

Control of Venous Leg Edema

Compression Systems*

Type	Alternate Name	Static Stiffness	Compression	
			Resting	With Activity
•Long Stretch	•Elastic	•Low	•High	•Lower
•Short Stretch	•Inelastic	•High	•Low (support)	•Higher

Inelastic Compression Systems for Active Reduction of Leg Edema*

Sub-bandage Pressure	Characteristics	Examples
•Low to Moderate 15 – 25 mmHg	•Zinc oxide paste bandage ± gauze	
•Low to Moderate 15 – 25 mmHg	•Padding plus flexible cohesive; has moderate stretch	
•Moderate 20 – 25 mmHg	•Foam comfort layer plus inelastic cohesive (light)	
•Moderate 20 – 30 mmHg	•Zinc oxide paste bandage ± gauze + flexible cohesive	
•Moderate – High	•Padding plus inelastic bandage, washable and reusable	
•Moderate – High	•Velcro system (can be used for prevention as well)	
•High 40 mmHg	•Foam comfort layer plus inelastic cohesive	
•High 40 mmHg	•Four-layer bandage (mixed system) (The friction between layers in the four-layer system may make it more rigid and less elastic.)	

Note: While cohesive bandages do have some stretch they are best considered to be inelastic systems. Sub-bandage pressure in modified systems can vary depending on the material of the bandage and, most importantly, the technique of the bandager.

Elastic Compression Systems for Active Reduction of Leg Edema*

Sub-bandage pressure	Characteristics	Examples
•High 40 mmHg	•Padding plus high-quality elastomer with application guide; washable and reusable	

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*** Caution:** Prior to the application of compression, patients must have a complete health assessment to rule out any contraindications to therapy. As well, since patient's health status is dynamic, a regular assessment should be completed to rule out contraindications for compression. Contraindications include arterial disease with an ABPI < 0.5 – 0.8, extensive thrombophlebitis and non-controlled hypertension.

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Compression Garments for Maintenance and Prevention of Leg Edema* (American Classification)

(Compression therapy is augmented by ensuring the patient has an effective calf-muscle pump and gait.)

Class	Pressure	Indications for Use	Examples
	15 – 20 mmHg	<ul style="list-style-type: none"> Tired, achy feet and legs; slight edema; for airline travel Spider veins, early varicose veins 	
I	20 – 30 mmHg	<ul style="list-style-type: none"> Varicose veins, mild edema Deep vein thrombosis (DVT) prevention 	
II	30 – 40 mmHg	<ul style="list-style-type: none"> Moderate varicose veins, mild edema Prevention of venous ulcer recurrence Lymphedema (but higher pressure is better) 	
III	40 – 50 mmHg	<ul style="list-style-type: none"> Severe varicose veins Prevention and treatment of venous leg ulcers Lymphedema Postphlebotic limb Chronic venous insufficiency (CVI) 	
IV	50 – 60 mmHg	<ul style="list-style-type: none"> Lymphedema 	

Calf-Muscle-Pump Activation

Device	Action	Indications for Use	Examples
Neuromuscular electrical stimulation	<ul style="list-style-type: none"> Stimulates the peroneal nerve Promotes muscle contraction and improved venous return 	<ul style="list-style-type: none"> For persons unable to activate the calf-muscle pump 	
Intermittent pneumatic compression (IPC)	<ul style="list-style-type: none"> Provides gradient, intermittent, pneumatic compression Activates the calf-muscle pump 	<ul style="list-style-type: none"> For use in immobile patients or patients unable to activate their calf-muscle pump 	
Resistance-band exercises	<ul style="list-style-type: none"> Supports resistance exercises Bands come in different colours to indicate strength of resistance Usually used in conjunction with compression 	<ul style="list-style-type: none"> Allows persons to strengthen the calf-muscle-pump action through dorsi- and plantar-flex exercises 	

Non-device-related Strategies

Strategy	Action	Indications for Use	Approach
Regular walking	<ul style="list-style-type: none"> Uses the calf-muscle pump 	<ul style="list-style-type: none"> For persons with the ability to ambulate, provided they have an effective gait; if not, a gait assessment and adjustment are required (see below) 	<ul style="list-style-type: none"> Rx for regular exercise plan
Effective ambulatory gait pattern	<ul style="list-style-type: none"> Provides an effective heel-toe gait Maximizes the actions of the calf-muscle pump Usually used in conjunction with compression 	<ul style="list-style-type: none"> For persons with a shuffle or ineffective gait that does not engage the calf-muscle pump 	<ul style="list-style-type: none"> Physical therapy consult
Leg elevation	<ul style="list-style-type: none"> When sitting or lying keep legs above heart level 	<ul style="list-style-type: none"> For persons not wearing compression garments For persons with achy, heavy legs 	<ul style="list-style-type: none"> Plan several times during the day to support venous return
Skin care	<ul style="list-style-type: none"> Regular skin care with a pH-balanced soap Application of non-allergenic emollient 	<ul style="list-style-type: none"> For persons wearing compression bandages or compression garments 	<ul style="list-style-type: none"> Perform before new compression bandage applied or if wearing compression garments Perform before going to bed