PICU ENTERAL FEEDING GUIDELINES

AIM: *To continue, resume or initiate enteral feeds within 24 hours of PICU admission and reach target nutritional goals earlier for all patients unable to take adequate oral nutrition.* *Early enteral nutrition reduces morbidity and mortality, preserves protective gut barrier function and improves overall nutritional status.*

INDICATIONS:

- All PICU patients (including those requiring ventilator support) who are unable to feed orally, or sustain adequate oral nutrition
- Functioning GI tract
- Absence of contraindications
- Absence of ileus confirmed

Trophic feeding may start in absence of bowel sounds

CONTRAINDICATIONS:

- Severe acidosis; hypoxia
- Hypotension; shock
- Escalating pressor support
- Ongoing volume resuscitation
- Severe cardiac dysfunction
- Mechanical bowel obstruction, bowel ischemia, significant GI bleed, severe ileus with vomiting, intractable diarrhea.
- Imminent surgery or procedure

- **Evaluate for risk of aspiration** (depressed cough/gag, altered mental status, delayed gastric emptying, significant reflux or vomiting, severe bronchospasm, prone positioning, unable to elevate HOB >30 degrees):
  +aspiration risk→ transpyloric (nasoduodenal or nasojejunal) feeding tube
  -aspiration risk→ nasogastric feeding tube or via G.T.T. (in place prior to admission)
- **Place nasogastric tube**, preferably at time of intubation, or transpyloric tube, then confirm placement
- **Elevate HOB >30 degrees** unless contraindicated
- **Obtain Nutrition Consult** for all patients starting enteral feeds; coordinate with dietitian to identify goal feeding volume, nutritional status/ risk of malnutrition, caloric needs

Trophic Feeding Candidates:

- Resolving hypotension
- Weaning pressor support
- Post GI surgical patients

Start:
<10kg: 0.5ml/kg/hr
10-40kg: 5ml/hr
>40kg: 10ml/hr

- Establish tolerance of trophic volume without increasing
- Assess appropriateness for advancement on daily rounds
- If unable to advance after 3-5 days, consider PN: earlier for malnourished patients, 3 days for <2 years well-nourished, 5 days for well-nourished >2 years

Continuous Feeding Candidates:

- All patients with transpyloric or jejunal feeding tubes
- Intolerance to bolus feeds
- Ready to advance trophic feeds to goal volumes

Start:
1 mL/kg/hr
OR
25% hourly goal rate
Max: 25mL/hr

Advance:
<10kg: 1-5mL/hr q 4hrs
>10kg: 5-20mL/hr q 4hrs

- Advance until goal volume reached
- Titrate IVF to enteral volumes

Bolus Feeding Candidates:

- Stable
- Gastric tube placement
- Ready to consolidate or resume home schedule

Transition from Continuous:
<6 months: Provide 3 hr equivalent volume over 1 hr
>6 months: Provide 4 hr equivalent volume over 1 hr

Resuming Home Regimen:

- Initiate feeds at ½ of usual home bolus volume
- If tolerating, advance to ¾ of usual home bolus volume at next feeding
- Advance to full volume of usual home bolus
- Titrate IVF to enteral volumes

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Formula Selection

- **Infants <12months CGA or ≤10kg:** breast milk or standard term formula (Enfamil or Similac) or home formula, if known
- **Toddler/Children >12 months or >10kg:** use Peptamen Jr or equivalent as default pediatric formula if no history of prior enteral formula feeding and no documented milk protein allergy
- **Older children/Teenagers over 10 years or 40kg:** use adult Peptamen with Prebio or equivalent as default formula if no prior formula feeding and no documented milk protein allergy
- **Consult unit dietitian or on-call dietitian,** if needed, for clarification of home formula and/or

Signs and Symptoms of Feeding Intolerance **notify MD if the following occur:**

- **Emesis**: >2 or more episodes/24hrs→ hold x 4hrs and reassess, consider scheduled antiemetic if appropriate or transpyloric tube placement; if volume intolerant, reduce volume of bolus feeds or consider continuous drip
- **Diarrhea**: >3 episodes of loose stool/24hrs→ discontinue laxatives and stool softeners, consult pharmacy to discontinue any sorbitol containing medication; consider opiate withdrawal; evaluate for stool pathogen (C.difficile if hematest positive) or malabsorption; consult dietitian to consider addition of soluble fiber and/or probiotic, need for alternate formula
- **Abdominal discomfort** (patient verbalizes discomfort, exhibits increased heart rate or blood pressure) **or abdominal distention:** >2 consecutive increases in abdominal girth measurement/24hrs→hold x 4hrs and reassess; ensure patient is stooling adequately; consider venting G.T.T. after/between feeds if applicable; consider promotility agent (erythromycin); consider return to previously tolerated feeding rate or volume

***Gastric residual volumes** do **NOT** correlate with gastric volumes, gastric emptying, reflux, or aspiration therefore are **NOT** an indication for feeding intolerance in absence of other signs and symptoms of intolerance*

Bowel Management

- **Upon initiation of enteral nutrition, choose one of the following:**
  - Docusate sodium (Colace®) PO BID, or
  - Polyethylene glycol (Miralax™) PO at bedtime

  ***IF ON OPIATES**, add senna (Senokot®) PO at bedtime or may substitute Peri-Colace® (fixed dose combination of docusate sodium and senna) PO BID*
- **If NO stool after 48hrs on enteral nutrition, choose one of the following:**
  - Increase Miralax™ to BID, or
  - Consider glycerin suppository or bisacodyl suppository once daily
- **If NO stool after 24 hrs of increasing Miralax™ or adding suppository, choose one of the following:**
  - Start Senokot (stimulant) PO daily or BID (if not started already)
  - Consider phosphate enema

Enteral Nutrition Maintenance

- **Review if goal volumes have been met** after day 3 of starting feeds. If no, consider promotility agent or transpyloric tube placement; ensure implementation of bowel management strategies; avoid unnecessary and prolonged interruptions in enteral feeding; monitor daily weights (ideally)
- **If enteral feeds are interrupted** for procedures or reasons other than intolerance, feedings should be resumed at previously tolerated rates

References

PICU Enteral Feeding Guidelines

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