

Transjugular Intrahepatic Portosystemic Shunt (TIPS)

What to expect

This handout explains a transjugular intrahepatic portosystemic shunt and what to expect when you have this procedure.

What is a transjugular intrahepatic portosystemic shunt?

A transjugular intrahepatic portosystemic shunt (TIPS) is a medical procedure. During TIPS, a tube called a stent-graft is placed to connect 2 blood vessels in your liver: the portal vein and the hepatic vein.

TIPS is most often done for people who have scar tissue in their liver, often caused by *cirrhosis*. This scar tissue blocks blood flow from the portal vein to the hepatic vein.

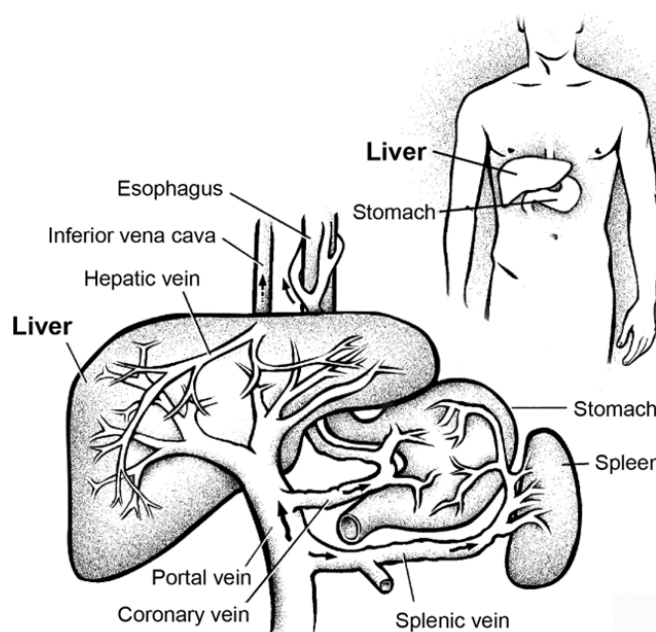
Here are the meanings of these terms:

- **Portal vein:** Blood vessel that carries blood to the liver
- **Hepatic vein:** Blood vessel that drains blood from the liver
- **Transjugular:** Through the *jugular* vein in your neck
- **Intrahepatic:** Inside your liver
- **Portosystemic:** From the portal vein to the hepatic vein
- **Shunt:** A passage between 2 natural channels that allows blood to move from one to the other

How does blood flow in a healthy liver?

In a healthy liver, blood flows from the intestines and spleen through the portal vein into the liver. This blood carries nutrients from food that you ate.

The liver processes these nutrients. The blood then filters through the liver tissue and drains into the hepatic veins and then into the heart.



This drawing shows the liver, its veins, and the nearby organs.



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Why do I need a TIPS procedure?

You have a problem with your liver that has caused *portal hypertension*. This condition causes extra pressure in the group of veins that drain blood from your stomach, esophagus, spleen, and bowel.

What happens in portal hypertension?

Portal hypertension causes 2 main problems: *variceal bleeding* and *ascites*.

- **Variceal Bleeding:** High pressure in the veins in the liver can cause the blood flow in the portal veins to back up. The blood must then drain through new pathways called varices (enlarged veins). When too much blood fills the veins, they weaken, and may break. When veins break, it can cause bleeding.
- **Ascites:** Ascites is a buildup of fluid in the belly. This happens when increased pressure from portal hypertension stops blood from flowing through the liver.

Can TIPS cure these problems?

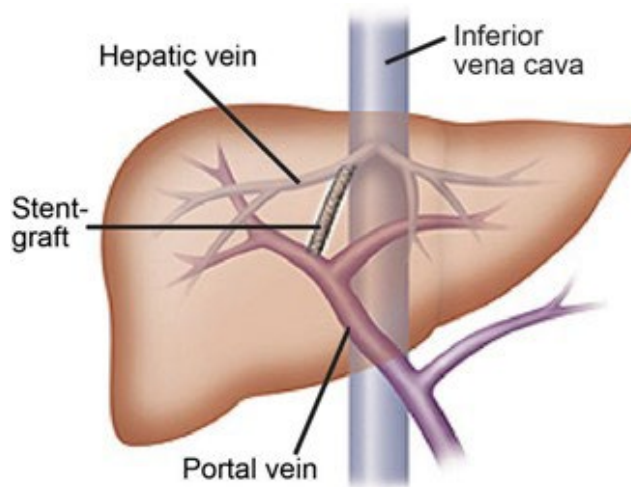
The stent-graft creates a new path between the portal and hepatic veins. This new path helps keep blood from building up in the liver. However, TIPS does not treat underlying liver disease.

How is TIPS done?

TIPS is done by an *interventional radiologist*, a doctor or advanced practice provider who specializes in procedures that are guided by X-rays or other imaging. During TIPS:

- You will be given *general anesthesia* (medicine that makes you sleep). You will have a breathing tube to help you breathe. A member of the anesthesia care team will monitor you.
- Your doctor will reach your veins through the large *jugular vein* in your neck. Your doctor will then place wires and *catheters* (thin plastic tubes) into your hepatic veins. Next, a pathway is created across the liver tissue to your portal vein.
- A *stent-graft* is then put in place to keep this new pathway open. The blood will flow directly from your portal system into your *vena cava* (the large vein that drains blood from your body and empties into your heart). This will ease the portal hypertension.

TIPS usually takes about 2 to 3 hours, but it may take longer.



A stent-graft is placed to connect your portal vein with your hepatic vein.

Will TIPS work well for me?

A shunt can be created in about 90% of patients (90 out of 100 patients). This means that doctors cannot create a shunt for 10 out of 100 patients. Your doctor will know during surgery if a shunt will work for you. If your doctor was able to create your shunt and you had:

- **Variceal bleeding:** There is an 80 to 90% chance that you will not have any more bleeding from the varices (80 to 90 out of 100 patients do not have any more of this bleeding).
- **Ascites:** There is about a 65% chance that your belly fluid will go away or lessen within about 1 month (65 out of 100 patients have this result).

Over time, your body may form scar tissue around the shunt. This can cause a partial block in the blood flow. Very rarely, this scarring fully blocks blood flow. After TIPS, you will need ultrasound exams of your belly from time to time. These scans will tell us if your shunt is working well and if scarring is causing any problems.

If the shunt stops working well, you may need other procedures to repair it. These procedures are less complex and involve fewer risks than the TIPS procedure. They are done with only *moderate sedation* (medicine to make you relax), not general anesthesia.

Are there risks involved?

Most people do well after a TIPS procedure, but there are also risks involved. These risks include:

- Bleeding
- Infection
- Worsening of liver function (rarely)
- New or worse *encephalopathy*, which causes mild confusion, trouble concentrating, or changes in the sleep-wake cycle

Most times, these symptoms can be managed with medicines. A medicine known as Lactulose will be prescribed for you after the procedure to help prevent/reduce new or worsening encephalopathy.

Your doctor will talk with you about these risks before you have the TIPS procedure. Please ask any questions and make sure that all of your concerns are answered.

Before Your Procedure

A nurse will call you within 5 days of your procedure. They will give you important instructions and answer any questions you have.

- You will meet with an anesthesia care provider to talk about your medicines for the procedure. This visit will be either in the hospital or in a clinic. We will arrange this visit for you.
- If you do not understand English well enough to understand the instructions from the nurse or the details of the procedure, tell us right away. We will arrange for a hospital interpreter to help you. A family member or friend **cannot** interpret for you.

- Most patients need blood tests done before this procedure. We may be able to do your blood tests when you arrive for your procedure. We will tell you if we need a blood sample before that day.
- If you take any blood-thinning medicines (such as Coumadin, Lovenox, Fragmin, or Plavix), you may need to stop taking the medicine for 3 to 9 days before your procedure. Do NOT stop these medicines unless your doctor or nurse has told you to do so. We will give you instructions as needed.
- You must arrange for a responsible adult to drive you home after your procedure and stay with you the rest of the day. You **cannot** drive yourself home or take a bus, taxi, or shuttle.

The Day of Your Procedure

To prepare for sedation, follow these instructions exactly. Starting at midnight, the night before your procedure

- Do not eat or drink anything.
- Do not take any of the medicines that you were told to stop before this procedure.
- If you must take medicines, take them with only a sip of water. Do not skip them unless your doctor or nurse tells you to.
- Do not take vitamins or other supplements. They can upset an empty stomach.

Bring with you to the hospital a list of all the medicines you take.

Please plan to spend most of the day in the hospital. If there is a delay in getting your procedure started, it is usually because we need to treat other people who have unexpected and urgent health issues. Thank you for your patience if this occurs.

At the Hospital

A staff member will give you a hospital gown to put on and a bag to put your belongings in. You may use the restroom at that time.

A staff member will take you to a pre-procedure area. There, a nurse will do a pre-procedure assessment. A family member or friend can be with you in the pre-procedure area.

An IV line will be started. You will be given fluids and medicines through the IV.

An interventional radiology specialist will talk with you about the procedure, answer any questions you have, and ask you to sign a consent form, if you have not already done this.

The anesthesia care provider will meet you and go over your health history, as well, before you go into the procedure room. This provider will give you medicine to make you sleep and monitor you during and after the procedure.

After Your Procedure

You will be moved to a room on the short-stay unit on the hospital.

If you are an outpatient, plan to spend at least 1 night in the hospital. Most patients are sent home the day after the procedure. Some patients may need to stay 1 to 2 extra nights.

Once you are settled in to your room:

- Your family member or friend will be able to be with you.
- You will need to rest flat on your back for 2 to 6 hours to allow your puncture site to heal.
- You will be able to eat and drink.

Before you get up to walk, we will assess you to make sure you can walk safely. A staff member will help you get out of bed. You will be able to go home the same day when:

- You can eat, drink, and use the restroom
- Your nausea and pain are under control
- Your vital signs are stable

Self-care at Home

- You may resume taking your normal medicines. Also, start taking any new medicines that your doctor prescribed.
- We will schedule an ultrasound exam of your belly for about 1 week after your TIPS procedure. The images will show us if the shunt is open. Be sure to keep this appointment.

For 24 Hours

The medicine that you were given to make you sleepy will stay in your body for several hours. It could affect your judgment. You may also be lightheaded or feel dizzy. Because of this, for 24 hours:

- Do not drive a car.
- Do not use machines or power tools.
- Do not drink alcohol.
- Do not take medicines such as tranquilizers or sleeping pills unless your doctor prescribed them.
- Do not make important decisions or sign legal documents.
- Do not be responsible for children, pets, or an adult who needs care.

To help your recovery:

- Do only light activities and get plenty of rest.
- Keep the puncture site covered with the dressing. Make sure it stays clean and dry.
- A responsible adult should stay with you overnight.
- Eat as usual.
- Drink lots of fluids.
- Resume taking your medicines as soon as you start to eat. Take only the medicines that your doctors prescribed or approved.

For 48 to 72 Hours

- Do not lift anything that weighs more than 5 to 10 pounds (a gallon of milk weighs almost 9 pounds).
- Do only gentle activities. This will allow your neck puncture site to heal.

Dressing Care

- For 24 hours, keep the puncture site covered with the dressing. Make sure it stays clean and dry.
- After 24 hours, remove the dressing and check for any signs that your wound needs care. See the list under “When to Call,” below.
- You may shower after 24 hours. Do not scrub the puncture site. Allow warm soapy water to run gently over the site. After showering, gently pat the site dry with a clean towel.
- Do not apply lotion, ointment, or powder to the site. You may apply a new bandage.
- If you apply a new bandage, change it every day for the next few days. Always check the site when you remove the bandage.
- Do not take a bath, sit in a hot tub, go swimming, or allow your puncture site to be covered with water until it is fully healed.
- You may have a little discomfort at the site for 1 to 2 days.

When to Call

Call us right away if you have:

- Mild fever, pain, redness, swelling at the puncture site or dizziness
- Mild shortness of breath, chest tightness, or chest pain
- Any other non-urgent questions or concerns

Call 911 or go to the emergency department if you have:

- Severe bleeding or any bleeding that does not stop after you have applied gentle pressure for about 15 minutes
- Drainage from your incision
- Fever higher than 101°F (38.3°C) or chills
- Shortness of breath that is getting worse
- New chest pain
- Dizziness
- Vomiting
- Yellowing of your eyes or skin

Who to Call

University of Washington Medical Center

Weekdays from 8 a.m. to 4:30 p.m., call the Interventional Radiology Department at 206.598.6209, option 2.

Harborview Medical Center

Weekdays from 8 a.m. to 4:30 p.m., call the Interventional Radiology Department at 206.744.2857.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

UWMC – Montlake:

206.598.6209, option 2

Harborview Medical Center:

206.744.2857

After hours and on

weekends and holidays:

Call 206.598.6190 and ask to page the Interventional Radiology resident on call.