Aivi A. Rahman

Professor Brown

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Annotated Bibliography

The Effect of Omega-3 Fatty Acids on Asthma

Farjadian S, Moghtaderi M, Kalani M, Gholami T, Teshnizi SH. Effects of omega-3 fatty acids on serum levels of T-helper cytokines in children with asthma. Cytokine. 2016;85:61–66. doi:10.1016/j.cyto.2016.06.002

This article discussed if there was a clear effect of omega 3 fatty acids on asthmatic symptoms, pulmonary function, and serum T helper cytokine concentrations in children that have either mild or moderate asthma. There were about 39 patients in the study. The patients took a gel capsule that contained 180 mg EPA and 120 mg DHA daily for 3 months. The tests that were administered were a spirometry for the patients pulmonary function as well as a multiplex cytometric bead assay to measure their serum for Th1, Th2, Th9, Th17, and Th22 cytokines. It was found that there was a 72% improvement in the symptoms of the patients. It was found in the study that as oral anti-inflammatory products, omega 3 fatty acids showed promising effects to be a complementary aid for those with asthma. However, it was also stated that there is a need for more studies with more patients, a broad range of ages and asthma severity, as well as a range of omega 3 fatty acid dosages in the trials.

This article is featured in a peer reviewed journal, as well as cited by other journals. The authors Farjadian, Kalani, and Gholami all are part of the Department of Immunology at the Shiraz University of Medical Sciences whereas Moghtaderi and Hosseini are part of the Allergy Research Center at Shiraz University of Medical Sciences and the Paramedical School at

Hormozgan University of Medical Science, respectively. All the authors have a range of scientific disciplines and offer different but related and unbiased perspectives throughout the study. This article supported the positive effects of omega-3 fatty acid supplements on asthma, which can be used in the literature review and had the goal to want to add omega-3 fatty acids to the diet of pregnant women to decrease the risk of asthma in children.

Mihrshahi S, Peat JK, Webb K, Oddy W, Marks GB, Mellis CM. Effect of omega-3 fatty acid concentrations in plasma on symptoms of asthma at 18 months of age. Pediatric Allergy and Immunology. 2004 [accessed 2019 Apr 30];15(6):517–522. https://web-b-ebscohost-com.ccny-proxy1.libr.ccny.cuny.edu/ehost/pdfviewer/pdfviewer?vid=0&sid=7b031a9e-49de-4211-89cb-4124913d510f@sessionmgr101. doi:10.1111/j.1399-3038.2004.00187.x

This journal discussed if there was a relation between omega 3 fatty acid levels in plasma on the symptoms of asthma and atopy in children around the age of 18 months old. This study consisted of 616 pregnant women with a family history of asthma, which would put their child at risk for having asthma. The mother was given either a supplement that contained omega 3 fatty acids or given a placebo. The asthma symptoms were analyzed through a double-blind test by nurses at the hospitals. Other tests that were administered were the skin prick, analyzing the blood content of IgE, as well as fatty acid concentration. The results indicated that with the active supplement group, it was found that wheezing, doctor visits due to wheezing, bronchodilator use, as well as nocturnal coughing were all reduced. However, the supplements had a low effect on diagnosed asthma, atopy, or serum IgE. This indicates that although wheezing could be an indicator of later onset asthma in children, it is still not certain that it is a very accurate indicator, which shows only some promising results that omega 3 fatty acids may help prevent future asthma and/or atopy.

This journal appears to be reliable as it was in a peer reviewed journal and cited at least a hundred times. The authors are all in high ranking scientific positions, as Mihrshahi is in the Clinical Epidemiology Unit at The Children's Hospital which Peat and Craig are part of (and both are also part of the Department of Child Health and Pediatrics at the University of Sydney), Webb is part of the School of Public Health and School of Molecular and Microbial Biosciences (Human Nutrition) at the University of Sydney, Oddy is in the Department of Nutrition Dietetics and Food Science at Curtin University of Technology, and Marks is in the Woolcock Institute of Medical Research at the University of Sydney as well as the Cooperative Research Centre for Asthma. These authors all came together with their different backgrounds and created an article that was not biased and was purely scientific and had a goal to influence the belief of the utility of omega-3 fatty acids. This article shows that omega-3 fatty acids do not aid asthma but mainly affect wheezing symptoms, which is a counter to what other journals had found in the literature review.

Neutze D, Evans K, Koenig M, Castelli G, Mounsey A. Does fish oil during pregnancy help prevent asthma in kids? Journal of Family Practice. 2018 [accessed 2019 Apr 30];67. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5810307/pdf/JFP-67-100.pdf

This study was on the effect of fish oil (containing omega 3 fatty acids) consumption in pregnant women on asthma in their children. About 736 pregnant women were chosen to participate in this study, and the women either took omega 3 long-chain polyunsaturated fatty acids (EPA or DHA) (as fish oil) or they took a placebo oil (olive oil). There was a daily recording of the persistent wheezing/asthmatic occurrences for the children, the use of inhaled beta-agonists, and/or relapses after they had the use of inhaled glucocorticoids. This study was done on the children from the ages of 1, 3, 6, 12, 18, 24, 30, and 36 months as well as 4 and 5

years old. It was found that the children of those who had taken fish oil all had a lowered risk of asthma by the time they were 3-5 years old. However, this effect was mainly only present in the mothers who had baseline levels of EPA and DHA in the lowest third or they did not consume as much fish oil prior to the study. It was reasoned that in this study, there was a larger amount of fish oil that was added as a daily supplement, so there was an effect on asthma seen that was not present in previous studies.

This study was in a reputable journal, and had very little bias in the writing style, and was very scientific and objective in its goals to influence how people view omega-3 fatty acids. The author Neutze (MD and PhD), Evans (MD), as well as Mounsey (MD) all worked in the Department of Family Medicine at the University of North Carolina at Chapel Hill, whereas both Koenig (PharmD and BCPS) and Castelli (PharmD, BCPS, and BC-ADM) are at UPMC St. Margaret Family Medicine Residency Program. The authors were all of medical background and held many degrees, aiding to the reliability of the study done. This article can be used in the literature review as more support that omega-3 fatty acids do reduce the risk of asthma, as well as provide reasoning why other studies may have found results that indicated otherwise.

Woods RK, Raven JM, Walters EH, Abramason MJ, Thien FC. Fatty acid levels and risk of asthma in young adults. Thorax. 2004 [accessed 2019 Apr 30];59(2):105–110. https://www-ncbi-nlm-nih-gov.ccny-proxy1.libr.ccny.cuny.edu/pmc/articles/PMC1746920/pdf/v059p00105.pdf. doi:10.1136/thorax.2003.009498

This journal article talked about the effects of plasma long chain (n-3) omega-3 fatty acids on adults with and without asthma. The study consisted of about 1601 adults. The adults were tested based on respiratory surveys as well as food frequency surveys. They also had a lung function test, skin prick test, as well as their plasma fatty acid percentage. Then, the study

compared the fatty acid percentage to their symptoms of asthma and atopy. However, the omega-6 polyunsaturated fatty acids (DHGLA) had a positive effect on asthma, which caused a need for further research for a potential cause and effect relationship. The plasma omega 3 fatty acids were found to have no association with reduced risk of asthma or atopy in young adults.

This journal article was displayed in a reputable and peer reviewed journal as well as cited by many other researchers. Both Woods as well as Abramason were affiliated with the Department of Epidemiology and Preventive Medicine at the Central and Eastern Clinical School, Monash University, and The Alfred Hospital. Raven and Thien were affiliated with the Department of Allergy, Immunology, and Respiratory Medicine at the Central and Eastern Clinical School, Monash University, and The Alfred Hospital. Walters was part of the Discipline of Medicine at the School of Medicine and University of Tasmania. All these authors came from many different disciplines and fields with the goal to objectively analyze the effects of omega-3 fatty acids as well as find points for future studies. This article can be used to refute the effectiveness of omega-3 fatty acids in the literature review.