

# Varicose Veins

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Varicose veins are abnormally enlarged superficial veins usually seen in the thigh and leg. In many patients they are a sign of a more serious underlying problem of the venous system. These veins often are branches of the superficial set of veins (long and short saphenous veins) which have leaking valves. As many as 30 million adults in the USA are affected by significant superficial venous insufficiency (saphenous vein and branches) and may have an easily treatable problem. Venous insufficiency is more of an "umbrella" diagnosis which refers to leakiness of the one way valves within the veins which results in increased pressure in the veins. The increased pressure may cause bulging varicose veins, leg swelling, cramps or achiness of the calves, restless legs, spider veins, discoloration and thickening of the skin of the lower leg, and eventual bleeding or ulceration.

Without treatment, varicose veins worsen with time. However, rather than focus on the varicose veins, it is probably more important to focus on the fate of the skin of the lower leg in this group of patients. Venous insufficiency may manifest itself in other ways as well, such as swollen, achy legs, discolored and thickened skin over the lower leg around the ankle area and purple, painful feet.

## What are the risk factors for developing varicose veins?

Heredity is the most significant risk factor in developing significant venous insufficiency and varicose veins. The second most important risk factor is the history of full term pregnancy. The more full term pregnancy a woman experiences, the higher the risk of vein related problems. Other conditions that may contribute to the development of varicose veins and venous insufficiency include morbid obesity, prolonged standing or sitting, focal trauma to a vein (sports injury) and deep vein thrombosis. Varicose veins are more common in females due to their child bearing status as well as the presence of estrogen. Despite this fact, males account for approximately 20-30% of patients who present for evaluation of varicose veins or other complications of venous insufficiency.



## What are the symptoms of varicose veins?

Varicose veins and venous insufficiency may cause symptoms less obvious than the commonly noted spider veins, bulging lumps, bleeding veins or leg ulcers. Other symptoms may include swollen achy legs, a feeling of heaviness or fatigue of the legs, or itchy and discolored legs. Patients usually complain of increased swelling and aching toward the end of the day and often note improvement with elevation of the legs or after a night of sleep. Other patients may be under treatment for conditions thought to be related to the heart (congestive heart failure), kidneys (renal failure or diabetic kidney disease), excess salt intake, lymphedema (swelling after leg incisions) or for neurologic conditions such as neuropathy or restless leg syndrome (RLS). Restless leg syndrome has been strongly correlated with venous insufficiency, so patients who have been diagnosed with RLS are encouraged to seek further vein evaluation.

## How can varicose veins be diagnosed?

Aside from the obvious signs of external varicose veins found at physical examination, the most accurate method of diagnosing underlying venous insufficiency is duplex ultrasound. When performed by a qualified registered vascular technologist, one can precisely determine the location of the leaky veins and formulate a logical and effective treatment plan to cure the problem. In addition to evaluating the superficial set of veins (saphenous system), the veins within the muscles (deep veins) are also examined to determine their status with respect to valve function and presence of clots. In addition, there are a variety of other types of leg veins which may be leaky and which less experienced technologists may



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overlook. These veins include the posterior thigh vein of Giacomini, the anterior and posterior medial saphenous veins and a number of perforating or connecting veins (Hunter's, Dodd's and Cockett's). The importance of the role of an experienced registered vascular technologist in performing the venous insufficiency study cannot be overstated. This is an outpatient examination which takes approximately 30 minutes per leg, and is best performed at the direction of the Physician Vein Specialist who will be responsible for making the treatment decisions.

## What are the modern treatment options for varicose and leaky veins?

Until year 2000, the treatment options for varicose veins and venous insufficiency were limited to compression stocking therapy on the conservative end of the treatment spectrum or saphenous vein ligation and/or stripping on the surgical end of the spectrum. Since VNUS Medical technologies introduced the radiofrequency catheter based endovenous closure technique in 1999, an estimated 25-30 million adults in the USA with significant superficial venous insufficiency now have an effective, outpatient treatment for their swollen achy legs, varicose veins and venous leg ulcers. In the days of vein stripping, more advanced skin changes or ulcerations were required to justify the invasive procedure. With endovenous techniques of sealing the leaky veins from within with a small catheter, under local anesthesia, these patients can now be treated at a much earlier stage of their disease, more effectively preventing more advanced complications from occurring in the future. Since a number of patients may also have arterial blockages, endovenous closure should be performed by a surgeon familiar with arterial and venous disease. Performance of the procedure in the office setting under local anesthesia offers the advantages of a less stressful environment, avoidance of exposure to hospital related risks (infections and IV medications) as well as avoidance of general or regional anesthetic risks. The procedure should be performed in a sterile operating room, under standard surgical protocol and precautions, using local anesthesia with a mild oral relaxant. The procedure usually takes less than one hour to perform, either as an isolated procedure or in conjunction with removal of varicose veins through small incisions (microphlebectomy).

## I've had varicose veins and brown skin for 20 years, why fix it now?

The natural history of untreated severe venous insufficiency is that of progression. Progression to larger varicosities, clotted varicosities, bleeding varicosities, progressive leg edema and disability, and brownish discoloration and thickened skin, with potential for future ulceration. Prior to the introduction of endovenous closure techniques, it made sense to be conservative when considering "surgical" treatment of varicose veins and venous insufficiency.

## Which is best for me, VNUS or Laser closure?

Although VNUS closure (radiofrequency based) has enjoyed excellent patient comfort ratings, both techniques are very effective in achieving successful long term closure of the saphenous vein trunks and its branches. Laser endovenous closure may be more appropriate in cases where there are segments of veins less than 7 cm in length which need to be closed, or when the diameter of the vein to be treated exceeds the recommended limit for radiofrequency closure. Treatment decisions should be individualized based on clinical and anatomic factors.

## Is Varicose Vein Surgery covered by insurance?

If a patient has symptoms of leg swelling, pain or inflammation related to bulging varicose veins, skin changes predisposing to ulcers or history of superficial clots or ulcers, most insurance companies will consider this a medically necessary condition. In general, a conservative trial of therapy, including 3-6 months of compression stocking therapy, elevation and anti-inflammatory medications is required to satisfy Medicare and most commercial insurance carriers' inclusion criteria. Some carriers may also require certain training qualifications be met by the treating physician to guarantee coverage (vascular surgeon performing procedure vs. other specialties). Most commercial insurance carriers will require a detailed letter of preauthorization to make a predetermination of medical necessity. This letter must include patient history of symptoms, types of previous treatments, results of physical and ultrasound exams, and photographs of the patient's legs demonstrating the clinical findings. Diagnosis codes and procedure codes must also be included. Thus, it is very important for patients to keep track of the length of time they have had their problems and the type and duration of all previous treatments (surgery, injections and stockings). Injection sclerotherapy is rarely covered by insurance unless there has been a history of recurrent hemorrhage or pain directly related to the varicosities in question.

swollen achy legs  
leg ulcers  
varicose & spider veins