

ArterioVenous Fistula (AVF) Formation for Haemodialysis

This leaflet gives you information why you may need an arteriovenous fistula (AVF) including the benefits, risks 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 after you.

What is a fistula?

A fistula is a connection made between an artery and a vein under the skin, usually in the arm, to create a strong and reliable access point for haemodialysis treatment. Having a working fistula is one of the most important factors for improving your quality of life during dialysis. Using a fistula for dialysis provides a much better blood flow rate, which leads to more effective dialysis. It also provides a safer form of dialysis access due to reduced risk of infection. This also means fewer hospital visits related to access problems, giving you more time to enjoy your daily activities.

Why is it done?

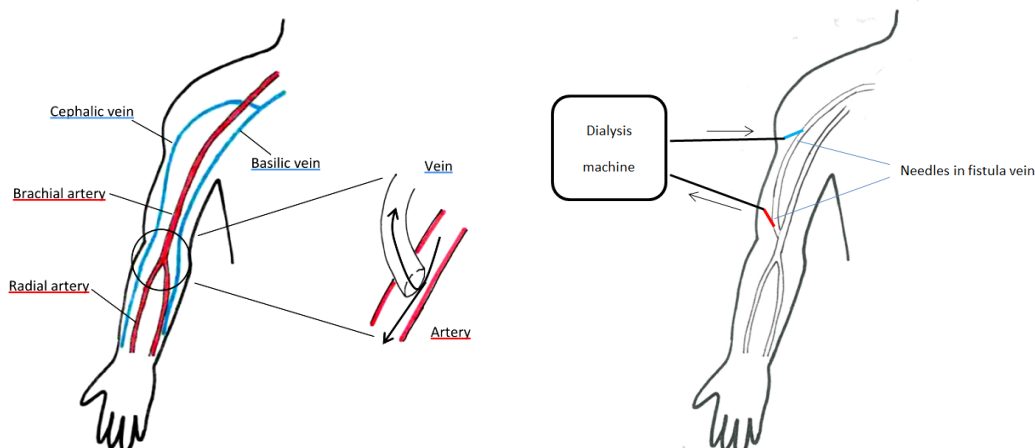
It is done to provide an easy, consistent way to remove and return blood during dialysis, which cleans the blood when the kidneys cannot.

Why should I have the fistula created now?

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. Creating the fistula early ensures it will be ready when dialysis is needed, reducing the need for temporary catheters and lowering infection risk.

Where is my fistula going to be located?

The fistula is typically created in the arm, most commonly in the forearm or upper arm.



What are the alternatives for fistula?

Another option is a synthetic **graft**, which connects an artery to a vein using a special tube made from man-made material. Grafts can be used sooner than a fistula and are useful if your veins are not suitable for a fistula. However, grafts have a higher risk of infection and clotting compared to fistulas and usually don't last long.

A **neckline or haemodialysis catheter** is another alternative but carries significantly higher risk for infection than a fistula. Over time, catheters can damage vessel walls in your chest and may cause arm and neck swelling or compromise the future possibility of having a fistula and having a kidney transplant. Typically, catheters last about one year, while fistula can last generally longer. Using a catheter also increases the chance of hospital admission for line complications like malfunction and infection. Catheters must be kept clean, dry, and covered with a dressing always, so activities like bath, swimming and water sports aren't possible.

How quickly can a fistula be used?

It usually takes 6-8 weeks after surgery before a fistula can be used, allowing it to mature and strengthen.

How is the fistula used for dialysis?

During dialysis, two needles are inserted into the fistula: one to carry blood from your body to the dialysis machine and another to return cleaned blood back to your body.

About the Surgery

What happens before the operation?

You will be seen by our Renal Vascular Access surgeons in the clinic for physical examination and will be arranged with imaging tests to select the best location for the fistula and then will be put on the waiting list. You may need blood tests and be advised to stop certain medications.

What happens during the operation?

The surgeon connects an artery to a nearby vein to create the fistula. The surgery is usually done under local anaesthesia and takes approximately one hour.

What happens afterwards?

You will have a scar approximately 5 cm long and, ideally, a functioning fistula. Your stitches will need to be removed after 7–10 days unless they are dissolvable, which will be explained to you. During the first few days, your fistula is delicate and vulnerable, so it's important to follow the care guidelines carefully. Over time, you will notice your vein enlarging and feel a buzzing sensation. As the fistula strengthens, the buzzing will become more noticeable, and the blood vessel will expand. Exercising your hand by squeezing a ball can help the fistula develop. We will regularly monitor its progress, and the timing of the fistula's first use will depend on how it matures and when you need to begin dialysis.

When can I go home?

Most patients can go home on the day of surgery if 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 use my arm normally?

Yes, you should retain full use of your arm, though you should avoid heavy lifting or pressure on the fistula arm while it heals. 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.

Do's:

- Check your fistula daily for a pulse or vibration (thill)
- Keep the fistula arm clean and dry
- Report any redness, swelling or pain to your healthcare team
- Use the arm normally but avoid heavy lifting
- Protect the arm from injury and avoid blood pressure measurements or blood draws from that arm

Don'ts:

- Do not carry heavy bags or objects on the fistula arm
- Avoid tight clothing and jewellery on the arm
- Do not scratch or pick at the fistula site

- Avoid sleeping on the fistula arm for prolonged periods

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 9am and 5pm, Monday to Friday in the main corridor between Grosvenor and Lanesborough Wing (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 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.



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