

# Having a TIPSS procedure in your liver to treat high blood pressure in the portal vein

Department of Radiology

Information for Patients

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## Introduction

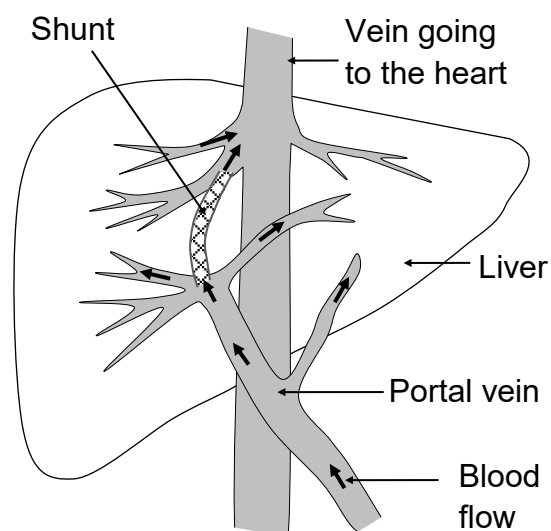
This leaflet tells you about your examination. Please read it carefully as it contains important information and instructions.

## What is a TIPSS?

**TIPSS** stands for **transjugular intrahepatic portosystemic shunt**.

The best way of describing what TIPSS is, is to explain what the letters stand for.

- **T** is for **transjugular**. The radiologist will put a thin, hollow needle into the jugular vein in your neck. A guidewire goes through this.
- **I** is for **intrahepatic**. This means the procedure to change (divert) the flow of blood is done within your liver. The guidewire will be pushed down to your liver.
- **PS** is for **portosystemic**. The shunt or stent joins up the vein that goes to the liver (portal vein), to a vein that goes to the heart (a systemic vein).
- **S** is for **shunt**. A metal stent or expanding tube is placed in a channel between your systemic and portal veins to create a bypass for blood to go back to the heart.



**Health information and support is available at [www.nhs.uk](http://www.nhs.uk)  
or call 111 for non-emergency medical advice**

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## Why do I need a TIPSS?

The portal vein is a blood vessel that carries blood from your bowel to your liver. The liver filters the blood and removes any waste products from it. The blood then goes through blood vessels called systemic veins towards your heart.

The disease in your liver is blocking the flow of blood and is causing high blood pressure in your portal vein.

### High blood pressure in the portal vein can cause:

- extra veins to grow in your tummy, like varicose veins
- bleeding into your stomach or food pipe (oesophagus) from the extra veins
- being sick with blood (vomiting blood)
- extra fluid inside your tummy (ascites).

The TIPSS procedure uses a shunt to connect your portal vein to a systemic vein. This means some of your blood will go through the shunt instead of going through the smaller blood vessels. This helps to lower the blood pressure in your portal vein.

## Are there any alternatives?

The hospital doctors looking after you (gastro-enterologist or surgeon) will have tried non-invasive ways of stopping the bleeding, or lowering this high blood pressure in your portal vein. These may not have worked.

An open operation is possible to divert blood in the portal vein and lower the pressure, and this produces the same result as a TIPSS does. However, the open operation has more risks than the TIPSS procedure.

If you are waiting for a liver transplant, having a TIPSS stent would not interfere with your transplant.

## Important information about blood thinners

**If you are taking medication that thins the blood (anticoagulants or antiplatelets) please call the Radiology Department for advice, as soon as possible. Call the number on your appointment letter.**

**Common examples of these drugs include aspirin, warfarin, clopidogrel (Plavix®), apixiban (Eliquis), rivaroxaban (Xarelto), ticagrelor (Brilinta), Dalteparin and Heparin.** If you are on Dalteparin or Heparin injections then these need to be stopped for 24 hours before your procedure.

You will be asked what blood thinning medication you are taking, how much you take (the dose), and what you are taking it for.

## Important information before you have X-rays or X-ray contrast

The contrast liquid contains iodine and is cleared by the kidneys in your wee (urine) or at your routine dialysis if you have dialysis.

### Please tell the X-ray staff when you arrive if you:

- **are allergic to iodine or rubber (latex)**, have any other allergies or have asthma.
- **have had a reaction in the past to an intravenous contrast liquid**, the dye used for kidney X-rays and CT scanning and X-rays of your heart and blood vessels.
- **are on renal (kidney) dialysis or have any problems with your kidneys.**
- **have diabetes.**
- **think there is any possibility that you might be pregnant.**

## How do I get ready for the TIPSS procedure?

You need to be an inpatient in the hospital (overnight stay).

You will need blood tests the day before the procedure and may need to have the fluid in your tummy (ascites) drained out.

### On the day of your procedure:

Please have a bath or shower in the morning before your procedure if you can.

Do not wear contact lenses.

Do not wear jewellery except for a plain wedding band only.

Do not wear make up, nail polish or acrylic/gel nails.

### Eating and drinking instructions:

- Do not eat for 6 hours before your procedure.
- You may drink fluid up to 2 hours before your procedure.
- Do not drink for 2 hours before your procedure.

If you are ill and the procedure is being carried out as an emergency you may not be eating anyway.

## What happens before the procedure?

You will be given antibiotics to help prevent infection.

You will have a general anaesthetic. This means you will be asleep and you will not feel anything during the procedure. You will be cared for by the anaesthetist throughout the procedure.

## What happens during the TIPSS procedure?

- The procedure will usually take place in the X-ray department. You will lie on the X-ray table flat on your back. You will be attached to a blood pressure monitoring machine and have a small monitoring device (peg) attached to your finger to check your heart rate (pulse).
- Everything will be kept clean (sterile). The skin of your neck will be cleaned with antiseptic and you will have some of your body covered with sterile sheets.
- The skin and deeper tissues over the vein will be numbed with local anaesthetic to provide you with pain relief when you wake up from the anaesthetic.
- A thin needle will be inserted into a vein in your neck. Through this needle a thin guide-wire and a plastic tube called a catheter (about the size of a very long piece of spaghetti) will be passed until they reach your liver veins.
- A colourless liquid that shows up on X-rays (contrast liquid) will be injected through the catheter and X-rays will be taken to see the liver veins.
- A needle is then passed down the catheter and pushed between the liver and portal veins to allow them to be connected.
- The catheter with a small balloon on it, is placed in the liver between the veins and inflated to create a channel.
- Once the channel has been stretched, a stent will be put in the vein and expanded to keep it open. The stent stays in your vein and becomes part of your vein wall.

## How long will the procedure take?

Every patient's situation is different. It is not always easy to know how complex or how straightforward the procedure will be. The procedure may take 45 minutes but it can take up to 4 hours.

## What happens after the procedure?

You will be taken to a recovery area by the anaesthetic team.

Nurses will carry out routine observations, such as taking your pulse and blood pressure to make sure that there are no problems.

When you have recovered from the general anaesthetic you will be taken back to your ward.

You will stay in bed for a few hours until you have recovered.

Afterwards you may feel some stiffness in your neck where the needle was inserted.

Once you have recovered from the procedure, you will probably feel no different than you did before except that hopefully the bleeding which was part of your problem should no longer happen, or the fluid in your abdomen should begin to drain away.

If you have any problems after the procedure please speak to the staff on the ward or your radiology nurses.

**If you have any problems after the procedure when you have gone home please see your GP or call the NHS helpline on 111.**

## Advice to follow after having a general anaesthetic:

General anaesthetics can affect your memory, concentration and reflexes for 24 to 48 hours. Please rest for at least 24 hours.

### For 24 hours:

- If you are going home you must have a responsible adult to take you home and stay with you for the first 24 hours
- **Do not** drive a car or any other vehicle or ride a bicycle.
- **Do not** drink alcohol.
- **Do not** smoke.
- **Do not** operate any machinery or do anything that needs skill or judgement.
- **Do not** make important decisions or sign any documents.
- **Do not** climb ladders.
- **Do not** do any strenuous exercise or heavy lifting

## Are there any risks or complications?

As with any procedure or operation, complications are possible. We have included the most common risks and complications in this leaflet, although they are different for each person. Your risks will be discussed with you before you sign the consent form.

- **Stent cannot be put in the right place** - it might not be possible to put the stent in the right place. This can happen because the liver disease has made the liver very hard and it may not be possible for the needle to pass through it. If this happens the procedure will be stopped (abandoned) and you may need a different operation on another day. If this is the case it will be discussed with you.
- **Pain or discomfort** at the skin entry point, this is in the side of your neck.
- **Bleeding or bruising** - some bruising and tenderness is to be expected around the skin entry point. It can be sore for 1 or 2 days.
- **Injury to a blood vessel** - there is a small risk of injury to a blood vessel (vein or artery) during the procedure. This could happen to the internal jugular vein where the needle and guidewire goes in, the major blood vessels in your neck (carotid artery) next to it, or to the blood vessels in the liver (inferior vena cava, hepatic veins or portal veins). If the injury causes a lot of bleeding it may need another procedure to fix it.
- **Infection** requiring treatment with antibiotics. You will be given antibiotics before the procedure to reduce the risk of infection. Life threatening reaction to infection can develop after TIPSS. This is called severe sepsis. This is one of the leading causes of death (mortality) in this procedure. Signs of infection are a high temperature and shaking. This will usually be found before you leave hospital. Please go to your nearest Emergency Department (A&E) if you have any of these symptoms after you leave the hospital. If you are not sure what to do, call NHS 111.
- **You could develop a liver abscess, or acute liver failure.** Infection and sepsis may result in the formation of a liver abscess that may need to be drained. Your liver function may get worse straight after procedure but this should improve by itself. In rare cases it can result in death.
- **Disturbances in heart rhythm** - these disturbances can last a short time and are usually caused by wires passing through the heart on the way to the liver during the procedure. The TIPSS procedure will redirect some of your blood to the heart and can cause heart failure. Your heart will have been assessed before the procedure and the risk of heart failure is low.

- **Side effects or reaction to contrast liquid** - some patients may be allergic to the contrast liquid and may have symptoms such as feeling or being sick (nausea or vomiting), or a rash. If you get any of these symptoms at the hospital, tell the doctor, nurse or other staff looking after you. If you develop symptoms at home you should contact your GP or call NHS 111.
- **Excessive drowsiness, sleepiness or difficulties in concentrating (known as encephalopathy)** may develop in up to 1 in 3 patients after a shunt is placed. This encephalopathy is usually manageable with the use of medications and a low-protein diet. In rare cases, severe encephalopathy or even coma may develop. This is because the liver normally takes waste products out of the blood stream. If too much blood bypasses the liver through the stent the waste products can remain in the blood and can cause you to become confused.
- **Another procedure may be needed to narrow or block the stent.** After the TIPSS procedure, if you develop confusion or coma the stent may need to be narrowed or blocked to limit the amount of blood flow through the channel.
- **Problems with blood clotting** - patients with jaundice are likely to have difficulties with blood clotting. There may be some bleeding from the liver where the needle was pushed between the 2 veins. On rare occasions this can need a blood transfusion or be fatal.
- **The TIPSS procedure may not stop your bleeding or reduce your fluid in the abdomen (ascites).** In 98 out of 100 patients, the stent can be put in the right place, but some patients continue to get bleeding and a build up of fluid in the tummy. Between 60 and 80 out of 100 patients (60 to 80 %) see an improvement in their symptoms.

## Is TIPSS permanent and what happens next?

The stent that the radiologist has put in the blood vessels in your liver will stay in for the rest of your life or until you have a liver transplant if that has been offered to you.

You will have ultrasound scans of your liver regularly to check if the stent is still working and not getting blocked. With ultrasound the radiologist will be able to see the stent and see if it is becoming blocked. If you are having a liver transplant then the radiologist will regularly check the stent until you have your transplant. If you are not having a liver transplant you may have to come for regular checks for at least 5 years.

If your stent gets blocked you will need to have a procedure to unblock it. The radiologist will ask you to come to the Radiology Department for a day and will do a procedure to unblock the stent. This procedure will not need a general anaesthetic. The radiologist will use the veins in your neck to access the stent in your liver again.

If you have any problems after the examination when you have gone home please see your GP or call NHS 111 for advice.

## What are the risks from exposure to radiation in this procedure?

The main risk from having X-rays is an increase in the risk of getting a cancer in the future. This risk is thought to be very small. We are all exposed to natural background radiation every day of our lives. This comes from the sun, food we eat, and the ground. Each examination gives a dose on top of this natural background radiation. The risks of radiation are slightly higher for an unborn child so we must ask some patients aged 10 to 55 years about their periods and possibility of being pregnant.

The benefits of this examination are likely to outweigh any potential risk and the risk from not having the examination could be greater. We will take all safeguards to minimise the amount of X-rays you receive.

## What if I need to talk to someone?

If you have any questions or concerns, or cannot make the appointment please call the Radiology Department **0116 258 8765 (option 7)** - Monday to Friday 9am to 5pm, excluding bank holidays.



اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔  
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