NUTRITION IN CRITICAL ILLNESS

When · What · How much

FEED
the gut

WHEN TO START

- **Early enteral -** within 24-48 h if gut works and haemodynamically stable
- **Delay / withhold -** uncontrolled shock, gut ischaemia, obstruction, high-output fistula
- **Trophic feed -** low-dose is acceptable once stabilising

ROUTE

- **Enteral first -** gastric default; preserves mucosa, fewer infections
- **Post-pyloric -** if high aspiration risk or gastric intolerance
- **Parenteral -** only if EN fails / contraindicated; supplemental PN day 3-7

TARGETS

underfeed calories early, prioritise protein

ENERGY	PROTEIN	ADVANCE	START EN
20-25	**1.3**	**48-72**	**24-48**
kcal/kg/day	**g/kg/day**	**hours**	**hours**
cap ≤ 70% early	*ASPEN 1.2-2.0*	*to full target*	*of admission*

REFEEDING SYNDROME

- **At-risk -** little intake > 5 days, low BMI, alcohol, chronic malnutrition
- **Hallmark -** falling phosphate, potassium and magnesium after feeding
- **Start low -** 25-50% goal (10-20 kcal/kg if very high risk), advance slowly
- **Thiamine -** 200-300 mg BEFORE / with feed; replace PO_4 / K / Mg

MONITORING

- **Gastric residuals -** routine GRV NOT recommended; do not stop for GRV < 500
- **Intolerance -** prokinetics (metoclopramide / erythromycin), then post-pyloric
- **Aspiration -** head of bed 30-45 degrees
- **Watch -** glucose, electrolytes, phosphate, triglycerides (if PN)

SPECIAL SITUATIONS

OBESITY

Hypocaloric, high-protein feeding: ~11-14 kcal/kg actual weight, protein up to 2.0-2.5 g/kg ideal body weight.

CRRT / RRT

High amino-acid losses - target up to 2.0-2.5 g/kg/day protein; count citrate and dialysate glucose as calories.

EFFORT caution

Very early high-dose protein may harm the sickest / AKI patients (EFFORT Protein 2023) - ramp up, do not front-load.

PATHWAY

Screen risk › Stable + gut → EN 24-48 h › Trophic + thiamine › Advance over 48-72 h › Intolerant → prokinetic › Inadequate → add PN

FORMULA & MICRONUTRIENTS: standard polymeric 1 kcal/mL is default; concentrated 1.5-2 kcal/mL if fluid-restricted; add fibre once stable; give thiamine and replace K / PO_4 / Mg. Indirect calorimetry is the gold-standard energy target.

AVOID / NOT ROUTINE: routine high-dose glutamine (harm in shock / multiorgan failure - REDOXS), immunonutrition, early supplemental PN in low-risk patients, and overfeeding (hyperglycaemia, raised CO_2, hepatic steatosis).

PEARLS & PITFALLS

- Early full-calorie feeding harms - the acute patient makes endogenous energy; prioritise protein.
- Give thiamine before carbohydrate in alcohol use / at-risk patients to prevent Wernicke.
- Do not chase gastric residual volumes; needless interruptions cause underfeeding.
- Watch phosphate in the first 72 h - a sharp drop is refeeding syndrome until proven otherwise.

References: ESPEN ICU Nutrition 2023 · ASPEN/SCCM 2016 · EFFORT Protein 2023 · NICE CG32 refeeding.

Educational aid; verify doses against local protocol and patient factors.