

<b>Title</b>	<b>Guideline: The Management of People with Leg Ulcers</b>
<b>Background</b>	See “Guideline: The Assessment of People with Leg Ulcers”
<b>Indications</b>	This guideline is intended to be used by health care providers, to guide their management of individuals admitted with or presenting with a leg ulcer.
<b>Guideline</b>	<p><b>Healable Wounds</b></p> <ol style="list-style-type: none"> <li>1. If the wound is on a healing trajectory – based off of the health care provider’s holistic assessment and clinical judgement – cleanse the wound with an appropriate wound cleansing solution using non-touch aseptic technique. Make sure to cleanse away wound surface debris. <b>NOTE: follow the manufacturer’s instructions when using a wound cleansing solution</b></li> <li>2. Debridement of loose, non-viable tissue in the wound should be performed by a trained health care provider who has the knowledge, skill, and competency to do so. Please refer to your respective college and employer’s policies and procedures before undertaking this task. For further guidance see “Guideline and Procedures: Wound Debridement” and “Guideline and Procedure: Conservative Sharp Wound Debridement”</li> <li>3. Cleanse the wound again post debridement. Gently <u>pat</u> the wound dry with dry sterile gauze</li> <li>4. Choose an appropriate conventional moist wound dressing or combination of dressings, unless otherwise directed by a physician or nurse practitioner. Consider choosing a dressing that will: <ol style="list-style-type: none"> <li>i. Manage and/or control the wound environment by keeping the wound moist and periwound tissue dry</li> <li>ii. Eliminate dead space by loosely filling all cavities with dressing material</li> <li>iii. Avoid adhesive dressings due to the increased sensitivity of people with venous disease</li> <li>iv. Be cost effective</li> <li>v. Be comfortable to wear, not causing increased pain during wear time or on removal</li> </ol> </li> <li>5. Choose an appropriate dressing change frequency based on: <ol style="list-style-type: none"> <li>i. Your wound assessment, including the patient’s risk for infection</li> <li>ii. Dressing products used and their ability to manage the exudate</li> <li>iii. Patient’s comfort and acceptability</li> </ol> </li> <li>6. Initiate appropriate compression therapy as per the wound care specialist or prescriber’s orders. If you are uncertain about the use of compression therapy contact your wound care specialist or the patient’s primary care provider. Compression bandaging, in combination with exercise, is the treatment of choice for venous leg ulcers. <b>NOTE: Compression bandaging is an added skill for health care providers. Before completing this task ensure you have the knowledge, skill, and competency to perform this task per your respective college’s standards and your employer’s policies and procedures.</b> <b>NOTE: To prevent pressure damage in people with impaired peripheral perfusion, thin or altered limb shape, foot deformities or dependent edema, Rheumatoid Arthritis, reduced sensation, long-term steroid use, and/or loss of calf muscle pump,</b></li> </ol>



	<p><b><i>an inelastic bandaging system should be used with extra padding or foam over bony prominences, the Achilles tendon, and the tibialis anterior tendon.</i></b></p> <p>Benefits of compression therapy include:</p> <ol style="list-style-type: none"> <li>Simulation of fibrinolysis</li> <li>Removal of sodium from subcutaneous tissue and a reduction in edema</li> <li>Facilitation of fluid movement due to the pressure gradient</li> <li>Creation of an environment suitable for wound healing</li> </ol> <p><b>*Elastic bandages</b> provide compression with high pressures at rest but less with muscle contraction</p> <p><b>*Inelastic bandages</b> provide support and resistance, i.e. high pressures with exercise and minimal pressure at rest</p> <ol style="list-style-type: none"> <li>Compression bandages <b>MUST</b> be applied according to manufacturer's recommendations</li> <li>Compression hosiery should be measured and fitted by a certified fitter</li> <li>TEDS <b>DO NOT</b> provide therapeutic compression for the treatment and management of venous stasis disease, and should not be used for that purpose</li> <li>Patient and/or care giver education: <ol style="list-style-type: none"> <li>Elevate their legs above the level of their heart when they are at rest, and 2-3 times per day for up to 30 minutes, and to elevate the foot of their bed on 5cm blocks or risers if congestive heart failure is ruled out</li> <li>Avoid applying sensitizing products like lanolin, latex, perfumes, cetylsteryl alcohol and topical antibiotics to their lower legs</li> <li>Protect themselves from insect bites</li> <li>Eliminate restrictive clothing</li> <li>Sit without their legs crossed and to avoid sitting/standing for long periods</li> <li>Walk and perform active range of motion exercises of ankles regularly to increase calf muscle pump function – you may need to refer to Physiotherapy</li> </ol> </li> </ol> <p><b>Not-healing/Not-healable Wounds</b></p> <ol style="list-style-type: none"> <li>If it is determined that the wound in question is not-healing or not-healable due to intrinsic and/or extrinsic factors that are impeding healing (based off of the health care providers holistic assessment and clinical judgement) cleanse the wound with an appropriate wound cleansing solution and follow the manufacturer's instructions</li> <li><b>DO NOT DEBRIDE</b>, especially if the circulation is severely impaired and/or if the wound is covered with hard, dry eschar</li> <li>Paint and/or cleanse the wound with an antiseptic and allow the antiseptic to air dry</li> <li>Choose an appropriate non-adherent, dry, gauze based dressing or combination of, unless otherwise directed by a physician or nurse practitioner. <b>NOTE: the application of moisture retentive dressings in the context of ischemia and or dry gangrene can result in a serious life or limb threatening infection.</b></li> <li>Based on your assessment choose a dressing that will: <ol style="list-style-type: none"> <li>Promote a dry wound environment</li> <li>Minimize bacterial contamination</li> <li>Prevent strike through of exudate, while wicking moisture away from the wound surface</li> <li>Be cost effective</li> </ol> </li> </ol>
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	<p>v. Be comfortable to wear, and do not causing increased pain during wear time or on removal</p> <p>16. Choose an appropriate dressing change frequency based on:</p> <ol style="list-style-type: none"> <li>Your wound assessment - goal is to keep the wound clean, dry and free of infection</li> <li>Dressing products used and their ability to manage the exudate</li> <li>The patient's comfort and acceptability</li> </ol> <p>17. If the wound is venous in nature and is currently not-healing or not-healable, the wound care specialist or prescriber may recommend/order low compression therapy to help manage edema and help prevent the wound from getting larger</p> <p>18. If the wound is arterial in nature:</p> <ol style="list-style-type: none"> <li>A referral to vascular surgery may be placed by the primary care provider</li> <li>Support the patient to eliminate restrictive clothing and to access a supervised exercise program as tolerated – you may need to refer to Physiotherapy</li> <li>Educate the patient and/or support person(s): <ul style="list-style-type: none"> <li>Protect their extremities from heat, cold, and trauma</li> <li>Elevate the head of their bed 10-15cm to maintain lower limb position below the level of the heart for ischemic pain</li> <li>Use a bed cradle to elevate bedding off their limbs, for pain management</li> <li>Avoid constrictive activities, i.e. nicotine, caffeine, tight shoes/socks</li> </ul> </li> </ol> <p><b>Management Guidelines for ALL Leg Ulcers</b></p> <p>19. Treat the cause:</p> <ol style="list-style-type: none"> <li>Modify any identified intrinsic, extrinsic, and iatrogenic factors affecting wound healing promote healing leg ulcers or stabilization if healing is not the goal, and to prevent complications</li> <li>For heel ulcers, have the patient elevate their heels completely off the bed surface and other pressure causing surfaces, using pillows or a wedge</li> </ol> <p>20. Patient centered concerns:</p> <ol style="list-style-type: none"> <li>Manage pain through advocacy and collaboration with the patient and primary health care provider. Considerations may include encouraging the patient to take their pain medication prior to dressing change, non-pharmacological methods such as distraction/guided imagery.</li> <li>Ensure the plan of care is created with input from the patient and/or their caregiver, including their concerns, motivations, abilities and preferences for treatment</li> <li>Elevation of the head of the patient's bed 10-15cm to position their lower limbs below the level of their heart, using a bed cradle to offload the pressure of the blankets on the patient's lower limbs, and avoiding constrictive clothing and activities</li> <li>For venous 'heaviness/limb tiredness', encourage adherence with compression therapy, limb elevation above the level of the heart when resting, calf-muscle pump exercises, and walking</li> </ol>
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21. Infection control:

- a. Teach that new onset or worsening pain is a sign of infection and requires immediate medical attention  
**NOTE: Topical antimicrobials can be used to reduce bacterial burden in the presence of superficial wound infection, but never take the place of systemic antibiotics when those are needed for deeper infections**
- b. If you suspect a superficial or spreading infectious process update the primary care provider urgently
- c. If you are not sure of the nature of the infection, choose a non-occlusive dressing as the secondary dressing.
- d. Instruct the patient to attend their nearest urgent care or emergency department if there are signs of spreading infection, cellulitis, systemic involvement, or per your clinical judgement
- e. Implement strategies to prevent infection, i.e. proper hand washing and infection control measures
- f. The patient may find high compression, especially elastic systems, too painful to tolerate until the infection starts to respond to the antibiotic therapy. Do not stop compression entirely because the edema will increase as a result of the cellulitis. Instead reduce compression. Leg elevation is important

22. Management of venous stasis dermatitis:

- a. Resolution may take 2-4 weeks – follow the wound care specialist or primary care provider's instructions
- b. Avoid the use of known sensitizers in patients with venous disease, i.e. products that contain perfume, latex, dyes, lanolin or wool alcohols, balsam of Peru, cetylsterol alcohol, parabens, colophony propylene glycol, neomycin, rubber, adhesives, framycetin, or gentamycin, as these may contribute to dermatitis
- c. Systemic antibiotic therapy is not needed for acute contact dermatitis
- d. Cleanse the patient's skin gently with tap water using a mild soap, i.e. Dove Soap, rinse well, and pat dry
- e. Use moisturizers such as Glaxal Base, Cliniderm, Moisturel lotions (not creams), or plain Vaseline petrolatum to keep the skin healthy and free of dry scales. Stop if dermatitis occurs
- f. Teach that rubbing or scratching even through a bandage may increase healing time

23. Advocate for or request interdisciplinary referrals:

- a. Wound Care Specialist for conservative sharp debridement, treatment planning, adjunct therapies
- b. Physiotherapy: mobility/exercise plan, mobility/gait/range of motion assessment, adjunctive therapies for wound healing and/or neuropathic pain management
- c. Occupational Therapist: assistive devices, modifications to activities of daily living, fall risk assessment and recommendations
- d. Orthotist/Pedorthist/Podiatrist: appropriate footwear/offloading device, professional foot care



	<ul style="list-style-type: none"> <li>e. Registered Dietician: diet, nutrition, supplementation, weight control</li> <li>f. Speech Language Pathologist: presence or risk of developing a swallowing impairments</li> <li>g. Social Work: psychosocial and economic/community supports</li> <li>h. Vascular surgeon: vascular assessment +/- surgical correction</li> <li>i. Dermatologist: patch testing for people with suspected sensitivity reactions</li> </ul> <p>24. Education for the patient and/or support person(s):</p> <ul style="list-style-type: none"> <li>a. To wash their legs and feet daily</li> <li>b. Moisturize their skin daily (not between the toes) using non-scented, mild, pH balanced soap.</li> <li>c. If the patient is wearing compression socks, have them apply moisturizers after the socks have been removed for the day</li> <li>d. To wear proper fitting shoes and orthotics (if they have been prescribed), indoors and out</li> <li>e. The value of quitting/reducing smoking</li> <li>f. Limiting or eliminating caffeine intake</li> <li>g. Exercising regularly and eating a well-balanced diet</li> <li>h. Change their socks daily (no tight shoes or socks)</li> <li>i. To protect their legs and feet from heat/cold/injury (no ice packs/heating pads)</li> <li>j. The signs and symptoms of infection/complications and when and how to seek <b>IMMEDIATE</b> help</li> <li>k. The wound dressing technique if they or their caregiver are going to be changing dressings</li> <li>l. Strategies for improving nutrition</li> <li>m. Need for ongoing follow-up with a health care provider at regular intervals</li> <li>n. Importance of professional foot care for those with arterial leg disease</li> <li>o. Benefits of compression therapy, daily leg elevation and the need for lifelong compression (if this is part of their plan of care)</li> <li>p. Exercises to promote calf muscle pump function</li> <li>q. How to care for and apply/remove compression stockings</li> <li>r. Need to replace stockings every four - six months, if compression therapy is part of the patients plan of care</li> </ul> <p>25. Provide resource/links to reinforce health teaching:</p> <ul style="list-style-type: none"> <li>a. SWRWCP's "My Arterial Leg Ulcer" Available at: <a href="https://swrwoundcareprogram.ca/Uploads/ContentDocuments/ALU%20April%202020.pdf">https://swrwoundcareprogram.ca/Uploads/ContentDocuments/ALU%20April%202020.pdf</a></li> <li>b. SWRWCP's "My Venous Leg Ulcer" Available at: <a href="https://swrwoundcareprogram.ca/Uploads/ContentDocuments/SWRWCP_VenousLEGulcer.pdf">https://swrwoundcareprogram.ca/Uploads/ContentDocuments/SWRWCP_VenousLEGulcer.pdf</a></li> <li>c. List of compression garment fitters in South Western Ontario Available at: <a href="https://swrwoundcareprogram.ca/Uploads/ContentDocuments/Compression%20Garment%20fitters%202019.pdf">https://swrwoundcareprogram.ca/Uploads/ContentDocuments/Compression%20Garment%20fitters%202019.pdf</a></li> </ul> <p>26. Re-evaluate</p>
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	<ul style="list-style-type: none"> <li>a. Regularly and consistently measure the ulcer, weekly at a minimum, using the same method</li> <li>b. Conduct a comprehensive reassessment to determine wound progress and the effectiveness of the treatment plan, i.e. Using the NPUAP PUSH Tool 3.0", weekly at a minimum</li> <li>c. Repeat Doppler ultrasound measurement of ABI when: <ul style="list-style-type: none"> <li>i. A leg ulcer deteriorates</li> <li>ii. Patient has a leg ulcer recurrence</li> <li>iii. There is a sudden increase in pain</li> <li>iv. The color and/or temperature of the foot changes</li> </ul> </li> <li>d. If the wound is not healing at an expected rate despite the implementation of best practice interventions, you may need to consider: <ul style="list-style-type: none"> <li>i. Update the primary care provider and wound care specialist</li> <li>ii. Re-evaluate plan of care and advocate for or request referrals</li> <li>iii. Discuss barriers or challenges with the patient</li> </ul> </li> <li>e. Reassess pain at <b>EVERY</b> dressing change and more frequently as reported by the patient, using the same pain tool/scale each time. Report pain management issues to the patient's primary care physician or primary care nurse practitioner</li> </ul> <p>27. Notify the primary care physician or primary care nurse practitioner immediately if the following occur:</p> <ul style="list-style-type: none"> <li>a. Acute onset of pain or increasing pain</li> <li>b. Wound probes to bone (if this is a new finding)</li> <li>c. Gangrene develops or worsens</li> <li>d. Rest pain develops in the foot</li> <li>e. Previously palpable peripheral pulses are diminished or absent</li> <li>f. Signs of localized and/or systemic infection develop</li> </ul> <p>28. Documentation:</p> <ul style="list-style-type: none"> <li>a. Document initial and ongoing assessments as per your organizations guidelines</li> <li>b. Document care plans, implementation strategies, and outcome measurements as per your organizations guidelines</li> </ul>
<b>Outcomes</b>	<p>1. Intended:</p> <ul style="list-style-type: none"> <li>a. The wound closes and drainage ceases. Expected rate of healing is a reduction in wound surface area by a minimum of 20-30% in 3-4 weeks</li> <li>b. The wound remains infection free</li> <li>c. The patient indicates that pain is resolved or manageable</li> <li>d. The patient understands and acts on their role in preventing further tissue damage and incorporates recommended activities and interventions to treat risk factors</li> <li>e. The patients commits to lifelong compression therapy (if this is part of their plan of care)</li> <li>f. Exudates and odor are effectively managed</li> <li>g. The patient can identify signs and symptoms of infection, and can describe how, when and whom to call if problems occur</li> <li>h. The patient becomes independent in self-management of their wound</li> </ul>



	<p>2. Unintended:</p> <ul style="list-style-type: none"> <li>a. The wound does not close if this is the goal</li> <li>b. The wound becomes infected or develops gangrene</li> <li>c. The patient requires an amputation where one was not anticipated</li> <li>d. The patient expresses concerns about poorly managed pain</li> <li>e. The patient does not understand and/or act on their role in preventing further tissue damage and does not incorporate recommended activities and interventions to treat risk factors</li> <li>f. The patient does not commit to life-long compression therapy (if this is in their plan of care)</li> <li>g. The patient does not understand the signs and symptoms of infection/complications, and when, how and whom to seek help from</li> <li>h. The patient does not become independent in self-management of their wound</li> </ul>
<b>References</b>	<ol style="list-style-type: none"> <li>1. Evans, R., et al. 2019. Best practice recommendations for the prevention and management of venous leg ulcers. <i>Wounds Canada</i>. Available at: <a href="https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/1521-wc-bpr-prevention-and-management-of-venous-leg-ulcers-1874e-final/file">https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/1521-wc-bpr-prevention-and-management-of-venous-leg-ulcers-1874e-final/file</a> [Accessed June 4, 2020].</li> <li>2. Beaumier, M., et al. 2020. Best practice recommendations for the prevention and management of arterial ulcers. <i>Wounds Canada</i>. Available at: <a href="https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/1690-wc-bpr-prevention-and-management-of-peripheral-arterial-ulcers-1921e-final/file">https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/1690-wc-bpr-prevention-and-management-of-peripheral-arterial-ulcers-1921e-final/file</a></li> <li>3. Health Quality Ontario. 2017. Quality Standards: Venous leg ulcers. Available at: <a href="http://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-venous-leg-ulcers-clinical-guide-en.pdf">http://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-venous-leg-ulcers-clinical-guide-en.pdf</a> [Accessed June 4, 2020].</li> <li>4. Fletcher, J., et al. 2019. Best Practice Statement – addressing complexities in the management of venous leg ulcers. <i>Wounds International</i>. Available at: <a href="https://www.woundsinternational.com/resources/details/best-practice-statement-addressing-complexities-management-venous-leg-ulcers">https://www.woundsinternational.com/resources/details/best-practice-statement-addressing-complexities-management-venous-leg-ulcers</a> [Accessed June 4, 2020].</li> </ol>