

Fish oil supplementation can slow muscle loss during immobilization

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A study published in *The FASEB Journal* demonstrated that dietary supplementation with omega-3 fatty acids (or fish oils) reduced the rate at which young women lost muscle mass during a period of

immobilization.

To conduct the study, McGlory and colleagues separated 20 healthy [young women](#) into two groups: an [omega-3](#) group and a sunflower oil control group. After consuming the relevant supplement for four weeks, participants had one of their legs immobilized for two weeks using a knee brace. Following the immobilization period, participants returned to normal daily activity for a two-week recovery period.

Researchers measured leg muscle size, mass, strength, and protein synthesis (known to regulate muscle size) before and after immobilization and following the recovery period. In the omega-3 group, the amount of muscle lost during immobilization was significantly lower than that of the control group.

"This novel study suggests that young women may be able to use omega-3 supplementation to slow muscle loss and enhance recovery in situations where one of their limbs is immobilized," explained Chris McGlory, Ph.D., Diabetes Canada Research Fellow working with Stuart Phillips, Ph.D., at McMaster University's Department of Kinesiology in Ontario, Canada. "These findings could have implications for muscle recovery following surgery such as ACL reconstruction."

In addition, following two weeks of regular daily activity, the omega-3 group experienced full return of skeletal muscle volume. This finding contradicts previous work in rodents showing inhibited recovery in atrophied muscle by omega-3 [fatty acids](#) following hindlimb immobilization.

"The interplay between dietary regimes and concurrent activity levels is not often addressed as squarely as it was in this study," said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*.

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