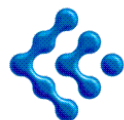


**Clinical Practice Guidelines for Nutrition
Support In Mechanically Ventilated,
Adult Critically Ill Patients**



**Critical Care
Nutrition**

www.criticalcarenutrition.com

Language of Summary Recommendations:

<u>Conditions</u>	<u>Language of Recommendation</u>
No reservations about endorsing intervention.	“strongly recommend”
Evidence supportive but minor uncertainties about safety, feasibility, or costs of intervention.	“recommend”
Supportive evidence weak and/or major uncertainties about safety, feasibility, or cost of intervention.	“should be considered”
Inadequate or conflicting evidence.	“insufficient data”

Color of Summary Recommendations:

<u>Recommendation</u>	<u>Colour code</u>
Recommend to do	Green
Recommend not to do	Red
Should be considered	Yellow
Insufficient data	White

Sponsors: Guideline a joint venture of the Canadian Critical Care Society, the Canadian Critical Trials Group, the Canadian Society for Clinical Nutrition, and Dietitians of Canada. The Canadian Critical Care Society and the Institute of Nutrition, Metabolism, and Diabetes of the Canadian Institutes of Health Research provided funding for guideline development.

ENTERAL NUTRITION (EN)	RECOMMENDATION
EN vs PN.	The use of EN over PN is strongly recommended .
Early vs delayed nutrient intake.	Early EN (within 24-48 hours of admission) is recommended .
Protein/peptides.	When initiating EN, the use of a whole protein formula (polymeric) is recommended .
Small bowel feeding.	In units where obtaining small bowel access is feasible, the routine use of small bowel feedings is recommended . In units where obtaining small bowel access involves more logistical difficulties, small bowel feeding should be considered for patients at high risk for intolerance to EN (on inotropes, continuous infusion of sedatives, or paralytic agents, or patients with high nasogastric drainage) or at high risk for regurgitation and aspiration (nursed in supine position). In units where obtaining small bowel access is not feasible (no access to fluoroscopy or endoscopy and blind techniques not reliable) small bowel feedings should be considered for those patients who repeatedly demonstrate high gastric residual volumes and are not tolerating adequate amounts of EN delivered into the stomach.
Body position.	In patients receiving EN, elevation of the head of the bed to 45 degrees is recommended . Where this is not possible, attempts to raise the head of the bed as much as possible should be considered .
Fish oils.	The use of an enteral formula with fish oils, borage oils, and antioxidants should be considered in patients with acute respiratory distress syndrome (ARDS).
Motility agents.	In patients who experience feed intolerance (high gastric residuals, emesis) the use of metoclopramide as a motility agent should be considered .
Achieving target dose of EN.	When initiating EN in head-injured patients, strategies to optimise delivery of nutrients (starting at target rate, higher threshold of gastric residual volumes and use of small bowel feedings) should be considered . In other critically ill patients there are insufficient data to make a recommendation.
Glutamine.	Enteral glutamine should be considered in burn and trauma patients. There are insufficient data to support the routine use of enteral glutamine in other critically ill patients.
Feeding protocols.	There are insufficient data to recommend the use of a feeding protocol in critically ill adult patients. If a feeding protocol is to be used, a protocol that incorporates prokinetics (metoclopramide) at initiation and tolerates a higher gastric residual volume (250 mls) should be considered as a strategy to optimise delivery of EN.
Arginine/other select nutrients.	It is recommended that diets supplemented with arginine and other select nutrients not be used.
Combination PN and EN.	It is recommended that PN not be started at the same time as EN. There are insufficient data to put forward a recommendation about when PN should be initiated in the critically ill patient who is not tolerating adequate amounts of EN. It is recommended that PN not be started in critically ill patients until all strategies to maximise EN delivery (small bowel feeding tubes, motility agents) have been attempted.
Closed vs open systems; Probiotics; pH; Fiber; High fat/Low CHO; Low fat /High CHO; Continuous vs other administration methods.	Insufficient data.

PARENTERAL NUTRITION (PN)	RECOMMENDATION
Glutamine.	When PN is prescribed, parenteral supplementation with glutamine, where available, is recommended . There are insufficient data to generate recommendations for IV glutamine in patients who are receiving EN.
Hypocaloric PN.	In patients who are not malnourished, are tolerating some EN, or when PN is indicated for short term (<10 days), hypocaloric PN should be considered . There are insufficient data to make recommendations about the use of hypocaloric PN or withholding of lipids in the following patients: those requiring PN for long term (>10 days), obese patients, and malnourished patients.
Use of lipids.	In patients who are not malnourished, are tolerating some EN, or when PN is indicated for short term (<10 days), the withholding of lipids should be considered . There are insufficient data to make recommendations about the withholding of lipids in patients who are malnourished or those requiring PN for long term (>10 days), obese patients, and malnourished patients.
Intensive insulin therapy.	In surgical critically ill patients receiving nutrition support, intensive insulin therapy to tightly control blood sugars between 4.4 – 6.1 should be considered . There are insufficient data to make a recommendation regarding intensive insulin therapy in other critically ill patients.
PN vs standard care.	For patients starting on EN, it is recommended that PN not be started at the same time. It is recommended that PN not be started in patients until all strategies to maximise EN delivery (such as small bowel feeding tubes, motility agents) have been attempted. In the patient who is not tolerating adequate EN there are insufficient data to put forward a recommendation about when PN should be initiated.
Branch Chain Amino Acids; Type of lipids; Zinc; Antioxidant strategies: Combined: single and multimodal; Mode of lipid delivery; Selenium.	Insufficient data.

In order to aid in the implementation of the Clinical Practice Guidelines please refer to the following resources:

Enteral Nutrition in The Critically Ill – Practice Guidelines Enteral Nutrition Feeding Guideline
 Enteral Nutrition: Management of Diarrhea Guideline Enteral Nutrition – Problem Solving Guide
 Care and Management of Nasoduodenal Feeding Tubes Routes of Nutrition Support Guideline
 Parenteral Nutrition Guidelines www.criticalcarenutrition.com

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