



# Percutaneous Nephrostomy

This information sheet explains about the procedure to insert a percutaneous nephrostomy. It describes what the procedure involves, the risks, and what to expect when you come to the Interventional Radiology department for treatment.

Please note that this leaflet is not meant to replace discussion between you and your doctor. You should raise any questions you may have with the doctor who has referred you for, or is performing, the procedure.

## What is a percutaneous nephrostomy?

A percutaneous nephrostomy is a tube that is inserted through the skin to drain urine from the kidney. The tube is sited in the skin of the back, on the same side as the affected kidney, just under the ribs. Part of the tube sits inside the body, within the kidney, and part of the tube sits outside on the skin. The urine is drained out of the body and collected in a nephrostomy bag.

## Why do I need a percutaneous nephrostomy?

A percutaneous nephrostomy is most commonly performed when there is a blockage of urine draining from the body. The blockage can occur at different points in the urinary system. For example, the tubes connecting each kidney to the bladder (ureters) or the tube connecting the bladder to the outside (urethra). When the urine is blocked, it becomes backed up in the kidney, causing it to swell and become damaged. This is also a risk for infection. More rarely, a percutaneous nephrostomy can be performed to divert the urine where there is damage that is causing urine to leak in this same pathway.

Insertion of a percutaneous nephrostomy drains the urine directly from the kidney to outside the body, reducing the pressure. If the flow of urine from only one kidney is blocked then a nephrostomy will only be needed on one side. If flow from both kidneys is blocked, then two nephrostomies will need to be inserted, one on each side. Depending on the type of blockage, the nephrostomy may be short-term or long-term.

## How do I prepare for a percutaneous nephrostomy insertion?

Percutaneous nephrostomy insertion can be performed as a day-case procedure however more commonly, it will be performed as part of your stay in hospital for the underlying cause. The procedure is typically performed under local anaesthetic. This means that you are awake but made numb around the area of the nephrostomy. You may also receive a sedating medication to help alleviate anxiety.

There may be blood tests required beforehand to check that your blood is clotting normally. You may also be asked not to eat for up to 6 hours before the procedure, you may still be able to drink clear fluids. Make sure to fully understand any specific instructions you are given for your procedure. If you have any questions beforehand, please ask your doctor.

## How is a percutaneous nephrostomy insertion performed?

You will be asked to change your clothes into a hospital gown and have a cannula (small plastic tube) inserted into a vein in your arm. This is necessary as painkillers or sedatives can be given through the cannula into your bloodstream during the procedure. You will be monitored by the nursing team before, during and after your procedure. They will record your observations, such as your blood pressure and your temperature.

To have the nephrostomy inserted, you will be asked to lay down on the operating table on your front, so that your back is accessible. The operating table is specially fitted with an X-ray machine that moves above and around the table but will not touch you.

There will be multiple people in the room whilst the nephrostomy is inserted. This will include the doctor inserting the nephrostomy, nurses, and a radiographer to operate the X-ray machine. There may also be additional staff to assist in the procedure. All of the staff in the room will be wearing lead aprons for purposes of X-ray safety.



The nephrostomy will be inserted under sterile conditions. This means that the staff doing the procedure will be wearing sterile gowns and gloves. In order to keep the area as clean as possible the skin will be washed with antiseptic, and sterile drapes applied to keep the area isolated.

The skin in the area of the nephrostomy will be injected with local anaesthetic to numb it. An ultrasound machine will be used to look at the kidney and allow a needle to be passed through the skin into the kidney. A guidewire will be passed through the needle into the kidney and the X-ray machine will be used to move the wire and make sure it is in the right place before the nephrostomy tube is finally inserted. Contrast is a type of dye that can be seen by the X-ray machine, this is injected through the nephrostomy tube to make sure it is in the right place. Once the nephrostomy is in place, a bag will be attached to collect the urine.

### Who performs the procedure and where?

The percutaneous nephrostomy will be inserted by a doctor called an Interventional Radiologist. This is a type of doctor that specialises in image-guided minimally invasive procedures. The procedure will usually take place in the Interventional Radiology (IR) department of the hospital in specialised operating theatres with X-ray equipment, also known as IR suites or labs.

### What are the potential risks/complications of a percutaneous nephrostomy?

A nephrostomy is a very common and safe procedure. However, all procedures come with potential risks and complications. If you have been recommended to have a nephrostomy inserted, this means that your Consultant and the Interventional Radiologist have discussed the risks and benefits of this procedure and feel that this would be the best option for you. However, you should consider the risks and benefits yourself and discuss these with your doctor to reach a collaborative decision.

- **Pain:** The insertion of the percutaneous nephrostomy may be painful for a short time. Any pain should be controlled by painkillers during and after the procedure.
- **Bleeding:** There is a risk of bleeding from the insertion. The urine collected in the nephrostomy bag may be bloodstained for 24-48 hours post-insertion. This is very common and usually stops by itself. It is possible that the bleeding may continue and require a blood transfusion or more rarely, a further operation or procedure to stop the bleeding.
- **Infection:** The urine backed-up in the kidney before the procedure can become infected. This can result in feeling generally unwell and require treatment with antibiotics.
- **Procedural Failure:** Rarely, the Interventional Radiologist will be unable to insert the nephrostomy adequately into the kidney. This may require another attempt at the nephrostomy procedure, or a different surgical procedure to treat the blockage.
- **Blockage:** After the procedure the nephrostomy tube may become blocked. This will require a further procedure to either unblock or replace the tube.
- **Adverse Reaction to Contrast:** The contrast dye used during the procedure can potentially cause side effects, including allergic reactions. If these side effects occur they will be identified and treated promptly.
- **Ionising Radiation:** The procedure uses X-ray radiation to look at the structures within the body. Patients are exposed to the lowest dose of radiation practicable and the risk of causing harm is very small.

### What happens afterwards?

After the procedure you will be monitored to ensure that you are recovering as expected and to control any pain. Afterwards you may be able to return home, or to the ward depending on your situation.

As every case is different, there is no set time that a nephrostomy will be in place for. If the nephrostomy is expected to be used long-term then the tube will need to be replaced after approximately 3 months. Depending on the cause of the blockage, you may undergo further procedures to alleviate it, such as surgery or insertion of a ureteric stent. This will be arranged by the Urology Consultant in charge of your care.



British  
Society of  
Interventional  
Radiology

British Society of Interventional Radiology  
The Royal College of Radiologists  
63 Lincoln's Inn Fields  
London WC2A 3JW

Notes