

# Nutrition and Wound Healing



**This summary has been developed for health professionals caring for people with impaired skin integrity or those at risk of loss of skin integrity. Assessment and management of skin integrity should be undertaken by health professionals with expertise in the area.**

***\* The role of nutrition in people with burns requires medical specialist input and is not included in the scope of this summary***

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
Level IV	Evidence from studies with no control or comparison group
EO	Consensus statements provided by a national or international panel of experts in the area.

**This is a summary of evidence from the following sources, which may be accessed as required:**

1. Haesler E, Carville K. 2023. Australian Standards for Wound Prevention and Management. Australian Health Research Alliance, Wounds Australia, WA Health Translation Network. <http://www.woundsaustralia.org/>
2. National Pressure Injury Advisory Panel, European Pressure Ulcer Advisory Panel, Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. EPUAP, NPIAP, PPPIA; 2019. <https://internationalguideline.com/2019>
3. Posthauer ME et al. The Role of Nutrition for Pressure Ulcer Management: National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel, and Pan Pacific Pressure Injury Alliance White Paper. *Advances in Skin & Wound Care*. 2015;28(4):175-88.
4. Gould L et al. Wound Healing Society 2015 Update on Guidelines for Pressure Ulcers. *Wound Repair and Regeneration*. 2016;24(1):145-62.
5. Daher GS et al. A Systematic Review of Oral Nutritional Supplement and Wound Healing. *Annals of Otolaryngology & Laryngology*. 2022;131(12):1358-68.
6. Song YP et al. Zinc Therapy Is a Reasonable Choice for Patients With Pressure Injuries: A Systematic Review and Meta-Analysis. *Nutrition in Clinical Practice*. 2020; 35(6):1001-9.
7. Barber GA et al. Effects and Associations of Nutrition in Patients with Venous Leg Ulcers: A Systematic Review. *Journal of Advanced Nursing*. 2018;74(4):774-87.
8. Chen B et al. Nutritional Status as a Predictor of the Incidence of Pressure Injury in Adults: A Systematic Review and Meta-Analysis. *Journal of Tissue Viability*. 2023; 32(3):339-48.
9. Smith K et al. Correlation Between Vitamin D levels and Hard-to-Heal Wounds: a Systematic Review. *Journal of Wound Care*. 2021;30(Sup6):S4-S10.
10. Wilkinson EAJ et al. Oral Zinc for Arterial and Venous Leg Ulcers. *Cochrane Database of Systematic Reviews*. 2014; 2017(11):CD001273.



## Assessment

1. Screen age appropriate nutritional status of each person with, or at risk of, a wound in all health care settings.<sup>1,2</sup> (EO)  
Use a validated tool, for example the Mini Nutritional Assessment (MNA), MNA®short form, or Malnutrition Universal screening tool (MUST) to determine nutritional risk.<sup>1,2</sup> (IV)
2. Nutritional assessment is a continual monitoring and review process.<sup>3</sup> (EO)
3. Assess weight and weight history to identify degree of any weight loss.<sup>1,2</sup> (EO)
4. Assess quantity, quality and nutritional content of food and fluid intake.<sup>1</sup> (EO)
5. Assess the person's general health and ability to eat independently.<sup>1,2</sup> (EO)
6. Document nutritional status of people with, or at risk of, a wound.<sup>1</sup> (EO)

## Management and Prevention

7. Refer people found at risk of malnutrition to a nutrition health professional for a comprehensive assessment.<sup>2</sup> (EO)
8. For those with a pressure injury:
  - Implement a nutritional care plan to ensure optimal hydration and nutritional intake (e.g., 30-35 kcal/kg body weight/day for persons with pressure injuries who are, or are at risk of being, malnourished.<sup>2</sup> (III)
  - provide high calorie, high protein supplements if nutritional needs are not met by usual diet.<sup>2</sup> (II)
  - Provide high protein, high calorie supplements and micronutrients if deficiencies exist for persons with pressure injuries who are, or at risk of being, malnourished.<sup>2,4</sup> (III)

- Protein, arginine, Vitamin C and zinc may help pressure injury healing<sup>5,6</sup> (I)
  - Provide high-calorie, high-protein, arginine, zinc and antioxidant oral supplements or enteral formula for adults with a Stage II or greater pressure injury who are malnourished or at risk of malnutrition.<sup>2</sup> (II)
9. Ensure adequate hydration, micronutrient, energy and protein intake to meet the person's needs, whether at risk of, or with a wound.<sup>1,2,7,8</sup> (EO-I)
  10. Arginine and omega-3 supplements have been shown to reduce surgical wound complications.<sup>5</sup> (II)
  11. Provide extra fluids if people have conditions leading to dehydration (e.g. fever, vomiting, high levels of exudate) when compatible with goals of care and clinical condition.<sup>2</sup> (EO)
  12. Mineral, vitamins and antioxidant enriched supplements may be more beneficial than non-enriched protein supplements for healing diabetes-related foot ulcers and pressure injuries.<sup>5</sup> (I)
  13. Vitamin D may have a beneficial effect on healing of diabetes-related foot ulcers and venous leg ulcers.<sup>9</sup> (III)
  14. Folic acid or flavonoids have been associated with improved healing of venous leg ulcers.<sup>7</sup> (III)
  15. Oral zinc supplements do not improve arterial and venous leg ulcer healing.<sup>10</sup> (I)