

**Canadian Clinical Practice Guidelines  
Summary of Revisions to the Recommendations**

**January 31<sup>st</sup> 2009**

#	Topic	Question	January 2009 Recommendation	2007 Recommendation
2.	Early vs. delayed nutrient intake	Does early enteral nutrition compared to late enteral nutrition result in better outcomes in the critically ill adult patient?	Based on 14 level 2 studies, we recommend early enteral nutrition (within 24-48 hours following admission to ICU) in critically ill patients.	Based on 11 level 2 studies, we recommend early enteral nutrition (within 24-48 hours following admission to ICU) in critically ill patients.
3.2	Dose of EN: Achieving target dose of EN *	Does achieving target dose of enteral nutrition result in better outcomes in the critically ill adult patient?	<b>UPGRADED from 2007</b> Based on 2 level 2 studies and 2 cluster randomized controlled trials, when starting enteral nutrition in critically ill patients, strategies to optimize delivery of nutrients (starting at target rate, higher threshold of gastric residual volumes, use of prokinetics and small bowel feedings) should be considered	Based on 1 level 2 study, when initiating enteral nutrition in head injured patients, strategies to optimize 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.
4.1 (a)	Composition of EN: Immune Enhancing Diets: Diets supplemented with arginine and other select nutrients	Compared to standard enteral feeds, do diets supplemented with arginine and other select nutrients result in improved clinical outcomes in the critically ill adult patient?	Based on 4 level 1 studies and 18 level 2 studies, we recommend that diets supplemented with arginine and other select nutrients* not be used for critically ill patients.	Based on 4 level 1 studies and 17 level 2 studies, we recommend that diets supplemented with arginine and other select nutrients* not be used for critically ill patients.
4.1 (b)	Composition of EN: Immune Enhancing Diets: Fish oils	Does the use of an enteral formula with fish oils, borage oils, and antioxidants result in improved clinical outcomes in the critically ill adult patient?	Based on 1 level 1 study and 4 level 2 studies, we recommend the use of an enteral formula with fish oils, borage oils and antioxidants in patients with Acute Lung Injury (ALI) and acute respiratory distress syndrome (ARDS).	Based on one level 1 study and 2 level 2 studies, we recommend the use of an enteral formula with fish oils, borage oils and antioxidants in patients with acute respiratory distress syndrome (ARDS).
4.1 (c)	Composition of EN: Immune Enhancing Diets: Glutamine	Compared to standard care, does glutamine-supplemented EN result in improved clinical outcomes in the critically ill adult patient?	Based on 2 level 1 and 7 level 2 studies, 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.	Based on 2 level 1 and 5 level 2 studies, 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.

5.1	<p><b>Strategies to optimize delivery and minimize risks of EN:</b></p> <p><b>Feeding Protocols *</b></p>	<p>Does the use of a feeding protocol result in better outcomes in the critically ill adult patient?</p>	<p><b>UPGRADED from 2007</b></p> <p>Based on 1 level 2 study and 2 cluster randomized controlled trials, an evidence based feeding protocol that incorporates prokinetics at initiation and a higher gastric residual volume (250 mls) and the use of post pyloric feeding tubes, <b>should be considered</b> as a strategy to optimize delivery of enteral nutrition in critically ill adult patients.</p>	<p>There are <b>insufficient data</b> from randomized trials to recommend the use of a feeding protocol in critically ill patients. If a feeding protocol is to be used, based on 1 level 2 study, a protocol that incorporates prokinetics (metaclopramide) at initiation and tolerates a higher gastric residual volume (250 mls) <b>should be considered</b> as a strategy to optimize delivery of enteral nutrition in critically ill adult patients.</p>
5.2	<p><b>Strategies to optimize delivery and minimize risks of EN:</b></p> <p><b>Motility agents *</b></p>	<p>Compared to standard practice (placebo), does the routine use of motility agents result in better clinical outcomes in the critically ill adult patient?</p>	<p><b>UPGRADED from 2007</b></p> <p>Based on 1 level 1 study and 5 level 2 studies, in critically ill patients who experience feed intolerance (high gastric residuals, emesis), we <b>recommend</b> the use of a promotility agent. Given the safety concerns associated with erythromycin, the recommendation is made for metoclopramide. There are <b>insufficient data</b> to make a recommendation about the use of combined use of metoclopramide and erythromycin.</p>	<p>Based on a systematic review and 2 level 2 studies, in critically ill patients who experience feed intolerance (high gastric residuals, emesis), the use of metoclopramide as a motility agent <b>should be considered</b>.</p>

#	Topic	Question	January 2009 Recommendation	2007 Recommendation
9.4	Composition of PN: Glutamine *	Does glutamine supplementation of parenteral nutrition influence outcomes in the critically ill adult patient?	<b>UPGRADED from 2007</b> Based on 4 level 1 studies and 13 level 2 studies, when parenteral nutrition is prescribed to critically ill patients, parenteral supplementation with glutamine, where available, is <b>strongly recommended</b> . There are <b>insufficient data</b> to generate recommendations for intravenous glutamine in critically ill patients receiving enteral nutrition.	Based on 4 level 1 studies and 5 level 2 studies, when parenteral nutrition is prescribed to critically ill patients, parenteral supplementation with glutamine, where available, is <b>recommended</b> . There are <b>insufficient data</b> to generate recommendations for intravenous glutamine in critically ill patients who are receiving enteral nutrition.
10.4	Strategies to optimize benefits and minimize risks of PN: intensive insulin therapy	Does tight blood sugar control result in better outcomes in the critically ill adult patient?	Pending revision of section (awaiting results of the NICE SUGAR)	Based on 3 level 2 studies, in surgical critically ill patients receiving nutrition support, intensive insulin therapy to tightly control blood sugars between 4.4-6.6 mmol/L <b>should be considered</b> . In all critically ill patients, we <b>recommend</b> avoiding hyperglycemia (blood glucose > 10 mmol/L) by minimizing intravenous dextrose and using insulin administration when necessary.
11.1	Supplemental antioxidant nutrients: combined vitamins and trace elements	Does the addition of supplemental antioxidant combined vitamins and trace elements result in better outcomes in the critically ill patient?	Based on 3 level 1 and 13 level 2 studies, the use of supplemental combined vitamins and trace elements <b>should be considered</b> in critically ill patients.	Based on 3 level 1 and 10 level 2 studies, the use of supplemental combined vitamins and trace elements and <b>should be considered</b> in critically ill patients.
11.2	Supplemental antioxidant nutrients: parenteral selenium **	Does parenteral selenium supplementation (alone or in combination with other antioxidants) result in better outcomes in the critically ill patient?	<b>DOWNGRADED from 2007</b> There are <b>insufficient data</b> to make a recommendation regarding IV/PN selenium supplementation alone, or in combination with other antioxidants, in critically ill patients.	Based on 1 level 1 and 7 level 2 studies, the use of IV/PN selenium supplementation alone or in combination with other antioxidants <b>should be considered</b> in critically ill patients.

\* the recommendations for these sections were upgraded with the incorporation of new evidence and values.  
\*\* the recommendation for this section was downgraded with the incorporation of new evidence and values.