

## Long-Term Care Survey Alert

### Pressure Ulcers: Take A Holistic Approach To Pressure Ulcer Prevention And Healing

**Find and use what best fits the patient's nutritional intake history and lifestyle.**

You know that nutrition is crucial to wound healing. But what's the best way to ensure that your resident's diet promotes pressure ulcer healing? Consider the "PEARLS" method.

The acronym "PEARL" stands for Protein, Energy, Amino acids, RDAs/RDIs (recommended dietary allowance/reference daily intake), and Lab data. **Kim Steele**, vice president of field operations for **Harmony Healthcare International**, recommended in a recent blog posting that facilities use the PEARLS method to help address nutritional needs for residents with pressure ulcer wounds.

#### How Much Protein is Necessary?

**Problem:** Protein is necessary for every part of the healing process and is responsible for the breakdown and use of essential enzymes and collagen required for wound healing, Steele said. Unfortunately, "protein energy malnutrition (PEM) is extremely common in the elderly and can be evidenced by something as simple as unintended weight loss."

**Solution:** "Recent studies indicate the basic requirement for exogenous protein in older adults is a minimum of 1.0 gram per kilogram of body weight, rather than 0.8 gram per kilogram of body weight for healthy adults," according to the **National Pressure Ulcer Advisory Panel (NPUAP)**. But the recommended protein intake for healing is even higher □ 1.2 to 1.5 grams per kilogram of body weight per day.

**Caveat:** "Clinical judgment is required to determine the appropriate level of protein for each individual, based on the number of pressure ulcers, overall nutrition status, comorbidities, and tolerance to nutritional interventions," NPUAP noted. "For example, individuals with chronic kidney disease may be inappropriate candidates for high levels of protein."

#### Meet Residents' Energy Needs with Adequate Diet

**Problem:** If the body doesn't receive adequate calories for energy, it will use protein, Steele cautioned. And protein loss takes energy away from wound healing. Unintended weight loss typically means loss of lean body mass, so you must address caloric needs first.

**Solution:** "Liberalize the diet, provide foods and fluids of preference, consider appetite stimulants, and [provide] adequate assistance at meals and supplements in the form of medications," Steele advised. "There are a multitude of food forms available □ puddings, ice cream, shakes, cookies, etc. that contain increased protein. Find and use what best fits the patient's intake history and lifestyle."

Also, don't forget about fluid intake. "Fluids serve as the solvent for vitamins, minerals, glucose and other nutrients and waste products through the body," NPUAP stated. Tissue oxygenation is needed for proper healing, and fluid administration may increase low tissue oxygen.

**Tip:** Monitor the resident's hydration status, checking for signs and symptoms of dehydration, NPUAP recommended. Keep in mind that residents who are consuming high levels of protein or who have heavily draining wounds may require additional fluids.

#### Monitor These Amino Acids

**Problem:** Amino acids are the building blocks of protein, and certain amino acids are essential during periods of physical stress like when a resident has pressure ulcers, according to NPUAP.

Glutamine and arginine are called conditionally indispensable amino acids (CIAAs), which are amino acids that the body makes, but not in sufficient amounts when sick or stressed, Steele said. The body does not make indispensable amino acids (IAAs) like leucine and tryptophan, which the body receives only via intake. Dispensable amino acids (DAAs) are non-essential amino acids that the body manufactures, but not in sufficient amounts when sick or stressed.

**Solution:** CIAAs like glutamine and arginine are the most important for healing pressure ulcers. In some cases, a CIAA agent may be necessary to promote cell growth for wound healing, Steele noted.

### **Make Sure Residents Get Their RDAs/RDIs**

**Problem:** Consider the RDAs/RDIs of key vitamins and minerals to promote wound healing. Vitamin C, zinc and copper are thought to impact pressure ulcer healing, according to NPUAP.

Vitamin C (ascorbic acid) is important for tissue repair and regeneration, because it functions with iron during the hydroxylation of proline and lysine in collagen production, NPUAP explained. Zinc deficiency can occur in residents who have wounds with increased drainage or poor dietary intake over a long time period. Zinc deficiency may impair wound healing due to the mineral's association with collagen formation, protein synthesis and cell proliferation.

Copper deficiency can also be harmful to residents with pressure ulcers, because copper is essential for collagen cross-linking, NPUAP noted.

**Solution:** You can offer vitamin and mineral supplements when the resident's dietary intake is poor or when you suspect or confirm deficiencies. "Typically, multivitamins and vitamin C are clinically appropriate to provide daily," Steele stated.

**Beware:** But you should provide zinc, if indicated, in very limited doses to avoid zinc overload, Steele warned. This can interfere with wound healing.

### **Be Discerning When Contemplating Lab Data**

**Problem:** You can use a variety of laboratory data to determine a resident's health status, but there are many data points that may or may not be very helpful in measuring whether a resident is improving.

Serum albumin is more reflective of an inflammatory process rather than current nutritional status, and prealbumin can be elevated due to corticosteroid use or renal disease, Steele noted. Hepatic proteins can indicate the severity of the resident's illness and identify a risk for malnutrition.

**Solution:** Keep in mind that these laboratory values identify risk rather than if a patient is getting better, Steele cautioned. "Changes in these values should not be used to indicate a change in protein status for patients in an acute or chronic inflammatory state in the wound."

**Resource:** To keep up with the latest recommendations and best practices for pressure ulcer healing, visit NPUAP's website at [www.npuap.org](http://www.npuap.org).