



ICU ENTERAL NUTRITION PROTOCOL

ICU Medical Nutrition Therapy (MNT) – Nutrition Care Process

- Completion of Nursing History and Assessment Nutrition Screen within 24 hours.
- Nutrition assessment by dietitian to determine nutrition risk/status.
- Determine route to deliver nutrition support and nutrition care plan based on:
 - GI Function
 - Expected duration of nutrition therapy
 - Aspiration risks
 - Potential for or actual development of organ dysfunction
 - Practice Guidelines (SEE BELOW)
- Monitor patient response to MNT and change in patient status.

Practice Guidelines

- Measures should be taken in hospitalized patients to detect actual or potential malnutrition at an early stage.
- Patients should be considered malnourished or at risk of developing malnutrition if they have inadequate nutrient for > 7 days or if they have a weight loss of > 10% of their pre-illness body weight.
- The onset or development of malnutrition should be prevented or slowed by giving appropriate patients optimum nutrition counseling and diets.
- Patients who cannot maintain adequate oral intake and who are candidates for nutrition support should be considered for enteral tube feedings prior to parenteral nutrition.
- Malnutrition should be corrected at a judicious rate and overfeeding should be avoided to prevent cardiovascular, pulmonary, and metabolic complications.
- Enteral access should be obtained whenever possible, either at time of surgery with direct enteral access or with nasogastric (or orogastric) feedings. Gastric atony associated with sepsis may limit the use of direct intragastric feedings. Limiting enteral feedings is advised in hemodynamically unstable patients because of splanchnic blood flow.
- Enteral tube feeding and parenteral nutrition should be combined when enteral support alone is not possible.
- PARENTERAL NUTRITION (PN) should be used alone when oral diet and/or *enteral feeding techniques have failed* to provide some or all of the patient's nutrient requirements or in selected conditions in which *enteral nutrition support is contraindicated*.
- PN is *unlikely* to benefit a patient who will be able to take enteral nutrition within 4 - 5 days after illness onset or who has a relatively minor injury.
- POSTOPERATIVE NUTRITION may be indicated for malnourished patients expected to undergo a period of postoperative starvation. If this period is expected to be longer than one week, nutrition support may be beneficial for *mildly* malnourished individuals. Ideally, access for enteral feeding is obtained at the time of surgery. Institution of nutrition support within 1 to 3 days after surgery is judicious in severely malnourished patients.

Indications and Considerations for Initiation of Enteral Feedings

- Decreased p.o. intake (< 50 - 75% intake of oral diet). Length of deficit allowed to continue should be based on preexisting malnutrition, expected catabolic severity, and duration of current illness.
- Inability to take oral diet (i.e. artificial ventilation, decreased level of consciousness,odynophagia, dysphagia)

Contraindications of Enteral Feedings

- Terminal Illness
- Short Bowel
- Obstruction (below the duodenum) or pseudo-obstruction
- GI Bleeding
- Vomiting and Diarrhea
- Fistulas (location may allow enteral feedings)
- GI Ischemia
- Ileus (post-pyloric feedings may circumvent Gastric Ileus)
- GI Inflammation: Pancreatitis
- Diffuse Peritonitis

References

A.S.P.E.N. Board of Directors. *Guidelines for the Use of Parenteral and Enteral Nutrition in Adult and Pediatric Patients*. Journal of Parenteral and Enteral Nutrition. Volume 17, Supplement, July - August 1993.

McClave, S.A. et al. *Enteral tube feeding in the intensive care unit: Factors impeding adequate delivery*. Critical Care Medicine 1999; 27, 1252 - 1256.



PHYSICIAN'S ORDER SHEET
STANDING ORDERS FOR:
INTENSIVE CARE UNIT

Check here if STAT medications ordered

ANOTHER BRAND OF GENERICALLY EQUIVALENT PRODUCT, APPROVED BY THE PHARMACY AND THERAPEUTICS COMMITTEE, MAY BE ADMINISTERED UNLESS (SPECIFIC) IS WRITTEN AFTER THE MEDICATION ORDER.

ENTERAL NUTRITION

GOALS

- Promote early nutritional intervention to maintain, support, or improve nutritional status.
- Decrease inappropriate use of parenteral nutrition.
- Initiate nutrition support within 24 - 48 hours if pt NPO and stable and/or appropriate for nutrition support. (See Practice Guidelines)
- Reach at least 80% of estimated energy and protein needs within 3 - 4 days of admission to ICU

ROUTE OF ADMINISTRATION

Gastric Feedings

- Nasogastric (NG)
- Orogastric (OG)
short term; critical care
- PEG/Gastrostomy

Small Bowl Feedings (cannot check residuals)

- Nasoduodenal (ND)
- Nasojejunal (NJ)
- Jejunostomy
- Use 10-10-10 Protocol (see order sheet)
- Other: _____

FORMULA

- | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> IsoSource HN
Standard formula, no fiber
(1.2 cal/ml, 53gm protein/l.) | <input type="checkbox"/> IsoSource 1.5 Cal
Lower CHO, fluid restricted
(1.5 cal/ml, 68gm protein/l.) | <input type="checkbox"/> NovaSource 2
Fluid restricted
(2.0 cal/ml, 90gm protein/l.) |
| <input type="checkbox"/> FiberSource HN
Standard formula, with fiber
(1.2 cal/ml, 53gm protein/l.) | <input type="checkbox"/> Impact with Glutamine
Immunonutrition formula
(1.5 cal/ml, 84gm protein/l.) | <input type="checkbox"/> NovaSource Renal
Renal failure/Dialysis - K, Phos
& fluid restricted
(2.0 cal/ml, 74gm protein/l.) |
| <input type="checkbox"/> IsoSource VHN
High protein
(1.0 cal/ml, 62gm protein/l.) | <input type="checkbox"/> Oxepa
Prevention and Tx of ARDS
(1.5 cal/ml, 63gm protein/l.) | <input type="checkbox"/> Suplena
Renal failure - K, Phos & Fluid restricted -
prevention of/or no plan for dialysis
(2.0 cal/ml, 40gm protein/l.) |
| <input type="checkbox"/> Peptinex DT
Semi-elemental formula for
malabsorption, prolonged NPO status
(1.0 cal/ml, 50gm protein/l.) | <input type="checkbox"/> NutriHep
Hepatic failure/enkephalopathy
from protein sensitivity, High BCAA
(1.5 cal/ml, 40gm protein/l.) | <input type="checkbox"/> Other
_____ |
| <input type="checkbox"/> Vivonex T.E.N.
Complete elemental for GI impairment,
very low fat
(1.0 cal/ml, 38 gm protein/l.) | | |

FEEDING SCHEDULE

- To be determined by Dietitian
- Continuous starting at: _____ ml/hr and increasing _____ ml/hr until goal date obtained.
- Goal rate: _____ ml/hr

Crushed medications are NOT to be administered through J-Tube

CONFIDENTIAL INFORMATION

 PHYSICIAN'S SIGNATURE

 DATE/TIME

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Initiation

- If feeding tube not currently in place, place ordered feeding tube and verify placement. After verification, mark tube to verify tube placement for continuous monitoring.
 - Nasogastric Feeding Tube
Verify placement by air bolus
 - 8F Nasogastric Feeding Tube
Verify placement by KUB
 - Orogastric Feeding Tube
Verify placement by air bolus
 - 8F Nasoduodenal Feeding Tube
Verify placement by KUB
- Initiate Aspiration Precautions: HOB > 30 degrees, **use blue dye for TF only if ordered by physician.**
- Initiate full strength FiberSource HN tube feeding formula at 20 ml/hr, unless other formula designated by physician or dietitian. Advance to appropriate goal rate based on **Advancement and Monitoring** instructions below.
- Check gastric residuals q 4 hours.

Patient's Actual Body Weight	Goal Rate For: IsoSource HN, FiberSource HN, IsoSource VHN	Goal Rate For: IsoSource 1.5 Cal, NovaSource Renal, or NovaSource 2
> 60 Kg.	65 ml/hr	40 ml/hr
< 60 Kg.	45 ml/hr	30 ml/hr

- Flush tube with 30 ml water before and after medication administration. Administration of liquid medication is preferable over crushed medications. If crushing medications, confirm that mechanical manipulation of medications is allowed.
- Flush tube with 100 ml water q 8 hours unless otherwise instructed. **Do not flush feeding tubes with cola or juice.**
- Crushed medications are NOT to be administered through J-Tube.**

Advancement and Monitoring

Sign of Intolerance	Action
Gastric Residuals	<ul style="list-style-type: none"> If residuals > 150 ml, hold TF 1 hour and recheck residuals. If residuals > 150 ml on more than 2 occasions, ask physician to consider initiating Reglan (Metoclopramide 10 mg. q 6 hours IV or p.o.) and placing dobhoff feeding tube for duodenal feedings. If able, place patient on right side for 1 hour. Check for duodenal placement of dobhoff tube with abdominal KUB. (If unable to advance dobhoff into the duodenum and residuals continue > 150 ml, hold TF until cause for intolerance determined.) If residuals < 150 ml, advance TF rate 20 ml/hr every 8 hours until goal rate as ordered by physician or dietitian is achieved. (If goal rate not specified, determine goal rate using above chart.)
Abdominal distention/pain, nausea/vomiting, aspiration	<ul style="list-style-type: none"> Hold TF until cause can be evaluated.
Glucose	<ul style="list-style-type: none"> If glucose > 180 mg./dl, call physician to initiate SS Insulin Protocol. If unable to control glucose with SS Insulin Protocol, consider change of formula to diabetic formula, e.g. IsoSource 1.5 Cal.
Constipation	<ul style="list-style-type: none"> Dulcolax suppository PRN, per physician order (surgeon if patient is post op). If patient is on non-fiber formula, consider change to fiber-containing formula or adding fiber to tube-feeding. (Fiber containing formulas: FiberSource HN and IsoSource 1.5 Cal). Consider increasing fluid given to patient.
Diarrhea (> 200 gm stool/day or > 3 watery stools/day)	<ul style="list-style-type: none"> Review medications (Sorbitol-based elixirs, antibiotics, magnesium, and phosphorus) Check for impaction. Discuss need to check for Clostridium Difficile with physician. Obtain order for Lomotil if antibiotic related diarrhea has been ruled out. Bowel atrophy (extended NPO status), consider trial of semi-elemental formula (Subdue). Microbial contamination of formula - limit hang time of TF in closed system (1 l. containers) to 36 hours or 8 hours if using open system (cans or opened 1 l. containers). Change tubing and feeding bag every 24 hours.

