

Inelastic bandages, for example Comprilan, Lastolan, Tensolan, work more by resistance and are applied firmly. As the calf muscle contracts and swells it pushes against the firm bandage and aids venous return. These have a high working pressure and a low resting pressure so tend to be more tolerated by patients. However, these will also require frequent application.

The difference is that elastic bandage application requires considerable skill – hence, appropriate training - and inelastic bandages are much easier to apply.

Multi-layer, multi component bandage systems (e.g. Profore, Coban 2, Venio 4) are also available and these combine elastic and inelastic properties, resulting in an overall inelastic system. Some of these also require skill to apply. However, there is training available in application of compression from the Industry or wound specialists. This can allow you to apply compression therapy safely and effectively to your patients.

**So what next, once the ulcer has been healed (a benchmark of time of 12 weeks applies to most venous leg ulcers deemed suitable for compression therapy)?**

Perhaps you have referred the patient to a vascular surgeon for a venous duplex scan and correction of the leaking valves. This may not always be a suitable option, especially if the patient has already had several vein procedures. So maintenance of venous valvular support must be continued. This is often achieved using knee high graduated compression garments in conjunction with walking, ankle exercises and leg elevation when not walking.

There are many brands of compression socks and stockings available, and when making a selection the patient will require guidance on the level of compression, as well as assessment for their ability to put the garment on and off.

**In summary**

- Make the correct diagnosis
- Reconfirm your diagnosis
- Select a compression system and receive education on correct application technique
- Continue to monitor oedema

- When ulcer is healed, recommend ongoing compression therapy in the form of a sock or stocking

**Subsidy vital for Compression Therapy**

On the back of a national study commissioned from the KPMG consultancy, the Australian Wound Management Association continues to encourage the Federal Government to subsidise compression therapy items for venous leg ulcer care (VLU).

*An economic evaluation of compression therapy for venous leg ulcers* estimated that a huge saving of \$166 million per year could be made if all eligible VLU patients could access compression bandages and stockings.

“At present, the barrier to best-practice use of compression items is their cost, which most Australian patients must pay for personally,” said AWMA national president Dr Bill McGuiness.

“VLU patients tend to be elderly people of limited means, and the majority is not receiving this recommended care. Most wounds managed with compression heal within the benchmark time of 12 weeks, nearly twice as quickly as otherwise.”

Around 42,600 Australians aged over 60 years have at least one VLU at any time. Hospital admission is required for the 11 per cent of patients not receiving compression, at a cost of up to \$9,380 per separation.

**A PDF of the KPMG report can easily be downloaded at [www.awma.com.au](http://www.awma.com.au)**

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A leaflet for patients on venous leg ulcer management can be downloaded at – [http://www.awma.com.au/publications/vlu\\_patient\\_info\\_trifold\\_2012-08-21.pdf](http://www.awma.com.au/publications/vlu_patient_info_trifold_2012-08-21.pdf)



**AWMA**  
Australian Wound Management Association Inc.  
National

# Identify and manage venous leg ulcers



**Compression therapy is not a crepe bandage pulled tight**

Compression therapy is a necessary requirement for some patients because peripheral oedema impacts on the function of the skin, resulting in poor healing and skin breakdown. First and foremost, we must determine the cause/s of the oedema:

- Dependency due to immobility
- Poor walking techniques—the shuffles - therefore not using the calf muscle pump system effectively
- Venous hypertension with consequent chronic venous insufficiency (CVI)
- Cardiac related failure
- Renal failure
- Hypoalbuminaemia
- Medication related oedema
- Lymphoedema

Identifying the cause and underlying reason/s for any wound is the first step in the wound healing process. Next is to address all the known factors influencing healing.

Whilst there are many causes of peripheral oedema, this brochure will focus on Chronic Venous Insufficiency

### What is CVI?

The venous system consists of three systems, four pumps and effective breathing. The three systems include the:

- deep system
- superficial system
- perforators

The deep system is a high pressure system, the superficial a low pressure system; to keep these two from 'swirling' together the perforators and their valves control the flow and regulate the pressure.

### What predisposes someone to CVI?

The new venous leg ulcer guidelines available from [www.awma.com.au](http://www.awma.com.au) inform us that patients may be at greater risk of having CVI if they have a history of -

- Confirmed venous disease by venous duplex scan
- Past history of DVT, phlebitis, pulmonary embolism
- Obesity
- Family history of venous problems
- Trauma or surgery to legs
- Decreased calf muscle pump
- Occupations of prolonged sitting or prolonged standing
- Multiple pregnancies

**Are there specific characteristics that help a clinician to identify a venous ulcer apart from the history above? (remember to check arterial supply (e.g. ABI)):**

Yes, venous ulcers have quite distinctive characteristics:

- "Brawny" oedema
- Haemosiderin staining in the gaiter region (reddish brown pigmentation)
- Lipodermatosclerosis (LPD)
- Evidence of previous healed ulcers
- Dilated or torturous superficial veins
- Atrophie Blanche
- Eczema and dry scaly skin
- Altered leg shape-inverted "champagne bottle"
- Ankle flare—broken capillaries in the foot and ankle region
- Ulcer is usually located on the medial or lateral aspect of the gaiter region
- Ulcer has irregular edges
- Ulcer is quite superficial and predominately viable tissue
- Pain is variable but often tolerable especially when leg elevated
- Leg is often itchy and hot at night

### Having taken a history and reviewed the ulcer characteristics, what is the next step?

Venous leg ulcers require compression therapy to reduce the oedema and support valvular function. Some clinicians prefer the term "support therapy" as it seems less harsh and does not imply discomfort.

### Compression therapy:

- Increases the hydrostatic pressure of the extra-vascular tissues
- Reduces the lumen of the vein
- Reduces the blood volume by 62 per cent in the standing position
- Forces fluid into both the venous and lymphatic system, thus reducing oedema
- Facilitates the action of the calf muscle pump

### How do we achieve compression?

For compression to be effective it has to offer higher pressure at the ankle distally and lower towards the knee proximally. A bandage put on a normal shaped leg will achieve this graduation if the tension of the fabric is maintained for the entire length of the lower leg. Unfortunately, some clinicians pull the bandage tighter as they reach the knee as they can see they are about to run out of bandage. Clearly, this is incorrect.

The key is to know what compression is required and what compression levels can be achieved, but before applying compression, to re-check that the diagnosis is venous. Pulses are palpable and there are no indicators of arterial disease or cardiac failure.

Crepe bandages applied to an oedematous limb will have to be re-applied every 30 minutes in order to deliver any resistance and offer graduated compression: hardly practical, and moreover they fall down if they initially 'push' the fluid out of the leg.

Elastic bandages, for example Surepress, Setopress Tensopress, achieve high working compression and high resting compression, in other words they 'squeeze' the leg day and night - walking or not walking. Being elastic they will re-conform to their original length as the oedema subsides.