**Developed by the British Columbia Provincial Nursing Skin &Wound Committee in collaboration with the NSWOCs/WCs from:**

First Nations Health Authority Health through wellness | fraserhealth Better health. Best in health care. | Interior Health | island health | northern health the northern way of caring | Provincial Health Services Authority Province-wide solutions. Better health. | vancouver CoastalHealth / Providence Health Care | Yukon

# Unna Boot Compression Therapy (without self-adherent wrap): Procedure

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| **HA Endorsement**<br>**BC & Yukon** | • Endorsement done: FNHA as reference, FHA, IHA, NHA & VCH/PHC.<br>• Endorsement pending: ISLH, PHSA & Yukon; until endorsement has been granted by your health authority (HA) please follow your HA's current document. |
| **Practice Level**<br>**BC & Yukon** | • Decision to apply an Unna Boot wrap and with which compression wrap method (fanfold or spiral) is to be done in consultation with an NSWOC/WC or MRP.<br>• Only nurses who have a competency in doing compression wraps can apply an Unna Boot wrap.<br>• Nurses must follow Health Authority/agency compression therapy policies/practice standard.<br>• Refer to the Guideline: Application of Compression Therapy for Venous Insufficiency & Mixed Venous/Arterial Insufficiency for information related to indications, precautions and contraindications for compression therapy. |
| **Need to Know** | • 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.<br>• The combination of 10% zinc oxide impregnated gauze wrap (Viscopaste), covered with a gauze wrap is known as an 'Unna Boot'.<br>• 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.<br>• 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.<br>• The boot provides low compression therapy (less than 20 mmHg) when the client is ambulating. |
| **Bookmarks** | Equipment & Supplies<br>Procedure<br>Procedure Video<br>Client Teaching<br>Document Management |
| **Indications / Precautions / Contraindications** | **Indications:**<br>• For clients with chronic eczema and dermatitis requiring moderate compression for the treatment of venous insufficiency and/or venous leg ulcers.<br>**Precautions:**<br>• Compression wraps may be used:<br>  ○ With caution for clients whose ABI is between 0.5 to 0.89 as this value indicates severe to mild arterial insufficiency.<br>  ○ 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).<br>  ○ 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.<br>• Protect very thin legs/bony prominences from pressure by adding additional padding.<br>• Promptly remove wrap and notify the MRP/NSWOC/WC if the client develop pain or a pale, cool or numb toes or foot, or signs and symptoms of heart failure.<br>• Discontinue use if redness, itching or deterioration of the wound occurs; notify NSWOC/WC, or MRP. |

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| | **Contraindications:**<br>• Do not use for clients with known sensitivity or allergy to zinc or other ingredients in bandage.<br>• Do not apply in the presence of uncontrolled heart failure.<br>• 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.<br>**MRP**: Most Responsible Provider.<br>**NSWOC**: Nurse Specialized in Wound, Ostomy, Continence.<br>**WC:** Wound Clinician. |
| **Related Documents** | Guideline: Application of Compression Therapy<br>Learning Module: Application of Compression Therapy<br>Procedure: Ankle Brachial Index for Adults using Handheld Doppler<br>Procedure: Ankle Brachial Index for Adults using Automatic ABPI System<br>Procedure: Duke Boot for Compression Therapy |

## 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

| Steps | Key Points/Rationale |
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| Apply/rewrap in the early morning or as soon as possible after the client is out of bed for the day. | Edema should be minimal in the morning if the client has had their legs elevated for the night. |
| Wash or shower leg(s) with warm water using a pH-balanced skin cleanser and dry well before wrapping. | To remove dead skin. |
| Measure the ankle circumference 10 cm from the bottom of the heel; measure the calf circumference 30 cm from the bottom of the heel. | 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. |
| If wound is present, provide wound care as per care plan and apply the appropriate cover dressing. | Viscopaste can be the primary dressing if the wound has a small amount of exudate.<br>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. |
| **To Apply** | |
| Don clean gloves. Support the foot off the floor and position the foot in dorsiflexion. | Dorsi-flexion ensures a good walking position once the wrap is on. |
| **First Layer**<br>If using the Fanfold method:<br>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 all areas are covered. | Viscopaste has no elasticity, so the fan-folded pleats allow the wrap to expand slightly in the presence of increasing edema. |

| Steps | Key Points/Rationale |
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| Start above the ankle, using no tension and an over-lap of 50%, with each turn up the leg, fold the bandage back upon itself just off-center of the anterior (front) aspect of the leg.<br>Repeat process up the leg, when complete there will be a row of pleats running up the anterior aspect of the leg.<br>Stop two finger-widths below the knee; cut off excess wrap and smooth the wrap to conform to the leg. | |
| If using the Spiral method:<br>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 all areas are covered.<br>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.<br>Stop two finger-widths below the knee; cut off excess wrap and smooth the wrap to conform to the leg. | |
| **Second Layer**<br>Change gloves.<br>If needed, wrap the foot and leg with cast padding in a loose spiral; ensure bony prominences are protected.<br>Wrap foot and leg with gauze wrap, secure with tape.<br>Apply stockinet or other similar non-compression type stocking may be applied for further securement of the boot, if needed. | To prevent undue pressure over bony prominence or for absorption of small amount of exudate. |
| **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:<br>• Assess for shortness of breath indicating heart failure<br>• Monitor for wrap slippage.<br>• Assess for pain, numbness, tingling, discolouration or swelling of the toes indicating circulatory problems.<br>• Assess for itchiness due to sensitivity to zinc or other product ingredients.<br>• 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.<br>If skin shows signs of sensitivity consult with physician/NP for patch testing.<br>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.<br>Measurable improvement in 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

1. British Columbia Provincial Nursing Skin & Wound Committee (2016). *Guideline: Application of Compression Therapy to Manage Venous Insufficiency and Mixed Venous/Arterial Insufficiency.*
2. Smith & Nephew Viscopaste Product Information.

## Document Management

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 & Wound Committee and has undergone provincial stakeholder review.

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