

# TIPS

TIPS stands for Transjugular Intrahepatic Portosystemic Shunt. This is a complex procedure that Vascular Interventional Radiology Doctors perform to create a bypass between two veins in your body: the hepatic vein and the portal vein.

## Why would I need a TIPS procedure?

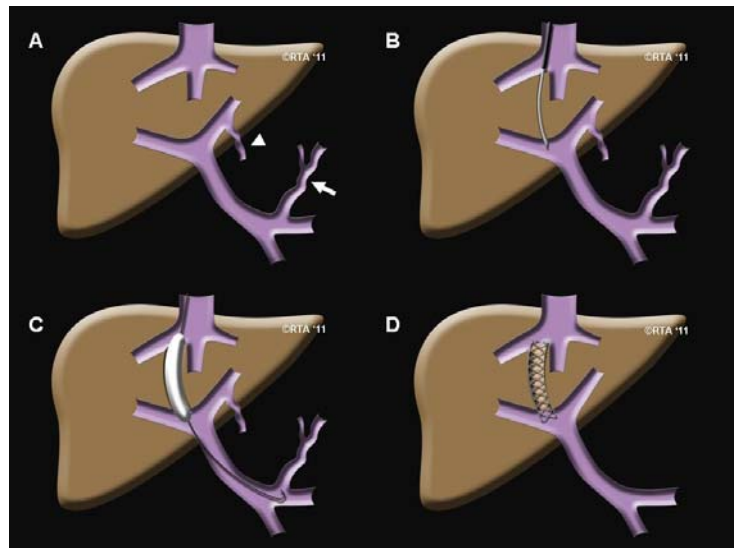
TIPS procedures are performed in patients that have problems with blood flowing out of the abdomen, through the liver, and back to the heart. This can be due to blood clots, blockages in the abdominal veins, but it's most commonly caused by liver disease.

Patients with long-standing liver disease, called cirrhosis, have problems with the blood flow through the liver, which acts like a filter for the blood flowing in the abdomen. This causes high pressure in the abdominal veins (the portal venous system) which can cause other problems like varices (large stretched veins) and ascites (fluid buildup in the belly). Varices can bleed and be potentially life threatening, and ascites is a very uncomfortable problem, where patients may become short of breath or have pain related to this fluid buildup.

The TIPS procedure creates a direct connection, also called a shunt, from the portal vein that handles the flow of blood from the abdomen, to the hepatic vein, which drains blood from the liver into the heart. The TIPS lowers the pressure difference between the portal vein and the hepatic vein, helping reduce or eliminate fluid buildup, and keep varices from bleeding.

## How is a TIPS Performed?

TIPS is a minimally invasive procedure that is done through a small incision in the neck. Through this incision, your doctor places a needle into the jugular vein, and threads long tubes called catheters, over long wires, called guide wires, into the veins in the liver. The doctor then places a large needle into the liver veins and aims the needle into the portal vein. Once the doctor confirms that the needle is placed in the portal vein, a wire is placed into the portal vein and a



device called a stentgraft is placed to create the shunt. A stentgraft is a metal mesh tube covered with a membrane through which blood can flow, bypassing the abnormal blood flow in the liver.

The procedure is performed with X-ray guidance, and many doctors are now using US guidance as well for placement of the TIPS. The X-rays give you a small dose of radiation, but they are an essential part of doing the procedure without open surgery, so no cutting is needed beyond the small incision in the neck and groin, if your doctor uses ultrasound guidance with special equipment. The recovery period after TIPS is usually a few days, provided that no complications or side-effects occur that require a longer recovery.

### **What are the Complications of TIPS?**

TIPS is a complex procedure that changes the blood flow in your body almost instantly. The most common problems that can happen after TIPS include hepatic encephalopathy, pain, bleeding, and heart failure.

**Hepatic Encephalopathy:** Because the procedure is creating a direct shunt from the portal vein to the hepatic vein, it can expose you to larger levels of blood that hasn't been filtered by your liver. This unfiltered blood may carry chemicals from your digestive system that may cause confusion, tremors, memory loss, and sleepiness, which in the setting of liver disease, is known as hepatic encephalopathy.

**Pain:** Most patients have little pain after TIPS, but neck pain from where the doctor entered the jugular vein, and abdominal pain, due to the needle and stent placement during TIPS are also seen frequently. This pain typically goes away and is usually handled well with pain control medications.

**Bleeding:** TIPS is a technically challenging procedure and requires the placement of a large needle to be placed through a chamber of the heart called the right atrium, into blood vessels in the liver. Whenever needles are placed in the body, there is a chance of bleeding, and because of the nature of this procedure, patients undergoing TIPS should understand that bleeding may occur which can require blood transfusions. Bleeding in the heart during TIPS is extremely rare.

**Heart Failure:** Because the shunt created during TIPS will increase blood flow directly to the heart, all patients undergoing TIPS have a screening heart ultrasound known as an echocardiogram, or an "echo," which establishes if the heart is healthy enough to accommodate a TIPS. In some cases, TIPS may have to be placed even though a patient's heart is not fully healthy, and issues with too much blood flowing to the heart may happen, however this is relatively rare.