

Which nutritional factors help preserve muscle mass, strength and performance in seniors?

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Sarcopenia, or the gradual loss of muscle mass, is a common consequence of ageing, and poses a significant risk factor for disability in older adults. As muscle strength plays an important role in the tendency to fall, sarcopenia leads to an increased risk of fractures and other injuries.

The International Osteoporosis Foundation (IOF) Nutrition Working Group has published a new review which identifies nutritional factors that contribute to loss of muscle mass, or conversely, are beneficial to the maintenance of muscle mass. The Group reviewed evidence from worldwide studies on the role of nutrition in sarcopenia, specifically looking at protein, acid–base balance, vitamin D/calcium, and other minor nutrients like [B vitamins](#).

"The most obvious intervention against sarcopenia is exercise in the form of [resistance training](#)," said Professor Jean-Philippe Bonjour, co-author and Professor of Medicine at the Service of Bone Diseases, University of Geneva. "However, adequate nutritional intake and an optimal dietary acid-base balance are also very important elements of any strategy to preserve muscle mass and strength during ageing."

The review discusses and identifies the following important nutritional factors that have been shown to be beneficial to the maintenance of muscle mass and the treatment and prevention of sarcopenia:

Protein:

[Protein intake](#) plays an integral part in muscle health. The authors propose an intake of 1.0–1.2 g/kg of body weight per day as optimal for skeletal muscle and [bone health](#) in elderly people without severely impaired renal function.

Vitamin D:

As many studies indicate a role for vitamin D in the development and preservation of [muscle mass](#) and function, adequate vitamin D should be ensured through exposure to sunlight and/or supplementation if required. Vitamin D supplementation in seniors, and especially in institutionalized elderly, is recommended for optimal musculoskeletal health.

Avoiding dietary acid loads:

Excess intake of acid-producing nutrients (meat and cereal grains) in combination with low intake of alkalizing fruits and vegetables may have negative effects on musculoskeletal health. Modifying the diet to include more fruits and vegetables is likely to benefit both bones and muscles.

Emerging evidence also suggests that vitamin B12 and/or folic acid play a role in improving muscle function and strength. As well, the Review discusses non-nutritional interventions such as hormones, and calls for more studies to identify the potential of antioxidants and anti-inflammatory compounds in the prevention of sarcopenia.

Dr. Ambrish Mithal, co-author and Chair and Head of Endocrinology and Diabetes division at Medanta, New Delhi underlined the need for further research in the field. "Strategies to reduce the numbers of falls and fractures within our ageing populations must include measures to

prevent sarcopenia. At present, the available evidence suggests that combining resistance training with optimal nutritional status has a synergistic affect in preventing and treating [sarcopenia](#)," said Mithal.

"We hope that further studies will shed light on other effective ways of preventing and treating this condition."

More information: Impact of nutrition on muscle mass, strength, and performance in older adults. A. Mithal & J.-P. Bonjour & S. Boonen & P. Burckhardt & H. Degens & G. El Hajj Fuleihan & R. Josse & P. Lips & J. Morales Torres & R. Rizzoli & N. Yoshimura & D. A. Wahl & C. Cooper & B. Dawson-Hughes & for the IOF CSA Nutrition Working Group. *Osteoporos Int.* [DOI:10.1007/s00198-012-2236-y](https://doi.org/10.1007/s00198-012-2236-y)

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