

# Updated Recommendations Available end January 2009

## Updated Recommendations from the Canadian Clinical Practice Guidelines for Nutrition Support

January 8<sup>th</sup> 2007

#	Topic	2003/2004 Recommendation	2005 Recommendation	RCTs since 2003 version	2007 Recommendation
2.	<b>Early vs. delayed nutrient intake</b>	Based on 8 level 2 studies, we recommend early enteral nutrition (within 24-48 hours following admission to ICU) in critically ill patients.	Based on <b>10</b> level 2 studies, we recommend early enteral nutrition (within 24-48 hours following admission to ICU) in critically ill patients.	Malhotra 2004 <sup>(1)</sup> Peck 2004 <sup>(2)</sup> Dvorak 2004 <sup>(3)</sup>	Based on <b>11</b> level 2 studies, we recommend early enteral nutrition (within 24-48 hours following admission to ICU) in critically ill patients.
4.1 (a)	<b>Composition of EN: Immune Enhancing Diets: Diets supplemented with arginine and other select nutrients</b>	Based on 3 level 1 studies and 15 level 2 studies, we recommend that diets supplemented with arginine and other selected nutrients not be used for critically ill patients.	Based on <b>4</b> level 1 studies and <b>16</b> level 2 studies, we recommend that diets supplemented with arginine and other selected nutrients not be used for critically ill patients.	Tseui 2004 <sup>(4)</sup> Kieft 2005 <sup>(5)</sup> Wibbenmeyer 2006 <sup>(6)</sup>	Based on 4 level 1 studies and <b>17</b> level 2 studies, we recommend that diets supplemented with arginine and other select nutrients* not be used for critically ill patients.
4.1 (b)	<b>Composition of EN: Immune Enhancing Diets: Fish oils</b>	Based on one level 1 study, the use of an enteral formula with fish oils, borage oils, and antioxidants should be considered in patients with acute respiratory distress	No change since 2003/2004.	Singer 2006 <sup>(7)</sup> Pontes-Arruda 2006 <sup>(8)</sup>	Based on one level 1 study and <b>2 level 2 studies, we recommend</b> the use of an enteral formula with fish oils, borage oils and antioxidants in patients with acute respiratory distress syndrome (ARDS).
4.1 (c)	<b>Composition of EN: Immune Enhancing Diets: Glutamine</b>	Based on 1 level 1 and 4 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 <b>2</b> level 1 and <b>5</b> 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.	--	No change since 2005
5.2	<b>Strategies to optimize delivery and minimize risks of EN: Motility agents</b>	Based on a systematic review and 1 level 2 study, in critically ill patients who experience feed intolerance (high gastric residuals, emesis), the use of metoclopramide as a motility agent should be considered.	No change since 2003/2004	Meissner 2003 <sup>(9)</sup>	Based on a <b>systematic review and 2 level 2 studies, in</b> critically ill patients who experience feed intolerance (high gastric residuals, emesis), the use of metoclopramide as a motility

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					agent should be considered.
5.4	<b>Strategies to optimize delivery and minimize risks of EN:</b> <i>Body position</i>	Based on 1 level 2 study, we recommend that critically ill patients receiving enteral nutrition have the head of the bed elevated to 45 degrees. Where this is not possible, attempts to raise the head of the bed as much as possible should be considered.	No change since 2003/2004	Nieuwenhoven 2006 <sup>(10)</sup>	Based on 1 level 1 and 1 level 2 study, we recommend that critically ill patients receiving enteral nutrition have the head of the bed elevated to 45 degrees. Where this is not possible, attempts to raise the head of the bed as much as possible should be considered.
6.4	<b>EN (Other):</b> <b>Gastrostomy vs. Nasogastric feeding</b>	New topic added 2007	New topic added 2007	--	There are insufficient data to make a recommendation on gastrostomy feeding vs. nasogastric feeding in the critically ill.
8.	<b>PN: PN vs. standard care</b>	Based on a meta-analysis, in critically ill patients with an intact gastrointestinal tract, we strongly recommend that parenteral nutrition not be used routinely.	Based on 5 level 2 studies, in critically ill patients with an intact gastrointestinal tract, we recommend that parenteral nutrition not be used routinely.	Xian-Li 2005 <sup>(11)</sup>	No change since 2005
9.4	<b>Composition of PN:</b> <b>Glutamine</b>	Based on 2 level 1 studies and 3 level 2 studies, when parenteral nutrition is prescribed to critically ill patients, parenteral supplementation with glutamine, where available, is recommended. There are insufficient data to generate recommendations for intravenous glutamine in critically ill patients who are receiving enteral nutrition.	Based on 3 level 1 studies and 5 level 2 studies, when parenteral nutrition is prescribed to critically ill patients, parenteral supplementation with glutamine, where available, is recommended. There are insufficient data to generate recommendations for intravenous glutamine in critically ill patients who are receiving enteral nutrition.	Zhou 2004 <sup>(12)</sup> Xian-Li 2005 <sup>(11)</sup>	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 recommended. There are insufficient data to generate recommendations for intravenous glutamine in critically ill patients who are receiving enteral nutrition.
10.4	<b>Strategies to optimize benefits</b>	Based on 1 level 2 study, in surgical critically ill patients	Based on 2 level 2 studies, in surgical critically ill patients	Grey 2004 <sup>(13)</sup> Van den Berghe 2006	Based on 3 level 2 studies, in surgical critically ill patients

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	<b>and minimize risks of PN: intensive insulin therapy</b>	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.	receiving nutrition support, intensive insulin therapy to tightly control blood sugars between 4.4-6.6 should be considered. There are insufficient data to make a recommendation regarding intensive insulin therapy in other critically ill patients.	<sup>(14)</sup>	receiving nutrition support, intensive insulin therapy to tightly control blood sugars between 4.4-6.6 mmol/L should be considered. <b>In all critically ill patients, we recommend avoiding hyperglycemia (blood glucose &gt; 10 mmol/L) by minimizing intravenous dextrose and using insulin administration when necessary.</b>
11.1	<b>Supplemental Antioxidant Nutrients: Combined Vitamins and Trace Elements</b>	There are insufficient data to make a recommendation regarding antioxidant nutrients (single or combined) in critically ill patients.	<b>Based on 4 level 1 and 7 level 2 studies, combined vitamins and trace elements should be considered in critically ill patients.</b>	Crimi 2004 <sup>(15)</sup> Angstwurm 2007 <sup>(16)</sup>	Based on <b>3</b> level 1 and <b>10</b> level 2 studies, the use of <b>supplemental combined vitamins and trace elements</b> and should be considered in critically ill patients.
11.2	<b>Supplemental Antioxidant Nutrients: Parenteral Selenium</b>	There are insufficient data to make a recommendation regarding IV/PN selenium supplementation alone or in combination with other antioxidants in critically ill patients	No change since 2003/2004	Angstwurm <sup>(16)</sup>	Based on <b>1</b> level 1 and <b>7 level 2</b> studies, the use of IV/PN selenium supplementation alone or in combination with other antioxidants <b>should be considered</b> in critically ill patients.

Highlighted areas indicate changes that have been made

# : corresponds to the original numbering in the JPEN 2003 publication (Heyland et al)

\* refer to [www.criticalcarenutrition.com](http://www.criticalcarenutrition.com) for more details on this and other topics

**Section 6.3: Title “EN Other: Prebiotics”** replaced with **“EN Other: Prebiotics/Probiotics/Synbiotics”**

**Section 10.2: “Strategies to Optimize Parenteral Nutrition and Minimize Risks: Use of lipids”**: wording of recommendation changed to make it specific to “withholding of lipids high in soybean oil”

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