

Fish oil supplements may help fight against Type 2 diabetes

May 22 2013

Widely-used fish oil supplements modestly increase amounts of a hormone that is associated with lower risk of diabetes and heart disease, according to a study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism* (JCEM).

[Fish oil supplements](#), also called omega 3 fatty acid capsules, raise levels of adiponectin in the bloodstream. Adiponectin is an important hormone that has beneficial effects on metabolic processes like glucose regulation and the modulation of inflammation. In long-term human studies, higher levels of adiponectin are associated with lower risks of type 2 diabetes and coronary heart disease.

"While prior animal studies found fish oil increased circulating adiponectin, whether similar effects apply in humans is not established," said the study's lead author, Jason Wu, PhD, of the Harvard School of Public Health. "By reviewing evidence from existing randomized clinical trials, we found that fish oil supplementation caused modest increases in adiponectin in the blood of humans."

The meta-analysis reviewed and analyzed results from 14 randomized, placebo-controlled clinical trials. In total, 682 subjects were treated with fish oil, and 641 were given placebos – most commonly olive and sunflower oils. In those taking fish oil, adiponectin levels increased by 0.37 ug/mL. The results also suggested the effect of fish oil on adiponectin differed substantially across the trials, suggesting that fish oil supplementation may have stronger influence on adiponectin in some

populations and weaker effects in others.

This is the first study to pool data from previous trials to suggest that fish oil consumption increases adiponectin in humans. The findings quantify the potential impact of fish oil on adiponectin level, and highlight the need to further investigate populations that may particularly benefit from fish oil supplementation.

"Although higher levels of adiponectin in the bloodstream have been linked to lower risk of diabetes and coronary [heart disease](#), whether fish oil influences glucose metabolism and development of type 2 [diabetes](#) remains unclear," said Wu. "However, results from our study suggest that higher intake of fish oil may moderately increase blood level of adiponectin, and these results support potential benefits of fish oil consumption on glucose control and fat cell metabolism."

Despite the uncertainty about the effectiveness of [fish oil](#) on cardiovascular and metabolic diseases, about 37 percent of adults and 31 percent of children nationwide use omega-3 supplements, according to the 2007 National Health Interview Survey from the National Institutes of Health's National Center for Complementary and Alternative Medicine (NCCAM).

More information: The article, "Effect of Fish Oil on Circulating Adiponectin: A Systematic Review and Meta-Analysis of Randomized Controlled Trials," appears in the June 2013 issue of JCEM.

Provided by The Endocrine Society

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