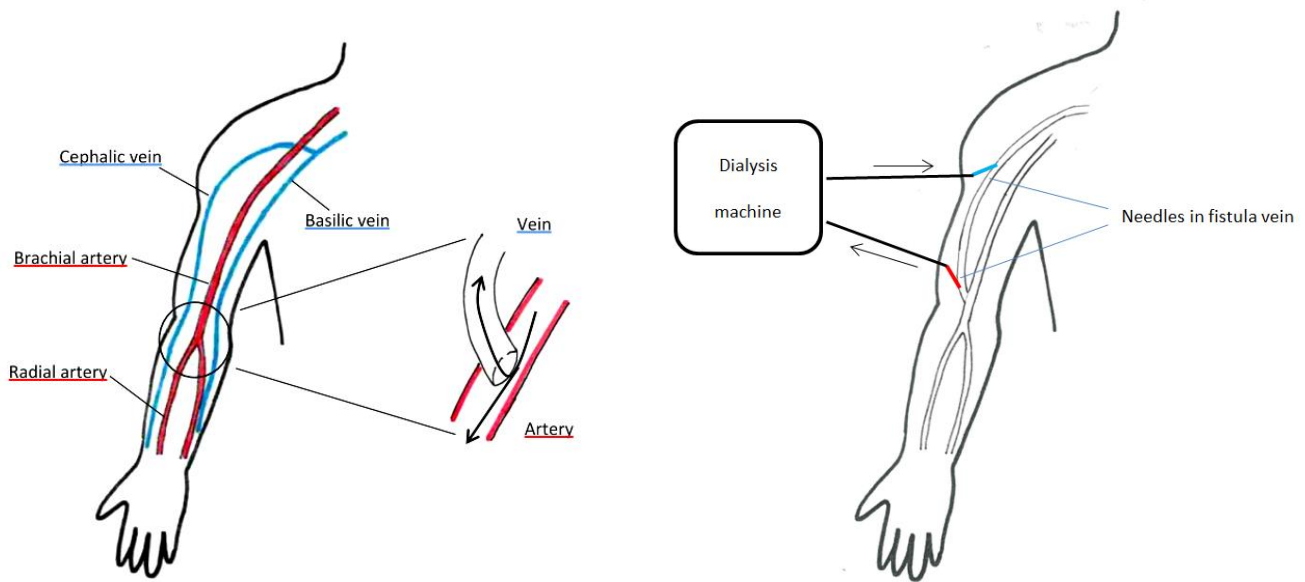
When is it done?

Ideally, the best time to create a fistula is before you are going to need dialysis. Having a fistula does **not** mean you will need to start dialysis. You can live a normal life with a fistula created in your arm and having a fistula created before you start dialysis allows the fistula time to develop before it is used.

Where is my fistula going to be?

There are usually two veins that we can use for a fistula. If you can have a fistula at the wrist, the two needles will go in your fistula vein in the forearm (from the wrist to the elbow).

If you have a fistula at the elbow crease, your fistula vein will be needled in the upper arm (from the elbow to just below your armpit, see image on page 2). After each dialysis session the two needles will be removed from your fistula. Two small dressings will be applied over the puncture sites and you will be able to use your arm normally.



What if I do not have good veins?

As a general rule, veins should be at least 2mm in size to proceed with surgery. To assess your veins, we will request an ultrasound scan to see how big they are. If they are all smaller than 2mm, then we might offer you the option to have a **graft**. This is a synthetic vein that is put under your skin and which connects the artery at the elbow crease to the vein in your armpit.

What if I need dialysis before my fistula is ready?

You will need to have a **haemodialysis line**. This is a flexible tube that is inserted through the skin into one of the large veins, usually in the neck or groin. If you already have a line or would want a line before having a fistula, there is some very important information you need to know:

- Dialysis lines have a **higher risk of infection** in comparison to fistulas
- With a dialysis line in place, you have a higher risk of being admitted to the hospital for line complications (malfunctioning, infection)
- Dialysis lines can **damage the veins** in your chest. This may cause arm and neck swelling or compromise the future possibility of having a fistula
- If your neck veins cannot be used for a line then your groin vein is used. This may potentially **compromise the possibility of having a kidney transplant** in the future.

About the surgery

Where is the scar going to be?

The incision is usually done at the wrist or at the elbow crease. More rarely, you may have a bigger scar in the inside of your arm or in the armpit.

How long is the surgery?

The surgery will take approximately one hour.

Will I be asleep?

Surgery is routinely performed under local anaesthetic (an injection at the level of the incision which will numb the skin) or under regional block (an injection at the level of the armpit to numb the whole arm).

When can I go home?

Most patients can go home on the day of surgery as long as they have someone at home with them in case there are any problems. You might be admitted on the ward or in the Day Surgery Unit. For some longer operations, which are performed under general anaesthetic (while you are asleep) you will often spend one night in hospital.

Are there any risks?

As with any surgical procedures, creating a fistula has some risks:

- **Failure:** unfortunately not all fistulas work. About 15 to 20% of fistulas do not work. This will mean that another surgery is possibly required.
- **Bleeding** is possible, however it is very rare. If you are at home and notice bleeding from the surgical wound, you should immediately apply a strong compression and call the emergency service. This is extremely rare but is the main reason why patients might need the emergency service.
- **Infection:** there is a small risk that the wound could get infected. If this happens, you might require treatment with antibiotics.
- **Steal Syndrome:** if the fistula works “too well”, too much blood might flow through your fistula and not enough towards your hand. This might give you pins and needles in your fingertips, cold fingers and pain. In the case that you have any of these symptoms, you should call your Vascular Access Nurse who will organise a clinical review.
- **Nerve Injury:** depending on the site of the incision, there are some nerves that pass near to the arteries which we use to create a fistula. If any damage is done to these nerves during surgery, you might feel numbness in a specific skin area of your arm.

Will my daily life change? Will I be able to move my arm normally?

If the procedure is successful, you should be able to live a normal life and move your arm normally. You will be asked to keep the surgical site dry for three days after the surgery. Afterwards, you will be able to have a bath or shower or even go swimming.

How do I look after my fistula?

A nurse will explain and show you how to look after your fistula. When your wound has healed you will be able to use your arm normally. Here are a few helpful tips:

- When a fistula is touched a ‘buzzing’ can be felt. Check for this every day and if it becomes weaker or stops please contact the renal unit as soon as possible
- Keep your dressing clean and dry until your wound has healed. If you have stitches these will need to be removed after ten days.
- Avoid wearing tight clothing or a wrist watch if your fistula is in your wrist.
- Do not allow anyone to take blood from your fistula arm or to put a drip into your fistula arm.
- Do not allow anyone to take your blood pressure on your fistula arm
- Do not lift heavy objects with your fistula arm

- Try not to sleep on your fistula arm.

What is the process of having a fistula?

You will be seen by a vascular access surgeon and a vascular access nurse in the outpatient clinic. They will request any further examinations if required, otherwise they will put you on the waiting list to have the surgery.

You will be seen by a vascular access nurse one or two weeks after the operation to check that your wound has healed properly and that your fistula is working. If you need to start haemodialysis soon we need to wait four to six weeks to allow the fistula to mature (get bigger and stronger). Otherwise your fistula will be checked when you come to your renal clinic appointments. We need to ensure it is working in readiness to start haemodialysis.

Contact us

If you have any questions about having a fistula or if you already have a fistula and have concerns, please contact the vascular access nurses on **020 8725 0282** (Monday to Friday, 8am to 5pm) or out of hours **020 8725 3400**.

In case of excessive bleeding or if your hand suddenly comes cold and painful please call 999 or go to your nearest Accident & Emergency department.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.stgeorges.nhs.uk

Additional services

Patient Advice and Liaison Service (PALS)

PALS can offer you on-the-spot advice and information when you have comments or concerns about our services or the care you have received. You can visit the PALS office between 9.30am and 4.30pm, Monday to Friday in the main corridor between Grosvenor and Lanesborough wings (near the lift foyer). **Tel:** 020 8725 2453 **Email:** pals@stgeorges.nhs.uk

NHS Choices

NHS Choices provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health. **Web:** www.nhs.uk

NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones.

Tel: 111

AccessAble

You can download accessibility guides for all of our services by searching 'St George's Hospital' on the AccessAble website (www.accessable.co.uk). The guides are designed to ensure everyone – including those with accessibility needs – can access our hospital and community sites with confidence.