



Dietary Protein Intake and Its Impact on Muscle Mass in Aging Adults: A Meta-Analysis

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Description

As the population ages, maintaining muscle mass becomes increasingly important for preserving mobility, strength and overall health. Sarcopenia, the progressive loss of muscle mass and function with age, is a growing concern that can lead to decreased quality of life, frailty and higher mortality rates. One key factor in preserving muscle mass is adequate dietary protein intake. This article examines the results of a meta-analysis on the relationship between protein consumption and muscle mass in older adults, highlighting the implications for dietary recommendations. Protein is essential for maintaining muscle health due to its role in muscle protein synthesis. As we age, the body's ability to utilize dietary protein efficiently diminishes, leading to a condition known as anabolic resistance. This means that older adults require a higher intake of protein to stimulate muscle protein synthesis at levels comparable to younger individuals. In this context, adequate protein intake becomes even more important for preserving muscle mass and preventing sarcopenia.

The meta-analysis reviewed multiple studies focusing on dietary protein intake and its effects on muscle mass in adults over the age of 50. The analysis found a consistent positive association between higher protein intake and the maintenance or increase of muscle mass in this population. It also explored the optimal levels of protein intake and the timing of consumption in relation to muscle preservation. The Recommended Dietary Allowance (RDA) for protein in the general population is 0.8 grams of protein per kilogram of body weight per day. However, the meta-analysis suggests that this recommendation may be insufficient for older adults. The studies included in the review indicated that consuming 1.0 grams-1.2 grams of protein per kilogram

of body weight per day is more effective for maintaining muscle mass in aging adults. Some evidence even points to the benefits of protein intake as high as 1.6 grams per kilogram of body weight, particularly for those engaged in resistance training or other forms of physical activity.

It was also noted that protein quality plays a significant role. High-quality proteins that contain all essential amino acids, such as those found in animal products (e.g., meat, eggs and dairy), were more effective in promoting muscle protein synthesis compared to plant-based proteins. However, for those following plant-based diets, combining different protein sources (e.g., legumes and grains) can help ensure adequate intake of essential amino acids. In addition to total protein intake, the timing and distribution of protein consumption throughout the day were found to be important. Consuming protein in evenly distributed amounts across meals (approximately 25 grams-30 grams per meal) has been shown to stimulate muscle protein synthesis more effectively than skewed patterns, where most protein is consumed in a single meal. This pattern allows for more consistent stimulation of muscle protein synthesis, which can contribute to better maintenance of muscle mass over time.

The analysis also revealed that older adults who engage in resistance training experience even greater benefits from higher protein intake. Protein intake both before and after exercise appeared to enhance muscle recovery and growth, suggesting that protein timing around physical activity should be considered when designing nutrition plans for older adults. Despite the clear benefits of increased protein intake, there are practical challenges for older adults. Reduced appetite, dental issues and changes in taste perception can make it difficult for some to meet their protein needs. For these individuals, strategies such as incorporating protein-rich snacks or using protein supplements may be necessary. Additionally, healthcare providers should consider individual health conditions, such as kidney disease, when recommending higher protein intake, as excessive protein may be harmful in certain populations.

The findings of this meta-analysis highlight the critical role of dietary protein in maintaining muscle mass among aging adults. With higher protein needs than younger populations, older adults should aim for protein intakes of 1.0 grams-1.2 grams per kilogram of body weight per day, with an emphasis on high-quality protein sources. Moreover, distributing protein intake evenly across meals and timing it around physical activity can further enhance its benefits for muscle preservation. Incorporating these insights into dietary guidelines for older adults could help mitigate the effects of sarcopenia, improving health outcomes and quality of life as the population continues to age.

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