

ORIGINAL RESEARCH COMMUNICATION

Combining fish-oil supplements with regular aerobic exercise improves body composition and cardiovascular disease risk factors^{1,2,3}

Alison M Hill, Jonathan D Buckley, Karen J Murphy and Peter RC Howe

¹ From the Nutritional Physiology Research Centre and the Australian Technology Network Centre for Metabolic Fitness, University of South Australia, Adelaide, Australia (AMH, JDB, KJM, and PRCH), and the Discipline of Physiology, School of Molecular and Biomedical Science, University of Adelaide, Adelaide, Australia (AMH and PRCH)

Background: Regular exercise and consuming long-chain n–3 fatty acids (FAs) from fish or fish oil can independently improve cardiovascular and metabolic health, but combining these lifestyle modifications may be more effective than either treatment alone.

Objective: We examined the individual and combined effects of n–3 FA supplements and regular exercise on body composition and cardiovascular health.

Design: Overweight volunteers [body mass index (BMI; in kg/m²): >25] with high blood pressure, cholesterol, or triacylglycerols were randomly assigned to one of the following interventions: fish oil (FO), FO and exercise (FOX), sunflower oil (SO; control), or SO and exercise (SOX). Subjects consumed 6 g tuna FO/d (≈1.9 g n–3 FA) or 6 g SO/d. The exercise groups walked 3 d/wk for 45 min at 75% age-predicted maximal heart rate. Plasma lipids, blood pressure, and arterial function were assessed at 0, 6, and 12 wk. Body composition was assessed by dual-energy X-ray absorptiometry at 0 and 12 wk only.

Results: FO supplementation lowered triacylglycerols, increased HDL cholesterol, and improved endothelium-dependent arterial vasodilation (*P* < 0.05). Exercise improved arterial compliance (*P* < 0.05). Both fish oil and exercise independently reduced body fat (*P* < 0.05).

Conclusions: FO supplements and regular exercise both reduce body fat and improve cardiovascular and metabolic health. Increasing intake of n–3 FAs could be a useful adjunct to exercise programs aimed at improving body composition and decreasing cardiovascular disease risk.

Key Words: n–3 Fatty acids • body fat • flow-mediated dilatation • lipids • dual-energy X-ray absorptiometry • DXA

This Article

- ▶ [Full Text](#)
- ▶ [Full Text \(PDF\)](#)
- ▶ [Purchase Article](#)
- ▶ [View Shopping Cart](#)
- ▶ [Alert me when this article is cited](#)
- ▶ [Alert me if a correction is posted](#)
- ▶ [Citation Map](#)

Services

- ▶ [Similar articles in this journal](#)
- ▶ [Similar articles in PubMed](#)
- ▶ [Alert me to new issues of the journal](#)
- ▶ [Download to citation manager](#)
- ▶ [Get Permissions](#)

Citing Articles

- ▶ [Citing Articles via HighWire](#)
- ▶ [Citing Articles via Google Scholar](#)

Google Scholar

- ▶ [Articles by Hill, A. M.](#)
- ▶ [Articles by Howe, P. R.](#)
- ▶ [Search for Related Content](#)


PubMed

- ▶ [PubMed Citation](#)
- ▶ [Articles by Hill, A. M.](#)
- ▶ [Articles by Howe, P. R.](#)

Agricola

- ▶ [Articles by Hill, A. M.](#)
- ▶ [Articles by Howe, P. R.](#)

This article has been cited by other articles:



Nutrition in Clinical Practice ▶ HOME

J. O. Clarke and G. E. Mullin
A Review of Complementary and Alternative Approaches to Immunomodulation
Nutr Clin Pract, February 1, 2008; 23(1): 49 - 62.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



A. M. Hill, A. M. Coates, J. D. Buckley, R. Ross, F. Thielecke, and P. R.C. Howe

Can EGCG Reduce Abdominal Fat in Obese Subjects?

J. Am. Coll. Nutr., August 1, 2007; 26(4): 396S - 402S.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)