**INITIATION/TITRATION OF ENTERAL NUTRITION (EN)**

1) Unless contraindicated, include EN orders with admission orders (ALWAYS discuss with ICU Fellow/Attending).
   - **GI access:** Insert #18 Fr Salem Sump NG tube (unless contraindicated)
   - "Enteral Feeding Continuous": Use the drop-down menu to order tube feeds.
     - Formula options: Isosource HP 1.0, Isosource 1.2, Resource 2.0, or Novasource Renal
     - Choose Isosource HP 1.0 unless patient requires a fluid restriction
     - Default is for feeds to start at 25mL/hr and advance to goal rate as per ICU Gastric Feeding Guideline.
     - Indicate goal rate in the yellow box in Cerner (see table on reverse to determine goal rate)

2) Following GI surgery, **do not** initiate EN until the Surgeon and ICU Fellow/Attending have discussed the feeding plan.
3) Unless contraindicated, order the ICU bowel protocol (standard or spine-injured) with ICU admission orders.
4) MVI (10 mL), folate (5 mg), thiamine (200 mg) IV once daily x 3 days are standard on ICU admission orders.

**MAINTENANCE OF EN**

5) Initiate metoclopramide (unless contraindicated) in patients with elevated gastric residual volumes (> 250 ml Q4H).
   - normal renal function: 10 mg IV Q6H
   - renal dysfunction: dosage adjustment required

6) **DO NOT STOP EN** in the following situations (unless medically indicated):
   - elevated gastric residual volumes
   - absent bowel sounds
   - single episodes of stimulation related emesis
   - diarrhea

7) Insert a nasoduodenal (ND) feeding tube (unless contraindicated) in the following patients:
   - gastric residual volumes >250 mL despite 4 doses metoclopramide followed by 2 doses erythromycin
   - aspiration risk (i.e. Hx. GERD; nursed in supine or prone position)

8) Manage patients with diarrhea as follows:
   - discontinue bowel protocol
   - send stool for C. difficile
   - rule out stool impaction (rectal check/other)

   **Note:** Use of a FMS rectal tube requires a full evaluation and completion of the ICU FMS PowerPlan.

9) Adhere to the ICU approved peri-operative NPO periods:
   - intubated: NPO 5 minutes; resume EN at pre-op rate within 1hr.
   - non-intubated: NPO 6 hrs; resume EN at pre-op rate within 1hr.

10) Adhere to the ICU approved extubation NPO periods:
    - pre-extubation: NPO 5 minutes (place NG Sump on suction).
    - post-extubation: resume EN at last tolerated rate in 4 hrs (unless contraindicated).
    - post-extubation: for oral intake, swallowing screen to be completed **no sooner than** 6 hours post-extubation*.

11) Prior to extubation, assess if EN is required. If required, ensure the patient has the appropriate feeding access. Unless contraindicated, a small bore nasogastric feeding tube is preferable.

12) Following extubation, a swallowing screen is required prior to oral intake (physician order required)*.

13) For patients on BiPAP EN is to be initiated/continued unless contraindicated (see below):
    - < 4 hrs post-extubation (see #10 above)
    - impending intubation
    - high risk aspiration (i.e. Hx GERD; elevated GRV; inability to protect airway – decreased LOC)

    **Note:** When in doubt hold EN; clarify feeding plan with ICU Fellow/Medical Attending.

*See ICU Swallowing Screening Guide

**TERMINATION OF EN**

14) Following extubation resume EN if oral intake is contraindicated. Discontinue EN once oral intake is adequate.

**RESOURCES:** All VCHA critical care algorithms/guidelines are located at www.ubccriticalcaremedicine.ca. Refer to www.criticalcarenutrition.com for evidence based nutrition support practice guidelines.

**Developed by:** J. Greenwood RD, in consultation with the ICU staff (Nutrition, Nursing, Medical). **Update:** 08/03/2019. **Reviewed by:** Members of the ICU QI/QA Committee. **Approved by:** Dr V. Dhingra, ICU Medical Director
### HOW TO USE

Determine goal feed rate based on patient weight. Standard formula is Isosource HP 1.0. Only choose Resource 2.0 or Novasource Renal if a fluid restriction is required and/or patient is receiving IHD. CRRT patients should receive Isosource HP 1.0. Use refeeding goal rate for malnourished patients.

### MALNUTRITION AND REFEEDING SYNDROME

To prevent significant electrolyte and fluid shifts associated with refeeding syndrome, recommend initial goal feeding rate provide 20kcal/kg for patients suspected to be malnourished. Advance to goal (25kcal/kg) when electrolytes have been within normal limits for 24h.

### SEVERELY MALNOURISHED PATIENTS

Initiate feeds at 25mL/hr and only advance to the refeeding goal rate (20kcal/kg) once electrolytes are repleted.

### RISK FACTORS FOR MALNUTRITION

- Substance use disorder
- NPO/suboptimal intake ≥ 5-7 days
- ≥ 10% weight loss over past 6 months
- Physical signs of malnutrition

### ENTERAL NUTRITION FORMULARY

<table>
<thead>
<tr>
<th>FORMULA</th>
<th>ISOSOURCE HP 1.0</th>
<th>RESOURCE 2</th>
<th>NOVASOURCE RENAL</th>
<th>ISOSOURCE 1.2</th>
<th>PEPTAMEN INTENSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>kcal/mL</td>
<td>1.0</td>
<td>2.0</td>
<td>2.0</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>% of calories from protein</td>
<td>25%</td>
<td>17%</td>
<td>18%</td>
<td>18%</td>
<td>37%</td>
</tr>
</tbody>
</table>
| COMMENTS | - Standard feed for ICU admission  
- High protein  
- Appropriate for CRRT  
- Fluid restricted  
- Quite low protein  
- For stable IHD patients  
- Fluid restricted  
- Contains low levels of K and PO₄  
- Quite low protein  
- For stable ward patients  
- Quite low protein  
- Very high protein  
- Use during Propofol infusion to provide adequate protein without overfeeding calories |