4.2b Composition of Enteral Nutrition: (Carbohydrate/fat): Low fat/high CHO May 2015

There were no new randomized controlled trials since the 2009 and 2013 updates and hence there are no changes to the following Summary of Evidence.

Recommendation: *There are insufficient data to recommend low fat/high CHO diets for critically ill patients.*

Discussion: The committee noted the large treatment effect based on one study (n = 43 patients) in burn patients. However, the committee also noted that existing low fat products were largely elemental or semi-elemental diets and hence the feasibility around the availability of a polymeric, low fat formula (15 % calories from fat) was a concern. Given the safety and cost concerns related to elemental diets, the committee decided not to put forward a recommendation at this time.

Semi Quantitative Scoring

Values	Definition	Score: 0, 1, 2, 3
Effect size	Magnitude of the absolute risk reduction attributable to the intervention listed--a higher score indicates a larger effect size	3
Confidence interval	95% confidence interval around the point estimate of the absolute risk reduction, or the pooled estimate (if more than one trial)--a higher score indicates a smaller confidence interval	2
Validity	Refers to internal validity of the study (or studies) as measured by the presence of concealed randomization, blinded outcome adjudication, an intention to treat analysis, and an explicit definition of outcomes--a higher score indicates presence of more of these features in the trials appraised	2
Homogeneity or Reproducibility	Similar direction of findings among trials--a higher score indicates greater similarity of direction of findings among trials	0
Adequacy of control group	Extent to which the control group represented standard of care (large dissimilarities = 1, minor dissimilarities=2, usual care=3)	3
Biological plausibility	Consistent with understanding of mechanistic and previous clinical work (large inconsistencies =1, minimal inconsistencies =2, very consistent =3)	1
Generalizability	Likelihood of trial findings being replicated in other settings (low likelihood i.e. single centre =1, moderate likelihood i.e. multicentre with limited patient population or practice setting =2, high likelihood i.e. multicentre, heterogenous patients, diverse practice settings =3.	1
Cost	Estimated cost of implementing the intervention listed--a higher score indicates a lower cost to implement the intervention in an average ICU	0
Feasible	Ease of implementing the intervention listed--a higher score indicates greater ease of implementing the intervention in an average ICU	2
Safety	Estimated probability of avoiding any significant harm that may be associated with the intervention listed--a higher score indicates a lower probability of harm	2

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Question: Does a low fat/high CHO enteral formula affect outcomes in the critically ill adult patient?

Summary of evidence: There was only one study that compared the outcomes of a low fat enteral diet, with and without omega 3 fatty acids, to a standard diet.

Mortality: There was no difference in the incidence of mortality between the groups receiving the low fat formula or standard (RR = 0.54, 95 % confidence intervals 0.13-2.31).

Infections: Low fat formula compared to standard was associated with a significant reduction in the incidence of pneumonia ($p<0.05$).

LOS: Low fat formula was associated with a trend towards a reduction in LOS ($p =0.08$).

Ventilator days: Not reported.

Other complications: No differences reported.

Conclusion:
1) Low fat enteral feeding may be associated with lower incidences of pneumonia and a trend towards a reduction in LOS in burn patients.

Level 1 study: if all of the following are fulfilled: concealed randomization, blinded outcome adjudication and an intention to treat analysis.
Level 2 study: If any one of the above characteristics are unfulfilled

Table 1. Randomized studies evaluating low fat/high CHO enteral nutrition in critically ill patients

Study	Population	Methods (score)	Intervention	Mortality # (%)†		RR (CI)**	Infections # (%)		RR (CI)**
1) Garrel 1995	Thermal injury patients > 20 % TSBA N = 43	C.Random: yes ITT: no Blinding: double (9)	(A) low fat (15 % fat) (B) low fat + fish oils vs (C) 35 % fat	(A) + (B) 3/24 (12.5)	(C) 3/13 (23)	0.54 (0.13-2.31)	(A) + (B) 3/24 (12.5)	(C) 7/13 (54)	0.23 (0.07-0.75)

Table 1. Randomized studies evaluating low fat/high CHO enteral nutrition in critically ill patients (continued)

Study	LOS days			Ventilator days		Cost		Other
1) Garrel 1995	(A) 45 ± 23	(B) 46 ± 23	(C) 67 ± 28	NR	NR	NR	NR	NR

C.Random: concealed randomization
ITT: intent to treat
NA: not available

† presumed ICU mortality unless otherwise specified
± : mean ± standard deviation
** RR= relative risk, CI= Confidence intervals