

Venous Leg Ulcers



For this summary, all recommendations have had their levels of evidence classified as follows:

Level I	Evidence from a systematic review or meta-analysis of at least two level II studies
Level II	Evidence from a well designed randomised controlled trial (for interventions), or a prospective cohort study (for prognostic studies)
Level III	Evidence from non-randomised studies with some control or comparison group (pseudo-randomised controlled trial; non-randomised experimental trial, cohort study, case-control study, time series studies with a control group; historical control study, retrospective cohort study)
Level IV	Evidence from studies with no control or comparison group

An additional rating of Expert Opinion (EO) has been added, for guideline recommendations which are consensus statements provided by a National or International Panel of experts in the area.

This guidelines summary has been developed for health professionals caring for clients with venous leg ulcers. Diagnosis of the aetiology of a leg ulcer as venous should be undertaken by a health professional with expertise in the area.

This is a summary of recommendations from the following sources, which should be accessed for further details as required:

1. AWMA & NZWCS. Australian and New Zealand Clinical Practice Guidelines for Prevention and Management of Venous Leg Ulcers. Barton, ACT: Cambridge Publishing; 2011. <https://www.woundsaustralia.com.au/>
2. Wounds Australia. Standards for Wound Prevention and Management. 3rd ed. Osborne Park, WA: Cambridge Media; 2016. <http://www.woundsaustralia.com.au/>
3. Wounds UK. Best Practice Statement: Addressing complexities in the management of venous leg ulcers. London: Wounds UK; 2019. <https://www.wounds-uk.com/>
4. Wounds UK. Best Practice Statement: Ankle brachial pressure index (ABPI) in practice. London: Wounds UK; 2019. <https://www.wounds-uk.com/>
5. Harding K, et al. Simplifying venous leg ulcer management: Consensus recommendations. London: Wounds International; 2015. www.woundsinternational.com
6. Briggs M, et al. Topical agents or dressings for pain in venous leg ulcers. Cochrane Database Syst Rev 2012; 11:CD001177.
7. Couch KS, et al. International Consolidated Venous Ulcer Guideline Update 2015. Ostomy Wound Manag 2017; 63:42-6.
8. Valle MF, et al. Comparative effectiveness of advanced wound dressings for patients with chronic venous leg ulcers: A systematic review. Wound Rep Regen 2014; 22:193-204.
9. Jones JE, et al. Skin grafting for venous leg ulcers. Cochrane Database Syst Rev 2013; 1:CD001737.



10. O'Meara S, et al. Compression for venous leg ulcers. *Cochrane Database Syst Rev* 2012; 11:CD000265.
11. Gohel MS, et al. A randomized trial of early endovenous ablation in venous ulceration. *N Eng J Med* 2018; 378:2105-14. <http://doi.org/10.1056/NEJMoa1801214>
12. Dumville J, et al. Negative pressure wound therapy for treating leg ulcers. *Cochrane Database Syst Rev* 2015; 7:CD011134.
13. Cullum N, Liu Z. Therapeutic ultrasound for venous leg ulcers. *Cochrane Database Syst Rev* 2017; 5:CD001180.
14. Aziz Z, Cullum N. Electromagnetic therapy for treating venous leg ulcers. *Cochrane Database Syst Rev* 2015; 7:CD002933.
15. Kranke P, et al. Hyperbaric oxygen therapy for chronic wounds. *Cochrane Database Syst Rev* 2015; 6:CD004123.
16. IWII. Wound infection in clinical practice. London: Wounds International; 2016. <http://www.woundinfection-institute.com/wp-content/uploads/2017/03/IWII-Wound-infection-in-clinical-practice.pdf>
17. Carvalho P, et al. Oral aspirin for treating venous leg ulcers. *Cochrane Database Syst Rev* 2016; 2:CD009432.
18. Scallan C, et al. Flavonoids for treating venous leg ulcers. *Cochrane Database Syst Rev* 2013; 5: CD006477.
19. Wu B, et al. Sulodexide for treating venous leg ulcers. *Cochrane Database Syst Rev* 2016; 6:CD10694.
20. Jull AB, et al. Pentoxifylline for treating venous leg ulcers. *Cochrane Database Syst Rev* 2012; 12:CD001733.
21. Nelson E, Bell-Syer SEM. Compression for preventing recurrence of venous ulcers. *Cochrane Database Syst Rev* 2014; 9:CD002303.

Assessment

1. A comprehensive, ongoing assessment of the individual, their history, their leg ulcer and the healing environment should be undertaken by a health professional with training and experience in leg ulcer management ^{1,2} (EO)
2. Clients with a leg ulcer should be screened for arterial disease, which may include history and clinical assessment as above, and:
 - examining pedal pulses ¹
 - doppler examination to assess Ankle-Brachial Pressure Index (ABPI) ¹⁻³
 - Note:** Doppler ABPI assessments should be undertaken by health professionals with expertise in this area ¹
 - compression therapy is contraindicated if ABPI is less than 0.8 or higher than 1.2 ¹ An ABPI over 1.2 is unreliable and indicates further investigation is necessary ¹
 - refer for specialist assessment, (e.g. duplex scanning) if there is uncertainty or the ABPI is less than 0.8 or higher than 1.2 ¹ (EO)
3. An ABPI reassessment should be undertaken regularly, e.g. every three–12 months according to the individual's condition ⁴ (EO)
4. Measure and document ulcer area and characteristics regularly to monitor progress ^{1,2} (IV)
5. Complex needs requiring referral to a specialist include:
 - uncertainty in diagnosis ^{1,5}
 - an ABPI less than 0.8 or >1.2 ¹
 - complex ulcers (e.g. multiple aetiology) ^{1,3,5}
 - signs of spreading and/or systemic infection ^{1,2}
 - deterioration of ulcer ¹
 - failure to reduce in size by 20–30% in four to six weeks, ⁵ or to improve after three months, or recurring ulceration ¹
 - Uncontrolled pain ¹
 (EO)



Management

6. Cleanse the ulcer with a neutral, non-irritating solution, e.g. warm tap water or saline¹ (IV)
7. If present, removal of necrotic and devitalised tissue should be undertaken through mechanical, sharp, autolytic or biological debridement¹ (IV)
 - *Sharp debridement should only be undertaken by trained, proficient health professionals¹ (EO)
8. EMLA® cream can reduce the pain associated with debridement when there are no contraindications^{1,6} (I)
9. Dressing choice should be based on assessment of the ulcer and be simple, low adherent, cost effective, and acceptable to the client¹ (I)
10. Dressings should maintain a moist wound-healing environment, manage wound exudate, bacterial burden, be non-adherent, and protect the peri-ulcer skin^{1,2,7} (II)
11. There is little evidence that any one dressing type is more effective than another. Singular reviews found cadexomer iodine was more effective than hydrocolloid and paraffin gauze in reducing ulcer size;⁸ allogenic bilayered cultured human skin equivalent plus compression improved healing in comparison to compression alone,⁸ and bilayer artificial skin improved healing compared to a simple dressing.⁹ (II)
12. Compression therapy is recommended, where there are no contraindications^{1,10} (I)
 - Multilayer compression bandage systems with an elastic component may be more effective than inelastic systems¹⁰ (I)
 - Four layer compression bandage systems result in a shorter time to healing than short-stretch bandage systems¹⁰ (I)
 - Contraindications include ulcers of other or mixed aetiology, peripheral vascular disease, heart disease, peripheral neuropathy and/or an ABPI <0.8 or >1.2¹ (EO)
13. Compression should be applied by a trained practitioner^{1,7} (IV)
14. Protective padding should be used over bony prominences when applying compression¹ (EO)
15. Refer for vascular assessment for venous intervention^{3,11} (II)
16. There is insufficient evidence that
 - topical negative pressure¹² (II)
 - therapeutic ultrasound¹³ (I)
 - electromagnetic therapy¹⁴ or (II)
 - hyperbaric oxygen,¹⁵ speeds healing of venous leg ulcers (II)
17. Systemic antibiotics should not be used for ulcers that show no clinical signs of infection^{1,16} (II)
18. There is insufficient evidence to recommend aspirin¹⁷, micronised purified flavanoid fraction¹⁸ or sulodexide¹⁹ to increase healing rates (II)
 - If there are no contraindications, pentoxifylline may promote healing^{1,20} (II)
19. Appropriate client education (written and/or verbal) may lead to improvement in knowledge of their condition and concordance with its management¹ (EO)
20. Recommend leg elevation and progressive leg exercises as part of the management plan^{1,7} (EO)



Prevention

21. After healing, use of compression therapy reduces ulcer recurrence rates.^{3,21} High level compression hosiery may reduce recurrence rates in comparison to medium level compression, however client concordance should be considered.²¹ (II)
22. Consider practicality and application methods when choosing compression type³ (EO)
23. Other recommended strategies to prevent recurrence include:
 - venous investigation and surgery¹ (I)
 - regular follow-up and education at three, six or 12 months depending on need and risk of recurrence³ (EO)
 - skin care, lower limb exercise and elevation of the affected limb^{1,3} (EO)