

Older men need more protein to maintain muscles

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Credit: University of Auckland

The amount of protein recommended by international guidelines is not sufficient to maintain muscle size and strength in older men, according to a new study.

Researchers say their findings mean [older men](#) should aim to have high quality [protein](#) at every meal.

The size of our skeletal muscles – the muscles we use to move our body – and our ability to perform everyday tasks naturally decline with age from the around the fifth decade. Severe [muscle](#) loss can lead to frailty, loss of independence and a greater risk of dying.

Regularly eating enough protein is known to help maintain muscles.

In the new international clinical study by a scientific team from New Zealand, Austria and Denmark, 30 older men were supplied a balanced diet containing the recommended daily allowance (RDA) or double this amount. The protein RDA has been established by many international health agencies including the World Health Organisation (WHO) and the United States Department of Agriculture (USDA) as 0.8 grams per kilogram of body weight. For 10 weeks, the men in the study had every meal and snack delivered to their homes. Before they went on the diet, and after the 10 weeks, the men had their muscle size, strength, physical function and general health carefully measured.

The men whose [protein intake](#) was at the RDA experienced a loss of muscle size and strength. The muscles of the men who had double the RDA did not grow bigger or stronger, but they did increase in power output - the maximum burst of force, thought to indicate the ability to do many basic activities such as walking up stairs.

"Our findings show the current WHO protein requirements are insufficient to maintain strength or muscle size in adults over age 70," says study lead scientist Dr Cameron Mitchell, a Research Fellow at the University of Auckland-based Liggins Institute.

"The current New Zealand RDA for protein is set slightly higher than the WHO at 1.07g/kg/day (for men over 70), but still might be not enough to maintain [muscle mass](#)."

His advice to older men: "Consume high quality protein at every meal to support muscle health. Protein derived from animal sources such as dairy and meat is more efficient at promoting [muscle growth](#) than plant-based protein."

The paper was published in the *American Journal of Clinical Nutrition*.

Earlier, lab-based studies showed that eating the same amount of protein results in less muscle growth in older than in younger men. This shows that for older adults, more protein is needed to stimulate muscle growth.

Other studies have shown that older adults who eat the most protein have the strongest and largest muscles, and lose the least muscle over time.

Professor David Cameron-Smith

"Although many lines of evidence suggest older adults need more protein to maintain muscle mass, there was limited evidence from the kind of study that we did – a randomized controlled trial, which is the gold standard in testing and intervention," says Liggins Institute's Professor David Cameron-Smith, Chair in Nutrition, senior scientist of the aging research platform.

"Also, in most of the previous trials, participants were given a protein supplement rather than real food, and it is difficult to make global dietary recommendations based on supplement studies."

In future studies, the team aim to include both women and men, and to pinpoint how much more protein than is currently recommended is needed to maintain muscle mass in [older adults](#).

"There is evidence that the relationship between dietary protein and muscle health follows the same pattern in both older men and women. So

while we hypothesise these results will hold true for older women, further research is required before we can provide an answer," says Dr Mitchell.

More information: The effects of dietary protein intake on appendicular lean mass and muscle function in elderly men: a 10-wk randomized controlled trial. *Am J Clin Nutr* ajcn160325; First published online November 1, 2017. [DOI: 10.3945/ajcn.117.160325](https://doi.org/10.3945/ajcn.117.160325)

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