Why Nutrition is Important: Critically Ill Patient

Critically ill patients are at increased risk of malnutrition due to the impact of inflammation and altered metabolism. This summary document is intended to provide key details and information about malnutrition in the critically ill patient and how it can be addressed.

KEY FACTS

Prevalence of Malnutrition

Types of Patients in the Intensive Care Unit	Prevalence of Malnutrition
Heterogeneous group	37.8%–78.1%
Elderly	37.8%–78.1%
Cardiac surgery	5.0%–20.0%
Liver transplantation	52.6%
Acute kidney injury	82.0%

Reprinted from Lew CCH, Yandell R, Fraser RJL, et al. Association between malnutrition and clinical outcomes in the intensive care unit: a systematic review. *JPEN J Parenter Enteral Nutr.* 2017;41(5):744-758.[1]

Nutrition support yielded a projected

$222 MILLION

in savings for Medicare patients with sepsis

- Critical illness is a pro-inflammatory process whereby amino acids are mobilized from muscle leading to negative nitrogen balance and muscle wasting.[2,3]
- Other contributors to muscle wasting are physical immobilization and an imbalance between nutrient intake and requirements.
- Inadequate nutrition in the intensive care unit (ICU) is associated with increased mortality[1,4-6], ICU length of stay (LOS)[1,4,5] and hospital LOS.[1,4-7]
- Inadequate nutrition is associated with increased 30-day readmission rate.[6,7]
- Critically ill malnourished patients have up to 6.5 x higher average cost per patient compared to general ward patients.[8]

What Should Clinicians Do? ▶

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KEY ACTIONS: WHAT SHOULD THE CLINICIAN DO?

- Perform nutrition screening followed by completion of a nutrition assessment by the registered dietitian in those identified at nutrition risk.

  Use the NUTRIC scoring method[9] *or Nutrition Risk Score-2002*[10] *to determine nutrition risk.*[11]

- Provide adequate calories and protein to meet anticipated energy expenditure and attenuate overall loss of muscle mass.[11]

- Begin nutrition support if oral intake is not possible or inadequate. Optimizing nutrition support therapy can result in cost savings as demonstrated by the ASPEN Value Project.[12]

- Start enteral nutrition (EN) (within 48 h).[12,13]
  - » If GI tract is functional (bowel sounds are not necessary to begin EN).
  - » Early EN in ICU patients has shown improved mortality and reduced infections when compared to delayed EN or withholding EN, and a shorter ICU and hospital LOS compared with parenteral nutrition (PN).
  - » EN can be safely provided in patients with sepsis in the absence of escalating vasopressors and symptoms of ileus.[14]

    Do not check gastric residual volumes as GRVs are unreliable.[15]

- Start PN in the following situations:
  - » Early PN if EN is contraindicated in severely malnourished patients.[13]
  - » Persistent or significant enteral feeding intolerance.[16]
  - » Escalating vasopressor requirement.

Recent pragmatic studies[15,17] comparing early EN to PN in critically ill patients have shown no increased infectious risk with early PN and no difference in mortality, suggesting early PN is safe and feasible when early EN cannot or will not be provided.[16]

- Monitor patients while on nutrition support therapy.

- Continue nutrition support including enteral and parenteral nutrition until adequate oral intake is demonstrated (≥75% needs). Inadequate oral intake post extubation is common.[18]

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