

## Percutaneous transhepatic biliary stenting and drainage

The liver produces a liquid called bile which drains to the gut through internal tubes (called bile ducts). If these tubes get blocked, the bile builds up in the liver, causing yellow eyes and skin (jaundice) and itchy skin (pruritus). This built-up fluid can become infected, and if not drained, can lead to liver failure.

In **transhepatic biliary drainage**, a plastic tube is passed through the skin (percutaneously) of the chest/abdomen directly into the bile ducts, allowing the bile to flow into a bag outside the body. In **transhepatic biliary stenting**, a metal or plastic stent (flexible scaffold tube) is passed through the same opening in the liver (transhepatic) and placed within the blocked bile duct to keep it open. This is often done after percutaneous biliary drainage to allow the external drain and bag to be removed. If the bile is not infected, the stent is placed at the time of first drainage.

### How will the procedure benefit me?

Draining bile outside the body relieves the pressure on the liver, allowing it to work normally and reducing the risk of infection and liver failure. The eyes and skin return to their normal colour and any itchiness is relieved. Biliary drainage may be also necessary in preparation for surgery or other procedures on the bile ducts. Biliary stenting provides long-term relief from bile duct obstruction, allowing the bile to drain internally to the gut in the normal fashion, with no external drain.

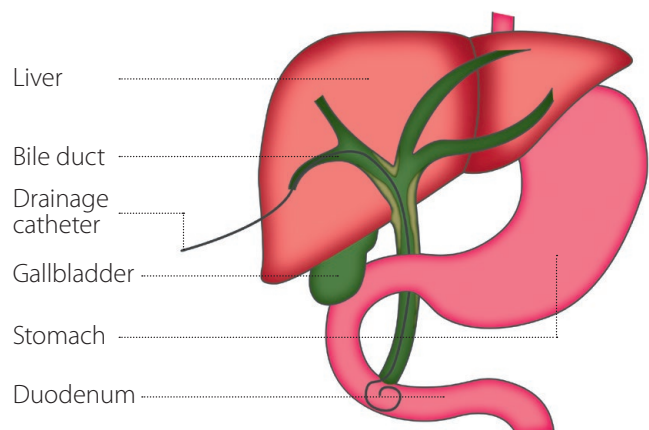
### How should I prepare before one of these procedures?

You may need to stop taking or change the dose of some medications – it is important to discuss this with your doctor. Your physician will most likely give you antibiotics before

the procedure. You will usually be required to fast the night before the procedure and may receive intravenous fluids.

### The procedures

Both procedures take place in a room with x-ray and ultrasound equipment, usually in the interventional radiology department. Each may be performed either with local or general anaesthesia, or a combination of the two. The skin where the incision will be made will be disinfected, and sterile drapes will be placed over you.



### Transhepatic biliary drainage

**Biliary drainage:** Using ultrasound and/or x-rays (fluoroscopy), the interventional radiologist will first guide a needle and then a wire into one of the bile ducts. This may be done in the lower right side of your chest or through the skin of your upper abdomen below the rib cage. Once the wire is in position, the interventional radiologist will slide a number of small tubes over the wire to make the path big enough so that they can then slide the drainage tube over the wire into position. If you are conscious, you will likely experience some pushing and pressure, but this should not be painful, as you will have been given a lot of local anaesthetic and strong intravenous painkillers.

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The drain will be adjusted so that it can drain fluid as well as possible and then fixed in position, sometimes with stitches, sometimes with sticky dressings on the skin. A sterile dressing will be applied which will have to be changed regularly.

**Biliary stenting:** If you have a biliary drain in place already, a wire will be passed through the drain into the gut, the drain removed by sliding it out over the wire, and replaced with the stent. When the interventional radiologist sees that the stent is in a good position, they remove the tube and the stent expands to keep the bile duct open. If you do not have a biliary drain in place already, a bile duct will be punctured as described above to place the stent.

Before and/or after stent placement, your blocked bile duct will be dilated with a special balloon; this may be felt as a sharp, short-term pain in the upper abdomen which will be treated with strong painkillers. After the procedure, a sterile adhesive plaster is applied over the puncture site.

## What are the risks?

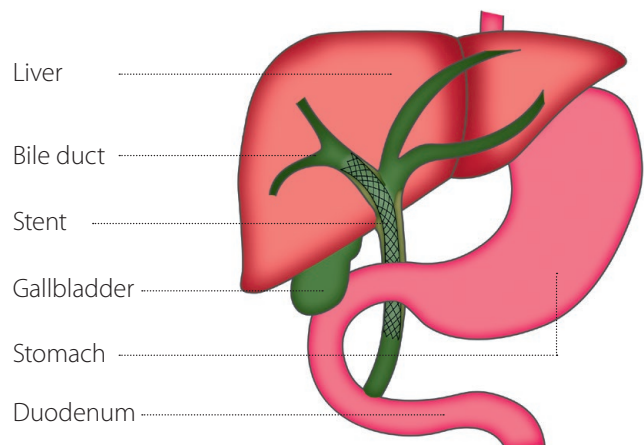
For both procedures, there is a small chance of bleeding from the puncture site through the skin, into the abdomen or into the bile ducts. If the tube has been placed between your ribs, there may be pain around the puncture site. The drain or stent can dislodge and move. Over time a stent can become blocked. It is also possible for bile ducts to become infected. Bile may leak along the tube to the skin, into the abdomen, or into the chest around the lungs. Any of these should be reported to your doctor.

## What should I expect afterwards? What is the follow-up plan?

You will be taken back to your ward for monitoring and bed rest. Mild pain at the puncture site and in the upper abdomen may be felt. Slight nausea also may be present. These symptoms will be managed with medications. You may be given more antibiotics.

If you have an external tube and bag, it is important to take care that the catheter does not get pulled out. The nurses will empty the drainage bag at regular intervals and record the fluid output.

Maintenance of your biliary catheter is extremely important; ensure that you receive clear instructions from your doctors regarding flushing the tube and changing the dressings if you are being discharged. You should also receive a plan for your follow-up which may include scheduled changes of your external tube at set intervals.



## Transhepatic biliary stenting

## [www.cirse.org/patients](http://www.cirse.org/patients)

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