

# Chronic Venous Insufficiency

## What is chronic venous insufficiency?

Chronic venous insufficiency (CVI) is a problem with getting blood to go back to the heart from the legs. It causes swelling (edema) of the legs. It can also cause sores on the legs.

## What is the cause?

Muscles in your feet and legs help your veins move blood to the heart against gravity. The veins also have one-way valves that keep the blood from flowing backwards. The valves work like one-way gates. They open as blood flows toward the heart and then close to prevent blood from flowing backward toward the feet. The pumping action of the calf muscles helps push blood in the veins up toward the heart. Problems with the leg veins, with valves, or with muscles can keep the blood from moving as it should. This can lead to pooling of blood, called stasis, in the veins.

When the valves in your veins are not working well, it can be hard for your blood to move up toward your heart. The blood may flow back into other veins and collect in the tissues of the lower legs and feet, causing swelling and sores.

Getting older or being overweight or inactive can help weaken or damage the valves in your veins and cause CVI. Valve damage can also occur if you have had a blood clot in your leg. Some people may be born with weak valves. Weak valves run in some families.

Another cause of CVI can be a problem with the calf muscle. If your muscles are getting weak, they may not be working well enough to help push blood back to the heart.

Chronic venous insufficiency is different from the problem of varicose veins. Varicose veins are enlarged, sometimes painful veins in the legs, but they usually do not have the fluid leakage that leads to CVI. Sometimes, however, people with chronic venous insufficiency also have varicose veins.

## What are the symptoms?

Symptoms of CVI may include:

- Ankle swelling (usually the earliest sign)
- Leg swelling
- A dull ache or heaviness in the legs, especially after standing for a long time
- Tired legs
- Enlargement of the veins close to the surface of your skin
- Clear or yellow fluid oozing from the skin
- Change of skin color in the affected area to brown, red, or reddish brown
- Leathery skin texture and leg tissue that feels hard when you touch it

- Flaking and itching
- Sores on your legs, often on or near the ankle

Blood leaking into tissue around your veins may color your skin a reddish brown, causing the skin to be browner than its usual color. The skin becomes dry, cracks, and itches. Your skin can be damaged by these changes, causing a condition called venous stasis dermatitis. You may get sores on your legs. The sores, called venous stasis ulcers, are usually located above the ankle on the inside of the leg. The sores can get infected. Surrounding tissue may then get infected, causing a condition called cellulitis. Cellulitis must be treated with antibiotics.

## How is it diagnosed?

Your healthcare provider will ask about your symptoms and medical history and examine you. Tests may include:

- **IPG (impedance plethysmogram)**, which measures blood flow in the veins of the arm or leg. Your healthcare provider or a technologist will put a pressure cuff on your arm or leg and measure how fast the veins empty.
- **Ultrasound**, which uses sound waves to show pictures of the veins in your arm or leg. These echo pictures help find any blockages. Ultrasound is also used to measure how fast the blood flows through the veins.
- A **contrast venogram**, which uses X-rays and a dye injected into a vein. This test can usually show any blockages in your veins.

## How is it treated?

The goals of treatment are to reduce the pooling of blood and prevent sores.

- Compression stockings can decrease pressure in the veins and prevent sores. These stockings are different from the elastic stockings that may be used to treat a blood clot. They are specially made to fit each person so that they put the most pressure near the ankles and the least pressure near the knees. You should put the stockings on after your legs have been up for a while, for example, before you get out of bed in the morning.
- If you do not have any sores and there is no fluid oozing out of the tissue:
  - A cream (hydrocortisone) that helps with itching, redness, and swelling can be used as needed, according to directions.
  - Creams such as zinc oxide may help protect the skin from cracking and getting infected.
  - Your healthcare provider may recommend an antifungus cream because you have a higher risk of getting a fungal infection.
- If the skin is oozing (weeping) drops of fluid, special wet compresses are used until the weeping stops.
- Sores are treated with layered compression bandages. Your healthcare provider can teach you how to put on the 3 or 4 layers of different types of bandages. Elastic bandages are not used because they do not provide enough pressure.
- If the sores get infected, your provider may prescribe antibiotics.

- To allow pooled blood to drain, raise your legs above the level of your heart at set times throughout the day (at least 30 minutes every 2 hours). At night, sleep with your feet raised about 6 inches by propping them on pillows.

If these methods do not provide relief, your healthcare provider may recommend one of these types of surgery:

- Sclerotherapy, which uses an irritating liquid injected into the veins. This causes the veins to close and forces the blood to flow through healthier veins. This procedure may decrease the swelling and make your legs look better, but it may cause worse problems later on.
- Vein ligation and stripping, which is surgery to tie off and sometimes remove parts of veins
- Valvuloplasty, which is surgery to repair the valves

Once it develops CVI is a lifelong condition. Flare-ups of stasis dermatitis and stasis ulcers may come and go.

## **How can I take care of myself?**

- Keep your legs up as much as possible when you are resting.
- Avoid long periods of sitting or standing. Walking is better for blood flow. When you are sitting, avoid crossing your legs or dangling your legs over the edge of a chair or bed.
- Exercise your calf muscles, such as by walking or by the following exercise: With your toes on the floor, lift your heels and then flatten your heels and lift your toes. Repeat several times. If you are sitting for a long time, do this at least 10 to 15 times every 30 minutes to keep working your calves. This is especially important if you are traveling. If possible, get up and walk for at least a few minutes every 1 to 2 hours to help your muscles move the blood out of your legs.
- Avoid wearing girdles, leg garters, and other tight-fitting garments.
- Keep a healthy weight. If you are overweight, try to lose some weight.
- Protect your feet and legs from injury, for example, by wearing comfortable, supportive shoes and socks. Keep the floors of your living area free from fall hazards, such as slippery throw rugs and toys.
- Keep your skin clean, dry, and soft. Wash with a mild soap, dry carefully and thoroughly, and put an unscented lotion on your legs right away if dryness has been a problem.
- If you have compression stockings, wear them during the day.
- Check the skin of your legs every day for signs of infection. These signs include:
  - An area that feels warmer than normal
  - New redness or a bigger area of redness
  - A change in the way the skin feels, such as tenderness, swelling, or hardness

If you think you are getting a leg sore or infection, see your healthcare provider right away.

Ask your provider what other symptoms or problems you should watch for and what to do if you have them. Make sure you know when you should come back for a checkup.

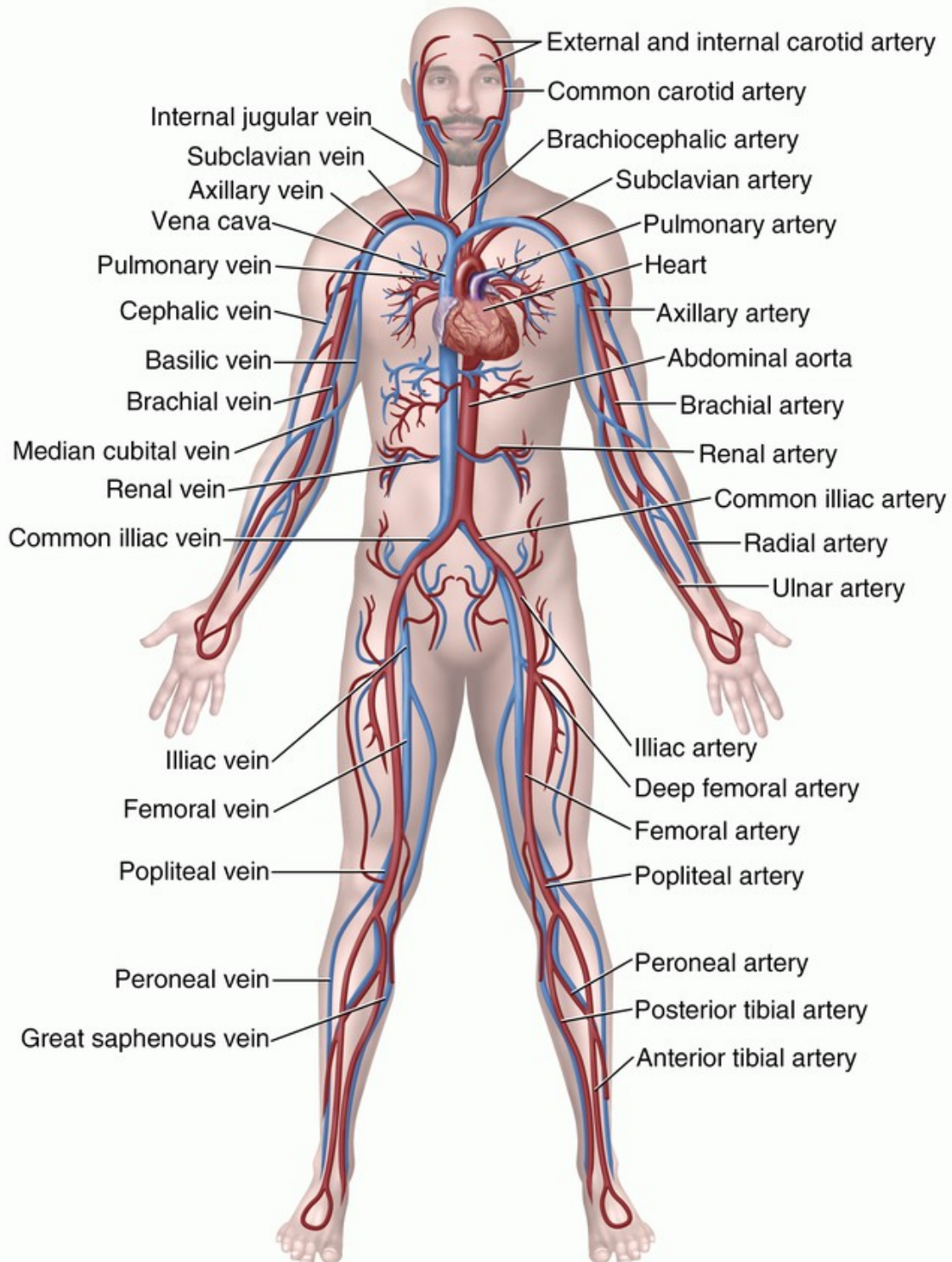
## **How can I help prevent chronic venous insufficiency?**

- To help your veins stay healthy, keep a healthy weight and activity level. Keep your calf muscles strong and active.
- Avoid long periods of inactivity. When you travel, be sure to either exercise your calf muscles when you are sitting or, if possible, take frequent breaks every 1 to 2 hours to walk around.
- If you have a family history of varicose veins, wear support stockings to help your veins stay healthy.

Developed by RelayHealth.

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# Circulatory System



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