

5.4 Strategies to optimize delivery and minimize risks of Enteral Nutrition: Body position

There were no new randomized controlled trials since the 2015 update and hence there are no changes to the following summary of evidence.

Question: Do alterations in body position result in better outcomes in the critically ill adult patient?

Summary of evidence: There was 1 level 1 study and 1 level 2 studies that compared the frequency of pneumonia in critically ill patients assigned to semi-recumbent or supine position. In one study (Nieuwenhoven 2006) the target of the intervention (45 degrees head of the bed elevation) was never achieved hence a meta-analysis of the two studies was not done.

Mortality: There was no significant difference between the groups in either study.

Infections: There was a significant reduction in the incidence of pneumonia in patients in the semi recumbent vs. supine position (RR 0.22, 95% CI 0.05, 0.9, $p=0.018$) in one study (Drakulovic 1999) but no effect on pneumonia in the other study that did not achieve the target intervention (Nieuwenhoven 2006; 13/112 vs. 8/109, $p=ns$).

LOS, Ventilator days: There were no statistically significant differences between the groups in either study.

Conclusions:

- 1) Semi-recumbent position may be associated with a reduction in pneumonia in critically ill patients.
- 2) Semi-recumbent position has no effect on mortality, ICU length of stay or duration of mechanical ventilation.

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 body position in critically ill patients

Study	Population	Methods (score)	Intervention	Mortality # (%)		Pneumonia # (%)		Length of stay (days)		Other outcomes	
				Semi Recumbent	Supine	Semi Recumbent	Supine	Semi Recumbent	Supine	Semi Recumbent	Supine
1) Drakulovic 1999	Mechanically ventilated Mixed ICU patients N=90	C.Random: yes ITT: no Blinding: no (10)	Semirecumbent vs. supine	ICU 7/39 (18)	ICU 13/47 (28)	2/39 (5)	11/47 (23)	ICU 9.7 ± 7.8	ICU 9.3 ± 7.2	Body position independent risk factor for VAP in multivariate analysis- major risk factor was duration of ventilation. Ventilator Days 7.1 ± 6.9* 6.0 ± 6.2*	
2) Nieuwenhoven 2006	ICU patients from 4 ICUs incubated within 24 hrs of admission and expected to be intubated > 48 hrs N=221	C.Random: yes ITT: yes Blinding: Yes (13)	45degrees vs. Standard head of the bed elevation	ICU 33/112 (29) Hospital 44/112 (39)	ICU 33/109 (30) Hospital 41/109 (38)	13/112 (12)	8/109 (7)	ICU 9 (0-281) Hospital 27 (2-301)	ICU 10 (9-91) Hospital 24 (0-186)	Ventilator Days 6 (0-64) 6 (0-281)	

C.Random: Concealed randomization
ITT: Intent to treat
NR: Not reported

± () : Mean ± Standard deviation (number)
ICU: intensive care unit