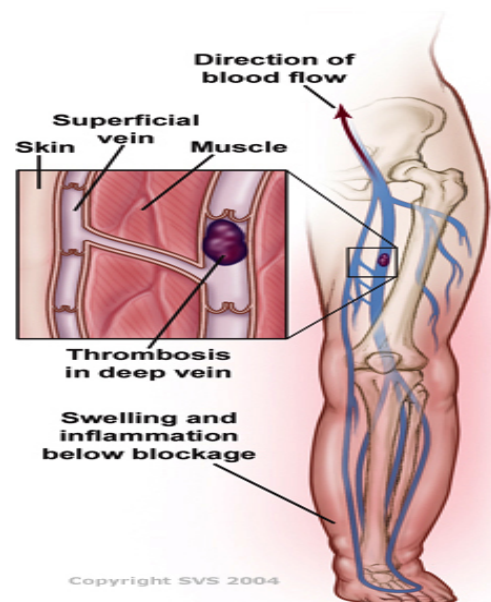


Heart Care Centers of Florida Cardiologists provide a comprehensive approach to the diagnosis and treatment of arterial and venous disease processes.

Chronic venous insufficiency occurs when leg veins cannot efficiently move oxygen-poor blood back to the heart. The pressure from blood pooling in the legs and feet can cause pain and swelling. There are three kinds of veins: superficial veins, which lie close to the skin, deep veins, which lie in groups of muscles, and perforating veins, which connect the superficial to the deep veins. When in the upright position, the blood in leg veins must go against gravity to return to the heart. To accomplish this, leg muscles squeeze the deep veins of legs and feet to help move blood back to the heart. One-way flaps, called valves, inside veins keep blood flowing in the right direction. When leg muscles relax, the valves inside veins close. This prevents blood from flowing in reverse, back down the legs. The entire process of sending blood back to the heart is called the venous pump. When one walks and his/her leg muscles squeeze, the venous pump works well. But when he/she sits or stands, especially for long periods of time, the blood in leg veins can pool and increase the venous blood pressure. Deep veins and perforating veins are usually able to withstand short periods of increased pressures. However, sitting or standing for a long hours can stretch vein walls because they are flexible. Over time, in susceptible individuals, this can weaken the walls of the veins and damage the vein valves, causing CVI. The most common form of CVI is primary varicose veins due to the insufficiency of the saphenous system (Nael 2009).





Risk factors for developing venous insufficiency include:

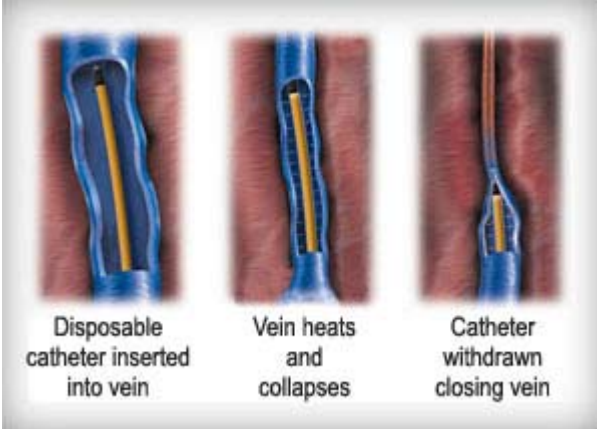
- History of deep vein thrombosis in the legs
- Age
- Being female (related to levels of the hormone progesterone)
- Being tall
- Genetic factors
- Obesity
- Smoking
- Pregnancy
- Prolonged sitting or standing

Signs & Symptoms Chronic Venous Insufficiency:

- Leg heaviness and fatigue
- Leg or ankle swelling
- Leg pain, aching or cramping
- Skin changes
- Ulcers, open wounds or sores

Chronic venous insufficiency is the leading cause for chronic leg ulcers. About 70-75% of all chronic leg ulcers are caused by venous hypertension (it is much more common than diabetic or ischemic ulcers). It is estimated that about 1-2% of the national health budget is spent on venous wounds. The main reason for the large health expense is the chronicity of this disease with over 75% recurrence rate.

Treatment options range from conservative with compression stockings to open surgical procedures and over the last ten years development of endovenous catheter based therapies.



Endovenous ablation techniques were developed and have replaced stripping and ligation as the new technique for elimination of vein reflux. One of the endovenous techniques is a radiofrequency-based procedure. RFA is performed by passing a special radiofrequency (RF) catheter from the knee to the groin and by controlled and preset heating of the targeted vessel until thermal injury causes shrinkage. The process is repeated every 7 centimeters along the course of the vein. Initial thermal injury is followed by fibrosis of the treated vessel. Radiofrequency ablation (RFA) has been shown to be effective, with a low rate of complications. The procedure is well tolerated by patients, and it produces good cosmetic results.

Excellent clinical results are seen at 4-5 years, and the long-term efficacy of the procedure is now known with 10 years of experience. In more than 90% of patients, biopsy specimens demonstrate complete occlusion of the vein lumen 6 weeks after treatment. The efficacy of RFA treatment has been reported by several groups, largest study with the longest follow-up is a clinical registry series that began collecting data in 1999 when the procedure received FDA approval. A 90% reflux-free rate was reported at 2 years. The latest available results with 5-year follow-up data demonstrated RFA treatment efficacy of 84% compared with 89% at 1 year, showing the durability of the treatment. Patient symptoms of pain, fatigue, or edema of lower extremities are often dramatically reduced after endovenous RFA treatment of CVI.