Pressure ulcer prevention and treatment:
The relationship between lean body mass, nutrition, and healing

Nutrition is a key part of comprehensive care and pressure ulcer prevention and treatment
Patients who are malnourished or who have low LBM are at increased risk for complications, including pressure ulcers\textsuperscript{1,3,7}

Lean body mass (LBM) loss and malnutrition start prior to admission and accelerate through the continuum of care\textsuperscript{2-4}

Complications increase with greater LBM loss and poor nutrition\textsuperscript{1*}

<table>
<thead>
<tr>
<th>% Loss of Total LBM</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>Impaired immunity, increased infection, mortality increased by 10%</td>
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<tr>
<td>20%</td>
<td>Decreased healing, weakness, increased infection, thinning of the skin, mortality increased by 30%</td>
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<tr>
<td>30%</td>
<td>Too weak to sit, new pressure ulcers develop, pneumonia, wound healing ceases, mortality increased by 50%</td>
</tr>
<tr>
<td>40%</td>
<td>Death, usually from pneumonia</td>
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* In the absence of preexisting LBM loss.

Adequate lean body mass and proper nutrition play a critical role in patient health and recovery\textsuperscript{1}

ONS may help prevent pressure ulcers and improve pressure ulcer healing\textsuperscript{5,6}

Poor nutrition is often a contributing cause of pressure ulcers\textsuperscript{5-6}

Percent of pressure ulcers where nutrition plays a role\textsuperscript{5}

Malnourished patients are at 200\textsuperscript{-}500\% higher risk for pressure ulcers\textsuperscript{7}

Most of your patients don’t get the nutrition they need to maintain and rebuild LBM

Protein Consumed

Research has shown that elderly hospitalized patients who were served a meal containing 40 grams of protein consumed only 10 grams of protein, half of which was from dessert\textsuperscript{8}

A 15-study meta-analysis demonstrated that oral nutritional supplements (ONS) were associated with a lower incidence of pressure ulcers in at-risk patients\textsuperscript{6}

Ensuring proper nutrition helps reduce the risk of pressure ulcers and also plays a role in pressure ulcer treatment\textsuperscript{5-6}

% Loss of Total LBM

- 10% Impaired immunity, increased infection, mortality increased by 10%
- 20% Decreased healing, weakness, increased infection, thinning of the skin, mortality increased by 30%
- 30% Too weak to sit, new pressure ulcers develop, pneumonia, wound healing ceases, mortality increased by 50%
- 40% Death, usually from pneumonia

* In the absence of preexisting LBM loss.
Nutrition has been demonstrated to reduce facility-acquired pressure ulcers as part of a comprehensive program. Ascension Health developed a bundle of interventions, which included nutrition, called SKIN to reduce the incidence of pressure ulcers in all at-risk patients. Nutrition has been demonstrated to reduce facility-acquired pressure ulcers as part of a comprehensive program. Evidence-based guidelines support nutrition intervention as part of pressure ulcer prevention and treatment. ESPEN recommends the use of ONS to reduce pressure ulcers and improve healing. A nutrition protocol, including ONS, is an effective component of a comprehensive program. Key associations promote proactive use of ONS.

According to chart reviews at Ascension Health, a nutrition consult was ordered for patients with pressure ulcers in 87% of cases; however, nutrition recommendations were followed only 35% of the time.

Surface: Be sure patient is on the correct type of mattress
Keep turning: Reposition patient at least every 2 hours when in bed
Incontinence: Offer toilet assistance every 2 hours
Nutrition: Monitor patient nutrition, carry out nutrition orders, and record supplement and meal intake

After utilizing the SKIN bundle for 14 months, the incidence of pressure ulcers was reduced from >2% to <1%.

There were no new facility-acquired stage III/IV pressure ulcers during the last 18 months of the study.

According to the National Pressure Ulcer Advisory Panel:
“Offer high-protein mixed oral nutritional supplements (ONS) and/or tube feeding, in addition to the usual diet, to patients with nutritional risk and pressure ulcer risk because of acute or chronic diseases, or following a surgical intervention.” (Strength of Evidence = A).

WOCN Guidelines for Prevention and Management of Pressure Ulcers:
“Elderly patients recovering from acute illness develop fewer pressure ulcers when given two daily nutritional supplement drinks.”
“Enteral nutrition support with high protein can significantly reduce the risk of development of pressure ulcers.”

ESPEN recommends the use of ONS to reduce pressure ulcers and improve healing.

<table>
<thead>
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<th>Recommendation</th>
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<tbody>
<tr>
<td>Pressure ulcer prevention</td>
<td>A</td>
</tr>
<tr>
<td>Pressure ulcer treatment</td>
<td>C</td>
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*Cited with permission from the NPUAP.†Cited with permission from the WOCN Society.‡ESPEN-European Society for Clinical Nutrition and Metabolism.
The cost of the treating just 1 pressure ulcer can provide 13 days of nutritional supplementation for 846 patients12

The estimated annual per-patient cost for pressure ulcers ranges from $11,000 to $70,000, with 73% of costs associated with nursing care13–16.

Pressure ulcers extend the average hospital stay by 5–13 days, resulting in an increase in in-patient cost17,18.

The additional cost of treating 1 pressure ulcer Nutritional support for 846 patients

$11,000 all-in cost to care for a pressure ulcer/$13 per person for nutritional supplementation = 846 people fed.*


The additional cost of treating one pressure ulcer can provide 13 days of nutritional supplementation for 846 patients.

As part of a comprehensive program, the cost of ONS for prevention of pressure ulcers is negligible compared to the cost of pressure ulcer treatment19–23.

Therapeutic nutrition is a highly cost-effective intervention to help reduce and treat pressure ulcers.13
As part of a comprehensive program,
Intervene with oral nutritional supplements to support pressure ulcer prevention and improve pressure ulcer healing

Lean Body Mass (LBM) loss and malnutrition start prior to admission and accelerate through the continuum of care²⁻⁴

Loss of LBM can result in serious complications, including impaired wound healing and development of pressure ulcers¹

Percent of pressure ulcers where nutrition plays a role⁵

- Not a contributing cause: 39%
- Poor nutrition a contributing cause: 61%

Aligned with evidence-based guidelines, ONS helps reduce the risk of pressure ulcers and also plays a role in pressure ulcer treatment⁶

Provide ONS to patients at risk for or with pressure ulcers

FIND your at-risk patients

FEED your patients oral nutrition supplements

FOLLOW your patients through discharge

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