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[Intervention Review]

Dietary marine fatty acids (fish oil) for asthma in adults and children

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Editorial group: Cochrane Airways Group.

Publication status and date: Edited (no change to conclusions), published in Issue 3, 2019.

Citation: Thien FCK, De Luca S, Woods RK, Abramson MJ. Dietary marine fatty acids (fish oil) for asthma in adults and children. *Cochrane Database of Systematic Reviews* 2000, Issue 4. Art. No.: CD001283. DOI: [10.1002/14651858.CD001283](https://doi.org/10.1002/14651858.CD001283).

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ABSTRACT

Background

Epidemiological studies suggest that a diet high in marine fatty acids (fish oil) may have beneficial effects on inflammatory conditions such as rheumatoid arthritis and possibly asthma.

Objectives

- (1) To determine the effect of marine n-3 fatty acid (fish oil) supplementation in asthma.
- (2) To determine the effect of a diet high in fish oil in asthma.

Search methods

We searched the Cochrane Airways Group Specialised Register. We also searched bibliographies of retrieved trials and contacted fish oil manufacturers. Searches were current as of May 2010.

Selection criteria

We included randomised controlled trials in patients with asthma more than two years of age. The study duration had to be in excess of four weeks. Double blind trials were preferred, but we also reviewed single-blind and open trials for possible inclusion.

All four reviewers read each paper, blind to its identity. Decisions concerning inclusion were made by simple majority. We all performed quality assessment independently.

Data collection and analysis

The only comparison possible was between marine n-3 fatty acid supplementation and placebo. There were insufficient trials to examine dietary manipulation alone.

Main results

Nine randomised controlled trials conducted between 1986 and 2001 satisfied the inclusion criteria. Seven were of parallel design and two were cross-over studies. Eight compared fish oil with placebo whilst one compared high dose versus low dose marine n-3 fatty acid supplementation. Two studies were conducted in children, whilst the remaining seven studies were conducted in adults. None of the included studies reported asthma exacerbations, health status or hospital admissions.

There was no consistent effect on any of the analysable outcomes: FEV1, peak flow rate, asthma symptoms, asthma medication use or bronchial hyper reactivity. One of the studies performed in children which combined dietary manipulation with fish oil supplementation showed improved peak flow and reduced asthma medication use. There were no adverse events associated with fish oil supplements.

Authors' conclusions

There is little evidence to recommend that people with asthma supplement or modify their dietary intake of marine n-3 fatty acids (fish oil) in order to improve their asthma control. Equally, there is no evidence that they are at risk if they do so.

PLAIN LANGUAGE SUMMARY**Dietary marine fatty acids (fish oil) for asthma in adults and children**

Eating more fish has been recommended as one way of possibly reducing asthma. Populations (such as Eskimo communities) with diets high in fish also have low rates of asthma. As diets in other communities have become higher in saturated fats, asthma has also increased. The theory has been that an ingredient in fish oil may reduce inflammation. Inflammation causes the swelling in the airways of the lungs that leads to asthma attacks. However, this review of trials found that people with asthma changing their diets to include more fish oil did not improve their asthma.