## Procedure: Unna Boot for Compression Therapy

### Practice level
- A Physician/NP order or clinical direction from a Wound Clinician is required to apply an Unna wrap. The compression wrap method (fan-fold or spiral) is to be stated in the order/clinical direction.
- Only nurses who have successfully completed additional education for compression therapy may apply compression wraps.
- Follow agency/Health Authority compression therapy policies/practice standard.
- Refer to the [Guideline: Application of Compression Therapy for Venous Insufficiency & Mixed Venous/Arterial Insufficiency](#) for further information related to indications, precautions and contraindications.

### Background
- The compression 'boot' was developed in Germany by Dr. Paul Unna in and there are several variations of this procedure; this document outlines the procedure used within British Columbia.
- The combination of 10% zinc oxide impregnated gauze wrap (Viscopaste), covered with a gauze wrap is known as an 'Unna Boot'.
- Cast padding over top of the Viscopaste layer may be used, if needed, for padding of bony prominences and/or for absorption of small amounts of exudates.
- The boot is classified as an inelastic-rigid compression therapy; the Viscopaste wrap forms a mold around the leg; with ambulation, the calf muscle must work against the mold and this work increases the venous return.
- The boot provides low compression therapy (less than 20 mmHg) when the client is ambulating.

### Indications /
- For clients with chronic eczema and dermatitis requiring moderate compression for the treatment of venous insufficiency and/or venous leg ulcers;

### Precautions /
- Compression wraps may be used:
  - With caution for clients whose ABI is between 0.5 to 0.89 as this value indicates severe to mild arterial insufficiency
  - With caution for clients whose ABI is 1.31 or greater as this value indicates calcified arteries (often seen in diabetics with advanced small vessel disease)
  - With extreme caution and in consultation with a vascular surgeon for clients whose ABI is 0.49 or less as this value indicates very severe arterial compromise.
- Protect very thin legs/bony prominences from pressure by adding additional padding.
- Promptly remove the wrap and notify the Physician/NP/Wound Clinician if the client develop pain or a pale, cool or numb toes or foot, or signs and symptoms of Heart Failure.
- Discontinue use if redness, itching or deterioration of the wound occurs; notify Wound Clinician, NP or Physician.
- If using silver wound products e.g., Acticoat Flex3 or Acticoat Flex7, then use an interface, e.g., gauze dressing, to prevent the paste's emulsifier from coming in contact with the silver dressing.

### Contraindications:
- Do not use for clients with known sensitivity or allergy to zinc or other ingredients in bandage.
- Do not apply in the presence of uncontrolled heart failure.
- Do not apply in the presence of untreated lower limb skin or wound infection.

### Definitions
- **Inelastic compression wrap** – A wrap made of non-stretch material such as a zinc paste impregnated gauze wrap or a short-stretch wrap.

### Related Documents
- Guideline: [Application of Compression Therapy](#)
- Learning Module: [Application of Compression Therapy](#)
- Procedure: [Ankle Brachial Index for Adults using Hand Held Doppler](#)
- Procedure: [Ankle Brachial Index for Adults using Automatic ABI System](#)

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**Equipment and Supplies**
- Viscopaste Bandage 7.5 cm x 6m – Cast padding, if using
- Gauze wrap e.g., Kling
- Stockinet cut to length of lower limb, if needed
- 2 pair of clean gloves
- Dressing supplies, if needed
- Measuring tape

**Procedure Link to Procedure Video**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Key Points</th>
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<tbody>
<tr>
<td><strong>Apply/rewrap in the early morning or as soon as possible after the client is out of bed for the day.</strong></td>
<td>Edema should be minimal in the morning if the client has had their legs elevated for the night.</td>
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<tr>
<td><strong>Wash or shower leg(s) with warm water using a pH-balanced skin cleanser and dry well before wrapping.</strong></td>
<td>To remove dead skin.</td>
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<tr>
<td><strong>Measure the ankle circumference 10 cm from the bottom of the heel; measure the calf circumference 30 cm from the bottom of the heel.</strong></td>
<td>With the first wrap, gives a base-line measurement of the client’s edema; with subsequent wrappings, provides an assessment of the resolution of the edema.</td>
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<td><strong>If wound is present, provide wound care as per care plan and apply the appropriate cover dressing.</strong></td>
<td>Viscopaste can be the primary dressing if the wound has a small amount of exudate.</td>
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**To Apply**

**First Layer**
- If using the Fanfold method:
  - Start at the base of the toes, using no tension and an overlap of 50%, loosely wrap the paste bandage around the foot, heel and ankle; ensure that all areas are covered.
  - Starting above the ankle, using no tension and overlapping by 50%, with each turn up the leg, fold the bandage back upon itself just off centre of the anterior (front) aspect of the leg.
  - Repeat this process up the leg; when complete there will be a row of pleats running up the anterior aspect of the leg.
  - Stop two finger-widths below the knee; cut off excess wrap and smooth the wrap to conform to the leg.
  - Viscopaste has no elasticity so the fan-folded pleats allow the wrap to expand slightly in the presence of increasing edema.
- If using the Spiral method:
  - Start at the base of the toes, using no tension and an overlap of 50%, loosely wrap the paste bandage around the foot, heel and ankle; ensure that all areas are covered.
  - Starting above the ankle, using no tension and overlapping each turn up the leg by 50%, wrap the paste bandage up the leg using a spiral technique.
  - Stop two finger-widths below the knee; cut off excess wrap and smooth the wrap to conform to the leg.

**Second Layer**
- Change gloves.
- If needed, wrap the foot and leg with cast padding in a loose spiral; ensure that all bony prominences are protected.
- Wrap foot and leg with gauze wrap and secure with tape.
- Apply stockinet or other similar non-compression type stocking may be applied for further securement of the boot, if needed.

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**To Remove**

Unwrap the wrap or cut it off with scissors (away from the ulcer location, if applicable).

Lift bandage away from the skin while cutting to avoid cutting the skin.

**Frequency of Wrap Change**

If ulcer present, then change wrap with each wound dressing change; if no ulcer present, then change wrap once a week unless there is slippage. Encourage client to shower legs before re-application of the wrap.

**Client Teaching**

Teach client to:
- Assess for shortness of breath indicating heart failure
- Monitor for wrap slippage.
- Assess for pain, numbness, tingling, discolouration or swelling of the toes indicating circulatory problems.
- Assess for itchiness due to sensitivity to zinc or other product ingredients.
- Remove the wrap if any of the above occur and contact a health care provider immediately.

Heart failure may develop due to the shifting of fluid back up to the heart.

If skin shows signs of sensitivity consult with physician/NP for patch testing.

Wrap slippage can result in a tourniquet effect leading to increased pressure and possible tissue necrosis.

**Expected Outcome**

Resolved eczema or dermatitis within 2 weeks; and/or Measurable improvement in the ankle and calf measurements within 1 week.

**Documentation**

1. Document as per agency/Health Authority policy that the procedure was done.
2. Document as per agency/Health Authority policy that client teaching was done.

**References**

2. Smith & Nephew Viscopaste Product Information.

**Document Creation/Review**

This guideline is based on the best information available at the time it was published and relies on evidence and avoids opinion-based statements where possible. It was developed by the Provincial Nursing Skin and Wound Committee and has undergone provincial stakeholder review.

**Created By**

British Columbia Provincial Nursing Skin and Wound Committee in collaboration with the Wound Care Clinicians from across all Health Authorities

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