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Compression therapy

Compression therapy using compression bandaging or graduated compression hosiery is an integral part of the management of varicose veins, [gravitational eczema](#) and/or venous [leg ulcers](#); both as an active treatment for healing of ulcers and in preventing recurrences of ulcers. Compression should not be used for arterial leg ulcers and should be used with caution in diabetic leg ulcers.

Compression therapy works by applying controlled pressure to the surface veins, keeping their diameter small and forcing blood back into the deep vein system which in turn pushes the blood uphill towards the heart. Improved blood flow aids in the healing of active ulcers and in preventing ulcer recurrences.

Types of compression therapy

There are several options for compression therapy. Two methods most commonly used are 3–4 layer compression bandaging and elastic graduated compression hosiery.

Compression bandaging

Bandages with predetermined levels of compression are available; light, moderate, high and extra–high performance. The type of bandage used depends on the severity of the swelling and how much pressure needs to be applied. For example, extra–high performance bandages are reserved for very large and swollen legs.

Compression bandages are useful if there are active ulcers as once the wound is cleansed and dressed the bandage can be easily wrapped around the leg from the toes to the calf. Elasticated bandages provide graduated compression with the highest pressure at the ankle where it is most needed. Padding should be applied in strips over bony prominences to prevent excessive pressure.

Bandages may be left on or reapplied for several weeks until the swelling has gone down. Due to their elasticity as the swelling goes down the bandage maintains the proper amount of pressure. When the ulcer has healed, compression hosiery may be recommended to provide a lesser amount of pressure but enough to maintain proper blood circulation and prevent ulcer recurrences.

Four–layer bandaging



First layer



Second layer



Applying the third layer



Third layer



Applying fourth layer



Completed bandage

Compression hosiery

Compression hosiery can be used as an alternative to compression bandaging for the treatment of active ulcers. It is also very useful for preventing ulcer recurrences. Compression hosiery is classified according to the pressure level applied at the ankle.

Class	Pressure	Indication for use
I	14–17 mmHg	Varicose veins, mild swelling
II	18–24 mmHg	Moderate to severe varicose veins, mild swelling, small ulcers, prevention of ulcer recurrence
III	25–35 mmHg	Severe varicose veins, chronic venous insufficiency (gross swelling), ulcers, prevention of ulcer recurrence

Measurements of the lower leg need to be taken to ensure the stocking fits properly. A correctly fitted stocking will produce an effective graduation in pressure and be comfortable to wear. A poorly fitted stocking may cause discomfort, trauma and more harm than good. In most cases stockings are worn up to just below the knee, although thigh length stockings are available if there is swelling above or below the knee or where there is joint deformity.

Compression hosiery is made from a number of different fibres including nylon, cotton yarn and elastane. Off-the-shelf stockings include circular knit stockings and flat-bed knit stockings. Flat-bed knit stockings are more flexible than circular knit stockings, making them easier to get on and off. Net stockings and one-way stretch stockings are available as made-to-measure items.

Studies on compression hosiery show that following removal of the stocking there is little evidence of reversal of the underlying disease process such as improvement in calf muscle function or restoration of the valves. Hence, patients need to be made aware that graduated compression hosiery, in conjunction with exercise, diet, limb elevation and skin care, is part of the long-term management plan of venous insufficiency and leg ulceration.

Compression hosiery



Related information

References:

On DermNet NZ:

- [Leg ulcers](#)
- [Gravitational eczema](#)

Other websites:

- [World Wide Wounds](#): Compression hosiery in the prevention and treatment of venous leg ulcers
- [Accucare](#) Canada, medical compression therapy services

Books about skin diseases:

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Author: Vanessa Ngan, staff writer

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