

Fish oil supplements may improve muscle function in older women

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Credit: University of Glasgow

Taking omega-3 supplements could improve muscle function in older women, potentially increasing their quality of life into old age and preventing unnecessary falls and loss of independence.

In a new study led by the Universities of Glasgow and Aberdeen and published today in the *American Journal of Clinical Nutrition*, scientists have found that supplementing the diet of [older women](#) with 3g of [fish oil](#) results in greater increases (when compared to a 3g of safflower oil

placebo) in their [muscle function](#) when combined with resistance exercise training over 18 weeks.

Before and after the exercise training programme researchers measured muscle size, using MRI, and muscle function, using a testing dynamometer, and calculated muscle quality (force produced relative to muscle size).

As expected the resistance exercise training increased muscle size, function and quality in all groups of participants. In men who were taking the fish oil supplements there were no extra gains in muscle function or size observed over the 18-week intervention period. However, in [women](#), those taking fish oil their muscle function, but not size, increased to a greater extent compared to those in the [placebo group](#).

In the women in the placebo group [exercise training](#) resulted in an average strength increase of 16%, however when the exercises were combined with an intake of fish oil that improvement increased to an average of 34%.

Dr Stuart Gray from the University of Glasgow's Institute of Cardiovascular and Medical Sciences (formerly of the University of Aberdeen, where much of the study was completed) said: "These findings provide important information for nutritional guidelines in older people where policy makers may want to consider recommendations for [fish oil supplements](#) to be consumed by older women.

Why men do not see the same benefit as women is important to understand and the underlying mechanisms need to be studied."

Researchers highlighted the fact that this greater increase in muscle function noted in women was independent of any changes in muscle size

with fish oil, such that it was muscle quality rather than size was improved.

The primary function of [skeletal muscle](#) is carry out many daily tasks, such as rising from a chair or getting on a bus, tasks often referred to as functional abilities. However, both size and function progressively decrease as a normal part of healthy ageing.

This decrease in function can result in a reduction in quality of life, increased falls risk and loss of independence.

Dr Gray added: "With the percentage of people aged over 65 predicted to rise from 17%, of the total population in 2010, to 23% in 2035, it is crucial to develop effective treatments for the age-related loss of muscle function.

"Findings of a benefit in women are particularly important as women tend to live around four years longer than men and cross the "disability threshold", where functional abilities are lost, 10 years earlier than men."

More information: M. Da Boit et al. Sex differences in the effect of fish oil supplementation on the adaptive response to resistance exercise training in older people: a randomized control trial, *American Journal of Clinical Nutrition* (2016). [DOI: 10.3945/ajcn.116.140780](https://doi.org/10.3945/ajcn.116.140780)

Provided by University of Glasgow

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