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Venous Leg Ulcers

Venous leg ulcers are common in older people. The most important part of treatment is for compression bandages to be applied correctly by a nurse. Keep as active as possible but elevate your leg when you are resting. Other treatments may be advised in some cases, such as a skin graft or vein surgery. After an ulcer has healed you should wear a support stocking each day, which helps to prevent it recurring.

What is a venous leg ulcer?

A skin ulcer develops when an area of skin breaks down to reveal the underlying flesh. Venous leg ulcers are the most common type of skin ulcer. They mainly occur just above the ankle. They usually affect older people and are more common in women. They affect about 1 in 1,000 people in the UK at some stage in their lives. Venous leg ulcers become more common as you get older and 20 in 1,000 people become affected by the time they are in their 80s. Most are painless but some are painful. Without treatment, an ulcer may become larger and cause problems in the leg. Skin inflammation (dermatitis) sometimes develops around a venous ulcer.



Non-venous skin ulcers are less common. For example, a skin ulcer may be caused by poor circulation due to narrowed arteries in the leg, problems with nerves that supply the skin, or other problems. The treatment for non-venous ulcers is different to that of venous ulcers.

The rest of this leaflet deals only with venous leg ulcers.

What causes venous leg ulcers?

The root of the problem is increased pressure of blood in the veins of the lower leg. This causes fluid to ooze out of the veins beneath the skin. This causes swelling, thickening and damage to the skin. The damaged skin may eventually break down to form an ulcer.

The increased pressure of blood in the leg veins is due to blood collecting in the smaller veins next to the skin. The blood tends to collect and pool because the valves in the larger veins become damaged by a previous blood clot (thrombosis) in the vein, or varicose veins. Gravity causes blood to flow back through the damaged valves and pool in the lower veins.

How is a venous leg ulcer diagnosed?

The appearance of a venous leg ulcer is usually fairly typical. It often looks different to ulcers caused by other problems such as poor circulation or nerve problems.

To rule out poor circulation as a cause, it is usual for a doctor or nurse to check the blood pressure in the ankle **and** in the arm. The ankle blood pressure reading is divided by the arm blood pressure reading to give a blood pressure ratio called the Ankle Brachial Pressure Index (ABPI). If the ratio is low (less than 0.8) it indicates that the cause of the ulcer is likely to be poor circulation (peripheral arterial disease) rather than venous problems. This is very important to know as the treatments are very different. An ABPI may be checked every six months or so to make sure the circulation to the legs remains good.

Certain blood and urine tests may also be done to rule out conditions such as **anaemia**, **diabetes**, **kidney problems** and **rheumatoid arthritis**, which may cause or aggravate certain types of skin ulcer.

In complicated cases you may need to have an **ultrasound scan**, **CT scan** or **MRI scan** to produce a detailed map of the blood circulation in your leg.

What is the treatment for venous leg ulcers?

The ulcer is dressed in a similar way to any other wound. Typically, a nurse will do this every week or so. The wound is cleaned when the dressing is changed - normally with ordinary tap water. However, an ulcer is unlikely to heal with just dressings. In addition to a dressing, the following treatments help the ulcer to heal.

Compression bandaging

This is the most important part of treatment. The aim is to counteract the raised pressure in the leg veins. This gives the best chance for the ulcer to heal. The common method is for a nurse to put on 2-4 layers of bandages over the dressing. When the bandages are put on, the pressure is put highest at the ankle and gradually less towards the knee and thigh. A support (compression) stocking over the dressing is sometimes used as an alternative but not thought to be as good as bandaging.

The bandages are reapplied every week or so. It is best to put the bandages on after you have raised (elevated) the leg for several hours or overnight (see below). So, make extra effort to keep your leg elevated just before the nurse is due to see you.

A note of caution: when you have a compression bandage on you should still be able to move your ankle around. Occasionally, the compression is too tight, or it may affect the circulation in the legs. Therefore, take off the bandages if your foot changes colour or temperature, or if you have increasing pain. Then see your doctor or nurse for advice.

Elevation and activity

When you are resting, if possible, try to keep your leg raised higher than your hip. This is particularly important if your leg is swollen. The aim is to let gravity help to pull fluid and blood in the right direction - towards the heart. This reduces swelling in the leg and reduces the pressure of blood in the leg veins. Try to set 3 or 4 periods per day of about 30 minutes to lie down with your leg raised. For example, lie on a bed or sofa with your foot on a couple of pillows. However, do not spend all your time in bed or resting. For the rest of the time, keep as active as you can and do normal activities. If possible, regular walks are good but do not stand still for long periods.

When you sleep overnight, if possible, try to keep your leg raised. You can do this by putting some pillows under the bottom of the mattress. (It may not be possible to sleep like this if you have certain other medical problems or disabilities.)

Other treatments

In some people, other conditions such as anaemia, poor nutrition, swelling of the legs and other medical problems may mean that the skin has less chance of healing well. Other treatments may be needed to help heal a venous leg ulcer - for example:

- **Try to stop smoking** if you are a smoker. The chemicals in cigarettes may interfere with the skin healing.
- **Antibiotic medicines** are sometimes advised for short periods if the skin and tissues around the ulcer become infected.
- **Painkillers** can be taken if the ulcer is painful.
- **Skin care.** The skin around an ulcer is often inflamed or scaly. Your doctor or nurse may advise on a cream to reduce inflammation if necessary.
- **Dietary advice** if your diet is not very good. Also, if you are overweight then **losing some weight** may help. Obesity is a risk factor for developing venous leg ulcers.
- **Iron tablets** or other treatments if you are anaemic.
- **Pentoxifylline** improves blood circulation and you may be offered this medicine to promote healing of the ulcer.
- **Hyperbaric oxygen** (oxygen delivered at high pressure) is sometimes used when facilities are available.
- **A skin graft** may be advised for a large ulcer, or for one that does not heal well.
- **Surgery** for **varicose veins** or other vein problems is advised in some cases. This may correct back pressure of blood pooling in the veins and allow an ulcer to heal.

Clinical Editor Notes (July 2017)

Dr Hayley Willacy would like you to know about a recent review of topical haemoglobin spray - Granulox®. This is a medical device to be used in the treatment of chronic wounds, such as venous leg ulcers. It works by increasing the oxygen supply to the wound, to speed up the healing process. Granulox® is now available to specialist wound care teams in hospitals and in the community. If you would like to read more, the review is in the further reading list below.

What is the outlook (prognosis)?

Up to 7 in 10 venous ulcers heal within 12 weeks if treated with compression bandaging which is reapplied every week or so. If compression is not used and an ordinary dressing or support (compression) stockings alone are used, the chance of healing is less.

Preventing a recurrence of venous skin ulcers

Venous leg ulcers commonly come back (recur) after they have healed. To prevent this, you should wear a support (compression) stocking during the daytime for at least five years after the ulcer has healed. This counteracts the raised pressure in the veins that causes venous leg ulcers. You should get a new stocking about every six months as the elastic tends to go after a while. Compression stockings can be prescribed or bought at pharmacies. They come in different sizes - your pharmacist will advise. Compression stockings for the prevention of venous leg ulcers are usually below knee in length rather than thigh length.

There are different strengths (classes) of compression stockings - class 1, 2 and 3. The higher the class (class 3) the greater the compression. Ideally, wear class 3 stockings. However, some people find class 3 stockings too tight and uncomfortable but class 2 may be fine. It is still better to wear some sort of compression stocking than none at all.

Note: proper compression stockings used for medical purposes are different to the support stockings or tights sold in ordinary clothing shops.

A leg ulcer is much less likely to recur if you wear compression stockings regularly.

Sometimes surgery for varicose veins or other vein problems is advised after an ulcer has healed, in order to help prevent a recurrence.

Further reading & references

- [Leg ulcer - venous](#); NICE CKS, February 2016 (UK access only)
- [Compression stockings](#); NICE CKS, September 2012 (UK access only)
- [O'Meara S, Al-Kurdi D, Ologun Y, et al; Antibiotics and antiseptics for venous leg ulcers. Cochrane Database Syst Rev. 2014 Jan 10;\(1\):CD003557. doi: 10.1002/14651858.CD003557.pub5.](#)
- [Management of chronic venous leg ulcers](#); Scottish Intercollegiate Guidelines Network - SIGN (August 2010)
- [Collins L, Seraj S; Diagnosis and treatment of venous ulcers. Am Fam Physician. 2010 Apr 15;81\(8\):989-96.](#)
- [Granulox® haemoglobin spray - Innovative Medical Technology Overview: Number 006/2016](#); Healthcare Improvement Scotland

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