

# EVIDENCE BASED STATEMENT

DOMAIN **07**, Statement **3**

TOPIC: “**Venous Ulcer diagnosis work up**”

## SEARCH TERMS & SOURCES

(venous ulcer) AND (diagnosis protocol)

### INCLUSION CRITERIA

- Lower limb only
- Reviews
- Publication < 10 years, only ENG

## SEARCH RESULT BEFORE - AFTER SELECTION

11 - 4

### PERTINENT LITERATURE NOT IDENTIFIED BY THE LITERATURE SEARCH

1. Srisuwan T, Inmutto N, Kattipathanapong T, et al. Ultrasound Use in Diagnosis and Management of Venous Leg Ulcer. Int J Low Extrem Wounds. 2020 Dec;19(4):305-314.
2. Pernot CCEG, Zwiers I, Ten Cate-Hoek AJ, et al. The need for a timely diagnostic workup for patients with venous leg ulcers. J Wound Care. 2018 Nov 2;27(11):758-763.
3. Westby MJ, Dumville JC, Stubbs N, et al. Protease activity as a prognostic factor for wound healing in venous leg ulcers. Cochrane Database Syst Rev. 2018 Sep 1;9(9):CD012841
4. Salvo P, Calisi N, Melai B, et al. Temperature- and pH-sensitive wearable materials for monitoring foot ulcers. Int J Nanomedicine. 2017 Jan 31;12:949-954
5. Jones EM, Cochrane CA, Percival SL. The Effect of pH on the Extracellular Matrix and Biofilms. Adv Wound Care (New Rochelle). 2015;4(7):431-439

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## Domain 7; Statement 3

### IDENTIFIED REFERENCES

1. Bernatchez SF, Eysaman-Walker J, Weir D. Venous Leg Ulcers: A Review of Published Assessment and Treatment Algorithms. *Adv Wound Care (New Rochelle)* 2022 Jan;11(1):28-41.
2. Hallas S, Nelson A, O'Meara S, et al. Development of a core outcome set for venous leg ulceration (CoreVen) research evaluations (protocol). *J Tissue Viability*. 2021 Aug;30(3):317-323.
3. Mosca RC, Ong AA, Albasha O, et al. Photobiomodulation Therapy for Wound Care: A Potent, Noninvasive, Photochemical Approach. *Adv Skin Wound Care* 2019 Apr;32(4):157-167.
4. Kavros SJ, Coronado R. Diagnostic and Therapeutic Ultrasound on Venous and Arterial Ulcers: A Focused Review. *Adv Skin Wound Care*. 2018 Feb;31(2):55-65.

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### TEXT FOR INCLUSION IN THE DOCUMENT

#### DOMAIN 07, Statement 3 , TOPIC: “**Venous Ulcer diagnosis work up**”

After detailed history and clinical description of the ulcer, the diagnostic work up must include a venous and arterial echo-color-Doppler, preceded by arterial pulses and ankle-brachial index measurement.

This last aspect is fundamental considering around 1/5 of ulcer etiologies are artero-venous.

Computed tomography and/or magnetic resonance and/or intravascular ultrasound and/or venography can be helpful particularly in case of need of proximal venous obstruction investigation. In this context, also plethysmography can be of help in providing objective measurements of drainage impairment. Wound swabs or biopsy should be always performed in the suspect of infection or proliferation anomalies, respectively.

Advanced assessment may include protease activity as prognostic factor for wound healing, yet more data are needed before confirming the real value of this investigation.

**[Westby MJ, Dumville JC, Stubbs N, et al. Protease activity as a prognostic factor for wound healing in venous leg ulcers. Cochrane Database Syst Rev. 2018 Sep 1;9(9):CD012841]**

Chronic non-healing wounds demonstrated an elevated alkaline environment, suggesting a potential use also of the ulcer PH assessment as prognostic factor. In a similar way, ulcer temperature variation has been taken into consideration, yet, as per the PH, further investigations are needed before recommending their inclusion in the diagnostic work up.

**[Salvo P, Calisi N, Melai B, et al. Temperature- and pH-sensitive wearable materials for monitoring foot ulcers. Int J Nanomedicine. 2017 Jan 31;12:949-954].**

Mobility and ankle range of motions are important parameters to be taken into consideration in the general assessment of the venous ulcer patients, particularly considering the related correlation with the wound healing.

**[Yim E, Richmond NA, Baquerizo K, et al. The effect of ankle range of motion on venous ulcer healing rates. Wound Repair Regen. 2014 Jul-Aug;22(4):492-6]**

Considering the impact on the quality of life and the related associated patient depression, psychological evaluation should not be underestimated.

**[Jones J, Barr W, Robinson J, Carlisle C. Depression in patients with chronic venous ulceration. Br J Nurs. 2006 Jun 8-21;15(11):S17-23]**

**[Westby MJ, Dumville JC, Stubbs N, et al. Protease activity as a prognostic factor for wound healing in venous leg ulcers. Cochrane Database Syst Rev. 2018 Sep 1;9(9):CD012841]**

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### STATEMENT FOR PUBLIC EVIDENCE-BASED AWARENESS

DOMAIN 7, Statement 3

Proper ulcer diagnosis requires detailed anamnesis, clinical visit, arterial & venous ultrasound scanning, lymphatic function assessment, and ankle-brachial index calculation

### SELECTED REFERENCES

1. Westby MJ, Dumville JC, Stubbs N, et al. Protease activity as a prognostic factor for wound healing in venous leg ulcers. *Cochrane Database Syst Rev.* 2018 Sep 1;9(9):CD012841
2. Salvo P, Calisi N, Melai B, et al. Temperature- and pH-sensitive wearable materials for monitoring foot ulcers. *Int J Nanomedicine.* 2017 Jan 31;12:949-954
3. Yim E, Richmond NA, Baquerizo K, et al. The effect of ankle range of motion on venous ulcer healing rates. *Wound Repair Regen.* 2014 Jul-Aug;22(4):492-6
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### identified LITERATURE BIAS

Lack of head to head comparison among different diagnostic protocols

### SUGGESTED NEXT LINES OF RESEARCH

Cost effectiveness analysis of the diagnostic options