

CRITICAL CARE ORDER SET

Nutritional Support

Nutrition support of the critically ill adult. Screen risk early, feed the gut first, and start within 24–48 h once resuscitated — but ramp slowly when refeeding risk is high. Oral beats enteral beats parenteral. Reassess tolerance, glucose, and electrolytes every day. Adapt all targets to your unit's standards and the individual patient.

ROUTE PREFERENCE

Oral



Enteral · first-line



Parenteral · second-line

01 General principles & eligibility

INITIATE SPECIALIZED NUTRITION SUPPORT IF

- ☐ Critically ill and unable to maintain oral intake
- ☐ OR hospitalized at **high nutritional risk / malnourished** and unlikely to meet needs orally

NOT USUALLY Not generally indicated if **well nourished, low nutritional risk, and expected to resume adequate oral intake within 5–7 days.**

02 Timing & daily checklist

24–48 H Start specialized nutrition support **within 24–48 h of ICU admission** if unable to take adequate oral nutrition.

DELAY / BE CONSERVATIVE IF

- ☐ Uncontrolled shock / escalating vasopressors
- ☐ Uncontrolled hypoxemia or acidosis

- ☐ Active GI ischemia, perforation, or obstruction

DAILY NUTRITION REVIEW

Feeding & fluids

Route, rate, calories, protein, adequacy

Head of bed

≥ 30° if enterally fed

Glucose control

140–180 mg/dL (Section 07)

Last bowel movement

Bowel regimen if needed

03 Nutritional risk assessment

INITIAL SCREENING – WITHIN 24 H

- ☐ Document **BMI**, recent weight change, reduced intake
- ☐ Disease severity (**APACHE II**, **SOFA**)
- ☐ Apply a screening tool – **NRS-2002**, or **NUTRIC score** (ICU-specific)

LOW RISK

Well nourished, low scores, likely to eat within a few days – routine monitoring.

HIGH RISK / MALNOURISHED

Prolonged inadequate intake, significant weight loss, high disease severity → prioritize early aggressive nutrition (24–48 h).

04 Enteral nutrition (EN) – first-line

Indications

Functional GI tract & no absolute contraindication.

Contraindications

Bowel ischemia, perforation, mechanical obstruction, uncontrolled GI bleeding, high-output proximal fistula without distal access.

ROUTE & ACCESS

- ☐ Duration < 4–6 weeks → **NG or orogastric tube**
- ☐ High aspiration risk / intolerance → **postpyloric** (nasojejunal; PEG-J / PEJ if long-term)

ENERGY & PROTEIN TARGETS

ENERGY

20–25 kcal/kg/day early (days 1–5) → **25–30** as stable

PROTEIN

1.2–2.0 g/kg/day (adjusted / IBW in obesity)

Initiation & advancement · hemodynamically stable

- ☐ **Day 0–1** — start trophic / low-dose EN, isotonic polymeric formula **10–20 mL/h**
- ☐ Assess tolerance **q4h** — nausea, emesis, distention, pain, bowel sounds, stool, aspiration
- ☐ **Day 1–3** — if tolerated, advance **10–25 mL/h every 8–12 h** to goal; hold / decrease for vomiting, high aspiration risk, suspected bowel ischemia

Gastric residuals (if used)

- ☐ Many protocols omit routine GRVs or use a high cutoff (**> 500 mL**) rather than 200 mL
- ☐ Above threshold → reassess for ileus; prokinetics (metoclopramide, erythromycin); consider postpyloric

Aspiration-risk mitigation

- ☐ HOB $\geq$ **30–45°**; oral-care protocol; avoid over-sedation
- ☐ Postpyloric feeds for recurrent aspiration / severe reflux / poor airway protection

- ☐ **Monitor** — diarrhea, constipation, distention, aspiration, hyperglycemia, electrolytes; check BMP, Mg, PO₄, Ca $\geq$ **daily** during initiation / instability

05 Parenteral nutrition (PN) — second-line

INDICATIONS

- ☐ **Contraindication to EN** (mechanical obstruction, severe malabsorption, short gut, high-output fistula without access)
- ☐ **OR** EN not tolerated / insufficient and patient at high nutritional risk or prolonged NPO anticipated

TIMING

HIGH-RISK / MALNOURISHED

Consider PN within the first **3–7 days** if EN cannot be started / advanced.

LOW-RISK / WELL-NOURISHED

May defer PN up to **~7 days** if stable & carefully monitored.

ACCESS & FORMULATION

- ☐ **Central venous access** for full PN

- ☐ Calories ~20–25 kcal/kg initially · protein 1.2–2.0 g/kg · remaining nonprotein calories split dextrose / lipids

MONITORING & SAFETY

- ☐ **Daily** — glucose, electrolytes, fluid balance; **triglycerides $\geq 2\times$ /week** initially; LFTs weekly / per protocol
- ☐ Watch — catheter-related infection, hyperglycemia, hypertriglyceridemia, liver dysfunction, metabolic bone disease

06 Refeeding risk protocol

IDENTIFY PATIENTS AT RISK

- ☐ Severe malnutrition; low BMI
- ☐ Minimal / no intake $\geq 5\text{--}7$ days
- ☐ Significant weight loss
- ☐ Alcohol-use disorder; prolonged fasting

Prevention

- ☐ Start at $\leq 50\%$ of caloric goal (or 10–20 kcal/kg/day in very high risk); advance over 3–5 days
- ☐ Monitor & aggressively replete **phosphate, potassium, magnesium**
- ☐ **Thiamine** before and during initiation

07 Glycemic control & metabolic support

- ☐ Target moderate glycemic control 140–180 mg/dL (local protocol); **avoid sustained hyperglycemia and hypoglycemia**
- ☐ Daily electrolytes with prompt replacement
- ☐ Standard **multivitamin & trace elements with PN**; with EN add vitamins / trace elements if prolonged or specific deficiency suspected

08 Weaning & transition

PN → EN / oral

EN → oral

- ☐ Begin decreasing PN once EN / oral reliably provides $\geq 60\%$ of needs
- ☐ Discontinue PN once $\geq 60-75\%$ met enterally / orally

- ☐ As swallowing improves & oral intake is safe — continue EN as a supplement until $> 60-75\%$ met orally
- ☐ Then taper or stop EN

EDUCATIONAL USE ONLY

Not a substitute for clinical judgement. Verify targets, allergies, renal/hepatic function, and contraindications. Adapt all energy / protein targets, formulas, and timing to your institutional nutrition-support protocol and the individual patient.

Spreading knowledge
Improving outcomes