Adult Malnutrition Screening and Nutrition Intervention Pathway

Nutrition screening of patients within 24 hours of hospital admission conducted by RN using validated nutrition screening tool that is age appropriate[1,2]

(18+ years):
Malnutrition Screening Tool (MST): Score ≥ 2 indicates at-risk of malnutrition[3]

(65+ years):
Mini Nutritional Assessment (MNA®): Score ≤ 11 indicates with (or at-risk of) malnutrition[3]

Other validated screening tool: Based on hospital preference

Nutrition screening indicates with (or at-risk of) malnutrition

YES

Triggers Registered Dietitian Nutritionist (RDN) consult to perform Nutrition Assessment and determine Nutrition Risk within 24 hours of Malnutrition Screening. [2, 4-7]

- Nutrition Focused Physical Assessment
- NRS 2002 or Modified NUTRIC[8,9]

NO

Nutrition staff or designee to monitor and assess patients every 3-7 days for hospital-acquired malnutrition[2,4]

Malnutrition and/or High Nutrition Risk Identified

YES

Diagnosis/risk is documented by RDN and confirmed by Physician[2,5-7]

NO

Nutrition Care Plan and Intervention

Patient awake, alert and able to tolerate oral feedings

NO

Initiate Specialized Nutrition Support

YES

Initiate Oral Nutritional Supplements (ONS):
2 servings per day within 24 hours of screening[6,7]

Diet Order	ONS Product Selection
Higher Protein	BOOST® High Protein Drink
Higher Calorie	BOOST PLUS® Drink
Fluid Restriction	BOOST PLUS® Drink
Diabetes-friendly	BOOST Glucose Control® Drink
Renal-friendly	NOVASOURCE® Renal Drink
Clear Liquid	BOOST BREEZE® Drink
Thickened Liquids	BOOST® Nutritional Pudding
All Other Diets	BOOST® High Protein Drink

Patient diet and ONS orders re-evaluated by the RDN during nutrition assessment

Is Enteral Nutrition Contraindicated based on the following[10]:

- Severe Malabsorptive Condition
- Severe GI Bleed
- Distal High Output GI Fistula
- Paralytic Ileus
- Intractable Vomiting and/or Diarrhea
- Mechanical Obstruction
- Inaccessible GI tract

NO

Start Enteral Nutrition Support

YES

Consider parenteral nutrition if unable to start oral or enteral feeding

Documented Nutrition Care Plan in Medical Record[2,5]

Use the Malabsorption Index[11] worksheet below to assist in identifying individuals with malabsorption and provide guidance in the selection of enteral diets.

Instructions: Check the box next to the answer that best applies to each question.

1. Stool frequency and consistency

How frequently does the individual experience diarrhea* and/or loose stools?

- ☐ **Every day** (4 points)
- ☐ **Three or more times per week** (3 points)
- ☐ **Rarely** (0 points)

2. Medication

Is the individual on a sorbitol-containing medication or other medications which promote rapid intestinal transit time and/or is the individual on a medication to control stools?

- ☐ **Yes** (3 points)
- ☐ **No** (0 points)

3. Nutritional status

Is weight loss occurring despite the provision of a reasonable level of calories and protein (eg, 25-35 kcal/kg with >1.0 g protein/kg/day)?

- ☐ **Yes** (3 points)
- ☐ **No** (0 points)

4. Medical diagnoses

Have any of the following diagnoses been documented in the individual's medical record over the last year: Crohn's disease; inflammatory bowel disease; pancreatitis; Cytomegalovirus (CMV); cryptosporidiosis; short bowel syndrome; intestinal failure; bacterial overgrowth; Mycobacterium avium-intracellulare infection (MAI); AIDS enteropathy; liver disease?

- ☐ **Yes** (3 points)
- ☐ **No** (0 points)

5. Treatments and diagnoses

Have any of the following treatments or procedures been received over the last 6 months: radiation therapy to the GI tract or surrounding areas; intestinal resections; gastrectomy?

- ☐ **Yes** (3 points)
- ☐ **No** (0 points)

6. Serum albumin

Based on a recent laboratory report (within the last 2 months), what is the individual's serum albumin level , indicating inflammatory status[12,13] which could be linked to gut dysfunction?

- ☐ ≤2.0 g/dL (4 points)
- ☐ 2.1-2.5 g/dL (3 points)
- ☐ 2.6-3.0 g/dL (2 points)
- ☐ >3.0 g/dL (0 points)
- ☐ Result not available

Add points here:

Question 1		Question 2		Question 3		Question 4		Question 5		Question 6		Total Points
	+		+		+		+		+		=	

Enteral Formula Selection Guide based on Total Points from the Malabsorption Index Worksheet

Low (0 points)

Select an intact protein formula, examples include:

- **COMPLEAT® Formulas**
  Ingredients from Real Foods
- **ISOSOURCE® Formulas**
  Complete Nutrition
- **FIBERSOURCE® HN**
  Fiber-containing
- **REPLETE® Formulas**
  Very High Protein

Moderate (2-6 points)

Initiate high MCT-containing intact protein diet:

- **NUTREN® 2.0**
  Calorically Dense Complete Nutrition
  If <60% of goal rate achieved due to documented GI intolerance*, advance to peptide-based, MCT-containing diet:
- **PEPTAMEN® Formulas**
  Peptide-based, Trusted Source for Tolerance
- **IMPACT® Peptide 1.5**
  Peptide-based Immunonutrition for Surgery and Trauma Patients

High (7-14 points)

Peptide-based, MCT-containing formula or free amino acid-based, very low-fat diet:

- **PEPTAMEN® Formulas**
  Peptide-based, Trusted Source for Tolerance
- **IMPACT® Peptide 1.5**
  Peptide-based Immunonutrition for Surgery and Trauma Patients
- **VIVONEX®/TOLEREX®**
  Free amino acid formulas

If <60% of goal rate achieved due to documented GI intolerance after a reasonable trial, consider use of TPN.

Very High (15+ points)

TPN may be indicated as dual feeding with elemental diet or sole therapy.

Dual feeding options include:

- **PEPTAMEN® Formulas**
  Peptide-based, Trusted Source for Tolerance
- **IMPACT® Peptide 1.5**
  Peptide-based Immunonutrition for Surgery and Trauma Patients
- **VIVONEX®/TOLEREX®**
  Free amino acid formulas

*Gastrointestinal intolerance: diarrhea >300 mL/day or more than 4 loose stools per day; abdominal distention; nausea and/or vomiting.

This pathway is intended to provide guidance. This document is not a substitute for clinical judgment or medical advice. Formula selection should be based on clinical assessment and judgment of the clinician.

References:

1. Jensen G, et al. *JPEN* 2019;43:32-10. **2.** ASPEN Adult Nutrition Care Pathway 2015. **3.** Anthony P. *Nutr Clin Pract*. 2008 23:373-82. **4.** White JV, et al. *J Acad Nutr Diet*. 2012;112:730-38. **5.** Nepple KG, et al. *J Acad Nutr Diet*. 2019;119(9 Suppl 2):S32-S39. **6.** Mullin GE, et al. *J Acad Nutr Diet* 2019 Jan (Epub ahead of print). **7.** Sriram K, et al. *JPEN*. 2017;41:384-91. **8.** Kondrup J, et al. *Clin Nutr*. 2003;22(3);321-336. **9.** Rahman H, et al. *Clin Nutr* 2016;35:158-162. **10.** Doley J, et al. In: Mueller C, Lord L, Marian M, McClave S, Miller S. ASPEN Adult Core Curriculum, 3rd ed. Silver Spring, MD. ASPEN;2017. **11.** DeLegge M, et al. *JPEN* 2001;S25,0094. **12.** Don B, Kaysen G. Seminars in Dialysis. 2004;17:432-437. **13.** Moore F, Weisbrodt N. Gut dysfunction and intolerance to EN in critically ill patients. Nestlé Nutrition Workshop Series Clinical and Performance Program 2003;8:149-170.

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