

on combined cardiovascular events. Neither RCTs nor cohort studies showed significantly increased risks of cancer or stroke with higher intake of omega 3, but there were too few events to rule out important effects.

Strengths and weaknesses

The largest studies reviewed had greater potential for bias than some of the smaller ones. We hoped that pooling studies at low risk of bias might provide enough power to inform us of effects on health, but this was not the case. Similarly, analysis of the effects of omega 3 on rarer outcomes such as stroke had insufficient power to detect clinically important effects. Unlike previous meta-analyses, we reviewed systematically the effects of omega 3 fats on mortality, cardiovascular disease, cancer, and bleeding events and analysed all relevant RCTs and prospective cohort studies. We also accounted for differences in study quality and examined the effects of long chain and short chain omega 3 fats in a wide group of participants; this provides high quality evidence to guide policy and practice.

Other studies

Our findings differ from those of a recent systematic review by Bucher et al,³ which reviewed trials assessing the effects of long chain omega 3 fats over at least six months in patients with coronary heart disease and found significant protection from mortality and sudden death. It did not include the large recent study by Burr et al.⁴

Possible explanations for the differences in results between this and the Bucher review rests on our inclusion of the study by Burr et al. These are that this RCT had the longest follow-up of all RCTs and the harmful effects of methylmercury could be cumulative; the study was the only RCT that specifically enrolled men treated for angina; omega 3 from oily fish has a different effect to fish oil supplements (but this was found not to explain the differences); the effect of omega 3 fats on cardiovascular disease is smaller than previously thought; or that its beneficial effect is limited to a specific group (such as patients after myocardial infarction or with heart failure) (see bmj.com). Two other systematic reviews were less comprehensive than ours.^{6,7}

Interpretation

It is not clear whether long chain or short chain omega 3 fats (together or separately) reduce or increase total mortality, cardiovascular events, cancer, or strokes. Our findings do not rule out an important effect of omega 3 fats on total mortality, as robust trials at low risk of bias reported few deaths. The source (dietary or supplemental) and dose of omega 3 fats did not seem to affect the effectiveness of long chain omega 3 fats.

UK guidelines encourage the general public to eat more oily fish, and higher amounts are advised after myocardial infarction (supported by trials after myocardial infarction). This advice should continue at present, but the evidence should be reviewed regularly. It is probably not appropriate to recommend a high intake of omega 3 fats for people who have angina but have not had a myocardial infarction.

Thanks to Theresa Moore and Margaret Burke from the Cochrane Heart Group, and to all of the authors of primary studies who helped us build up the data. This paper is based on a Cochrane review accepted for publication in The Cochrane Library (see www.TheCochraneLibrary.net for information).

What is already known on this topic

A systematic review of randomised controlled trials in coronary heart disease showed reduced mortality in patients taking supplemental long chain omega 3 fats

What this study adds

This systematic review assessed the health effects of long chain and shorter chain omega 3 fats (together or separately) on total mortality, cardiovascular events, cancer, and strokes in a wide group of participants and found no evidence of a clear benefit of omega 3 fats on health

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Corrections and clarifications

ABC of wound healing: Burns

We failed to spot an obvious error in this article by Alex Benson and colleagues (*BMJ* 2006;332:649-52, 18 Mar). In the box titled "Criteria for referral to a burns centre" (p 651), the three "less than" symbols (for proportion of total body surface area affected by partial or full thickness burns) should of course have been "more than" symbols.

Call to scrap import tariffs on pharmaceuticals in global WTO talks

In this news article by John Zarocostas, we wrongly stated that a proposal calling for an end to import tariffs was circulated during talks in Doha, Qatar (*BMJ* 2006;332:508, doi:10.1136/bmj.332.7540.508-c). In fact the talks were in Geneva.

Obituaries: Kenneth Herbert Walter

In this obituary, we wrongly spelt Kenneth Walter's name as Walker (*BMJ* 2006;332:671, 18 Mar). We have not been able to discover how we made this mistake, but we do apologise.