NUTRITION IN PRESSURE ULCER PREVENTION AND TREATMENT

Introduction

The recommendations in this section of the guideline are predominantly for adult individuals and have been derived from evidence conducted in adult populations. Recommendations for nutritional assessment and treatment in pediatric populations are presented in the section Special Populations: Pediatric Individuals.

Nutrition Screening

1. Screen nutritional status for each individual at risk of or with a pressure ulcer:
   - at admission to a health care setting;
   - with each significant change of clinical condition; and/or
   - when progress toward pressure ulcer closure is not observed. (Strength of Evidence = C; Strength of Recommendation = )

Nutrition screening is the process used to identify individuals who require a comprehensive nutrition assessment due to characteristics that put them at potential nutritional risk. Any qualified member of the health care team may complete nutrition screening, and it should be conducted on admission to the health care facility, or at first visit in community settings.

2. Use a valid and reliable nutrition screening tool to determine nutritional risk. (Strength of Evidence = C; Strength of Recommendation = )

3. Refer individuals screened to be at risk of malnutrition and individuals with an existing pressure ulcer to a registered dietitian or an interprofessional nutrition team for a comprehensive nutrition assessment. (Strength of Evidence = C; Strength of Recommendation = )

Nutrition Assessment

1. Assess the weight status of each individual to determine weight history and identify significant weight loss (≥ 5% in 30 days or ≥ 10% in 180 days). (Strength of Evidence = C; Strength of Recommendation = )

2. Assess the individual’s ability to eat independently. (Strength of Evidence = C; Strength of Recommendation =  )

3. Assess the adequacy of total nutrient intake (i.e., food, fluid, oral supplements and enteral/parenteral feeds). (Strength of Evidence = C; Strength of Recommendation =  )

The focus of nutrition assessment should be on evaluating energy intake, unintended weight change and the effect of psychological stress or neuropsychological problems. Additionally, assessment should include a determination of the individual’s caloric, protein and fluid requirements.

Care Planning
1. Develop an individualized nutrition care plan for individuals with or at risk of a pressure ulcer. (Strength of Evidence = C; Strength of Recommendation = ♦)

A registered dietitian, in consultation with the interprofessional team (including, but not limited to, a physician, nurse, speech pathologist, occupational therapist, physical therapist and dentist) should develop and document an individualized nutrition intervention plan based on the individual’s nutritional needs, feeding route and goals of care, as determined by the nutrition assessment.

2. Follow relevant and evidence-based guidelines on nutrition and hydration for individuals who exhibit nutritional risk and who are at risk of pressure ulcers or have an existing pressure ulcer. (Strength of Evidence = C; Strength of Recommendation = ♦)

Energy Intake

1. Provide individualized energy intake based on underlying medical condition and level of activity. (Strength of Evidence = B; Strength of Recommendation = ♦)

2. Provide 30 to 35 kcalories/kg body weight for adults at risk of a pressure ulcer who are assessed as being at risk of malnutrition. (Strength of Evidence = C; Strength of Recommendation = ♦)

3. Provide 30 to 35 kcalories/kg body weight for adults with a pressure ulcer who are assessed as being at risk of malnutrition. (Strength of Evidence = B; Strength of Recommendation = ♦ ♦)

4. Adjust energy intake based on weight change or level of obesity. Adults who are underweight or who have had significant unintended weight loss may need additional energy intake. (Strength of Evidence = C; Strength of Recommendation = ♦ ♦)

5. Revise and modify/liberalize dietary restrictions when limitations result in decreased food and fluid intake. These adjustments should be made in consultation with a medical professional and managed by a registered dietitian whenever possible. (Strength of Evidence = C; Strength of Recommendation = ♦)

Caloric needs are ideally met by a healthy diet; however, some individuals are unable or unwilling to consume an adequate diet. Overly restricted diets may make food unpalatable and unappealing, and therefore reduce intake.

6. Offer fortified foods and/or high calorie, high protein oral nutritional supplements between meals if nutritional requirements cannot be achieved by dietary intake. (Strength of Evidence = B; Strength of Recommendation = ♦ ♦)

Oral nutritional supplements (ONS), enhanced foods, and food fortifiers can be used to combat unintended weight loss and malnutrition.

7. Consider enteral or parenteral nutritional support when oral intake is inadequate. This must be consistent with the individual’s goals. (Strength of Evidence = C; Strength of Recommendation = ♦)

If oral intake is inadequate, enteral or parenteral nutrition may be recommended if consistent with the individual’s wishes. Enteral (tube) feeding is the preferred route if the gastrointestinal tract is
functioning. The risks and benefits of nutrition support should be discussed with the individual and caregivers early on, and should reflect the individual’s preferences and goals for care.

**Protein Intake**

1. **Provide adequate protein for positive nitrogen balance for adults assessed to be at risk of a pressure ulcer.** (Strength of Evidence = C; Strength of Recommendation = ✶)

2. **Offer 1.25 to 1.5 grams protein/kg body weight daily for adults at risk of a pressure ulcer who are assessed to be at risk of malnutrition when compatible with goals of care, and reassess as condition changes.** (Strength of Evidence = C; Strength of Recommendation = ✶)

3. **Provide adequate protein for positive nitrogen balance for adults with a pressure ulcer.** (Strength of Evidence = B; Strength of Recommendation = ✶)

4. **Offer 1.25 to 1.5 grams protein/kg body weight daily for adults with an existing pressure ulcer who are assessed to be at risk of malnutrition when compatible with goals of care, and reassess as condition changes.** (Strength of Evidence = B; Strength of Recommendation = ✶)

5. **Offer high calorie, high protein nutritional supplements in addition to the usual diet to adults with nutritional risk and pressure ulcer risk, if nutritional requirements cannot be achieved by dietary intake.** (Strength of Evidence = A; Strength of Recommendation = ✶)

6. **Assess renal function to ensure that high levels of protein are appropriate for the individual.** (Strength of Evidence = C; Strength of Recommendation = ✶ ✶)

Clinical judgment is required to determine the appropriate level of protein for each individual, based on the number of pressure ulcers present, overall nutritional status, co-morbidities, and tolerance to nutritional interventions.

7. **Supplement with high protein, arginine and micronutrients for adults with a pressure ulcer Category/Stage III or IV or multiple pressure ulcers when nutritional requirements cannot be met with traditional high calorie and protein supplements.** (Strength of Evidence = B; Strength of Recommendation = ✶)

**Hydration**

1. **Provide and encourage adequate daily fluid intake for hydration for an individual assessed to be at risk of or with a pressure ulcer.** This must be consistent with the individual’s comorbid conditions and goals. (Strength of Evidence = C; Strength of Recommendation = ✶ ✶)

2. **Monitor individuals for signs and symptoms of dehydration including change in weight, skin turgor, urine output, elevated serum sodium, and/or calculated serum osmolality.** (Strength of Evidence = C; Strength of Recommendation = ✶)

3. **Provide additional fluid for individuals with dehydration, elevated temperature, vomiting, profuse sweating, diarrhea, or heavily exuding wounds.** (Strength of Evidence = C; Strength of Recommendation = ✶ ✶)
Fluid serves as the solvent for vitamins, minerals, glucose and other nutrients and transports nutrients and waste products though the body. Health professionals should monitor individuals’ hydration status, checking for signs and symptoms of dehydration such as: changes in weight, skin turgor, urine output, elevated serum sodium, or calculated serum osmolality.⁷

**Vitamins and Minerals**

1. Provide/encourage individuals assessed to be at risk of pressure ulcers to consume a balanced diet that includes good sources of vitamins and minerals. (Strength of Evidence = C; Strength of Recommendation = )

2. Provide/encourage an individual assessed to be at risk of a pressure ulcer to take vitamin and mineral supplements when dietary intake is poor or deficiencies are confirmed or suspected. (Strength of Evidence = C; Strength of Recommendation = )

3. Provide/encourage an individual with a pressure ulcer to consume a balanced diet that includes good sources of vitamins and minerals. (Strength of Evidence = B; Strength of Recommendation = )

4. Provide/encourage an individual with a pressure ulcer to take vitamin and mineral supplements when dietary intake is poor or deficiencies are confirmed or suspected. (Strength of Evidence = B; Strength of Recommendation = )