Omega-3 fatty acids and cardiovascular disease: an updated systematic review

Record Status
This is a bibliographic record of a published health technology assessment from a member of INAHTA. No evaluation of the quality of this assessment has been made for the HTA database.

Citation

Authors' objectives
Evaluate the effect of omega−3 fatty acids (n-3 FA) on clinical and selected intermediate cardiovascular (CV) outcomes and the association of n-3 FA intake and biomarkers with CV outcomes. The n-3 FA under review include eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), docosapentaenoic acid (DPA), stearidonic acid (SDA), and alphalinolenic acid (ALA). The effect and association of n-3 FA intake and biomarker levels with CV clinical and intermediate outcomes remains controversial. We update prior Evidence Reports of n-3 FA and clinical and intermediate CV disease (CVD) outcomes.

Authors' conclusions
The 61 RCTs mostly compared marine oil supplements with placebo on CVD outcomes in populations at risk for CVD or with CVD, while the 37 observational studies mostly examined associations between various individual n-3 FA and long-term CVD events in generally healthy populations. Compared with the prior report on n-3 FA and CVD, there is more robust RCT evidence on ALA and on clinical CV outcomes; also, by design there are newly added data on associations between n-3 FA biomarkers and CV outcomes. However, conclusions regarding the effect of n-3 FA intake on CV outcomes or associations with outcomes remain substantially unchanged. Marine oils statistically significantly raise HDL-c and LDL-c by similar amounts (≤2 mg/dL), while lowering Tg in a dose-dependent manner, particularly in individuals with elevated Tg; they have no significant effect on BP. ALA has no significant effect on intermediate outcomes. Limited data were available from RCTs on the effect of n-3 FA on clinical CVD outcomes. Observational studies suggest that higher marine oil intake (including from dietary fish) is associated with lower risk of several CVD outcomes. No clear differences in effects or associations were evident based on population, demographic features, or co-interventions. Future RCTs would be needed to establish adequate evidence of the effect of n-3 FA on CVD outcomes or to clarify differential effects in different groups of people. However, future trials are unlikely to alter conclusions about the effects of n-3 FA supplementation on intermediate cardiovascular outcomes (BP, LDL-c, HDL-c, or Tg).

Project page URL
https://www.effectivehealthcare.ahrq.gov/search-for-guides-reviews-and-reports/?pageaction=displayproduct&amp;productid=2261

Final publication URL

Indexing Status
Subject indexing assigned by CRD

MeSH
Humans; Cardiovascular Diseases; Dietary Supplements; Fatty Acids, Omega-3

Language Published
English

Country of organisation
United States

English summary
An English language summary is available.

Address for correspondence
AHRQ, Center for Outcomes and Evidence Technology Assessment Program, 540 Gaither Road, Rockville, MD 20850, USA Email: AHRQTAP@ahrq.hhs.gov

AccessionNumber
32016000930

Date abstract record published
16/08/2016