

Renal Services

Having an arteriovenous fistula (AVF) or arteriovenous graft (AVG) for kidney dialysis

Before and after surgery information for patients, family, and carers.

This information leaflet will help to prepare you for your AVF/AVG operation. This information also includes how to care for your newly created AVF (fistula) or AVG (graft) and what to do if there are any problems. Family members and carers can play an important role in supporting patients in their care by understanding and being aware of the following fistula/graft advice.

What is an arteriovenous fistula (AVF)?

An arteriovenous fistula is formed during an operation. The surgeon joins a vein and an artery together in your arm. This forms a more accessible blood vessel that gives the increased flows of blood that are required for haemodialysis.

What is an arteriovenous graft (AVG)?

An arteriovenous graft is similar to a fistula. However, instead of the artery being connected directly to your vein, a plastic tube is used to link the two together.



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Referral for an AVF/AVG

Your renal consultant or renal nurse specialists (RNS) will refer you for fistula/graft formation.

Ideally, if a fistula is needed, this should be planned at least 6 months before starting dialysis. A fistula will take 6 to 8 weeks, sometimes longer, before it is ready to be used for dialysis.

If you need a graft, it is still best to prepare in advance. A graft will be needed if you are unable to have a fistula. A graft can be used much sooner than a fistula.

It is not always possible to plan for the fistula or graft, especially if you need dialysis suddenly. In these cases, a plastic tube known as a vascular catheter will be inserted into your neck or groin. This will allow you to have dialysis until the fistula or graft is created and is ready to be used.

If you do have a vascular catheter in place for dialysis, once the fistula or graft has been used successfully for 2 weeks, the vascular catheter can be removed. Your dialysis staff will refer you to have this removed on the Renal Day Case Unit.

Once you have been referred for a fistula or graft, you will be invited to see one of the vascular access surgeons at clinic, who will discuss your options with you.

You may have already been to radiology to have your veins and arteries of your arms scanned. The surgeon will use this to advise you on your options.

In the clinic, we will talk to you about the surgery and explain the advantages and possible complications. Please ask any questions that you have. We will also talk to you about any medication that you may need to stop taking before your surgery.

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MRSA Swabs

You will need to have MRSA swabs taken. MRSA is a germ that lives on the skin or in the throat. It does not normally cause infection, but can do so after an operation.

If your swabs are positive for MRSA you will be given a special shampoo and body wash to use to get rid of it before the operation. The swabs are valid for 12 weeks if you are already on dialysis, and 18 weeks if you have not started dialysis yet. Please ask your nurse in clinic for more information regarding this.

The procedure

Once you have been assessed by the surgeon, you will be added to the theatre waiting list and will be sent a date for your procedure.

If your procedure is on a Monday and you are already receiving dialysis, you may be asked to dialyse on the Sunday in preparation for your procedure on Monday.

If you are on dialysis and the theatre date is on your dialysis day, the dialysis staff will move your dialysis sessions to accommodate.

You will be asked to come to UHCW at 7.30am on the morning of the procedure. If your procedure is in the afternoon, you may be asked to come in for 11am. Instructions about where to come will be sent to you once a theatre slot has been booked.

Most procedures are performed under local anaesthetic, so you will be awake and you will be able to eat and drink as normal.

If you need a general anaesthetic (where you are asleep), you will need to attend a pre-anaesthetic review to make sure it is safe to give you a general anaesthetic before you are given a date for your procedure. If you are having a general anaesthetic, you will need to stop eating and drinking before your operation and will be given advice about this.

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What happens after having a fistula or graft?

After your fistula or graft procedure, you will return to the Renal Day Case Unit, Ward 50 or to the Day Surgery Unit.

The nurses on the day unit or ward will check that your fistula or graft is working properly.

This is done by feeling the site where the fistula has been formed. A buzzing sensation known as the “thrill” can be felt. The nurse will also listen for a “bruit” around the site, which is a whooshing sound heard through a stethoscope. The “thrill” and “bruit” are caused by the high flow of blood through the vein or graft. They are a good indication that the fistula or graft is working.

If you have a fistula and all is well, you will go home the same day, usually in the evening.

Patients who have a graft will stay overnight after their surgery.

Can there be any complications after the operation?

- Most people experience some pain after the operation. Pain relief can be taken to help ease this.
- You may notice a small amount of blood visible on the dressing or some bruising around the wound site. This is normal.
- You may feel or be sick (nausea and vomiting) if you had a general anaesthetic.
- The fistula or graft can become blocked by a blood clot and stop working. If this happens immediately after the operation, the surgeon may want to try and unblock the fistula. This will be discussed with you at the time.
- There is a small risk of an infection in the skin where the surgeon has made the cut. This may require treatment such as antibiotics.
- Swelling in the fistula arm. It is important to move the arm as much as possible after surgery. This movement may help to reduce swelling and stop the arm from becoming stiff.

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There can also be back pressure on the blood vessel. This causes a swollen arm, or reduction in the blood flow to the lower arm, causing cold fingers. The risk of either of these occurring is very small, but the risks are higher if:

- You have thin blood vessels in your arm
- You have had previous operations for fistula formation
- You have diabetes. It may help to wear a glove on the hand to keep it warm.

Wound care

Stitches will be used to close the wound. The stitches may be dissolvable (do not need to be removed) or non-dissolvable (they need to be removed by a nurse or doctor). Most patients will have stitches that are dissolvable.

For patients who have non dissolvable stitches, the nurse discharging you will talk to you about when and where you can have these taken out.

There may be a dressing applied over the wound site to keep the wound clean and healthy. Some surgeons may apply Dermabond (a clear skin glue). The Dermabond is instead of a dressing. The advantage of the glue is that you can shower and wash straight away, and the glue will begin to peel off after a few days.

Looking after your AVF/AVG

Our renal surgeons advise patients they can drive 48 to 72 hours after the fistula or graft has been created. You must be able to move your arm freely and without any restriction before you can drive.

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 surgery
- Rest your arm – the wound needs time to heal.
- Do not lift anything heavy with your affected arm.
- Within a few days you should be able to feel the “thrill”. Check your fistula every day for the “thrill”. If you cannot feel the “thrill”, let your

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nursing team know straight away as this could mean that your fistula has stopped working.

- Do not let any medical professionals take blood or put needles in your fistula or graft except Renal Unit staff. Blood should always be taken from the veins on the back of your hands. Please let staff know this if you are having blood taken.
- Never let anyone take your blood pressure on the fistula or graft arm.
- Wrist bands are available for you to wear on your affected arm to tell others not to take blood or blood pressure from your arm.
- Do not wear any tight sleeves or watches that may restrict the flow of blood through your fistula or graft arm.
- Be careful not to lie on your fistula arm.
- Do not carry heavy shopping bags on your affected arm.
- You may need to wear gloves in cold weather to keep your hand warm.
- Wear gloves when you are gardening. They will protect you from scratches and cuts which may cause infection.

What exercises do I need to do?

In order to maintain good blood flow in your newly created fistula, it is important that you exercise the arm.

The purpose of exercise is to increase the blood supply to that part of your arm. You should start doing the exercise once the stitches have dissolved or been removed and the swelling has gone.

The exercise can be carried out whilst sitting, standing, or lying down. Please follow these instructions:

- Hold a spongy ball, the size of a tennis ball, in the fistula hand. If you have a rolled-up pair of socks, this will do.
- Allow the arm to hang in a relaxed way.
- Squeeze the ball for five to six seconds and then release the pressure until your fingers return to their normal colour.
- Repeat the exercise 10 to 15 times.
- Do the exercise four to five times a day.

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If the fistula becomes too painful, stop and take a break. Don't worry, this can happen due to increased blood flow in the new fistula.

When can I return to normal activities?

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

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

If you are already on haemodialysis, your dialysis nurses will check the fistula/graft to make sure it is working at each haemodialysis session.

If you are not yet receiving haemodialysis, your renal nurse specialist will check the fistula/graft at 1 or 2 weeks, to check for healing and to make sure the fistula/graft is working, and at 6 weeks to check for fistula/graft development.

If you are a transplant or CAPD patient and your consultant has requested the formation of a fistula/graft, your transplant/CAPD nurse will check and monitor your fistula/graft after this has been created.

However, you should contact us (details below) if you experience any of the following symptoms:

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

Contact us:

Access Nurses on 02476 96 8307 Monday to Friday, 8am-4pm

Ward 50 at UHCW on 02476 96 8257 or 02476 28258

Your fistula or graft is your lifeline. Please look after it.

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General advice and consent

Some of your questions may have been answered by this leaflet, but remember that this is only the starting point for discussion with your healthcare team.

Before any doctor, nurse or therapist examines or treats you, they must seek your consent or permission.

In order to make a decision, you need to have the information from your health professionals about the treatment or investigation which is being offered to you. You should always ask them more questions if you do not understand or if you want more information.

The information you receive should be about your condition, the alternatives available to you, and whether it carries risks as well as benefits.

The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact 024 7696 8307 and we will do our best to meet your needs.

The Trust operates a smoke free policy.

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