CONDITION

Venous insufficiency

Venous insufficiency is poor blood flow back toward the heart because leg veins are damaged or blocked.

WHAT IT IS
Poor return of blood through the leg veins

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
Leg swelling, aching, heaviness, skin changes

WHAT CAUSES IT
Damaged valves, venous blockage, or weakened vein walls

HOW IT IS DIAGNOSED
Examination and duplex ultrasound

MAIN TREATMENT
Compression, activity, skin care, and vein procedures

CAN IT BE CURED?
Sometimes - procedures can correct specific faulty veins

IS IT AN EMERGENCY?
Sometimes - sudden swelling, breathlessness, or uncontrolled bleeding

LONG-TERM OUTLOOK
Usually manageable, but skin damage can progress

Overview

Venous insufficiency means that blood does not travel efficiently from the legs back toward the heart. It usually affects veins in the lower legs and may be called chronic venous insufficiency when it continues over time.

Leg veins contain one-way valves. These small flaps help stop blood from flowing backward, especially when you are standing. The calf muscles also squeeze the veins as you walk, acting like a pump.

If the valves do not close properly, or a vein is narrowed or blocked, pressure builds inside the veins. Fluid can then leak into nearby tissues. This may cause swelling, aching, visible veins, and changes in the skin.

Venous insufficiency is not the same as varicose veins, although they often occur together. Varicose veins are enlarged, twisted veins near the skin. Some people have visible varicose veins without significant venous insufficiency, while others have deeper vein problems that are not easy to see.

The condition is often manageable. However, ongoing high pressure in the veins can eventually damage the skin or lead to a venous leg ulcer, which is a slow-healing open sore.

Symptoms

Symptoms tend to be worse after standing or sitting for a long time. They may improve after walking, raising the legs, or resting overnight.

Common symptoms include:

Brown or reddish-brown skin can develop when blood cells leak out of small vessels. Iron-containing pigment from these cells remains in the tissues. This is called hemosiderin staining.

Venous eczema, also called stasis dermatitis, can make the lower leg itchy, inflamed, scaly, or weepy. Long-standing inflammation may make the skin and tissue underneath feel hard and tight. This change is called lipodermatosclerosis.

Symptoms can resemble those caused by a blood clot, lymphatic swelling, infection, or heart, kidney, liver, or artery problems. Swelling should not automatically be assumed to come from venous insufficiency.

- Swelling around the ankles or lower legs
- Aching, throbbing, heaviness, or tiredness in the legs
- Itching, burning, cramping, or a feeling of tightness
- Varicose veins or clusters of small surface veins
- Dry, flaky, irritated, or discoloured skin
- Skin that becomes firm or thick around the lower leg
- A shallow sore, usually near the inside of the ankle

Causes and risk factors

The most common problem is venous reflux. This means that valves have stopped closing properly, allowing blood to fall backward down the leg between heartbeats.

A previous deep vein thrombosis, or DVT, can damage valves or leave a vein partly blocked. Long-term symptoms following a DVT are known as post-thrombotic syndrome.

Less often, a vein higher in the pelvis or abdomen is compressed or obstructed. Some people are also born with vein or valve differences that affect blood flow.

Factors associated with venous insufficiency include:

These factors do not mean that you will develop the condition. Some people develop venous insufficiency without a clear cause.

- Increasing age
- A family history of varicose veins or venous problems
- Previous DVT or serious leg injury
- Pregnancy
- Higher body weight
- Limited mobility
- Work or activities involving prolonged standing or sitting

Diagnosis

A healthcare professional will ask when the swelling or discomfort occurs, whether one or both legs are affected, and whether you have had a blood clot, ulcer, injury, or vein treatment.

Your legs may be examined while you are standing and lying down. The examination looks for swelling, varicose veins, skin changes, ulcers, and signs of infection. The pulses in your feet may also be checked because artery disease can affect which compression treatments are safe.

Duplex ultrasound is the main test used to confirm venous insufficiency. It combines a standard ultrasound image with Doppler measurements, which show the direction and speed of blood flow. It can identify backward flow, obstruction, and previous clots.

An ankle-brachial pressure index may be measured if compression is being considered or artery disease is suspected. This compares blood pressure at the ankle with blood pressure in the arm. It does not diagnose venous insufficiency, but it helps assess circulation to the foot.

CT or MRI imaging of the veins is sometimes used when a blockage in the pelvis or abdomen is suspected or when a procedure is being planned. Blood tests do not confirm venous insufficiency, although they may help investigate other causes of swelling or an infected ulcer.

Treatment and management

Treatment aims to reduce pressure in the veins, control swelling and discomfort, protect the skin, and help ulcers heal. The best approach depends on which veins are affected, whether there is a blockage, and whether you have skin damage or other circulation problems.

Compression stockings, wraps, or bandages squeeze the leg in a controlled way. This helps move blood and fluid upward. Compression must have the correct strength and fit. An assessment may be needed first, particularly if you have weak foot pulses, artery disease, diabetes-related foot problems, or reduced sensation.

Regular walking activates the calf-muscle pump. Ankle movements can also help during periods of sitting. Raising the legs so that the ankles are above heart level may reduce swelling for some people. Long periods of standing or sitting can make symptoms worse.

Moisturisers can protect dry skin. Venous eczema may require a prescribed anti-inflammatory cream as well as compression and skin care. Scratching or injuring fragile skin can lead to sores or infection.

A venous leg ulcer usually needs wound care and compression when the arterial circulation is adequate. Dressings manage fluid and protect the wound, while compression addresses the underlying venous pressure. Large, persistent, or infected ulcers may need specialist care.

If ultrasound identifies a faulty surface vein, treatment may close or remove it. Options include heat-based ablation, non-heat closure methods, foam sclerotherapy, phlebectomy, or surgery. These treatments redirect blood into healthier veins. Selected blockages in larger pelvic veins may be treated with a stent, which is a small tube that holds the vein open.

Blood-thinning medicine is used when there is a separate reason, such as a blood clot. It is not a routine treatment for uncomplicated venous insufficiency. Water tablets like furosemide or hydrochlorothiazide may reduce swelling caused by some other medical conditions, but they do not repair faulty vein valves.

Complications

Ongoing venous pressure can cause chronic inflammation and permanent skin changes. The lower leg may become discoloured, firm, tender, or narrowed above the ankle.

A venous ulcer is the main long-term complication. These ulcers often occur near the inner ankle. They may leak fluid and can take months to heal. Some return after healing, especially if high venous pressure continues.

Other possible complications include:

A surface-vein clot is not the same as DVT, but it sometimes needs prompt assessment to check its location and extent.

- Venous eczema and cracked skin
- Bacterial skin infection, called cellulitis
- Bleeding from a fragile varicose vein
- Inflammation and clotting in a surface vein
- Reduced mobility because of pain, swelling, or ulcer dressings

Prevention

Venous insufficiency cannot always be prevented. Valve damage after a DVT, inherited vein structure, and some anatomical blockages are not under your control.

Regular movement may support the calf-muscle pump and reduce pooling of blood. If you sit or stand for long periods, changing position and taking walking breaks can help. Maintaining a weight that is appropriate for you may reduce pressure on the leg veins.

If you have already been diagnosed, using compression as advised, caring for your skin, and responding early to new sores may help limit complications. After a DVT, following the treatment and follow-up plan for the clot is important, although it cannot guarantee that later venous symptoms will be prevented.

Living with it and what to expect

Venous insufficiency is often long term. Symptoms may fluctuate over months and years, particularly with changes in activity, mobility, weight, temperature, or time spent standing.

Swelling and aching often improve with compression, walking, and leg elevation, but the underlying valve problem may remain. Brown skin staining can be permanent even when circulation and inflammation improve.

A procedure can reduce reflux in a specific vein and may improve symptoms or ulcer healing. It does not remove the tendency to develop problems in other veins. New varicose veins or recurrent symptoms can appear later.

Many people remain active and manage the condition without major limits. More advanced skin changes or ulcers require regular care and can affect sleep, work, footwear, and mobility. Ulcers can heal, but recurrence is possible, so ongoing compression or vein treatment may be

recommended after healing.

Routine follow-up is particularly important if you have an ulcer, worsening skin changes, recurrent inflammation, or difficulty using compression. Seek advice if a stocking becomes painful, causes numbness, or changes the colour of your foot rather than simply stopping its use without a replacement plan.

When to get medical help

Arrange a routine appointment if you have persistent leg swelling, heaviness, visible varicose veins with symptoms, brown or inflamed skin, or a sore that is not healing. Earlier assessment may help prevent further skin damage.

Seek urgent same-day medical care for sudden swelling or pain in one leg, especially if it is warm, red, or tender. These can be symptoms of DVT. Rapidly spreading redness, worsening ulcer pain, pus, or fever may suggest infection and also needs prompt assessment.

Call emergency services for:

If a varicose vein bleeds, lie down, raise the leg, and press firmly over the bleeding point with a clean cloth or dressing. Get emergency help if bleeding is heavy or continues.

- Sudden breathlessness, chest pain, coughing up blood, or fainting
- Bleeding from a leg vein that does not stop with firm pressure
- Severe illness, confusion, or collapse alongside a red or infected leg

Common questions

Can venous insufficiency go away?

Mild swelling and discomfort may improve greatly with movement, compression, or treatment of a faulty vein. However, damaged valves do not usually repair themselves. Skin staining may remain even after the pressure in the veins improves.

Is venous insufficiency the same as varicose veins?

No. Varicose veins are enlarged surface veins. Venous insufficiency describes poor blood return caused by reflux or obstruction. You can have one without obvious signs of the other, although they commonly occur together.

Do I need to wear compression stockings all day?

Compression is commonly worn during the day and removed for sleep, but the type and

schedule should match your circulation, symptoms, and ability to use it safely. Stockings should not cause significant pain, numbness, or foot colour changes.

Is walking good for venous insufficiency?

Walking usually supports venous blood flow because the calf muscles squeeze the veins with each step. If walking causes severe pain, marked shortness of breath, or foot pain that repeatedly occurs with activity, seek medical assessment rather than assuming it is venous.

Why is the skin around my ankles turning brown?

High pressure in the veins can allow blood cells to leak into nearby tissue. Iron-containing pigment left behind by these cells causes brown staining. New discolouration should be assessed because it may signal ongoing inflammation and a higher risk of skin breakdown.

Can venous insufficiency cause a blood clot?

Venous insufficiency and blood clots are related but are not the same condition. A previous DVT can cause later venous insufficiency. Sudden one-sided swelling, warmth, or pain needs urgent assessment for a new clot.

Sources

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