# Omega-3 fatty acid supplementation not associated with lower risk of major CVD events

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In a study that included nearly 70,000 patients, supplementation with omega-3 polyunsaturated fatty acids was not associated with a lower risk of all-cause death, cardiac death, sudden death, heart attack, or stroke, according to an analysis of previous studies published in the September 12 issue of *JAMA*.

"Treatment with marine-derived omega-3 polyunsaturated fatty acids (PUFAs) for the prevention of major cardiovascular adverse outcomes has been supported by a number of randomized clinical trials (RCTs) and refuted by others. Although their mechanism of action is not clear, their postulated effect on cardiovascular outcomes may be due to their ability to lower triglyceride levels, prevent serious arrhythmias, or even decrease platelet aggregation and lower blood pressure. Current guidelines issued by major societies recommend their use, either as supplements or through dietary counseling, for patients after myocardial infarction [MI; heart attack], whereas the U.S. Food and Drug Administration has approved their administration only as triglyceride-lowering agents in patients with overt hypertriglyceridemia, and some (but not all) European national regulatory agencies have approved the omega-3 administration for cardiovascular risk modification. The controversy stemming from the varying labeling indications causes confusion in everyday clinical practice about whether to use these agents for cardiovascular protection," according to background information in the article.

Evangelos C. Rizos, M.D., Ph.D., of the University Hospital of Ioannina, Ioannina, Greece, and colleagues performed a large-scale synthesis of the available randomized evidence by conducting a systematic review and meta-analysis to determine the association between omega-3 PUFAs and major cardiovascular outcomes.

Of the 3,635 citations retrieved, 20 studies with 68,680 randomized patients were included, reporting 7,044 deaths, 3,993 cardiac deaths, 1,150 sudden deaths, 1,837 heart attacks, and 1,490 strokes. Analysis indicated no statistically significant association with all-cause mortality, cardiac death, sudden death, heart attack, and stroke when all supplement studies were considered.

"In conclusion, omega-3 PUFAs are not statistically significantly associated with major cardiovascular outcomes across various patient populations. Our findings do not justify the use of omega-3 as a structured intervention in everyday clinical practice or guidelines supporting dietary omega-3 PUFA administration. Randomized evidence will continue to accumulate in the field, yet an individual patient data meta-analysis would be more appropriate to refine possible associations related to, among others, dose, adherence, baseline intake, and cardiovascular disease risk group," the authors conclude.

**More information:** JAMA. 2012;308[10]:1024-1033.

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