

Venous Stents

What are Venous Stents?

Most people are familiar with heart stents placed to improve blood flow after a heart attack or to prevent one. Venous stents function in the same way except rarely are they placed emergently.

Venous stents are metal mesh tubes that expand against blocked or narrowed damaged vein walls. They act as a scaffold to keep veins open. In most cases, surgeons place venous stents in larger, central veins, such as those found in the:

- Legs and Arms
- Chest
- Abdomen

Conditions We Treat with Venous Stents

Venous stents can help people with chronic blood clots, scarring or other conditions that compress or narrow the veins, limiting blood flow.

- **Chronic [deep vein thrombosis \(DVT\)](#):** DVT is a blood clot in one of the large, deep veins that returns blood from the leg — or less commonly, from the arm — to the heart and lungs.
- **Post-thrombotic syndrome:** DVT can damage veins which leads to extensive scarring and narrowing leading to chronic swelling and pain. People may not experience symptoms of post-thrombotic syndrome for years following a DVT.
- **May-Thurner syndrome:** a congenital condition where the iliac artery runs from your abdomen to your right leg pushes against the left iliac vein. This may result in narrowing or scarring leading to a DVT, swelling, pain, fatigue or pelvic congestion syndrome (PCS).
- **[Nutcracker syndrome](#):** A congenital condition in which the arteries near the kidney compress the left kidney (renal) vein causing severe back pressure to the kidney leading to flank pain and blood in the urine.
- **Hemodialysis/arteriovenous fistulae:** People receiving hemodialysis whose grafts or fistulas experience decreased blood flow because of narrowing in their veins can sometimes benefit from stents.

Before Your Venous Stent Procedure

In addition to taking your medical history and performing a physical exam, our providers may order additional testing including advanced imaging.

Ultrasound

The most common imaging test — duplex ultrasound — uses sound waves to visualize your blood vessels and measures the direction and speed of blood flow through your veins. Ultrasound gives your doctor a clear picture of the structure of your blood vessels and helps to pinpoint the exact location of any narrowing or blockage.

Venogram

Sometimes, ultrasound may not be effective because of the location of the vein. In this case, your vascular surgeon may suggest a venogram.

A venogram is an x-ray that allows your doctor to see the anatomy of your veins.

After inserting a catheter (thin, flexible tube) into a vein — most often in the leg — your doctor injects a contrast dye into the catheter, which allows your veins to be seen on the x-ray.

Your vascular surgeon can use the venogram to diagnose and treat your condition by performing venous angioplasty and stent placement at the same time if indicated.

What To Expect During Venous Stenting

The procedure to place venous stents are almost always done on an outpatient basis, under moderate sedation.

If a clot or other obstruction is blocking the vein, your surgeon may first remove it and perform angioplasty before placing the stent.

During **venous angioplasty and stenting**, your vascular surgeon will:

- Insert a needle into a vein in your groin or behind your knee, depending on which vein needs stenting.
- Insert a guide wire which allows safe passage of a catheter sheath over it.
- Use x-ray guidance (fluoroscopy) to guide the catheter to the site of the narrowing.
- Precise measurements are obtained by using a specialized ultrasound device placed within the vein (IVUS).
- A balloon is placed at the narrowing and inflated to widen the narrow vein in preparation for stent placement.
- The stent (a soft metal meshed tube) is placed and functions to push against the narrowed walls of the vein to keep it open.
- Upon successful stent placement, the catheters and wires are removed and pressure is applied to the insertion site. A small dressing is applied.

In most cases, people who undergo venous stenting go home the same day within a few hours after the procedure is completed.

To prevent blood clots from developing within the stent, most people will be placed on blood thinners for a few months. Long term monitoring and imaging is mandatory to maintain optimal long-term outcomes.