



Transjugular Intrahepatic Portosystemic Shunt (TIPS)

About your procedure

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

What does TIPS mean?

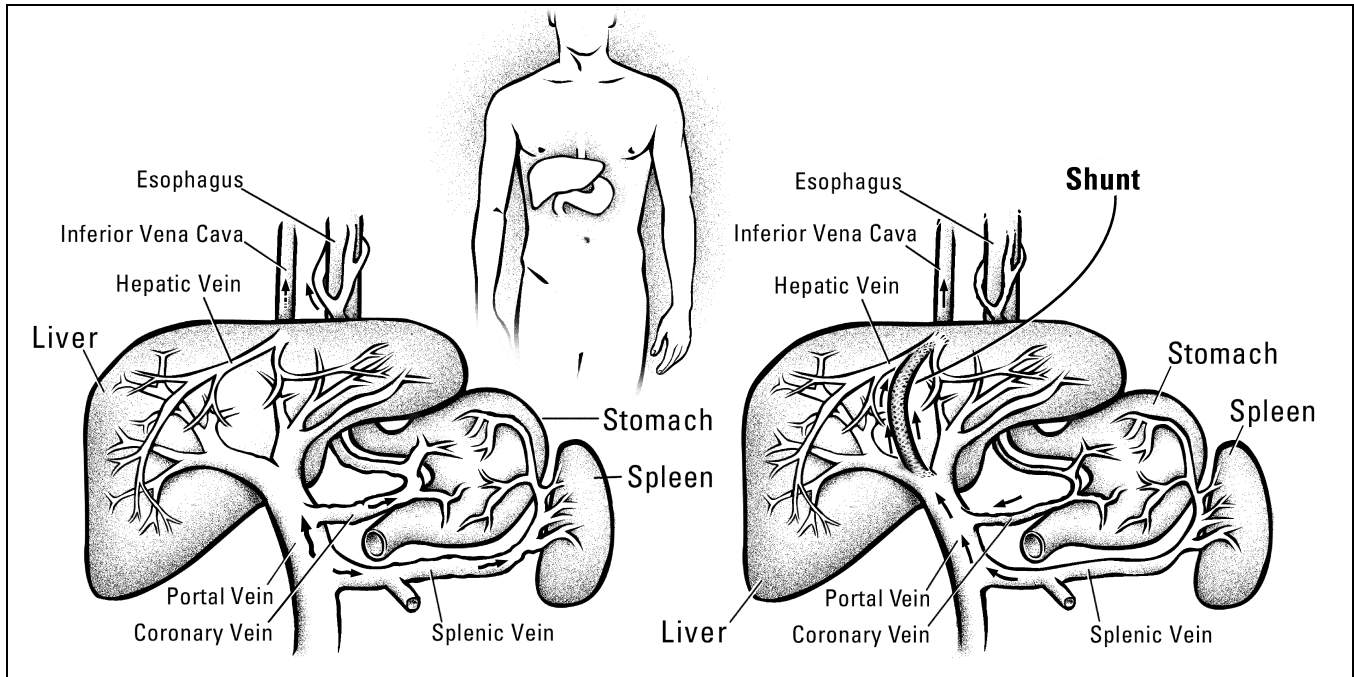
TIPS stands for *transjugular intrahepatic portosystemic shunt*:

- *Transjugular* – through the *jugular* vein in your neck
- *Intrahepatic* – within your liver
- *Portosystemic* – from the *portal* vein to the *hepatic* vein
(The portal vein carries blood into the liver. The hepatic vein drains blood from the liver.)
- *Shunt* – a metal tube covered with fabric that allows flow from one blood system to another

Why do I need a TIPS procedure?

Normally, blood flows from your intestines and spleen through the *portal vein* into your liver. A healthy liver processes the blood cells and absorbed nutrients from the gut (see picture on left on page 2). The blood then filters through the liver tissue and drains into the *hepatic veins* and then into the heart.

You have a problem with your liver that has caused *portal hypertension*. This condition causes increased pressure in the network of veins that drain your stomach, esophagus, spleen, and bowel. The most common reason for this problem is *cirrhosis* of the liver, which is widespread scarring in your liver.



A healthy liver is shown on the left. A liver with a shunt in place is shown on the right.

Portal hypertension causes 2 major problems:

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*. When too much blood fills the veins, they weaken. This can cause a lot of bleeding.

Ascites

Ascites is a buildup of fluid in the abdomen. This may occur for many different reasons.

Can TIPS cure these problems?

The TIPS procedure only helps control these problems. It does not make your liver function any better than it already does. The shunt creates a new path between the portal vein and hepatic veins to keep blood from building up in the liver (see picture on the right, above).

Other problems can also be improved with this procedure. Your doctor will talk with you about how this treatment may help you.

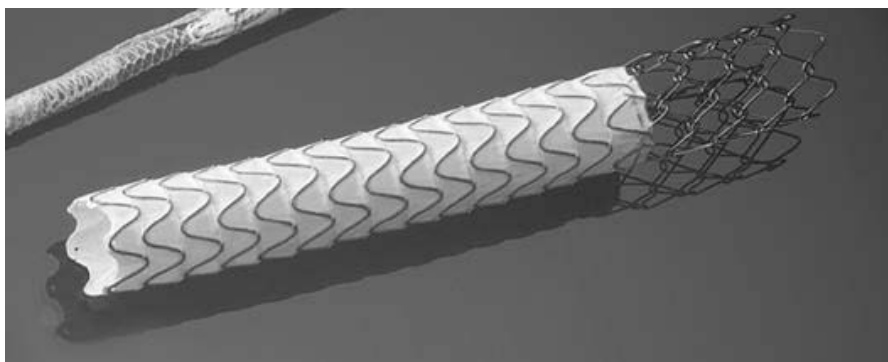
The only long-term cure for portal hypertension is to have a liver transplant. If your doctor has told you that a liver transplant could help you, you can have TIPS done and still get a transplant later.

How is TIPS done?

TIPS is done by an *interventional radiologist*, a doctor who specializes in procedures that are guided by X-rays or other imaging. The entire procedure usually takes about 2 to 3 hours, but it can last as long as 5 to 6 hours. You will have *general anesthesia*, which means that you will be completely asleep. You will have a breathing tube to help you breathe.

Your doctor will access your veins through the large *jugular vein* in your neck. From there, your doctor will use wires and *catheters* (thin plastic tubes) to enter your hepatic veins. Then, a passageway is created across the liver tissue to your portal vein.

A *stent-graft* (see the picture below) will be placed to keep this passageway open. The blood will flow directly from your portal system into your *vena cava* (a large vein that drains blood from the upper body and the lower body, and empties into the right *atrium* (chamber) of the heart). This will relieve the portal hypertension.



A stent-graft

After the procedure, we will wake you up. You will have a scar about ½ inch long on your neck.

You will feel sleepy for the rest of the day, but you should feel normal by the next day. After that, you should be able to return to your normal activities.

What should I expect after my TIPS procedure?

A shunt can be created in about 90% of patients (90 out of 100). For some people (10%, or 10 out of 100), it is not possible to create the shunt.

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.
- Ascites, there is about a 65% chance that your belly fluid will go away or be reduced within about 1 month.

Over time, your body may form scar tissue around the shunt. This can cause partial (or rarely, complete) blockage. Because of this problem, you will need ultrasound tests from time to time to make sure the shunt is working well.

If the shunt stops working well, you may need 1 or more procedures to repair it. These procedures are less complicated and risky than the original TIPS procedure. They are done with mild sedation only, not general anesthesia.

Are there risks involved?

Most people do well after the TIPS procedure. About $\frac{1}{3}$ of people (33 out of 100) who get a shunt develop new or worsened *encephalopathy* (mild confusion, trouble concentrating, or changes in your sleep-wake cycle). Most times, these symptoms can be managed with medicines.

But, creating TIPS is a serious medical procedure. About 5 to 10% of people (5 to 10 out of 100) have a serious complication. These can include:

- Bleeding in the abdomen that may be life-threatening
- Serious infection
- Liver disease gets much worse

In the first several days, the death rate from the procedure itself is about 1% (1 out of 100 people die from a TIPS procedure). And, the death rate in the first few months after the procedure can be much higher.

Your doctor will talk with you about your risks before you have the procedure. Please be certain that all of your questions and concerns are addressed.

Before Your Procedure

- You will need a pre-anesthesia consult, either in the hospital or in a clinic, before you have the TIPS procedure. We will schedule this visit for you.
- If you are an outpatient, a nurse coordinator will call you the afternoon before your procedure. If your procedure is on a Monday, the nurse will call you the Friday before. The nurse will give you important instructions and answer any questions you have.

- If you do not understand English well enough to understand these instructions or the details of the procedure, tell us as soon as possible. We will arrange for a hospital interpreter to assist you. **A family member or friend may not interpret for you.**
- If you have had an allergy or bad reaction to *contrast* (X-ray dye) in the past, please call our nurse coordinators (see numbers on the last page). You may need medicine for this allergy before the procedure.
- If your kidney function is not normal and we need to give X-ray dye into your blood vessels, we may prescribe a medicine for you to take before and after your procedure to help protect your kidneys.
- 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 the procedure. You will receive instructions about this.
- If you have diabetes and take insulin or metformin (Glucophage), you will receive instructions about holding or adjusting your dose for the day your port is placed.

Day Before Your Procedure

You must closely follow these instructions before your procedure:

- The day before the procedure, you may eat as usual. Drink lots of fluids.
- Starting **6 hours** before the procedure, you may only have *clear liquids* (liquid you can see through, such as water, Sprite, cranberry juice, weak tea)
- Starting **2 hours** before your procedure:
 - Take **nothing** at all by mouth.
 - If you must take medicines, take them with **only** a sip of water.
 - Do not take vitamins or other supplements. They can upset an empty stomach.

On the Day of Your Procedure

- Take all of your other usual medicines on the day of the procedure. Do **not** skip them unless your doctor or nurse tells you to.
- Bring a list of all the medicines you take with you.

- If there is a delay in getting your procedure started, it is usually because we need to treat other people with unexpected and urgent problems. Thank you for your patience if this occurs.
- Unless you are told otherwise:
 - **If you are a patient at University of Washington Medical Center (UWMC)**, check in at Admitting on the 3rd (main) floor of the hospital. Admitting is to the right and behind the Information Desk in the lobby.
 - **If you are a patient at Harborview Medical Center (HMC)**, check in at the Ambulatory Procedure Area (APA) on the 8th floor of the Maleng Building.
- A medical assistant will give you a hospital gown to put on and a bag for your belongings. You may use the restroom at that time.
- An *intravenous* (IV) line will be started. You will be given fluids and medicines through the IV.
- An *interventional radiology doctor* will talk with you about the procedure and ask you to sign a consent form if that has not already been done. You will be able to ask questions at that time.
- You will then be put to sleep by an *anesthesiologist*. This person will monitor you throughout the entire procedure and while you recover from anesthesia.

After Your Procedure

- Soon after you are awake, you will be able to have liquids and then solid food.
- You will stay in the hospital overnight. We will watch you closely for any signs of bleeding or infection.
- Most people go home the next day. There is no other recovery needed.

When You Get Home

- You may resume taking your normal medicines. Take **only** the medicines that your doctors prescribed or approved.
- You will be scheduled for an ultrasound of your abdomen about 1 week after your procedure. Be sure to keep this appointment.

Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help.

Radiology/Imaging Services:
206-598-6200

When to Call

Call us **right away** if you have:

- Fever higher than 101°F (38.3°C) or chills
- New abdominal pain
- Confusion or sleepiness that gets worse
- Dizziness
- Yellowing of your eyes or skin
- Shortness of breath that gets worse

Who to Call

University of Washington Medical Center (UWMC) Patients

Interventional Radiology nurse coordinator 206-598-6897

Procedure Scheduling..... 206-598-6209

After hours (between 5 p.m. and 7 a.m.), and on weekends and holidays

Ask for the Interventional Radiology Fellow on call..... 206-598-6190

Harborview Medical Center (HMC) Patients

Patient Care Coordinators..... 206-744-0112 or 206-744-0113

After hours (between 5 p.m. and 7 a.m.), and on weekends and holidays

Ask for the Interventional Radiology Fellow on call..... 206-744-0147

If You Have an Emergency

Go directly to the nearest Emergency Room or call 9-1-1. Do not wait to contact one of our staff.

UW Medicine

Radiology/Imaging Services
Box 357115

1959 N.E. Pacific St. Seattle, WA 98195
206-598-200