Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg
Caring for Health / À l'écoute de notre santé

Shared health Soins communs Manitoba

Indications & Application of Elasticized Tubular Bandages (ETBs) for Lower Extremity Compression

Quick Reference Guide

Situation

Goal of this document: To provide practice direction for:

1. Initiation of compression for underlying conditions requiring compression e.g. venous insufficiency with or without ulcers, lymphedema, or postural hypotension.
2. Use of ETBs as an alternative to compression systems (e.g. Coban™ 2)
3. Increasing tolerance to compression in order to progress to higher levels of compression

Background

What are Elasticized Tubular Bandages (ETBs)?

ETBs provide a range of compression levels when applied to a limb. Often known by tradenames.

What is compression therapy?

Compression therapy improves venous return and reduces edema by partially compressing incompetent valves and/or superficial veins. ETBs optimize venous return by reducing the diameter of the blood vessels.

What assessment is required?

A lower leg assessment must be conducted to determine etiology of limb pathology and to rule out the presence of arterial disease, prior to the application of ETBs.

Who can initiate compression therapy with ETBs?

If lower leg assessment determines the etiology of limb pathology and rules out the presence of arterial disease Health Care Professionals (Nurses, Physicians, Nurse Practitioners, Occupational Therapists, Physiotherapists, Physician's Assistants) can initiate low to medium levels of compression therapy (5-20mmHg range).

How is low-medium level compression therapy achieved with ETBs?

Low to medium level compression is achieved using ETB in a single layer. Refer to Appendix B to determine level of compression based on the largest circumference of the limb and use of appropriate sizing guide for the product and level of compression.

Are Prescriber's orders required?

Prescribers orders are not required to initiate low to medium compression (5-20mmHg range)., an Ankle Brachial Pressure Index (ABPI) is not required to initiate ETBs.

For Compression levels higher than 20mmHg consult an Advanced Wound Care Clinician or refer for Vascular Assessment.

Assessment

How to initiate ETBs for Lower Extremity

1. Complete Lower Leg assessment. Use lower leg assessment in Appendix A to determine etiology of limb pathology and to rule out the presence of arterial disease.
2. Determine level of compression (low to medium) by measuring the calf at the widest point and using the chart and measuring guide in Appendix B.
3. Legs should be washed with warm water with pH balanced soap or a skin cleanser. Apply lotion to skin avoiding wound if present.

Application of ETBs

The correct application of ETB is from 2 fingers behind the back of the knee to the metatarsophalangeal (MTP) joints of the toes (toes can be exposed). See Appendix B.

Wearing Schedules and Care

1. ETBs can be worn 24 hours a day in the following circumstances:
    - when wound is present (replace when soiled or every 72 hours)
    - when wound has infection to allow lower level of compression and access to wound
    - for patients, residents and clients who sleep sitting up in a chair
    - when lymphedema is present
2. ETBs can be washed with mild soap and air dried up to 20 times.

Activity and Leg Elevation

Ambulation is encouraged followed by leg elevation during periods of rest.

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Appendix A

Lower Leg Assessment

Underlined words are defined on Page 5

Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg — *Caring for Health* / *À l'écoute de notre santé*	Name:	
	Address:	
Date of assessment:	DOB:	
Location of assessment:	Manitoba Health #	PHIN

Signs & Symptoms	Venous	Right	Left	Arterial	Right	Left
Temperature	Warm to touch			Cool in warm environment		
Colour	Hemosiderin staining (red/brown)			Dependent rubor		
	Redness			Pallor on elevation		
Pain	Heavy, aching legs			Nocturnal		
	On deep palpation			At rest/with legs elevated		
	Relieved with elevation			When walking		
Skin changes	Thickened skin			Shiny taut skin		
	Lipodermatosclerosis (woody fibrosis)			Less hair/hairless		
	Atrophie Blanche			Gangrene		
	Stasis dermatitis					
Nails				Fungal nails		
Capillary refill	3 seconds or less			Greater than 3 seconds		
Pedal Pulses	Palpable Dorsalis Pedis			Diminished/absent Dorsalis Pedis		
	Palpable Post. Tibial			Diminished/absent Post. Tibial		
	Pitting			Minimal		

Edema	Non-pitting			No edema		
Wound	Gaiter area			Bony prominences		
Other symptoms (describe)						

Etiology	Venous ☐		Arterial ☐		Mixed Arterial/Venous ☐	
Health History	**Hx associated with Venous Disease (√ all that apply)**		**Hx associated with Arterial Disease (√ all that apply)**			
	☐	Family history of leg ulcers	☐	L/E Arterial Disease	☐	Rheumatoid Arthritis
	☐	Varicose Veins	☐	Intermittent Claudication	☐	Renal Disease
	☐	DVT Affected Leg	☐	Vascular Surgery L/Es	☐	Vasculitis
	☐	DVT Unaffected Leg	☐	Rest Pain/night pain	☐	Hypercholesterolemia
	☐	Venous surgery	☐	Hypertension	☐	Ulcerative Colitis/IBD/Crohn's
	☐	Injection Sclerotherapy	☐	CHF	☐	Current Smoker: #cigarettes/day
	☐	Trauma/Fracture of leg(s)	☐	MI	☐	Past Smoker Quit when? _____
	☐	Pulmonary embolism	☐	Angina	☐	Previous vascular procedure
	☐	Pregnancies # _____	☐	CVA/TIAS	☐	Obesity
	☐	Osteoarthritis	☐	Diabetes	☐	Hx of Atherosclerosis
	☐	Phlebitis	☐	**None of the above**	☐	
	☐	**None of the above**	☐		☐	
History of Leg Ulcers	Have you had leg ulcers before this one? ☐ Yes ☐ No Year of first occurrence _____ Have you been treated with compression bandaging before? ☐ Yes ☐ No					

Recommendations:

_____

_____

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_____

Signature: _____ **Date:** _____

Definitions

Atrophie Blanche: A common clinical with leg ulcers, as consequence of venous hypertension. It presents as atrophic porcelain satellite scars with peripheral telangiectasia (spider veins) and hyperpigmentation. Capillaries are virtually absent in areas of the scars.

Dependent Rubor: Dependent rubor is a fiery to dusky-red coloration visible when the leg is in a dependent position but not when it's elevated above the heart. In dark skin, there is a change in colour to the extremity when leg is dependent. The underlying cause is peripheral arterial disease (PAD), so the extremity is cool to the touch.

Gaiter Area: The area extending from just above the ankle to below the knee.

Hemosiderin Staining: Dark purple or rusty discoloration of the lower legs caused by chronic venous disease. When vein valves fail, regurgitated blood forces red blood cells (RBCs) out of capillaries. Dead RBCs release iron, which is stored in tissues as hemosiderin, staining the skin.

Lipodermatosclerosis: The cause is probably multifactorial, involving tissue hypoxia and leakage of proteins into the interstitial space. Recurrent ulceration and fat necrosis is associated with lipodermatosclerosis. In advanced lipodermatosclerosis the proximal leg swells from chronic venous obstruction and the lower leg shrinks from chronic ulceration and fat necrosis resulting in the inverted champagne bottle appearance of the lower leg.

Stasis Dermatitis: Erythema and scaling that can vary from subacute, acute, to chronic inflammation. Cellulitis like symptoms occur from chronic inflammation which causes red cyanotic-looking plaques. The skin becomes thickened has a bumpy cobblestone like appearance.

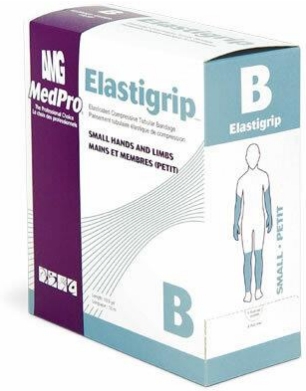
Appendix B

Measuring for Elasticized Tubular Compression

Elastigrip®

NOTE: Elastigrip® has latex and applied in a single layer.

Compression with Elastigrip®			
Elastigrip	LOW (5-10mm Hg)	MEDIUM (10-20mmHg)	**SAP#**
Size	Circumference of calf at widest point (cm)		
A	5.0-6.0	6.5-7.5	210432
B	6.5-7.5	8.0-11.5	210433
C	8.0-11.5	12.0-20.5	288916
D	12.0-20.5	21.0-31.5	210431
E	21.0-31.5	32.0-41.0	204157
F	32.0-41.0	41.5-49.5	210434
G	41.5-49.5	50.0-57.5	210435
J	58.0-66.5	67.0-82.5	300424
K	67.0-82.5	83.0-90.0	300425
L	83.0-90.0	90.5-102.0	300426
M	90.5-102.0	102.5-112.0	300409



Measuring for Elasticized Tubular Compression

SurgiGrip

NOTE SurgiGrip does not have latex and is applied in a single layer giving 8-12mmHg.

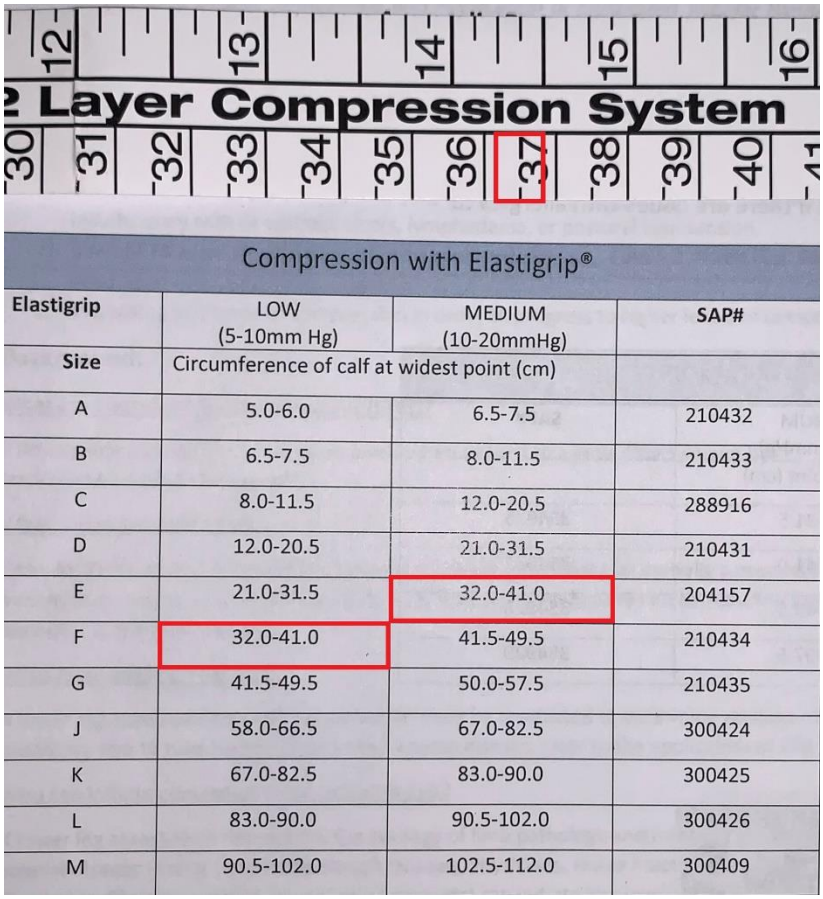
SurgiGrip is not on contract but is available if there are issues with allergies to latex, so is only available in limited sizes.

Compression with SurgiGrip			
SurgiGrip	LOW (5-10mm Hg)	MEDIUM (10-20mmHg)	**SAP#**
Size	Circumference of calf at widest point (cm)		
D	12.0-20.5	21.0-31.5	354925
E	21.0-31.5	32.0-41.0	354927
F	32.0-41.0	41.5-49.5	354928
G	41.5-49.5	50.0-57.5	354929

Measuring for Elasticized Tubular Compression

1. Measure the circumference of the calf at widest point in centimeters (cms) using a disposable measuring tape

2. Select the size (letter) based on desired level of compression



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3. Measure length from foot to heel to knee (must fit from base of toes to 2 cm below the knee)

4. Wash and moisturize legs between applications

5.ETBs can be applied over dressings