



MIND THE GUT

for Better Outcomes

Gut: The forgotten organ in critical care

WHY GASTROINTESTINAL DYSFUNCTION MATTERS IN THE ICU

Gut dysfunction is highly prevalent and often underestimated in critically ill patients — despite its direct link to worse clinical outcomes.^{1,2}

HIGH INCIDENCE

25% more likely



in critically ill patients with sepsis.³

Up to
75% of patients



suffer from EGI in an ICU setting.^{4,5}

WORSE OUTCOMES



3 more days



on mechanical ventilation.¹



Mortality increases by

40-60%



in patients with GI dysfunction

compared to those with
preserved gut function.¹

EXTENDED ICU STAYS



ICU length of
stay extended by

3-4 days



significantly increasing costs.^{1,5}



Over

\$450,000



in additional cost
Resulting from GI intolerance for every 100 patients
with a longer length of ICU stay.⁶

THE GUT IS MORE THAN A DIGESTIVE ORGAN

The gut is a central immuno-metabolic hub that influences the entire body, particularly in critical illness.¹¹⁻¹⁴



BARRIER INTEGRITY:

Maintains mucosal protection; enteral feeding reduces bacterial translocation and infection risk.¹¹



IMMUNOMODULATION:

Home to 70% of the body's immune cells, the gut regulates systemic inflammation.^{12,13}



ENDOCRINE/METABOLIC CONTROL:

Secretes hormones vital for insulin sensitivity and glucose homeostasis.¹⁴



ABSORPTION:

Essential for uptake of nutrients needed for recovery and organ function.¹⁵

WHY DO WE NEED TO FEED THE GUT IN THE ICU?

Feeding the gut early isn't just supportive — it's preventive.

ASPEN Critical Care Guidelines, 2016¹³, ESPEN Practical Guidelines, 2023¹⁶



PRESERVE GUT INTEGRITY



SUPPORT OTHER ORGANS



MODULATE IMMUNE RESPONSE



IMPROVE OUTCOMES



PREVENT GI DYSFUNCTION PROGRESSION

GUT INJURY: A KEY DRIVER OF MULTI-ORGAN DYSFUNCTION IN CRITICAL CARE¹⁷

The gut is a central immuno-metabolic organ and driver of MODS¹⁷

FIGURE 1: Assessment of gastrointestinal dysfunction as part of multi-organ dysfunction. Gastrointestinal injury may impact other organ systems and vice versa. Arrows represent the bidirectional nature of these interactions. When assessing gastrointestinal dysfunction, inter-organ crosstalk should be considered in patients with multiple organ dysfunction.



Adapted from: Bachmann K, Asrani V and Reintam Blaser A. *Curr Opin Crit Care*. 2025; 31(2): 172-178.

GUT CARE CHECK

A simplified roadmap to guide nutritional support in critically ill patients.



STEP 1

Define protein and energy targets.



STEP 2

Identify risk of GI dysfunction: GIDS.

Clinical relevance: enables early recognition of GI dysfunction and targeted nutritional interventions.⁷



STEP 3

Tailor nutrition intervention.



STEP 4

Monitor: reassess GIDS and nutritional adequacy daily.

STEP 1

DEFINE PROTEIN AND ENERGY TARGETS

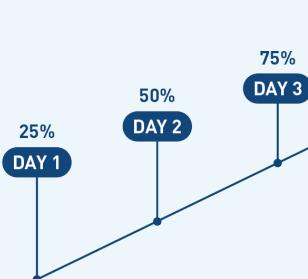
Practical nutrition guidance for critically ill patients.⁸



ACUTE PHASE

DAY 1-4

Progressive Feeding (Prevent Overfeeding)



POST-ACUTE ICU PHASE

>DAY 5

Early Mobilization

CALORIES:

Set at 70% of predictive equations or 100% of indirect calorimetry.

TARGET 1
100%
DAY 4

PROTEIN:

Minimum protein intake **1.3g/kg/day**. If enteral nutrition target achieved is lower (80-85%), consider **1.5g/kg/day**.



POST-ICU PHASE

Exercise

CALORIES:

Increase to 125% of predictive equations or 125% of indirect calorimetry or **30kcal/kg/day**.

TARGET 2
POST-ICU TARGET

ICU Discharge

Increase protein intake to **1.5-2.0g/kg/day**. Consider prolonged enteral nutrition, oral nutrition supplements or protein supplements.

STEP 2 & 4

ASSESSING GI FUNCTION: THE GIDS SCORE⁷

60% of critically ill patients have at least one GI symptom during ICU stay.⁹

TABLE 1: Gastrointestinal Dysfunction Score (GIDS), grades of severity.

0 No risk	1 Increased risk	2 GI dysfunction	3 GI failure	4 Life threatening
No symptoms OR one of the following with oral intake	Two of the following	Three or more symptoms of score 1 OR up to two of the following	Three or more of the following	One of the following
<ul style="list-style-type: none"> Absent bowel sounds Vomiting GRV > 200ml GI paralysis/dynamic ileus Abdominal distension Diarrhea (not severe) GI bleeding without transfusion IAP 12-20mmHg 	<ul style="list-style-type: none"> No oral intake Absent bowel sounds Vomiting GRV > 200ml GI paralysis/dynamic ileus Abdominal distension Diarrhea (not severe) GI bleeding without transfusion IAP 12-20mmHg 	<ul style="list-style-type: none"> Severe diarrhea GI bleeding without transfusion IAP > 20mmHg 	<ul style="list-style-type: none"> Prokinetic use GI paralysis/dynamic ileus Abdominal distension Severe diarrhea GI bleeding without transfusion IAP > 20mmHg 	<ul style="list-style-type: none"> GI bleeding leading to hemorrhagic shock Mesenteric ischemia Abdominal compartment syndrome

If some variables (e.g., GRV or IAP) have not been measured, the score can be calculated without considering these variables.

Abbreviations: GRV - gastric residual volume; GI - gastrointestinal; IAP - intra-abdominal pressure.

DID YOU KNOW?

- EFI includes the inability to deliver planned enteral nutrition due to GI dysfunction.¹⁰
- EFI isn't just intolerance — it's a clinical red flag: **Mortality increases by 50% in patients who developed EFI** (odds ratio of 1.50; 95% CI:1.38-1.64).¹

STEP 3

TAILOR NUTRITION INTERVENTION

Match the formula to patient tolerance using GIDS²-based guidance.

GIDS severity score	Type of enteral formula
0 – No risk	Polymeric formula
1 - Increased risk	Peptide-based formula depending on the symptoms*
2 - GI dysfunction	Peptide-based formulas if enteral nutrition is allowed**

***Symptoms associated with EFI:** vomiting, GRV > 200ml, abdominal distension or diarrhea.¹¹

**Absence of GI bleeding and IAP < 20mmHg.

DID YOU KNOW?

In a study of over 19,000 patients, 100% whey peptide-based formula was associated with significantly lower risk of EFI compared to both other peptide-based formulas and standard intact-protein formulas ($p<0.05$).⁴

Peptamen®

When every ingredient counts.

A TARGETED SOLUTION FOR A COMPROMISED GUT

In patients with GI dysfunction or malabsorption, Peptamen® has been proven to improve tolerance and absorption.

- **100% Hydrolyzed Whey Protein:** promotes rapid gastric emptying and better tolerance.⁷
- **70% MCT Content:** provides fast, efficient energy with minimal digestive load.⁷
- **Small Peptides:** facilitate absorption even in inflamed or compromised mucosa.⁷



Must be used under medical supervision.



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PTTM-15634-0226

