The **R**ight
Approach to
Nutrition Care
in ICU

A process for incorporating the Canadian CPG, ASPEN/SCCM and ESPEN guidelines into a nutrition care plan for a critically ill patient

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Use the following prompts to assist in identifying the Right nutrition care plan for a critically ill patient

Right Patient

* Is this right patient to provide a nutrition support intervention on using the Right approach:
	+ Patient should be critically ill and fully resuscitated and hemodynamically stable
* Assess clinical picture for presence of shock, sepsis, MSOF, ALI/RDS, trauma, burns, upper GI Sx, use NUTRIC score to determine nutritional risk, BMI risk
* Consider your plan based on the following:

Right Nutrition Strategy - based on your assessment above.

Use EN before PN if at all possible

**If EN**

* Whole protein, polymeric formulas should be considered first
* Use of small bowel feeding recommended, when it can be carried out easily
* Motility agents recommended
* Probiotics should be considered – not saccharomyces boulardii
* Severe Sepsis/critically ill **no** arginine
* ARDS/ALI/trauma consider EN with fish oil, borage oil and antioxidants
* Shock, MSOF – **no** glutamine enteral or parenteral (REDOXS with combined EN/PN glutamine)
* Burns, trauma patients – consider enteral glutamine
* Burns - supplement with Cu, Se, Zn higher than standard dose
* Severe acute pancreatitis nasoenteric tube for EN as soon as volume resuscitation is complete

**If PN**

* Supplementary PN is a reserve tool to use when target not reached with EN alone
* Reduction of the load of omega 6 fa /soy bean oil emulsions should be considered
* Not malnourished and tolerating some EN🡪 withhold IV lipids high in soybean oil
* *Burns, trauma* – consider parenteral glutamine while on PN - CCN Nibble April 2013
* MSOF or shock - NO Parenteral glutamine should be considered – (REDOXS with combined EN/PN glutamine)
* Parenteral selenium should be considered alone or in combination with other antioxidants



Right time - what is the best timing for this therapy on this patient?

**If EN**

* Early EN– within 24-48h, of admission to ICU strongly recommended, minimize NPO
* Do not start EN and PNat the same time is recommended
* If not tolerating ENthere is insufficient data to say when to start PN

**If PN**

* Do not start PNuntil all strategies to maximize EN have been attempted is recommended
* PN not to be used for < 5-7 days
* Use PN if:
	+ previously healthy but NOT tolerating EN after a significant time
	+ On admission patient malnourished and not tolerating EN
	+ If major sx planned and EN not feasible and pt malnourished
* Early supplemental PNand high IV glucose not recommended

Right dose

* IC vs. predictive equations? Insufficient data predictive equations used with caution
* Consider the right weight to use in dosing - act BW, IBW, adj BW
* Hypocaloric EN feeding – insufficient data
* Start EN at goal rate (PEPuP)
* Strive to achieve 60-80% goal calories from EN in first 72h
* Patients who are not malnourished, are tolerating some PN or when PN is used short term 🡪 low dose PN should be considered
* Meet 80% of energy needs with PN
* Severely undernourished provide 25-30 cal/kg BW/d 🡪if not met give supplementary PN
* RRT patients should receive increased protein - 2.5g/kg/d
* Acute critical phase **excess** of 20-25 cal/kg BW/d may not be favorable
* Anabolic recovery phase 25-30 cal/kg BW/d– if not met give supplementary PN



* Severely undernourished provide 25-30 cal/kg
* In patientsBMI <30 protein 1.2-2.0 g/kg act BW
* Obese pt use IC or if not available the PSU 2010 modified PSU if >60yo/1.2g pro/kg act BW or 2-2.5g/kg IBW



Right Evaluation/monitoring

* Use a bedside monitoring tool assess adequacy of intake
* Use of threshold for GRV 250– 500mL should be considered
* Volume of GRV to return to the patient - sufficient data ( consider 250-500mL)
* Use of a prokinetic at start of EN should be considered - patients with EN intolerance 🡪the use of a prokinetic is recommended (metoclopramide)
* Monitor position of feeding tubes in small bowel for displacement
* Monitor for HOB 30-45°
* Monitor for metabolic control i.e. blood sugar control of 7-8 mmol/L is recommended and >10mmol/L should be avoided
* Calculate NCP adequacy and report on deficits

Right outcome/response

* Develop and use a plan based on guidelines
* Meet estimated nutritional needs
* Preservation of LBM
* Provision of therapeutic intervention through nutrition
* Metabolic and physical tolerance to care plan
* Consider participate in the International Nutrition Survey to assess your service www.criticalcarenutrition.com

Note: Insufficient data to support use of:

* Enteral: Fibre (soluble), BCAA, hydroxyl methyl butyrate, closed vs. open systems, low pH feeds, ornithine ketoglutarate, high fat/low CHO or low fat/high CHO diets, low CHO diets in conjunction with insulin tx, high protein diets for HI patients, fish oils alone, Vit D, continuous vs. other methods of EN delivery, G feeds vs. NG
* Parenteral: Zinc, use of lipids via TNA vs. piggy back delivery systems

**References:**

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