

# Abstract

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## High consumption of omega-3 polyunsaturated fatty acids decrease plasma homocysteine: A meta-analysis of randomized, placebo-controlled trials.

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**OBJECTIVE:** High consumption of  $\omega$ -3 polyunsaturated fatty acids (PUFAs) has been associated with lower plasma homocysteine (Hcy) levels, but intervention studies in humans have been inconclusive. The objective was to systematically evaluate the effects of  $\omega$ -3 PUFA supplementation on plasma Hcy levels.

**METHODS:** A comprehensive search of Medline, EMBASE, the Cochrane Clinical Trials Registry, and bibliographies of relevant articles published from 1966 through September 2010 was undertaken. All randomized, placebo-controlled trials that compared  $\omega$ -3 PUFA supplementation with placebo were included. Two investigators performed data extraction and quality scoring independently, with discrepancies resolved by consensus.

**RESULTS:** Eleven trials including 702 subjects were analyzed. The outcomes studied were plasma Hcy level. Eleven randomized, placebo-controlled trials were included in this meta-analysis. Supplementation with  $\omega$ -3 PUFAs was associated with a significant decrease in plasma Hcy level (weighted mean difference  $-1.59$   $\mu\text{mol/L}$ , 95% confidence interval  $-2.34$  to  $-0.83$ ) compared with control subjects.

**CONCLUSION:** This meta-analysis suggested that  $\omega$ -3 PUFA supplementation can decrease plasma Hcy levels. The implications of these findings remain to be elucidated.

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