

MANAGING INTOLERANCE based on Critical Care Nutrition Guidelines¹

Summary of Select 2016 CRITICAL CARE NUTRITION GUIDELINES

USE OF PROTOCOLS

- Recommend enteral feeding protocols be designed and implemented to increase the overall percentage of goal calories provided. **D3a**
- Use of volume-based feeding protocol or top-down multi-strategy protocol is suggested. **D3b**

GASTRIC RESIDUALS

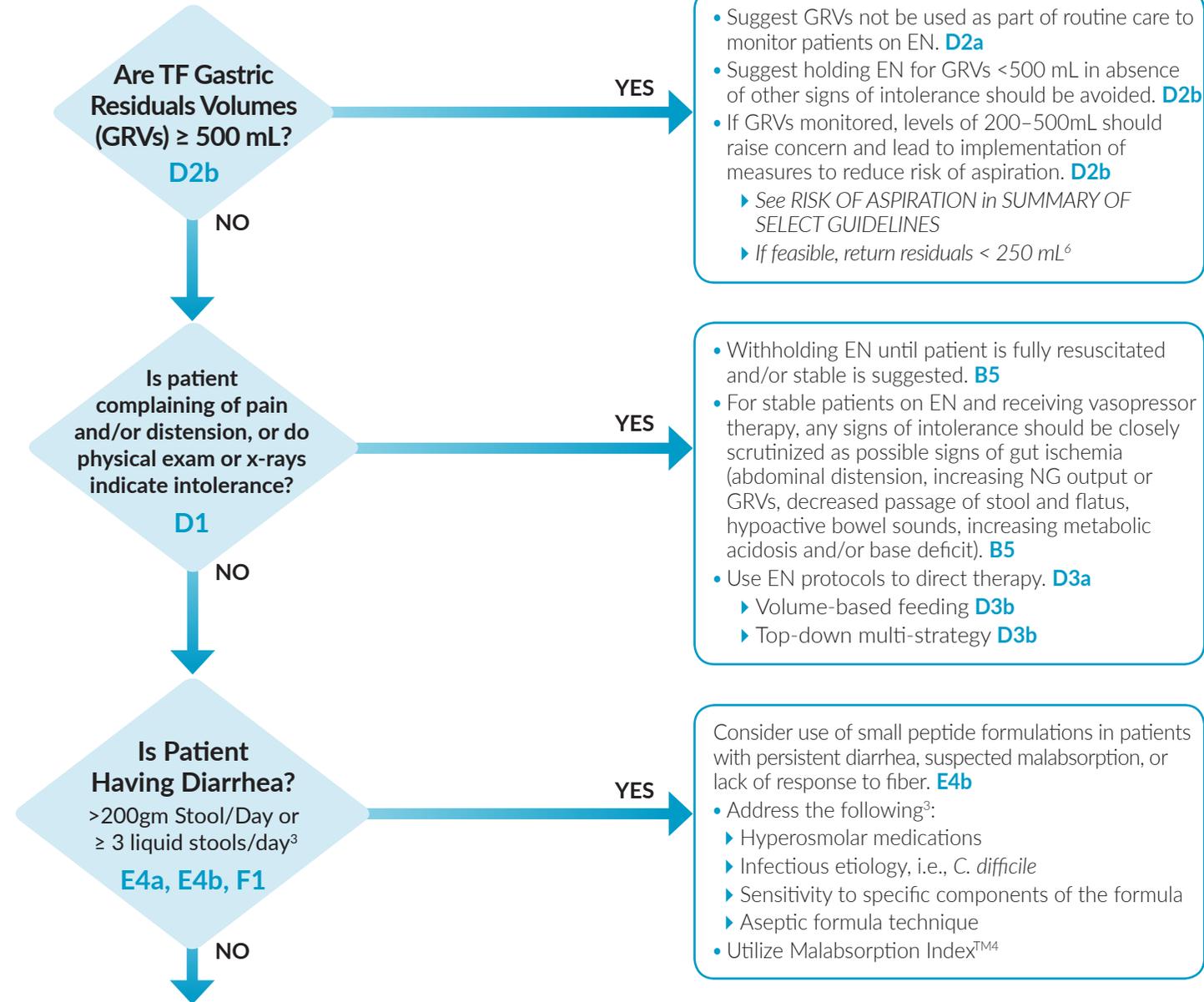
- Suggest patients be monitored for tolerance of EN and inappropriate cessation of EN be avoided. **D1**
- Suggest avoiding holds on EN for gastric residual volumes < 500mL in the absence of other signs of intolerance. **D2b**

RISK OF ASPIRATION

- Patients should be assessed for risk of aspiration and the following steps proactively employed:
 - ▶ Recommend diverting to postpyloric access in those at high risk for aspiration or those not tolerating gastric EN. **B4a**
 - ▶ Elevating head of bed 30°–45° is suggested. **D4d**
 - ▶ Suggest switching delivery to continuous infusion in high risk patients or those intolerant to bolus gastric EN. **D4b**
 - ▶ Use of chlorhexidine mouthwash twice daily is suggested. **D4d**
 - ▶ Suggest prokinetic agents be initiated in patients at high risk of aspiration and where clinically feasible. **D4c**

GUT DYSFUNCTION

- **Diarrhea:**
 - ▶ EN should not be automatically interrupted for diarrhea; evaluating etiology of diarrhea to determine appropriate therapy is also suggested. **D6**
 - ▶ If there is evidence of diarrhea and fiber is not contraindicated, 10–20 gm of fermentable soluble fiber is suggested, given in divided doses over 24 hours as adjunctive therapy. **F1**
- **Peptides:**
 - ▶ Use of small peptide formulations in the patient with persistent diarrhea, suspected malabsorption, or lack of response to fiber is suggested. **E4b**
- **Fiber:**
 - ▶ Avoiding both soluble and insoluble fiber in patients at high risk for bowel ischemia or severe dysmotility is suggested. **E4b**
 - ▶ A fermentable soluble fiber should be considered for routine use in all hemodynamically stable medical and surgical patients placed on standard enteral formulations. **F1**



Critical Care Nutrition Therapy Algorithms

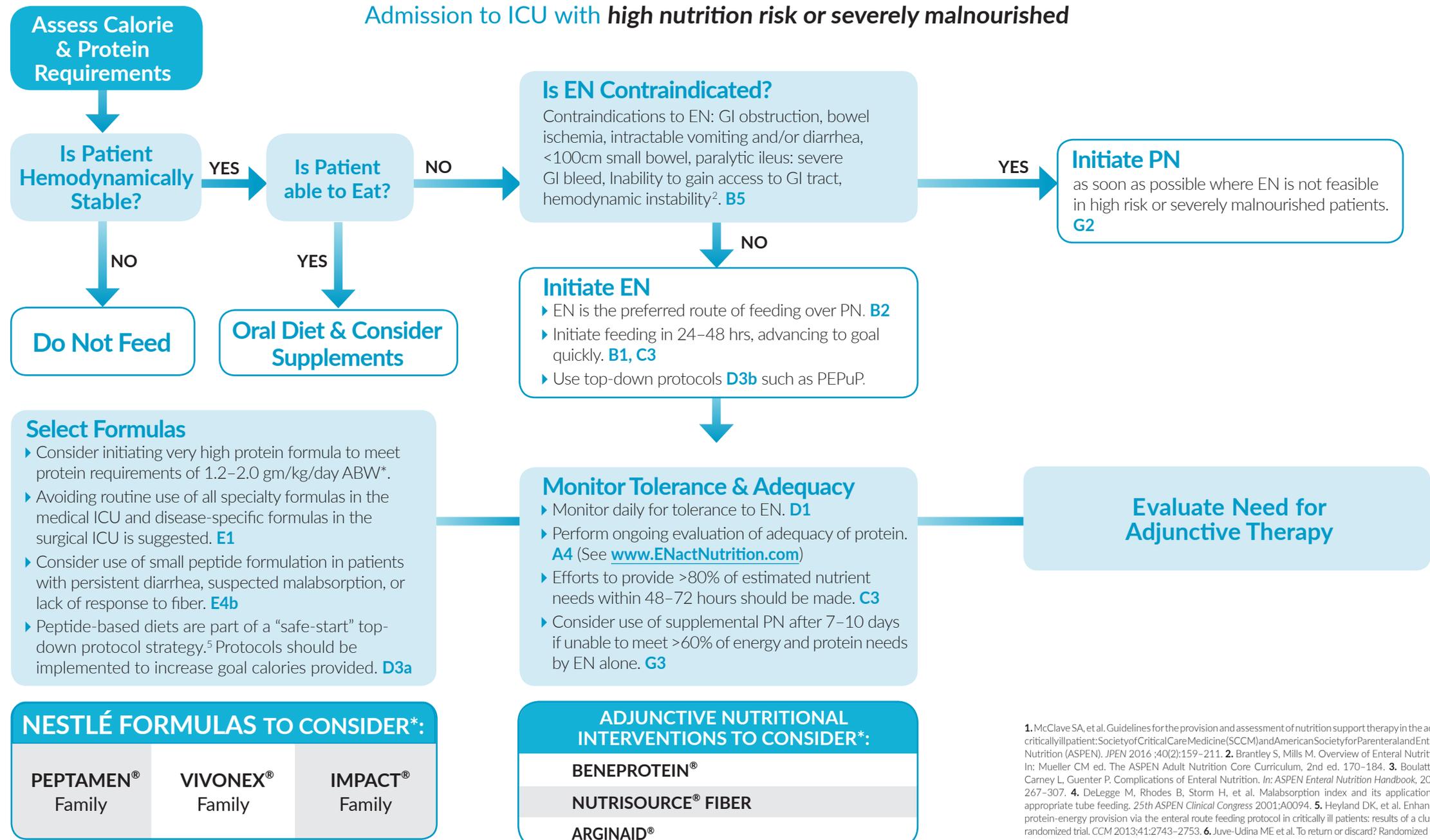
ENTERAL NUTRITION DECISION and Calculation of Needs based on Critical Care Nutrition Guidelines¹

Summary of Select 2016 CRITICAL CARE NUTRITION GUIDELINES

USE OF PROTOCOLS	Recommend enteral feeding protocols be designed and implemented to increase the overall percentage of goal calories provided. D3a Use of volume-based feeding protocol or top-down multi-strategy protocol is suggested. D3b
ROUTE	Suggest EN over PN be used in critically ill patients who require nutrition support therapy. B2
INITIATE EN	Recommend nutrition support therapy in the form of early EN should be initiated in 24–48 hours in the patient who is unable to maintain volitional intake. B1 Suggest patients at high nutrition risk or severely malnourished should be advanced to goal feeding as quickly as tolerated over 24–48 hours. Goal is to provide > 80% of estimated protein and energy needs over the first 48–72 hours. C3
HOLD PN	In the low nutrition risk patient, suggest PN be withheld for 7 days following ICU admission for the patient who cannot maintain volitional intake or receive EN. G1
INITIATE PN	Initiating PN is suggested on admission in high nutrition risk or severely malnourished patients, when EN is not feasible. G2 Recommend supplementing with PN after 7–10 days of EN, if unable to meet > 60% of energy and protein needs by the enteral route alone. G3
CALORIES	Suggest indirect calorimetry (IC) be used to determine energy requirements when available and in the absence of variables that affect accuracy. A3a In the absence of IC, use a published predictive equation or a simplistic weight-based equation (25–30 kcal/kg/d) to determine caloric requirements for BMI < 30. A3b See <i>Obesity</i> for recommendations for patients with BMI ≥ 30.
PROTEIN	Suggest sufficient (high-dose) protein should be provided in the range of 1.2–2.0g/kg ABW*/day in the patient with BMI less than 30 and may likely be even higher in burn or multi-trauma patients. C4 An ongoing evaluation of adequacy of protein provision is suggested. A4 See <i>Obesity</i> for recommendations for patients with BMI ≥ 30.
OBESITY	For all classes of obesity where BMI is > 30, it is suggested the goal of the EN regimen not exceed 65–70% of target energy requirements as measured by IC. If IC unavailable, suggest 11–14 kcal/kg ABW**/day for BMI 30–50, and 22–25 kcal/kg IBW**/day for BMI > 50. Protein is suggested at ≥ 2.0 gm/kg IBW**/day for BMI 30–40, and up to 2.5 gm/kg IBW**/day for BMI ≥ 40. Q5

*ABW is Actual Body Weight; **IBW is Ideal Body Weight

Admission to ICU with **high nutrition risk or severely malnourished**



*The mention of product brands does not constitute an endorsement of any Nestle HealthCare Nutrition product by SCCM or A.S.P.E.N.

1. McClave SA, et al. Guidelines for the provision and assessment of nutrition support therapy in the adult critically ill patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (ASPEN). *JPEN* 2016;40(2):159–211. 2. Brantley S, Mills M. Overview of Enteral Nutrition. In: Mueller CM ed. *The ASPEN Adult Nutrition Core Curriculum*, 2nd ed. 170–184. 3. Boulatta J, Carney L, Guenter P. Complications of Enteral Nutrition. In: *ASPEN Enteral Nutrition Handbook*, 2010, 267–307. 4. DeLegge M, Rhodes B, Storm H, et al. Malabsorption index and its application to appropriate tube feeding. *25th ASPEN Clinical Congress* 2001:A0094. 5. Heyland DK, et al. Enhanced protein-energy provision via the enteral route feeding protocol in critically ill patients: results of a cluster randomized trial. *CCM* 2013;41:2743–2753. 6. Juve-Udina ME et al. To return or discard? Randomized trial on gastric residual volume management. *Intensive and Critical Care Nursing* 2009; 25(5):258–267.