A 45-year-old male with alcoholic cirrhosis presents to a regular clinic visit. His cirrhosis is complicated by portal hypertension and ascites along with non-bleeding esophageal varices. He has a BMI of 20. On physical exam you note a cachectic appearing patient with temporal wasting and fat and muscle loss with a distended abdomen. He reports symptoms of increased weakness and fatigue. He would like to know what he can do to improve these symptoms.

Which of the following is most beneficial in increasing lean body mass?

A. Total parenteral nutrition  
B. Protein restriction  
C. Enteral feeding via a naso-jejunal tube  
D. Daily Vitamin E supplement  
E. Late evening protein snack

Answer: E  
The late-evening snack with a high protein content has been found to be most beneficial in increasing lean body mass. The longest period of fasting is at night. Supplementing with protein before the fast takes advantage of the post-absorptive phase. Protein restriction should be avoided. Total parenteral nutrition and enteral tube feeding have not been shown to be beneficial in increasing muscle mass. Vitamin E has been used to treat non-alcoholic fatty liver disease in some patients but is not used to increase muscle mass.