

# **N-3 polyunsaturated fatty acids in coronary heart disease: a meta-analysis of randomized controlled trials \***

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## **Abstract**

### **Purpose**

Observational studies have shown an inconsistent association between n-3 polyunsaturated fatty acids and the risk of coronary heart disease. We investigated the effects of dietary and nondietary (supplemental) intake of n-3 polyunsaturated fatty acids on coronary heart disease.

### **Subjects and methods**

We searched the literature to identify randomized controlled trials that compared dietary or nondietary intake of n-3 polyunsaturated fatty acids with a control diet or placebo in patients with coronary heart disease. Studies had to have at least 6 months of follow-up data, and to have reported clinical endpoint data. We identified 11 trials, published between 1966 and 1999, which included 7951 patients in the intervention and 7855 patients in the control groups.

### **Results**

The risk ratio of nonfatal myocardial infarction in patients who were on n-3 polyunsaturated fatty acid-enriched diets compared with control diets or placebo was 0.8 (95% confidence interval [CI]: 0.5 to 1.2,  $P = 0.16$ ; Breslow-Day test for heterogeneity,  $P = 0.01$ ), and the risk ratio of fatal myocardial infarction was 0.7 (95% CI: 0.6 to 0.8,  $P < 0.001$ ; heterogeneity  $P > 0.20$ ). In 5 trials, sudden death was associated with a risk ratio of 0.7 (95% CI: 0.6 to 0.9,  $P < 0.01$ ; heterogeneity  $P > 0.20$ ), whereas the risk ratio of overall mortality was 0.8 (95% CI: 0.7 to 0.9,  $P < 0.001$ ; heterogeneity  $P > 0.20$ ). There was no difference in summary estimates between dietary and nondietary interventions of n-3 polyunsaturated fatty acids for all endpoints.

### **Conclusion**

This meta-analysis suggests that dietary and nondietary intake of n-3 polyunsaturated fatty acids reduces overall mortality, mortality due to myocardial infarction, and sudden death in patients with coronary heart disease.

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