

	Policies and Procedures RNSP: Advanced RN Intervention LPN Additional Competencies Title: COMPRESSION BANDAGING - APPLICATION OF I.D. Number: 1094
Authorization: <input checked="" type="checkbox"/> SHR Nursing Practice Committee	Source: Nursing Date Effective: January 2017 Scope: SHR & Affiliates

Any PRINTED version of this document is only accurate up to the date of printing 23-Mar-17. Saskatoon Health Region (SHR) cannot guarantee the currency or accuracy of any printed policy. Always refer to the Policies and Procedures site for the most current versions of documents in effect. SHR accepts no responsibility for use of this material by any person or organization not associated with SHR. No part of this document may be reproduced in any form for publication without permission of SHR.

DEFINITIONS:

Ankle Brachial Pressure Index (ABPI)- A valid and reliable non-invasive test to measure the ratio of the systolic blood pressure in the lower extremities to the blood pressure in the arms. It is used to screen clients for the presence and severity of arterial compromise as well as to predict the healability of lower leg wounds.

Certified Nurse- A nurse that received certification according to the policy for that profession in the application of compression bandaging.

Client- Used to refer to residents, patients and clients.

Toe Brachial Pressure Index (TBPI)- A non-invasive test to measure the ratio of the blood pressure in the toes to the systolic pressure in the arms. It is used when the ABPI is abnormally high (greater than 1.3) and to screen diabetic clients for the presence and severity of arterial compromise.

Compression Bandages- Bandages made of fabrics that are elastic, inelastic or a combination of the materials that apply a graduated compression to the limb (see Appendix A).

Compression Garments- Custom and non-custom fitted hosiery and clothing that provides graduated compression. Garments provide a therapeutic compression for the management of venous and lymphatic disease.

Graduated Compression- Incremental pressure that begins at the ankle and progresses up the leg. This helps to squeeze or push blood back up the leg from the ankle to the thigh in an effort to counteract pooling of blood in the leg and the resultant swelling.

Less Than Full Stretch- 50% less than the full stretch of the Manufacturer's recommendation.

ROLES:

Licensed Practical Nurses (LPNs) – LPN certification for this Additional Competency is under review by the Nursing Practice Committee. As assigned, LPNs currently educated or certified may continue to

provide Application of Compression Bandaging. LPNs requiring initial certification or education will not be certified or educated until the review is completed.

Registered Nurses (RNs) – RNs identified by their manager in targeted practice settings will be certified in this Registered Nurse Specialty Practice (Advanced RN Intervention): Compression Bandaging- Application of

Registered Psychiatric Nurse (RPNs)- RPN certification for this Speciality Practice is under review by the SHR Nursing Practice Committee. As assigned, currently educated or certified RPNs may continue to provide Compression Bandaging- Application of. RPNs requiring initial certification or education will not be certified or educated until the review is complete.

Wound Care Clinician (WCC) - A Registered Nurse with advanced wound training and certification as an Enterostomal Therapist or has completed the International Interprofessional Wound Care Course (IIWCC).

1. PURPOSE:

- 1.1 To ensure all clients in SHR with venous leg ulcers, mixed arterial venous disease, cellulitis, post deep vein thrombosis , lymphedema, chronic and postoperative edema receive treatment that is in keeping with best practice guidelines.
- 1.2 To ensure that compression bandaging (with 20mmHg or more compression) is initiated appropriately and that assessment occurs before initiating therapy and again every time the client's bandages are replaced.

2. POLICY:

- 2.1 The RN certified in this RNSP will have first completed the following learning module/activities prior to application of a Compression Bandage independently:
 - Attend an educational session on application of Compression Bandaging. This includes theory, advanced assessment, products, bandaging techniques and skills labs.
 - Complete the learning package and quiz and return it to CNE
 - Complete a competency checklist with a certified RN during first application of compression bandaging
- 2.2 All clients will have a compression bandaging order on the chart, including the specific degree (mmHg) and type of compression required.
- 2.3 When either the products or a certified nurse is unavailable (to apply or replace compression bandages), an order for an alternate method of compression will be required and used (i.e. tubular bandage)(see Appendix B).
- 2.4 Prior to initiation of compression therapy, a holistic client assessment, lower limb assessment and an ABPI or TBPI will be completed by a certified RN with a recommendation for the type of compression intervention.

Note: Doppler Assessments: ABPI/TBPI, see Policy #1018

- 2.5 Client referral to the appropriate disciplines will be made to maximize the treatment plan and address any correctable systemic factors (i.e. diabetes educator, dietician, physiotherapist, occupational therapist, wound care clinician).

- 2.6 Compression may be initiated without ABPI/TBPI if vascular studies have been obtained and/or following clinical evaluation by a vascular specialist.
- 2.7 Compression bandages will be applied according to the manufacturer's instructions for use.
- 2.8 Frequency of compression bandaging changes and product type will be dependent on many factors (see Appendix A).
- 2.9 Notify the Most Responsible Physician (MRP) if there are signs and symptoms of an acute cellulitis to the lower extremity or congestive heart failure exacerbation.

Note: Do not stop compression bandaging without direction of the MRP.

- 2.10 Clients with edema management only will be measured on initiation and then at a minimum weekly (5cm above medial malleolus and widest circumference of the calf- see illustration below)



From <http://www.lymphedemablog.com/2011/09/15/measuring-for-compression-stockings/>

Note: It takes approximately one month of treatment to achieve adequate edema reduction.

- 2.11 Clients being treated for edema management (without a wound):
 - 2.11.1 Will be measured at every bandage change until 3 consistent measurements occur.
 - 2.11.2 After 3 consistent measurements have occurred continue to do maintenance bandaging for 1 month.
 - 2.11.3 After one month of maintenance bandaging the client will be transitioned into a compression garment.
- 2.12 Clients with a closed wound will transition into a garment after 3 weeks of wound closure.
Note: Clients seen by a vascular specialist will be assessed for compression garments by the wound resource team at their follow up appointment.
- 2.13 When the client is unable and/or unwilling to adhere to the prescribed compression bandaging regime, the nurse will communicate with the WCC/Enterostomal Therapy Nurse (ETN) for further recommendations and/or the MRP/RN(NP) for orders.
- 2.14 A client with a history of cardiovascular disease (i.e. Congestive Heart Failure (CHF), Chronic Obstructive Pulmonary Disease (COPD)) and/or is palliative will have compression applied according to the complex co-morbidity procedure (see 3.15).

2.15 The MRP/RN(NP) and/or the WCC/ETN will be contacted when a bandaging complication involves client safety, for immediate clinical follow up. All such application concerns will also be reported to the manager and clinical nurse educator or clinical nurse leader so educational follow up may take place immediately.

2.16 When compression bandaging is initiated the certified nurse will follow up in 48 hours.

3. PROCEDURE

3.1 Supplies:

- Alcohol Based Hand Sanitizer
- Compression bandaging product
- Skin cleanser
- Moisturizer
- Bandage scissors
- Tape
- Measuring tape
- Wound care supplies
- PPE: non-sterile gloves/gown

3.2 Perform hand hygiene.

3.3 Set up equipment and supplies. Select the appropriate compression bandaging product as ordered.

3.4 Position client appropriately.

3.5 Give clear explanation of the procedure to be performed.

3.6 Perform hand hygiene, don PPE.

3.7 Carefully remove the compression bandage from the limb per manufacturer's instructions.

Note: *Exercise caution to avoid trauma to the skin. Where with bandage scissors are not available, unwinding the bandages is most appropriate removal technique.*

3.8 Wash and moisturize legs. Inspect the skin for any skin damage that might be related to the compression bandaging (i.e. forefoot swelling, deep ridges, slippage and/or pressure injury).

3.9 Remove gloves. Perform hand hygiene and apply clean gloves.

3.10 Provide local wound care, if indicated.

3.11 Measure the calf and ankle circumferences (See 2.10).

3.12 Apply the ordered compression bandaging product per manufacturer's instructions.

3.13 Remove PPE. Perform hand hygiene.

3.14 Document on initiation and with every bandage change in the appropriate nursing record:

- condition of the bandage removed
- skin integrity
- complications of bandaging
- wound care
- measurement of the limb
- compression system applied
- client's response and tolerance to the treatment

3.15 Complex Co-Morbidity Procedure

3.15.1 Complex Co-Morbidity Procedure will be performed on every client that has a history of CHF, COPD and/or is palliative for the initiation of compression bandaging.

3.15.2 Nursing assessment of the cardiovascular and respiratory systems will be done prior to initiation of compression.

Note: *Compression Bandaging has the potential to exacerbate heart failure and at any point should the client show symptoms the MRP/RN(NP) will be immediately notified for further orders*

3.15.3 On initiation, the certified nurse will begin by wrapping only one leg at less than full stretch or as ordered by the vascular specialist.

Note- Progress the client to full stretch on one leg before moving to the second leg. Once the full stretch has been reached on the first leg begin the procedure again on the second leg.

3.15.4 In the first 24 hours following the initiation, the client's response to compression will be assessed by the certified nurse by repeating the systems assessment and documenting it on the appropriate nursing record.

Note: *Home Care- This requires a visit to the client.*

3.15.5 Based on the client's response and the certified nurse's assessment, the nurse will use their clinical judgement to apply the compression bandaging at less than full stretch, gradually increasing to full stretch.

Note: *The nurses clinical judgement is based on the clients tolerance to the procedure and remaining symptom free from exacerbation of their chronic co-morbidity condition.*

3.16 Teaching

3.16.1 Teach the Client/Caregiver:

- Rationale for treatment
- During treatment, the compression should feel snug but not painful and it is normal for the bandages to feel more snug at night
- Expected outcomes following the compression therapy (i.e. compression garments for life)
- Compression bandages must remain dry (i.e. cover with bag during shower)
- May remove the bandages and shower on scheduled dressing change day, as directed by your nurse
- Never alter or rewrap bandages
- Encourage activity and ambulation as tolerated

- Avoid sitting or standing for greater than 2 hours
- Avoid crossing your legs when sitting
- Alternate activity with elevating the legs above the heart.

Note: Provide the client with bandage care Information and Safety Instructions on initiation of compression bandaging (see Appendix C). **Home Care-** Teach the client how to safely remove the bandage if indicated.

3.16.2 If the following signs and symptoms occur teach the client to elevate their legs above the heart and take/request analgesic medication:

- Increased lower leg pain
- Numbness and tingling in the feet
- Swelling
- Bandages that feel tighter than usual

Note: If the symptoms are not resolved by elevation and analgesia, remove the bandages completely and notify the MRP/NP(RN) and/or the WCC/ETN. The timeframe for resolution of the symptoms will be dependent on the type of analgesia used.

3.16.3 Notify the nurse immediately if there is any blueness/whiteness or discoloration of the toes.

Note: Home Care clients should remove the bandages immediately and notify the nurse.

4. REFERENCE(s):

Cooper, G (2013) Compression Therapy in Oedema and Lymphedema, British Journal of Cardiac Nursing

Heartland Health Region. (2012). Compression Therapy Policy - Reference Number C01-43.

Heartland Health Region. (2012). Compression Therapy a) Compression Stockings b) Compression Garment – JuxtaLite c) Multilayer Compression Bandaging. Policy Reference Number C01-43.01.

Heartland Health Region. (2012). Ankle Brachial Pressure Index (ABPI) – Doppler Assessment of the Lower Limb Circulation and Lower Limb Compression Bandaging Learning Package.

Kelsey Trail Health Region. (2013). Compression Therapy to Lower Limbs - Compression Stockings and Compression Garments Draft Policy.

Regina Qu'Appelle Health Region. (2013). Long Term Care Lower Limb Compression Therapy Systems – Learning Package.

Vowden K, Vowden P, Partsch H, Treadwell T, 3M™ COBAN™ 2 Compression Made Easy, Wounds International 2011; 2(1):1-6 Available from <http://www.woundsinternational.com> Policies & Procedures: Compression Bandaging of the Lower Limbs – Multilayer (Maintenance) I.D. # C-138 Page 5 of 8

Winnipeg Regional Health Authority, (2011) Regional Wound Care Clinical Practice Guidelines: <http://www.wrha.mb.ca/professionals/ebpt/files/wc-06venouslegulcer.pdf>

Wounds International. (2013). Principles of compression in venous disease: a practitioner's guide to treatment and prevention of venous leg ulcers. Available from: www.woundsinternational.com.

Woo K., & Cowie, B, (2013, January) Understanding compression for venous leg ulcers, Nursing 43(1); 66-68

Zuther, Joachim (2011) Measuring for Compression Stockings, <http://www.lymphedemablog.com/2011/09/15/measuring-for-compression-stockings/>

3M Coban 2 and 3M Coban 2 Lite Two Layer Compression System: Instructions for use (2015) <http://multimedia.3m.com/mws/media/4989890/coban-2-and-2-lite-compression-system-package-insert-english.pdf>

Appendix A

**COMPRESSION BANDAGING SYSTEMS
(MANUFACTURERS RECOMMENDATIONS)**

Bandage Name	Level of Compression	Type of Compression	Wear Time	Considerations
3M Coban 2	High 30-50 mm Hg Sustained ABPI 0.8 – 1.2 Initiation • Physician/NP order required Application • Demonstrated Competency	Active Graduated • Various bandage applications	3-7 days	2 layer bandage system (comfort layer plus compression layer) • See package instructions • Bandage is not bulky and most clients able to wear normal footwear • Cannot be re-used • During initial treatment phase, large amounts of exudate may necessitate bandage replacement for 7 days
Comprilan (Beirsdorf-Jobst)	High 35-40 mm Hg ABPI 0.8 – 1.2 Initiation • Physician's order required Application • Demonstrated Competency	• Passive Graduated • Spiral application • Short stretch	Re-wrap daily	• Not recommended for non ambulatory patients as requires calf muscle pump • Various methods to wrap • Absorbent dressing necessary for highly exudative wounds • Can be washed 20 times
3M Coban2 Lite	Moderate 20-30 mm Hg Sustained ABPI Greater than 0.5 Initiation • Physician's order required Application • Demonstrated competency	Active Graduated • Various bandage applications	3-7 days	Similar in appearance and application to Coban2 but provides less compression (see Coban2 for further details)
Profore	HIGH 30-40 mm Hg ABPI Greater than 0.8 Initiation • Physician's order required • Application Demonstrated competency	Active Graduated One application technique (4 layers)	3-7 days	• Contains latex Do not use on patients with an ABPI of less than 0.8, or on diabetic patients with advanced small vessel disease.

Appendix B

Alternante Methods For Compression Products				
Bandage Name	Level of Compression	Type of Compression	Wear Time	Considerations
Tensor/ACE bandage	Mild 10-12 mm Hg Not sustained	Active Graduated • Spiral application	1 day Rewrap prn	Apply from toes to knee including heel • Thin materials are less effective • Replace frequently, as worn bandages lose compression • Alert: shear and friction is possible. Protective padding may be necessary
Tubigrip Molnlycke Health Care (Contains Latex)	Mild 10-15 mm Hg Not sustained	Not Graduated Application: 1. Cut Tubigrip to twice the length required for limb, allowing an extra 2–3cm for overlap. 2. Pull Tubigrip onto limb like a stocking 3. Double Tubigrip back over limb. Ensure upper edge is taken 2–3cm higher up the limb than the first.	Reapply prn	May be used initially to decrease edema prior to introducing higher levels of compression or for clients that are unable to adhere to compression bandaging



Compression Bandage Therapy Client Information & Safety Instructions

Appendix C

What is it? The bandage that has been applied to your leg is called a *compression bandage*. Compression bandaging promotes normal flow of blood and reduces edema (swelling). It is proven to be the most effective treatment for venous leg ulcers, cellulitis, and/or for the reduction of edema. To ensure your treatment is as effective as possible it will be important that your nurse changes the compression bandage regularly. You will require compression garments following compression bandaging therapy. Your nurse will discuss this with you.

It is **normal** for the compression bandage to feel snug when it is applied but it should not be painful. It may also feel snuggier at night during the first few days of treatment. Your Physician or RN(NP) may have prescribed you pain medication.



'Dos and Don'ts' when wearing a compression bandage:

- **Don't** alter or rewrap your bandage on your own
- **Don't** sit or stand in one position for more than 2 hours
- **Don't** wear restrictive or tight clothing
- **Don't** cross your legs
- **Do** calf muscle exercises as tolerated (for example, walking, or wiggling toes)
- **Do** keep the compression bandage dry at all times (i.e. cover with bag during shower)
- **Do** elevate your legs above the level of your heart throughout the day (minimum 30 minutes 4 times per day)

Note for Home Care Clients ONLY:

- The Home Care Nurse may teach you how to remove the compression bandage so you can shower just prior to your scheduled dressing change.

If you experience any of the following symptoms you need to elevate your legs and contact the nurse immediately for further direction:

- Increased pain in your lower leg
- Numbness, tingling, and/or 'pins and needles' in your toes or foot
- Increase in swelling with or without a blue or white discoloration of your toes

Note for Home Care Clients ONLY: If the above symptoms are not resolved following elevation of the legs AND taking your pain medication:

- remove the compression bandage with the special bandage scissors you have been provided and as taught by the Home Care Nurse
- notify your Home Care Nurse by calling the appropriate number (see page 2 for Home Care Office listings)

Saskatoon Health Region Home Care Office Contact Listings:

Saskatoon Home Care	
Home Care	306-655-4300
Treatment Centre	306-655-4300

Rural Home Care - areas surrounding Saskatoon	
Humboldt/ Watson/ Quill Lake	306-682-2609
Lanigan/ Nokomis/ Watrous/ Strasbourg	306-365-1440
Wakaw/ Rosthern/ Cudworth	306-233-4611
Wynyard/ Wadena	306-338-2517