



Understanding Varicose Veins

Patient Information

The Circulatory System

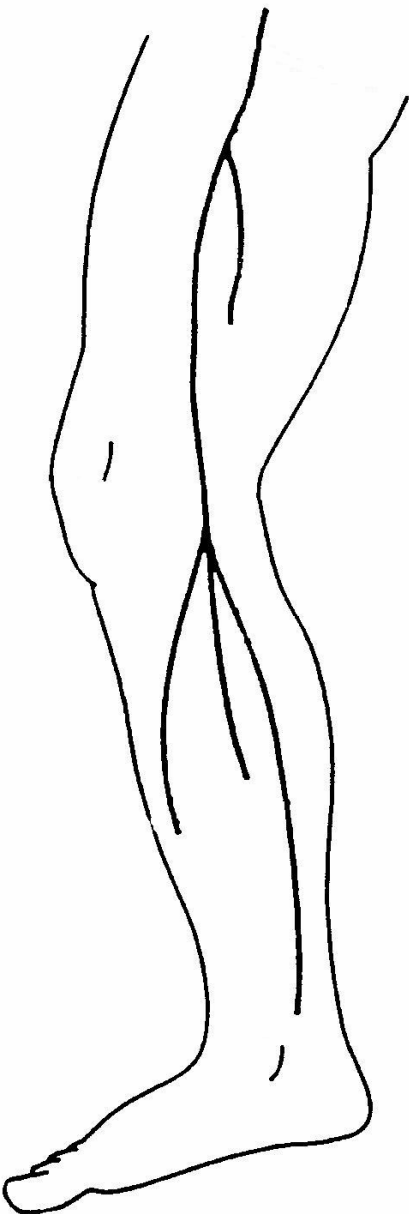
Arteries carry oxygenated blood to your legs and the **veins** carry de-oxygenated blood away from your legs. The blood returns to the lungs to pick up more oxygen and returns to the heart to be pumped out again through the arteries.

The venous system has two components. The first is the deep venous system. It lies below the muscles and transports 90% of the blood away from your legs. It is the system that can get blood clots, which may be life threatening if not treated. It usually has nothing to do with your varicose veins.

The second component is the superficial venous system. It transports approximately 10% of the blood away from your legs. You can get clots in this system that causes pain and discomfort (superficial phlebitis) but they are not life threatening. The superficial system has everything to do with your varicose veins.

Veins have one-way valves that open up as the blood travels upward, and then close down tightly to prevent the blood from leaking back down. The deep and superficial veins both have these valves.

When the deep system has faulty valves (the valves do not close tightly allowing the blood to leak back down) you will develop profound and chronic swelling. When the superficial system has faulty valves you may develop varicose veins.



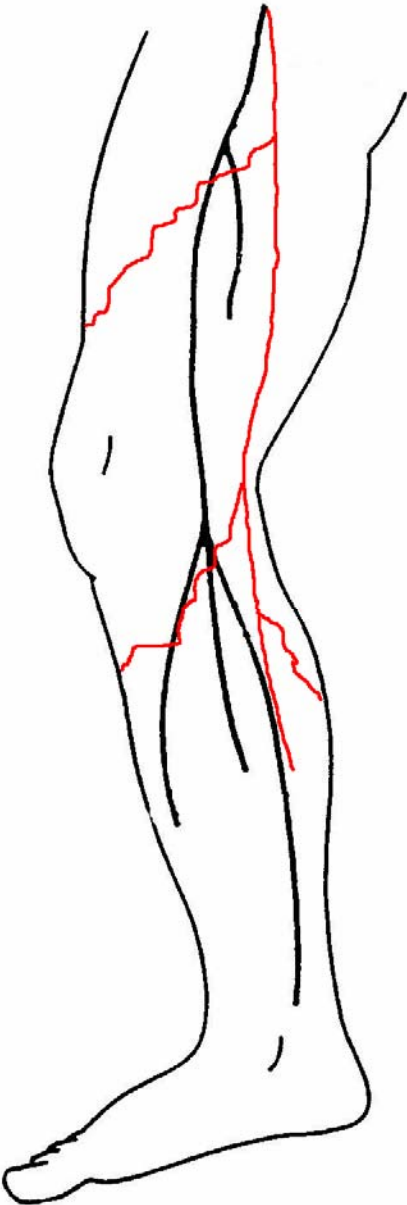
Reflux

The condition that results from these leaky valves is known as **reflux**. When the blood is refluxing back down the legs it puts excess pressure on the vein walls which causes them to expand. This expansion causes the valves to be even more ineffective.

In the picture to the left, the black markings represent the deep venous system. The **red** markings represent the superficial system. The **Greater Saphenous Vein** is the **main tree** of the superficial system. The **varicose veins** are like the **branches of the tree**.

In order to treat the varicose veins effectively the entire greater saphenous vein must be treated. If we just removed the **branches** the refluxing blood in the **main tree** would result in more varicose branches.

In rare cases you may have reflux in the greater saphenous vein that causes spider veins on the medial thigh, knee and calf. But for the most part spider veins are unrelated to reflux in the saphenous vein, therefore insurance companies consider their treatment cosmetic.



Can varicose veins cause significant medical problems?

When reflux is left untreated over many years, the constant pressure backup may cause a leaking of the blood into the tissues. This leaking causes brown stains on the skin. This is known as stasis skin changes and can become serious.

In cases where the stasis is severe a breakdown of the tissue may result in a **chronic venous stasis ulcer**. Venous stasis ulcers are very difficult to treat and are chronic in nature with the ulcer reopening just when you thought it was healed.

Because of this complication some insurance companies may consider it medically necessary to treat your varicose veins. Our insurance specialist will help to determine your specific benefits.

Venous stasis ulcers do not occur in all patients with varicose veins. Unfortunately, we cannot definitively predict who will go on to develop this complication. When skin changes begin to appear the likelihood of an ulcer increases.



Treatment Options for Varicose Veins

- **No treatment:** Some patients opt not to treat their varicose veins. They may live their entire life with varicose veins and never develop complications more serious than a chronic dull ache.
- **Compression Hose:** Compression hose aid in the treatment of varicose veins by helping to *squeeze* the blood back out of the legs by means of an upward gradient compression. In many cases this will relieve discomfort.
- **Ultrasound Guided Sclerotherapy:** Under the guidance of ultrasound a needle is inserted into the greater saphenous vein and a chemical is injected directly into the diseased vein. This chemical irritates the vein wall causing it to collapse and scar down.
- **EndoVenous Ablation:** A catheter is inserted into the greater saphenous vein at the level of the knee. This is done using a large gauge needle, although sometimes a small incision may be needed to locate the vein. A laser fiber is then fed up the catheter into the proximal portion of the greater saphenous vein. The laser fiber is slowly withdrawn as it fires energy into the vein causing damage to the vein wall. This damage results in the greater saphenous vein closing down.
- **Ambulatory Phlebectomy:** After EndoVenous Laser Therapy has destroyed the proximal greater saphenous vein the branches of the varicose veins are surgically removed. This is done through tiny incisions with an instrument that resembles a crochet hook. The veins are hooked and pulled out of the leg. The incisions are closed with steri strips. No sutures are required. In most cases you can return to work the following day.
- **Ligation and stripping:** The traditional surgical method used to remove varicose veins. This procedure involves numerous incisions requiring suturing and a prolonged recovery period.