

COMPRESSION BANDAGE THERAPY

COBAN WRAPS

APPLICATION AND MAINTENANCE

LEARNING PACKAGE

Initial certification credit hours: 4 hours Annual
recertification hours: 1 hour

Revised August 2019

**COMPRESSION BANDAGE THERAPY COBAN WRAPS APPLICATION
AND MAINTENANCE**

Compression Therapy:

- Is the mainstay of treatment for both venous and lymphatic disease, as it helps to improve venous and lymphatic return to the heart.
- It is important that nurses understand how edema occurs to ensure that it is applied and used appropriately.
- This Learning Package explains what compression is and how it can be used to improve the functioning of the venous and lymphatic systems.

Properties of the ideal compression therapy system

- **Incorporates inelastic component** - Compression therapy systems that incorporate an inelastic component have a high SSI (static stiffness index) that provides an unyielding, but flexible cast around the limb, a ridged sleeve. Such systems produce the so called massaging effect — and are thought to be more effective at aiding venous return than elastic systems (such as antiemboli stockings).
- **Easy to apply and adapt to a range of limb sizes and shapes** - Compression therapy systems need to be conformable to be applied effectively to a range of limb sizes and shapes, while offering therapeutic levels of compression without the risk of damage. For example, a two-layer cohesive system can be used even on highly misshapen limbs. This is because the cohesive properties allow the bandage to be shaped to the limb by cutting during application, restarting anywhere on the limb, and filling any gaps in the application afterwards.
- **Allows full functionality and movement** - Compression therapy systems need to be as adaptable and thin as possible to facilitate movement, and to minimise impact on quality of life by allowing continuation of exercise and usual activities, and the wearing of normal clothes and shoes.
- **Comfortable at rest** - Effective compression is achieved by accurate application of the bandage system, which should provide some compression at rest, but work effectively during exercise. Although patients are often able to tolerate high pressures during movement, when at rest, high pressures may be uncomfortable and even unsafe. Poor tolerability may contribute to reduced concordance, which reduces healing rates and may double the time to complete healing.
- **Non-allergenic and durable** - Some patients may develop skin allergies while wearing a compression therapy system made with latex. Latex-free versions should be offered to individuals at risk.

The Science behind Compression Therapy

- Compression systems may contain both inelastic and elastic materials.

- Most multi-layer systems (two-and four-layer) function as an inelastic system even if they contain mainly elastic components.
- Compression bandages with a high SSI (static stiffness index) create a rigid but flexible cast or cylinder when applied to the lower limb.
- This acts like a closed system whereby external pressure applied to the leg is transmitted equally in all directions within the affected area.
- The rigid sleeve provided by the compression therapy system maximises the effect of muscle movement. The muscles in the leg work against the rigid sleeve which in turn prevents any increase in the circumference of the calf and assists in redistributing the fluid upwards against gravity.
- The compression system needs to be durable and allow patients to perform their daily activities. Any slippage in the bandage system will result in a loss of tension and fit, reducing its effectiveness.
- In addition, there is a risk of damage to fragile skin. Various factors may increase slippage including the composition of the compression materials used, the application technique, and the lifestyle of the patient and the shape of the limb itself.

Compression therapy is indicated in patients with:

Venous insufficiency: Damage to the veins or valves may lead to unrelieved high venous pressure (Venous hypertension). Over time, venous hypertension causes an upset in the normal balance that keeps fluids in the vessels, causing pooling of fluid in the lower extremities, which results in edema. If not managed, venous hypertension will ultimately result in venous leg ulcers.

The Goal of compression therapy in Venous Insufficiency: The goal of compression therapy is to support venous return to the heart and to reduce edema in lower extremities. The treatment is aimed at correcting, as much as possible, the long-term complications of chronic venous insufficiency. Compression therapy is considered the standard of care for treating venous hypertension and venous ulcerations. **It is essential to make sure that there is adequate circulation to the legs before using compression bandages.**

Symptoms commonly seen with venous insufficiency include:

- swelling in the lower legs, feet and/or ankles
- skin ulcers that won't "go away" or heal
- brown or red skin discoloration

- rough, dry, scaly skin on your legs
- severe itching, leading to scratching and skin surface injuries

Significant edema due to chronic venous insufficiency



Skin changes due to chronic venous insufficiency



Venous hypertension causing venous leg ulcers



Venous leg ulcers are a serious complication of venous hypertension. These wounds have a high rate of recurrence. Compression therapy is considered the standard of care for treating venous hypertension and venous ulcerations.

What causes Venous Insufficiency?

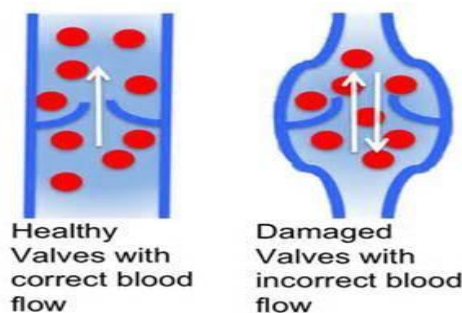
The venous system comprises of several components that work together to return blood to the heart. They are:

1. Veins (superficial, perforator and deep):

Superficial veins act as a collection system returning blood via small perforator veins back to the heart through the deep veins, which lie within muscle and fascia.

2. One-way valves:

- Veins have thin muscular walls that easily dilate to accommodate venous blood and one-way valves that prevent backflow (reflux).
- The valves in the veins comprise of two thin flaps of tissue attached to the vein walls.
- When the leg muscles contract blood is pushed along the vein from distal to proximal, i.e. from the leg towards the heart, and the flow of blood pushes the flaps to the side and opens the valve.
- When the leg muscles relax, gravity causes the blood to flow backwards down the vein. This closes the valve and prevents the blood moving back into the next section of vein.
- When the leg muscles contract again, the pressure on the blood in the vein opens the valves to allow blood to flow towards the heart.



Venus pressure changes with posture:

As a person rises to a standing position from lying down, the pressure within the venous system increases considerably. This is due to gravity, which causes blood to accumulate in the lower extremities.

Calf and foot pump mechanisms:

- Venous circulation is assisted by the action of foot and calf muscles acting as “pumps” squeezing the blood back to the heart via contraction (muscle systole) and relaxation (muscle diastole). Flexing the foot or calf muscles propels the blood to the heart and the one-way valves prevent reflux.
- As the person moves during exercise, the pumping effect of the calf muscles in a healthy leg considerably reduces the pressure in the venous system by encouraging blood flow out of the legs. When the person stops walking, the pressure rises again.

- If your patient/client is diagnosed with venous insufficiency and swelling / leg ulcers are present, treatment recommendations may include:
- Instruct your client/patient to elevate his leg(s) whenever possible, preferably higher than the level of the heart.
- If the client/patient has decreased mobility encourage the patient to preform “**ankle pumps**” (client/patient flexes and extends their ankle about 10 times every 2 hours) which will activate the calf muscle pump to help return blood up towards the heart.

INDICATIONS for Compression Therapy:

Lymphedema:

Lymphedema is an abnormal collection of protein-rich fluid in the interstitial tissue resulting from obstruction of lymphatic drainage.

Lymphedema is a chronic disease needing life-long treatment.

Among the different therapeutic modalities, compression is the single most important element of treatment for both the initial phase of decongestion (DLT) as well as for long-term maintenance.

Compression is vital in order to get the most effective clinical and cost effectiveness outcome of treatment and helping patients to maintain function and have improved appearance.

Management by proper compression may be supplemented with other treatment modalities including skin care, exercise and manual lymphatic drainage but must never be replaced by any other method.



Examination in a patient with lymphedema may reveal the following findings:

1. Pitting edema of the affected area most commonly in the distal extremities; over time, radial enlargement of the area, progressing to a non-pitting edema. This may or may not be tender.

2. Erythema of the affected area and thickening of the skin (woody edema).
3. Elephantiasis nostra verrucosa (with long-term involvement): An area of cobble-stoned, hyperkeratotic, papillomatous plaques most commonly seen on the shins; the plaques can be covered with a loosely adherent crust, can be weepy or oozing a clear or yellow fluid, and/or can have a foul-smelling odor
4. Fissuring, ulcerations, skin breakdown, and lymphorrhea.

Types of Lymphedema

Primary lymphedema is a form of lymphedema which is not directly attributable to another medical condition. It can be caused by congenital disease or primary abnormality of the lymphatics and can present at birth, early or late in life.

Secondary lymphedema is a condition characterized by swelling of the soft tissues in which an excessive amount of lymphatic fluid has accumulated. A medical condition contributes to the lymphedema, such as the removal of lymph nodes during various cancer surgeries, especially for breast and prostate cancers. Secondary lymphedema may also be caused by trauma, and venous disease. Lymphedema can also occur in people who are morbidly obese.



Chronic edema: a broad term used to describe edema of greater than 3 months' duration, where normal lymphatics have failed to remove the overload of tissue fluid; primarily caused by other pathologies. (i.e. diuretics do not work)

Lipedema: Lipedema is a condition characterized by swelling and enlargement of the lower limbs due to abnormal deposition of subcutaneous fat. Lipedema is an under-recognized condition, often misdiagnosed as lymphedema or dismissed as simple obesity. Lipedema generally thought to be a genetic condition. Lipedema appears to be a condition almost exclusively affecting females. Lipedema is an entity distinct from obesity, but may be wrongly diagnosed as primary obesity, due to clinical overlap. This condition is associated with pain, tenderness, and easy bruising in affected areas. Elevating the limbs has no effect on the involved limbs.



The Goal of compression therapy in Lymphedema:

The objective of compression therapy in the management of lymphedema is to reduce swelling by applying external compression to the limb, facilitating limb function and shape improvement by softening subcutaneous tissues. There is no drug alternative.

CONTRAINDICATIONS for compression therapy:

Severe peripheral artery disease — prior to using compression therapy, it is important to confirm that the condition is due to chronic venous insufficiency rather than ischemia, or of mixed origin. In patients with non-palpable pulses or risk factors for peripheral artery disease (PAD), vascular evaluation including ankle-brachial Pressure index (ABPI) should be performed. Patients with an abnormal ABPI or symptomatic PAD and venous ulcers should be referred to a vascular specialist for evaluation and decision-making regarding wound care, since compression therapy in patients with significant PAD may lead to complications. Skin necrosis and, in a few instances, amputation have occurred as a result of inappropriate compression therapy.



Ankle-Brachial Pressure Index

- The Ankle-Brachial Pressure Index (ABPI) measures the resting blood pressure at the ankle compared to the blood pressure in the arm.
- This index provides a measurement of the severity of the peripheral arterial disease.
- Only specially trained individuals can complete this diagnostic procedure.
- In PAPHR patients are referred to the Community Clinic or Home Care for ABPI unless they are diabetic, in which case they are referred to a vascular surgeon.
- Compression cannot be applied before an ABPI is completed and/or client consult to a vascular surgeon has occurred.
- The patient must have had a previous ABPI that is in the acceptable range for the prescribed compression therapy /or the patient has been assessed by a vascular surgeon who has ordered the compression therapy.
- The ABPI should be current at least in the previous 6 months.
- Multi-layer compression bandaging will only be applied by certified Nurses and applied according to manufacturer’s recommendations
 - **An acceptable range for ABPI for compression therapy is 0.8 to 1.3** ○ **Any ABPI greater than 1.3 indicates possible problems with perfusion**

| ABPI Value | Interpretation | Type of Compression Therapy |
|-------------------|--|--|
| Greater than 1.3 | Abnormally high range Requires a TBI Contact wound clinician or vascular surgeon | Incompressible Arteries |
| 1.0 – 1.3 | Normal Range | High Compression |
| 0.8 – 0.99 | Borderline to Mild Obstruction from Peripheral Arterial Disease | High Compression |
| 0.71 – 0.79 | Mild to Moderate Obstruction from Peripheral Arterial Disease Contact wound clinician or vascular surgeon | Modified Compression |
| Less than 0.7 | Mild to Moderate Obstruction form Peripheral Arterial Disease | Contra – indicated unless ordered by specialist |

Level of compression should never be solely based on ABPI results, which may be inaccurate due to clinician/ technician knowledge and experience, presence of diabetes, renal disease, atherosclerosis, significant lower limb edema and client's insight into current health and overall health history.

Toe Brachial Index

- A Toe Brachial Index (TBI) is performed when the Ankle Brachial Index is abnormally high due to plaque and calcification of the arteries in the leg. This is caused by atherosclerosis and is most often found in diabetic patients.
- A normal TBI differs from a normal ABI because the normal blood pressure in the big toe (hallux) is expected to be less than at the ankle or the arm.
 - **An acceptable range for TBI for compression therapy is greater than 0.7**

| TBI Value | Interpretation | Type of Compression |
|------------------|--|----------------------|
| Greater than 0.7 | Normal | High Compression |
| 0.41 – 0.69 | Mild to Moderate Peripheral Arterial Disease | Modified Compression |
| Less than 0.4 | Sever Ischemia Contact wound clinician or vascular surgeon | Contra-Indicated |

Level of compression applied may be modified and gradually increased based on patient comfort/tolerance. Compression must always include education and timely follow up regarding compression tolerance.

Reference for Chart
Lower Extremity Wound Pathway LOWER
LEG ASSESSMENT FORM, Feb 2016.

Complications of Compression Therapy:

Most of the complications associated with compression bandaging are avoidable. Patients should be instructed to remove the bandage if numbness, tingling, or discoloration of the toes occurs and to seek medical attention if the symptoms do not immediately resolve.

Contact dermatitis — Contact dermatitis can develop from one of the components in the bandaging system in susceptible individuals.

Lower extremity ischemia and skin breakdown — Symptoms and signs of lower extremity ischemia can develop if the bandage is applied too tightly.

Skin necrosis — Excessive pressure over the instep and bony prominences of the leg and foot can cause skin necrosis. Additional padding prior to bandaging will alleviate pressure points.

Fungal infection — Accumulation of exudate from the ulcer under compression dressings can lead to foul odor and predispose to fungal infection. If the bandage becomes soaked, all occlusive and compressive dressings should be removed and any fungal rash treated to resolution before reapplication. Increasing the frequency of bandaging may help to manage the drainage.

Precautions of Compression

Acute Cellulitis — Acute cellulitis, if present, is initially treated with limb elevation and systemic antibiotics. Compression therapy is delayed until inflammation and pain subside.

Heart Failure--- Client/patients that have a history of cardiovascular disease, chronic obstructive pulmonary disease or our palliative care patients need to be assessed for signs and symptoms of Heart Failure. Exacerbation of signs and symptoms of heart failure such as sudden shortness of breath, cough, white frothy phlegm and crackles on lung auscultation could indicate that fluid is returning to quickly into the blood stream making it difficult for an already compromised heart mechanism to effectively pump this fluid to the body. In this case the MRP would be the initial consult. If the patient is a home care client, the client and their family will be taught the signs and symptoms of respiratory issues.

Application of Compression Therapy

Procedure:

Equipment:

1. Bandage scissors to remove previous multilayer compression bandages
2. Person care supplies required to wash and moisturize area to be compressed
3. Wound care supplies as required
4. Multilayer compression bandages as ordered by prescriber.

Prior to application:

1. Verify prescriber's order to confirm level of compression and frequency of change
2. Assess and manage pain as required.
3. Remove present multilayer compression bandages using bandage scissors cutting from the toes up in a zig zag pattern or unwrapping the bandages.
4. Assess skin condition.
5. Cleanse and moisturize the limb and periwound skin.
6. Obtain and document limb measurement (narrowest at ankle and widest at calf) refer to Learning Package, prior to initial application and weekly thereafter to determine when edema reduction is achieved.
7. Provide local wound care (if applicable) Multilayer compression bandages are not designed as wound dressings.

NOTE: Refer client/patient to appropriate disciplines to maximize and individualize the treatment plan to address issues that may have an impact on healing (i.e. physical therapy for mobility/gait assessment, dietician for nutrition to optimize wound healing) Attempt to control, minimize or eliminate underlying issues such as diabetes, hypertension, etc.

Maintenance Procedure: Ensure that untrained staff, the client and their family are aware of the care and management of the multilayer compression bandages.

Assessment should be performed daily by nurse or through education to client/family

1. Inspect Bandages for:
 - a. Any soak through of drainage or other moisture
 - b. Any client manipulation of the bandages (i.e. pushed down or partial removal, cutting or slippage)

2. Assess the client for:
 - a. Ongoing pain
 - b. Excessive swelling of toes or knee
 - c. Increased numbness/tingling of the feet
 - d. Unusual discoloration with unresolved pain
 - e. Exacerbation of signs and symptoms of heart failure (i.e. sudden shortness of breath, cough, white frothy phlegm, crackles, edema etc.) In this case the MRP would be the initial consult.

3. Report any abnormal findings of the inspection and assessment to the MRP, Enterostomal Therapist, and/or certified nurse

Benefits of Compression:

- Provides sustained therapeutic compression for up to 7 days.
- Clinically proven to significantly reduce slippage and improve patient's daily living activities
- Easy and fast to apply
- The compression layer is designed to be applied at full stretch, reducing application variability for consistent, reliable compression at every application
- The thin, lightweight, breathable sleeve allows patients to wear their own shoes, so they can return to their regular daily activities
- Not made with natural rubber

COBAN

Layer 1: The Inner Comfort Foam Layer

- Apply this layer with the foam side against the skin, using just enough tension to conform to the shape of the leg with minimal overlap.

- Cover the skin with as thin a layer as possible with no gaps. This is meant to protect the skin from the compression layer therefore preventing any skin breakdown.

- When skin folds (aprons) are present, use pieces of comfort foam layer folded with foam side out to separate them.
- If a wound is present, appropriate absorbent dressings are needed to manage exudate.
- There should be minimal overlap, proceed up the leg/arm in a spiral technique with just enough tension to conform smoothly along the contours. This layer should not be stretched. If the bandage spiral does not conform with minimal overlaps, the bandage may be cut to redirect the application or you may use follow the roll technique.
- Continue to cover all skin with as thin a layer as possible. Try to avoid large wrinkles that could cause skin breakdown when the compression layer is applied over top.

When wrapping lower limbs:

1. Always have the foot in a 90° in the dorsiflexed position. (Toes to Nose)
2. Start the application with a circular winding at the base of the toes, beginning at the fifth metatarsal head. Beginning at the fifth toe provides neutral, comfortable foot alignment.
3. The second circular winding should come across the top of the foot so that the middle of the bandage width approximately covers the articulating aspect of the ankle joint. Bring this winding around the back of the heel and lay it over the top of the foot where it overlaps the underlying material. Cut the wrap and gently press into place. The heel of the foot is not completely covered.
4. With minimal overlap, proceed up the leg in a spiral technique with just enough tension to conform smoothly along the contours. If the bandage spiral does not conform with minimal overlaps, the bandage may be cut to redirect the application or use the **Follow the Roll Technique**. Continue up the leg to cover all skin with as thin a layer as possible.
5. The top of the bandage should end just below the fibular head, or two fingers width below the crease at the back of the knee.
6. Apply light pressure to the comfort layer with your hands. This helps to mould the bandage to the patient. The end of the comfort foam layer may be secured with tape.

Layer 2: The Outer Compression Layer

- Apply even compression as much as possible. Even compression is best achieved when the material is applied at full stretch but this may not be indicated. It is recommended that you hold the roll close to the foot and limb throughout the application for controlled, even compression.

When wrapping lower limbs:

- 1) With the foot in a 90°dorsiflexed position, start the application with a circular winding at the base of the toes, beginning at the 5th metatarsal head.
- 2) Complete two or three **figure of eight** around the ankle ensuring that the entire heel is covered. If needed for conformability and even coverage, you may cut the compression material and proceed up the foot and leg with individual windings at 50% overlap, making sure to press and conform each subsequent layer.
- 3) Proceed up the leg with 50% overlaps, ending the application slightly below the ending of the comfort layer. This will allow the comfort layer to prevent the compression layer to make direct contact with skin preventing any skin breakdown from the compression layer.
- 4) You may also use the **Follow the Roll Technique**.
- 5) As you end the application, apply light pressure and cut off the excess material.

Apply multilayer compression bandage system as per manufactures' recommendations.

1. Basic application illustrated instructions:
<http://multimedia.3m.com/mws/media/7135680/coban-2-layer-2-layer-lite-compressionsystem-basic-app.pdf?fn=70-2010-8235-4.pdf>
2. Thin fragile leg application illustrated instructions:
<http://multimedia.3m.com/mws/media/7135690/coban-2-layer-litethin-fragile-leg-illustratedinstructions.pdf?fn=70-2010-8236-2.pdf>
3. Highly contoured leg cutting technique Illustrated instructions:
<http://multimedia.3m.com/mws/media/7135700/coban-2-layer-cutting-technique-illustratedinstructions.pdf?fn=70-2010-8237-0.pdf>
4. Highly contoured leg follow the roll illustrated instructions:
<http://multimedia.3m.com/mws/media/7135710/coban-2-layer-follow-the-roll-techniqueillustrated-instruction.pdf?fn=70-2010-8238-8.pdf>
5. Full leg application:
<http://multimedia.3m.com/mws/media/9174730/coban-2-layer-compression-sys-full-legapplication-instructions.pdf?fn=70-2011-5425-2.pdf>

Follow the Roll technique:

Many patients have extreme leg contours and a traditional spiral wrap is difficult to achieve. In cases such as these the wrap may be applied in a **Follow the Roll Technique**. With minimal overlap, and with just enough tension to conform smoothly along the contours, wind the bandage around the ankle and proceed up the leg applying the layer in the direction the roll takes you. The top of the bandage should end just below the fibular head, or two fingers width below the crease at the back of the knee. Bring the

bandage back down the leg to cover all areas of the skin. To ensure as thin a layer as possible, try to minimize the areas of overlapped material. This technique can be used with both the comfort layer and the outer compression layer.

See hyperlink below:

http://solutions.3mcanada.ca/3MContentRetrievalAPI/BlobServlet?lmd=1326386194000&locale=en_CA&assetType=MMM_Image&assetId=1319218515316&blobAttribute=ImageFile

TIPS FOR USING COMPRESSION THERAPY

Ensure compression over the calf muscles: It is tempting to slacken the bandage when ascending the leg to achieve graduated compression. However, this is not necessary as the pressure will naturally be lower because of the increased circumference of the calf. As the calf muscle pump is responsible for a significant proportion of venous return from the leg, it is important to ensure that sufficient pressure is applied over the calf muscles.

Use extra padding if required: Additional padding may be required beneath a compression therapy system to adjust shape and protect an area at risk of pressure damage or to manage excessive exudate.

Ensure good skin care: Although compression therapy is the mainstay of treatment, it should be combined with good lower limb skin care and advice regarding limb elevation. The limb should be cleansed and dried in-between treatments. A full visual assessment needs to be completed to ensure that there is no skin breakdown. Moisturize skin with baza cleanse and protect prior to applying coban wrap.

Patient safety alert: *It is important to apply the compression layer in a spiral technique and not circular. Any circular application of the compression layer could cause a tourniquet effect cutting off valuable circulation to the affected limb*****

Removal of Compression Bandage

Compression Therapy products may be removed with bandage scissors using a zig/zag technique cutting from the foot upwards. Apply moisturizing lotion to the bandage scissors to help ease cutting. Do not use regular scissors with a pointed end – the risk of injury to the client is high and may result in a wound, puncture or leaking lymphatic fluid. The client, nurse or trained care giver can also remove the compression layer by unwrapping.

Measuring limbs:

Limbs should be measured at onset of compression treatment and then every week following until the limb has reached the optimum size and a compression garment can be ordered.

Leg measurements: Requires an ankle measurement and a calf measurement



Place the measuring tape 5cm above the medial malleolus and _____ cm up from the heel.

Write this measurement down and label it as **“ankle measurement”**.



Measure the largest part of the calf. You may need to search for the largest part of the calf by measuring above and below the middle of the calf; the objective here is to get the largest measurement. Write this measurement down and label it as **“calf measurement”**.

It is recommended to mark the leg with a non-permanent, non-toxic marker at each circumferential measurement made.

If the affected leg is unusually shaped, the positions of the circumferential and length measuring points should be taken on the unaffected leg first. This technique helps to identify the position of these points on the affected leg.

Arm measurements:



Wrist measurement:

This is the point of greatest compression and therefore a very important point. Place the measuring tape at the narrowest part of the wrist, at the transition from the hand to the forearm and measure the circumference.

Elbow measurement:

Measure the largest part around the elbow with the arm slightly bent; the objective here is to get the largest measurement.



Upper arm measurement:

This measurement is taken around the upper arm in the axillary fold.

Compression Garments

3M™ Coban™ 2 Layer Compression Therapy is a short term therapy to get the swelling down and then the patient should be graduated to another form of fitted compression garment.

Once your patients affected limb is at its optimum size make arrangements for occupational therapy to measure for a custom fitted garment. Compression therapy is for life.



Compression Bandage Therapy – Coban Application and Maintenance

Learning Package - Quiz

Name: _____ Facility: _____ Date: _____

- 1) Compression therapy is the mainstay treatment for the management of: **(circle correct answer)**
 - a) Cardiovascular disease
 - b) Chronic obstructive pulmonary disease
 - c) Venous and lymphatic disease
 - d) Peripheral arterial disease

- 2) A healthy venous system is dependent on the action of the ankle, calf and foot muscle pumps and competent valves to prevent backflow of blood. (Circle) True or false?

- 3) Measuring a patient's ABPI helps to determine their suitability for compression therapy. (Circle) True or false?

- 4) What is considered to be the normal range for an ABPI? _____
- 5) When compression is applied to both limbs it can increase cardiac output. **(Circle)** True or false? What type of patient must we use caution with when applying compression wrapping and what would be signs and symptoms to watch for? _____

- 6) You have a patient with mobility issues wearing 3M™ Coban compression wraps. Why would you instruct this patient to perform “ankle pumps”?

- 7) When applying 3M™ Coban compression wraps, in what position does the patient need to hold their foot? _____
- 8) When applying the outer compression wrap (not the comfort layer) to the foot and heel you need to completely cover the heel. In what configuration do you wrap the 3M™ Coban around the ankle to obtain the heel coverage?

- 9) Multilayer compression bandaging needs to be applied for what length of time? **(circle all the correct answers)**
- (a) 6 weeks
 - (b) Until ulcer is healed
 - (c) Until edema is reduced
 - (d) For life
- 10) Benefits of compression therapy are: **(circle all the correct answers)**
- a) Improves venous and lymphatic return to the heart
 - b) Reduces edema
 - c) May help blood clots from forming in the deep veins
 - d) Helps relieve symptoms and prevent problems caused by varicose veins, skin ulcers, and deep vein thrombosis
- 11) Your patient has venous stasis disease and has been treated for a venous ulcer in the past. Today your patient reports he stopped wearing his compression garments a week ago because he has been

problem free for more than a year. Is it appropriate for this patient to stop wearing his compression garments given that he has had no problems for more than a year? **(Circle)** True or false?

References:

1. Government of Saskatchewan Lower Extremity Wound Pathway, LOWER LEG ASSESSMENT FORM, Feb 2016. For further information refer to:
<http://www.sasksurgery.ca/provider/lowerextremitywound.html>
2. Edema grading scale: **Source:** Guelph General Hospital Congestive Heart Failure Pathway 1Zierler RE, Sumner DS, "Physiologic Assessment of Peripheral Arterial Occlusive Disease", Chapter 6 Vascular Surgery 4th Edition 1:85-117 WB Saunders CO., Orlando FL 1995
3. Up to Date: Compression therapy for the treatment of chronic venous insufficiency: Best Practice for the Management of Lymphoedema - 2nd edition Published by:
The international Lymphoedema Framework in association with the World Alliance for Wound and Lymphoedema Care, June 2012
4. Best Practice for the Management of Lymphoedema - 2nd edition CHAPTER 2 An overview of the science behind compression bandaging for lymphoedema and chronic oedema;
5. Hugo Partsch MD (2019). Importance of adequate pressure in compression therapy : Basis for successful treatment. *Hautarzt* 70(9):707-714
6. Lisa MacGregor (2013). Principles of compression in venous disease: a practitioner's guide to treatment and prevention of venous leg ulcers. *Wounds International*,
7. Christine Moffatt () 3 M™ Coban™ 2 Layer Compression Therapies. Therapy for edema including venous insufficiency and lymphedema: Application and Removal Techniques.
http://solutions.3mcanada.ca/wps/portal/3M/en_CA/SkinandWound/Home/

Competency Checklist Compression Therapy

Date _____

Assessor: _____

Name: _____

| Criteria | Coban 2 |
|---|---------------------------|
| Describes the purpose of compression therapy. | |
| Describes the components of the assessment that must be completed prior to compression therapy. | |
| Identifies the contraindications for applying compression therapy. | |
| Completes a Basic Lower Limb Assessment: <ul style="list-style-type: none"> • Describes the assessment parameters and the implications for practice. • Identifies when an advanced lower limb assessment must be carried out. | |
| Understands that an order from a Physician / NP or direction from a Wound Clinician is required prior to applying compression therapy. | |
| Adequately prepares the client and the environment for compression bandaging. | |
| Provides education for the client and/or family. <ul style="list-style-type: none"> • Understands the role that education plays in promoting adherence to compression therapy. | |
| Applies compression therapy according to the product information sheet for those products commonly used in the clinical setting. | |
| Describes the follow-up required for clients receiving compression therapy. | |
| Assesses the lower leg for improvement or deterioration and for problems associated with compression therapy. <ul style="list-style-type: none"> • Describes how to evaluate that the compression therapy is effective. • Describes the problems associated with compression therapy. | |
| Competency Achieved | Yes No Needs Review |

| | |
|----------|--|
| Comments | |
|----------|--|

Assessor Signature: _____