

## ***Varicose Vein Overview***

Varicose veins, also called "varicocoeles," result when the valves that control the flow of blood in and out of veins fail to work properly and the pull of gravity causes blood to pool in the legs or elsewhere.

When valves fail in the legs, the superficial veins become enlarged and twisted, these are varicose veins. Smaller varicose veins are sometimes called spider veins. Obesity, pregnancy, constriction of the veins with garters or tight clothing, and an inherited tendency are among the contributing causes of varicose veins. Usually, there are no symptoms. Varicose veins are diagnosed by physical examination.

Women between the ages of 30 and 70 are most often affected by varicose veins. In the United States, 10 percent of men and 20 percent of women have varicose or spider veins. Treatment usually is not required. While most treatment is sought for cosmetic reasons – to improve the appearance of the veins in the legs – some varicose veins are painful and require treatment for medical reasons.

## ***What Is Venous Insufficiency?***

Venous insufficiency is an abnormal circulatory condition with decreased return of blood from the leg veins up to the heart, with pooling of blood in the veins. Normally, stop valves in the vein close to keep blood from flowing downward with gravity. When the valves in the vein become weak and don't close properly, they allow blood to flow backward, or reflux.

## ***What Are The Symptoms Of Varicose Veins Or Venous Insufficiency?***

Symptoms caused by venous insufficiency and varicose veins include aching pain, easy leg fatigue, and leg heaviness, all of which worsen as the day progresses. Many people find they need to sit down in the afternoon and elevate their legs to relieve these symptoms. In more severe cases, venous insufficiency and reflux can cause skin discoloration and ulceration which may be very difficult to treat. One percent of adults over age 60 have chronic ulceration.

## ***How Common Is Venous Disease and Varicose Veins?***

Chronic venous disease of the legs is one of the most common conditions

affecting people. Approximately half of the U.S. population has venous disease—50 to 55% of women and 40 to 45% of men. Of these, 20 to 25% of the women and 10 to 15% of men will have visible varicose veins. Varicose veins affect 1 out of 2 people age 50 and older, and 15-25% of all adults. People without visible varicose veins can still have symptoms. The symptoms can arise from spider veins as well as from varicose veins, because, in both cases, the symptoms are caused by pressure on nerves by dilated veins.

## ***Diagnostic Testing For Varicose Veins***

### **Ultrasound**

The presence of varicose veins is most often confirmed by ultrasound. This is a painless procedure in which a radiologist or technologist moves an instrument (transducer/receiver) about the size and shape of a computer mouse across the outside surface of the skin. Sound waves are transmitted through the skin and allow the technologist to "see" the size, shape and texture of the patient's veins. A picture is displayed on a computer screen as the radiologist or technologist takes the ultrasound.

The Radiologist will use ultrasound to assess the venous anatomy, vein valve function, and venous blood flow changes, which can assist in diagnosing venous insufficiency. The technologist will map the greater saphenous vein and examine the deep and superficial venous systems to determine if the veins are open and to pinpoint any reflux. The saphenous vein, which runs the length of the thigh, is one of the major veins of the leg.

The use of ultrasound will help your interventional radiologist determine if you are a candidate for a minimally-invasive treatment, known as Varicose Vein Ablation.

## ***Interventional Radiology Treatment For Varicose Veins***

Your physician will determine the treatment that best serves you and your condition. If you are a candidate for a minimally invasive Interventional Radiology Treatment, your physician may recommend:

### **Varicose Vein Ablation**

This minimally-invasive treatment is an outpatient procedure performed using imaging guidance. After applying local anesthetic to the vein, the interventional radiologist inserts a thin catheter, about the size of a strand of spaghetti, into the vein and guides it up the greater saphenous vein in the thigh. Then laser or radiofrequency (RF) energy is applied to the inside of the vein. This heats the vein and seals the vein closed. Reflux within the greater saphenous vein leads to pooling in the visible varicose veins below. By closing the greater saphenous vein, the twisted and varicosed branch veins, which are close to the skin, shrink and improve in appearance. Once the diseased vein is closed, other healthy veins take over to carry blood from the leg, re-establishing normal flow.

## ***What Are The Benefits Of Vein Ablation?***

The treatment takes approximately 1 hour and provides prompt relief of symptoms. You can return to normal activity almost immediately with little or no pain. There may be minor soreness or bruising, which can be treated with over-the-counter pain relievers. There is no scar, because the procedure does not require a surgical incision, just a nick in the skin, about the size of a pencil tip.

Traditionally, surgical ligation or vein stripping was the treatment for varicose veins, but these procedures can be quite painful and often have a long recovery time. In addition, there are high rates of recurrence with the surgical procedures, on average 10 – 25 percent.

## ***How Successful Is The Vein Ablation?***

The two-year data show a 93-95% success rate. This is a much higher efficacy rate than surgical ligation or stripping.

## ***Are There Other Treatments For Varicose Veins?***

Ambulatory phlebectomy and injection sclerotherapy are also used. Ambulatory phlebectomy is a minimally-invasive surgical technique used to treat varicose veins that are not caused by saphenous vein reflux. The abnormal vein is removed through a tiny incision or incisions using a special set of tools. The procedure is done under local anesthesia, and typically takes under an hour. Recovery is rapid, and most patients do not need to interrupt regular activity after ambulatory phlebectomy.

Injection sclerotherapy can also be used to treat some varicose and nearly all spider veins. An extremely fine needle is used to inject the vein with a solution which shrinks the vein.

## ***Does Insurance Cover Vein Ablation?***

Many insurance carriers cover venous insufficiency treatments, based on medical necessity for symptom relief.