



# Clinical Guidelines: Venous Leg Ulcers

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**SerenaGroup**  
Building the Nation's Leading Wound Care Team

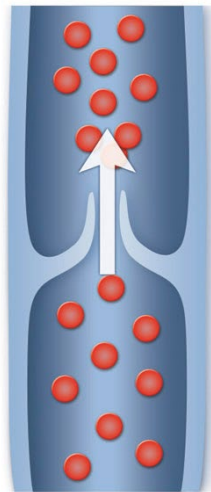
# Venous Leg Ulcer (VLU) /Stasis Ulcer

- **venous ulcers** are generally irregular, shallow, and located in the gaiter region of the leg, above the malleolus to 1” below the knee. Granulation tissue and fibrin are typically present in the ulcer base.
  - Associated findings: lower extremity varicosities, edema, venous dermatitis, and lipodermatosclerosis. Venous ulcers are usually recurrent, and an open ulcer can persist for weeks to many years
    - 3.6% of people over 65yr have a VLU

# Venous System

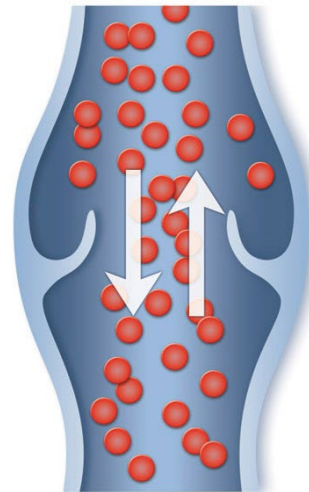
- Deterioration of the valves in the venous system, particularly in the lower extremities, causes backflow. This results in blood pooling in the veins, followed by swelling and the development of an ulcer

Healthy Vein Valve



Healthy valves keep blood moving in one direction

Diseased Vein Valve



Diseased valves cause blood to move in both directions, elevating venous pressure

# Risk Factors

- Family history
- Blood clots (DVT)
- Leg injury
- Smoking
- Aging
- Obesity



# Symptoms

- Swollen, Aching, Tired or Itchy legs
- Discoloration such as red, purple or black lower extremity
- Dry or cracked (alligator) skin
- Increased pain
- Irritated rash which results in an open wound



# Diagnosis

- 20% of patients with VLU also have arterial disease
- Arterial disease must be ruled out before a treatment course can be determined
  - Pedal pulses are present ABI>0.8
  - ABI<1.0 suggests vascular disease
  - In elderly or diabetic patients with ABI>1.2, a Toe Brachial Index of >0.6 may help to suggest adequate arterial flow.
  - Non-invasive vascular studies showing waveforms are recommended

# Assessment

**Stage 1:** Edema and skin pigmentation

**Stage 2:** Edema, skin pigmentation and dermatitis

**Stage 3:** Edema, skin pigmentation, dermatitis, varicosities and ulceration

**Documentation Requirements:** wound history, recurrence and characteristics (location, staging, size, base, exudates, infection condition of surrounding skin and pain)



Class/Grade	mmHg	Compression Description
Light	8-15	This is the lightest form of compression, which is great for energizing your legs. These types of socks provide relief from tired and achy legs. They also help control minor swelling by gently enhancing circulation in the legs.
Mild	15-20	provides relief from minor to moderate swelling, aching, and varicose veins, especially during pregnancy. They are great for preventing deep vein thrombosis (or economy class syndrome) while traveling, but they're also good for anyone who stands or sits for long periods of time.
Class 1 *prescription required	20-30	offers moderate compression and can be used to treat a variety of mild to moderate conditions. This level can provide relief from varicose veins, edema, deep vein thrombosis, and post-sclerotherapy. This level is also referred to as Class I or firm compression.
Class 2 *prescription required	30-40	often prescribed to provide relief from severe edema, varicose veins, and deep vein thrombosis. They're also prescribed for post-sclerotherapy and to heal active venous stasis ulcers. This level of compression should only be worn under a doctor's supervision.
Class 3 *prescription required	40-50	This is the highest level of compression we offer and should only be worn if prescribed by a doctor. This level is typically used to treat chronic venous insufficiency and post-thrombotic syndrome.



# Compression Therapy

- Multi-layer compression wraps are the Gold Standard of compression therapy
- Custom fit stockings or Velcro wraps should be considered after failed attempts at multi-layer compression
- Pneumatic pumps may be used in conjunction with stockings or Velcro wraps or on their own if a patient cannot or will not wear appropriate compression
- Elastic, tubular devices are not considered adequate compression

\*compression therapy is contraindicated for patients with an ABI <0.7\*

# Lifelong Commitment

- After being diagnosed with venous insufficiency, patients will need to wear daily compression for the duration of their life.
  - Patient education is key in developing this mindset

Approximately 67% of patients who do not use compression hosiery experience recurrence after six months compared with only 28% of those who do use this therapy daily



# Debridement/Infection Management

- Remove necrotic, devitalized tissue by sharp, enzymatic, mechanical, biological or autolytic debridement.
  - Evidence shows that weekly debridement results in faster wound healing time with less complications
- If infection is suspected in a debrided ulcer, or if epithelialization from the margin is not progressing within two weeks of debridement and initiation of compression therapy, determine the type and level of infection in the debrided ulcer by tissue biopsy or by a validated quantitative swab technique.

# Dressing Selection

- Use clinical judgment to maintain a moist wound bed, being mindful to manage exudates and protect peri-wound skin.

**\*\*Wet-to-dry dressings do not provide a continuously moist environment and are considered an inappropriate dressing selection\*\***

**VENOUS ULCER PATIENTS ARE PARTICULARLY SUSCEPTIBLE TO CONTACT DERMATITIS RELATED TO TOPICAL THERAPIES**

- For guidance on dressing selection, please reference wound source.  
<https://www.woundsource.com/product-category/dressings>

# Surgical Intervention

- Subfascial endoscopic perforator surgery (SEPS) is a procedure to address underlying venous pathologic etiology (with or without skin grafting or use of a bilayered artificial skin)
- Less extensive surgery on the venous system, such as superficial venous ablation, endovenous laser ablation or valvuloplasty, especially when combined with compression therapy, can be useful in decreasing the recurrence of venous leg ulcers. Procedures that are less extensive than deep ligation of multiple perforating veins can help to decrease venous hypertension when combined with an adequate compression system.

# Advanced Products

- If all elements of standard wound therapy have been met, and the patient is not showing signs of improvement; consider advanced therapies such as Cultured Tissue Products.
  - Be mindful of local Medicare requirements (LCD)
  - Always follow manufacturer's instructions for use
  - Follow appropriate storage, tracking and documentation requirements
  - Follow hospital requirements for informed consent, universal protocol and personal protective equipment



# Quiz 1/3

1. Venous Ulcers are:
  - a. Prevalent in both children and adults
  - b. Generally irregular, shallow, and located in the gaiter region of the leg, above the malleolus to 1” below the knee.
  - c. Easily healed without likelihood of recurrence
  - d. Occurring in approximately 15 percent of patients with diabetes and is commonly located on the bottom of the foot
2. Symptoms of venous insufficiency include
  - a. Leg swelling, increased pain, skin discoloration
  - b. Dry/cracked skin, neuropathy, skin discoloration
  - c. Nausea, heartburn, indigestion
  - d. Mood change, insomnia, hallucinations
3. Multi-layer compression wraps provide between 25-40mmHg compression and are considered the Gold Standard of compression therapy.
  - a. True
  - b. False

## Quiz 2/3

1. Arterial disease must be ruled out for an appropriate treatment course to be developed, more so, 20% of patients with a venous ulcer also have arterial disease.
  - a. True
  - b. False
2. Wet-to-dry dressings are appropriate in the treatment of venous leg ulcers.
  - a. True
  - b. False
3. All are true about debridement of venous ulcers except:
  - a. Weekly debridements result in faster healing times
  - b. Debridement removes necrotic and devitalized tissue as well as bio burden
  - c. Debridements can be performed at home by the patient or family caregiver
  - d. Sharp, enzymatic, mechanical, biological and autolytic are acceptable methods of debridement.



# Quiz 3/3

Name \_\_\_\_\_ Date \_\_\_\_\_

1. Approximately 67% of patients who do not use compression hosiery experience recurrence after six months compared with only 28% of those who do use this therapy daily
  - a. True
  - b. False
2. 15-20mmHg compression
  - a. Does not require a Physician order
  - b. Provides relief from minor to moderate swelling
  - c. Is not adequate compression for wound healing
  - d. All of the above
3. ABI, PVR or other non-invasive vascular testing are essential for appropriate diagnosis and ability to compress
  - a. True
  - b. False
4. Compression therapy is contraindicated for patients with an ABI  $<.07$ 
  - a. True
  - b. False



The operation completed successfully.

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