Health effects of omega-3 fatty acids on asthma


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
The purpose of this study was to conduct a systematic review of the scientific-medical literature to identify, appraise, and synthesize the evidence for the health effects of omega-3 fatty acids in asthma. Questions addressed the: efficacy of omega-3 fatty acids to improve respiratory outcomes; impact of covariates (e.g., omega-3 fatty acid source, type, and dose) on efficacy; influence of omega-3 fatty acids on mediators of inflammation thought to be related to the pathogenesis of asthma; value of omega-3 fatty acids as primary prevention as well as secondary prevention; and, safety profile in asthma populations, or subpopulations, and those at risk. The results may be used to inform a research agenda as well as to assist clinicians in advising patients who may wish to take this supplementation to treat or prevent asthma.

Authors' conclusions
Aside from an acceptable safety profile, it is impossible to definitively conclude anything with respect to the value of using omega-3 fatty acid supplementation in asthma for adults or children either in or beyond North America. The lack of sufficiently consistent evidence, as well as a paucity of evidence from well-designed, well-conducted and adequately powered studies suggests that no definitive conclusion can yet be drawn regarding the efficacy of omega-3 fatty acid supplementation as a treatment. The influence on efficacy of key intervention, population or cointervention factors (e.g., sources, types or doses of omega-3 fatty acid content) cannot yet be determined. The picture of the impact of the exposure on mediators of inflammation thought to be related to the pathogenesis of asthma is largely unclear. There are too few studies from which to conclude anything definitive with respect to primary prevention. Some data suggest that dietary fish consumption, including oily fish, may serve a protective role for children, yet this association was neither observed for adolescent (positive association) or adult populations (no association). Final follow-up data when children reach five years of age in a large randomized controlled trial should provide a clearer picture of the value of omega-3 fatty acids as early primary prevention. No safety profile relating to omega-3 fatty acid intake was reported for primary prevention studies, and little probability of harm beyond occasional mild discomfort was observed in treatment studies. The questions of secondary prevention and of safety related to omega-3 fatty acid use in subpopulations of asthmatics could not be addressed due to a lack of studies. Overall, the present collection of evidence likely does not constitute the best test of the overarching hypothesis that omega-3 fatty acid supplementation alone can foster asthma-related benefits. Future research investigating North American samples is likely needed to establish or refute the value of omega-3 fatty acids to treat or prevent asthma in North American adults and children.

Project page URL
http://www.ahrq.gov/clinic/tp/o3asthmtp.htm

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