

## Nutritional Strategies to Prevent Muscle Loss after Bariatric Surgery

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### Abstract

Obesity is a chronic non-communicable disease that has increased dramatically worldwide <sup>[1]</sup>. The 2015 National Health and Morbidity Survey (NHMS) showed that the prevalence of overweight, obesity and abdominal obesity in Malaysia had increased by 0.6%, 2.6% and 2.0% respectively as compared to the previous findings of NHMS 2011<sup>[2]</sup>. Thus, many approaches have been attempted including bariatric surgery. However, it is associated with complications like lean tissue loss, augmented bone loss and a high risk of postprandial hypoglycemia due to patients being unable to achieve adequate dietary protein and accelerated nutrient emptying. Hence, this review paper provides several findings on possible causes of muscle tissue loss and nutritional strategies to prevent muscle loss.

Initially, a literature search was conducted from electronic databases like PubMed, Scopus and Google Scholar Science Direct. A total of 15 articles on nutritional strategies to prevent muscle loss after bariatric surgery that was published between January 2017 and May 2022 were retrieved. In this review, several causes of muscle tissue loss, its consequences on a patient's health and nutritional strategies to preserve muscle protein are summarized in the following figures.

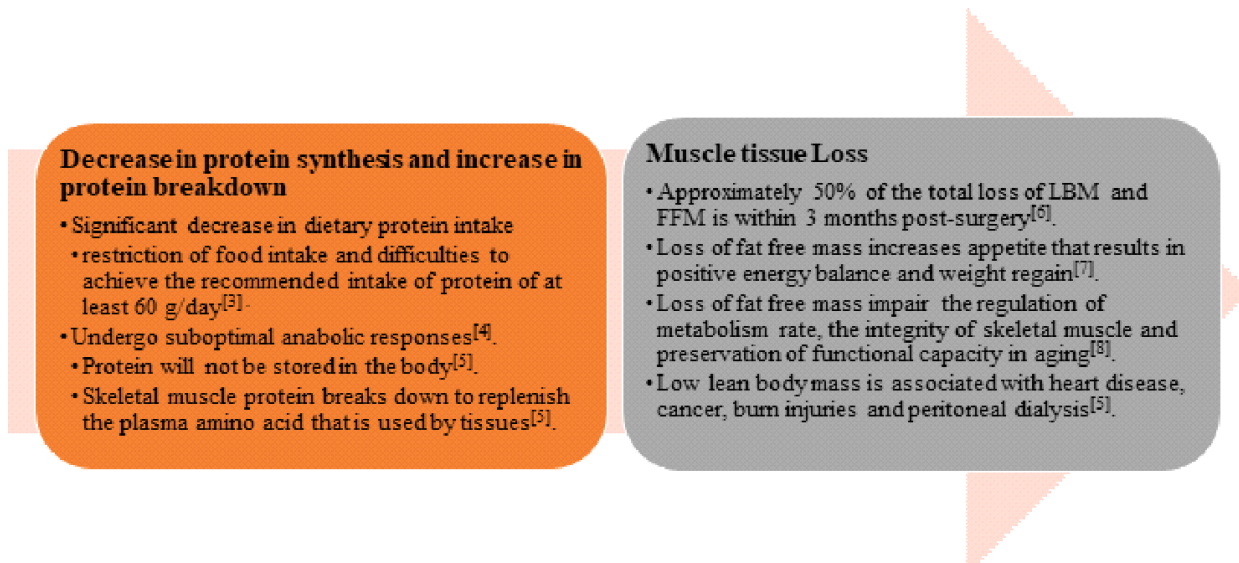


Figure 1: Causes of muscle tissue loss and its consequences

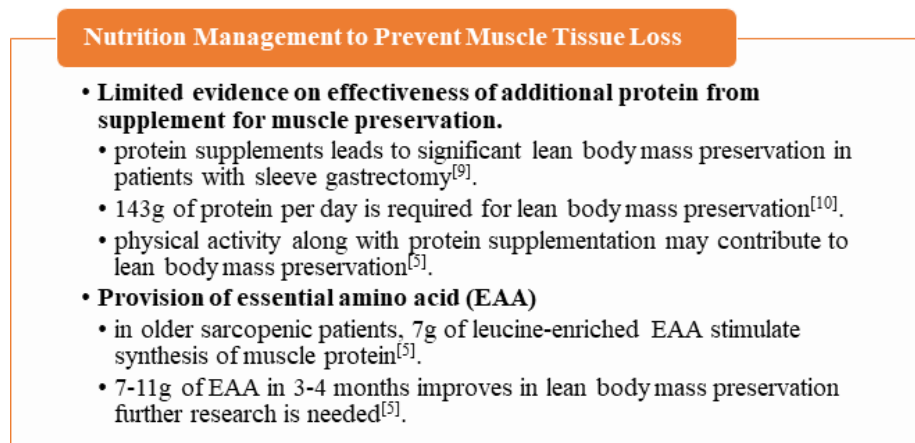


Figure 2: Nutrition management to prevent muscle tissue loss

In conclusion, bariatric surgery leads to the loss of lean body mass and fat-free mass due to a significant decrease in protein intake and rapid weight loss. This will lead to several consequences that impair basal metabolism and body functions and reduce life quality [7]. Regular and sufficient protein intake together with resistance exercise are essential for muscle preservation [4]. Further research should be continued to increase the understanding of the pathophysiology and related mechanism that causes muscle loss and develop appropriate treatment and possible modifications in current bariatric procedures available.

**Keywords**

Bariatric surgery, Muscle tissue loss, Nutrition strategies

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