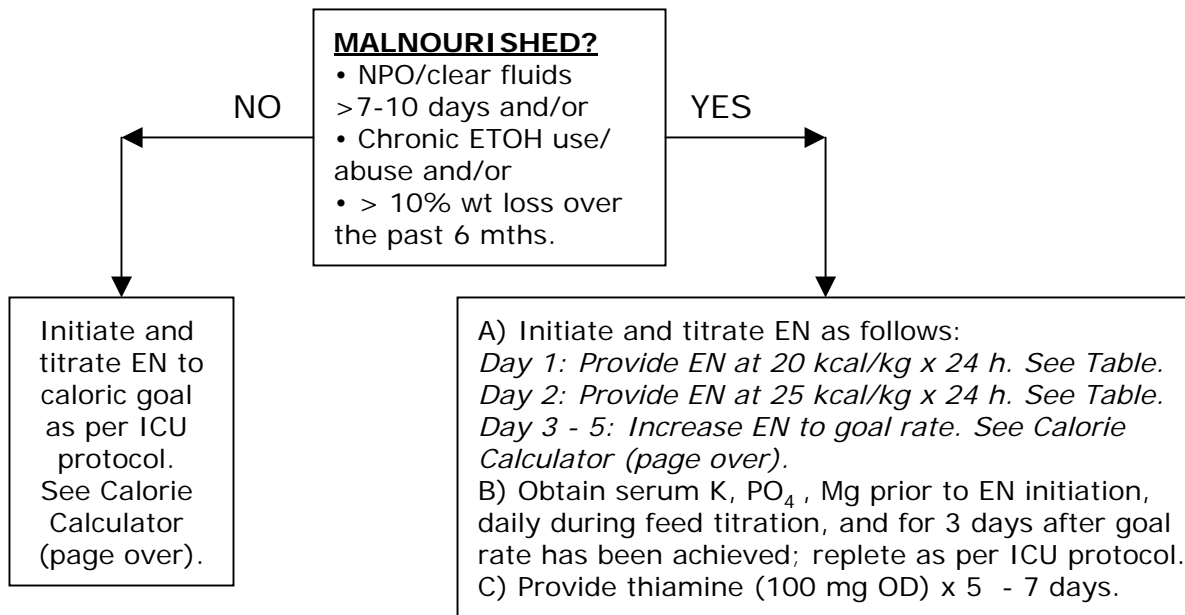


ENTERAL NUTRITION (EN): MANAGING NUTRITION RELATED ELECTROLYTE SHIFTS (REFEEDING SYNDROME) IN THE ICU

Refeeding Syndrome
 The metabolic and physiologic processes that occur as a consequence of depletion during starvation and repletion during refeeding. May result in profound *hypophosphatemia, hypokalemia, hypomagnesemia* as well as sodium retention/fluid overload, and thiamine deficiency.



NOTE: GUIDELINE ONLY
 Slower feed rate progression required in the following situations:
 1) Severely malnourished patient.
 2) Absence of metabolic stress.
 3) Inability to access bloodwork daily.
 4) Lack of an electrolyte replacement protocol.

TABLE 1: ISOSOURCE (1.2 kcal/mL)

Wt (Kg)	20 kcal/Kg	Isosource ml/hr	25 kcal/Kg	Isosource ml/hr
40	800	30	1000	35
50	1000	35	1250	45
60	1200	40	1500	50
70	1400	50	1750	60
80	1600	55	2000	70
90	1800	60	2250	80

TABLE 2: RESOURCE 2.0 (2 kcal/mL)

Wt (Kg)	20 kcal/Kg	Resource 2.0 ml/hr	25 kcal/Kg	Resource 2.0 ml/hr
40	800	15	1000	20
50	1000	20	1250	25
60	1200	25	1500	30
70	1400	30	1750	35
80	1600	35	2000	40
90	1800	40	2250	45

DETERMINING ENERGY REQUIREMENTS: CALORIE CALCULATOR

Developed by J. Greenwood, RD. Update 7/2007

Step 1: See Table 1; select pt age and gender.

Step 2: Go to Table 2; identify stress level.

Step 3: Return to Table 1; read across to corresponding energy requirement and goal rate.

NOTE: Table 1 based on wt of 60 – 65 kg (females)/ 70 – 75 kg (males). Refer to Table 3 to modify energy (kcal) for pts who do not fall within this wt range.

Table 1

AGE	SEX	STRESS LEVEL	ENERGY (Kcal)	GOAL RATE (ml/hr) Isosource 1.2 kcal/ml	GOAL RATE (ml/hr) Resource: 2 kcal/ml
18 - 25	M	Mild	2150	75	45
		Mod	2300	80	50
		High	2650	90	55
	F	Mild	1700	60	35
		Mod	1850	65	40
		High	2150	75	45
26 - 35	M	Mild	2050	70	45
		Mod	2200	75	45
		High	2600	90	55
	F	Mild	1650	60	35
		Mod	1800	65	40
		High	2100	70	45
36 - 50	M	Mild	1950	70	40
		Mod	2100	75	45
		High	2400	85	50
	F	Mild	1600	55	35
		Mod	1700	60	35
		High	2000	70	45
51 - 70	M	Mild	1800	65	40
		Mod	1950	70	45
		High	2250	80	50
	F	Mild	1450	50	30
		Mod	1550	55	35
		High	1850	65	40
71 - 90	M	Mild	1650	60	35
		Mod	1800	65	40
		High	2050	70	45
	F	Mild	1400	50	30
		Mod	1500	50	35
		High	1750	60	40

Table 2

STRESS LEVEL	EXAMPLES - CLINICAL CONDITION
MILD	<10% burn; mild infection; minor surgery
MOD	10 – 20% burn; significant surgery; moderate pancreatitis
HIGH	20% - 40 % burn; severe infection; major surgery; multiple trauma; severe pancreatitis; severe CHI
SEVERE	> 40% burn injury (requires individual assessment; use high stress level in short term)

Table 3

BODY MASS	WEIGHT (Kg)	ADJUST ENERGY GOAL	ADJUST GOAL FEED RATE
VERY SMALL	F <40 M <55	- 250 kcal	↓ Isosource 10 ml/hr ↓ Resource 5 ml/hr
SMALL	F 40 - 50 M 55 - 65	- 125 kcal	↓ Isosource 5 ml/hr Resource 2 (same)
LARGE	F 70 - 80 M 90 - 100	+ 125 kcal	↑ Isosource 5 ml/hr Resource 2 (same)
VERY LARGE	F >80 M >100	+ 250 kcal	↑ Isosource 10 ml/hr ↑ Resource 5 ml/hr

Obese patients: use corrected wt.
(ABW – IBW) X 0.25 + IBW

ENTERAL PRODUCTS FORMULARY

FORMULA	ISOSOURCE	PROMOTE	RESOURCE 2	NOVASOUCE RENAL	PEPTINEX
Kcal/ml	1.2	1.0	2.0	2.0	1.0
Protein content Gm/1000 Kcal	44	63	44.5	37	50
Fat content Gm/1000 kcal	35	26	43	50	17
CHO content Gm/1000 kcal	126	130	107	100	164
H ₂ O content ml/1000 kcal	670	830	475	500	830
Na / K content mg/1000 kcal	40/38	39/46	18/20	22/11	44/31
Modification		↑↑ PRO	↓ H ₂ O	↓ PRO/↓ K ⁺	Predigested
Indication	Feed of choice	Large burn	Fluid restriction	CRF/No dialysis	Malabsorption