# Haemodialysis access with a tunnelled line

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Haemodialysis is a treatment for severe chronic kidney disease (CKD). A dialysis line allows your healthcare team to access your blood so that it can be filtered by the haemodialysis (HD) machine.

There are different types of dialysis line, and your healthcare team will discuss which is the best option for you. This may depend on how quickly you need to start dialysis.

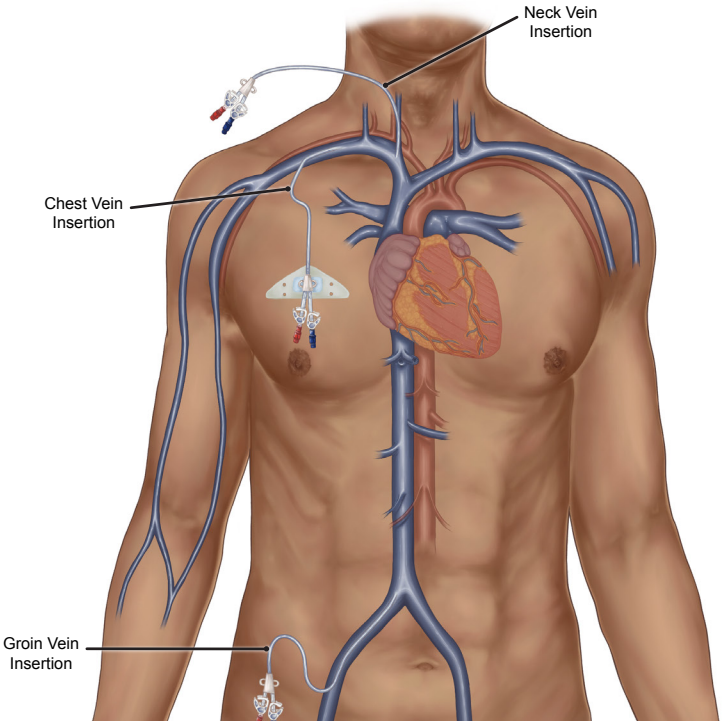
This leaflet explains more about tunnelled lines, also known as haemodialysis catheters or permcaths.

## What is a tunnelled line?

A tunnelled line is a soft plastic tube, which is inserted into one of the large veins in your chest, neck or, occasionally, in your groin. This gives your dialysis team access to your blood so that it can be filtered by the haemodialysis machine. Your cleaned blood is then returned to your body through the line.

The line is about the width of a standard pencil and twice as long. It will pass under your skin for a short distance, to the front of your chest (if it goes in through your neck), or the front of your thigh (if it goes in your groin), before coming out of the skin.

The external part of the line may initially be kept in place with stitches. The part of the line running under your skin has a small cuff of material which helps your body to form scar tissue. This keeps the line in place after the stitches are removed.



A tunnelled line can stay in place for as long as it is needed. This may be until an alternative method of haemodialysis access such as a fistula or a graft has been created and is ready for use. Your kidney team may decide that the line is the best form of dialysis access for you and will keep it in for longer.

A tunnelled line is different from a temporary haemodialysis catheter (vascath) which is intended for short-term use – usually a maximum of two weeks.

## Why do I need a haemodialysis line?

Haemodialysis is a treatment for kidney failure. When your kidneys don't work properly, they can't clean your blood, so toxins build up in your blood stream. Your kidneys also make less urine so excess fluid and waste products remain in the body. Haemodialysis 'cleans' your blood by running it through a dialysis machine filter to remove toxins and excess fluid. The clean blood is then returned to your body and the dialysis fluid is thrown away.

A fistula or haemodialysis line is needed for this to take place. This is known as **vascular access**.

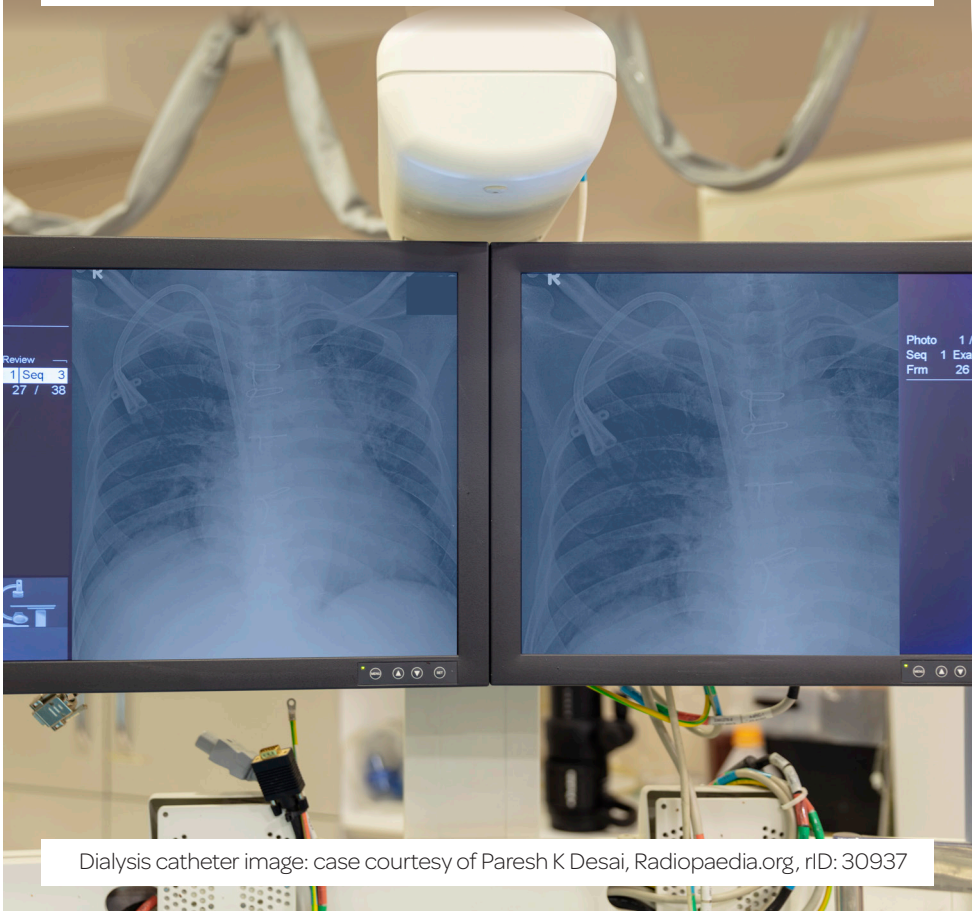
The main benefit of having a tunnelled line is that it can be used for dialysis straight away. Other types of dialysis access, such as a fistula, need an operation and take time to 'mature' before they can be used.

A tunnelled line is usually recommended if your doctor feels that you should start haemodialysis very soon.

## How is a tunnelled line inserted?

Your tunnelled line is inserted in hospital. You will be given a local anaesthetic so you will be awake during the procedure. You can usually eat, drink and take your medication as normal beforehand. You may need to have some blood tests to check that it is safe for you to have the procedure.

The procedure will take place in the kidney or X-ray unit. Sometimes X-rays are needed to make sure the line is positioned correctly, especially if you have a pacemaker (a small electrical device that keeps your heart beating regularly).




Dialysis catheter image: case courtesy of Paresh K Desai, Radiopaedia.org, rID: 30937

## What will happen before the procedure?

Your kidney team will review your medications. If you take any medications to thin your blood or make it less likely to clot (for example, aspirin, clopidogrel, warfarin and apixaban), these may need to be temporarily stopped a few days before your procedure.

**Do not stop or change any medications without discussing it with your doctor.**

You may be given a special liquid to wash with for a few days before the procedure and a cream to rub inside your nostrils three times a day. These help to reduce the risk of infection.

## What will happen during the procedure?

Your kidney team will explain what will happen and answer any questions you may have. They will ask you to sign a consent form to agree to the procedure.

You will be asked to change into a hospital gown and lie flat on your back on a bed. A small plastic tube (**cannula**) will be inserted into the back of your hand. You will also be attached to a heart monitor.

The doctor or nurse will clean the area where the line is to be inserted with an antiseptic solution to reduce the risk of infection. A large sterile drape will be used to cover the surrounding area.

Your doctor or nurse will then inject a local anaesthetic to numb the skin where the line is going to be placed. This may sting for a second or two before going numb.

Your doctor will use an ultrasound machine to guide a needle through your skin into the vein. You may feel a slight 'pushing' sensation. A flexible wire will be put through the needle into the vein and the needle will be removed. A small cut will be made at the insertion point, approximately 1cm in length.

The line will be pushed under the skin and inserted into the vein over the wire. The wire will then be removed.

The line will be checked to make sure it is working. It will be held in place by small stitches and a sterile dressing will be placed over the exit site (the point where your line exits through your skin).

The whole procedure should take around 20 to 30 minutes.

## Will it hurt?

Having a tunnelled line inserted should not be painful as you will have a local anaesthetic which will numb the area. You may feel some 'pushing' during the procedure, especially when the line is first put under your skin, but this should not hurt. Let your doctor know if you are in any pain during the procedure.

You may feel a little sore when the local anaesthetic has worn off and there may be some bruising.

## What happens afterwards?

Once the line has been inserted, you will have a chest X-ray to make sure it is in the right place.

You may then have a short (usually two hour) session of haemodialysis to make sure the line is working well before you go home.

You should avoid strenuous exercise for around a week after the procedure.

The stitches around the insertion site will usually be removed after seven to ten days, and those around the exit site after three weeks. This can be done at your GP surgery or at your dialysis unit.

## Are there any risks to having a tunnelled line inserted?

The vast majority of tunnelled lines are inserted without any problems. However, as with any procedure, there are potential risks. Your kidney team will discuss these with you before the procedure. Possible risks include:

### Bleeding

Some mild bleeding or 'oozing' from either the exit or insertion site is common and usually stops quickly.

Heavy bleeding is rare but can be serious. If this occurs you should seek urgent medical attention.

### Pain

During the procedure, you may experience a sharp stinging from the local anaesthetic, but this should fade quickly. If you experience any pain after this, tell your doctor, who may give you some more anaesthetic.

Some mild pain is common after the procedure. If you develop severe pain, seek urgent medical attention.

## Infection

Your doctor will take care to reduce the risk of infection during the procedure and it is important that you keep the site clean and dry afterwards.

If you do develop an infection, you will need antibiotics and your line may have to be removed.

## Insertion failure

Sometimes it is not possible to insert the line due to a narrowing or blockage in your vein. This may mean that your procedure will have to be delayed.

## Injury to nerves

There are several nerves which lie close to the veins in your neck and groin. There is a small risk of the local anaesthetic temporarily blocking these nerves. In the neck this may cause a change in voice, or weakness and/or change in sensation of the shoulder or arm. In the groin you may experience weakness and/or a change in sensation over the thigh. In rare cases these changes last more than a few hours and you may need extra tests to investigate this further.

## Pneumothorax (collapsed lung)

When the needle is first inserted into your neck vein, there is a small risk of puncture to the lining of the lung, causing a collapsed lung (**pneumothorax**). This may cause you to feel short of breath and experience pain when breathing.

An X-ray is performed after each line insertion to confirm the position of the line and identify any possible complications such as bleeding or a pneumothorax.

If a pneumothorax does develop, you may need a tube inserted into your chest (**chest drain**) to drain the air and allow your lung to re-expand, or, rarely, an operation to repair the lining of your lung.

## Heart rhythm disturbance

When the flexible wire is inserted in your neck, it may irritate the entry chamber to your heart, causing extra beats. This usually resolves after the wire is repositioned, but you may experience some **palpitations** (noticeable heartbeats). Your heart rhythm will be monitored throughout the procedure and serious rhythm disturbance is rare.

## Arterial puncture

The artery lies close to the vein and may be accidentally punctured during the procedure. In most cases, pressure will stop the bleeding. Very rarely, an operation may be needed to repair the hole in the artery.

## Deep venous thrombosis

If you are having a line inserted into the groin, you are at increased risk of a blood clot forming near the line (**deep venous thrombosis**). You may be prescribed medications to thin the blood and reduce the risk of this happening.

## How will I know if something is wrong?

Your nurses will check your line's insertion and exit site for signs of infection each time you have dialysis.

**Important!**

**Contact your kidney unit immediately if you notice any of the following:**

- **A higher temperature than normal, fever, chills or shivering. These may be symptoms of infection.**
- **Pain, itching, redness or swelling around the exit site.**
- **Discharge from around the line.**
- **Cracks or leaks in the line.**

**If there is severe bleeding, or your line falls out, press on the insertion site (not the exit site) with a clean hand towel and call 999 for help or go to your nearest Accident and Emergency Department.**

## How should I look after my tunnelled line?

The dressings around the insertion and exit sites must be kept dry and you should not have a bath or shower until the wound heals and the stitches are completely removed.

**Exposing your line and exit site to water increases the risk of infection, so taking a bath or going swimming are not recommended if you have a tunnelled line.**

Your kidney team will talk to you about how to adapt your washing routine to make sure the line is kept clean without too much exposure to water.

Your dialysis nurses will usually change your dressing once a week. Let them know if the dressing is itchy or uncomfortable.

Do not use any creams or talcum powder around the line.

Wear clean, loose-fitting clothes around your line and take care when dressing and undressing to avoid pulling on the line.

It is advisable to wrap and tape a clean piece of gauze around the line when it is not in use. Your dialysis nurse will show you how to do this.

Keep sharp instruments like scissors away from your line.

Do not pull or tug on your dialysis line.

**If a member of your healthcare team is not familiar with tunnelled lines, ask them to contact your dialysis unit or kidney ward before they access or use the line. This may not be possible in an emergency.**

## What happens when I don't need the line anymore?

Your line will be removed at your kidney unit if you either stop having dialysis or have it through a **fistula** (an alternative method of haemodialysis access).

## Where can I find out more information?

- **Kidney Care UK** Patient information - www.kidneycareuk.org
- **NHS Choices** Dialysis - www.nhs.uk/conditions/dialysis

## Contact us to see how we can support you

# Call free on

# 0808 801 00 00

*(Monday to Friday, 9am-5pm)*

support@kidneycareuk.org

www.kidneycareuk.org

If you have feedback about this leaflet, please let us know at: **feedback@kidneycareuk.org**

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