

# Chronic Venous Insufficiency, Lymphedema, Phlebo-Lymphedema-

## Advantages of multilayer compression bandaging: A novel approach using edema wear & foam base dressing

### Background

**Lymphedema** - accumulation of protein-rich fluid in the interstitial space due to a imbalance of net ultra-filtration at the capillary level.

**Chronic Venous Insufficiency** results from failure of the venous valves to transport blood to the heart from the lower extremities.

**Phlebo-lymphedema** is due to insufficiency of the venous or lymphatic system (or both), in combination with possible systematic contributors, leading to accumulation of protein-rich fluid in the interstitial space. Damage to the Lymphatic System can also lead to:

- Disruption in normal flow of lymph resulting in an accumulation of high protein edema in the interstitial tissue
- Failure of lymphatic drainage from tissue
- If left untreated causes chronic inflammation and reactive fibrosis of affective tissue

### Venous Ulcer Characteristics

#### *Cause*

- Incompetent venous valves create lower extremity edema due to increased venous hypertension resulting in ulceration.

#### *Location*

- Gaiter area: extending from just above the malleolus to below the knee. Tends to occur on both lateral and medial aspects of the leg.

#### *Ulceration Appearance*

- Taut, brawny
- Weeping/blistering
- Hemosiderin staining
- Venous eczema/stasis dermatitis

#### *Exudate*

- Moderate to heavy drainage
- Maceration of skin

#### *Pain*

- Mild to moderate

### Case Description #1

Patient is a 67-year-old African American Male, with a 30 year history of swelling in the legs, (right > left) after MVA in 1989 resulted in right lower extremity (LE) rod placement. For past 15 years, LE wounds opening and closing (right > left) requiring frequent Wound Care Center visits. Patient resides in a rehab facility and referred to outpatient physical therapy (PT) for lymphedema and wound care management.

Complex medical history includes: Right LE fracture with rod placement, septic shock, atrial fibrillation, Tardive Dyskinesia, cellulitis, ischemic cardiomyopathy (EF 35%), chronic acquired lymphedema

#### **Intervention:**

- Complete Decongestive Therapy (CDT)- gold standard of care for lymphedema
- Super Absorbent Wound Dressing
- Foam Based Dressings (Dermablue)
- Non-Adhesive Dressings
- Edema Wear (Size Large progressing to Medium)



### Case Description #2

Patient is a 74-year-old Caucasian male with a 25 year history of LE swelling and complex medical history including Lymphedema. Presented to outpatient PT with significantly draining partial thickness wounds, peri-wound maceration with skin fragility, and hyperkeratosis from the toes and lower legs.

Patient recently ruled out for cellulitis and finished preventative antibiotics. Patient stopped wearing compression garments when legs started weeping, resulting in worsening edema.

#### **Intervention:**

- Complete Decongestive Therapy (CDT)- gold standard of care for lymphedema
- Super Absorbent Wound Dressing
- Foam Based Dressings (Dermablue)
- Non-Adhesive Dressings
- Edema Wear (Size Large progressing to Medium)



### Purpose

The purpose of the cases is to demonstrate:

- Advantages/positive effects of multilayer compression bandaging
- Positive effects of edema wear/fuzzy whale and wound healing
- Healing response of wound dressings in combination with edema wear and multilayer compression bandaging

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### Outcomes

Limb	Evaluation Limb Volume (mL)		Discharge Limb Volume (mL)		Evaluation Wound Measurement (cm)		Discharge Wound Measurement (cm)	
	Left	Right	Left	Right	Left	Right	Left	Right
Case #1	13,772.12	17,214.91	13,151.98 (↓ 8.33%)	16,475.46 (↓ 9.04%)	Length: 30 Width: 25 Depth: 0.2	Length: 38 Width: 30 Depth: 0.2	Healed	Healed
Case #2	18,470.33	17,767.44	11,466.85 (↓ 35.46%)	12,295.01 (↓ 33.43%)	Length: 35 Width: 40 Depth: 0.2	Length: 35 Width: 40 Depth: 0.2	Healed	Healed

In both cases:

- Wounds healed in under 7 months
- Able to transition from multilayered compression bandaging to Foam Based Compression Garments
- Required education on importance of skin care, donning and doffing compression garments, and maintenance of limb volume reduction to maintain results