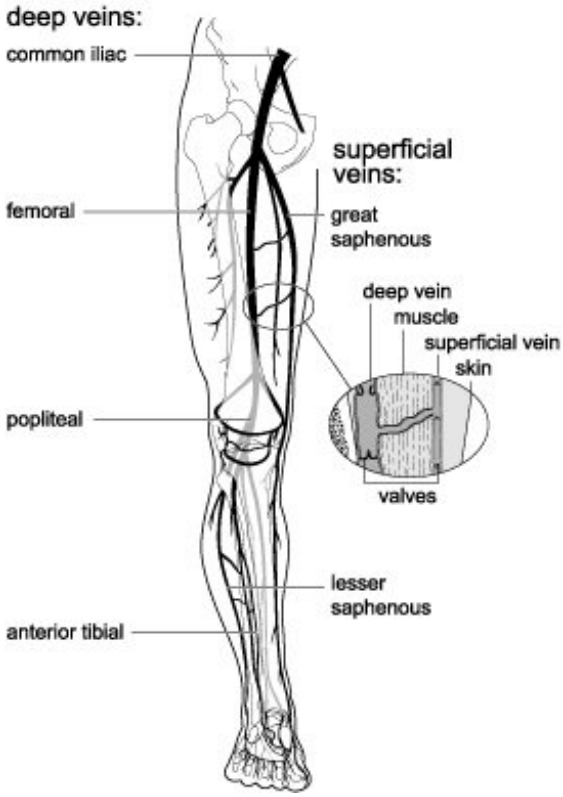
Venous Stasis & Chronic Venous Insufficiency

As people age, the veins located in their legs may weaken and stretch.
When veins weaken and lose the ability to pump blood effectively, the condition is called *chronic venous insufficiency* (**CVI**) or *venous stasis*.

Almost all veins return blood back to the heart. This happens by:

- The force of the heart pumping fresh blood pushes blood back to the heart.
- Blood flowing to the heart from the force of gravity.

In the deep veins of the legs, blood has to fight gravity and flow upstream back to the heart. Here, the leg muscles contract to pump blood back toward the heart.



Vein walls are elastic, and many veins have small valves that only allow blood to flow in one direction. When leg muscles contract, they push inward against the elastic vein walls. This squeezes blood upward, opens the valves, and moves blood toward the heart. When leg muscles relax, the vein wall also relaxes and the valves inside the vein close to prevent blood from flowing backward. This method of pumping blood out of the legs is called the *venous pump*.

CAUSES

The venous pump works best while walking and leg muscles are contracting. But when a person sits or stands, blood pressures in leg veins can build. Deep veins are usually able to withstand short periods of inactivity, but long periods of inactivity (and increased pressure) can stretch, weaken, and damage vein walls.

High blood pressure can also stretch and damage vein walls. The veins may no longer be able to pump blood back to the heart.
Venous hypertension (high blood pressure inside veins) that lasts over time is a primary cause of CVI. CVI can also be caused by:
Deep vein thrombosis, a condition where a *thrombus* (blood clot) blocks blood flow in a vein.
Phlebitis, an inflammation of a superficial vein that causes a blood clot to form.

Other risk factors for CVI may include:

- Heredity.
- Obesity.
- Pregnancy.
- Sedentary lifestyle.
- Smoking.
- Jobs requiring long periods of standing or sitting in one place.
- Age and gender:
  - Women in their 40's and 50's and men in their 70's are more prone to developing CVI.

SYMPTOMS

Symptoms of CVI may include:

- Varicose veins.
- Ulceration or skin breakdown.

- *Lipodermatosclerosis*- a condition that affects the skin just above the ankle, usually on the inside surface. Over time the skin becomes brown, smooth, tight and often painful. Those with this condition have a high risk of developing skin ulcers.
- Reddened or discolored skin on the leg.
- Swelling.

DIAGNOSIS

Your caregiver can diagnose CVI after performing a careful medical history and physical examination. To confirm the diagnosis, the following tests may also be ordered:

- Duplex ultrasound.
- *Plethysmography* (tests blood flow).
- *Venograms* (x-ray using a special dye).

TREATMENT

The goals of treatment for CVI are to restore a person to an active life and to minimize pain or disability. Typically, CVI does not pose a serious threat to life or limb, and with proper treatment most people with this condition can continue to lead active lives. In most cases, mild CVI can be treated on an outpatient basis with simple procedures. Treatment methods include:

- Elastic compression socks.
- *Sclerotherapy*, a procedure involving an injection of a material that "dissolves" the damaged veins. Other veins in the network of blood vessels take over the function of the damaged veins.
- *Vein stripping* (an older procedure less commonly used).
- Laser Ablation surgery.
- Valve repair.

HOME CARE INSTRUCTIONS

- Elastic compression socks must be worn every day. They can help with symptoms and lower the chances of the problem getting worse, but they do not cure the problem.
- Only take over-the-counter or prescription medicines for pain, discomfort, or fever as directed by your caregiver.
- Your caregiver will review your other medications with you.

SEEK MEDICAL CARE IF:

- You are confused about how to take your medications.
- There is redness, swelling, or increasing pain in the affected area.
- There is a red streak or line that extends up or down from the affected area.
- There is a breakdown or loss of skin in the affected area, even if the breakdown is small.
- You develop an unexplained oral temperature above 100.5º F (38.1º C).
- There is an injury to the affected area.

SEEK IMMEDIATE MEDICAL CARE IF:

- There is an injury and open wound to the affected area.
- Pain is not adequately relieved with pain medication prescribed or becomes severe.
- An oral temperature above 102º F (38.9º C) develops or as directed by your caregiver.
- The foot/ankle below the affected area becomes suddenly numb or the area feels weak and hard to move.

MAKE SURE YOU:

- Understand these instructions.
- Will watch your condition.
- Will get help right away if you are not doing well or get worse.

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