

*A number of medical organizations have come up with specific, as well as general, recommendations for clinicians to help predict and prevent a common issue in the health system: pressure ulcers.*



*High-protein nutrition support can significantly reduce risk for pressure ulcers and may improve healing of ulcers.*

**T**o help clinicians achieve pressure ulcer prevention goals, several medical organizations have reviewed relevant research and solicited expert opinion in order to develop clinical practice guidelines that include nutritional measures. Among these organizations are the Wound Ostomy and Continence Nurses Society (WOCN), the European Pressure Ulcer Advisory Panel, and the US National Pressure Ulcer Advisory Panel (EPUAP/NPUAP).<sup>\*</sup> Evidence-based practice depends on guideline authors who prepare recommendations based on the available literature or, where there is no literature, based on expert opinion. Some of the guidelines have Strength of Evidence ratings (SOE) of A, B, or C\*, while others do not.

### Specific Recommendations:

- Offer high protein mixed oral nutrition supplements and/or tube feeding, in addition to the usual diet, to individuals with nutritional risk because of acute and chronic disease, or following a surgical intervention (EPUAP/NPUAP SOE = A).
- Administer oral nutritional supplements (ONS) and/or tube feeding in between the regular meals to avoid reduction of normal food and fluid intake during regular mealtimes (EPUAP/NPUAP SOE = C).
- High-protein nutrition support can significantly reduce risk for pressure ulcers and may improve healing of ulcers. Elderly patients recovering from acute illness develop fewer pressure ulcers when given two daily nutritional supplement drinks (WOCN).
- A diet enriched with eicosapentanoic acid (EPA), gamma-linolenic acid (GLA), and vitamins A, C, and E is associated with a significantly lower occurrence of new pressure ulcers in critically ill patients with acute lung injury (WOCN).



## General Recommendations:

- Screen patients at admission to care setting for nutritional deficiencies and other pressure ulcer risk factors.
  - Assess adequacy of nutritional intake (eg. calories, protein, and fluid) (WOCN)
  - Assess for signs of dehydration (eg. skin turgor, urine output, elevated serum sodium) (WOCN)
  - Assess for significant weight loss (>5% change in 30 days or >10% in 180 days) (WOCN)
- Refer patients determined to be at risk for a more comprehensive assessment by a registered dietitian or multidisciplinary nutrition team (WOCN, EPUAP/NPUAP). The assessment may include evaluation of laboratory results such as levels of serum albumin and prealbumin (WOCN).
- Provide nutritional support to at-risk patients. Support should include the following (EPUAP/NPUAP):
  - Estimation of nutritional requirements
  - Comparison of nutrient intake with estimated requirements
  - Provision of appropriate nutrition intervention based on appropriate feeding route
  - Monitoring and evaluation of nutritional outcome, with reassessment of nutritional status at frequent intervals while patient is at risk based on appropriate feeding route

## Conclusion

Nutrition intervention should be a part of any pressure ulcer prevention plan. The use of ONS as part of this intervention is evidence-based and supported by EPUAP/NPUAP and WOCN guidelines.

*Elderly patients recovering from acute illness develop fewer pressure ulcers when given two daily nutritional supplement drinks (WOCN).\**

- Regular oral nutrition (via normal feeding and/or with additional nutritional supplementation) is the preferred feeding route. When this route is inadequate or impossible, enteral tube feeding and parenteral nutrition may be necessary (EPUAP/NPUAP).
- General nutrition support recommendation: Provide at-risk patients with 30–35 kcal/kg of body weight per day, 1.25–1.5 grams/kg of body weight per day of protein, and 1 mL of fluid per kcal per day (WOCN, EPUAP/NPUAP).

## Levels-of-Evidence Rating

### Level A:

Two or more supporting RCTs of at least 10 patients with pressure ulcers (at Levels I or II), a meta-analysis of RCTs, or a Cochrane Systematic Review of RCTs.

### Level B:

One or more supporting controlled trials of at least 10 humans with pressure ulcers or two or more supporting non-randomized trials of at least 10 patients with pressure ulcers (at Level III).

### Level C:

Two supporting case series of at least 10 patients with pressure ulcers or expert opinion.

\*WOCN, Guideline for Prevention and Management of Pressure Ulcers, June 2010, pages 24–26; EPUAP/NPUAP,

Pressure Ulcer Prevention and Treatment: Clinical Practice Guideline, October 2009, pages 30–33.