

# BACK TO BASICS: CORRECT BANDAGING

As an integral aspect of wound treatment, there is a necessity for clinicians to be adept at applying bandages. The incorrect application of bandages can result in harm to the patient. This article describes the basic principles of applying retention bandages.

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**B**andaging is a fundamental nursing procedure carried out on a daily basis by nurses of all grades. However, it should never be undertaken without planning or care. Bandages can be applied for a number of reasons and, therefore, consideration needs to be given to the correct application technique. Individuals can be harmed through wearing incorrectly applied bandages.

The reasons underpinning the decision to use bandages are manifold. They include the:

- ▶ Securing of dressings, particularly in situations where adhesive dressings cannot be used.
- ▶ Support of joints.
- ▶ Reduction of oedema.
- ▶ Provision of compression therapy for the management of venous leg ulcers and/or lymphoedema.

The application of compression bandages is a specialist skill requiring additional training and competence (Royal College of Nursing, 2006; Lay-Flurrie, 2011) and, therefore, will not be considered here.

### **Bandage classification**

Bandages are grouped according to their material properties and functions, and fall into two broad categories (Thomas, 1998; British

National Formulary, 2013). Type one are lightweight conforming stretch bandages, and knitted polyamide and cellulose contour bandages. Their main functions are retention, securing dressings in place, and close conformity to the limb. Examples include K-Band® (Urgo Medical), Easifix® K (BSN Medical), and Slinky™ (Mölnlycke).

Type two bandages are made variously of cotton, polyamide and elastane, or elastomer and viscose. Their main functions include the management of sprains and strains, the prevention of oedema, and the supply of light support to the limb. Examples include Hospicrepe® (Paul Hartmann), K-Lite® (Urgo Medical), and Profore™ #2 (Smith & Nephew).

### **Bandage application**

The 11 steps to correctly apply retention bandages are:

- ▶ Adopt a comfortable position; avoid bending over the patient to protect your back.
- ▶ Use a 10 cm-wide bandage for lower limbs in adults. A wider bandage will be more difficult to conform to the limb, especially around the foot, and a narrower bandage will result in more overlapping layers with the potential for pressure damage.
- ▶ Ask the patient to flex their foot before bandaging (“toes to nose”)

to reduce bulk around the ankle, which would limit ankle flexion movements.

- ▶ Start at the base of the toes and apply one or two turns around the foot to secure the bandage (*Figure 1*).
- ▶ Take the bandage across the front of the foot towards the heel (*Figure 2*).
- ▶ Wrap the bandage around the back of the heel and come back across the front of the foot (*Figure 3*).
- ▶ Take the bandage underneath the sole of the foot to fill the gap and return across the top of the foot. The heel and sole of the foot should be completely encircled. If the patient has a long foot, two turns may be required to completely cover the foot (*Figure 4*).
- ▶ Continue bandaging up the leg, applying in a spiral technique,

ensuring 50% overlap (*Figure 5*).

- ▶ Finish just below the knee. This should be two finger widths below the popliteal fossa (back of the knee).
- ▶ Cut off any excess bandage and secure with tape. *Do not* wrap the excess bandage around the top as this can cause skin damage from excess pressure or a tourniquet effect, and also restrict venous return (*Figure 6*).
- ▶ Ensure the patient can flex their ankle freely.

### **Risks of incorrect bandaging**

Failure to apply bandages from toe to knee or incorrect overlapping can result in mis-shapen limbs as fluid is pushed into the tissues above or below the bandage (*Figure 7*). This can lead to pressure damage or blistering. Every

time a bandage is removed, the skin must be inspected for signs of redness, creasing, or blistering that indicate excessive pressure or friction from poor application. Extra protection should be given to these vulnerable areas with the use of wool padding (Beldon, 2012). Irritation can be reduced by the use of a cotton stockinette liner underneath the bandage.

### **Pedal oedema**

If the bandage is not applied from the base of the toes, fluid can be pushed into the forefoot causing oedema. This can also occur if excessive bandage layers are applied around the ankle (*Figure 8*). This can result in tissue congestion and poor perfusion, with restricted removal of waste products (Hofman, 2010).



**Figure 1.** Bandage is applied from the base of the toes with the foot flexed.



**Figure 2.** Bandage is drawn across the front of the foot.



**Figure 3.** Bandage is taken around the back of the heel.



**Figure 4.** Bandage is taken underneath the sole of the foot and returned across the front of the foot.



**Figure 5.** The clinician should continue up the leg in a spiral with 50% overlap.



**Figure 6.** The bandage is fully applied.

**Pressure damage**

Bony prominences are vulnerable to pressure damage from bandaging (Figure 9). The foot should be assessed for any foot deformities and vulnerable points protected from excessive pressure using wool padding (Moffatt et al, 2007). Particular attention should be given to the front of the foot (anterior tibial area), heel, and ankles, and any redness indicating nonblanching erythema should be addressed by using extra wool padding.

**Blistering**

Inadequate overlapping of the bandage can result in blisters forming from the shift of fluid out between the bandage layers, or from friction if the bandage is not fixed securely (Figure 10).

**Conclusion**

Bandaging is a skill that should only be performed by clinicians who have the necessary knowledge and skill (Nursing and Midwifery Council, 2008). Before applying any bandage, the specific need for bandaging should be established. If an alternative option is available this should be considered (e.g. can an adhesive dressing be used instead?).

If a bandage is required, consideration should be given to the condition of the patient's skin, vulnerable areas should be identified and protected, and then the correct bandage selected and correctly



**Figure 7.** (a) Incorrect bandage application has resulted in slippage and shifting of fluid into the feet. There is also the risk of creating a tourniquet at the calf. (b) Fluid has been pushed into the ankle below the bandage.

applied. Care should be taken to check the limb at every dressing change. In this way, harm is avoided and the therapeutic purposes of the bandaging are fulfilled.

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**Figure 8.** The bandage has been applied from the ankle, shifting fluid into the foot.



**Figure 9.** Excess layers of bandaging have been applied over the vulnerable anterior tibialis without padding.



**Figure 10.** Blisters caused by pressure and friction from excessive layers of bandaging around the foot.