

# [Spider veins and varicose veins]



The latest treatment methods  
Background, information,  
answers

## Foreword

### Dear Reader

Vein diseases are amongst the most common medical conditions that occur. Studies demonstrated that more than 60% of the adults in Germany have spider veins and about 30% suffer from larger varicose veins.

### So you are not alone!

This brochure gives you an overview of the different types of varicose veins, how they develop, and the most suitable methods of treatment. You will also find **useful tips** and ideas about what you can do to help your legs.

And do not be afraid of going to see your doctor promptly.

Early diagnosis and treatment can relieve symptoms and prevent complications.



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## Have I got spider veins or varicose veins? What causes them?

### A common disease

Varicose veins are pathologically enlarged superficial veins in the legs. They are often twisted. The smallest of these enlarged veins are called spider veins, while varicose veins usually mean larger diseased veins. In technical terms, varicose veins may be referred to as varicosities, while the condition itself is called varicose disease or varicosis.



Varicose veins are mostly due to a hereditary **connective tissue weakness**. Sooner or later, this weakness disrupts the function of the leg veins and leads to varicose veins. Advancing age, hormonal factors, lack of exercise, sitting or standing for long periods at work, and overweight can all increase the risk of disease and symptoms.

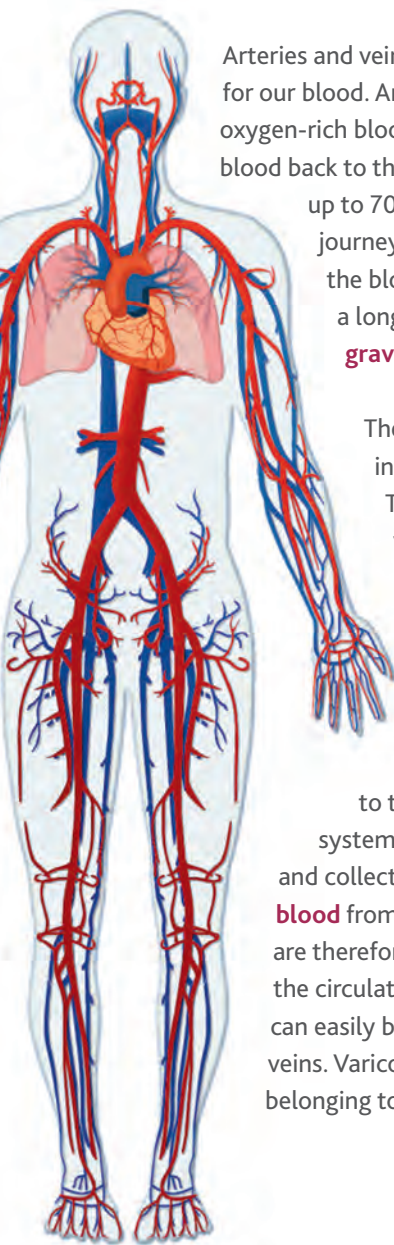
## What are the symptoms of varicose veins?

Symptoms of varicose veins include feeling of tension, heaviness, or swelling in the legs, night cramps, pain, itching, pins and needles, or tingling in the legs. In severe cases, there may be an accumulation of fluid in the tissue (oedema) and inflammation or pigmentation of the skin.

Even small varicose veins such as spider veins may cause symptoms. As spider veins may be an **“early warning sign”** of an underlying vein problem, you should have your veins checked by a specialist right now.



## Why are healthy veins so important and how do varicose veins develop?

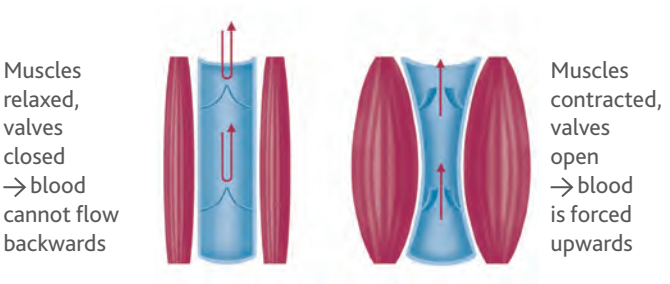


Arteries and veins form the transport system for our blood. Arteries supply the body with oxygen-rich blood while the veins bring used blood back to the heart and lungs – carrying up to 7000 litres a day. On its return journey from the legs up to the heart, the blood has to be transported over a long distance **against the force of gravity**.

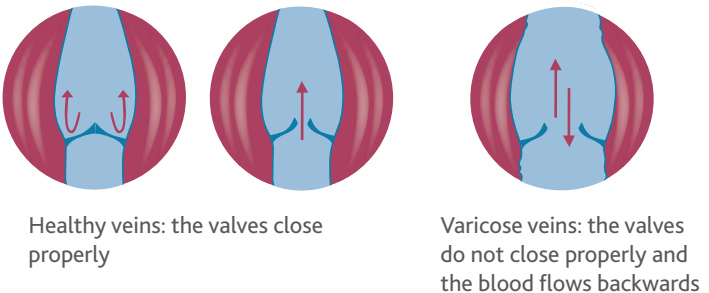
The veins in the leg are divided into superficial and deep veins. The two systems are linked at various sites by connecting veins known as perforating veins. The deep vein system lies between the muscles deep inside the leg and is responsible for about 90% of the return blood flow to the heart. The superficial vein system runs just beneath the skin and collects about **10% of the venous blood** from the legs. The superficial veins are therefore not absolutely essential for the circulation, and the return transport can easily be taken over by the deep veins. Varicose veins develop only in veins belonging to the superficial system.

The flow of blood back to the heart against gravity is sustained by the pump function of the heart and the activity of the calf muscles. Movement such as walking causes the muscle bellies to swell, which compresses the veins lying between the muscles and forces the blood upwards. This process is known as the **muscle pump function**.

To ensure that the blood does not flow back into the legs, our veins are equipped with **valves**. These valves usually open only for blood to flow in the direction of the heart. They close again immediately afterwards to prevent any downwards flow.



If the valves are not working properly, blood can flow back into the legs and collect there. This increases the pressure in the veins so that they continuously become dilated. Finally they can be seen on the leg surface as spider veins or varicose veins.



## What types of varicose veins are there?

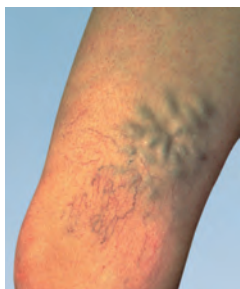
### Spider veins and reticular varicose veins

Dilated bluish or reddish veins with a diameter of up to 1 mm are called spider veins. They lie directly under the surface of the skin and are therefore clearly visible. Reticular varicose veins have a diameter of up to 3 mm, are also found in the skin and usually form net-like patterns. The bluish or greenish veins can be seen shimmering clearly through the skin. Spider veins and reticular veins are primarily a cosmetic problem. Their unattractive appearance is the reason that many people seek treatment.



### Perforating varicose veins

Perforating veins connect the superficial with the deep veins and ensure that blood flows into the deep system. Each leg has up to 150 of these perforators. If their function is disrupted, the direction of flow reverses: some of the blood no longer flows into the deep veins but remains in the veins at the surface of the skin – when enlarged, perforating veins are often seen bulging out of the skin.







### Side branch varicose veins

Side branch or tributary veins are larger veins that empty into the main trunk veins.

Dilated side branch veins tend to occur more pronounced in the lower leg than the thigh and form very prominent, palpable varicose veins.

### Trunk varicose veins

Each leg has two trunk veins: the great saphenous vein (Latin: vena saphena magna), which runs up the leg from the inside of the ankle to the groin, and the small saphenous vein (Latin: vena saphena parva), which runs from the outside of the ankle to just above the hollow of the knee. Trunk varicose veins develop if the valves of these veins do not function properly and are unable to transport the blood adequately. Trunk veins are not usually visible from the outside as they lie deep in the tissue. The presence of trunk varicose veins may be noticed indirectly when the congested blood continues into side branch veins, which then become clearly visible. For this reason, side branch varicose veins often occur together with trunk varicose veins.



Left:  
great saphenous vein  
(vena saphena magna)

Right:  
small saphenous vein  
(vena saphena parva)

**Make sure to get varicose perforating, side branch, or trunk veins examined by a doctor.**

## What complications can untreated varicose veins cause?

At the beginning, the dilated and twisted veins are only bothersome by their appearance. Varicose veins often do not cause any symptoms at all at this early stage. Later on there may be an **accumulation of fluid (oedema)** in the legs, which typically starts in the feet and around the ankles, often accompanied by a feeling of tension, itching, or pain. The symptoms are worse after standing for long periods or on hot summer days but improve on walking or lying down.

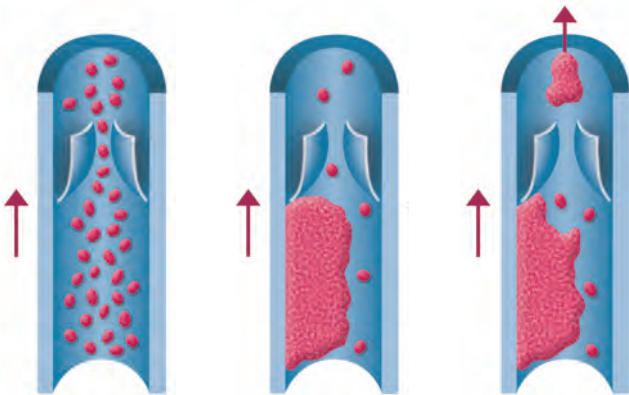
If the disease advances, chronic skin changes with troublesome itching may develop. The skin becomes darker and appears brownish or mottled.

Chronic vein weakness increases the risk of a whole series of serious complications, including inflammation and **venous leg ulcers (ulcus cruris)** - wounds that heal badly or not at all. In addition, **blood clots (thrombosis)** may form in the deep veins of the leg and, in the worst case, lead to **pulmonary embolism**.

Normal blood flow

Vein thrombosis

Embolus  
(moving blood clot)



## When should I go to the doctor?



If you are not sure about the true state of your veins or the first enlarged veins have already appeared on your skin, you should consult a doctor specialising in venous diseases (vein specialist or phlebologist) to have a look at them.

If your varicose veins get worse, new ones appear, or you develop **symptoms**, do not delay to make an appointment any longer. Apart from the varicose veins themselves, signs of advanced vein disease may include inflammation, pigmentation, hardening of the skin, and open wounds that do not heal well. In this case you should definitely go and see your doctor for a **precise examination and diagnosis**.

Using modern pain-free imaging techniques, such as Doppler or duplex ultrasound scanning, your doctor can quickly determine the state of your veins and see whether treatment is necessary.

## Exercise is good for your veins

**Exercise** is important for the circulation and good for the veins. Walking, hiking, swimming, and cycling are all particularly good at activating the muscle pump. If you have to spend a lot of time sitting down during the day, make sure to move around whenever you can. And do the following vein exercises several times a day:

### Exercise 1

Sit on the front half of a chair with your back straight and your legs together. Your thighs should form an angle of  $90^\circ$  with the lower legs and your toes should be pointing forwards. Now lift both legs together onto the tips of your toes and quickly put your feet down flat on the floor again. Repeat 20 times.



### Exercise 2

Sit on the chair as in exercise 1. Alternately lift your left and your right foot slowly on your heel – in other words, alternately raise your toes – and return the foot to the floor. Repeat 10 times with the left foot and 10 times with the right.



### Exercise 3

Sit on the chair as in exercise 1. First with the right foot, then with the left, raise your leg until the foot is on tiptoe and then raise the toes (until your heels are on the floor). Repeat 10 times on the right and 10 times on the left.



#### Exercise 4

Assume the same position as in exercise 1, but sit further back in the middle of the chair. Raise your legs and make a cycling motion as if you were riding a bicycle. Repeat 20 times.



#### Exercise 5

Now sit with your back resting against the back of the chair. Hold firmly on to the back of the chair with both hands. Push your feet and legs up off the floor using your toes, hold them in the air for a moment, and then slowly put your feet back on the floor. Repeat 10 times.



#### Exercise 6

Sit with your back against the chair as for exercise 5. Hold firmly on to the back of the chair with both hands. Stretch your legs out straight in front of you and lower them again. Repeat 10 times.



#### Exercise 7

Sit as for exercise 5. Hold one leg out in front of you. Move your foot in a circular motion 10 times to the left, then 10 times to the right. Repeat with the other leg.



You will find more exercises at  
[www.healthy-veins.com](http://www.healthy-veins.com)

## What else can I do against varicose veins and vein weakness?

Exercise is important but stimulating your legs with cold water, at the end of a shower for example, also helps. The cold causes the veins to constrict, which improves the blood transport from the legs.

Enjoy a few minutes' rest and **elevate your feet as often as you can** – this will improve the flow of blood back to the heart.

Avoid long, hot baths, long sessions in the sauna, and prolonged sunbathing, as the heat causes the veins to dilate. It is also important to drink plenty of fluids and maintain a **balanced diet**, as overweight puts extra strain on the veins.

Reserve high heels for special occasions. Flat shoes are better for activating the muscle pump and venous function.



## Vein tablets

**Pharmacies** carry a range of medicines that can be used to combat the feeling of heaviness in the legs that is so typical of varicose veins. Vein tablets are also used to prevent the accumulation of fluid (oedema) in the legs. For effective treatment, you have to take the vein tablets regularly for a sufficiently long period of time. As a general rule, vein tablets cannot replace the professional medical treatment of varicose veins but may be a helpful additional treatment.



## Overview of the methods of treatment

After examining your veins, your vein specialist will discuss the possible treatments and select the best option with you. Spider veins, for example, can be treated easily and gently with **micro-sclerotherapy**. These days, effective methods of outpatient treatment are available also for large varicose veins, without the need for a general anaesthetic, laser, or surgery. It must be remembered, however, that no treatment can make varicose vein disease disappear forever. After some time new varicose veins may appear in the same place or elsewhere, as the connective tissue weakness, which is usually the cause, cannot be cured. So in some circumstances, even successful treatment may have to be repeated from time to time or started again.



### Compression therapy

This method of treatment involves wearing compression bandages or compression stockings that exert pressure on the legs from the outside, thus helping the muscle pump to do its work. Enlarged veins become narrower and this improves the flow through the veins and reduces fluid accumulation (oedema).

Compression therapy has to be continued on a life-long basis, otherwise the symptoms will return rapidly after stopping treatment.





### **Varicose vein surgery**

Surgeons still often “strip” the trunk veins. Under either general or local anaesthesia the surgeon makes an incision in the groin, ties off the damaged vein (and often neighbouring healthy veins) and cuts it off. A metal wire is pushed down through the vein and extracted through the skin via another incision at the knee or ankle. The wire is pulled out, bringing the trunk varicose vein with it (stripping), tearing off the side branches supplying the trunk vein at the same time. Most patients recover within 1-2 week.

Enlarged side branches can also be removed surgically through multiple incisions, using a special hook to pull them out through the skin, incision by incision. This procedure is called phlebectomy.

## Overview of the methods of treatment

### Endovenous thermal procedures

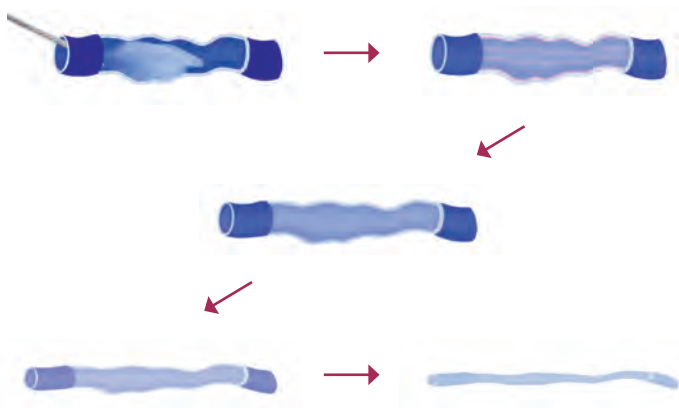
These are surgical procedures that close the trunk veins by applying heat through a probe inside the vein. Endovenous laser therapy (EVLT) makes use of laser light, while endovenous radiofrequency ablation (RFA) uses radio waves. The probe is inserted into the vein at the ankle or knee and pushed upwards towards the groin. The blood is heated so strongly that it vaporises and, so to speak, “cooks” the vein, causing it to close up. Before the thermal treatment starts, the tissues around the varicose vein are protected by multiple injections with about 300 ml of a special anaesthetic solution. This provides a fluid firewall that prevents heat damage to the skin, nerves, and other tissues and reduces pain (tumescent anaesthesia). As a rule, these methods are not suitable for tortuous side branch varicose veins which can be treated without surgery by using minimally invasive foam sclerotherapy on an outpatient basis.

### Sclerotherapy

Endovenous sclerotherapy can be used to treat **all** types of varicose veins – from spider veins to trunk veins – without surgery or a general anaesthesia.

Sclerotherapy involves the injection of a medicinal product (sclerosant) directly into the enlarged vein through a fine needle or, in the case of larger veins, also through a small catheter. The cells in the vein wall react to the sclerosant, making the vein walls stick together and close off the vein. Breakdown and conversion processes in the body cause the treated vein to disappear with time.

According to the European guidelines<sup>1</sup> micro-sclerotherapy is the method of choice for treating spider veins and reticular varicose veins. Sclerotherapy results in an 80-90% improvement in these veins.



### Foam sclerotherapy

The liquid sclerosant can be made into a special foam that is even more effective. The sclerosant foam is injected into the varicose veins under ultrasound guidance, so that the doctors can exactly watch what they are doing. An anaesthetic is not needed for sclerotherapy, as the method is virtually painless.

Foam sclerotherapy is a good and cost-effective alternative to surgical procedures: the internationally recognised NICE guidelines<sup>2</sup> actually recommend the use of sclerotherapy in preference to surgery in the treatment of trunk varicose veins.

<sup>1</sup> Rabe E, Breu FX, Cavezzi A, Coleridge Smith P, Frullini A, Gillet JL, Guex JJ, Hamel-Desnos C, Kern P, Partsch B, Ramelet AA, Tessari L, Pannier F. European guidelines for sclerotherapy in chronic venous disorders. *Phlebology*. 2014; 29(6): 338-54.

<sup>2</sup> National Institute for Health and Care Excellence. *Varicose veins in the legs: The diagnosis and management of varicose veins*. 2013.

## What happens during sclerotherapy?

As a rule, an ultrasound scan will be carried out at your first appointment to determine whether your varicose veins need treatment. Your doctor will then discuss a treatment plan with you, and tell you what the costs are going to be.

In principle, the larger varicose veins will be treated before the small ones – any spider veins will therefore be dealt with last.

The sclerosant will be injected into the diseased vein as a foam or liquid. You will, of course, feel a slight prick as the needle is inserted but the injection of the sclerosant does not usually cause any pain. Superficial veins may be seen to “blanch” (become white) immediately after the injection, as the sclerosant forces the blood out of the vein. As with laser therapy and radiofrequency ablation, you will not see the final results of treatment until some weeks later, when your body has succeeded in breaking down and absorbing the diseased veins. A sclerotherapy session usually lasts 20-30 minutes, depending on the severity and number of varicose veins. You may need further sessions at intervals of 1 - 3 weeks. As with other treatment methods, compression stockings or bandages should generally be worn for a few days or weeks after sclerotherapy.

## Points to note after treatment

After treatment, you will need to walk around in the practice for about 30 minutes. You can resume your normal daily activities immediately and you can go straight back to work. As with all methods of treatment for varicose veins, you are, however, advised not to take part in any strenuous sporting activities, take hot baths or saunas, sunbathe, or undertake any long-distance travel for some time after the treatment. The doctor in charge of your treatment can give you the best advice about what to do and what not to do after treatment.



## Your diagnosis

Your doctor can use this diagram to sketch in your varicose veins.



Your doctor can use this space to write down the diagnosis:

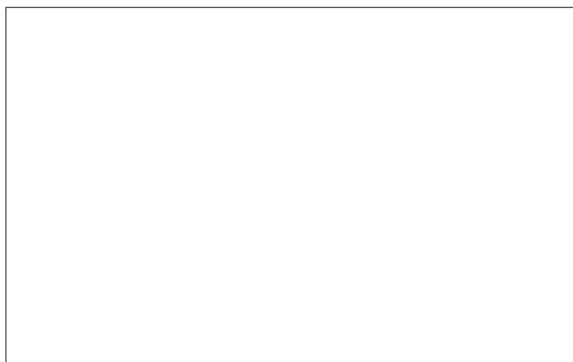
A large, empty rectangular box with a thin black border, intended for a doctor to write a diagnosis. The box is oriented vertically and occupies most of the page's height.

Ask for more information, advice on varicose veins, and treatment options in your medical practice.

More information available at

[www.healthy-veins.com](http://www.healthy-veins.com)

Medical practice stamp



A patient information sheet from the leading manufacturer of sclerosants.

**Kreussler Pharma**

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