

Metabolic Phases

Ebb Phase (12-24 hours, not priority)

Ebb-Phase Response

Hypovolaemic Shock

↓ metabolic rate

↓ O₂ consumption

↓ BP

↓ Body temp

Flow Phase (10-14 days)

Acute response

Catabolism Predominates

↑ glucocorticoids

↑ glucagon

↑ N excretion

↑ BMR

Impaired use of fuels

Adaptive Response

Anabolism Predominates

Hormonal response gradually diminishes

↓ hypermetabolic rate

Potential for restoration of body protein

Wound healing (depends on nut intake)

Guidelines & References

ESPEN guideline on clinical nutrition in the intensive care unit (2019)

Biochem

Increased by Decreased by

Serum Albumin

dehydr- ation, marasmus (severe malnutrit- ion), blood transfusion	overhydration, hepatic failure, ascites, eclampsia, protein losing state, cancer, pregnancy, bed rest, trauma/post-op, inflammat- ion/infection/metabolic stress
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Serum Prealbumin

severe renal failure, oral contracep- tives	post-op, liver disease/hepa- tises, infection, dialysis, hyperthyroidism, hyperglyc- aemia
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Serum Transferrin

iron defici- ency, chronic blood loss, hepatitis, hypoxia, chronic renal failure	pernicious anaemia, overhy- dration, chronic infection, uraemia (declining renal function), cancer
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Changes to BMR

↑ stress, sepsis, fever, pain,
BMR adrenaline

↓ anaesthesia, sedation, sleep,
BMR starvation, continuous feeding

Nut Reqs

START AT HIGH END OF EARLY PHASE
(84-105kJ/DAY) – Then lower range of
critical illness

NEMO – critical illness (105-125kJ/day).
Higher end of range in recovery phase

Awake = moves from critical illness to
trauma requirements

P: NEMO: 1.2-2.0g/kg/day. Lower range.

Fluid: 30-35ml/kg/day

Avoid overfeeding – risk outweighs benefit

Underweight & healthy weight = ABW

Overweight = IBW

Obese = AdjBW (actual body weight - ideal
body weight) x 0.33 + ideal body weight)

No guidelines for micros - not a focus in
ICU

Intervention

Prevent malnutrition & catabolism

Stimulate/facilitate wound healing

Minimise risk associated with feeding

Maintain fluid & electrolyte balance

Strategies

Early EN (within 12-24 hours) = Reduction
in pneumonia, mortality. Improved wound
healing, GIT function & structure, strength &
recovery. o Aim for goal, or 80%+, within
48-72 hours

Gut impaired? = **PN w/ trophic feeds** (10-
20mL of EN).

ONS, purred diet + moderately thick liquids
HPHE education

Reduce fluid: restrict IV, diuretic medication,
fluid removal via dialysis

Consider: eeb or flow, Med Hx, usual diet
pre-hospital, allergies/intolerances,
refeeding risk

Monitoring

**reqs need to be evaluated and recalculated
at least once per week**

Wean NGT as oral intake ↑

EN: GI S/S

Swallowing function – w/ speechies

Example PESS

P: Inadequate protein-energy intake, altered
GI function, impaired nutrient utilisation

Notes

*lots of low evidence recommendations due
to the nature of the patients – very limited
high/Grade A evidence*



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