

# AVAILABILITY OF A VERY HIGH PROTEIN ENTERAL NUTRITION FORMULA LEADS TO CHANGE IN PRACTICE IN NUTRITION PRESCRIPTION

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## BACKGROUND & OBJECTIVES

The 2009 ASPEN/SCCM Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient provided guidance for clinicians on the target caloric and protein goals for critically ill adults<sup>1</sup>. The recommended goal for protein intake was 1.2-2.0 g protein/Kg or higher based on clinical course. However, clinicians faced challenges in meeting these guidelines with the available enteral formulas, specifically in terms of reaching protein goals without overfeeding or employing the use of protein modulars.

In 2011 a very high protein, semi-elemental formula was made available in the U.S. in response to the needs of clinicians for a formula to meet protein needs.

The primary objective of this analysis was to assess the calculated energy and protein needs of the hospitalized critically ill patient before and after the introduction of a very high protein tube feeding.

## METHODS

### Population:

- 40 subjects that received propofol
  - 20 subjects prior to the 2011 commercialization of a very high protein, semi-elemental formula (STD EN)
  - 20 subjects who received a very high protein, semi-elemental formula (VHP EN; Peptamen Intense VHP)

### Data Collection:

- Subjects were assigned to a formula group based on the formula received Day 1 of the study.
- Study days were counted as any day on which formula intake was recorded.

1. McClave S. et al. *JPEN*. 2009.; 33(3):277-316.

## METHODS

### Measures:

- Demographics (age, gender, admitting diagnosis)
- Daily propofol dose
- Estimated nutrition needs
- Enteral prescription

### Statistics:

- Descriptive characteristics were tabulated using number and percent within formula groups.
- Protein and calorie needs were described using mean, standard deviation, minimum, and maximum for both the lower and upper bounds of the reported range of needs.
- The summary mean estimated needs for all study days were compared between formula groups using a t-test.

## DEMOGRAPHICS

- 40 patients with neurological diagnoses, receiving propofol in the ICU were included

Table 1: Demographics

	VHP EN (n=20)	STD EN (n=20)
	N (%)	N (%)
<b>Gender</b>		
Male	13 (65%)	14 (77%)
Missing	0	2
<b>Age at admission (yrs)</b>		
<25	5 (26%)	5 (25%)
25-44	9 (47%)	6 (30%)
45+	5 (26%)	9 (45%)
Mean (range)	36.7 (18-67)	39.9 (17-63)

## RESULTS

### Estimated Nutrition Needs:

- Calculated protein requirements were significantly higher after availability of a VHP formula (p=0.03)
- Calculated caloric requirements from enteral formula were lower following availability of a VHP formula (NS; p=0.17)

Table 2: Estimated Nutrition Needs

	Prior to Launch of VHP EN	Following the Launch of VHP EN	p-value
Calculated Protein Needs	117 + 20 gm/day	133 + 25 gm/day	p=0.03
Calculated Caloric Needs	2069 + 411 kcal/day	1912 + 285 kcal/day	p=0.17

## CONCLUSION

Upon the availability of a very high protein tube feeding formula there was a practice change in determining nutrition needs. Protein needs were estimated at a higher level and caloric needs were estimated at a lower level. Although not statistically significant for all aspects of estimated needs, this difference was significant clinically. This is especially important when considering that the additional protein recommended often has to be added in the form of modular powders or liquids which is associated with an increase in nursing resources for administration.