

This leaflet tells you about dialysis line insertion. It explains what is involved and what the possible risks are. It is not meant to replace informed discussion between you and your doctor, but can act as a starting point for such discussions. If you have any questions about the procedure please ask the doctor who has referred you or the department which is going to perform it.

### **What are dialysis lines?**

Dialysis lines are venous lines used to allow haemodialysis – a medical procedure that uses a special machine (a dialysis machine) to filter waste products from the blood and to restore normal constituents to it. A dialysis line can be inserted into a blood vessel (vein), in the neck (jugular vein), upper chest (subclavian vein) or in the groin (femoral vein). The tip of the dialysis catheter is placed into a large central vein. The dialysis lines have two channels that allow dialysis to occur from a dialysis machine.

### **Are there different types of dialysis lines?**

There are essentially two different types of dialysis lines: temporary or tunnelled. The temporary dialysis line is a solution for short-term dialysis. The lines can be inserted before each dialysis session or inserted for a short period (6–8 weeks). They are not tunnelled under the skin. Permanent dialysis lines are tunnelled underneath the skin over the front of the chest, thigh or lower abdomen. This minimises the risk of infection and migration of the dialysis lines. They can be used as a long-term dialysis solution or for a defined

period while waiting for a fistula to be formed and mature.

### **What are the possible complications?**

Complications are very uncommon and dialysis line insertion is a safe procedure. As an artery accompanies every vein, it is possible to puncture the artery inadvertently. The lung is also very close and it is possible to puncture the lung (pneumothorax). These are extremely uncommon and the risk is about 1%.

Dialysis lines can migrate in the first two weeks while the Dacron cuff on the line anchors it in place. There is a small risk that an infection may occur due to insertion (within 14 days), but the greater risk is subsequent infections. These later infections can occur in two ways – in the tunnel track or within the line itself. Tunnel track infections can usually be treated successfully with antibiotics; unfortunately if your line becomes infected within, it may need to be removed. The risk is generally around 5–10% but can be up to 50%. To avoid infections you must try to keep the skin around the line dry, clean and covered. Do not allow anyone to use the line who does not take all the sterile/non-touch precautions.

There are a number of complications that may occur after weeks to months following insertion. Venous thrombosis (blockage of the vein with clot) occurs in approximately 2–8% of cases. If your arm or leg becomes swollen, you should contact your doctor as soon as possible.

### **Who has made the decision?**

The consultant renal physician in charge of your care. However, you will also have the opportunity for your opinion to be considered and if, after discussion with your doctors, you no longer want the procedure, you can decide against it.

### **Are you required to make any special preparations?**

Insertion of a dialysis line is usually carried out as a day case procedure under local anaesthetic. You may be asked not to eat for four hours before the procedure, although you may still drink clear fluids such as water. If you have any allergies or have previously had a reaction to the dye (contrast agent), you *must* tell the radiology staff before you have the test.

You may be asked to take a special shower to reduce the chances of infection.

### **Who will you see?**

Renal physicians and interventional radiologists generally place dialysis lines.

Interventional radiologists have special expertise in reading the images and using imaging to guide catheters and wires to aid diagnosis and treatment.

### **Where will the procedure take place?**

In the angiography suite or theatre; this is usually located within the radiology department. This is similar to an operating theatre into which specialised X-ray equipment has been installed.

## What happens during insertion?

You will be asked get undressed and put on a hospital gown. A small cannula (thin tube) will be placed into the vein in your arm.

The procedure is performed using image guidance. An interventional radiologist uses an ultrasound probe and X-rays to allow accurate insertion of the dialysis line through a minute incision. To relax you, the procedure is often performed under sedation; there is no need for a general anaesthetic and the related risks. Local anaesthetic is injected at the line insertion site. This may just sting for a few seconds but then will go numb. The interventional radiologist places the line and after a further injection of local anaesthetic on the chest, tunnels the line so that it is ready for use. The majority of patients do not remember the procedure. When you leave the interventional radiology suite, the line will be fully functioning and ready for use.

Occasionally there can be a narrowing within the veins. If this is identified, the interventional radiologist may perform a venoplasty to allow the safe placement of the dialysis line. This will be discussed with you before the procedure.

## Will it hurt?

It may sting a little and you may have a small bruise along the tunnelled area.

## How long will it take?

Every patient is different, and it is not always easy to predict; however, expect to be in the radiology department for about an hour.

## What happens afterwards?

You will be taken back to your ward. Nursing staff will carry out routine observations including pulse and blood pressure. You will be able to go home after a few hours of observation.

## What can I do after my line placement?

There are no physical limitations. The dialysis lines have a small Dacron cuff which sits in the tunnelled portion (under the skin) and helps fix the catheter in place. It is wise to take great care over the first two weeks, until the cuff has anchored in. The wound should be kept completely dry for the first five days and thereafter have showers rather than baths. When you have a shower you should keep the line covered. Depending on your treatment plan, you may need to have the line flushed on a regular basis.

## Finally

Some of your questions should have been answered by this leaflet, but remember that this is only a starting point for discussion about your treatment with the doctors looking after you. Make sure you are satisfied that you have received enough information about the procedure.

## Contact:

British Society of Interventional Radiology  
[www.bsir.org](http://www.bsir.org)

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**British Society of Interventional  
Radiology**

## Dialysis line insertion

## Patient information

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