

Summary Points and Consensus Recommendations from the International Protein Summit¹

SYNOPSIS

The International Protein Summit brought global experts in clinical nutrition and protein metabolism together to offer expert consensus opinion to provision of protein in the intensive care unit (ICU) and help close the gaps between what is happening in clinical practice and what is recommended through society guidelines.

The Issue

Worldwide, ICU patients fail to receive protein in the range of 1.2-2.0g/kg/day as recommended by the SCCM-ASPEN 2016 Guidelines

Why Protein Matters

Protein loss is observed universally in all critically ill patients and associated with increased morbidity and mortality
Adequate protein delivery is very likely essential for optimal nutrition therapy

Recommendation

Clinicians are urged to prioritize efforts toward delivering protein to patients at high nutrition risk

Key summary points and emerging trends

Recommend ≥ 1.2 g/kg/day protein, with doses up to 2-2.5g/kg/day

- Protein catabolism is part of the metabolic response to critical illness. The magnitude of protein loss and subsequent muscle mass depletion is associated with impaired function, poor clinical outcomes and increased morbidity and mortality.
- Dietary protein is a fundamental prerequisite for muscle protein synthesis and maintenance of function.

Certain patients may need protein delivery at the higher end of the recommended range

Subgroups of ICU patients that may require higher protein feeding strategies include:

- The elderly (> 60 years)
- The obese
- Patients with trauma or burns
- Patients on dialysis/renal replacement therapy

Achieving protein goals should take precedence over meeting energy needs

- Data have demonstrated that after controlling for caloric intake, a significant reduction in mortality is seen when >80% of protein requirements are delivered. In contrast, no mortality benefit is seen with increasing calories after controlling for protein delivered.
- Early energy supply from nutrition therapy should be conservative, at 80-90% of measured energy expenditure.

High protein, hypocaloric feeding may help glucose control

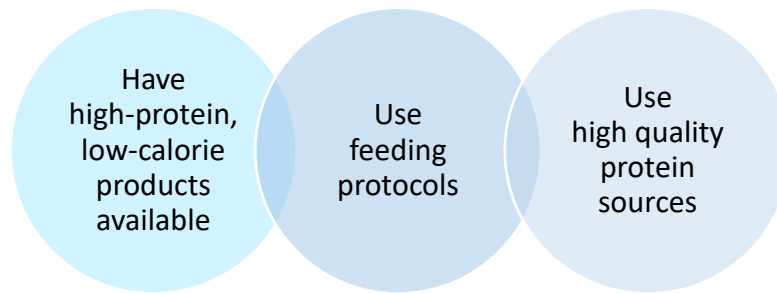
- High protein, hypocaloric feeding strategies have been shown to reduce the average daily insulin requirement, decrease the percentage of patients requiring insulin, and may reduce the risk of hypoglycemia/hyperglycemia.

High-quality protein sources should be used

- Protein sources are not equal in their ability to stimulate skeletal muscle protein synthesis (MPS).
- High quality protein sources (soy, whey, casein) are recommended. Low-quality sources such as collagen should be avoided.

1. Hurt R et al. Nutrition in Clinical Practice, 2017; 32(S1): 142-151S.

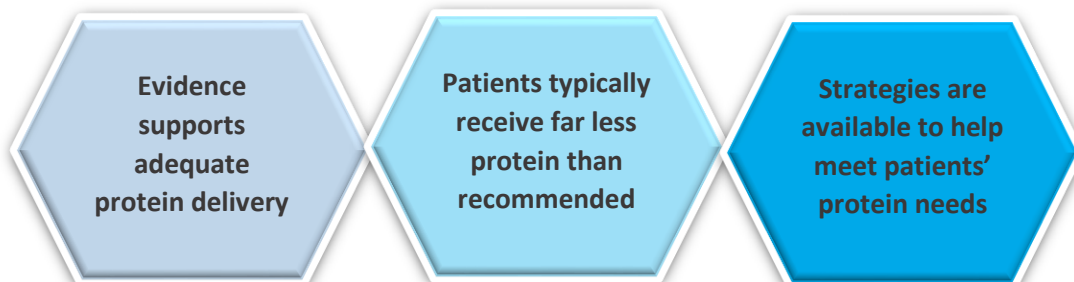
Strategies Recommended to Help Deliver Adequate Enteral Protein in the ICU



Subsets of critically ill patients have unique protein requirements, as outlined in the table below.

Patient Group	Protein Dose
Obese <ul style="list-style-type: none"> Obesity is present in >25% of patients admitted to the ICU. 2 g/kg ideal body weight (IBW) with a BMI 30–39.9; 2.5 g/kg IBW with BMI ≥40 kg 	2.0 – 2.5 g/kg/d
Renal Failure <ul style="list-style-type: none"> Acute kidney injury (AKI) is common, and can be present in >57% of patients in the ICU The provision of protein to ICU patients with AKI not yet on renal replacement therapy (RRT) should be determined in the same manner as other critically ill patients With RRT, higher levels of protein may be needed to achieve positive nitrogen balance 	No RRT: 1.2 – 2.0 g/kg/d RRT: 1.5 – 2.5 g/kg/d
Elderly (> 60 years) <ul style="list-style-type: none"> Protein provision is challenging due to baseline loss of muscle mass compared with younger patients, a reduced ability to recover muscle function following disuse, and a lower anabolic response to circulating amino acids involved in skeletal muscle protein synthesis. 	Up to 2.0 – 2.5 g/kg/d
Persistent Inflammation Catabolism Syndrome (PICS) <ul style="list-style-type: none"> Because of advances in ICU care of the critically ill patient, the percentage of patients who die of multiple-organ dysfunction (MOD) early in the ICU course has decreased. Those who survive often develop immunosuppression and a persistent inflammation catabolism syndrome (PICS). 	1.2 – 2.0 g/kg/d

In Summary



To view the full article visit: tinyurl.com/proteinsummit16

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