

Medline Sponsored Learning: Putting Comfort and Versatility in the Wound Management Toolbox



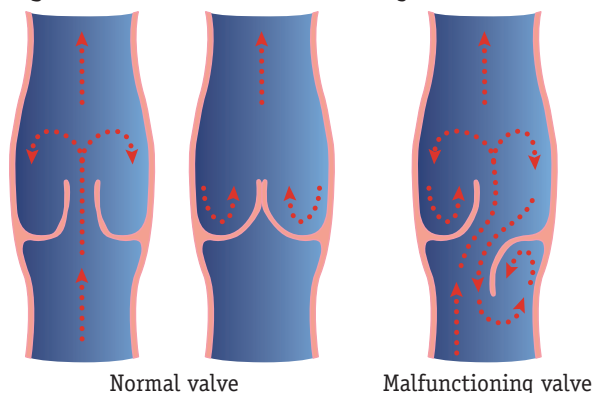
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Michelle Labbie is a nurse practitioner who is passionate about complex wound management in the context of chronic disease management, particularly in people with lower leg ulcerations and diabetic foot complications. She has focused her expertise in these areas for over 25 years and is actively involved in clinical research, pathways and practice guideline development and implementation of evidence-based care.

Venous Leg Ulcers and Chronic Venous Insufficiency

Venous leg ulcers (VLUs) are a common complication for patients living with chronic venous insufficiency (CVI). VLUs account for 80% of all leg ulcers and have a high recurrence rate, at 70%. Unlike arteries, veins have valves to prevent reflux. These valves work to ensure a one-way return of blood back to the heart to be re-oxygenated (Figure 1). In the leg, the calf muscles serve as a "pump" to aid venous return. The calf-muscle pump works like a bicycle pump, cycling between filling and pumping during gait. Inadequate calf-muscle pump function can result from prolonged inactivity, loss of mobility or age-related decrease in activity level. Venous hypertension can result from valvular incompetence, inadequate calf-muscle pump action and/or venous obstruction. Over time, venous hypertension leads to increased capillary permeability, resulting in leaking of fluid and protein into peripheral tissues (i.e., edema). When untreated, CVI and venous edema can lead to dermatological changes, including hemosiderin deposit, atrophie blanche and hardening of tissues in the leg (lipodermatosclerosis).

Figure 1. Normal and Malfunctioning Venous Valves



(Source: Best Practice Recommendations for the Prevention and Management of Venous Leg Ulcers. Wounds Canada)

Compression Therapy and Venous Return

Compression therapy is the key to reducing, managing and preventing edema. A complete health history and vascular assessment should be completed prior to initiating compression therapy, and clinicians should also carefully consider contraindications to compression therapy, such as allergies, severe peripheral arterial disease and psycho-social factors.

There are two forces that work together to create an interface pressure between the skin and compression garments or wraps. Resting pressure is exerted by the compression garment or wrap when the patient is at rest. This produces the "static effect." Working pressure is exerted by the compression garment or wrap when the patient is ambulating. This produces the "dynamic effect." The difference between the two pressures is dependent on the stretch or stiffness of the compression. Compression ther-

***Compression does not work
if the person does not buy in to
the management plan!***

apy assists in working against the forces of gravity and helps support normal venous return up the leg. 30–40 mmHg is the gold standard level of therapeutic compression for the management of venous insufficiency if arterial perfusion is adequate.

Forms of Compression

Compression exists in different forms, including compression garments, wrapped layered compression, adjustable wraps and intermittent pneumatic compression. It is important to note that compression garments help to *prevent* edema, but do not *reduce* edema. Compression wraps are used to reduce and prevent edema from recurring.

How Compression Wraps Work

Compression wraps should be applied at the same tension over the entire lower leg. Wraps exert higher pressure at the ankle, and less at the calf. The amount of pressure exerted by the wraps is dependent on the number of layers applied, degrees of overlap and degree of tension applied. The circumference of the leg inversely impacts the interface pressure (i.e., pressure underneath the wraps). The smaller the circumference of the limb, the greater the interface pressure. Clinicians should always consider the size of the limb when applying compression wraps. The goal is to "flatten the curve" and build up skinnier areas of the leg to even out the interface pressure.

Short-stretch (inelastic) compression provides a lower resting pressure and a higher working pressure (during ambulation) in comparison to long stretch (elastic) compression (Table 1). For these reasons, short stretch (inelastic) compression systems are more comfortable at rest and have more dynamic effects during

ambulation due to the higher interface pressure. With that said, there are instances where elastic compression may be preferred.

Table 1. Types of Compression Bandages

Type	Alternate Name	Static Stiffness	Compression	
			Resting	With Activity
Long Stretch	Elastic	Low	High	Lower
Short Stretch	Inelastic	High	Low (support)	Higher

(Source: Best Practice Recommendations for the Prevention and Management of Venous Leg Ulcers. Wounds Canada)

Things to Consider when Choosing Compression Therapy

- Peripheral arterial perfusion
- General health status and comorbidities (e.g., congestive heart failure)
- Presence of wounds (e.g., location, shape, size)
- Presence of pain and/or infection
- Is the patient managed with antimicrobials and for how long?
- Edema (e.g., where, how much, etiology)
- Skin and hygiene (e.g., cleanliness, contact or stasis dermatitis)
- Adherence to health management plan
- Tolerance of compression
- Social supports (e.g., at home, ability to attend clinic appointments)
- Team approach, with patient-centred considerations
- Characteristics of the compression system (conformability to leg size and shape, ease of application, durability, comfort, ease of patient movement)

AccuWrap



AccuWrap is a two-layer short-stretch compression bandage system. It consists of thin and streamlined layering and is made of 100% woven polyester that is sturdy and breathable. There are accuracy indicators, a visual aid to ensure consistent application of the system. The bandages have a slight cohesive texture, which helps them stay in place, prevents rolling/unrolling during application and facilitates minor adjustments by lifting and repositioning. AccuWrap comes in three different kits: AccuWrap (30–40 mmHg), AccuWrap XL (30–40 mmHg for longer/large legs) and AccuWrap Lite (20–30 mmHg). The packaging includes clinician instructions and a rip-off patient education card.

IoPlex and Compression Therapy

IoPlex is an iodine-based dressing that can be used in conjunction with compression bandaging systems. Iodine is a common antimicrobial agent in wound care. IoPlex dressings are indicated for cleaning of exudative wounds, infected traumatic or surgical

wounds and infected burns. Caution should be taken when using IoPlex for patients with a history of thyroid disease (e.g., Grave's disease, Hashimoto's thyroiditis, goiter) and should not be used on pregnant or lactating patients.

IoPlex is a polyvinyl alcohol (PVA) foam containing controlled-release iodophor for on-demand release of iodine when it comes into contact with proteinaceous exudate. The polymers within the PVA foam reduce cytotoxicity common with iodine and is therefore safe to use.

The PVA foam has large exudate capacity and a wicking ability for significant absorption.

IoPlex has extended wear time, lasting up to three days.

However, IoPlex can be stacked under compression to increase wear time if you are changing the compression once a week. The dressing changes colour from charcoal black to white once the iodine is depleted, signalling the dressing is likely ready to be changed.

IoPlex comes pre-moistened and is easy to apply. It can be cut to size or shape and stacked under compression bandaging systems.

Unlock healing potential with IoPlex.

IoPlex with I-Plexomer™ is the world's only controlled release iodine foam dressing.

A proprietary controlled-release system allows for regulated and sustained infection management through the slow release of iodine within the wound dressing.

Highly absorbent, gentle and stackable.
Easy to apply and remove.

-  Reduces bacterial burden within the wound dressing
-  Effectively removes exudate and debris
-  Sustained release over 24 to 72 hours
-  Can be cut to shape of wound and stacked



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