

# Having a tunnelled haemodialysis line inserted

This leaflet aims to answer your questions about having a tunnelled dialysis line (also known as a tunnelled haemodialysis catheter or tunnelled line) inserted. It explains the benefits, risks and alternatives, as well as 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 tunnelled dialysis line?

A tunnelled dialysis line is a thin, flexible, plastic tube that is inserted into a vein (blood vessel). It is held securely in place by a cuff under the skin.

A dialysis line is usually inserted because blood tests have shown that your kidneys are not working properly, and are not removing waste products from your body. The dialysis line takes blood from your body and into a machine that filters out the waste products in a process known as haemodialysis. The blood is then returned to your body through the dialysis line.

Usually the dialysis line is inserted into a vein in the neck. Occasionally, other veins are used, for example, at the top of the leg (groin).

## What are the benefits of having a tunnelled dialysis line?

Haemodialysis is usually a life-saving treatment. A dialysis line allows us access to your blood so that it can be filtered by the haemodialysis machine. The different types of access are:

- a tunnelled dialysis line
- a non-tunnelled dialysis line
- arteriovenous fistulas (AVFs)
- grafts (a plastic tube which is placed under the skin, usually in your arm).

The main benefit of a tunnelled dialysis line is that it can be used for dialysis immediately after insertion. The other types of access, especially AVFs, require an operation and often cannot be used for four to eight weeks after the procedure.

Tunnelled dialysis lines are often used if a person needs dialysis straight away, or if he or she already has an AVF which cannot be used, for example, because it has become blocked. A tunnelled dialysis line can remain in place for many months.

## Are there any alternatives?

If you need dialysis immediately for a short period of time and you do not have a functioning AVF or graft, then the only alternative to a tunnelled line is a non-tunnelled line. A non-tunnelled line is inserted into the neck and upper chest wall, or the top of the leg. However, this type of line can only remain in place for a very short period of time (less than two weeks).

For longer term haemodialysis you will need an AVF. While you are waiting for this to be formed, a tunnelled or non-tunnelled line may be used.

All of these options will be discussed with you by your doctor or access nurse.

## Are there any risks associated with having a tunnelled dialysis line inserted?

As with any medical procedure, we need to inform you of the potential risks and complications. We take precautions to minimise these, such as using an ultrasound scanning machine to help us position the line, and using sterile conditions to reduce the risk of infection. Below is a summary of some of the risks, ranging from those that are common to those that are very rare.

### Common risks and complications:

- **Pain or bruising at the insertion site:** This usually settles after 24 hours with analgesia, such as paracetamol.
- **Bleeding from the exit site:** This is more common if you have been on blood thinning medication such as aspirin, clopidogrel or warfarin.
- **Kinks in the line:** A portion of the line can get 'kinked' and may need to be re-positioned.
- **The dialysis line can be accidentally removed** if pulled on.

### Less common risks and complications:

- **Failure to gain access to the vein:** This may require a second attempt in a different location.
- **Failure to insert the line:** This happens in about one in 10 line insertions as a result of technical difficulties. We would usually reschedule the procedure to be done in the x-ray department, with the aid of additional imaging equipment.
- **Damage to the surrounding structures:** This includes the vein itself, as well as the muscle, nerves and artery. The artery often lies next to the vein, and accidental arterial puncture occurs during three in every 100 procedures. This is usually controlled by applying pressure over the puncture site, but may result in some bruising in the neck. If there is significant bleeding, the procedure may need to be abandoned and very rarely, an operation may be required to control the bleeding.
- **Infection:** Infections can affect either the area where the dialysis line exits from the skin (an exit site infection) or the blood stream (bacteraemia). Treatment of infections may involve antibiotics, removal of the dialysis line, or both.
- **Blockage of the line or the vein that the line is in:** If a blood clot is blocking the line, it may be necessary to give some medication down the line to unblock it. If a blood clot is blocking the vein (deep vein thrombosis), you would need to take blood thinning medication for three to six months.
- **Narrowing of the vein that the line is in:** If this occurs in one of the veins in the neck and chest, there may be problems with the blood flowing through the line, and you may notice your face is puffy or swollen. Tell your doctor if you notice this. It can happen within a few days of the line insertion, or many months later.

**Rare risks and complications:**

- **Pneumothorax:** This happens when the upper part of the lining of the chest cavity (pleura) is accidentally punctured, allowing air into the space between the chest wall and the lungs. The pressure on the underlying lung can cause the lung to collapse and you may notice pain when you take a breath and/or difficulty breathing. It occurs very infrequently (one in 400 insertions). A lot of the time, it gets better on its own, but sometimes another procedure may be required to allow air to escape and the lungs to re-inflate.
- **Haemothorax:** This happens when a structure (such as a large blood vessel) within the chest cavity is accidentally damaged, and blood leaks into the space between the chest wall and the lungs. As with a pneumothorax, there can be pressure on the lung, which makes it difficult to breath. A chest drain is needed to allow the blood to escape, and if the blood loss is significant we may recommend that you have a blood transfusion.
- **A fast or irregular heart beat:** This usually resolves on its own.
- **An air bubble entering the bloodstream:** If an air bubble travels to the heart or brain it can cause symptoms like that of a heart attack or stroke.

**If any of the rare complications occur, it is likely that you will need to stay in hospital for a few days for careful monitoring.**

**Although deaths have occurred as a result of complications following this procedure, this is extremely rare.**

## **What do I need to do to prepare for insertion of a tunnelled dialysis line?**

### **Procedure**

The procedure usually takes place in the Patience Ward Day Case Unit (5th Floor, Borough Wing, Guy's Hospital), or in the x-ray department (3rd Floor, Tower Wing, Guy's Hospital). We will let you know about the date, time and location of the procedure in advance. Please arrive in good time for your appointment.

### **Medications**

If you are taking any medicines that thin your blood, such as antiplatelet medicines (for example aspirin or clopidogrel) or anticoagulant medicines (for examples warfarin or rivaroxaban), please tell your doctor or the nurse. They should tell you when to stop these medications before the procedure and when it is safe to restart them after the procedure.

If you have any questions about your medication and what to do beforehand, please contact the ward or vascular access nurse using the numbers provided at the end of this leaflet.

### **If you are being sedated**

Under some circumstances, sedation is given. The doctors will discuss this with you before you come in to hospital.

If you are being sedated, please do not eat or drink anything (except non-fizzy water) for six hours before your appointment. This means that you cannot suck on sweets or chew gum. You are allowed to drink water up to two hours before your appointment.

You will also need to arrange for a relative or friend to accompany you home.

**If you are not being sedated**

You will not need to fast if you are not being sedated. However, we recommend that you don't eat a large meal for six hours before the procedure.

You do not have to be accompanied home by a friend or relative, but you may prefer to travel home with someone.

**Giving my consent (permission)**

The staff caring for you may need to ask your permission to perform a particular treatment or investigation. You will be asked to sign a consent form that says you have agreed to the treatment and that you understand the benefits, risks and alternatives. If there is anything you don't understand or if you need more time to think about it, please tell the staff caring for you.

Remember, it is your decision. You can change your mind at any time, even if you have signed the consent form. Let staff know immediately if you change your mind. Your wishes will be respected at all times. If you would like to read our consent policy, please tell a member of staff.

**What happens during a tunnelled dialysis line insertion?**

It usually takes 20 to 30 minutes to insert the line. You will need to lie down, and your heart will be monitored throughout the procedure by the placement of sticky labels (electrodes) on your chest.

The site of insertion (upper chest or in certain circumstances, top of the leg) is cleaned to make it sterile, and sterile drapes are placed over you. Local anaesthetic is then injected into the skin. Once the anaesthetic has numbed the site of insertion, a needle is placed into the vein with the help of an ultrasound machine.

A guide wire is threaded through the needle, and the tunnelled dialysis line is threaded over the wire. The wire is then removed. The dialysis line is then 'tunnelled' under the skin for about eight centimetres, before exiting from the skin on the upper chest wall. The line is held securely in place with two stitches, which will remain in place for four to six weeks. A sterile dressing is then placed over the exit site.

The stitches around the line exit site should be removed after 21 days. The skin stitches at the line entry site can be removed after 7–10 days.

**Will I feel any pain?**

You should not feel any pain because you will have local anaesthetic injected into the insertion site. You may be aware of some 'pushing and pulling', particularly during the tunnelling, but this should not hurt. After the local anaesthetic has worn off you may feel some discomfort around the dialysis line.

Your dialysis line should remain in place until you have a working AVF/graft, which will be arranged for you by the doctors and nurses looking after you. An AVF cannot be used for four to eight weeks after it has been created.

## What happens after the procedure?

A chest x-ray is usually taken to check that the tunnelled dialysis line is correctly positioned. After this you would usually be free to return home, or to attend for dialysis, where you will be followed up by consultant if this has been arranged.

**If you are taking blood thinning medication, this can usually be restarted the day after the procedure. The doctor inserting your dialysis line will confirm this with you.**

### Contact us

If you have any questions or concerns about dialysis line insertion, please contact your vascular access clinical nurse specialist on **020 7188 2262** or bleep **1414** or **1394** (Monday to Friday, 9am to 5pm). Out of hours, please contact Patient Ward on **020 7188 8838**.

In an emergency please contact your GP or attend your nearest accident and emergency department.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit [www.guysandstthomas.nhs.uk/leaflets](http://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 9am to 5pm, Monday to Friday

### 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](mailto:pals@gstt.nhs.uk)

**t:** 020 7188 3514 (complaints)      **e:** [complaints2@gstt.nhs.uk](mailto: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](mailto: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

### NHS Choices

Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.

**w:** [www.nhs.uk](http://www.nhs.uk)

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