

Omega-3 Literature list

In collaboration with

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LOOK-UP-WORDS – You can look up words in the literature list by using Words “search function” in the English version you find it by clicking >CTRL< and F at the same time.

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Absorption

Boustani SE, Colette C, Monnier L et al. Enteral absorption in man of eicosapentaenoic acid in different chemical forms. *Lipids* 1987;22: 711-14
[MORE INFORMATION](#)

Lawson LD, Hughes G. Human absorption of fish oil fatty acids as triacylglycerols, free acids, or ethyl esters. *Biochim Biophys Res Comm* 1988; 152: 328-35

Nelson,G,J; Ackman,R,G. Absorption and transport of fat in mammals with emphasis on n-3 polyunsaturated fatty acids. *Lipids* 1988;23: 1005-14
[MORE INFORMATION](#)

Beckermann B, Beneke M, Seitz I. Vergleich der Bioverfügbarkeit von Eicosapentaensäure und Docosahexaensäure aus Triglyceriden, freien Fettsäuren und Ethylestern bei Probanden. *Arzneim -Forsch Drug Res* 1990; 40: 700-4.

Luley C, Wieland H, Gruwald J. Bioavailability of omega-3 fatty acids: Ethylester preparations are as suitable as triglyceride preparations. *Akt Ernaehr-Med.* 1990; 15: 123-5.

Nordoy A, Barstad L, Connor WE, Hatcher L. Absorption of the n-3 eicosapentaenoic and docosahexaenoic acids as ethyl esters and triglycerides by humans. *Am J Clin Nutr* 1991; 53: 1185-90 [MORE INFORMATION](#)

Krokan HE, Bjerve KS, Moerk E. The enteral bioavailability of eicosapentaenoic acid and docosahexenoic acid is as good from ethyl esters as from glycerol esters in spite of lower hydrolytic rates by pancreatic lipase in vitro. *Biochim Biophys Acta* 1993; 1168: 59-67

Christensen MS, Høy C-E, Redgrave TG. Lymfatic absorption of n-3

polyunsaturated fatty acids from marine oils with different intramolecular fatty acid distributions. *Biochim Biophys Acta* 1994;1215:198-204 [MORE INFORMATION](#)

Dyerberg J, Madsen P, Møller J, Aardestrup I, Schmidt EB. Bioavailability of n-3 Fatty Acid Formulations. In: *n-3 Fatty Acids: Prevention and Treatment in Vascular Disease*. Eds. Kristensen SD, Schmidt EB, De Caterina R, Endres S. Springer-Verlag London - Bi & Gi Publishers, Verona 1995; 217-26.

Jalili M, Dehpour AR. Extremely Prolonged INR Associated with Warfarin in Combination with Both Trazodone and Omega-3 Fatty Acids. *Arch Med Res*. 2007;38(8):901-4.

Raatz SK, Redmon JB, Wimmergren N, Donadio JV, Bibus DM. Enhanced absorption of n-3 fatty acids from emulsified compared with encapsulated fish oil. *J Am Diet Assoc*. 2009;109(6):1076-81. [MORE INFORMATION](#)

Dyerberg J, Madsen P, Møller JM, Aardestrup I, Schmidt EB. Bioavailability of marine n-3 fatty acid formulations. *Prostaglandins Leukot Essent Fatty Acids*. 2010;83:137-41. [MORE INFORMATION](#)

Neubronner J, Schuchardt JP, Kressel G, Merkel M, von Schacky C, Hahn A. Enhanced increase of omega-3 index in response to long-term n-3 fatty acid supplementation from triacylglycerides versus ethyl esters. *Eur J Clin Nutr*. 2011 Feb;65(2):247-54. [Epub ahead of print] [MORE INFORMATION](#)

Wakil A, Mir M, Mellor DD, Mellor SF, Atkin SL. The bioavailability of eicosapentaenoic acid from reconstituted triglyceride fish oil is higher than that obtained from the triglyceride and monoglyceride forms. *Asia Pac J Clin Nutr*. 2010;19(4):499-505. [MORE INFORMATION](#)

Ulven SM, Kirkhus B, Lamglait A, Basu S, Elind E, Haider T, Berge K, Vik , Pedersen JI Metabolic effects of krill oil are essentially similar to those of fish oil but at lower dose of EPA and DHA, in healthy volunteers. *Lipids*. 2011 Jan;46(1):37-46. Epub 2010 Nov 2. [MORE INFORMATION](#)

Schuchardt JP, Neubronner J, Kressel G, Merkel M, von Schacky C, Hahn A. Moderate doses of EPA and DHA from re-esterified triacylglycerols but not from ethyl-esters lower fasting serum triacylglycerols in statin-treated dyslipidemic subjects: Results from a six month randomized controlled trial. *Prostaglandins Leukot Essent Fatty Acids*. 2011 Aug 20. [Epub ahead of print] [MORE INFORMATION](#)

Schuchardt JP, Schneider I, Meyer H, Neubronner J, von Schacky C, Hahn

A. Incorporation of EPA and DHA into plasma phospholipids in response to different omega-3 fatty acid formulations - a comparative bioavailability study of fish oil vs. krill oil. *Lipids Health Dis.* 2011 Aug 22;10(1):145. [Epub ahead of print] [MORE INFORMATION](#)

Schuchardt JP, Hahn A. Bioavailability of long-chain omega-3 fatty acids. *Prostaglandins Leukot Essent Fatty Acids.* 2013 Jul;89(1):1-8. doi: 10.1016/j.plefa.2013.03.010. Epub 2013 May 12. [MORE INFORMATION](#)

ADHD (Attention-Deficit/Hyperactive Disorder), DCD (Developmental Coordination Disorder); Dyslexia

Strevens LJ, Zentall SS, Marcey LA, Kuczek T, Burgess JR. Omega-3 fatty acids in boys with behaviour, learning and health problems. *Physiology & Behaviour* 1996;59:915-20.

Richardson AJ, Montgomery P. The Oxford-Durham study: a randomized, controlled trial of dietary supplementation with fatty acids in children with developmental coordination disorders. *Pediatrics* 2005;115:1360-6.

Haag M. Essential fatty acids and the brain. *Can J Psychiatry* 2003;48:195-203.

Stordy BJ. Benefit of docosahexaenoic acid supplements to dark adaptation in dyslexic. *Lancet* 1995;346:385. [MORE INFORMATION](#)

Richardson AJ, Ross MA. Fatty acid metabolism in neurodevelopmental disorder: a new perspective on associations between attention-deficit/hyperactive disorder, dyslexia, dyspraxia and the autistic spectrum. *Prostaglandins Leukot Essent Fatty Acids.* 2000;63:1-9. [MORE INFORMATION](#)

Stevens L, Zhang W, Peck L et al. EFA supplementation in children with inattention, hyperactivity, and other disruptive behaviours. *Lipids* 2003;38:1007-21. [MORE INFORMATION](#)

Voigt RG, Llorente AM, Jensen CL, Fraley JK, Beretta MC, Heird WC. A randomised, double-blind, placebo-controlled trial of docosahexaenoic acid supplementation in children with attention-deficit/hyperactive disorder. *J Pediatr* 2001;139:189-96.

Hirayama S, Hamazaki T, Terasawa K. Effect of docosahexaenoic containing food administration on symptoms of attention-deficit/hyperactive disorder: a placebo-controlled double-blind study. *Eur J Clin Nutr* 2004;58:467-73.

Richardson AJ Omega-3 fatty acids in ADHD and related neurodevelopmental disorders. *Int Rev Psychiatry*. 2006;18:155-72. [MORE INFORMATION](#)

Uauy R, Dangour AD. Nutrition in brain development and aging: role of essential fatty acids. *Nutr Rev*. 2006;64:S24-33. [MORE INFORMATION](#)

Sinn N, Bryan J. Effect of Supplementation with Polyunsaturated Fatty Acids and Micronutrients on Learning and Behavior Problems Associated with Child ADHD. *J Dev Behav Pediatr*. 2007;28(2):82-91. [MORE INFORMATION](#)

Sorgi PJ, Hallowell EM, Hutchins HL, Sears B. Effects of an open-label pilot study with high-dose EPA/DHA concentrates on plasma phospholipids and behavior in children with attention deficit hyperactivity disorder. *Nutr J*. 2007 Jul 13;6:16. [MORE INFORMATION](#)

Vaisman N, Kaysar N, Zaruk-Adasha Y, Pelled D, Brichon G, Zwingelstein G, Bodennec J. Correlation between changes in blood fatty acid composition and visual sustained attention performance in children with inattention: effect of dietary n-3 fatty acids containing phospholipids. *Am J Clin Nutr*. 2008;87(5):1170-80. [MORE INFORMATION](#)

Bélanger SA, Vanasse M, Spahis S, Sylvestre MP, Lippé S, L'heureux F, Ghadirian P, Vanasse CM, Levy E. Omega-3 fatty acid treatment of children with attention-deficit hyperactivity disorder: A randomized, double-blind, placebo-controlled study. *Paediatr Child Health*. 2009 Feb;14(2):89-98. [MORE INFORMATION](#)

Raz R, Gabis L. Essential fatty acids and attention-deficit-hyperactivity disorder: a systematic review. *Dev Med Child Neurol*. 2009;51(8):580-92. [MORE INFORMATION](#)

Morse NL. A meta-analysis of blood fatty acids in people with learning disorders with particular interest in arachidonic acid. *Prostaglandins Leukot Essent Fatty Acids*. 2009 Nov-Dec;81(5-6):373-89. [MORE INFORMATION](#)

Gustafsson PA, Birberg-Thornberg U, Duchén K, Landgren M, Malmberg K, Pelling H, Strandvik B, Karlsson T. EPA supplementation improves

teacher rated behaviour and oppositional symptoms in children with ADHD. *Acta Paediatr.* 2010 Oct;99(10):1540-9. [MORE INFORMATION](#)

Gustafsson PA, Birberg-Thornberg U, Duchén K, Landgren M, Malmberg K, Pelling H, Strandvik B, Karlsson T. EPA supplementation improves teacher-rated behaviour and oppositional symptoms in children with ADHD. *Acta Paediatr.* 2010 Oct;99(10):1540-9. doi: 10.1111/j.1651-2227.2010.01871.x. Epub 2010 Jun 8. [MORE INFORMATION](#)

Bloch MH, Qawasmi A. Omega-3 fatty acid supplementation for the treatment of children with attention-deficit/hyperactivity disorder symptomatology: systematic review and meta-analysis. *J Am Acad Child Adolesc Psychiatry.* 2011 Oct;50(10):991-1000. Epub 2011 Aug 12. [MORE INFORMATION](#)

Milte CM, Sinn N, Buckley JD, Coates AM, Young RM, Howe PR. Polyunsaturated fatty acids, cognition and literacy in children with ADHD with and without learning difficulties. *J Child Health Care.* 2011 Aug 9. [Epub ahead of print] [MORE INFORMATION](#)

Millichap JG, Yee MM. The diet factor in attention-deficit/hyperactivity disorder. *Pediatrics.* 2012 Feb;129(2):330-7. Epub 2012 Jan 9. [MORE INFORMATION](#)

Gillies D, Sinn JKh, Lad SS, Leach MJ, Ross MJ. Polyunsaturated fatty acids (PUFA) for attention deficit hyperactivity disorder (ADHD) in children and adolescents. *Cochrane Database Syst Rev.* 2012 Jul 11;7:CD007986. [MORE INFORMATION](#)

Aggression

Hamazaki T; Sawazaki S; Itomura M; Asaoka E; Nagao Y; Nishimura N; Yazawa K; Kuwamori T; Kobayashi M. The effect of docosahexaenoic acid on aggression in young adults. A placebo-controlled double-blind study. *J Clin Invest* 1996;97:1129-32. [MORE INFORMATION](#)

Hallahan B, Hibbeln JR, Davis JM, Garland MR. Omega-3 fatty acid supplementation in patients with recurrent self-harm. Single-centre double-blind randomised controlled trial. *Br J Psychiatry.* 2007 Feb;190:118-22. [MORE INFORMATION](#)

Sanchez-Villegas A, Henríquez P, Figueiras A, Ortuño F, Lahortiga F, Martínez-González MA. Long chain omega-3 fatty acids intake, fish consumption and mental disorders in the SUN cohort study. *Eur J Nutr.* 2007;46(6):337-46. [MORE INFORMATION](#)

Buydens-Branchey L, Branchey M. Long-chain n-3 polyunsaturated fatty acids decrease feelings of anger in substance abusers. *Psychiatry Res.* 2008 Jan 15; 157(1-3):95-104. [MORE INFORMATION](#)

Crowe FL, Skeaff CM, Green TJ, Gray AR. Serum phospholipid n 3 long-chain polyunsaturated fatty acids and physical and mental health in a population-based survey of New Zealand adolescents and adults. *Am J Clin Nutr.* 2007;86(5):1278-85 [MORE INFORMATION](#)

Appleton KM, Rogers PJ, Ness AR. Is there a role for n-3 long-chain polyunsaturated fatty acids in the regulation of mood and behaviour? A review of the evidence to date from epidemiological studies, clinical studies and intervention trials. *Nutr Res Rev.* 2008;21(1):13-41. [MORE INFORMATION](#)

Zaalberg A, Nijman H, Bulten E, Stroosma L, van der Staak C. Effects of nutritional supplements on aggression, rule-breaking, and psychopathology among young adult prisoners. *Aggress Behav.* 2010 Mar;36(2):117-26. [MORE INFORMATION](#)

Milte CM, Parletta N, Buckley JD, Coates AM, Young RM, Howe PR. Eicosapentaenoic and docosahexaenoic acids, cognition, and behavior in children with attention-deficit/hyperactivity disorder: A randomized controlled trial. *Nutrition.* 2012 Jun;28(6):670-7. Epub 2012 Apr 25. [MORE INFORMATION](#)

Asthma

Lee TH. Benefits from oily fish. *Brit Med J.* 1988;297:1421-2. [MORE INFORMATION](#)

Black PN, Sharpe S. Dietary fat and asthma: is there a connection. *Eur Respir J.* 1997;10:6-12. [MORE INFORMATION](#)

Broughton KS; Johnson CS; Pace BK; Liebman M; Kleppinger KM. Reduced asthma symptoms with n-3 fatty acid ingestion are related to 5-series leukotriene production. *Am J Clin Nutr.* 1997;65:1011-7. [MORE INFORMATION](#)

Nagakura T, Matsuda S, Shichijyo K, Sugimoto H, Hata H. Dietary supplementation with fish oil rich in w-3 polyunsaturated fatty acids in children with bronchial asthma. *Eur Respir J.* 2000;16:861-5.

Tabak C, Wijga AH, et al. Diet and asthma in Dutch school children (ISAAC-2), *Thorax.* 2006; 61: 1048-53.

Kompauer I, Demmelmair H, Koletzko B, Bolte G, Linseisen J, Heinrich J. Association of fatty acids in serum phospholipids with lung function and bronchial hyperresponsiveness in adults. *Eur J Epidemiol.* 2008;23(3):175-90. [MORE INFORMATION](#)

Krauss-Etschmann S, Hartl D, Rzehak P, Heinrich J, Shadid R, Del Carmen Ramírez-Tortosa M, Campoy C, Pardillo S, Schendel DJ, Decsi T, Demmelmair H, Koletzko BV; Nutraceuticals for Healthier Life Study Group. Decreased cord blood IL-4, IL-13, and CCR4 and increased TGF-beta levels after fish oil supplementation of pregnant women. *J Allergy Clin Immunol.* 2008;121(2):464-470.e6 [MORE INFORMATION](#)

Olsen SF, Østerdal ML, Salvig JD, Mortensen LM, Rytter D, Secher NJ, Henriksen TB. Fish oil intake compared with olive oil intake in late pregnancy and asthma in the offspring: 16 y of registry-based follow-up from a randomized controlled trial. *Am J Clin Nutr.* 2008;88(1):167-75. [MORE INFORMATION](#)

Miyake Y, Sasaki S, Arakawa M, Tanaka K, Murakami K, Ohya Y. Fatty acid intake and asthma symptoms in Japanese children: The Ryukyus Child Health Study. *Clin Exp Allergy.* 2008 Oct;38(10):1644-50. [MORE INFORMATION](#)

Schubert R, Kitz R, Beermann C, Rose MA, Lieb A, Sommerer PC, Moskovits J, Alberternst H, Böhles HJ, Schulze J, Zielen S. Effect of n-3 polyunsaturated fatty acids in asthma after low-dose allergen challenge. *Int Arch Allergy Immunol.* 2009;148(4):321-9. [MORE INFORMATION](#)

Klemens CM, Berman DR, Mozurkewich EL. The effect of perinatal omega-3 fatty acid supplementation on inflammatory markers and allergic diseases: a systematic review. *BJOG.* 2011 Jul;118(8):916-25. doi: 10.1111/j.1471-0528.2010.02846.x. [MORE INFORMATION](#)

Li J, Xun P, Zamora D, Sood A, Liu K, Daviglius M, Iribarren C, Jacobs D Jr, Shikany JM, He K. Intakes of long-chain omega-3 (n-3) PUFAs and fish in relation to incidence of asthma among American young adults: the CARDIA study. *Am J Clin Nutr*. 2013 Jan;97(1):173-8. doi: 10.3945/ajcn.112.041145. Epub 2012 Nov 28. [MORE INFORMATION](#)

Autism

Richardson AJ, Ross MA. Fatty acid metabolism in neurodevelopmental disorder: a new perspective on associations between attention-deficit/hyperactive disorder, dyslexia, dyspraxia and the autistic spectrum. *Prostaglandins Leukot Essent Fatty Acids*. 2000;63:1-9.

Amminger GP, Berger GE, Schafer MR, Klier C, Friedrich MH, Feucht M. Omega-3 Fatty Acids Supplementation in Children with Autism: A Double-blind Randomized, Placebo-controlled Pilot Study. *Biol Psychiatry*. 2006 Aug 22; Epub ahead of print. . [MORE INFORMATION](#)

Meiri G, Bichovsky Y, Belmaker RH. Omega 3 fatty acid treatment in autism. *J Child Adolesc Psychopharmacol*. 2009 Aug;19(4):449-51. [MORE INFORMATION](#)

Bipolar Disease

Stoll AL, Severus E, Freeman MP, Rueter S, Zboyan HA, Diamond E, Cress KK, Marangell LB. Omega 3 fatty acids in bipolar disorder. A preliminary double-blind, placebo-controlled trial. *Arch Gen Psychiatry* 1999;56:407-12. [MORE INFORMATION](#)

Stoll AL, Locke CAM, Marangell LB, Severus WE. Omega-3 fatty acids and bipolar disorder: a review. *Prostaglandins Leucotrienes and essential Fatty Acids*. 1999;60:329-37.

Nemets B, Stahl Z, Belmaker RH. Addition of omega-3 fatty acid to maintenance medication treatment for recurrent unipolar depressive disorder. *Am J Psychiatry* 2002;159:477-9. [MORE INFORMATION](#)

Stoll AL, Severus E, Freeman MP, Rueter S, Zboyan HA, Diamond E, Cress KK, Marangell LB. Omega 3 fatty acids in bipolar disorder. A preliminary double-blind, placebo-controlled trial. *Arch Gen Psychiatry*. 1999;56:407-12. [MORE INFORMATION](#)

Freeman MP, Hibbeln JR, Wisner KL, et al. Omega-3 fatty acids: evidence basis for treatment and future research in psychiatry. *J Clin Psychiatry*. 2006;67(12):1954-67. [MORE INFORMATION](#)

Wozniak J, Biederman J, Mick E, et al. Omega-3 fatty acid monotherapy for pediatric bipolar disorder: A prospective open-label trial. *Eur Neuropsychopharmacol*. 2007; 17(6-7):440-7. [MORE INFORMATION](#)

Stahl LA, Begg DP, Weisinger RS, Sinclair AJ. The role of omega-3 fatty acids in mood disorders. *Curr Opin Investig Drugs*. 2008 Jan;9(1):57-64. [MORE INFORMATION](#)

McNamara RK, Jandacek R, Rider T, Tso P, Stanford KE, Hahn CG, Richtand NM. Deficits in docosahexaenoic acid and associated elevations in the metabolism of arachidonic acid and saturated fatty acids in the postmortem orbitofrontal cortex of patients with bipolar disorder. *Psychiatry Res*. 2008;160(3):285-99. [MORE INFORMATION](#)

Clayton EH, Hanstock TL, Hirneth SJ, Kable CJ, Garg ML, Hazell PL. Long-chain omega-3 polyunsaturated Fatty acids in the blood of children and adolescents with juvenile bipolar disorder. *Lipids*. 2008;43(11):1031-8. [MORE INFORMATION](#)

Lucas M, Asselin G, Mérette C, Poulin MJ, Dodin S. Ethyl-eicosapentaenoic acid for the treatment of psychological distress and depressive symptoms in middle-aged women: a double-blind, placebo-controlled, randomized clinical trial. *Am J Clin Nutr*. 2008 Dec 30. [Epub ahead of print] [MORE INFORMATION](#)

Clayton EH, Hanstock TL, Hirneth SJ, Kable CJ, Garg ML, Hazell PL. Reduced mania and depression in juvenile bipolar disorder associated with long-chain omega-3 polyunsaturated fatty acid supplementation. *Eur J Clin Nutr*. 2009;63(8):1037-40. [MORE INFORMATION](#)

Amminger GP, Schäfer MR, Papageorgiou K, Klier CM, Cotton SM, Harrigan SM, Mackinnon A, McGorry PD, Berger GE. Long-Chain {omega}-3 Fatty Acids for Indicated Prevention of Psychotic Disorders: A Randomized, Placebo-Controlled Trial. *Arch Gen Psychiatry*. 2010 Feb;67(2):146-54. [MORE INFORMATION](#)

Sarris J, Mischoulon D, Schweitzer I. Omega-3 for bipolar disorder: meta-analyses of use in mania and bipolar depression. *J Clin Psychiatry*. 2011 Aug 9. [Epub ahead of print] [MORE INFORMATION](#)

Cancer

Nelson R,L, Tanure J,C, Andrianapoulus G, Souza G, Lands WEM. A comparison of dietary fish oil and corn oil in experimental colorectal carcinogenesis. *Nutr Cancer* 1988;11:215-20. [MORE INFORMATION](#)

Reich R, Royce L, Martin GR. Eicosapentaenoic acid reduces the invasive and metastatic activities of malignant tumor cells. *Biochem Biophys Res Comm* 1989;160:559-64. [MORE INFORMATION](#)

Kaizer L, Boyd NF, Kriukov V, Tritcher D. Fish consumption and breast cancer risk: an ecological study. *Nutr Cancer* 1989;12:61-8. [MORE INFORMATION](#)

Kromhout D. The importance of n-6 and n-3 fatty acids in carcinogenesis. *Med Oncol Tumor Pharmacother* 1990;7:173-6. [MORE INFORMATION](#)

Kune S, Kune GA, Watson LF, Case-control study of dietary etiological factors: The Melbourne colorectal cancer study. *Nutr Cancer* 1987;9:21-42. [MORE INFORMATION](#)

Caygill CPJ, Charlett A, Hill MJ. Fat, fish, fish oil and cancer. *Br. J Cancer*. 1996;74:159-64. [MORE INFORMATION](#)

Kato I, Akhmedkhanov A, Koenig K, Toniolo PG, Shore RE, Riboli E. Prospective study of diet and female colorectal cancer: the New York university women's health study. *Nutrition and Cancer*. 1997;28:276-81. [MORE INFORMATION](#)

Holmes MD, Hunter DJ, Colditz GA, Stampfer MJ, Hankinson SE, Speizer FE, Rosner B, Willet WC. Association of dietary intake of fat and fatty acids with risk of breast cancer. *JAMA* 1999;281:914-20. [MORE INFORMATION](#)

Fernandez E, Chatenoud L, La Vecchia C, Negri E, Franceschi S. Fish consumption and cancer risk. *Am J Clin Nutr* 1999;70:85-90. [MORE INFORMATION](#)

Norrish AE, Skeaff CM, Arribas GLB, Sharpe SJ, Jackson Rt. Prostate cancer risk and consumption of fish oils: a dietary biomarker-based case-control study. *Br J Cancer* 1999;81:1238-42. [MORE INFORMATION](#)

Larsson SC, Kumlin M, Ingelman-Sundberg M, Wolk A. Dietary long-chain n-3 fatty acids for the prevention of cancer: a review of potential mechanisms. *Am J Clin Nutr*. 2004;79:935-45. [MORE INFORMATION](#)

Engeset D, Alsaker E, Lund E, Welch A et al. Fish consumption and breast cancer risk. The European Prospective Investigation into Cancer and Nutrition (EPIC). *Int J Cancer*. 2006;119:175-82. [MORE INFORMATION](#)

MacLean CH, Newberry SJ, Mojica WA, Khanna P, Issa AM, Suttorp MJ, et al. Effects of omega-3 fatty acids on cancer risk: a systematic review. *JAMA*. 2006;295:403-15. [MORE INFORMATION](#)

Hooper L, Thompson RL, Harrison RA, et al. Risks and benefits of omega 3 fats for mortality, cardiovascular disease, and cancer: systematic review. *BMJ* 2006; 332: 752 – 760. [MORE INFORMATION](#)

Koralek DO, Peters U, Andriole G, Reding D, Kirsch V, Subar A, Schatzkin A, Hayes R, Leitzmann MF. A prospective study of dietary alpha-linolenic acid and the risk of prostate cancer (United States). *Cancer Causes Control* 2006;17:783-91. [MORE INFORMATION](#)

Kelavkar UP, Hutzley J, Dhir R et al. Prostate tumor growth and recurrence can be modulated by the omega-6:omega-3 ratio in diet: athymic mouse xenograft model simulating radical prostatectomy. *Neoplasia*. 2006;8:112-24. [MORE INFORMATION](#)

Wolk A, Larsson SC, Johansson JE, Ekman P. Long-term fatty fish consumption and renal cell carcinoma incidence in women. *JAMA*. 2006;296:1371-6. [MORE INFORMATION](#)

Pardini RS. Nutritional intervention with omega-3 fatty acids enhances tumor response to anti-neoplastic agents. *Chem Biol Interact*. 2006;162:89-105. [MORE INFORMATION](#)

Xia S, Lu Y, Wang J, He C, Hong S, Serhan CN, Kang JX. Melanoma growth is reduced in fat-1 transgenic mice: impact of omega-6/omega-3 essential fatty acids. *Proc Natl Acad Sci U S A*. 2006;103:12499-504. Epub 2006 Aug 3. [MORE INFORMATION](#)

Kuriki K, Wakai K, Hirose K. et al. Risk of colorectal cancer is linked to erythrocyte compositions of fatty acids as biomarkers for dietary intakes

of fish, fat, and fatty acids. *Cancer Epidemiol Biomarkers Prev.* 2006; 15: 1791-8. [MORE INFORMATION](#)

Chang ET, Bälter KM, Torráng A et al. Nutrient Intake and Risk of Non-Hodgkin's Lymphoma. *Amer J Epidemiol* 2006; 164: 1222-32; [MORE INFORMATION](#)

Stehr SN, Heller AR. Omega-3 fatty acid effects on biochemical indices following cancer surgery. *Clin Chim Acta.* 2006; 373: 1-8. [MORE INFORMATION](#)

Hall MN, Campos H, Li H, et al. Blood levels of long-chain polyunsaturated fatty acids, aspirin, and the risk of colorectal cancer. *Cancer Epidemiol Biomarkers Prev.* 2007; 16(2): 314-21. [MORE INFORMATION](#)

Kimura Y, Kono S, Toyomura K, et al. Meat, fish and fat intake in relation to subsite-specific risk of colorectal cancer: The Fukuoka Colorectal Cancer Study. *Cancer Sci.* 2007; 98(4): 590-7. [MORE INFORMATION](#)

Berquin LM, Min Y, Wu R. et al. Modulation of prostate cancer genetic risk by omega-3 and omega-6 fatty acids" *Journal of Clinical Investigation.* July 2007, doi: 10.1172/JCI31494. [MORE INFORMATION](#)

Chavarro JE, Stampfer MJ, Li H, et al. A Prospective Study of Polyunsaturated Fatty Acid Levels in Blood and Prostate Cancer Risk *Cancer Epidemiology, Biomarkers & Prevention* Published on-line ahead of print, doi: 10.1158/1055-9965.EPI-06-1033. [MORE INFORMATION](#)

Theodoratou E, McNeill G, Cetnarskyj R, et al. Dietary Fatty acids and colorectal cancer: a case-control study. *Am J Epidemiol.* 2007 Jul 15; 166(2): 181-95. [MORE INFORMATION](#)

Courtney ED, Matthews S, et al, Eicosapentaenoic acid (EPA) reduces crypt cell proliferation and increases apoptosis in normal colonic mucosa in subjects with a history of colorectal adenomas," *Int J Colorectal Dis,* 2007; 22(7): 765-776. [MORE INFORMATION](#)

Chavarro JE, Stampfer MJ, Li H, Campos H, Kurth T, Ma JA prospective study of polyunsaturated Fatty Acid levels in blood and prostate cancer risk. *Cancer Epidemiol Biomarkers Prev.* 2007; 16(7): 1364-70. [MORE INFORMATION](#)

Kuriki K, Hirose K, Wakai K, et al. Breast cancer risk and erythrocyte compositions of n-3 highly unsaturated fatty acids in Japanese. *Int J Cancer*. 2007;121(2):377-85. [MORE INFORMATION](#)

Berquin IM, Min Y, Wu R, et al. Modulation of prostate cancer genetic risk by omega-3 and omega-6 fatty acids. *J Clin Invest*. 2007;117(7):1866-75 [MORE INFORMATION](#)

Geelen A, Schouten JM, Kamphuis C, Stam BE, Burema J, Renkema JM, Bakker EJ, Van't Veer P, Kampman E. Fish Consumption, n-3 Fatty Acids, and Colorectal Cancer: A Meta-Analysis of Prospective Cohort Studies. *Am J Epidemiol*. 2007 Nov 15;166(10):1116-25. [MORE INFORMATION](#)

Campbell PT, Sloan M, Kreiger N. Dietary Patterns and Risk of Incident Gastric Adenocarcinoma. *Am J Epidemiol*. 2008 Feb 1;167(3):295-304. [MORE INFORMATION](#)

Calviello G, Serini S, Piccioni E. n-3 polyunsaturated fatty acids and the prevention of colorectal cancer: molecular mechanisms involved. *Curr Med Chem*. 2007;14(29):3059-69. [MORE INFORMATION](#)

Mehta SP, Boddy AP, Cook J, Sams V, Lund EK, Johnson IT, Rhodes M. Effect of n-3 polyunsaturated fatty acids on Barrett's epithelium in the human lower esophagus *Am J Clin Nutr*. 2008;87(4):949-56. [MORE INFORMATION](#)

Hall MN, Chavarro JE, Lee I-M, Willett WC, Ma J. American Association for Cancer Research. A 22-year Prospective Study of Fish, n-3 Fatty Acid Intake, and Colorectal Cancer Risk in Men Megan. *Cancer Epidemiology Biomarkers & Prevention* 2008;17: 1136-1143. [MORE INFORMATION](#)

Pot GK, Geelen A, van Heijningen EM, Siezen CL, van Kranen HJ, Kampman E. Opposing associations of serum n-3 and n-6 polyunsaturated fatty acids with colorectal adenoma risk: An endoscopy-based case-control study. *Int J Cancer*. 2008 Oct 15;123(8):1974-7. [MORE INFORMATION](#)

Chavarro JE, Stampfer MJ, Hall MN, Sesso HD, Ma J. A 22-y prospective study of fish intake in relation to prostate cancer incidence and mortality. *Am J Clin Nutr*. 2008;88(5):1297-303. [MORE INFORMATION](#)

Crowe FL, Allen NE, Appleby PN, Overvad K, et al. Fatty acid composition of plasma phospholipids and risk of prostate cancer in a case-control analysis nested within the European Prospective Investigation into

Cancer and Nutrition. Am J Clin Nutr. 2008;88(5):1353-63. [MORE INFORMATION](#)

Shannon J, King IB, Lampe JW, Gao DL, Ray RM, Lin MG, Stalsberg H, Thomas DB. Erythrocyte fatty acids and risk of proliferative and nonproliferative fibrocystic disease in women in Shanghai, China. Am J Clin Nutr. 2009;89(1):265-76. [MORE INFORMATION](#)

Fradet V, Cheng I, Casey G, Witte JS. Dietary Omega-3 Fatty Acids, Cyclooxygenase-2 Genetic Variation, and Aggressive Prostate Cancer Risk. Clin Cancer Res. 2009 Apr 1;15(7):2559-66. [MORE INFORMATION](#)

Daniel CR, McCullough ML, Patel RC, Jacobs EJ, Flanders WD, Thun MJ, Calle EE Dietary intake of omega-6 and omega-3 fatty acids and risk of colorectal cancer in a prospective cohort of U.S. men and women. Cancer Epidemiol Biomarkers Prev. 2009;18(2):516-25. [MORE INFORMATION](#)

Nakajima T, Kubota N, Tsutsumi T, Oguri A, Imuta H, Jo T, Oonuma H, Soma M, Meguro K, Takano H, Nagase T, Nagata T. Eicosapentaenoic acid inhibits voltage-gated sodium channels and invasiveness in prostate cancer cells. Br J Pharmacol. 2009;156(3):420-31 [MORE INFORMATION](#)

Ryan AM, Reynolds JV, Healy L, Byrne M, Moore J, Brannelly N, McHugh A, McCormack D, Flood P. Enteral nutrition enriched with eicosapentaenoic acid (EPA) preserves lean body mass following esophageal cancer surgery: results of a double-blinded randomized controlled trial. Ann Surg. 2009;249(3):355-63. [MORE INFORMATION](#)

Wendel M, Heller AR. Anticancer actions of omega-3 fatty acids--current state and future perspectives. Anticancer Agents Med Chem. 2009;9(4):457-70. [MORE INFORMATION](#)

Kim J, Lim SY, Shin A, Sung MK, Ro J, Kang HS, Lee KS, Kim SW, Lee ES. Fatty fish and fish omega-3 fatty acid intakes decrease the breast cancer risk: a case-control study. BMC Cancer. 2009;9:216. [MORE INFORMATION](#)

Skeie G, Braaten T, Hjartåker A, Brustad M, Lund E. Cod liver oil, other dietary supplements and survival among cancer patients with solid tumours. Int J Cancer. 2009;125(5):1155-60. [MORE INFORMATION](#)

Murff HJ, Shu XO, Li H, Dai Q, Kallianpur A, Yang G, Cai H, Wen W, Gao YT, Zheng W. A prospective study of dietary polyunsaturated fatty acids and colorectal cancer risk in Chinese women. Cancer Epidemiol Biomarkers Prev. 2009;18(8):2283-91. [MORE INFORMATION](#)

Shannon J, King IB, Lampe JW, Gao DL, Ray RM, Lin MG, Stalsberg H, Thomas DB. Erythrocyte fatty acids and risk of proliferative and nonproliferative fibrocystic disease in women in Shanghai, China. *Am J Clin Nutr*. 2009;89(1):265-76. [MORE INFORMATION](#)

Fradet V, Cheng I, Casey G, Witte JS. Dietary omega-3 fatty acids, cyclooxygenase-2 genetic variation, and aggressive prostate cancer risk. *Clin Cancer Res*. 2009;15(7):2559-66. [MORE INFORMATION](#)

Witt PM, Christensen JH, Schmidt EB, Dethlefsen C, Tjønneland A, Overvad K, Ewertz M. Marine n-3 polyunsaturated fatty acids in adipose tissue and breast cancer risk: a case-cohort study from Denmark. *Cancer Causes Control*. 2009 Nov;20(9):1715-21. [MORE INFORMATION](#)

Gong Z, Holly EA, Wang F, Chan JM, Bracci PM. Intake of fatty acids and antioxidants and pancreatic cancer in a large population-based case-control study in the San Francisco Bay Area. *Int J Cancer*. 2010 Jan 26. [Epub ahead of print] [MORE INFORMATION](#)

Bougnoux P, Hajjaji N, Ferrasson MN, Giraudeau B, Couet C, Le Floch O. Improving outcome of chemotherapy of metastatic breast cancer by docosahexaenoic acid: a phase II trial. *Br J Cancer*. 2009 Dec 15;101(12):1978-85. [MORE INFORMATION](#)

Dimri M, Bommi PV, Sahasrabuddhe AA, Khandekar JD, Dimri GP. Dietary omega-3 polyunsaturated fatty acids suppress expression of EZH2 in breast cancer cells. *Carcinogenesis*. 2010 Mar;31(3):489-95. [MORE INFORMATION](#)

West NJ, Clark SK, Phillips RK, Hutchinson JM, Leicester RJ, Belluzzi A, Hull MA. Eicosapentaenoic acid reduces rectal polyp number and size in familial adenomatous polyposis. *Gut*. 2010 Jul;59(7):918-25. [MORE INFORMATION](#)

Brasky TM, Lampe JW, Potter JD, Patterson RE, White E. Specialty Supplements and Breast Cancer Risk in the VITamins And Lifestyle (VITAL) Cohort. *Epidemiol Biomarkers Prev*. 2010;19(7):1696-708. [MORE INFORMATION](#)

Szymanski KM, Wheeler DC, Mucci LA. Fish consumption and prostate cancer risk: a review and meta-analysis. *Am J Clin Nutr*. 2010 Nov;92(5):1223-33. [MORE INFORMATION](#)

Patterson RE, Flatt SW, Newman VA, Natarajan L, Rock CL, Thomson CA, Caan BJ, Parker BA, Pierce JP. Marine Fatty Acid Intake Is Associated with Breast Cancer Prognosis. *J Nutr*. 2011 Feb;141(2):201-6. [MORE INFORMATION](#)

Murphy RA, Mourtzakis M, Chu QS, Baracos VE, Reiman T, Mazurak VC. Nutritional intervention with fish oil provides a benefit over standard of care for weight and skeletal muscle mass in patients with nonsmall cell lung cancer receiving chemotherapy. *Cancer*. 2011 Feb 28. doi: 10.1002/cncr.25709. [Epub ahead of print] [MORE INFORMATION](#)

Murff HJ, Shu XO, Li H, Yang G, Wu X, Cai H, Wen W, Gao YT, Zheng W. Dietary polyunsaturated fatty acids and breast cancer risk in Chinese women: a prospective cohort study. *Int J Cancer*. 2011 Mar 15;128(6):1434-41. [MORE INFORMATION](#)

Brasky TM, Till C, White E, Neuhaus ML, Song X, Goodman P, Thompson IM, King IB, Albanes D, Kristal AR. Serum Phospholipid Fatty Acids and Prostate Cancer Risk: Results From the Prostate Cancer Prevention Trial. *Am J Epidemiol*. 2011 Apr 24. [Epub ahead of print] Williams CD, Whitley BM, Hoyo C, Grant DJ, Iraggi JD, Newman KA, Gerber L, Taylor LA, McKeever MG, Freedland SJ. A high ratio of dietary n-6/n-3 polyunsaturated fatty acids is associated with increased risk of prostate cancer. *Nutr Res*. 2011 Jan;31(1):1-8. [MORE INFORMATION](#)

Williams CD, Whitley BM, Hoyo C, Grant DJ, Iraggi JD, Newman KA, Gerber L, Taylor LA, McKeever MG, Freedland SJ. A high ratio of dietary n-6/n-3 polyunsaturated fatty acids is associated with increased risk of prostate cancer. *Nutr Res*. 2011 Jan;31(1):1-8. [MORE INFORMATION](#)

van der Meij BS, van Bokhorst-de van der Schueren MA, Langius JA, Brouwer IA, van Leeuwen PA. n-3 PUFAs in cancer, surgery, and critical care: a systematic review on clinical effects, incorporation, and washout of oral or enteral compared with parenteral supplementation. *Am J Clin Nutr*. 2011 Nov;94(5):1248-65. Epub 2011 Sep 21. [MORE INFORMATION](#)

Aronson WJ, Kobayashi N, Barnard RJ, Henning S, Huang M, Jardack PM, Liu B, Gray A, Wan J, Konijeti R, Freedland SJ, Castor B, Heber D, Elashoff D, Said J, Cohen P, Galet C. Phase II Prospective Randomized Trial of a Low-Fat Diet with Fish Oil Supplementation in Men Undergoing Radical Prostatectomy. *Cancer Prev Res (Phila)*. 2011 Oct 25. [Epub ahead of print] [MORE INFORMATION](#)

Touvier M, Kesse-Guyot E, Andreeva VA, Fezeu L, Charnaux N, Sutton A, Druesne-Pecollo N, Hercberg S, Galan P, Zelek L, Latino-Martel P, Czernichow S. Modulation of the association between plasma intercellular adhesion molecule-1 and cancer risk by n-3 PUFA intake: a nested case-control study. *Am J Clin Nutr*. 2012 Feb 29. [Epub ahead of print] [MORE INFORMATION](#)

Alfano CM, Imayama I, Neuhaus ML, Kiecolt-Glaser JK, Wilder Smith A, Meeske K, McTiernan A, Bernstein L, Baumgartner KB, Ulrich CM, Ballard-Barbash R. Fatigue, Inflammation, and ω -3 and ω -6 Fatty Acid Intake Among Breast Cancer Survivors. *J Clin Oncol*. 2012 Mar 12. [Epub ahead of print] [MORE INFORMATION](#)

van der Meij BS, Langius JA, Spreeuwenberg MD, Slootmaker SM, Paul MA, Smit EF, van Leeuwen PA. Oral nutritional supplements containing n-3 polyunsaturated fatty acids affect quality of life and functional status in lung cancer patients during multimodality treatment: an RCT. *Eur J Clin Nutr*. 2012 Mar; 66(3): 399-404. doi: 10.1038/ejcn.2011.214. Epub 2012 Jan 11. [MORE INFORMATION](#)

Murff HJ, Shrubsole MJ, Cai Q, Smalley WE, Dai Q, Milne GL, Ness RM, Zheng W. Dietary intake of PUFAs and colorectal polyp risk. *Am J Clin Nutr*. 2012 Mar; 95(3): 703-12. Epub 2012 Jan 25. [MORE INFORMATION](#)

Wu S, Feng B, Li K, Zhu X, Liang S, Liu X, Han S, Wang B, Wu K, Miao D, Liang J, Fan D. Fish Consumption and Colorectal Cancer Risk in Humans: A Systematic Review and Meta-analysis. *Am J Med*. 2012 Apr 17. [Epub ahead of print] [MORE INFORMATION](#)

Touvier M, Kesse-Guyot E, Andreeva VA, Fezeu L, Charnaux N, Sutton A, Druesne-Pecollo N, Hercberg S, Galan P, Zelek L, Latino-Martel P, Czernichow S. Modulation of the association between plasma intercellular adhesion molecule-1 and cancer risk by n-3 PUFA intake: a nested case-control study. *Am J Clin Nutr*. 2012 Apr; 95(4):944-50. Epub 2012 Feb 29. [MORE INFORMATION](#)

Mandal CC, Ghosh-Choudhury T, Dey N, Ghosh Choudhury G, Ghosh-Choudhury N. miR-21 is Targeted By Omega-3 Polyunsaturated Fatty Acid to Regulate Breast Tumor CSF-1 Expression. *Carcinogenesis*. 2012 Jun 7. [Epub ahead of print] [MORE INFORMATION](#)

Wang S, Wu J, Suburu J, Gu Z, Cai J, Axanova LS, Cramer SD, Thomas MJ, Perry DL, Edwards IJ, Mucci LA, Sinnott JA, Loda MF, Sui G, Berquin IM, Chen YQ. Effect of dietary polyunsaturated fatty acids on castration-

resistant Pten-null prostate cancer. *Carcinogenesis*. 2012 Feb;33(2):404-12. Epub 2011 Dec 8. [MORE INFORMATION](#)

Gerber M. Omega-3 fatty acids and cancers: a systematic update review of epidemiological studies. *Br J Nutr*. 2012 Jun;107 Suppl 2:S228-39. [MORE INFORMATION](#)

Bonatto SJ, Oliveira HH, Nunes EA, Pequito D, Iagher F, Coelho I, Naliwaiko K, Kryczyk M, Brito GA, Repka J, Sabóia LV, Fukujima G, Calder PC, Fernandes LC. Fish oil supplementation improves neutrophil function during cancer chemotherapy. *Lipids*. 2012 Apr;47(4):383-9. [MORE INFORMATION](#)

Sawada N, Inoue M, Iwasaki M, Sasazuki S, Shimazu T, Yamaji T, Takachi R, Tanaka Y, Mizokami M, Tsugane S; Japan Public Health Center-Based Prospective Study Group. Consumption of n-3 fatty acids and fish reduces risk of hepatocellular carcinoma. *Gastroenterology*. 2012 Jun;142(7):1468-75. Epub 2012 Feb 16. [MORE INFORMATION](#)

Arem H, Neuhaus ML, Irwin ML, Cartmel B, Lu L, Risch H, Mayne ST, Yu H. Omega-3 and omega-6 fatty acid intakes and endometrial cancer risk in a population-based case-control study. *Eur J Nutr*. 2012 Aug 23. [Epub ahead of print] [MORE INFORMATION](#)

Finocchiaro C, Segre O, Fadda M, Monge T, Scigliano M, Schena M, Tinivella M, Tiozzo E, Catalano MG, Pugliese M, Fortunati N, Aragno M, Muzio G, Maggiora M, Oraldi M, Canuto RA. Effect of n-3 fatty acids on patients with advanced lung cancer: a double-blind, placebo-controlled study. *Br J Nutr*. 2012 Jul;108(2):327-33. Epub 2011 Nov 25. [MORE INFORMATION](#)

Epstein MM, Kasperzyk JL, Mucci LA, Giovannucci E, Price A, Wolk A, Håkansson N, Fall K, Andersson SO, Andrén O. Dietary fatty acid intake and prostate cancer survival in Örebro County, Sweden. *Am J Epidemiol*. 2012 Aug 1;176(3):240-52. Epub 2012 Jul 10. [MORE INFORMATION](#)

Safarinejad MR, Shafiei N, Safarinejad S. Effects of EPA, γ -linolenic acid or coenzyme Q10 on serum prostate-specific antigen levels: a randomised, double-blind trial. *Br J Nutr*. 2012 Nov 30:1-8. [Epub ahead of print] [MORE INFORMATION](#)

Chua ME, Sio MC, Sorongon MC, Morales ML Jr. The relevance of serum levels of long chain omega-3 polyunsaturated fatty acids and prostate

cancer risk: A meta-analysis. *Can Urol Assoc J.* 2013 May; 7(5-6):E333-43. doi: 10.5489/cuaj.1056. [MORE INFORMATION](#)

Zheng Ju-Sheng , Hu Xiao-Jie, Zhao Yi-Min, Yang Jing, Li Duo. Intake of fish and marine n-3 polyunsaturated fatty acids and risk of breast cancer: meta-analysis of data from 21 independent prospective cohort studies. *BMJ* 2013; 346:f3706 doi: 10.1136/bmj.f3706 (Published 27 June 2013)

Ibiebele TI, Nagle CM, Bain CJ, Webb PM. Intake of omega-3 and omega-6 fatty acids and risk of ovarian cancer. *Cancer Causes Control.* 2012 Nov; 23(11):1775-83. doi: 10.1007/s10552-012-0053-4. Epub 2012 Aug 30. [MORE INFORMATION](#)

Chua ME, Sio MC, Sorongon MC, Morales ML Jr. The relevance of serum levels of long chain omega-3 polyunsaturated fatty acids and prostate cancer risk: A meta-analysis. *Can Urol Assoc J.* 2013 May; 7(5-6):E333-43. doi: 10.5489/cuaj.1056. [MORE INFORMATION](#)

Cardiovascular

Dyerberg J, Bang HO, Stoffersen E, Moncada S, Vane JR. Eicosapentaenoic acid and prevention of thrombosis and atherosclerosis. *Lancet* 1978; ii: 117-9. [MORE INFORMATION](#)

GISSI-Prevenzione Investigators. Dietary supplementation with n-3 polyunsaturated fatty acids and vitamin E after myocardial infarction: results of the GISSI-Prevenzione trial. *Lancet* 1999; 354:447-55. [MORE INFORMATION](#)

Marchioli R, Barzi F, Bomba E, et al. Early protection against sudden death by n-3 polyunsaturated fatty acids after myocardial infarction. Time-course analysis of the results of the GISSI-Prevenzione study. *Circulation* 2002; 105:1897-1903. [MORE INFORMATION](#)

Christensen JH, Korup E, Aarøe J, Toft E, Møller J, Rasmussen K, Dyerberg J, Schmidt EB. Fish consumption, n-3 fatty acids in cell membranes, and heart rate variability in survivors of myocardial infarction with left ventricular dysfunction. *Am J Cardiol* 1997; 79: 1670-3. [MORE INFORMATION](#)

Burr ML, Fehily AM, Gilbert JF, Rogers S, Holliday RM, Sweetnam PM,

Elwood PC, Deadman NM. Effects of changes in fat, fish, and fibre intakes on death and myocardial reinfarction: Diet And Reinfarction Trial (DART). Lancet 1989;i:757-61. [MORE INFORMATION](#)

Burr ML. N-3 and N-6 fatty acids, cholesterol, and coronary heart disease. Atherosclerosis Reviews 1991;23:251-8.

Ness AR, Hughes J, Elwood PC, Whitley E, Smith GD, Burr ML. The long-term effect of dietary advice in men with coronary disease: follow-up of the Diet and Reinfarction Trial (DART). Eur J Clin Nutr 2002;56:512-8. [MORE INFORMATION](#)

Burr ML, Ashfield-Watt PAL, Dunstan FDJ, Fehily AM, Breay P, Ashton T, Zotos PC, Haboubi NAA, Elwood PC. Lack of benefit of dietary advice to men with angina: results of a controlled trial. Eur J Clin Nutr. 2003;57:193-200. [MORE INFORMATION](#)

Thies F, Garry JM, Yaqoob P, Rerkasem K, Williams J, Shearman CP, Gallagher PJ, Calder PC, Grimble RF. Association of n-3 polyunsaturated fatty acids with stability of atherosclerotic plaques: a randomised controlled trial. Lancet. 2003 Feb 8;361(9356):477-85. [MORE INFORMATION](#)

Hooper L, Thompson RL, Harrison RA, Summerbell CD, Moore H, Worthington HV, Durrington PN, Ness NE, Capps NE, Davey Smith G, Riermersma RA, Ebrahim SBJ. Omega-3 fatty acids for prevention and treatment of cardiovascular disease (Review). Cochrane Library. 2004 vol 4. [MORE INFORMATION](#)

Leaf A, Weber PC. Cardiovascular effects of n-3 fatty acids. N Engl J Med 1988;318:57.

Force T, Milani R, Hibberd P, Lorenz R, Uedelhoven W, Leaf A, Weber P. Aspirin-Induced Decline in Prostacyclin Production in Patients With Coronary Artery Disease Is Due to Decreased Endoperoxide Shift. Circulation 1991;84:2286-93. [MORE INFORMATION](#)

Leaf A, Jorgensen MB, Jacobs AK, Cote G, Schoenfeld DA, Scheer J, Bonnie RN, Slack JD, Kellet MA, Raizner AE, Weber PC, Mahrer PR, Rossouw JE. Do fish oils prevent restenosis after coronary angioplasty?. Circulation 1994;90:2248-57. [MORE INFORMATION](#)

Leaf A, Kang JX. Prevention of cardiac sudden death by n-3 fatty acids: a review of the evidence. J Int Med 1996;240:5-12. [MORE INFORMATION](#)

Kang JX, Leaf A. The antiarrhythmic effects of polyunsaturated fatty acids. ISSFAL Newsletter 1997;4:11-16.

Leaf A, Xiao Y-F, Kang JX, Bilman GE. Prevention of sudden cardiac death by n-3 polyunsaturated fatty acids. Pharmacol Therapeutics. 2003;98:355-77. [MORE INFORMATION](#)

Leaf A. The electrophysiological basis for the antiarrhythmic actions of polyunsaturated fatty acids. Eur Heart J. 2001;Suppl. D:D98-105. [MORE INFORMATION](#)

de Lorgeril M., Salen P, Martin J-L, Monjaud I, Delaye J, Mamelle N. Mediterranean diet, traditional risk factors, and the rate of cardiovascular complications after myocardial infarction. Final report of the Lyon Diet Heart Study. Circulation 1999;99:779-85. [MORE INFORMATION](#)

de Lorgeril M, Renaud S, Mamelle N, Salen P, Martin J-L, Monjaud I, Guidollet J, Touboul P, Delaye J. Mediterranean alpha-linolenic acid-rich diet in secondary prevention of coronary heart disease. Lancet 1994;343:1454-9. [MORE INFORMATION](#)

Hooper L, Thompson RL, Harrison RA, et al. Risks and benefits of omega 3 fats for mortality, cardiovascular disease, and cancer: systematic review. BMJ 2006; 332: 752 – 760.
Effects of omega-3 fatty acids on cardiovascular disease. [MORE INFORMATION](#)

Whelton SP, He J, Whelton PK, et al. Meta-analysis of observational studies on fish intake and coronary heart disease. Am J Cardiol 2004;93:1119-23. [MORE INFORMATION](#)

Siscovick DS, Raghunathan TE, King I, Weinmann S, Wicklund KG, Albright J, Bovbjerg V, Arbogast P, Smith H, Kushi LH, Cobb LA, Copass MK, Poaty BM, Lemaitre R, Retzlaff B, Childs M, Knapp. Dietary intake of long-chain n-3 polyunsaturated fatty acids and the risk of primary cardiac arrest. JAMA 1995;247:1363-7. [MORE INFORMATION](#)

Sellmayer A, Witzgall H, Lorentz RL, Weber PC. Effects of dietary fish oil on ventricular premature complexes. Am J Cardiol 1995;76:947-7. [MORE INFORMATION](#)

Christensen JH, Gustenhof P, Korup E, Aaroe J, Toft E, Moeller J, Rasmussen C, Dyerberg J, Schmidt EB. Effect of fish oil on heart rate variability in survivors of myocardial infarction: a double blind randomised controlled trial. BMJ 1996;312:677-8. [MORE INFORMATION](#)

Raitt MH, Connor WE, Morris C, Kron J, Halperin B, Chugh SS, McClelland J, Cook J, MacMurdy K, Swenson R, Connor SL, Gerhard G, Kraemer DF, Osearn D, Marchant C, Calhoun D, Shnider R, McAnulty J. Fish oil supplementation and risk of ventricular tachycardia and ventricular fibrillation in patients with implantable defibrillators. *JAMA* 2005;293:2884-91. [MORE INFORMATION](#)

Leaf A, Albert CM, Josephson M, Steinhaus D, Kluger J, Kang JX, Cox B, Zhang H, Schoenfeld D; Fatty Acid Antiarrhythmia Trial Investigators. Prevention of fatal arrhythmias in high-risk subjects by fish oil n-3 fatty acid intake. *Circulation*. 2005;112:2762-8. [MORE INFORMATION](#)

Brouwer IA, Zock PL, Camm AJ, Hauer RN et al. Effects of fish oil on ventricular tachyarrhythmia and death in patients with implantable cardioverter defibrillators: the Study on omega-3 Fatty Acids and Ventricular Arrhythmia (SOFA) randomized trial. *JAMA* 2006;295:2613-9. [MORE INFORMATION](#)

von Schacky C. Omega-3 fatty acids and cardiovascular disease.. *Curr Atheroscler Rep*. 2003;5:139-45. [MORE INFORMATION](#)

von Schacky C, Baumann K, Angerer P. The effect of n-3 fatty acids on coronary atherosclerosis: results from SCIMO, an angiographic study, background and implications. *Lipids*. 2001;36 Suppl:S99-102. [MORE INFORMATION](#)

von Schacky C, Angerer P, Kothny W, Theisen K, Mudra H. The effect of dietary omega-3 fatty acids on coronary atherosclerosis. A randomized, double-blind, placebo-controlled trial. *Ann Intern Med*. 1999;130:554-62. [MORE INFORMATION](#)

Harris WS, Von Schacky C. The Omega-3 Index: a new risk factor for death from coronary heart disease? *Prev Med*. 2004;39:212-20. [MORE INFORMATION](#)

Hu FB, Bronner L, Willett WC, Stampfer MJ, Rexrode KM, Albert CM, Hunter D, Manson JE. Fish and omega-3 fatty acid intake and risk of coronary heart disease in women. *JAMA* 2001;287:1815-21 [MORE INFORMATION](#)

Landmark K, Abdelnoor M, Urdal P, Kilhovd B, Doerum H-P, Borge N, Refvem H. Use of fish oils reduce infarct size as estimated from peak creatinine kinase and lactate dehydrogenase activities. *Cardiology* 1998;89:94-102. [MORE INFORMATION](#)

Agency for Healthcare Research and Quality. March 2004. Evidence reports: health effects of omega-3 fatty acids on lipids and glycemic control in type II diabetes and the metabolic syndrome and on inflammatory bowel disease, rheumatoid arthritis, renal disease, systemic lupus erythematosus and osteoporosis. [MORE INFORMATION](#)

Wang C, Harris WS, Chung M, et al. n-3 Fatty acids from fish or fish-oil supplements, but not alfa-linolenic acid, benefit cardiovascular disease outcomes in primary- and secondary-prevention studies: a systematic review. *Am J Clin Nutr* 2006;84:5-17. [MORE INFORMATION](#)

Jacobson TA. Secondary prevention of coronary artery disease with omega-3 fatty acids. *Am J Cardiol*. 2006;98:61i-70i. [MORE INFORMATION](#)

Lamotte M, Annemans L, Kawalec P, Zoellner Y. A multi-country health economic evaluation of highly concentrated N-3 polyunsaturated fatty acids in secondary prevention after myocardial infarction. *Pharmacoeconomics*. 2006;24:783-95. [MORE INFORMATION](#)

Leaf A. Omega-3 fatty acids and prevention of arrhythmias. *Curr Opin Lipidol*. 2007;18(1):31-4. [MORE INFORMATION](#)

Harris WS, Gonzales M, et al. Effects of omega-3 fatty acids on heart rate in cardiac transplant recipients. *Am J Cardiol*. 2006;98(10):1393-5. [MORE INFORMATION](#)

Kottke TE, Wu LA, Brekke LN, Brekke MJ, White RD. Preventing sudden death with n-3 (omega-3) fatty acids and defibrillators. *Am J Prev Med*. 2006;31(4):316-323. [MORE INFORMATION](#)

von Schacky C. A review of omega-3 ethyl esters for cardiovascular prevention and treatment of increased blood triglyceride levels. *Vasc Health Risk Manag*. 2006;2(3):251-62. [MORE INFORMATION](#)

Harris WS. Omega-3 fatty acids and cardiovascular disease: A case for omega-3 index as a new risk factor. *Pharmacol Res*. 2007 Mar;55(3):217-23. [MORE INFORMATION](#)

Harris WS, Reid KJ, Sands SA, Spertus JA. Blood omega-3 and trans fatty acids in middle-aged acute coronary syndrome patients. *Am J Cardiol*. 2007;99(2):154-8. [MORE INFORMATION](#)

von Schacky C, Harris WS. Cardiovascular benefits of omega-3 fatty acids. *Cardiovascular Research*, 2007; 73(2): 310-315. [MORE INFORMATION](#)

Yokoyama M, Origasa H, Matsuzaki M, Matsuzawa Y et al. Effects of eicosapentaenoic acid on major coronary events in hypercholesterolaemic patients (JELIS): a randomized open-label, blinded endpoint analysis" *Lancet* 2007; 369: 1090-8. [MORE INFORMATION](#)

Mozaffarian D. JELIS, fish oil, and cardiac events. *Lancet* 2007; 369: 1062-1063. [MORE INFORMATION](#)

Mita T, Watada H, Ogiwara T, et al. Eicosapentaenoic acid reduces the progression of carotid intima-media thickness in patients with type 2 diabetes. *Atherosclerosis*. 2007;191(1):162-7. [MORE INFORMATION](#)

von Schacky C. Omega-3 fatty acids and cardiovascular disease. *Curr Opin Clin Nutr Metab Care*. 2007; 10(2):129-35. [MORE INFORMATION](#)

Chrysohoou C, Panagiotakos DB, Pitsavos C, et al. Long-term fish consumption is associated with protection against arrhythmia in healthy persons in a Mediterranean region--the ATTICA study. *Am J Clin Nutr*. 2007; 85(5):1385-91. [MORE INFORMATION](#)

Cundiff DK, Lanou AJ, Nigg CR. Relation of omega-3 Fatty Acid intake to other dietary factors known to reduce coronary heart disease risk. *Am J Cardiol*. 2007;99(9):1230-3. [MORE INFORMATION](#)

Harris WS, Poston WC, Haddock CK. Tissue n-3 and n-6 fatty acids and risk for coronary heart disease events. *Atherosclerosis*. 2007;193(1):1-10. [MORE INFORMATION](#)

Shah AP, Ichiuji AM, Han JK, Traina M, El-Bialy A, Meymandi SK, Wachsner RY. Cardiovascular and endothelial effects of fish oil supplementation in healthy volunteers . *J Cardiovasc Pharmacol Ther*. 2007;12(3):213-9 [MORE INFORMATION](#)

Jacobson TA. Beyond lipids: the role of omega-3 fatty acids from fish oil in the prevention of coronary heart disease. *Curr Atheroscler Rep*. 2007;9(2):145-53. [MORE INFORMATION](#)

Sakabe M, Shiroshita-Takeshita A, Maguy A, Dumesnil C, Nigam A, Leung TK, Nattel S. Omega-3 polyunsaturated fatty acids prevent atrial fibrillation associated with heart failure but not atrial tachycardia remodeling. *Circulation*. 2007;116(19):2101-9. [MORE INFORMATION](#)

Jenkins DJ, Josse AR, Beyene J, Dorian P, Burr ML, LaBelle R, Kendall CW, Cunnane SC. Fish-oil supplementation in patients with implantable cardioverter defibrillators: a meta-analysis. *CMAJ*. 2008;178(2):157-64. [MORE INFORMATION](#)

Lee JH, O'Keefe JH, Lavie CJ, Marchioli R, Harris WS. Omega3 Fatty acids for cardioprotection. *Mayo Clin Proc*. 2008;83(3):324-32. [MORE INFORMATION](#)

Ninio DM, Hill AM, Howe PR, Buckley JD, Saint DA. Docosahexaenoic acid-rich fish oil improves heart rate variability and heart rate responses to exercise in overweight adults. *Br J Nutr*. 2008 Mar 13;:1-7 [Epub ahead of print] [MORE INFORMATION](#)

Macchia A, Monte S, Pellegrini F, Romero M, Ferrante D, Doval H, D'Ettore A, Maggioni AP, Tognoni G. Omega-3 fatty acid supplementation reduces one-year risk of atrial fibrillation in patients hospitalized with myocardial infarction. *Eur J Clin Pharmacol*. 2008 Feb 29 [Epub ahead of print] [MORE INFORMATION](#)

Harris WS, Miller M, Tighe AP, Davidson MH, Schaefer EJ. Omega-3 fatty acids and coronary heart disease risk: clinical and mechanistic perspectives. *Atherosclerosis*. 2008;197(1):12-24. [MORE INFORMATION](#)

Din JN, Harding SA, Valerio CJ, Sarma J, Lyall K, Riemersma RA, Newby DE, Flapan AD. Dietary intervention with oil rich fish reduces platelet-monocyte aggregation in man. *Atherosclerosis*. 2008;197(1):290-6. [MORE INFORMATION](#)

Metcalf RG, Sanders P, James MJ, Cleland LG, Young GD. Effect of dietary n-3 polyunsaturated fatty acids on the inducibility of ventricular tachycardia in patients with ischemic cardiomyopathy. *Am J Cardiol*. 2008;101(6):758-61. [MORE INFORMATION](#)

Mozaffarian D, Stein PK, Prineas RJ, Siscovick DS. Dietary fish and omega-3 fatty acid consumption and heart rate variability in US adults. *Circulation*. 2008 Mar 4;117(9):1130-7. Epub 2008 Feb 19. [MORE INFORMATION](#)

Wilhelm M, Tobias R, Asskali F, Kraehner R, Kuly S, Klinghammer L, Boehles H, Daniel WG. Red blood cell omega-3 fatty acids and the risk of ventricular arrhythmias in patients with heart failure. *Am Heart J*. 2008 Jun;155(6):971-7 [MORE INFORMATION](#)

Anand RG, Alkadri M, Lavie CJ, Milani RV. The role of fish oil in arrhythmia prevention. *J Cardiopulm Rehabil Prev.* 2008;28(2):92-8. [MORE INFORMATION](#)

Lane JS, Magno CP, Lane KT, Chan T, Hoyt DB, Greenfield S. Nutrition impacts the prevalence of peripheral arterial disease in the United States. *J Vasc Surg.* 2008 Jun 27. [Epub ahead of print] [MORE INFORMATION](#)

Campos H, Baylin A, Willett WC. α -Linolenic Acid and Risk of Nonfatal Acute Myocardial Infarction. *Circulation.* 2008 Jul 7. [Epub ahead of print] [MORE INFORMATION](#)

Sun Q, Ma J, Campos H, Rexrode KM, Albert CM, Mozaffarian D, Hu FB. Blood concentrations of individual long-chain n-3 fatty acids and risk of nonfatal myocardial infarction. *Am J Clin Nutr.* 2008 Jul;88(1):216-23. [MORE INFORMATION](#)

Streppel MT, Ocké MC, Boshuizen HC, Kok FJ, Kromhout D. Long-term fish consumption and n-3 fatty acid intake in relation to (sudden) coronary heart disease death: the Zutphen study. *Eur Heart J.* 2008 Jul 18. [Epub ahead of print] [MORE INFORMATION](#)

Gissi-Hf Investigators. Effect of n-3 polyunsaturated fatty acids in patients with chronic heart failure (the GISSI-HF trial): a randomised, double-blind, placebo-controlled trial. *Lancet.* 2008 Aug 29. [Epub ahead of print] [MORE INFORMATION](#)

Macchia A, Monte S, Pellegrini F, Romero M, Ferrante D, Doval H, D'Ettore A, Maggioni AP, Tognoni G. Omega-3 fatty acid supplementation reduces one-year risk of atrial fibrillation in patients hospitalized with myocardial infarction. *Eur J Clin Pharmacol.* 2008;64(6):627-34 [MORE INFORMATION](#)

Yamagishi K, Iso H, Date C, Fukui M, Wakai K, Kikuchi S, Inaba Y, Tanabe N, Tamakoshi A. Fish, omega-3 polyunsaturated fatty acids, and mortality from cardiovascular diseases in a nationwide community-based cohort of Japanese men and women the JACC (Japan Collaborative Cohort Study for Evaluation of Cancer Risk) Study. *J Am Coll Cardiol.* 2008;52(12):988-96. [MORE INFORMATION](#)

Harris WS, Kris-Etherton PM, Harris KA. Intakes of long-chain omega-3 fatty acid associated with reduced risk for death from coronary heart disease in healthy adults. *Curr Atheroscler Rep.* 2008;10(6):503-9. [MORE INFORMATION](#)

He K, Liu K, Daviglius ML, Mayer-Davis E, Jenny NS, Jiang R, Ouyang P, Steffen LM, Siscovick D, Wu C, Barr RG, Tsai M, Burke GL. Intakes of long-chain n-3 polyunsaturated fatty acids and fish in relation to measurements of subclinical atherosclerosis. *Am J Clin Nutr.* 2008 Oct; 88(4):1111-8. [MORE INFORMATION](#)

Saito Y, Yokoyama M, Origasa H, Matsuzaki M, Matsuzawa Y, Ishikawa Y, Oikawa S, Sasaki J, Hishida H, Itakura H, Kita T, Kitabatake A, Nakaya N, Sakata T, Shimada K, Shirato K; JELIS Investigators, Japan. Effects of EPA on coronary artery disease in hypercholesterolemic patients with multiple risk factors: sub-analysis of primary prevention cases from the Japan EPA Lipid Intervention Study (JELIS). *Atherosclerosis.* 2008; 200(1):135-40. [MORE INFORMATION](#)

Peoples GE, McLennan PL, Howe PR, Groeller H. Fish Oil Reduces Heart Rate and Oxygen Consumption During Exercise. *J Cardiovasc Pharmacol.* 2008 Dec; 52(6):540-7 [MORE INFORMATION](#)

Li GR, Sun HY, Zhang XH, Cheng LC, Chiu SW, Tse HF, Lau CP. Omega-3 polyunsaturated fatty acids inhibit transient outward and ultra-rapid delayed rectifier K⁺ currents and Na⁺ current in human atrial myocytes. *Cardiovasc Res.* 2009 Feb 1; 81(2):286-93. [MORE INFORMATION](#)

Saremi A, Arora R. The Utility of Omega-3 Fatty Acids in Cardiovascular Disease. *Am J Ther.* 2008 Dec 15. [Epub ahead of print] [MORE INFORMATION](#)

Gissi-HF Investigators, Tavazzi L, Maggioni AP, Marchioli R, Barlera S, Franzosi MG, Latini R, Lucci D, Nicolosi GL, Porcu M, Tognoni G. Effect of n-3 polyunsaturated fatty acids in patients with chronic heart failure (the GISSI-HF trial): a randomised, double-blind, placebo-controlled trial. *Lancet.* 2008; 372(9645):1223-30. [MORE INFORMATION](#)

Zhao YT, Chen Q, Sun YX, Li XB, Zhang P, Xu Y, omega-3 fatty acids in pGuo JH. Prevention of sudden cardiac death with atients with coronary heart disease: A meta-analysis of randomized controlled trials. *Ann Med.* 2009 Jan 16:1-10. 2009 Jan 16:1-10. [MORE INFORMATION](#)

Brouwer IA, Raitt MH, Dullemeijer C, Kraemer DF, Zock PL, Morris C, Katan MB, Connor WE, Camm JA, Schouten EG, McAnulty J. Effect of fish oil on ventricular tachyarrhythmia in three studies in patients with implantable cardioverter defibrillators. *Eur Heart J.* 2009 Apr; 30(7):820-6. [MORE INFORMATION](#)

Streppel MT, Ocké MC, Boshuizen HC, Kok FJ, Kromhout D. Long-term fish consumption and n-3 fatty acid intake in relation to (sudden) coronary heart disease death: the Zutphen study. *Eur Heart J*. 2008;29(16):2024-30. [MORE INFORMATION](#)

Farzaneh-Far R, Harris WS, Garg S, Na B, Whooley MA. Inverse association of erythrocyte n-3 fatty acid levels with inflammatory biomarkers in patients with stable coronary artery disease: The Heart and Soul Study. *Atherosclerosis*. 2009 Aug;205(2):538-43 [MORE INFORMATION](#)

Micallef MA, Munro IA, Garg ML An inverse relationship between plasma n-3 fatty acids and C-reactive protein in healthy individuals. *Eur J Clin Nutr*. 2009 Sep;63(9):1154-6. [MORE INFORMATION](#)

Galli C, Risé P *Nutr Health*. Fish consumption, omega 3 fatty acids and cardiovascular disease. The science and the clinical trials. 2009;20(1):11-20. [MORE INFORMATION](#)

Levitan EB, Wolk A, Mittleman MA. Fish consumption, marine omega-3 fatty acids, and incidence of heart failure: a population-based prospective study of middle-aged and elderly men. *Eur Heart J*. 2009 Jun;30(12):1495-500. [MORE INFORMATION](#)

Smith PJ, Blumenthal JA, Babyak MA, Georgiades A, Sherwood A, Sketch MH Jr, Watkins LL. Association between n-3 fatty acid consumption and ventricular ectopy after myocardial infarction. *Am J Clin Nutr*. 2009;89(5):1315-20. [MORE INFORMATION](#)

Lemaitre RN, King IB, Sotoodehnia N, Rea TD, Raghunathan TE, Rice KM, Lumley TS, Knopp RH, Cobb LA, Copass MK, Siscovick DS. Red blood cell membrane alpha-linolenic acid and the risk of sudden cardiac arrest. *Metabolism*. 2009;58(4):534-40. [MORE INFORMATION](#)

León H, Shibata MC, Sivakumaran S, Dorgan M, Chatterley T, Tsuyuki RT Effect of fish oil on arrhythmias and mortality: systematic review. *BMJ*. 2008;337:a2931. doi: 10.1136/bmj.a2931. [MORE INFORMATION](#)

Smith PJ, Blumenthal JA, Babyak MA, Georgiades A, Sherwood A, Sketch MH Jr, Watkins LL. Association between n-3 fatty acid consumption and ventricular ectopy after myocardial infarction. *Am J Clin Nutr*. 2009;89(5):1315-20. [MORE INFORMATION](#)

Danaei G, Ding EL, Mozaffarian D, Taylor B, Rehm J, Murray CJ, Ezzati M. The preventable causes of death in the United States: comparative risk

assessment of dietary, lifestyle, and metabolic risk factors. PLoS Med. 2009 Apr 28;6(4):e1000058. [MORE INFORMATION](#)

Zhao YT, Chen Q, Sun YX, Li XB, Zhang P, Xu Y, Guo JH. Prevention of sudden cardiac death with omega-3 fatty acids in patients with coronary heart disease: a meta-analysis of randomized controlled trials. Ann Med. 2009;41(4):301-10. [MORE INFORMATION](#)

Marik PE, Varon J. Omega-3 Dietary Supplements and the Risk of Cardiovascular Events: A Systematic Review. Clin Cardiol. 2009;32(7):365-372. [MORE INFORMATION](#)

Lavie CJ, Milani RV, Mehra MR, Ventura HO. Omega-3 polyunsaturated fatty acids and cardiovascular diseases. J Am Coll Cardiol. 2009;54(7):585-94. [MORE INFORMATION](#)

Marchioli R, Levantesi G, Silletta MG, et al. Effect of n-3 polyunsaturated fatty acids and rosuvastatin in patients with heart failure: results of the GISSI-HF trial. Expert Rev Cardiovasc Ther. 2009 Jul;7(7):735-48. [MORE INFORMATION](#)

Heidt MC, Vician M, Stracke SK, Stadlbauer T, Grebe MT, Boening A, Vogt PR, Erdogan. Beneficial effects of intravenously administered N-3 fatty acids for the prevention of atrial fibrillation after coronary artery bypass surgery: a prospective randomized study. Thorac Cardiovasc Surg. 2009;57(5):276-80. [MORE INFORMATION](#)

Lee JH, O'Keefe JH, Lavie CJ, Harris WS. Omega-3 fatty acids: cardiovascular benefits, sources and sustainability. Nat Rev Cardiol. 2009 Oct 27. [Epub ahead of print] [MORE INFORMATION](#)

Joensen AM, Schmidt EB, Dethlefsen C, Johnsen SP, Tjønneland A, Rasmussen LH, Overvad K. Dietary intake of total marine n-3 polyunsaturated fatty acids, eicosapentaenoic acid, docosahexaenoic acid and docosapentaenoic acid and the risk of acute coronary syndrome - a cohort study. Br J Nutr. 2010 Feb;103(4):602-7. [MORE INFORMATION](#)

Micallef MA, Munro IA, Garg ML. An inverse relationship between plasma n-3 fatty acids and C-reactive protein in healthy individuals. Eur J Clin Nutr. 2009 Sep;63(9):1154-6. [MORE INFORMATION](#)

Virtanen JK, Mursu J, Voutilainen S, Tuomainen TP. Serum long-chain n-3 polyunsaturated fatty acids and risk of hospital diagnosis of atrial fibrillation in men. Circulation. 2009 Dec 8;120(23):2315-21. [MORE INFORMATION](#)

Park Y, Lim J, Lee J, Kim SG. Erythrocyte fatty acid profiles can predict acute non-fatal myocardial infarction. *Br J Nutr.* 2009 Nov;102(9):1355-61. [MORE INFORMATION](#)

Dijkstra SC, Brouwer IA, van Rooij FJ, Hofman A, Witteman JC, Geleijnse JM. Intake of very long chain n-3 fatty acids from fish and the incidence of heart failure: the Rotterdam Study. *Eur J Heart Fail.* 2009 Oct;11(10):922-8. [MORE INFORMATION](#)

Joensen AM, Schmidt EB, Dethlefsen C, Johnsen SP, Tjønneland A, Rasmussen LH, Overvad K. Dietary intake of total marine n-3 polyunsaturated fatty acids, eicosapentaenoic acid, docosahexaenoic acid and docosapentaenoic acid and the risk of acute coronary syndrome - a cohort study. *Br J Nutr.* 2010 Feb;103(4):602-7. [MORE INFORMATION](#)

de Goede J, Geleijnse JM, Boer JM, Kromhout D, Verschuren WM. Marine (n-3) Fatty Acids, Fish Consumption, and the 10-Year Risk of Fatal and Nonfatal Coronary Heart Disease in a Large Population of Dutch Adults with a Low Fish Intake. *J Nutr.* 2010 May;140(5):1023-8. [MORE INFORMATION](#)

Levitan EB, Wolk A, Mittleman MA. Fatty fish, marine omega-3 fatty acids and incidence of heart failure. *Eur J Clin Nutr.* 2010 Jun;64(6):587-94. [MORE INFORMATION](#)

Adkins Y, Kelley DS. Mechanisms underlying the cardioprotective effects of omega-3 polyunsaturated fatty acids. *J Nutr Biochem.* 2010 Sep;21(9):781-92. [MORE INFORMATION](#)

Filion KB, El Khoury F, Bielinski M, Schiller I, Dendukuri N, Brophy JM. Omega-3 fatty acids in high-risk cardiovascular patients: a meta-analysis of randomized controlled trials. *BMC Cardiovasc Disord.* 2010 Jun 3;10(1):24. [MORE INFORMATION](#)

Pottala JV, Garg S, Cohen BE, Whooley MA, Harris WS. Blood Eicosapentaenoic and Docosahexaenoic Acids Predict All-Cause Mortality in Patients With Stable Coronary Heart Disease: The Heart and Soul Study. *Circ Cardiovasc Qual Outcomes.* 2010 Jul;3(4):406-12. [MORE INFORMATION](#)

Gajos G, Rostoff P, Undas A, Piwowarska W. Effects of polyunsaturated omega-3 fatty acids on responsiveness to dual antiplatelet therapy in patients undergoing percutaneous coronary intervention: the OMEGA-PCI (OMEGA-3 fatty acids after pci to modify responsiveness to dual antiplatelet therapy) study. *J Am Coll Cardiol.* 2010 Apr 20;55(16):1671-

8. [MORE INFORMATION](#)

Di Minno MN, Tremoli E, Tufano A, Russolillo A, Lupoli R, Di Minno G. Exploring newer cardioprotective strategies: omega-3 fatty acids in perspective. *Thromb Haemost.* 2010 Aug 30;104(4). [MORE INFORMATION](#)

Saravanan P, Davidson NC, Schmidt EB, Calder PC. Cardiovascular effects of marine omega-3 fatty acids. *Lancet.* 2010 Aug 14;376(9740):540-50. Epub 2010 Jul 15. [MORE INFORMATION](#)

Makhoul Z, Kristal AR, Gulati R, Luick B, Bersamin A, Boyer B, Mohatt GV. Associations of very high intakes of eicosapentaenoic and docosahexaenoic acids with biomarkers of chronic disease risk among Yup'ik Eskimos. *Am J Clin Nutr.* 2010 Mar;91(3):777-85. [MORE INFORMATION](#)

Wennberg M, Bergdahl IA, Hallmans G, Norberg M, Lundh T, Skerfving S, Strömberg U, Vessby B, Jansson JH. Fish consumption and myocardial infarction: a second prospective biomarker study from northern Sweden. *Am J Clin Nutr.* 2011 Jan;93(1):27-36. [MORE INFORMATION](#)

Kromhout D, Giltay EJ, Geleijnse JM. n-3 Fatty Acids and Cardiovascular Events after Myocardial Infarction. *N Engl J Med.* 2010; 363:2015-27 [MORE INFORMATION](#)

Filion KB, El Khoury F, Bielinski M, Schiller I, Dendukuri N, Brophy JM. Omega-3 fatty acids in high-risk cardiovascular patients: a meta-analysis of randomized controlled trials. *BMC Cardiovasc Disord.* 2010 Jun 3;10:24. [MORE INFORMATION](#)

Galan P, Kesse-Guyot E, Czernichow S, Briancon S, Blacher J, Hercberg S; for the SU.FOL.OM3 Collaborative Group. Effects of B vitamins and omega 3 fatty acids on cardiovascular diseases: a randomised placebo controlled trial. *BMJ.* 2010 Nov 29;341:c6273. doi: 10.1136/bmj.c6273. [MORE INFORMATION](#)

Pase MP, Grima NA, Sarris J. The effects of dietary and nutrient interventions on arterial stiffness: a systematic review. *Am J Clin Nutr.* 2010 Dec 8. [Epub ahead of print] [MORE INFORMATION](#)

Kumar S, Sutherland F, Rosso R, Teh AW, Lee G, Heck PM, Feldman A, Medi C, Watt S, Garg ML, Sparks PB. Effects of Chronic Omega-3 Polyunsaturated Fatty Acid Supplementation on Human Atrial

Electrophysiology. Heart Rhythm. 2010 Dec 10. [Epub ahead of print] [MORE INFORMATION](#)

Kowey PR, Reiffel JA, Ellenbogen KA, Naccarelli GV, Pratt CM. Efficacy and safety of prescription omega-3 fatty acids for the prevention of recurrent symptomatic atrial fibrillation: a randomized controlled trial. JAMA. 2010 Dec 1;304(21):2363-72. Epub 2010 Nov 15. [MORE INFORMATION](#)

Levitan EB, Wolk A, Mittleman MA. Fatty fish, marine omega-3 fatty acids and incidence of heart failure. Eur J Clin Nutr. 2010 Jun;64(6):587-94. [MORE INFORMATION](#)

Bjerregaard LJ, Joensen AM, Dethlefsen C, Jensen MK, Johnsen SP, Tjønneland A, Rasmussen LH, Overvad K, Schmidt EB. Fish intake and acute coronary syndrome. Eur Heart J. 2010 Jan;31(1):29-34. [MORE INFORMATION](#)

Gronroos NN, Alonso A. Diet and risk of atrial fibrillation – epidemiologic and clinical evidence –. Circ J. 2010 Oct;74(10):2029-38.

Nodari S, Triggiani M, Campia U, Manerba A, Milesi G, Cesana BM, Gheorghide M, Dei Cas L. Effects of n-3 polyunsaturated fatty acids on left ventricular function and functional capacity in patients with dilated cardiomyopathy. J Am Coll Cardiol. 2011 Feb 15;57(7):870-9. [MORE INFORMATION](#)

Finzi AA, Latini R, Barlera S, Rossi MG, Ruggeri A, Mezzani A, Favero C, Franzosi MG, Serra D, Lucci D, Bianchini F, Bernasconi R, Maggioni AP, Nicolosi G, Porcu M, Tognoni G, Tavazzi L, Marchioli R. Effects of n-3 polyunsaturated fatty acids on malignant ventricular arrhythmias in patients with chronic heart failure and implantable cardioverter-defibrillators: A substudy of the Gruppo Italiano per lo Studio della Sopravvivenza nell'Insufficienza Cardiaca (GISSI-HF) trial. Am Heart J. 2011 Feb;161(2):338-343.e1 [MORE INFORMATION](#)

Benedetto U, Melina G, di Bartolomeo R, Angeloni E, Sansone D, Falaschi G, Capuano F, Comito C, Roscitano A, Sinatra R. n-3 polyunsaturated fatty acids after coronary artery bypass grafting. Ann Thorac Surg. 2011 Apr;91(4):1169-75. [MORE INFORMATION](#)

Pase MP, Grima NA, Sarris J. The effects of dietary and nutrient interventions on arterial stiffness: a systematic review. Am J Clin Nutr. 2011 Feb;93(2):446-54. [MORE INFORMATION](#)

Moertl D, Hammer A, Steiner S, Hutuleac R, Vonbank K, Berger R. Dose-dependent effects of omega-3-polyunsaturated fatty acids on systolic left ventricular function, endothelial function, and markers of inflammation in chronic heart failure of nonischemic origin: a double-blind, placebo-controlled, 3-arm study. *Am Heart J*. 2011 May;161(5):915.e1-9. [MORE INFORMATION](#)

Vedtofte MS, Jakobsen MU, Lauritzen L, Heitmann BL. Dietary {alpha}-linolenic acid, linoleic acid, and n-3 long-chain PUFA and risk of ischemic heart disease. *Am J Clin Nutr*. 2011 Aug 24. [Epub ahead of print] [MORE INFORMATION](#)

Joensen AM, Overvad K, Dethlefsen C, Johnsen SP, Tjønneland A, Rasmussen LH, Schmidt EB. Marine n-3 Polyunsaturated Fatty Acids in Adipose Tissue and the Risk of Acute Coronary Syndrome. *Circulation*. 2011 Sep 13;124(11):1232-8. Epub 2011 Aug 22. [MORE INFORMATION](#)

Mozaffarian D, Lemaitre RN, King IB, Song X, Spiegelman D, Sacks FM, Rimm EB, Siscovick DS. Circulating long-chain ω -3 fatty acids and incidence of congestive heart failure in older adults: the cardiovascular health study: a cohort study. *Ann Intern Med*. 2011 Aug 2;155(3):160-70. [MORE INFORMATION](#)

Mozaffarian D, Wu JH. Omega-3 Fatty acids and cardiovascular disease: effects on risk factors, molecular pathways, and clinical events. *J Am Coll Cardiol*. 2011 Nov 8;58(20):2047-67. [MORE INFORMATION](#)

Kromhout D, Geleijnse JM, de Goede J, Oude Griep LM, Mulder BJ, de Boer MJ, Deckers JW, Boersma E, Zock PL, Giltay EJ. n-3 Fatty Acids, Ventricular Arrhythmia-Related Events, and Fatal Myocardial Infarction in Postmyocardial Infarction Patients With Diabetes. *Diabetes Care*. 2011 Dec;34(12):2515-20. [MORE INFORMATION](#)

Kumar S, Sutherland F, Morton JB, Lee G, Morgan J, Wong J, Eccleston DE, Voukelatos J, Garg ML, Sparks PB. Long Term Omega-3 Polyunsaturated Fatty Acid Supplementation Reduces the Recurrence of Persistent Atrial Fibrillation after Electrical Cardioversion. *Heart Rhythm*. 2011 Nov 22. [Epub ahead of print] [MORE INFORMATION](#)

Pase MP, Grima NA, Sarris J. Do long-chain n-3 fatty acids reduce arterial stiffness? A meta-analysis of randomised controlled trials. *Br J Nutr*. 2011 Oct;106(7):974-80. [MORE INFORMATION](#)

Musa-Veloso K, Binns MA, Kocenas A, Chung C, Rice H, Oppedal-Olsen H,

Lloyd H, Lemke S. Impact of low v. moderate intakes of long-chain n-3 fatty acids on risk of coronary heart disease. *Br J Nutr*. 2011 Oct;106(8):1129-41. Epub 2011 May 31. [MORE INFORMATION](#)

Brouwer IA, Raitt MH, Dullemeijer C, Kraemer DF, Zock PL, Morris C, Katan MB, Connor WE, Camm JA, Schouten EG, McAnulty J. Effect of fish oil on ventricular tachyarrhythmia in three studies in patients with implantable cardioverter defibrillators. *Eur Heart J*. 2009 Apr;30(7):820-6 [MORE INFORMATION](#)

Strøm M, Halldorsson TI, Mortensen EL, Torp-Pedersen C, Olsen SF. Fish, n-3 Fatty Acids, and Cardiovascular Diseases in Women of Reproductive Age: A Prospective Study in a Large National Cohort. *Hypertension*. 2012 Jan;59(1):36-43 [MORE INFORMATION](#)

Wu JH, Lemaitre RN, King IB, Song X, Sacks FM, Rimm EB, Heckbert SR, Siscovick DS, Mozaffarian D. Association of Plasma Phospholipid Long-Chain Omega-3 Fatty Acids with Incident Atrial Fibrillation in Older Adults: The Cardiovascular Health Study. *Circulation*. 2012 Mar 6;125(9):1084-93. doi: 10.1161/CIRCULATIONAHA.111.062653. [MORE INFORMATION](#)

Skilton MR, Ayer JG, Harmer JA, Webb K, Leeder SR, Marks GB, Celermajer DS. Impaired Fetal Growth and Arterial Wall Thickening: A Randomized Trial of Omega-3 Supplementation. *Pediatrics*. 2012 Feb 20. [Epub ahead of print] . [MORE INFORMATION](#)

Yang Y, Lu N, Chen D, Meng L, Zheng Y, Hui R. Effects of n-3 PUFA supplementation on plasma soluble adhesion molecules: a meta-analysis of randomized controlled trials. *Am J Clin Nutr*. 2012 Feb 29. [Epub ahead of print] [MORE INFORMATION](#)

McLaren JE, Michael DR, Guschina IA, Harwood JL, Ramji DP. Eicosapentaenoic acid and docosahexaenoic acid regulate modified LDL uptake and macropinocytosis in human macrophages. *Lipids*. 2011 Nov;46(11):1053-61. Epub 2011 Aug 7. [MORE INFORMATION](#)

Kashiyama T, Ueda Y, Nemoto T, Wada M, Masumura Y, Matsuo K, Nishio M, Hirata A, Asai M, Kashiwase K, Kodama K. Relationship between coronary plaque vulnerability and serum n-3/n-6 polyunsaturated fatty acid ratio. *Circ J*. 2011 Sep 22;75(10):2432-8. Epub 2011 Jul 20. [MORE INFORMATION](#)

Wang Q, Liang X, Wang L, Lu X, Huang J, Cao J, Li H, Gu D. Effect of omega-3 fatty acids supplementation on endothelial function: A meta-

analysis of randomized controlled trials. *Atherosclerosis*. 2012 Apr; 221(2):536-43. Epub 2012 Jan 20 *Arch Intern Med*. 2012 Apr 9. [Epub ahead of print] [MORE INFORMATION](#)

Kwak SM, Myung SK, Lee YJ, Seo HG; for the Korean Meta-analysis Study Group. Efficacy of Omega-3 Fatty Acid Supplements (Eicosapentaenoic Acid and Docosahexaenoic Acid) in the Secondary Prevention of Cardiovascular Disease: A Meta-analysis of Randomized, Double-blind, Placebo-Controlled Trials. *Arch Intern Med*. 2012 Apr 9. [Epub ahead of print] [MORE INFORMATION](#)

Kromhout D, Geleijnse JM, de Goede J, Oude Griep LM, Mulder BJ, de Boer MJ, Deckers JW, Boersma E, Zock PL, Giltay EJ. n-3 fatty acids, ventricular arrhythmia-related events, and fatal myocardial infarction in postmyocardial infarction patients with diabetes. *Diabetes Care*. 2011 Dec; 34(12):2515-20. [MORE INFORMATION](#)

Khawaja O, Gaziano JM, Djoussé L. A meta-analysis of omega-3 Fatty acids and incidence of atrial fibrillation. *J Am Coll Nutr*. 2012 Feb; 31(1):4-13. [MORE INFORMATION](#)

Delgado-Lista J, Perez-Martinez P, Lopez-Miranda J, Perez-Jimenez F. Long chain omega-3 fatty acids and cardiovascular disease: a systematic review. *Br J Nutr*. 2012 Jun; 107 Suppl 2:S201-13. [MORE INFORMATION](#)

The ORIGIN Trial Investigators. n-3 Fatty Acids and Cardiovascular Outcomes in Patients with Dysglycemia. *N Engl J Med*. 2012 Jun 11. [Epub ahead of print] [MORE INFORMATION](#)

Rizos EC, Ntzani EE, Bika E, Kostapanos MS, Elisaf MS. Association between omega-3 fatty acid supplementation and risk of major cardiovascular disease events: a systematic review and meta-analysis. *JAMA*. 2012 Sep 12; 308(10):1024-33. [MORE INFORMATION](#)

Wilk JB, Tsai MY, Hanson NQ, Gaziano JM, Djoussé L. Plasma and dietary omega-3 fatty acids, fish intake, and heart failure risk in the Physicians' Health Study. *Am J Clin Nutr*. 2012 Oct; 96(4):882-8. Epub 2012 Sep 5. [MORE INFORMATION](#)

Wennberg M, Strömberg U, Bergdahl IA, Jansson JH, Kauhanen J, Norberg M, Salonen JT, Skerfving S, Tuomainen TP, Vessby B, Virtanen JK. Myocardial infarction in relation to mercury and fatty acids from fish: a risk-benefit analysis based on pooled Finnish and Swedish data in men. *Am J Clin Nutr*. 2012 Oct; 96(4):706-13. Epub 2012 Aug 15. [MORE](#)

[INFORMATION](#)

Eussen SR, Geleijnse JM, Giltay EJ, Rompelberg CJ, Klungel OH, Kromhout D. Effects of n-3 fatty acids on major cardiovascular events in statin users and non-users with a history of myocardial infarction. *Eur Heart J*. 2012 Jul;33(13):1582-8. Epub 2012 Feb 1. [MORE INFORMATION](#)

Harris WS, Kennedy KF, O'Keefe JH Jr, Spertus JA. Red blood cell fatty acid levels improve GRACE score prediction of 2-yr mortality in patients with myocardial infarction. *Int J Cardiol*. 2012 Oct 5. pii: S0167-5273(12)01182-5. doi: 10.1016/j.ijcard.2012.09.076. [Epub ahead of print] [MORE INFORMATION](#)

Chiuve SE, Rimm EB, Sandhu RK, Bernstein AM, Rexrode KM, Manson JE, Willett WC, Albert CM. Dietary fat quality and risk of sudden cardiac death in women. *Am J Clin Nutr*. 2012 Sep;96(3):498-507. doi: 10.3945/ajcn.112.040287. Epub 2012 Aug 1. [MORE INFORMATION](#)

Mozaffarian D, Marchioli R, Macchia A, Silletta MG, Ferrazzi P, Gardner TJ, Latini R, Libby P, Lombardi F, O'Gara PT, Page RL, Tavazzi L, Tognoni G; for the OPERA Investigators. Fish Oil and Postoperative Atrial Fibrillation: The Omega-3 Fatty Acids for Prevention of Post-operative Atrial Fibrillation (OPERA) Randomized Trial. *JAMA*. 2012 Nov 5:1-11. doi: 10.1001/jama.2012.28733. [Epub ahead of print] [MORE INFORMATION](#)

Smith DA. Review: Omega-3 polyunsaturated fatty acid supplements do not reduce major cardiovascular events in adults. *Ann Intern Med*. 2012 Dec 18;157(12):JC6-5. doi: 10.7326/0003-4819-157-12-201212180-02005. [MORE INFORMATION](#)

Wu JH, Cahill LE, Mozaffarian D. Effect of fish oil on circulating adiponectin: a systematic review and meta-analysis of randomized controlled trials. *J Clin Endocrinol Metab*. 2013 Jun;98(6):2451-9. doi: 10.1210/jc.2012-3899. Epub 2013 May 23. [MORE INFORMATION](#)

Virtanen JK, Laukkanen JA, Mursu J, Voutilainen S, Tuomainen TP. Serum long-chain n-3 polyunsaturated fatty acids, mercury, and risk of sudden cardiac death in men: a prospective population-based study. *PLoS One*. 2012;7(7):e41046. doi: 10.1371/journal.pone.0041046. Epub 2012 Jul 16. [MORE INFORMATION](#)

Kotwal S, Jun M, Sullivan D, Perkovic V, Neal B. Omega 3 Fatty acids and cardiovascular outcomes: systematic review and meta-analysis. *Circ Cardiovasc Qual Outcomes*. 2012 Nov;5(6):808-18. doi:

10.1161/CIRCOUTCOMES.112.966168. Epub 2012 Oct 30. [MORE INFORMATION](#)

Masson S, Marchioli R, Mozaffarian D, Bernasconi R, Milani V, Dragani L, Tacconi M, Marfisi RM, Borgese L, Cirrincione V, Febo O, Nicolis E, Maggioni AP, Tognoni G, Tavazzi L, Latini R. Plasma n-3 polyunsaturated fatty acids in chronic heart failure in the GISSI-Heart Failure Trial: relation with fish intake, circulating biomarkers, and mortality. *Am Heart J*. 2013 Feb;165(2):208-15.e4. doi: 10.1016/j.ahj.2012.10.021. Epub 2013 Jan 4. [MORE INFORMATION](#)

Xin W, Wei W, Li X. Effects of fish oil supplementation on cardiac function in chronic heart failure: a meta-analysis of randomised controlled trials. *Heart*. 2012 Nov;98(22):1620-5. doi: 10.1136/heartjnl-2012-302119. Epub 2012 Jul 3. [MORE INFORMATION](#)

He Z, Yang L, Tian J, Yang K, Wu J, Yao Y. Efficacy and safety of omega-3 fatty acids for the prevention of atrial fibrillation: a meta-analysis. *Can J Cardiol*. 2013 Feb;29(2):196-203. doi: 10.1016/j.cjca.2012.03.019. Epub 2012 Jun 7. [MORE INFORMATION](#)

Siegel G, Ermilov E. Omega-3 fatty acids: benefits for cardio-cerebrovascular diseases. *Atherosclerosis*. 2012 Dec;225(2):291-5. doi: 10.1016/j.atherosclerosis.2012.09.006. Epub 2012 Sep 18. [MORE INFORMATION](#)

Djoussé L, Akinkuolie AO, Wu JH, Ding EL, Gaziano JM. Fish consumption, omega-3 fatty acids and risk of heart failure: a meta-analysis. *Clin Nutr*. 2012 Dec;31(6):846-53. doi: 10.1016/j.clnu.2012.05.010. Epub 2012 Jun 6. [MORE INFORMATION](#)

Risk and Prevention Study Collaborative Group, Roncaglioni MC, Tombesi M, Avanzini F, Barlera S, Caimi V, Longoni P, Marzona I, Milani V, Silletta MG, Tognoni G, Marchioli R n-3 fatty acids in patients with multiple cardiovascular risk factors. *N Engl J Med*. 2013 May 9;368(19):1800-8. doi: 10.1056/NEJMoa1205409. [MORE INFORMATION](#)

CIBD (Chronic Inflammatory Bowel Disease)

Siguel EN, Lerman RH. Prevalence of essential fatty acid deficiency in patients with chronic gastrointestinal disorders. *Metabolism* 1996;45:12-

23.

Belluzzi A, Brignola C, Campieri M, Pera A, Boschi S, Miglioli M. Effect of an enteric-coated fish-oil preparation on relapses in Crohn's disease. *N Engl J Med* 1996; 334: 1557-60. [MORE INFORMATION](#)

Almallah YZ, El-Tahir A, Heys SD, Richardson S, Eremin O. Distal proctocolitis and n-3 polyunsaturated fatty acids: the mechanism(s) of natural cytotoxicity inhibition. *Eur J Clin Invest* 2000; 30: 58-65. [MORE INFORMATION](#)

Salomon P, Kornbluth AA, Janowitz HD. Treatment of ulcerative colitis with fish oil n-3-w-fatty acid: An open trial. *J Clin Gastroenterol* 1990; 12: 157-61. [MORE INFORMATION](#)

Stenson WF, Cort D, Rodgers J, Burakoff R, DeSchryver-Krecskemeti K, Gramlich TL, Beeken W. Dietary supplementation with fish oil in ulcerative colitis. *Ann Int Med* 1992; 116: 609-14. [MORE INFORMATION](#)

Siguel EN, Lerman RH. Prevalence of essential fatty acid deficiency in patients with chronic gastrointestinal disorders. *Metabolism* 1996; 45: 12-23. [MORE INFORMATION](#)

Belluzzi A, Brignola C, Campieri M, Pera A, Boschi S, Miglioli M. Effect of an enteric-coated fish-oil preparation on relapses in Crohn's disease. *N Engl J Med* 1996; 334: 1557-60. [MORE INFORMATION](#)

Agency for Healthcare Research and Quality. March 2004. Evidence reports: health effects of omega-3 fatty acids on lipids and glycemic control in type II diabetes and the metabolic syndrome and on inflammatory bowel disease, rheumatoid arthritis, renal disease, systemic lupus erythematosus and osteoporosis. Internet: [MORE INFORMATION](#)

MacLean CH, Mojica WA, Newberry SJ, et al. Systematic review of the effects of n-3 fatty acids in inflammatory bowel disease. *Am J Clin Nutr* 2005; 82: 611-9. [MORE INFORMATION](#)

Macdonald A. Omega-3 fatty acids as adjunctive therapy in Crohns disease. *Gastroenterol Nurs*. 2006; 29: 295-301.

Courtney ED, Matthews S, et al, Eicosapentaenoic acid (EPA) reduces crypt cell proliferation and increases apoptosis in normal colonic mucosa

in subjects with a history of colorectal adenomas," *Int J Colorectal Dis*, 2007; 22(7): 765-776. [MORE INFORMATION](#)

Turner D, Steinhart A, Griffiths A. Omega 3 fatty acids (fish oil) for maintenance of remission in ulcerative colitis. *Cochrane Database Syst Rev*. 2007 Jul 18; (3):CD006443. [MORE INFORMATION](#)

Turner D, Zlotkin SH, Shah PS, Griffiths AM. Omega 3 fatty acids (fish oil) for maintenance of remission in Crohn's disease. *Cochrane Database Syst Rev*. 2007 Apr 18; (2):CD006320. [MORE INFORMATION](#)

Feagan BG, Sandborn WJ, Mittmann U, Bar-Meir S, D'Haens G, Bradette M, Cohen A, Dallaire C, Ponich TP, McDonald JW, Hébuterne X, Paré P, Klvana P, Niv Y, Ardizzone S, Alexeeva O, Rostom A, Kiudelis G, Spleiss J, Gilgen D, Vandervoort MK, Wong CJ, Zou GY, Donner A, Rutgeerts P. Omega-3 free fatty acids for the maintenance of remission in Crohn disease: the EPIC Randomized Controlled Trials. *JAMA*. 2008 Apr 9; 299(14):1690-7. [MORE INFORMATION](#)

Turner D, Zlotkin SH, Shah PS, Griffiths AM. Omega 3 fatty acids (fish oil) for maintenance of remission in Crohn's disease. *Cochrane Database Syst Rev*. 2009 Jan 21; (1):CD006320. [MORE INFORMATION](#)

John S, Luben R, Shrestha SS, Welch A, Khaw KT, Hart AR. Dietary n-3 polyunsaturated fatty acids and the aetiology of ulcerative colitis: a UK prospective cohort study. *Eur J Gastroenterol Hepatol*. 2010 May; 22(5):602-6. [MORE INFORMATION](#)

Solakivi T, Kaukinen K, Kunnas T, Lehtimäki T, Mäki M, Nikkari ST. Serum fatty acid profile in subjects with irritable bowel syndrome. *Scand J Gastroenterol*. 2011 Mar; 46(3):299-303 [MORE INFORMATION](#)

Cabré E, Mañosa M, Gassull MA. Omega-3 fatty acids and inflammatory bowel diseases - a systematic review. *Br J Nutr*. 2012 Jun; 107 Suppl 2:S240-52. [MORE INFORMATION](#)

COPD (Chronic Obstructive Pulmonary Disease)

Shahar E, Folsom AaR, Melnick SL, et al. Dietary n-3 polyunsaturated fatty acids and smoking-related chronic obstructive pulmonary disease. *N Engl J Med* 1994; 331:228-33. [MORE INFORMATION](#)

Archer SL. Fish oil as a therapy for lung disease. *Nutrition* 1996;12:372-4.

Smit HA, Grievink L, Tabak C. Dietary influences on chronic obstructive lung disease and asthma: a review of the epidemiological evidence. *Proceedings of the Nutrition Society* 1999;58:309-19. [MORE INFORMATION](#)

Shahar E, Boland LL, Folsom AA, Tockman MS, McGovern PG, Eckfeldt JH. Docosahexaenoic acid and smoking-related chronic obstructive pulmonary disease. *Am J Respir Crit Care Med* 1999;159:1780-5. [MORE INFORMATION](#)

Schwartz J, Weiss ST. The relationship of dietary fish intake to level of pulmonary function in the first National Health and Nutrition Survey (NHANES I). *Eur Respir J* 1994;7:1821-4. [MORE INFORMATION](#)

Agency for Healthcare Research and Quality. March 2004. Health effects of omega-3 fatty acids on asthma. NIH Workshop on omega-3 essential fatty acids and psychiatric disorders. Abstracts September 2-3, 1998.

Shahar E, Folsom AR, Melnick SL, Tockman MS, Comstock GW, Gennaro V, Higgins MW, Sorlie PD, Ko WJ, Szklo M; Atherosclerosis Risk in Communities Study Investigators. Dietary n-3 polyunsaturated acids and smoking-related chronic obstructive pulmonary disease. *Am J Epidemiol*. 2008;168(7):796-801. [ADHD MORE INFORMATION](#)

John S, Luben R, Shrestha SS, Welch A, Khaw KT, Hart AR. Dietary n-3 polyunsaturated fatty acids and the aetiology of ulcerative colitis: a UK prospective cohort study. *Eur J Gastroenterol Hepatol*. 2010 May;22(5):602-6. [MORE INFORMATION](#)

Dementia/ Alzheimer

Heude B, Ducimetière P, Berr C. Cognitive decline and fatty acid composition of erythrocyte membranes - The EVA Study. *Am J Clin Nutr* 2003;77:803-8. [MORE INFORMATION](#)

Barberger-Gateau P, Letenneur L, Deschamps V, Pérès K, Dartigues J-F, Renaud S. Fish, meat, and risk of dementia: cohort study *BMJ* 2002;325:932-3. [MORE INFORMATION](#)

Morris MC, Evans DA, Bienias JL, Tangney CC, Bennett DA, Wilson RS, Aggarwal N, Schneider J. Consumption of fish and n-3 fatty acids and risk of incident Alzheimer disease. Arch Neurol 2003;60:940-6. [MORE INFORMATION](#)

Friedland RP. Fish consumption and the risk of Alzheimer disease. 2003;60:923-4. [MORE INFORMATION](#)

Maclean CH, Issa AM, Newberry SJ, et al. Effects of omega-3 fatty acids on cognitive function with aging, dementia, and neurological diseases. Evid Rep Technol Assess (Summ) 2005;Feb(114):1-3. [MORE INFORMATION](#)

Morris MC, Evans DA, Tangney CC, Biennas JL, Wiolson RS. Fish consumption and cognitive decline with age in large community study. Arch Neurol 2005;62:1849-53. [MORE INFORMATION](#)

Kotani S, Sakaguchi E et al. Dietary supplementation of arachidonic and docosahexaenoic acids improves cognitive dysfunction. Neurosci Res. 2006 Aug 11; [Epub ahead of print].

Freund-Levi Y, Eriksdotter-Jönhagen M, Cederholm T, et al. Omega-3 Fatty Acid Treatment in 174 Patients With Mild to Moderate Alzheimer Disease: OmegAD Study. A Randomized Double-blind Trial. Arch Neurol. 2006;63:1402-1408. [MORE INFORMATION](#)

Kotani S, Sakaguchi E, Warashina S, et. al Dietary supplementation of arachidonic and docosahexaenoic acids improves cognitive dysfunction. Neurosci Res. 2006;56:159-64. [MORE INFORMATION](#)

Johnson EJ, Schaefer EJ. Potential role of dietary n-3 fatty acids in the prevention of dementia and macular degeneration. Am J Clin Nutr. 2006;83(6 Suppl):1494S-1498S. [MORE INFORMATION](#)

Kotani S, Sakaguchi E, Warashina S, et. al Dietary supplementation of arachidonic and docosahexaenoic acids improves cognitive dysfunction. Neurosci Res. 2006;56:159-64. [MORE INFORMATION](#)

Schaefer EJ, Bongard V, Beiser AS, Lamon-Fava S, Robins SJ, et al. Plasma Phosphatidylcholine Docosahexaenoic Acid Content and Risk of Dementia and Alzheimer Disease: The Framingham Heart Study. Arch Neurol. 2006;63:1545-50.

Morris MC. Docosahexaenoic Acid and Alzheimer Disease Arch Neurol. 2006;63:1527-8. [MORE INFORMATION](#)

Morris MC, Evans DA, Tangney CC, et al. Relation of the tocopherol forms to incident Alzheimer disease and to cognitive change. Am J Clin Nutr. 2005;81:508-14. [MORE INFORMATION](#)

Connor WE, Connor SL The importance of fish and docosahexaenoic acid in Alzheimer disease Am J Clin Nutr 2007;85:929-30. [MORE INFORMATION](#)

Beydoun MA, Kaufman JS, Satia JA, et al. Plasma n-3 fatty acids and the risk of cognitive decline in older adults: the Atherosclerosis Risk in Communities Study. Am J Clin Nutr 2007;85:1103-11. [MORE INFORMATION](#)

van Gelder BM, Tijhuis M, Kalmijn S, Kromhout D. Fish consumption, n-3 fatty acids, and subsequent 5-y cognitive decline in elderly men: the Zutphen Elderly Study. Am J Clin Nutr 2007; 85: 1142-7. [MORE INFORMATION](#)

Freund-Levi Y, Basun H, Cederholm T, et al. Omega-3 supplementation in mild to moderate Alzheimer's disease: effects on neuropsychiatric symptoms. International Journal of Geriatric Psychiatry 21 June 2007, doi 10.1002/gps.1857. [MORE INFORMATION](#)

Nurk E, Drevon CA, Refsum H, Solvoll K, Vollset SE, Nygård O, Nygaard HA, Engedal K, Tell GS, Smith AD. Cognitive performance among the elderly and dietary fish intake: the Hordaland Health Study. Am J Clin Nutr. 2007;86(5):1470-8. [MORE INFORMATION](#)

Dullemeijer C, Durga J, Brouwer IA, van de Rest O, Kok FJ, Brummer RJ, van Boxtel MP, Verhoef P. n 3 Fatty acid proportions in plasma and cognitive performance in older adults. Am J Clin Nutr. 2007;86(5):1479-85. [MORE INFORMATION](#)

Rosenberg IH. Rethinking brain food. Am J Clin Nutr. 2007;86(5):1259-60. [MORE INFORMATION](#)

Barberger-Gateau P, Raffaitin C, Letenneur L, Berr C, Tzourio C, Dartigues JF, Alpérovitch A. Dietary patterns and risk of dementia: The Three-City cohort study. Neurology. 2007;69(20):1921-30. [MORE INFORMATION](#)

Song C, Zhao S. Omega-3 fatty acid eicosapentaenoic acid. A new treatment for psychiatric and neurodegenerative diseases: a review of clinical investigations. *Expert Opin Investig Drugs*. 2007;16(10):1627-38. [MORE INFORMATION](#)

Cherubini A, Andres-Lacueva C, Martin A, Lauretani F, Iorio AD, Bartali B, Corsi A, Bandinelli S, Mattson MP, Ferrucci L. Low plasma N-3 fatty acids and dementia in older persons: the InCHIANTI study. *J Gerontol A Biol Sci Med Sci*. 2007 Oct;62(10):1120-6. [MORE INFORMATION](#)

Ma QL, Teter B, Ubeda OJ, Morihara T, Dhoot D, Nyby MD, Tuck ML, Frautschy SA, Cole GM. Omega-3 fatty acid docosahexaenoic acid increases SorLA/LR11, a sorting protein with reduced expression in sporadic Alzheimer's disease (AD): relevance to AD prevention. *J Neurosci*. 2007;27(52):14299-307. [MORE INFORMATION](#)

Offe K, Dodson SE, Shoemaker JT, Fritz JJ, Gearing M, Levey AI, Lah JJ. The lipoprotein receptor LR11 regulates amyloid beta production and amyloid precursor protein traffic in endosomal compartments. *J Neurosci*. 2006 Feb 1;26(5):1596-603. [MORE INFORMATION](#)

Samieri C, Féart C, Letenneur L, Dartigues JF, Pérès K, Auriacombe S, Peuchant E, Delcourt C, Barberger-Gateau P. Low plasma eicosapentaenoic acid and depressive symptomatology are independent predictors of dementia risk. *Am J Clin Nutr*. 2008 Sep;88(3):714-21. [MORE INFORMATION](#)

Chiu CC, Su KP, Cheng TC, Liu HC, Chang CJ, Dewey ME, Stewart R, Huang SY. The effects of omega-3 fatty acids monotherapy in Alzheimer's disease and mild cognitive impairment: a preliminary randomized double-blind placebo-controlled study. *Prog Neuropsychopharmacol Biol Psychiatry*. 2008;32(6):1538-44. [MORE INFORMATION](#)

Puri BK, Bydder GM, Manku MS, Clarke A, Waldman AD, Beckmann CF. Reduction in cerebral atrophy associated with ethyl-eicosapentaenoic acid treatment in patients with Huntington's disease. *J Int Med Res*. 2008;36(5):896-905. [MORE INFORMATION](#)

Irving GF, Freund-Levi Y, Eriksdotter-Jönhagen M, Basun H, Brismar K, Hjorth E, Palmblad J, Vessby B, Vedin I, Wahlund LO, Cederholm T. Omega-3 fatty acid supplementation effects on weight and appetite in patients with Alzheimer's disease: the omega-3 Alzheimer's disease study. *J Am Geriatr Soc*. 2009;57(1):11-7. [MORE INFORMATION](#)

Albanese E, Dangour AD, Uauy R, Acosta D, Guerra M, Guerra SS, Huang Y, Jacob K, Llibre de Rodriguez J, Noriega LH, Salas A, Sosa AL, Sousa RM, Williams J, Ferri CP, Prince MJ. Dietary fish and meat intake and dementia in Latin America, China, and India: a 10/66 Dementia Research Group population-based study. *Am J Clin Nutr*. 2009 Jun 24. [Epub ahead of print] [MORE INFORMATION](#)

Kröger E, Verreault R, Carmichael PH, Lindsay J, Julien P, Dewailly E, Ayotte P, Laurin D. Omega-3 fatty acids and risk of dementia: the Canadian Study of Health and Aging. *Am J Clin Nutr*. 2009;90(1):184-92. [MORE INFORMATION](#)

Devore EE, Grodstein F, van Rooij FJ, Hofman A, Rosner B, Stampfer MJ, Witteman JC, Breteler MM. Dietary intake of fish and omega-3 fatty acids in relation to long-term dementia risk. *Am J Clin Nutr*. 2009;90(1):170-6. [MORE INFORMATION](#)

Ma QL, Yang F, Rosario ER, Ubeda OJ, Beech W, Gant DJ, Chen PP, Hudspeth B, Chen C, Zhao Y, Vinters HV, Frautschy SA, Cole GM. Beta-amyloid oligomers induce phosphorylation of tau and inactivation of insulin receptor substrate via c-Jun N-terminal kinase signaling: suppression by omega-3 fatty acids and curcumin. *J Neurosci*. 2009 Jul 15;29(28):9078-89. [MORE INFORMATION](#)

Albanese E, Dangour AD, Uauy R, Acosta D, Guerra M, Guerra SS, Huang Y, Jacob KS, de Rodriguez JL, Noriega LH, Salas A, Sosa AL, Sousa RM, Williams J, Ferri CP, Prince MJ. Dietary fish and meat intake and dementia in Latin America, China, and India: a 10/66 Dementia Research Group population-based study. *Am J Clin Nutr*. 2009;90(2):392-400. [MORE INFORMATION](#)

van de Rest O, Spiro A 3rd, Krall-Kaye E, Geleijnse JM, de Groot LC, Tucker KL. Intakes of (n-3) fatty acids and fatty fish are not associated with cognitive performance and 6-year cognitive change in men participating in the Veterans Affairs Normative Aging Study. *J Nutr*. 2009 Dec;139(12):2329-36. [MORE INFORMATION](#)

Kim JL, Winkvist A, Aberg MA, Aberg N, Sundberg R, Torén K, Brisman J. Fish consumption and school grades in Swedish adolescents: a study of the large general population. *Acta Paediatr*. 2010 Jan;99(1):72-7. [MORE INFORMATION](#)

Muldoon MF, Ryan CM, Sheu L, Yao JK, Conklin SM, Manuck SB. Serum Phospholipid Docosahexaenoic Acid Is Associated with Cognitive Functioning during Middle Adulthood. *J Nutr*. 2010 Apr; 140(4):848-53. [MORE INFORMATION](#)

Muldoon MF, Ryan CM, Sheu L, Yao JK, Conklin SM, Manuck SB. Serum phospholipid docosahexaenoic acid is associated with cognitive functioning during middle adulthood. *J Nutr*. 2010 Apr; 140(4):848-53. Epub 2010 Feb 24. [MORE INFORMATION](#)

Yurko-Mauro K, McCarthy D, Rom D, Nelson EB, Ryan AS, Blackwell A, Salem N Jr, Stedman M; on behalf of the MIDAS Investigators. Beneficial effects of docosahexaenoic acid on cognition in age-related cognitive decline. *Alzheimers Dement*. 2010 Nov; 6(6):456-64 [MORE INFORMATION](#)

Dangour AD, Allen E, Elbourne D, Fasey N, Fletcher AE, Hardy P, Holder GE, Knight R, Letley L, Richards M, Uauy R. Effect of 2-y n-3 long-chain polyunsaturated fatty acid supplementation on cognitive function in older people: a randomized, double-blind, controlled trial. *Am J Clin Nutr*. 2010 Jun; 91(6):1725-32. [MORE INFORMATION](#)

Quinn JF, Raman R, Thomas RG, Yurko-Mauro K, Nelson EB, Van Dyck C, Galvin JE, Emond J, Jack Jr CR, Weiner M, Shinto L, Aisen PS. Docosahexaenoic Acid Supplementation and Cognitive Decline in Alzheimer Disease. A Randomized Trial. *JAMA*. 2010; 304(17):1903-1911. doi:10.1001/jama.2010.1510 [MORE INFORMATION](#)

Kesse Guyot E, Péneau S, Ferry M, Jeandel C, Hercberg S, Galan P. Thirteen-Year Prospective Study between Fish Consumption, Long-Chain n-3 Fatty Acids Intakes and Cognitive Function. *J Nutr Health Aging*. 2011; 15(2):115-20. [MORE INFORMATION](#)

Gao Q, Niti M, Feng L, Yap KB, Ng TP. Omega-3 polyunsaturated fatty acid supplements and cognitive decline: Singapore Longitudinal Aging Studies. *J Nutr Health Aging*. 2011; 15(1):32-5. [MORE INFORMATION](#)

Lopez LB, Kritz-Silverstein D, Barrett Connor E. High dietary and plasma levels of the omega-3 fatty acid docosahexaenoic acid are associated with decreased dementia risk: the Rancho Bernardo study. *J Nutr Health Aging*. 2011; 15(1):25-31. [MORE INFORMATION](#)

Zhao Y, Calon F, Julien C, Winkler JW, Petasis NA, Lukiw WJ, Bazan NG. Docosahexaenoic acid-derived neuroprotectin D1 induces neuronal survival via secretase- and PPAR γ -mediated mechanisms in Alzheimer's

disease models. PLoS One. 2011 Jan 5;6(1):e15816. [MORE INFORMATION](#)

Yurko-Mauro K, McCarthy D, Rom D, Nelson EB, Ryan AS, Blackwell A, Salem N Jr, Stedman M; MIDAS Investigators. Beneficial effects of docosahexaenoic acid on cognition in age-related cognitive decline. *Alzheimers Dement*. 2010 Nov;6(6):456-64. [MORE INFORMATION](#)

Sinn N, Milte CM, Street SJ, Buckley JD, Coates AM, Petkov J, Howe PR. Effects of n-3 fatty acids, EPA v. DHA, on depressive symptoms, quality of life, memory and executive function in older adults with mild cognitive impairment: a 6-month randomised controlled trial. *Br J Nutr*. 2011 Sep 20:1-12. [Epub ahead of print] [MORE INFORMATION](#)

Bowman GL, Silbert LC, Howieson D, Dodge HH, Traber MG, Frei B, Kaye JA, Shannon J, Quinn JF. Nutrient biomarker patterns, cognitive function, and MRI measures of brain aging. *Neurology*. 2012 Jan 24;78(4):241-9. [MORE INFORMATION](#)

Chiu CC, Frangou S, Chang CJ, Chiu WC, Liu HC, Sun IW, Liu SI, Lu ML, Chen CH, Huang SY, Dewey ME, Stewart R. Associations between n-3 PUFA concentrations and cognitive function after recovery from late-life depression. *Am J Clin Nutr*. 2012 Jan 4. [Epub ahead of print] [MORE INFORMATION](#)

Gu Y, Schupf N, Cosentino SA, Luchsinger JA, Scarmeas N. Nutrient intake and plasma β -amyloid. *Neurology*. 2012 May 2. [Epub ahead of print] [MORE INFORMATION](#)

Tan ZS, Harris WS, Beiser AS, Au R, Himali JJ, Debette S, Pikula A, Decarli C, Wolf PA, Vasan RS, Robins SJ, Seshadri S. Red blood cell ω -3 fatty acid levels and markers of accelerated brain aging. *Neurology*. 2012 Feb 28;78(9):658-64. [MORE INFORMATION](#)

Sydenham E, Dangour AD, Lim WS. Omega 3 fatty acid for the prevention of cognitive decline and dementia. *Cochrane Database Syst Rev*. 2012 Jun 13;6:CD005379. [MORE INFORMATION](#)

Dangour AD, Andreeva VA, Sydenham E, Uauy R. Omega 3 fatty acids and cognitive health in older people. *Br J Nutr*. 2012 Jun;107 Suppl 2:S152-8. [MORE INFORMATION](#)

Sinn N, Milte CM, Street SJ, Buckley JD, Coates AM, Petkov J, Howe PR. Effects of n-3 fatty acids, EPA v. DHA, on depressive symptoms, quality of life, memory and executive function in older adults with mild cognitive

impairment: a 6-month randomised controlled trial. *Br J Nutr.* 2012 Jun; 107(11):1682-93. Epub 2011 Sep 20. [MORE INFORMATION](#)

Gu Y, Schupf N, Cosentino SA, Luchsinger JA, Scarmeas N. Nutrient intake and plasma β -amyloid. *Neurology.* 2012 Jun 5; 78(23):1832-40. Epub 2012 May 2. [MORE INFORMATION](#)

Nilsson A, Radeborg K, Salo I, Björck I. Effects of supplementation with n-3 polyunsaturated fatty acids on cognitive performance and cardiometabolic risk markers in healthy 51 to 72 years old subjects: a randomized controlled cross-over study. *Nutr J.* 2012 Nov 22; 11(1):99. [Epub ahead of print] [MORE INFORMATION](#)

Lin PY, Chiu CC, Huang SY, Su KP A meta-analytic review of polyunsaturated fatty acid compositions in dementia. *J Clin Psychiatry.* 2012 Sep; 73(9):1245-54. doi: 10.4088/JCP.11r07546. Epub 2012 Aug 7. [MORE INFORMATION](#)

Stonehouse W, Conlon CA, Podd J, Hill SR, Minihane AM, Haskell C, Kennedy D. DHA supplementation improved both memory and reaction time in healthy young adults: a randomized controlled trial. *Am J Clin Nutr.* 2013 May; 97(5):1134-43. doi: 10.3945/ajcn.112.053371. Epub 2013 Mar 20. [MORE INFORMATION](#)

Witte AV, Kerti L, Hermannstädter HM, Fiebach JB, Schreiber SJ, Schuchardt JP, Hahn A, Flöel A. Long-Chain Omega-3 Fatty Acids Improve Brain Function and Structure in Older Adults. *Cereb Cortex.* 2013 Jun 24. [Epub ahead of print] [MORE INFORMATION](#)

Lee LK, Shahar S, Chin AV, Yusoff NA. Docosahexaenoic acid-concentrated fish oil supplementation in subjects with mild cognitive impairment (MCI): a 12-month randomised, double-blind, placebo-controlled trial. *Psychopharmacology (Berl).* 2013 Feb; 225(3):605-12. doi: 10.1007/s00213-012-2848-0. Epub 2012 Aug 30. [MORE INFORMATION](#)

Depression

Maes M, Smith R, Christophe A, Cosyns P, Desnyder R, Meltzer H. Fatty acid composition in major depression: decreased w3 fractions in cholesteryl esters and increased C20:4w6/C20:5w3 ratio in cholesteryl esters and phospholipids. *J Affective Disorders* 1996; 38: 35-46.

Bruinsma KA, Taren DL. Dieting, Essential fatty acid intake, and depression. Nutrition reviews 2000;58:98-108. [MORE INFORMATION](#)

Severus E, Littman AB, Stoll AL. Omega-3 fatty acids, homocystein, and the increased risk of cardiovascular mortality in major depressive disorder. Rev Psychiatry 2001;9:280-93. [MORE INFORMATION](#)

Tiemeier H, van Tuijl HR, Hofman A, Kiliaan AJ, Breteler MMB. Plasma fatty acid composition and depression are associated in the elderly: the Rotterdam Study. Am J Clin Nutr 2003;78:40-6. [MORE INFORMATION](#)

Maes M, Christophe A, Delange J, Altamura C, Neels H, Meltzer HY. Lowered w3 polyunsaturated fatty acids in serum phospholipids and cholesteryl ester of depressed patients. Psychiatry Research 1999;85:275-91. [MORE INFORMATION](#)

Hibbeln JR. Seafood consumption, the DHA content of mothers' milk and prevalence rates of postpartum depression: a cross-national, ecological analysis. J Affective Disorders 2002;69:15-29. [MORE INFORMATION](#)

Hibbeln JA, Salem N. Dietary polyunsaturated fatty acids and depression: when cholesterol does not satisfy. Am J Clin Nutr. 1995;62:1-9.

Maes M, Smith R, Christophe A, et al. Fatty acid composition in major depression: decreased omega 3 fractions in cholesteryl esters and increased C20: 4 omega 6/C20:5 omega 3 ratio in cholesteryl esters and phospholipids. J Affect Disord. 1996;38:35-46. [MORE INFORMATION](#)

Huan M, Hamazaki K, Sun Y, et al. Suicide attempt and n-3 fatty acid levels in red blood cells: a case control study in China. Biol Psychiatry. 2004 Oct 1;56(7):490-6. [MORE INFORMATION](#)

Mamalakis G, Kalogeropoulos N, Andrikopoulos N, Hatzis C, Kromhout D, Moschandreas J, Kafatos A. Depression and long chain n-3 fatty acids in adipose tissue in adults from Crete. Eur J Clin Nutr. 2006;60:882-8. [MORE INFORMATION](#)

Sublette ME, Hibbeln JR, Galfalvy H, Oquendo MA, Mann J. Omega-3 polyunsaturated essential fatty acid status as a predictor of future suicide risk. J Am J Psychiatry. 2006;163:1100-2. [MORE INFORMATION](#)

Williams AL, Katz D, Ali A, et al. Do essential fatty acids have a role in the treatment of depression?. J Affect Disord. 2006;93:117-23. [MORE INFORMATION](#)

Sontrop J, Campbell MK. Omega-3 polyunsaturated fatty acids and depression: a review of the evidence and a methodological critique. *Prev Med.* 2006;42: 4-13. [MORE INFORMATION](#)

Freeman MP, Hibbeln JR, Wisner KL, et al. Omega-3 fatty acids: evidence basis for treatment and future research in psychiatry. *J Clin Psychiatry.* 2006;67(12):1954-67. [MORE INFORMATION](#)

Kamphuis MH, Geerlings MI, Tijhuis MA, et al. Depression and cardiovascular mortality: a role for n-3 fatty acids? *Am J Clin Nutr.* 2006;84(6): 1513-7. [MORE INFORMATION](#)

Hallahan B, Hibbeln JR, Davis JM, Garland MR. Omega-3 fatty acid supplementation in patients with recurrent self-harm: Single-centre double-blind randomised controlled trial. *Br J Psychiatry.* 2007;190: 118-122. [MORE INFORMATION](#)

Buydens-Branchey L, Branchey M. n-3 polyunsaturated fatty acids decrease anxiety feelings in a population of substance abusers. *J Clin Psychopharmacol.* 2006;26(6):661-5. [MORE INFORMATION](#)

Schins A, Crijns HJ, Brummer RJ, et al. Altered omega-3 polyunsaturated fatty acid status in depressed post-myocardial infarction patients. *Acta Psychiatr Scand.* 2007;115(1):35-40. [MORE INFORMATION](#)

Ross BM. Omega-3 fatty acid deficiency in major depressive disorder is caused by the interaction between diet and a genetically determined abnormality in phospholipid metabolism. *Med Hypotheses.* 2007;68(3):515-24. [MORE INFORMATION](#)

Conklin SM, Gianaros PJ, et al, Long-chain omega-3 fatty acid intake is associated positively with corticolimbic gray matter volume in healthy adults," *Neurosci Lett*, 2007; 421(3): 209-12. [MORE INFORMATION](#)

McNamara RK, Hahn CG, Jandacek R, Rider T, Tso P, Stanford KE, Richtand NM Selective deficits in the omega-3 fatty acid docosahexaenoic acid in the postmortem orbitofrontal cortex of patients with major depressive disorder. *Biol Psychiatry.* 2007;62(1):17-24 [MORE INFORMATION](#)

Lin PY, Su KP. A meta-analytic review of double-blind, placebo-controlled trials of antidepressant efficacy of omega-3 fatty acids. *J Clin Psychiatry.* 2007 Jul;68(7):1056-61. [MORE INFORMATION](#)

Raeder MB, Steen VM, Vollset SE, Bjelland I. Associations between cod

liver oil use and symptoms of depression: the Hordaland Health Study. *J Affect Disord*. 2007; 101(1-3):245-9. [MORE INFORMATION](#)

Sanchez-Villegas A, Henríquez P, Figueiras A, Ortuño F, Lahortiga F, Martínez-González MA. Long chain omega-3 fatty acids intake, fish consumption and mental disorders in the SUN cohort study. *Eur J Nutr*. 2007; 46(6):337-46. [MORE INFORMATION](#)

Song C, Zhao S. Omega-3 fatty acid eicosapentaenoic acid. A new treatment for psychiatric and neurodegenerative diseases: a review of clinical investigations. *Expert Opin Investig Drugs*. 2007; 16(10):1627-38. [MORE INFORMATION](#)

Conklin SM, Manuck SB, Yao JK, Flory JD, Hibbeln JR, Muldoon MF. High omega-6 and low omega-3 fatty acids are associated with depressive symptoms and neuroticism. *Psychosom Med*. 2007 Dec; 69(9):932-4. Epub 2007 Nov 8. [MORE INFORMATION](#)

Rogers PJ, Appleton KM, Kessler D, Peters TJ, Gunnell D, Hayward RC, Heatherley SV, Christian LM, McNaughton SA, Ness AR. No effect of n-3 long-chain polyunsaturated fatty acid (EPA and DHA) supplementation on depressed mood and cognitive function: a randomised controlled trial. *Br J Nutr*. 2008; 99(2):421-31. [MORE INFORMATION](#)

Jazayeri S, Tehrani-Doost M, Keshavarz SA, Hosseini M, Djazayeri A, Amini H, Jalali M, Peet M. Comparison of therapeutic effects of omega-3 fatty acid eicosapentaenoic acid and fluoxetine, separately and in combination, in major depressive disorder. *Aust N Z J Psychiatry*. 2008; 42(3):192-8. [MORE INFORMATION](#)

Su KP, Huang SY, Chiu TH, Huang KC, Huang CL, Chang HC, Pariante CM. Omega-3 Fatty Acids for Major Depressive Disorder During Pregnancy: Results From a Randomized, Double-Blind, Placebo-Controlled Trial. *J Clin Psychiatry*. 2008 Apr; 69(4):644-51. [MORE INFORMATION](#)

Féart C, Peuchant E, Letenneur L, Samieri C, Montagnier D, Fourrier-Reglat A, Barberger-Gateau P. Plasma eicosapentaenoic acid is inversely associated with severity of depressive symptomatology in the elderly: data from the Bordeaux sample of the Three-City Study. *Am J Clin Nutr*. 2008; 87(5):1156-62. [MORE INFORMATION](#)

da Silva TM, Munhoz RP, Alvarez C, Naliwaiko K, Kiss A, Andreatini R, Ferraz AC. Depression in Parkinson's disease: A double-blind, randomized, placebo-controlled pilot study of omega-3 fatty-acid

supplementation. J Affect Disord. 2008 Dec;111(2-3):351-9.. [MORE INFORMATION](#)

Lucas M, Asselin G, Mérette C, Poulin MJ, Dodin S. Ethyl-eicosapentaenoic acid for the treatment of psychological distress and depressive symptoms in middle-aged women: a double-blind, placebo-controlled, randomized clinical trial. Am J Clin Nutr. 2009;89(2):641-51. [MORE INFORMATION](#)

Colangelo LA, He K, Whooley MA, Daviglius ML, Liu K. Higher dietary intake of long-chain omega-3 polyunsaturated fatty acids is inversely associated with depressive symptoms in women. Nutrition Published online ahead of print, 4 February 2009 [MORE INFORMATION](#)

Appleton KM, Rogers PJ, Ness AR. Is there a role for n-3 long-chain polyunsaturated fatty acids in the regulation of mood and behaviour? A review of the evidence to date from epidemiological studies, clinical studies and intervention trials. Nutr Res Rev. 2008;21(1):13-41. [MORE INFORMATION](#)

Rees AM, Austin MP, Owen C, Parker G. Omega-3 deficiency associated with perinatal depression: Case control study. Psychiatry Res. 2009 Mar 4. [Epub ahead of print] [MORE INFORMATION](#)

Golding J, Steer C, Emmett P, Davis JM, Hibbeln JR. High levels of Depressive Symptoms in Pregnancy With Low Omega-3 Fatty Acid Intake From Fish. Epidemiology. 2009 Jul;20(4):598-603. [MORE INFORMATION](#)

Lucas M, Asselin G, Mérette C, Poulin MJ, Dodin S. Ethyl-eicosapentaenoic acid for the treatment of psychological distress and depressive symptoms in middle-aged women: a double-blind, placebo-controlled, randomized clinical trial. Am J Clin Nutr. 2009;89(2):641-51. [MORE INFORMATION](#)

Strøm M, Mortensen EL, Halldorsson TI, Thorsdottir I, Olsen SF. Fish and long-chain n-3 polyunsaturated fatty acid intakes during pregnancy and risk of postpartum depression: a prospective study based on a large national birth cohort. Am J Clin Nutr. 2009;90(1):149-55. [MORE INFORMATION](#)

Bountziouka V, Polychronopoulos E, Zeimbekis A, Papavenetiou E, Ladoukaki E, Papairakleous N, Gotsis E, Metallinos G, Lionis C, Panagiotakos D. Long-term fish intake is associated with less severe depressive symptoms among elderly men and women: the MEDIS

(MEDiterranean ISlands Elderly) epidemiological study. *J Aging Health*. 2009; 21(6):864-80. [MORE INFORMATION](#)

Kraguljac NV, Montori VM, Pavuluri M, Chai HS, Wilson BS, Unal SS. Efficacy of omega-3 Fatty acids in mood disorders - a systematic review and metaanalysis. *Psychopharmacol Bull*. 2009; 42(3): 39-54. [MORE INFORMATION](#)

Carney RM, Freedland KE, Rubin EH, Rich MW, Steinmeyer BC, Harris WS. Omega-3 augmentation of sertraline in treatment of depression in patients with coronary heart disease: a randomized controlled trial. *JAMA*. 2009; 302(15):1651-7. [MORE INFORMATION](#)

Leung BM, Kaplan BJ. Perinatal depression: prevalence, risks, and the nutrition link--a review of the literature. *J Am Diet Assoc*. 2009 Sep; 109(9): 1566-75. [MORE INFORMATION](#)

Freeman MP. Omega-3 fatty acids in major depressive disorder. *J Clin Psychiatry*. 2009; 70 Suppl 5:7-11. [MORE INFORMATION](#)

Appleton KM, Rogers PJ, Ness AR. Updated systematic review and meta-analysis of the effects of n-3 long-chain polyunsaturated fatty acids on depressed mood. *Am J Clin Nutr*. 2010 Mar; 91(3): 757-70. [MORE INFORMATION](#)

Martins JG. EPA but not DHA appears to be responsible for the efficacy of omega-3 long chain polyunsaturated fatty acid supplementation in depression: evidence from a meta-analysis of randomized controlled trials. *J Am Coll Nutr*. 2009 Oct; 28(5): 525-42. [MORE INFORMATION](#)

Jazayeri S, Keshavarz SA, Tehrani-Doost M, Djalali M, Hosseini M, Amini H, Chamari M, Djazayeri A. Effects of eicosapentaenoic acid and fluoxetine on plasma cortisol, serum interleukin-1beta and interleukin-6 concentrations in patients with major depressive disorder. *Psychiatry Res*. 2010 Jun 30; 178(1): 112-5. [MORE INFORMATION](#)

Lespérance F, Frasere-Smith N, St-André E, Turecki G, Lespérance P, Wisniewski SR. The efficacy of omega-3 supplementation for major depression: a randomized controlled trial. *J Clin Psychiatry*. 2010 Jun 15. [Epub ahead of print] [MORE INFORMATION](#)

Lin PY, Huang SY, Su KP. A meta-analytic review of polyunsaturated fatty acid compositions in patients with depression. *Biol Psychiatry*. 2010 Jul 15; 68(2): 140-7. [MORE INFORMATION](#)

Jans LA, Giltay EJ, Willem Van der Does AJ. The efficacy of n-3 fatty acids DHA and EPA (fish oil) for perinatal depression. *Br J Nutr*. 2010 Nov 16.;1-9. [MORE INFORMATION](#)

Rondanelli M, Giacosa A, Opizzi A, Pelucchi C, La Vecchia C, Montorfano G, Negroni M, Berra B, Politi P, Rizzo AM. Effect of omega-3 fatty acids supplementation on depressive symptoms and on health-related quality of life in the treatment of elderly women with depression: a double-blind, placebo-controlled, randomized clinical trial. *J Am Coll Nutr*. 2010 Feb;29(1):55-64. [MORE INFORMATION](#)

Baghai TC, Varallo-Bedarida G, Born C, Häfner S, Schüle C, Eser D, Rupprecht R, Bondy B, von Schacky C. Major depressive disorder is associated with cardiovascular risk factors and low Omega-3 index. *J Clin Psychiatry*. 2010 Dec 14. [Epub ahead of print] [MORE INFORMATION](#)

Rondanelli M, Giacosa A, Opizzi A, Pelucchi C, La Vecchia C, Montorfano G, Negroni M, Berra B, Politi P, Rizzo AM. Long chain omega 3 polyunsaturated Fatty acids supplementation in the treatment of elderly depression: effects on depressive symptoms, on phospholipids Fatty acids profile and on health-related quality of life. *J Nutr Health Aging*. 2011;15(11):37-44. [MORE INFORMATION](#)

Lafourcade M, Larrieu T, Mato S, Duffaud A, Sepers M, Matias I, De Smedt-Peyrusse V, Labrousse VF, Bretillon L, Matute C, Rodríguez-Puertas R, Layé S, Manzoni OJ. Nutritional omega-3 deficiency abolishes endocannabinoid-mediated neuronal functions. *Nat Neurosci*. 2011 Jan 30. [MORE INFORMATION](#)

Tajalizadekhoob Y, Sharifi F, Fakhrzadeh H, Mirarefin M, Ghaderpanahi M, Badamchizade Z, Azimipour S. The effect of low-dose omega 3 fatty acids on the treatment of mild to moderate depression in the elderly: a double-blind, randomized, placebo-controlled study. *Eur Arch Psychiatry Clin Neurosci*. 2011 Feb 12. [Epub ahead of print] [MORE INFORMATION](#)

Kesse-Guyot E, Péneau S, Ferry M, Jeandel C, Hercberg S, Galan P; SU.VI.MAX 2 Research Group. Thirteen-year prospective study between fish consumption, long-chain n-3 fatty acids intakes and cognitive function. *J Nutr Health Aging*. 2011 Feb;15(2):115-20. [MORE INFORMATION](#)

Rondanelli M, Giacosa A, Opizzi A, Pelucchi C, La Vecchia C, Montorfano G, Negroni M, Berra B, Politi P, Rizzo AM. Effect of omega-3 fatty acids supplementation on depressive symptoms and on health-related quality

of life in the treatment of elderly women with depression: a double-blind, placebo-controlled, randomized clinical trial. *J Am Coll Nutr.* 2010 Feb;29(1):55-64. [MORE INFORMATION](#)

Swenne I, Rosling A, Tengblad S, Vessby B. Omega-3 polyunsaturated essential fatty acids are associated with depression in adolescents with eating disorders and weight loss. *Acta Paediatr.* 2011 Jul 6. doi: 10.1111/j.1651-2227.2011.02400.x. [Epub ahead of print]. [MORE INFORMATION](#)

Rondanelli M, Giacosa A, Opizzi A, Pelucchi C, La Vecchia C, Montorfano G, Negroni M, Berra B, Politi P, Rizzo AM. Long chain omega 3 polyunsaturated fatty acids supplementation in the treatment of elderly depression: effects on depressive symptoms, on phospholipids fatty acids profile and on health-related quality of life. *J Nutr Health Aging.* 2011;15(1):37-44. [MORE INFORMATION](#)

Kiecolt-Glaser JK, Belury MA, Andridge R, Malarkey WB, Glaser R. Omega-3 supplementation lowers inflammation and anxiety in medical students: A randomized controlled trial. *Brain Behav Immun.* 2011 Jul 19. [Epub ahead of print] [MORE INFORMATION](#)

Sinn N, Milte CM, Street SJ, Buckley JD, Coates AM, Petkov J, Howe PR. Effects of n-3 fatty acids, EPA v. DHA, on depressive symptoms, quality of life, memory and executive function in older adults with mild cognitive impairment: a 6-month randomised controlled trial. *Br J Nutr.* 2011 Sep 20:1-12. [Epub ahead of print] [MORE INFORMATION](#)

Sublette ME, Ellis SP, Geant AL, Mann JJ. Meta-analysis of the effects of eicosapentaenoic acid (EPA) in clinical trials in depression. *J Clin Psychiatry.* 2011 Sep 6. [Epub ahead of print] [MORE INFORMATION](#)

Kesse-Guyot E, Touvier M, Andreeva VA, Jeandel C, Ferry M, Hercberg S, Galan P. Cross-Sectional but Not Longitudinal Association Between n-3 Fatty Acid Intake and Depressive Symptoms: Results From the SU.VI.MAX 2 Study. *Am J Epidemiol.* 2012 Feb 2. [Epub ahead of print] [MORE INFORMATION](#)

da Rocha CM, Kac G. High dietary ratio of omega-6 to omega-3 polyunsaturated acids during pregnancy and prevalence of post-partum depression. *Matern Child Nutr.* 2012 Jan;8(1):36-48. doi: 10.1111/j.1740-8709.2010.00256.x [MORE INFORMATION](#)

Lewis MD, Hibbeln JR, Johnson JE, Lin YH, Hyun DY, Loewke JD. Suicide deaths of active-duty US military and ω -3 fatty-acid status: a case-

control comparison. *J Clin Psychiatry*. 2011 Dec;72(12):1585-90. Epub 2011 Aug 23. [MORE INFORMATION](#)

Swenne I, Rosling A, Tengblad S, Vessby B. Omega-3 polyunsaturated essential fatty acids are associated with depression in adolescents with eating disorders and weight loss. *Acta Paediatr*. 2011 Dec;100(12):1610-5. doi: 10.1111/j.1651-2227.2011.02400.x. Epub 2011 Aug 18. [MORE INFORMATION](#)

Hoffmire CA, Block RC, Thevenet-Morrison K, van Wijngaarden E. Associations between omega-3 poly-unsaturated fatty acids from fish consumption and severity of depressive symptoms: An analysis of the 2005-2008 National Health and Nutrition Examination Survey. *Prostaglandins Leukot Essent Fatty Acids*. 2012 Apr 1. [Epub ahead of print] [MORE INFORMATION](#)

Gertsik L, Poland RE, Bresee C, Rapaport MH. Omega-3 fatty acid augmentation of citalopram treatment for patients with major depressive disorder. *J Clin Psychopharmacol*. 2012 Feb;32(1):61-4. [MORE INFORMATION](#)

Hoffmire CA, Block RC, Thevenet-Morrison K, van Wijngaarden E. Associations between omega-3 poly-unsaturated fatty acids from fish consumption and severity of depressive symptoms: an analysis of the 2005-2008 National Health and Nutrition Examination Survey. *Prostaglandins Leukot Essent Fatty Acids*. 2012 Apr;86(4-5):155-60. Epub 2012 Apr 1. [MORE INFORMATION](#)

Pottala JV, Talley JA, Churchill SW, Lynch DA, von Schacky C, Harris WS. Red blood cell fatty acids are associated with depression in a case-control study of adolescents. *Prostaglandins Leukot Essent Fatty Acids*. 2012 Apr;86(4-5):161-5. Epub 2012 Mar 29. [MORE INFORMATION](#)

Rizzo AM, Corsetto PA, Montorfano G, Opizzi A, Faliva M, Giacosa A, Ricevuti G, Berra B, Rondanelli M, Pelucchi C. Comparison between the AA/EPA ratio in depressed and non depressed elderly females: omega-3 fatty acid supplementation correlates with improved symptoms but does not change immunological parameters. *Nutr J*. 2012 Oct 10;11(1):82. [Epub ahead of print] [MORE INFORMATION](#)

Shapiro GD, Fraser WD, Séguin JR. Emerging risk factors for postpartum depression: serotonin transporter genotype and omega-3 Fatty Acid status. *Can J Psychiatry*. 2012 Nov;57(11):704-12. [MORE INFORMATION](#)

Dermatitis/Psoriasis (Allergy)

Bjoerneboe A, Soeuland E, Bjoerneboe G-EA, Rajka G, Drevon CA. Effect of dietary supplementation with eicosapentaenoic acid in the treatment of atopic dermatitis. *Br. J Dermatol* 1987;117:463-9..

Isseroff RR. Fish again for dinner! The role of fish and other dietary oils in the therapy of skin disease. *J Am Acad Dermatol* 1988;19:1073-80 [MORE INFORMATION](#)

Burton JL. Dietary fatty acids and inflammatory skin disease. *Lancet* 1989;i:27-31. [MORE INFORMATION](#)

Sharpe GR, Farr PM. Evening primrose oil and eczema. *Lancet* 1990;i:667-8 [MORE INFORMATION](#)

Soeyland E, Drevon CA. The effect of very long-chain n-3 fatty acids on immune-related skin diseases. *Eur J Clin Nutr* 1993;47:381-8 [MORE INFORMATION](#)

Danno K, Ikai K, Imamura S. Anti-inflammatory effects of eicosapentaenoic acid on experimental skin inflammation models. *Arch Dermatol Res* 1993;285-5. [MORE INFORMATION](#)

Bittiner SB, Tucker WF, Cartwright I, Bleehen SS. A double-blind, randomised, placebo-controlled trial of fish oil in psoriasis. *Lancet* 1988;i:378-80. [MORE INFORMATION](#)

Kragballe K, Fogh K. A low-fat diet supplemented with dietary fish oil (Max-EPA) results in improvement of psoriasis and in formation of leukotriene B5. *Acta Derm Venereol (Stockh)* 1989;69:23-8. [MORE INFORMATION](#)

Kojima T, Terano T, Tanabe E, Okamoto S, Tamura Y, Yoshida S. Effect of highly purified eicosapentaenoic acid on psoriasis. *J Am Acad Dermatol* 1989;21:150-1. [MORE INFORMATION](#)

Gupta AK, Ellis CN, Tellner DC, Anderson TF, Voorhees JJ. Double-blind, placebo-controlled study to evaluate the efficacy of fish oil and low-dose UVB in the treatment of psoriasis. *Br J Dermatol* 1989;120:801-7. [MORE INFORMATION](#)

Soeyland E, Funk J, Rajka G, Sandberg M, Thune P, Rustad L, Helland S, Middelfart K, Odu S, Falk ES, Solvoll K, Bjoerneboe G-EAa, Drevon CE. Effect of dietary supplementation with very-long-chain n-3 fatty acids in patients with psoriasis. *N Engl J Med* 1993; 328:1812-6. [MORE INFORMATION](#)

Mayser P, Mrowietz U, Arenberger P, et al. w-3 fatty acid-based lipid infusion in patients with chronic plaque psoriasis: Results of a double-blind, randomized, placebo-controlled, multicenter trial.. *J Am Acad Dermatol* 1998; 38:539-47. [MORE INFORMATION](#)

Kull I, Bergstrom A, Lilja G, Pershagen G, Wickman M. Fish consumption during the first year of life and development of allergic diseases during childhood. *Allergy*. 2006; 61:1009-15. [MORE INFORMATION](#)

Koch C, Dölle S, Metzger M, Rasche C, Jungclas H, Rühl R, Renz H, Worm M. Docosahexaenoic acid (DHA) supplementation in atopic eczema: a randomized, double-blind, controlled trial. *Br J Dermatol*. 2008; 158(4):786-92. [MORE INFORMATION](#)

Alm B, Aberg N, Erdes L, Möllborg P, Pettersson R, Norvenius G, Goksör E, Wennergren G. Early introduction of fish decreases the risk of eczema in infants. *Arch Dis Child*. 2009 Jan; 94(1): 11-5. [MORE INFORMATION](#)

Alm B, Aberg N, Erdes L, Möllborg P, Pettersson R, Norvenius SG, Goksör E, Wennergren G. Early introduction of fish decreases the risk of eczema in infants. *Arch Dis Child*. 2009; 94(1): 11-5. [MORE INFORMATION](#)

Furuhjelm C, Warstedt K, Larsson J, Fredriksson M, Böttcher MF, Fälth-Magnusson K, Duchén K Fish oil supplementation in pregnancy and lactation may decrease the risk of infant allergy. *Acta Paediatr*. 2009 Sep; 98(9): 1461-7. [MORE INFORMATION](#)

Schnappinger M, Sausenthaler S, Linseisen J, Hauner H, Heinrich J. Fish consumption, allergic sensitisation and allergic diseases in adults. *Ann Nutr Metab*. 2009; 54(1):67-74. [MORE INFORMATION](#)

Furuhjelm C, Warstedt K, Fagerås M, Fälth-Magnusson K, Larsson J, Fredriksson M, Duchén K. Allergic disease in infants up to 2 yr of age in relation to plasma omega-3 fatty acids and maternal fish oil supplementation in pregnancy and lactation. *Pediatric Allergy and Immunology* 2011; Doi no: 10.1111/j.1399-3038.2010.01096.x [MORE INFORMATION](#)

Thijs C, Müller A, Rist L, Kummeling I, Snijders BE, Huber M, van Ree R, Simões-Wüst AP, Dagnelie PC, van den Brandt PA. Fatty acids in breast milk and development of atopic eczema and allergic sensitisation in infancy. *Allergy*. 2011 Jan;66(1):58-67. doi: 10.1111/j.1398-9995.2010.02445.x. [MORE INFORMATION](#)

Klemens CM, Berman DR, Mozurkewich EL. The effect of perinatal omega-3 fatty acid supplementation on inflammatory markers and allergic diseases: a systematic review. *BJOG*. 2011 Jul;118(8):916-25. doi: 10.1111/j.1471-0528.2010.02846.x. [MORE INFORMATION](#)

Palmer DJ, Sullivan T, Gold MS, Prescott SL, Heddle R, Gibson RA, Makrides M. Effect of n-3 long chain polyunsaturated fatty acid supplementation in pregnancy on infants' allergies in first year of life: randomised controlled trial. *BMJ*. 2012 Jan 30;344:e184. doi: 10.1136/bmj.e184. [MORE INFORMATION](#)

Noakes PS, Vlachava M, Kremmyda LS, Diaper ND, Miles EA, Erlewyn-Lajeunesse M, Williams AP, Godfrey KM, Calder PC. Increased intake of oily fish in pregnancy: effects on neonatal immune responses and on clinical outcomes in infants at 6 mo. *Am J Clin Nutr*. 2012 Feb;95(2):395-404. Epub 2012 Jan 4. [MORE INFORMATION](#)

D'Vaz N, Meldrum SJ, Dunstan JA, Lee-Pullen TF, Metcalfe J, Holt BJ, Serralha M, Tulic MK, Mori TA, Prescott SL. Fish oil supplementation in early infancy modulates developing infant immune responses. *Clin Exp Allergy*. 2012 Aug;42(8):1206-16. doi: 10.1111/j.1365-2222.2012.04031.x. [MORE INFORMATION](#)

D'Vaz N, Meldrum SJ, Dunstan JA, Martino D, McCarthy S, Metcalfe J, Tulic MK, Mori TA, Prescott SL. Postnatal Fish Oil Supplementation in High-Risk Infants to Prevent Allergy: Randomized Controlled Trial. *Pediatrics*. 2012 Sep 3. [Epub ahead of print] [MORE INFORMATION](#)

DHA/EPA

Davidson MH, Maki KC, Kalkowski J, Schaefer EJ, Torri SA, Drennan KB. Effects of docosahexaenoic acid on serum lipoproteins in patients with combined hyperlipidemia: a randomized, double-blind, placebo-controlled trial. *J Am Coll Nutr*. 1997 Jun;16(3):236-43. [MORE INFORMATION](#)

Mori TA, Bao DQ, Burke V, Puddey IB, Beilin LJ. Docosahexaenoic acid but not eicosapentaenoic acid lowers ambulatory blood pressure and heart rate in humans. *Hypertension*. 1999;34:253-60. [MORE INFORMATION](#)

Volker DH, FitzGerald PE, Garg ML. The eicosapentaenoic to docosahexaenoic acid ratio of diets affects the pathogenesis of arthritis in Lew/SSN rats. *J Nutr*. 2000;130:559-65. [MORE INFORMATION](#)

Mori TA, Burke V, Puddey IB, Watts GF, O'Neal DN, Best JD, Beilin LJ. Purified eicosapentaenoic and docosahexaenoic acids have differential effects on serum lipids and lipoproteins, LDL particle size, glucose, and insulin in mildly hyperlipidemic men. *Am J Clin Nutr*. 2000;71:1085-94. [MORE INFORMATION](#)

Hughes DA, Pinder AC n-3 polyunsaturated fatty acids inhibit the antigen-presenting function of human monocytes. *Am J Clin Nutr*. 2000 (1 Suppl): 357S-60S. [MORE INFORMATION](#)

Weber P, Raederstorff D. Triglyceride-lowering effect of omega-3 LC-polyunsaturated fatty acids--a review. *Nutr Metab Cardiovasc Dis*. 2000;10:28-37. [MORE INFORMATION](#)

Mori TA, Watts GF, Burke V, Puddey IB, Beilin LJ. Differential effects of eicosapentaenoic acid and docosahexaenoic acid on vascular reactivity of the forearm microcirculation in hyperlipidemic, overweight men. *Circulation* 2000;102:1264-9. [MORE INFORMATION](#)

Woodman RJ, Mori TA, Burke V, Puddey IB, Watts GF, Best JD, Beilin LJ. Docosahexaenoic acid but not eicosapentaenoic acid increases LDL particle size in treated hypertensive type 2 diabetic patients. *Diabetes Care*. 2003 Jan;26(1):253. [MORE INFORMATION](#)

Park Y, Jones PG, Harris WS. Triacylglycerol-rich lipoprotein margination: a potential surrogate for whole-body lipoprotein lipase activity and effects of eicosapentaenoic and docosahexaenoic acids. *Am J Clin Nutr* 2004;80:45-50. [MORE INFORMATION](#)

Mori TA, Woodman RJ. The independent effects of eicosapentaenoic acid and docosahexaenoic acid on cardiovascular risk factors in humans. *Curr Opin Clin Nutr Metab Care* 2006;9:95-104. [MORE INFORMATION](#)

von Schacky C. A review of omega-3 ethyl esters for cardiovascular prevention and treatment of increased blood triglyceride levels. *Vasc Health Risk Manag*. 2006;2(3):251-62. [MORE INFORMATION](#)

Satoh N, Shimatsu A, Kotani K et al. Purified eicosapentaenoic acid reduces small dense LDL, remnant lipoprotein particles, and C-reactive protein in metabolic syndrome. Diabetes Care. 2007; 30(1):144-6. [MORE INFORMATION](#)

Arterburn LM, Hall EB, Oken H. Distribution, interconversion, and dose response of n-3 fatty acids in humans. Am J Clin Nutr. 2006; 83(6 Suppl): 1467S-1476S. [MORE INFORMATION](#)

James MJ, Ursin VM, Cleland LG. Metabolism of stearidonic acid in human subjects: comparison with the metabolism of other n-3 fatty acids. Am J Clin Nutr. 2003; 77(5):1140-5. [MORE INFORMATION](#)

Duda MK, O'shea KM, Tintinu A, Xu W, Khairallah RJ, Barrows BR, Chess DJ, Azimzadeh AM, Harris WS, Sharov VG, Sabbah HN, Stanley WC. Fish Oil, But Not Flaxseed Oil, Decreases Inflammation and Prevents Pressure Overload-Induced Cardiac Dysfunction. Cardiovasc Res. 2008 Nov 17. [Epub ahead of print] [MORE INFORMATION](#)

Sala-Vila A, Castellote AI, López-Sabater MC. The intramolecular position of docosahexaenoic acid in the triacylglycerol sources used for pediatric nutrition has a minimal effect on its metabolic use. Nutr Res. 2008 Mar; 28(3): 131-6. [MORE INFORMATION](#)

Egert S, Kannenberg F, Somoza V, Erbersdobler HF, Wahrburg U. Dietary alpha-linolenic acid, EPA, and DHA have differential effects on LDL fatty acid composition but similar effects on serum lipid profiles in normolipidemic humans. J Nutr. 2009; 139(5):861-8. [MORE INFORMATION](#)

Fekete K, Marosvölgyi T, Jakobik V, Decsi T. Methods of assessment of n-3 long-chain polyunsaturated fatty acid status in humans: a systematic review. Am J Clin Nutr. 2009 Jun; 89(6):2040S-2051S. [MORE INFORMATION](#)

Calder PC, Yaqoob P. Understanding omega-3 polyunsaturated Fatty acids. Postgrad Med. 2009 Nov; 121(6): 148-57. [MORE INFORMATION](#)

Phang M, Sinclair AJ, Lincz LF, Garg ML. Gender-specific inhibition of platelet aggregation following omega-3 fatty acid supplementation. Nutr Metab Cardiovasc Dis. 2010 Aug 11. [Epub ahead of print] [MORE INFORMATION](#)

Lemke SL, Vicini JL, Su H, Goldstein DA, Nemeth MA, Krul ES, Harris WS. Dietary intake of stearidonic acid-enriched soybean oil increases the omega-3 index: randomized, double-blind clinical study of efficacy and safety. *Am J Clin Nutr*. 2010 Oct;92(4):766-75. [MORE INFORMATION](#)

Welch AA, Shakya-Shrestha S, Lentjes MA, Wareham NJ, Khaw KT. Dietary intake and status of n-3 polyunsaturated fatty acids in a population of fish-eating and non-fish-eating meat-eaters, vegetarians, and vegans and the precursor-product ratio of α -linolenic acid to long-chain n-3 polyunsaturated fatty acids: results from the EPIC-Norfolk cohort. *Am J Clin Nutr*. 2010 Nov;92(5):1040-51. [MORE INFORMATION](#)

Wei MY, Jacobson TA. Effects of Eicosapentaenoic Acid Versus Docosahexaenoic Acid on Serum Lipids: A Systematic Review and Meta-Analysis. *Curr Atheroscler Rep*. 2011 Oct 6. [Epub ahead of print] [MORE INFORMATION](#)

Mori TA. Eicosapentaenoic Acid and Docosahexaenoic Acid: Are They Different? PUFA newsletter December 2011

Mozaffarian D, Wu JH. (n-3) Fatty Acids and Cardiovascular Health: Are Effects of EPA and DHA Shared or Complementary? *J Nutr*. 2012 Jan 25. [Epub ahead of print] [MORE INFORMATION](#)

Diabetes

McGrath LT, Brennan GM, Donnelly JP, Johnston GD, Hayes JR, McVeigh GE. Effect of dietary fish oil supplementation on peroxidation of serum lipids in patients with non-insulin dependent diabetes mellitus. *Atherosclerosis* 1996;121:275-83. [MORE INFORMATION](#)

Axelrod L, Camuso J, Williams E, Kleinman K, Briones E, Schoenfeld D. Effects of a small quantity of w-3 fatty acids on risk factors in NIDDM. *Diabetes Care* 1994;17:37-44. [MORE INFORMATION](#)

Toft I, Boenaa KH, Ingebretsen OC, Nordoy A, Jenssen T. Effects of n-3 polyunsaturated fatty acids on glucose homeostasis and blood pressure in essential hypertension. A randomized, controlled trial. *Ann Intern Med* 1995;123:911-8. [MORE INFORMATION](#)

Friedberg CE, Heine RJ, Janssen MJFM, Grobbee DE. Fish oil and glycemic control in diabetes. *Diabetes Care*. 1998;21:494-500. [MORE INFORMATION](#)

Sirtori CR, Crepaldi G, Manzato P, Mancini M, Rivellesse A, Paoletti R, Pazzucconi F, Pamparana F, Stragliotto E. One year treatment with ethyl esters of n-3 fatty acids in patients with hypertriglyceridemia and glucose intolerance reduced triglyceridemia, total cholesterol and increased HDL-C without glycemic alterations. *Atherosclerosis* 1998;137:419-27. [MORE INFORMATION](#)

Ginsberg HN, Illingworth R. Postprandial dyslipidemia: an atherogenic disorder common in patients with diabetes mellitus. *Am J Cardiol* 2001;88(suppl):9H-15H. [MORE INFORMATION](#)

Stene LC, Joner G; Norwegian Childhood Diabetes Study Group. Use of cod liver oil during the first year of life is associated with lower risk of childhood-onset type 1 diabetes: a large, population-based, case-control study. *Am J Clin Nutr*. 2003;78(6):1128-34 [MORE INFORMATION](#)

Mostad IL, Bjerve KS, Bjorgaas MR, Lydersen S, Grill V. Effects of n-3 fatty acids in subjects with type 2 diabetes: reduction of insulin sensitivity and time-dependent alteration from carbohydrate to fat oxidation. *Am J Clin Nutr*. 2006;84:540-50. [MORE INFORMATION](#)

Agency for Healthcare Research and Quality. March 2004. Evidence reports: health effects of omega-3 fatty acids on lipids and glycemic control in type II diabetes and the metabolic syndrome and on inflammatory bowel disease, rheumatoid arthritis, renal disease, systemic lupus erythematosus and osteoporosis. Internet: [MORE INFORMATION](#)

De Caterina R, Madonna R, Bertolotto A, Schmidt EB. n-3 fatty acids in the treatment of diabetic patients: biological rationale and clinical data. *Diabetes Care*. 2007;30(4):1012-26. [MORE INFORMATION](#)

Norris JM, Yin X, Lamb MM, Barriga K, Seifert J, Hoffman M, Orton HD, Barón AE, Clare-Salzler M, Chase HP, Szabo NJ, Erlich H, Eisenbarth GS, Rewers M. Omega-3 polyunsaturated fatty acid intake and islet autoimmunity in children at increased risk for type 1 diabetes. *JAMA*. 2007;298(12):1420-8. [MORE INFORMATION](#)

Hartweg J, Farmer AJ, Holman RR, Neil HA. Meta-analysis of the effects of n-3 polyunsaturated fatty acids on haematological and thrombogenic factors in type 2 diabetes. *Diabetologia*. 2007;50(2):250-8. [MORE INFORMATION](#)

Mita T, Watada H, Ogihara T, Nomiya T, Ogawa O, Kinoshita J, Shimizu T, Hirose T, Tanaka Y, Kawamori R. Eicosapentaenoic acid reduces the progression of carotid intima-media thickness in patients with type 2 diabetes. *Atherosclerosis*. 2007 Mar;191(1):162-7. [MORE INFORMATION](#)

Kabir M, Skurnik G, Naour N, Pechtner V, Meugnier E, Rome S, Quignard-Boulangé A, Vidal H, Slama G, Clément K, Guerre-Millo M, Rizkalla SW. Treatment for 2 mo with n 3 polyunsaturated fatty acids reduces adiposity and some atherogenic factors but does not improve insulin sensitivity in women with type 2 diabetes: a randomized controlled study. *Am J Clin Nutr*. 2007 Dec;86(6):1670-9. [MORE INFORMATION](#)

Hartweg J, Farmer AJ, Perera R, Holman RR, Neil HA. Meta-analysis of the effects of n-3 polyunsaturated fatty acids on lipoproteins and other emerging lipid cardiovascular risk markers in patients with type 2 diabetes. *Diabetologia*. 2007;50(8):1593-602. [MORE INFORMATION](#)

Hartweg J, Perera R, Montori V, Dinneen S, Neil HA, Farmer A. Update of: Cochrane Database Syst Rev. 2001;(3):CD003205. Omega-3 polyunsaturated fatty acids (PUFA) for type 2 diabetes mellitus. . Cochrane Database Syst Rev. 2008 Jan 23;(1):CD003205. [MORE INFORMATION](#)

Ramel A, Martínéz A, Kiely M, Morais G, Bandarra NM, Thorsdottir I. Beneficial effects of long-chain n-3 fatty acids included in an energy-restricted diet on insulin resistance in overweight and obese European young adults. *Diabetologia*. 2008 Jul;51(7):1261-8.. [MORE INFORMATION](#)

Lee CT, Adler AI, Forouhi NG, Luben R, Welch A, Khaw KT, Bingham S, Wareham NJ. Cross-sectional Association Between Fish Consumption and Albuminuria: The European Prospective Investigation of Cancer-Norfolk Study. *Am J Kidney Dis*. 2008 Nov;52(5):876-86.. [MORE INFORMATION](#)

Hartweg J, Farmer AJ, Holman RR, Neil A. Potential impact of omega-3 treatment on cardiovascular disease in type 2 diabetes. *Curr Opin Lipidol*. 2009;20(1):30-8. [MORE INFORMATION](#)

Egert S, Fobker M, Andersen G, Somoza V, Erbersdobler HF, Wahrburg U. Effects of dietary alpha-linolenic acid, eicosapentaenoic acid or docosahexaenoic acid on parameters of glucose metabolism in healthy volunteers. *Ann Nutr Metab.* 2008;53(3-4):182-7. [MORE INFORMATION](#)

Kaushik M, Mozaffarian D, Spiegelman D, Manson JE, Willett WC, Hu FB. Long-chain omega-3 fatty acids, fish intake, and the risk of type 2 diabetes mellitus. *Am J Clin Nutr.* 2009 Sep;90(3):613-20. [MORE INFORMATION](#)

Stirban A, Nandreaan S, Götting C, Tamler R, Pop A, Negrean M, Gawlowski T, Stratmann B, Tschoepe D. Effects of n-3 fatty acids on macro- and microvascular function in subjects with type 2 diabetes mellitus. *Am J Clin Nutr.* 2010 Mar;91(3):808-13. [MORE INFORMATION](#)

Wong CY, Yiu KH, Li SW, Lee S, Tam S, Lau CP, Tse HF. Fish-oil supplement has neutral effects on vascular and metabolic function but improves renal function in patients with Type 2 diabetes mellitus. *Diabet Med.* 2010 Jan;27(1):54-60. [MORE INFORMATION](#)

Lee CC, Sharp SJ, Wexler DJ, Adler AI. Dietary intake of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) and diabetic nephropathy - cohort analysis of the Diabetes Control and Complications Trial (DCCT). *Diabetes Care.* 2010 Jul;33(7):1454-6. [MORE INFORMATION](#)

McEwen B, Morel-Kopp MC, Tofler G, Ward C. Effect of Omega-3 Fish Oil on Cardiovascular Risk in Diabetes. *Diabetes Educ.* 2010 Jul-Aug;36(4):565-84. [MORE INFORMATION](#)

Baik I, Abbott RD, Curb JD, Shin C. Intake of fish and n-3 fatty acids and future risk of metabolic syndrome. *J Am Diet Assoc.* 2010 Jul;110(7):1018-26. [MORE INFORMATION](#)

Lee CC, Sharp SJ, Wexler DJ, Adler AI. Dietary intake of eicosapentaenoic and docosahexaenoic acid and diabetic nephropathy: cohort analysis of the diabetes control and complications trial. *Diabetes Care.* 2010 Jul;33(7):1454-6. [MORE INFORMATION](#)

Shapiro H, Theilla M, Attal-Singer J, Singer P. Effects of polyunsaturated fatty acid consumption in diabetic nephropathy. *Nat Rev Nephrol.* 2011 Feb;7(2):110-21. [MORE INFORMATION](#)

Brostow DP, Odegaard AO, Koh WP, Duval S, Gross MD, Yuan JM, Pereira MA. Omega-3 fatty acids and incident type 2 diabetes: the Singapore Chinese Health Study. *Am J Clin Nutr*. 2011 May 18. [Epub ahead of print] [MORE INFORMATION](#)

Djoussé L, Biggs ML, Lemaitre RN, King IB, Song X, Ix JH, Mukamal KJ, Siscovick DS, Mozaffarian D. Plasma omega-3 fatty acids and incident diabetes in older adults. *Am J Clin Nutr*. 2011 May 18. [Epub ahead of print] [MORE INFORMATION](#)

Villegas R, Xiang YB, Elasy T, Li HL, Yang G, Cai H, Ye F, Gao YT, Shyr Y, Zheng W, Shu XO.] Fish, shellfish, and long-chain n-3 fatty acid consumption and risk of incident type 2 diabetes in middle-aged Chinese men and women. *Am J Clin Nutr*. 2011 Jun 15. [Epub ahead of print] [MORE INFORMATION](#)

Kromhout D, Geleijnse JM, de Goede J, Oude Griep LM, Mulder BJ, de Boer MJ, Deckers JW, Boersma E, Zock PL, Giltay EJ. n-3 Fatty Acids, Ventricular Arrhythmia-Related Events, and Fatal Myocardial Infarction in Postmyocardial Infarction Patients With Diabetes. *Diabetes Care*. 2011 Dec; 34(12):2515-20. [MORE INFORMATION](#)

López-Alarcón M, Martínez-Coronado A, Velarde-Castro O, Rendón-Macías E, Fernández J. Supplementation of n3 long-chain polyunsaturated fatty acid synergistically decreases insulin resistance with weight loss of obese prepubertal and pubertal children. *Arch Med Res*. 2011 Aug;42(6):502-8. [MORE INFORMATION](#)

Akinkuolie AO, Ngwa JS, Meigs JB, Djoussé L. Omega-3 polyunsaturated fatty acid and insulin sensitivity: a meta-analysis of randomized controlled trials. *Clin Nutr*. 2011 Dec;30(6):702-7. Epub 2011 Sep 29. [MORE INFORMATION](#)

Wu JH, Micha R, Imamura F, Pan A, Biggs ML, Ajaz O, Djousse L, Hu FB, Mozaffarian D. Omega-3 fatty acids and incident type 2 diabetes: a systematic review and meta-analysis. *Br J Nutr*. 2012 Jun; 107 Suppl 2:S214-27. [MORE INFORMATION](#)

Zhou Y, Tian C, Jia C. Association of fish and n-3 fatty acid intake with the risk of type 2 diabetes: a meta-analysis of prospective studies. *Br J Nutr*. 2012 Aug; 108(3):408-17. doi: 10.1017/S0007114512002036. [MORE INFORMATION](#)

Sørensen IM, Joner G, Jenum PA, Eskild A, Stene LC. Serum long chain n-3 fatty acids (EPA and DHA) in the pregnant mother are independent of

risk of type 1 diabetes in the offspring. *Diabetes Metab Res Rev.* 2012 Jul;28(5):431-8. doi: 10.1002/dmrr.2293. Epub 2012 Mar 6. [MORE INFORMATION](#)

Dyslexia

Lindmark L, Clough P. A 5-month open study with long-chain polyunsaturated fatty acids in dyslexia. *J Med Food.* 2007;10(4):662-6. [MORE INFORMATION](#)

Dysmenorrhoea

Nigam S. Evidence for relief from severe menstrual cramps by fish diet in patients with primary dysmenorrhea. Third international congress on essential fatty acids and eicosanoids. Abstracts p. 20.

Harel Z, Biro FM, Kottenhahn RK, Rosenthal SL. Supplementation with omega-3 polyunsaturated fatty acids in the management of dysmenorrhea in adolescents. *Am J Obstet Gynecol.* 1996;174:1335-8. [MORE INFORMATION](#)

Deutch B. Menstrual pain in Danish women correlated with low n-3 polyunsaturated fatty acid intake. *Eur J Clin Nutr* 1995;49:508-16. [MORE INFORMATION](#)

Deutch B, Jørgensen EB, Hansen JC. Menstrual discomfort in Danish women reduced by dietary supplements of omega-3 PUFA and B12 (fish oil or seal oil capsules). *Nutr Res* 2000;20:621-3. [MORE INFORMATION](#)

Lucas M, Asselin G, Mérette C, Poulin MJ, Dodin S. Ethyl-eicosapentaenoic acid for the treatment of psychological distress and depressive symptoms in middle-aged women: a double-blind, placebo-controlled, randomized clinical trial. *Am J Clin Nutr.* 2009;89(2):641-51. [MORE INFORMATION](#)

Lucas M, Asselin G, Mérette C, Poulin MJ, Dodin S. Effects of ethyl-eicosapentaenoic acid omega-3 fatty acid supplementation on hot flashes and quality of life among middle-aged women: a double-blind, placebo-controlled, randomized clinical trial. *Menopause.* 2008 Nov 20. [Epub ahead of print] [MORE INFORMATION](#)

Moghadamnia AA, Mirhosseini N, Abadi MH, Omranirad A, Omidvar S. Effect of *Clupeonella grimmii* (anchovy/kilka) fish oil on dysmenorrhoea. *East Mediterr Health J*. 2010 Apr; 16(4): 408-13. [MORE INFORMATION](#)

Rahbar N, Asgharzadeh N, Ghorbani R. Effect of omega-3 fatty acids on intensity of primary dysmenorrhea. *Int J Gynaecol Obstet*. 2012 Apr; 117(1): 45-7. Epub 2012 Jan 17. [MORE INFORMATION](#)

Endometriosis

Missmer SA, Chavarro JE, Malspeis S, Bertone-Johnson ER, Hornstein MD, Spiegelman D, Barbieri RL, Willett WC, Hankinson SE. A prospective study of dietary fat consumption and endometriosis risk. *Hum Reprod*. 2010 Mar 23. [Epub ahead of print] [MORE INFORMATION](#)

Eye diseases - Age-Related Maculopathy/Age-related Macular Degeneration (ARM/AMD) etc.

Smith W, Mitchell P, Leeder SR. Dietary fat and fish intake and age-related maculopathy. *Arch Ophthalmol*. 2000; 118: 401-4. [MORE INFORMATION](#)

Feher J, Kovacs B, Kovacs I, Schveoller M, Papale A, Balacco Gabrieli C. Improvement of visual functions and fundus alterations in early age-related macular degeneration treated with a combination of acetyl-L-carnitine, n-3 fatty acids, and coenzyme Q10. *Ophthalmologica*. 2005; 219: 154-66. [MORE INFORMATION](#)

Chua B, Flood V, Rochtchina E, Wang JJ, Smith W, Mitchell P. Dietary Fatty acids and the 5-year incidence of age-related maculopathy. *Arch Ophthalmol*. 2006; 124: 981-6. [MORE INFORMATION](#)

Seddon JM, George S, Rosner_. Cigarette smoking, fish consumption, omega-3 fatty acid intake, and associations with age-related macular degeneration: the US Twin Study of Age-Related Macular Degeneration. *Arch Ophthalmol*. 2006; 124: 995-1001 [MORE INFORMATION](#)

Hodge WG, Schachter HM, Barnes D, et al. Efficacy of omega-3 fatty acids in preventing age-related macular degeneration: a systematic review. *Ophthalmology*. 2006;113:1165-72. [MORE INFORMATION](#)

Moeller SM, Arch Ophthalmol. Associations between intermediate age-related macular degeneration and lutein and zeaxanthin in the Carotenoids in Age-related Eye Disease Study (CAREDS): ancillary study of the Women's Health Initiative. 2006;124:1151-62. [MORE INFORMATION](#)

Johnson EJ, Schaefer EJ. Potential role of dietary n-3 fatty acids in the prevention of dementia and macular degeneration. *Am J Clin Nutr*. 2006;83(6 Suppl):1494S-1498S. [MORE INFORMATION](#)

Hodge WG, Barnes D, Schachter HM, et al. Evidence for the effect of omega-3 fatty acids on progression of age-related macular degeneration: a systematic review. *Retina*. 2007;27(2):216-21. [MORE INFORMATION](#)

Cangemi FE. TOZAL Study: an open case control study of an oral antioxidant and omega-3 supplement for dry AMD. *BMC Ophthalmol*. 2007;7:3. [MORE INFORMATION](#)

Townend BS, Townend ME, Flood V, et al Dietary Macronutrient Intake and Five-Year Incident Cataract: The Blue Mountains Eye Study. *Am J Ophthalmol*. 2007 Apr 23; [Epub ahead of print]. [MORE INFORMATION](#)

Age-Related Eye Disease Study Research Group. The relationship of dietary lipid intake and age-related macular degeneration in a case-control study. AREDS report no. 20. *Arch Ophthalmol*. 2007;125:661-669, 671-679. [MORE INFORMATION](#)

Chong EWT, Kreis AJ, Wong TY, Simpson JA, Guymer RH. Dietary omega-3 Fatty Acid and Fish Intake in the Primary Prevention of Age-Related Macular Degeneration - A Systematic Review and Meta-analysis". *Archives of Ophthalmology*. 2008;126: 826-83. [MORE INFORMATION](#)

Augood C, Chakravarthy U, Young I, Vioque J, de Jong PT, Bentham G, Rahu M, Seland J, Soubrane G, Tomazzoli L, Topouzis F, Vingerling JR, Fletcher AE. Oily fish consumption, dietary docosahexaenoic acid and eicosapentaenoic acid intakes, and associations with neovascular age-related macular degeneration. *Am J Clin Nutr*. 2008 Aug;88(2):398-406. [MORE INFORMATION](#)

SanGiovanni JP, Chew EY, Agrón E, Clemons TE, Ferris FL 3rd, Gensler G, Lindblad AS, Milton RC, Seddon JM, Klein R, Sperduto RD; Age-Related

Eye Disease Study Research Group. The relationship of dietary omega-3 long-chain polyunsaturated fatty acid intake with incident age-related macular degeneration: AREDS report no. 23. Arch Ophthalmol. 2008;126(9):1274-9. [MORE INFORMATION](#)

Chong EW, Robman LD, Simpson JA, Hodge AM, Aung KZ, Dolphin TK, English DR, Giles GG, Guymer RH. Fat consumption and its association with age-related macular degeneration. Arch Ophthalmol. 2009;127(5):674-80. [MORE INFORMATION](#)

Tan JS, Wang JJ, Flood V, Mitchell P. Dietary fatty acids and the 10-year incidence of age-related macular degeneration: the Blue Mountains Eye Study. Arch Ophthalmol. 2009 May;127(5):656-65. [MORE INFORMATION](#)

Chiu CJ, Klein R, Milton RC, Gensler G, Taylor A. Does eating particular diets alter risk of age-related macular degeneration in users of the age-related eye disease study supplements? Br J Ophthalmol. 2009 Sep;93(9):1241-6. [MORE INFORMATION](#)

Sangiovanni JP, Agrón E, Meleth AD, Reed GF, Sperduto RD, Clemons TE, Chew EY. {omega}-3 Long-chain polyunsaturated fatty acid intake and 12-y incidence of neovascular age-related macular degeneration and central geographic atrophy: a prospective cohort study from the Age-Related Eye Disease Study. Am J Clin Nutr. 2009 Dec;90(6):1601-7 [MORE INFORMATION](#)

Parekh N, Volland RP, Moeller SM, Blodi BA, Ritenbaugh C, Chappell RJ, Wallace RB, Mares JA; CAREDS Research Study Group. Association between dietary fat intake and age-related macular degeneration in the Carotenoids in Age-Related Eye Disease Study (CAREDS): an ancillary study of the Women's Health Initiative. Arch Ophthalmol. 2009 Nov;127(11):1483-93. [MORE INFORMATION](#)

Sangiovanni JP, Agrón E, Meleth AD, Reed GF, Sperduto RD, Clemons TE, Chew EY; Age-Related Eye Disease Study Research Group. {omega}-3 Long-chain polyunsaturated fatty acid intake and 12-y incidence of neovascular age-related macular degeneration and central geographic atrophy: AREDS report 30, a prospective cohort study from the Age-Related Eye Disease Study. Am J Clin Nutr. 2009 Dec;90(6):1601-7. Epub 2009 Oct 7. [MORE INFORMATION](#)

Roncone M, Bartlett H, Eperjesi F. Essential fatty acids for dry eye: A review. Cont Lens Anterior Eye. 2009 Dec 21. [Epub ahead of print] [MORE INFORMATION](#)

Swenor BK, Bressler S, Caulfield L, West SK. The Impact of Fish and Shellfish Consumption on Age-Related Macular Degeneration. *Ophthalmology*. 2010 Dec; 117(12):2395-401. [MORE INFORMATION](#)

Wojtowicz JC, Butovich I, Uchiyama E, Aronowicz J, Agee S, McCulley JP Pilot, Prospective, Randomized, Double-masked, Placebo-controlled Clinical Trial of an Omega-3 Supplement for Dry Eye. *Cornea*. 2011 Mar; 30(3): 308-14. [MORE INFORMATION](#)

Christen WG, Schaumberg DA, Glynn RJ, Buring JE. Dietary omega-3 Fatty Acid and Fish Intake and Incident Age-Related Macular Degeneration in Women. *Arch Ophthalmol*. 2011 Mar 14. [Epub ahead of print] doi: 10.1001/archophthalmol.2011.34 [MORE INFORMATION](#)

Cortina MS, Bazan HE. Docosahexaenoic acid, protectins and dry eye. *Curr Opin Clin Nutr Metab Care*. 2011 Mar; 14(2): 132-7. [MORE INFORMATION](#)

Li N, He J, Schwartz CE, Gjorstrup P, Bazan HE. Resolvin E1 improves tear production and decreases inflammation in a dry eye mouse model. *J Ocul Pharmacol Ther*. 2010 Oct; 26(5): 431-9. [MORE INFORMATION](#)

Christen WG, Schaumberg DA, Glynn RJ, Buring JE. Dietary ω -3 fatty acid and fish intake and incident age-related macular degeneration in women. *Arch Ophthalmol*. 2011 Jul; 129(7): 921-9. [MORE INFORMATION](#)

Merle B, Delyfer MN, Korobelnik JF, Rougier MB, Colin J, Malet F, Féart C, Le Goff M, Dartigues JF, Barberger-Gateau P, Delcourt C. Dietary omega-3 fatty acids and the risk for age-related maculopathy: the Alienor Study. *Invest Ophthalmol Vis Sci*. 2011 Jul 29; 52(8): 6004-11. [MORE INFORMATION](#)

Brignole-Baudouin F, Baudouin C, Aragona P, Rolando M, Labetoulle M, Pisella PJ, Barabino S, Siou-Mermet R, Creuzot-Garcher C. A multicentre, double-masked, randomized, controlled trial assessing the effect of oral supplementation of omega-3 and omega-6 fatty acids on a conjunctival inflammatory marker in dry eye patients. *Acta Ophthalmol*. 2011 Nov; 89(7): e591-7. doi: 10.1111/j.1755-3768.2011.02196.x. Epub 2011 Aug 11. [MORE INFORMATION](#)

Berson EL, Rosner B, Sandberg MA, Weigel-DiFranco C, Willett WC. ω -3 intake and visual acuity in patients with retinitis pigmentosa receiving vitamin A. *Arch Ophthalmol*. 2012 Jun; 130(6): 707-11. [MORE INFORMATION](#)

Arnold C, Winter L, Fröhlich K, Jentsch S, Dawczynski J, Jahreis G, Böhm V. Macular Xanthophylls and ω -3 Long-Chain Polyunsaturated Fatty Acids in Age-Related Macular Degeneration: A Randomized Trial. *JAMA Ophthalmol.* 2013 May 1; 131(5):564-72. doi: 10.1001/jamaophthalmol.2013.2851. [MORE INFORMATION](#)

Merle BM, Delyfer MN, Korobelnik JF, Rougier MB, Malet F, Féart C, Le Goff M, Peuchant E, Letenneur L, Dartigues JF, Colin J, Barberger-Gateau P, Delcourt C. High concentrations of plasma n3 fatty acids are associated with decreased risk for late age-related macular degeneration. *J Nutr.* 2013 Apr; 143(4):505-11. doi: 10.3945/jn.112.171033. Epub 2013 Feb 13. [MORE INFORMATION](#)

The Age-Related Eye Disease Study 2 (AREDS2) Research Group*. Lutein/Zeaxanthin for the Treatment of Age-Related Cataract: AREDS2 Randomized Trial Report No. 4. *JAMA Ophthalmol.* 2013 May 5:1-7. doi: 10.1001/jamaophthalmol.2013.4412. [Epub ahead of print] [MORE INFORMATION](#)

Dawczynski J, Jentsch S, Schweitzer D, Hammer M, Lang GE, Strobel J. Long term effects of lutein, zeaxanthin and omega-3-LCPUFAs supplementation on optical density of macular pigment in AMD patients: the LUTEGA study. *Graefes Arch Clin Exp Ophthalmol.* 2013 May 22. [Epub ahead of print] [MORE INFORMATION](#)

Fatty liver (Lipodystrophia hepatis)

Capanni M, Calella F, Biagini MR, et al. Prolonged n-3 polyunsaturated fatty acid supplementation ameliorates hepatic steatosis in patients with non-alcoholic fatty liver disease: a pilot study. *Aliment Pharmacol Ther.* 2006; 23(8):1143-51. [MORE INFORMATION](#)

Gonzalez-Periz A, Planaguma A, Gronert K, et al. Docosahexaenoic acid (DHA) blunts liver injury by conversion to protective lipid mediators: protectin D1 and 17S-hydroxy-DHA. *FASEB J.* 2006; 20(14):2537-9. [MORE INFORMATION](#)

Spadaro L, Magliocco O, Spampinato D, Piro S, Oliveri C, Alagona C, Papa G, Rabuazzo AM, Purrello F] Effects of n-3 polyunsaturated fatty acids in subjects with nonalcoholic fatty liver disease. *Dig Liver Dis.* 2008 Mar; 40(3):194-9.. [MORE INFORMATION](#)

Tanaka N, Sano K, Horiuchi A, Tanaka E, Kiyosawa K, Aoyama T. Highly purified eicosapentaenoic acid treatment improves nonalcoholic steatohepatitis. *J Clin Gastroenterol*. 2008;42(4):413-8. [MORE INFORMATION](#)

González-Pérez A, Horrillo R, Ferré N, Gronert K, Dong B, Morán-Salvador E, Titos E, Martínez-Clemente M, López-Parra M, Arroyo V, Clària J. Obesity-induced insulin resistance and hepatic steatosis are alleviated by {omega}-3 fatty acids: a role for resolvins and protectins. *FASEB J*. 2009 Jun;23(6):1946-57. [MORE INFORMATION](#)

Cussons AJ, Watts GF, Mori TA, Stuckey BG. Omega-3 fatty acid supplementation decreases liver fat content in polycystic ovary syndrome: a randomized controlled trial employing proton magnetic resonance spectroscopy. *J Clin Endocrinol Metab*. 2009;94(10):3842-8. [MORE INFORMATION](#)

Masterton GS, Plevris JN, Hayes PC. Review article: omega-3 fatty acids - a promising novel therapy for non-alcoholic fatty liver disease. *Aliment Pharmacol Ther*. 2010 Apr;31(7):679-92. [MORE INFORMATION](#)

Shapiro H, Tehilla M, Attal-Singer J, Bruck R, Luzzatti R, Singer P. The therapeutic potential of long-chain omega-3 fatty acids in nonalcoholic fatty liver disease. *Clin Nutr*. 2011 Feb;30(1):6-19. [MORE INFORMATION](#)

Bulchandani DG, Nachnani JS, Nookala A, Naumovitch C, Herndon B, Molteni A, Quinn T, Alba LM. Treatment with Omega-3 fatty acids but not exendin-4 improves hepatic steatosis. *Eur J Gastroenterol Hepatol*. 2010 Oct;22(10):1245-52. [MORE INFORMATION](#)

Oya J, Nakagami T, Sasaki S, Jimba S, Murakami K, Kasahara T, Wasada T, Sekiguchi H, Hasegawa M, Endo Y, Iwamoto Y. Intake of n-3 polyunsaturated fatty acids and non-alcoholic fatty liver disease: a cross-sectional study in Japanese men and women. *Eur J Clin Nutr*. 2010 Oct;64(10):1179-85. [MORE INFORMATION](#)

Parker HM, Johnson NA, Burdon CA, Cohn JS, O'Connor HT, George J. Omega-3 supplementation and non-alcoholic fatty liver disease: a systematic review and meta-analysis. *J Hepatol*. 2012 Apr;56(4):944-51. Epub 2011 Oct 21. [MORE INFORMATION](#)

Parker HM, Johnson NA, Burdon CA, Cohn JS, O'Connor HT, George J. Omega-3 supplementation and non-alcoholic fatty liver disease: a

systematic review and meta-analysis. J Hepatol. 2012 Apr;56(4):944-51. Epub 2011 Oct 21. [MORE INFORMATION](#)

Fertility

Conquer JA, Martin JB, Tummon I, Watson L, Tekpetey F. Fatty acid analysis of blood serum, seminal plasma, and spermatozoa of normozoospermic vs. asthenozoospermic males. Lipids. 1999;34:793-9. [MORE INFORMATION](#)

Tummon I, Watson L, Tekpetey F. Effect of DHA supplementation on DHA status and sperm motility in asthenozoospermic males. Conquer JA, Martin JB. Lipids. 2000;35:149-54. [MORE INFORMATION](#)

Lenzi A, Gandini L, Maresca V, et al. Fatty acid composition of spermatozoa and immature germ cells. Mol Hum Reprod. 2000;6:226-31. [MORE INFORMATION](#)

Tavilani H, Doosti M, Abdi K, Vaisiraygani A, Joshaghani HR. Decreased polyunsaturated and increased saturated fatty acid concentration in spermatozoa from asthenozoospermic males as compared with normozoospermic males. Andrologia. 2006;38:173-8. [MORE INFORMATION](#)

Witt PM, Christensen JH, Ewertz M, Aardestrup IV, Schmidt EB. The incorporation of marine n-3 PUFA into platelets and adipose tissue in pre- and postmenopausal women: a randomised, double-blind, placebo-controlled trial. Br J Nutr. 2010 Aug;104(3):318-25. [MORE INFORMATION](#)

Functions

Dyerberg J, Jørgensen KA, Arnfred T. Human umbilical blood vessel converts all cis-5,8,11,14,17 eicosapentaenoic acid to prostaglandin I₃. Prostaglandins 1981; 22: 857-62. [MORE INFORMATION](#)

Zuccato E, Hornstra G, Dyerberg J. Long term "Marine diet" in Eskimos is not associated with altered urinary excretion of total tetranor prostaglandin metabolites. Prostaglandins 1985; 30: 465-77. [MORE](#)

[INFORMATION](#)

Christensen JH, Gustenhoff P, Korup E, Aarøe J, Toft E, Møller J, Rasmussen K, Dyerberg J, Schmidt EB. Effect of fish oil on heart rate variability in survivors of myocardial infarction: a double blind randomised controlled trial. *BMJ* 1996; 312: 677-8. [MORE INFORMATION](#)

Dyerberg J, Christensen JH, Eskesen D, Astrup A, Stender S. *Trans*, and *n-3* polyunsaturated fatty acids and vascular function-A yin yang situation? *Atherosclerosis Supplements* 2006;7:33-35. [MORE INFORMATION](#)

Christensen JH, Skou HA, Fog L, Hansen VE, Vesterlund T, Dyerberg J, Toft E, Schmidt EB. Marine n-3 Fatty Acids, Wine Intake, and Heart Rate Variability in Patients Referred for Coronary Angiography. *Circulation* 2001;103:651-7 [MORE INFORMATION](#)

Christensen JH, Christensen MS, Dyerberg J, Schmidt EB. Heart rate variability and fatty acid content of blood cell membranes: a dose-response study with n-3 fatty acids. *Am J Clin Nutr* 1999; 70: 331-7. [MORE INFORMATION](#)

Jensen T, Stender S, Goldstein K, Hoelmer G, Deckert T Partial normalization by dietary cod-liver oil of increased microvascular albumin leakage in patients with insulin-dependent diabetes and albuminuria. *N Engl J Med* 1989;321:1572-7 [MORE INFORMATION](#)

Serhan CN. Novel chemical mediators in the resolution of inflammation: resolvins and protectins. *Anesthesiol Clin*. 2006;24:341-64. [MORE INFORMATION](#)

Chiang N, Serhan CN. Cell-cell interaction in the transcellular biosynthesis of novel omega-3-derived lipid mediators. *Methods Mol Biol*. 2006;341:227-50. [MORE INFORMATION](#)

Arita M, Oh SF, Chonan T, et al. Metabolic inactivation of resolvin E1 and stabilization of its anti-inflammatory actions. *J Biol Chem*. 2006;281:22847-54. [MORE INFORMATION](#)

Gani OA. Are fish oil omega-3 long-chain fatty acids and their derivatives peroxisome proliferator-activated receptor agonists? *Cardiovasc Diabetol*. 2008 Mar 20;7:6. [MORE INFORMATION](#)

Tanabe Y, Matsunaga Y, Saito M, Nakayama K. Involvement of Cyclooxygenase-2 in Synergistic Effect of Cyclic Stretching and Eicosapentaenoic Acid on Adipocyte Differentiation. *J Pharmacol Sci*. 2008 Mar; 106(3): 478-84. [MORE INFORMATION](#)

Din JN, Harding SA, Valerio CJ, Sarma J, Lyall K, Riemersma RA, Newby DE, Flapan AD. Dietary intervention with oil rich fish reduces platelet-monocyte aggregation in man. *Atherosclerosis*. 2008; 197(1): 290-6. [MORE INFORMATION](#)

Krauss-Etschmann S, Hartl D, Rzehak P, Heinrich J, Shadid R, Del Carmen Ramírez-Tortosa M, Campoy C, Pardillo S, Schendel DJ, Decsi T, Demmelmair H, Koletzko BV; Nutraceuticals for Healthier Life Study Group. Decreased cord blood IL-4, IL-13, and CCR4 and increased TGF-beta levels after fish oil supplementation of pregnant women. *J Allergy Clin Immunol*. 2008; 121(2): 464-470.e6 [MORE INFORMATION](#)

Arterburn LM, Hall EB, Oken H. Distribution, interconversion, and dose response of n-3 fatty acids in humans. *Am J Clin Nutr*. 2006; 83(6 Suppl): 1467S-1476S. [MORE INFORMATION](#)

Barceló-Coblijn G, Murphy EJ, Othman R, Moghadasian MH, Kashour T, Friel JK. Flaxseed oil and fish-oil capsule consumption alters human red blood cell n-3 fatty acid composition: a multiple-dosing trial comparing 2 sources of n-3 fatty acid. *Am J Clin Nutr*. 2008 Sep; 88(3): 801-9. [MORE INFORMATION](#)

Larson MK, Ashmore JH, Harris KA, Vogelaar JL, Pottala JV, Sprehe M, Harris WS. Effects of omega-3 acid ethyl esters and aspirin, alone and in combination, on platelet function in healthy subjects. *Thromb Haemost*. 2008; 100(4): 634-41. [MORE INFORMATION](#)

Koletzko B, Beblo S, Demmelmair H, Hanebutt FL. Omega-3 LC-PUFA supply and neurological outcomes in children with phenylketonuria (PKU). *J Pediatr Gastroenterol Nutr*. 2009; 48 Suppl 1: S2-7. [MORE INFORMATION](#)

Kohli P, Levy BD. Resolvins and protectins: mediating solutions to inflammation. *Br J Pharmacol*. 2009 Oct; 158(4): 960-71. [MORE INFORMATION](#)

Zhao Y, Calon F, Julien C, Winkler JW, Petasis NA, Lukiw WJ, Bazan NG. Docosahexaenoic acid-derived neuroprotectin D1 induces neuronal survival via secretase- and PPAR γ -mediated mechanisms in Alzheimer's

disease models. PLoS One. 2011 Jan 5;6(1):e15816. [MORE INFORMATION](#)

Wei MY, Jacobson TA. Effects of Eicosapentaenoic Acid Versus Docosahexaenoic Acid on Serum Lipids: A Systematic Review and Meta-Analysis. Curr Atheroscler Rep. 2011 Oct 6. [Epub ahead of print] [MORE INFORMATION](#)

Serhan, C.N. Petasis, N.A. Resolvins and protectins in inflammation resolution. Chem. Rev. 2011;111: 5922-5943. [MORE INFORMATION](#)

Kiecolt-Glaser JK, Epel ES, Belury MA, Andridge R, Lin J, Glaser R, Malarkey WB, Hwang BS, Blackburn E. Omega-3 fatty acids, oxidative stress, and leukocyte telomere length: A randomized controlled trial. Brain Behav Immun. 2012 Sep 23. pii: S0889-1591(12)00431-X. doi: 10.1016/j.bbi.2012.09.004. [Epub ahead of print] [MORE INFORMATION](#)

Hearing loss

Gopinath B, Flood VM, Rochtchina E, McMahon CM, Mitchell P. Consumption of omega-3 fatty acids and fish and risk of age-related hearing loss. Am J Clin Nutr. 2010 Aug;92(2):416-21. [MORE INFORMATION](#)

Hemicranias

McCarren T, Hitzemann R, Smith R, Kloss R, Allen C, Glueck CJ. Amelioration of severe migraine by fish oil (w-3) fatty acids. Am J Clin Nutr 1995;41:439. [MORE INFORMATION](#)

History

Dyerberg J, Bang HO. Hæmostatic function and platelet polyunsaturated fatty acids in Eskimos. Lancet 1979;2:433-5. [MORE INFORMATION](#)

Bang HO, Dyerberg, J, Nielsen, AaB. Plasma lipid and lipoprotein pattern in Greenlandic west-coast Eskimos. Lancet 1971;1:1143-6 [MORE INFORMATION](#)

Dyerberg J, Bang HO, Hjørne N. Fatty acid composition of the plasma lipids in Greenland Eskimos. Am J Clin Nutr. 1975; 28: 958-66. [MORE INFORMATION](#)

Ackman RG, Eaton CA, Dyerberg J. Marine docosaenoic acid isomer distribution in the plasma of Greenland Eskimos. Am J Clin Nutr 1980; 33: 1814-7. [MORE INFORMATION](#)

Bang HO, Dyerberg J, Sinclair HM. The composition of the Eskimo food in North Western Greenland. Am J Clin Nutr 1980; 33: 2657-61. [MORE INFORMATION](#)

Bang HO, Dyerberg J. The lipid metabolism in Greenlanders. Meddr Grønland, Man & Society 1981; 2: 3-18.

Bang HO, Dyerberg J, Nielsen AaB. Nutrition classics: Plasma lipid and lipoprotein pattern in Greenland West-coast Eskimos. Nutrition Reviews 1986.

Bang HO, Dyerberg J. Fatty acid pattern and ischaemic heart disease. Lancet 1987; 633. [MORE INFORMATION](#)

Makhoul Z, Kristal AR, Gulati R, Luick B, Bersamin A, Boyer B, Mohatt GV. Associations of very high intakes of eicosapentaenoic and docosahexaenoic acids with biomarkers of chronic disease risk among Yup'ik Eskimos. Am J Clin Nutr. 2010 Mar;91(3):777-85. [MORE INFORMATION](#)

Huntingtons Disease

Puri BK, Bydder GM, Manku MS, Clarke A, Waldman AD, Beckmann CF. Reduction in cerebral atrophy associated with ethyl-eicosapentaenoic acid treatment in patients with Huntington's disease. J Int Med Res. 2008;36(5):896-905. [MORE INFORMATION](#)

Hyperlipemia

Connor,WE. Effects of omega-3 fatty acids in hypertriglyceridemic states. *Seminars Thromb Hemostas* 1988;14:271-84.

Harris,WS. Fish oils and plasma lipid and lipoprotein metabolism in humans: a critical review. *J Lipid Res* 1989;30:785-807. [MORE INFORMATION](#)

Schmidt EB, Pedersen JO, Varming K, Ernst E, Jersild C, Grunnet N, Dyerberg J. n-3 fatty acids and leucocyte chemotaxis. Effects in hyperlipidemia and dose-response studies in healthy men. *Arteriosclerosis Thrombosis* 1991;11:429-35. [MORE INFORMATION](#)

Rolf N, Tenschert W, Lison AE. Results of a long-term administration of omega-3 fatty acids in haemodialysis patients with dyslipoproteinaemia. *Nephrol Dial Transplant* 1990;5:797-801. [MORE INFORMATION](#)

Schmidt EB, Varming K, Svaneborg N, Dyerberg J. n-3 polyunsaturated fatty acid supplementation (Pikasol) in men with moderate and severe hypertriglyceridemia: A dose-response study. *Ann Nutr Metab* 1992;36:283-7. [MORE INFORMATION](#)

Schmidt EB, Kristensen SD, de Caterina R, Illingworth DR. The effects of n-3 fatty acids on plasma lipids and lipoproteins and other cardiovascular risk factors in patients with hyperlipidemia. *Atherosclerosis* 1993;103:107-21. [MORE INFORMATION](#)

Austin MA, McKnight B, Edwards KE, Bradley CM, McNeely MJ, Psaty BM, Brunzell JD, Motulsky AG. Cardiovascular disease mortality in familial forms of hypertiglyceridemia: A 20-year prospective study. *Circulation* 2000;101:2777-82. [MORE INFORMATION](#)

Nordøy A, Bønaa KH, Sandset PM, Hansen J-B, Nilsen H. Effect of w-3 fatty acids and Simvastatin on hemostatic risk factors and postprandial hyperlipemia in patients with combined hyperlipemia. *Arterioscler Thromb Vasc Biol* 2000;20:259-65. [MORE INFORMATION](#)

Weber P, Raederstorff D. Triglyceride-lowering effect of omega-3 LC-polyunsaturated fatty acids-a review. *Nutr Metab Cardiovasc Dis*. 2000;10:28-37. [MORE INFORMATION](#)

Ginsberg HN, Illingworth R. Postprandial dyslipidemia: an atherogenic disorder common in patients with diabetes mellitus. *Am J Cardiol* 2001;88(suppl):9H-15H. [MORE INFORMATION](#)

Agency for Healthcare Research and Quality. March 2004. Evidence reports: health effects of omega-3 fatty acids on lipids and glycemic control in type II diabetes and the metabolic syndrome and on inflammatory bowel disease, rheumatoid arthritis, renal disease, systemic lupus erythematosus and osteoporosis. Internet: [MORE INFORMATION](#).

De Caterina R, Madonna R, Bertolotto A, Schmidt EB. n-3 fatty acids in the treatment of diabetic patients: biological rationale and clinical data. *Diabetes Care*. 2007;30(4):1012-26. [MORE INFORMATION](#)

McKenney JM, Sica D. Role of prescription omega-3 fatty acids in the treatment of hypertriglyceridemia. *Pharmacotherapy*. 2007;27(5):715-28. [MORE INFORMATION](#)

Kelley DS, Siegel D, Vemuri M, Mackey BE. Docosahexaenoic acid supplementation improves fasting and postprandial lipid profiles in hypertriglyceridemic men. *Am J Clin Nutr* 2007;86, 2:324-333. [MORE INFORMATION](#)

Meyer BJ, Hammervold T, Rustan AC, Howe PR. Dose-dependent effects of docosahexaenoic acid supplementation on blood lipids in statin-treated hyperlipidaemic subjects. *Lipids*. 2007 Mar;42(2):109-15. [MORE INFORMATION](#)

Davidson MH, Stein EA, Bays HE, Maki KC, Doyle RT, Shalwitz RA, Ballantyne CM, Ginsberg HN; Combination of prescription Omega-3 with Simvastatin (COMBOS) Investigators. Efficacy and tolerability of adding prescription omega-3 fatty acids 4 g/d to simvastatin 40 mg/d in hypertriglyceridemic patients: an 8-week, randomized, double-blind, placebo-controlled study. *Clin Ther*. 2007;29(7):1354-67. [MORE INFORMATION](#)

Milte CM, Coates AM, Buckley JD, Hill AM, Howe PR. Dose-dependent effects of docosahexaenoic acid-rich fish oil on erythrocyte docosahexaenoic acid and blood lipid levels. *Br J Nutr*. 2007 Oct 31;; 1-6 [Epub ahead of print] [MORE INFORMATION](#)

Goldberg RB, Sabharwal AK Fish oil in the treatment of dyslipidemia. *Curr Opin Endocrinol Diabetes Obes*. 2008;15(2):167-74. [MORE INFORMATION](#)

Jacobson TA. Role of n-3 fatty acids in the treatment of hypertriglyceridemia and cardiovascular disease. *Am J Clin Nutr.* 2008;87(6):1981S-90S. [MORE INFORMATION](#)

Becker DJ, Gordon RY, Morris PB, Yorko J, Gordon YJ, Li M, Iqbal N. Simvastatin vs therapeutic lifestyle changes and supplements: randomized primary prevention trial. *Mayo Clin Proc.* 2008;83(7):758-64. [MORE INFORMATION](#)

Maki KC, McKenney JM, Reeves MS, Lubin BC, Dicklin MR Effects of adding prescription omega-3 acid ethyl esters to simvastatin (20 mg/day) on lipids and lipoprotein particles in men and women with mixed dyslipidemia. *Am J Cardiol.* 2008;102(4):429-33. [MORE INFORMATION](#)

Caslake MJ, Miles EA, Kofler BM, Lietz G, Curtis P, Armah CK, Kimber AC, Grew JP, Farrell L, Stannard J, Napper FL, Sala-Vila A, West AL, Mathers JC, Packard C, Williams CM, Calder PC, Minihane AM. Effect of sex and genotype on cardiovascular biomarker response to fish oils: the FINGEN Study. *Am J Clin Nutr.* 2008;88(3):618-29. [MORE INFORMATION](#)

Barter P, Ginsberg HN. Effectiveness of combined statin plus omega-3 fatty acid therapy for mixed dyslipidemia. *Am J Cardiol.* 2008;102(8):1040-5. [MORE INFORMATION](#)

Saito Y, Yokoyama M, Origasa H, Matsuzaki M, Matsuzawa Y, Ishikawa Y, Oikawa S, Sasaki J, Hishida H, Itakura H, Kita T, Kitabatake A, Nakaya N, Sakata T, Shimada K, Shirato K; JELIS Investigators, Japan. Effects of EPA on coronary artery disease in hypercholesterolemic patients with multiple risk factors: sub-analysis of primary prevention cases from the Japan EPA Lipid Intervention Study (JELIS). *Atherosclerosis.* 2008;200(1):135-40. [MORE INFORMATION](#)

Valdivielso P, Rioja J, Garcia-Arias C, Sanchez-Chaparro MA, Gonzalez-Santos P. Omega 3 fatty acids induce a marked reduction of apolipoprotein B48 when added to fluvastatin in patients with type 2 diabetes and mixed hyperlipidemia: a preliminary report. *Cardiovasc Diabetol.* 2009;8(1):1. [Epub ahead of print] [MORE INFORMATION](#)

Derosa G, Maffioli P, D'Angelo A, Salvadeo S, Ferrari I, Fogari E, Gravina A, Mereu R, Randazzo S, Cicero A. Effects of long chain omega-3 fatty acids on metalloproteinases and their inhibitors in combined dyslipidemia patients. *Expert Opin Pharmacother.* 2009 Apr 27. [Epub ahead of print] [MORE INFORMATION](#)

Motoyama KR, Curb JD, Kadowaki T, El-Saed A, Abbott RD, Okamura T, Evans RW, Nakamura Y, Sutton-Tyrrell K, Rodriquez BL, Kadota A, Edmundowicz D, Willcox BJ, Choo J, Katsumi N, Otake T, Kadowaki S, Kuller LH, Ueshima H, Sekikawa A. Association of serum n-6 and n-3 polyunsaturated fatty acids with lipids in 3 populations of middle-aged men. *Am J Clin Nutr.* 2009;90(1):49-55. [MORE INFORMATION](#)

Bays HE, McKenney J, Maki KC, Doyle RT, Carter RN, Stein E. Effects of prescription omega-3-acid ethyl esters on non--high-density lipoprotein cholesterol when coadministered with escalating doses of atorvastatin. *Mayo Clin Proc.* 2010 Feb;85(2):122-8. [MORE INFORMATION](#)

Bitzur R, Cohen H, Cohen T, Dror TW, Herzog Y, Lifshitz Y, Lubish T, Harats D, Rubinstein A. The Metabolic Effects of Omega-3 Plant Sterol Esters in Mixed Hyperlipidemic Subjects. *Cardiovasc Drugs Ther.* 2011 Jan 13. [MORE INFORMATION](#)

Kim SH, Kim MK, Lee HY, Kang HJ, Kim YJ, Kim HS. Prospective randomized comparison between omega-3 fatty acid supplements plus simvastatin versus simvastatin alone in Korean patients with mixed dyslipidemia: lipoprotein profiles and heart rate variability. *Eur J Clin Nutr.* 2011 Jan;65(1):110-6. [MORE INFORMATION](#)

Skulas-Ray AC, Kris-Etherton PM, Harris WS, Vanden Heuvel JP, Wagner PR, West SG. Dose-response effects of omega-3 fatty acids on triglycerides, inflammation, and endothelial function in healthy persons with moderate hypertriglyceridemia. *Am J Clin Nutr.* 2011 Feb;93(2):243-52. [MORE INFORMATION](#)

Bays HE, Ballantyne CM, Kastelein JJ, Isaacsohn JL, Braeckman RA, Soni PN. Eicosapentaenoic Acid Ethyl Ester (AMR101) Therapy in Patients With Very High Triglyceride Levels (from the Multi-center, pLAcEbo-controlled, Randomized, double-blIND, 12-week study with an open-label Extension [MARINE] Trial). *Am J Cardiol.* 2011 Jun 15. [Epub ahead of print] [MORE INFORMATION](#)

Schuchardt JP, Neubronner J, Kressel G, Merkel M, von Schacky C, Hahn A. Moderate doses of EPA and DHA from re-esterified triacylglycerols but not from ethyl-esters lower fasting serum triacylglycerols in statin-treated dyslipidemic subjects: Results from a six month randomized controlled trial. *Prostaglandins Leukot Essent Fatty Acids.* 2011 Aug 20. [Epub ahead of print] [MORE INFORMATION](#)

Samuel S, Peskin B, Arondekar B, Alperin P, Johnson S, Blumenfeld I, Stone G, Jacobson TA. Estimating health and economic benefits from using prescription omega-3 fatty acids in patients with severe hypertriglyceridemia. *Am J Cardiol*. 2011 Sep 1;108(5):691-7. [MORE INFORMATION](#)

Wei MY, Jacobson TA. Effects of Eicosapentaenoic Acid Versus Docosahexaenoic Acid on Serum Lipids: A Systematic Review and Meta-Analysis. *Curr Atheroscler Rep*. 2011 Oct 6. [Epub ahead of print] [MORE INFORMATION](#)

Shearer GC, Savinova OV, Harris WS. Fish oil - How does it reduce plasma triglycerides? *Biochim Biophys Acta*. 2011 Oct 25. [Epub ahead of print] [MORE INFORMATION](#)

Hypertension

Norris PG, Jones CJ, Weston MJ. Effect of dietary supplementation with fish oil on systolic blood pressure in mild essential hypertension. *Brit Med J* 1986;293:104-5. [MORE INFORMATION](#)

Knapp HR, FitzGerald GA. The antihypertensive effects of fish oil. A controlled study of polyunsaturated fatty acid supplements in essential hypertension. *N Engl J Med* 1989;320:1037-43. [MORE INFORMATION](#)

Bønaa KH, BjerveKS, Straume B, Gram IT, Thelle D. Effect of eicosapentaenoic acid and docosahexaenoic acid on blood pressure in hypertension. *N Engl J Med* 1990;322:795-801. [MORE INFORMATION](#)

Levinson PD, Iosiphidis AH, Saritelli AL, Herbert PN, Steiner M. Effects of n-3 fatty acids in essential hypertension. *Am J Hypertens* 1990;3:754-60. [MORE INFORMATION](#)

Radack K, Deck C, Huster G. The effect of low doses of n-3 fatty acid supplementation on blood pressure in hypertensive subjects. *Arch Intern Med* 1991;151:1173-80. [MORE INFORMATION](#)

Cobiac L; Nestel P,J; Wing L,M,H; Howe P,R,C. A low-sodium diet supplemented with fish oil lowers blood pressure in the elderly. *J Hypertension* 1992;10:87-92. [MORE INFORMATION](#)

Singer P. α -Linoleic acid vs. long-chain n-3 fatty acids in hypertension and hyperlipidemia. *Nutrition* 1992;8:133-5. [MORE INFORMATION](#)

Ventura HO, Milani RV, Lavie CJ, Smart FW, Stapleton DD, Toups TS, Price HL. Cyclosporine-induced hypertension. Efficacy of w-3 fatty acids in patients after cardiac transplantation. *Circulation* 1993;88:281-5. [MORE INFORMATION](#)

Appel LJ. The effect of omega-3 polyunsaturated fatty acids on blood pressure. *Omega-3 News* 1994;IX:1-5.

Lungershausen YK, Abbey M, Nestel PJ, Howe PRC. Reduction of blood pressure and plasma triglycerides by omega-3 fatty acids in treated hypertensives. *J Hypertens* 1994;12:1041-5. [MORE INFORMATION](#)

Andreassen AK, Hartmann A, Offstad J, Geiran O, Kvernebo K, Simonsen S. Hypertension prophylaxis with omega-3 fatty acids in heart transplant recipients. *J Am Coll Cardiol* 1997;29:1324-31. [MORE INFORMATION](#)

Theobald HE, Goodall AH, Sattar N, Talbot DC, Chowienczyk PJ, Sanders TA. Low-dose docosahexaenoic acid lowers diastolic blood pressure in middle-aged men and women. *J Nutr.* 2007;137(4):973-8. [MORE INFORMATION](#)

Ueshima H, Stamler J, Elliott P, Chan Q, et al; INTERMAP Research Group. Food omega-3 fatty acid intake of individuals (total, linolenic acid, long-chain) and their blood pressure: INTERMAP study. *Hypertension.* 2007;50(2):313-9. [MORE INFORMATION](#)

Cicero AF, Ertek S, Borghi C. Omega-3 polyunsaturated Fatty acids: their potential role in blood pressure prevention and management. *Curr Vasc Pharmacol.* 2009;7(3):330-7. [MORE INFORMATION](#)

http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=17548718&ordinalpos=2&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum

Mori TA, Burke V, Puddey I, Irish A, Cowpland CA, Beilin L, Dogra G, Watts GF. The effects of [omega]3 fatty acids and coenzyme Q10 on blood pressure and heart rate in chronic kidney disease: a randomized controlled trial. *J Hypertens.* 2009 Sep;27(9):1863-72. [MORE INFORMATION](#)

Liu JC, Conklin SM, Manuck SB, Yao JK, Muldoon MF. Long-Chain Omega-3 Fatty Acids and Blood Pressure. *Am J Hypertens*. 2011 Jul 14. doi: 10.1038/ajh.2011.120. [Epub ahead of print] [MORE INFORMATION](#)

Cabo J, Alonso R, Mata P. Omega-3 fatty acids and blood pressure. *Br J Nutr*. 2012 Jun;107 Suppl 2:S195-200. [MORE INFORMATION](#)

Huang T, Shou T, Cai N, Wahlqvist ML, Li D. Associations of plasma n-3 polyunsaturated fatty acids with blood pressure and cardiovascular risk factors among Chinese. *Int J Food Sci Nutr*. 2012 Sep;63(6):667-73. doi: 10.3109/09637486.2011.652076. Epub 2012 Jan 20. [MORE INFORMATION](#)

Skulas-Ray AC, Kris-Etherton PM, Harris WS, West SG. Effects of marine-derived omega-3 fatty acids on systemic hemodynamics at rest and during stress: a dose-response study. *Ann Behav Med*. 2012 Dec;44(3):301-8. doi: 10.1007/s12160-012-9393-2. [MORE INFORMATION](#)

Menopausal Distress

Lucas M, Asselin G, Mérette C, Poulin MJ, Dodin S. Effects of ethyl-eicosapentaenoic acid omega-3 fatty acid supplementation on hot flashes and quality of life among middle-aged women: a double-blind, placebo-controlled, randomized clinical trial. *Menopause*. 2008 Nov 20. [Epub ahead of print] [MORE INFORMATION](#)

Mortality/Longevity

Lindberg M, Saltvedt I, Sletvold O, Bjerve KS. Long-chain n-3 fatty acids and mortality in elderly patients. *Am J Clin Nutr*. 2008 Sep;88(3):722-9. [MORE INFORMATION](#)

Danaei G, Ding EL, Mozaffarian D, Taylor B, Rehm J, Murray CJ, Ezzati M. The preventable causes of death in the United States: comparative risk assessment of dietary, lifestyle, and metabolic risk factors. *PLoS Med*. 2009;6(4):e1000058. Epub 2009 Apr 28. [MORE INFORMATION](#)

Buhr G, Bales CW. Nutritional Supplements for Older Adults: Review and Recommendations-Part II. *J Nutr Elder*. 2010 Jan;29(1):42-71. [MORE INFORMATION](#)

Einvik G, Klemsdal TO, Sandvik L, Hjerkin EM. A randomized clinical trial on n-3 polyunsaturated fatty acids supplementation and all-cause mortality in elderly men at high cardiovascular risk. *Eur J Cardiovasc Prev Rehabil*. 2010 Oct;17(5):588-92. [MORE INFORMATION](#)

Pottala JV, Garg S, Cohen BE, Whooley MA, Harris WS. Blood Eicosapentaenoic and Docosahexaenoic Acids Predict All-Cause Mortality in Patients With Stable Coronary Heart Disease: The Heart and Soul Study. *Circ Cardiovasc Qual Outcomes*. 2010 Jul;3(4):406-12. [MORE INFORMATION](#)

Einvik G, Klemsdal TO, Sandvik L, Hjerkin EM. A randomized clinical trial on n-3 polyunsaturated fatty acids supplementation and all-cause mortality in elderly men at high cardiovascular risk. *Eur J Cardiovasc Prev Rehabil*. 2010 Oct;17(5):588-92. [MORE INFORMATION](#)

Gopinath B, Buyken AE, Flood VM, Empson M, Roachchina E, Mitchell P. Consumption of polyunsaturated fatty acids, fish, and nuts and risk of inflammatory disease mortality. *Am J Clin Nutr*. 2011 May;93(5):1073-9. [MORE INFORMATION](#)

Kiecolt-Glaser JK, Epel ES, Belury MA, Andridge R, Lin J, Glaser R, Malarkey WB, Hwang BS, Blackburn E. Omega-3 fatty acids, oxidative stress, and leukocyte telomere length: A randomized controlled trial. *Brain Behav Immun*. 2012 Sep 23. pii: S0889-1591(12)00431-X. doi: 10.1016/j.bbi.2012.09.004. [Epub ahead of print] [MORE INFORMATION](#)

Mozaffarian D, Lemaitre RN, King IB, Song X, Huang H, Sacks FM, Rimm EB, Wang M, Siscovick DS. Plasma phospholipid long-chain ω -3 fatty acids and total and cause-specific mortality in older adults: a cohort study. *Ann Intern Med*. 2013 Apr 2;158(7):515-25. doi: 10.7326/0003-4819-158-7-201304020-00003. [MORE INFORMATION](#)

Obesity

Couet C, Delarue J, Ritz P, Antoine JM, Lamisse F. Effect of dietary fish oil on body fat mass and basal fat oxidation in healthy adults. *Int J Obes Relat Metab Disord*. 1997 Aug; 21(8):637-43. [MORE INFORMATION](#)

Krebs JD, Browning LM, McLean NK, et al. Additive benefits of long-chain n-3 polyunsaturated fatty acids and weight-loss in the management of cardiovascular disease risk in overweight hyperinsulinaemic women. *Int J Obes*. 2006; 30:1535-44. [MORE INFORMATION](#)

Kim HK, Della-Fera M, Lin J, Baile CA. Docosahexaenoic Acid Inhibits Adipocyte Differentiation and Induces Apoptosis in 3T3-L1 Preadipocytes *J. Nutr*. 2006 136: 2965-2969. [MORE INFORMATION](#)

Hill AM, Buckley JD, Murphy KJ, Howe PR. Combining fish-oil supplements with regular aerobic exercise improves body composition and cardiovascular disease risk factors *Am J Clin Nutr*. 2007; 85(5):1267-1274. [MORE INFORMATION](#)

Lucia Bergmann R, Bergmann KE, Haschke-Becher E, Richter R, Dudenhausen JW, Barclay D, Haschke F. Does maternal docosahexaenoic acid supplementation during pregnancy and lactation lower BMI in late infancy? *J Perinat Med*. 2007; 35(4):295-300. [MORE INFORMATION](#)

Fontani G, Corradeschi F, Felici A, Alfatti F, Bugarini R, Fiaschi AI, Cerretani D, Montorfano G, Rizzo AM, Berra B. Blood profiles, body fat and mood state in healthy subjects on different diets supplemented with Omega-3 polyunsaturated fatty acids. *Eur J Clin Invest*. 2005 Aug; 35(8):499-507. [MORE INFORMATION](#)

Kabir M, Skurnik G, Naour N, Pechtner V, Meugnier E, Rome S, Quignard-Boulangé A, Vidal H, Slama G, Clément K, Guerre-Millo M, Rizkalla SW. *Am J Clin Nutr*. 2007 Dec; 86(6):1670-9. Treatment for 2 mo with n 3 polyunsaturated fatty acids reduces adiposity and some atherogenic factors but does not improve insulin sensitivity in women with type 2 diabetes: a randomized controlled study. [MORE INFORMATION](#)

Mori T, Kondo H, Hase T, Tokimitsu I, Murase T. Dietary fish oil upregulates intestinal lipid metabolism and reduces body weight gain in C57BL/6J mice. *J Nutr*. 2007 Dec; 137(12):2629-34. [MORE INFORMATION](#)

Tanabe Y, Matsunaga Y, Saito M, Nakayama K. Involvement of Cyclooxygenase-2 in Synergistic Effect of Cyclic Stretching and

Eicosapentaenoic Acid on Adipocyte Differentiation. *J Pharmacol Sci.* 2008 Mar; 106(3): 478-84. [MORE INFORMATION](#)

Ebbesson SO, Tejero ME, Nobmann ED, Lopez-Alvarenga JC, Ebbesson L, Romenesko T, Carter EA, Resnick HE, Devereux RB, MacCluer JW, Dyke B, Laston SL, Wenger CR, Fabsitz RR, Comuzzie AG, Howard BV. Fatty acid consumption and metabolic syndrome components: the GOCADAN study. *J Cardiometab Syndr.* 2007 Fall; 2(4): 244-9. [MORE INFORMATION](#)

Sneddon AA, Tsofliou F, Fyfe CL, Matheson I, Jackson DM, Horgan G, Winzell MS, Wahle KW, Ahren B, Williams LM. Effect of a conjugated linoleic acid and omega-3 fatty acid mixture on body composition and adiponectin. *Obesity (Silver Spring).* 2008 May; 16(5): 1019-24. [MORE INFORMATION](#)

Lucia Bergmann R, Bergmann KE, Haschke-Becher E, Richter R, Dudenhausen JW, Barclay D, Haschke F. Does maternal docosahexaenoic acid supplementation during pregnancy and lactation lower BMI in late infancy? *J Perinat Med.* 2007; 35(4): 295-300.]. [MORE INFORMATION](#)

Ramel A, Martínéz A, Kiely M, Morais G, Bandarra NM, Thorsdottir I. Beneficial effects of long-chain n-3 fatty acids included in an energy-restricted diet on insulin resistance in overweight and obese European young adults. *Diabetologia.* 2008; 51(7): 1261-8. [MORE INFORMATION](#)

Parra D, Ramel A, Bandarra N, Kiely M, Martínez JA, Thorsdottir I. A diet rich in long chain omega-3 fatty acids modulates satiety in overweight and obese volunteers during weight loss. *Appetite.* 2008; 51(3): 676-80. [MORE INFORMATION](#)

Ramel A, Parra D, Martínéz JA, Kiely M, Thorsdottir I. Effects of seafood consumption and weight loss on fasting leptin and ghrelin concentrations in overweight and obese European young adults. *Eur J Nutr.* 2009 Mar; 48(2): 107-14. [MORE INFORMATION](#)

González-Pérez A, Horrillo R, Ferré N, Gronert K, Dong B, Morán-Salvador E, Títos E, Martínez-Clemente M, López-Parra M, Arroyo V, Clària J. Obesity-induced insulin resistance and hepatic steatosis are alleviated by {omega}-3 fatty acids: a role for resolvins and protectins. *FASEB J.* 2009 Jun; 23(6): 1946-57. [MORE INFORMATION](#)

Buckley JD, Howe PR. Anti-obesity effects of long-chain omega-3 polyunsaturated fatty acids. *Obes Rev.* 2009 Nov; 10(6): 648-59. [MORE INFORMATION](#)

Micallef M, Munro I, Phang M, Garg M. Plasma n-3 Polyunsaturated Fatty Acids are negatively associated with obesity. *Br J Nutr*. 2009 Nov;102(9):1370-4. [MORE INFORMATION](#)

Defina LF, Marcoux LG, Devers SM, Cleaver JP, Willis BL. Effects of omega-3 supplementation in combination with diet and exercise on weight loss and body composition. *Am J Clin Nutr*. 2011 Feb;93(2):455-62. [MORE INFORMATION](#)

Donahue SM, Rifas-Shiman SL, Gold DR, Jouni ZE, Gillman MW, Oken E. Prenatal fatty acid status and child adiposity at age 3 y: results from a US pregnancy cohort. *Am J Clin Nutr*. 2011 Apr;93(4):780-8. Epub 2011 Feb 10. [MORE INFORMATION](#)

Buckley JD, Howe PR. Long-chain omega-3 polyunsaturated fatty acids may be beneficial for reducing obesity-a review. *Nutrients*. 2010 Dec;2(12):1212-30. Epub 2010 Dec 9. [MORE INFORMATION](#)

Munro IA, Garg ML. Dietary supplementation with n-3 PUFA does not promote weight loss when combined with a very-low-energy diet. *Br J Nutr*. 2012 Jan 3:1-9. [Epub ahead of print] [MORE INFORMATION](#)

Golub N, Geba D, Mousa SA, Williams G, Block RC . Greasing the wheels of managing overweight and obesity with omega-3 fatty acids. *Med Hypotheses*. 2011 Dec;77(6):1114-20. Epub 2011 Oct 6. [MORE INFORMATION](#)

López-Alarcón M, Martínez-Coronado A, Velarde-Castro O, Rendón-Macías E, Fernández J. Supplementation of n3 long-chain polyunsaturated fatty acid synergistically decreases insulin resistance with weight loss of obese prepubertal and pubertal children. *Arch Med Res*. 2011 Aug;42(6):502-8. [MORE INFORMATION](#)

Zhang G, Sun Q, Hu FB, Ye X, Yu Z, Zong G, Li H, Zhou Y, Lin X. Erythrocyte n-3 fatty acids and metabolic syndrome in middle-aged and older Chinese. *J Clin Endocrinol Metab*. 2012 Jun;97(6):E973-7. Epub 2012 Mar 28. [MORE INFORMATION](#)

Itariu BK, Zeyda M, Hochbrugger EE, Neuhofer A, Prager G, Schindler K, Bohdjalian A, Mascher D, Vangala S, Schranz M, Krebs M, Bischof MG, Stulnig TM. Long-chain n-3 PUFAs reduce adipose tissue and systemic inflammation in severely obese nondiabetic patients: a randomized controlled trial. *Am J Clin Nutr*. 2012 Oct 3. [Epub ahead of print] [MORE INFORMATION](#)

Munro IA, Garg ML. Prior supplementation with long chain omega-3 polyunsaturated fatty acids promotes weight loss in obese adults: a double-blinded randomised controlled trial. *Food Funct.* 2013 Apr 25; 4(4):650-8. doi: 10.1039/c3fo60038f. Epub 2013 Feb 11. [MORE INFORMATION](#)

Osteoarthritis - Spondylitis

Stammers T, Sibbald B, Freeling P. Fish oil in Osteoarthritis. *Lancet* 1989; ii:503. [MORE INFORMATION](#)

Eriksen W, Sandvik L, Bruusgaard D. Does dietary supplementation of cod liver oil mitigate musculoskeletal pain? *Eur J Clin Nutr* 1996; 50:689-93. [MORE INFORMATION](#)

Maroon JC, Bost JW. Omega-3 fatty acids (fish oil) as an anti-inflammatory: an alternative to NSAIDs for discogenic pain. *Surg Neurol* 2006; 65: 325. [MORE INFORMATION](#)

Sundstrom B, Stalnacke K, Hagfors L, Johansson G. Supplementation of omega-3 fatty acids in patients with ankylosing spondylitis. *Scand J Rheumatol.* 2006 Sep-Oct; 35(5):359-62. [MORE INFORMATION](#)

Goldberg RJ, Katz J. A meta-analysis of the analgesic effects of omega-3 polyunsaturated fatty acid supplementation for inflammatory joint pain. *Pain.* 2007; 129(1-2):210-23. [MORE INFORMATION](#)

Baker KR, Matthan NR, Lichtenstein A, Niu J, Guermazi A, Roemer F, Grainger A, Nevitt M, Clancy M, Lewis CE, Torner J, Felson DT. Association of plasma n-6 and n-3 polyunsaturated fatty acids with synovitis in the knee: the MOST study. *Osteoarthritis Cartilage.* 2012 Feb 4. [Epub ahead of print] [MORE INFORMATION](#)

Osteoporosis

Vanek C, Connor WE. Do n-3 fatty acids prevent osteoporosis? *Am J Clin Nutr* 2007 85: 647-648. [MORE INFORMATION](#)

Högström M, Nordström P, Nordström A. n-3 Fatty acids are positively associated with peak bone mineral density and bone accrual in healthy men: the NO₂ Study. *Am J Clin Nutr* 2007 85: 803-807. [MORE INFORMATION](#)

Rousseau JH, Kleppinger A, Kenny AM. Self-Reported Dietary Intake of Omega-3 Fatty Acids and Association with Bone and Lower Extremity Function. *J Am Geriatr Soc*. 2009 Oct;57(10):1781-8. [MORE INFORMATION](#)

Eriksson S, Mellström D, Strandvik B. Fatty acid pattern in serum is associated with bone mineralisation in healthy 8-year-old children. *Br J Nutr*. 2009 Aug;102(3):407-12. [MORE INFORMATION](#)

Farina EK, Kiel DP, Roubenoff R, Schaefer EJ, Cupples LA, Tucker KL. Protective effects of fish intake and interactive effects of long-chain polyunsaturated fatty acid intakes on hip bone mineral density in older adults: the Framingham Osteoporosis Study. *Am J Clin Nutr*. 2011 Mar 2. [Epub ahead of print] [MORE INFORMATION](#)

Damsgaard CT, Mølgaard C, Matthiessen J, Gyldenløve SN, Lauritzen L. The effects of n-3 long-chain polyunsaturated fatty acids on bone formation and growth factors in adolescent boys. *Pediatr Res*. 2012 Feb 15. doi: 10.1038/pr.2012.28. [Epub ahead of print] [MORE INFORMATION](#)

Orchard TS, Pan X, Cheek F, Ing SW, Jackson RD. A systematic review of omega-3 fatty acids and osteoporosis. *Br J Nutr*. 2012 Jun;107 Suppl 2:S253-60. [MORE INFORMATION](#)

Orchard TS, Ing SW, Lu B, Belury MA, Johnson K, Wactawski-Wende J, Jackson RD. The association of red blood cell n-3 and n-6 fatty acids to dietary fatty acid intake, bone mineral density and hip fracture risk in the Women's Health Initiative. *J Bone Miner Res*. 2012 Sep 27. doi: 10.1002/jbmr.1772. [Epub ahead of print] [MORE INFORMATION](#)

Paediatrics/Development

Carlson SE, Werkman SH, Rhodes PG, Tolley EA. Visual-acuity development in healthy preterm infants: effect of marine-oil supplementation. *Am J Clin Nutr* 1993;58:35-42. [MORE INFORMATION](#)

Innis SM. Essential fatty acid requirements in human nutrition. *Can J*

Physiol Pharmacol 1993;71:699-706. [MORE INFORMATION](#)

Hachey DL. Benefits and risks of modifying maternal fat intake in pregnancy and lactation. Am J Clin Nutr 1994;59(suppl):S454-64. [MORE INFORMATION](#)

Urauy R, Hoffman DR, Birch EE, Birch DG, Jameson DM, Tyson J. Safety and efficacy of omega-3 fatty acids in the nutrition of very low birth weight infants: Soy oil and marine oil supplementation of formula. J Pediatr 1994;124:612-20. [MORE INFORMATION](#)

Innis SM, Lupton BA, Nelson C. Biochemical and functional approaches to study of fatty acid requirements for very premature infants. Nutrition 1994;10:72-6. [MORE INFORMATION](#)

Decsi T, Koletzko B. Polyunsaturated fatty acids in infant nutrition. Acta Paediatr 1994;Suupl 395:31-7. [MORE INFORMATION](#)

Farquharson J. Infant cerebral cortex and dietary fatty acids. Eur J Clin Nutr 1994; 48 suppl. 2 :S24-6. [MORE INFORMATION](#)

Farquharson J, Cockburn F, Patrick WA, Jamieson EC, Logan RW. Infant cerebral cortex phospholipid fatty-acid composition and diet. Lancet 1992;340:810-3. [MORE INFORMATION](#)

Makrides M, Neumann M, Simmer K, Pater J, Gibson R. Are long-chain polyunsaturated fatty acids essential nutrients in infancy?. Lancet 1995;345:1463-8. [MORE INFORMATION](#)

Strevens LJ, Zentall SS, Marcey LA, Kuczek T, Burgess JR. Omega-3 fatty acids in boys with behaviour, learning, and health problems. Physiology & Behavior 1996;59:915-20. [MORE INFORMATION](#)

Birch EE, Hoffman DR, Uauy R, Birch DG, Prestidge C. Visual acuity and the essentiality of docosahexaenoic acid and arachidonic acid in the diet of term infants. Pediatr Res 1998;44:201-9. [MORE INFORMATION](#)

Gibson RA, Makrides M. The role of long chain polyunsaturated fatty acids (LCPUFA) in neonatal nutrition. Acta Paediatr 1998;87:1017-22. [MORE INFORMATION](#)

Innis SM. Maternal diet, length of gestation, and long-chain polyunsaturated fatty acid status of infants at birth. Am J Clin Nutr 1999;70:181-2. [MORE INFORMATION](#)

Birch EE, Garfield S, Hoffman DR, Birch DG. A randomized controlled trial of early dietary supply of long-chain polyunsaturated fatty acids and mental development in term infants. *Developmental Medicine & Child Neurology* 2000;42: 174-81. [MORE INFORMATION](#)

Gibson RA. Long-chain polyunsaturated fatty acids and infant development. *Lancet* 1999;354: 1919-20. [MORE INFORMATION](#)

Elias SL, Innis SM. Infant plasma trans, n-6 and n-3 fatty acids and conjugated linoleic acids are related to maternal plasma fatty acids, length of gestation, and birth weight and length. *Am J Clin Nutr* 2001;73:807-14. [MORE INFORMATION](#)

McCann JC, Ames BN. Is docosahexaenoic acid, an n-3 long-chain polyunsaturated fatty acid, required for development of normal brain function? An overview of evidence from cognitive and behavioral tests in humans and animals. *Am J Clin Nutr* 2005;82:281-95. [MORE INFORMATION](#)

Woltil HA, van Beusekom CM, Schaafsma A, Muskiet FAJ, Okken A. Long-chain polyunsaturated fatty acid status and early growth of low birth weight infants. *Eur J Pediatr* 1998;157:146-52. [MORE INFORMATION](#)

Yehuda S, Rabinovitz S, Mostofsky DI. Essential fatty acids are mediators of brain biochemistry and cognitive functions. *J Neuroscience Res* 1999;56:565-70. [MORE INFORMATION](#)

Lauritzen L, Hansen HS, Jørgensen MH, Michaelsen KF. The essentiality of long chain n-3 fatty acids in relation to development and function of the brain and retina. *Progr. Lipid Res* 2001;40:1-94. [MORE INFORMATION](#)

Henderson WR, Astley SJ, Ramsey BW. Liver function in patients with cystic fibrosis ingesting fish oil. *J Pediatrics* 1994;125:504-5. [MORE INFORMATION](#)

Helland IB, Smith L, Saarem K, Saugstad OD, Drevon CA. Maternal supplementation with very-long-chain n-3 fatty acids during pregnancy and lactation augments children's IQ at 4 years of age. *Pediatrics* 2003;111:39-44. [MORE INFORMATION](#)

Genus SJ, Schwalfenberg GK. *J Perinatol.* 2006;26:359-65. Time for an oil check: the role of essential omega-3 fatty acids in maternal and pediatric health. [MORE INFORMATION](#)

Birch EE, Castañeda YS, Wheaton DH, Birch DG, Uauy RD, Hoffman DR. Visual maturation of term infants fed long-chain polyunsaturated fatty acid-supplemented or control formula for 12 mo Am. J. Clinical Nutrition, Apr 2005; 81: 871 - 879. [MORE INFORMATION](#)

Dunstan JA, Simmer K, Dixon G, Prescott SL. Cognitive assessment at 21/2 years following fish oil supplementation in pregnancy: a randomized controlled trial. Arch Dis Child Fetal Neonatal Ed. 2008 Jan; 93(1):F45-50.. [MORE INFORMATION](#)

Yuhas R, Pramuk K, Lien EL. Human milk fatty acid composition from nine countries varies most in DHA. Lipids. 2006; 41(9):851-8. [MORE INFORMATION](#)

Hibbeln JR, Davis JM, Steer C, et al. Maternal seafood consumption in pregnancy and neurodevelopmental outcomes in childhood (ALSPAC study): an observational cohort study. Lancet. 2007; 369(9561):578-85. [MORE INFORMATION](#)

Bakker EC, Hornstra G, Blanco CE, Vles JS Eur J Clin Nutr. 2009 Apr; 63(4):499-504. Epub 2007 Dec 19. Relationship between long-chain polyunsaturated fatty acids at birth and motor function at 7 years of age. [MORE INFORMATION](#)

Birch EE, Garfield S, Castaneda Y, Highbanks-Wheaton D, Uauy R, Hoffman D. Visual acuity and cognitive outcomes at 4 years of age in a double-blind, randomized trial of long-chain polyunsaturated fatty acid-supplemented infant formula. Early Hum Dev. 2007 May; 83(5):279-84.. [MORE INFORMATION](#)

Beblo S, Reinhardt H, Demmelmair H, Muntau AC, Koletzko B. Effect of fish oil supplementation on fatty acid status, coordination, and fine motor skills in children with phenylketonuria. J Pediatr. 2007; 150(5):479-84. [MORE INFORMATION](#)

Bergmann LR, Haschke F, et al Does maternal docosahexaenoic acid supplementation during pregnancy and lactation lower BMI in late infancy?, J Perinat Med, 2007 Jun 5; [Epub ahead of print]. [MORE INFORMATION](#)

Krauss-Etschmann S, Shadid R, Campoy C, Hoster E, et al. Nutrition and Health Lifestyle (NUHEAL) Study Group Effects of fish-oil and folate supplementation of pregnant women on maternal and fetal plasma

concentrations of docosahexaenoic acid and eicosapentaenoic acid: a European randomized multicenter trial.. Am J Clin Nutr. 2007 May;85(5):1392-400. [MORE INFORMATION](#)

Judge MP, Harel O, Lammi-Keefe CJ. A docosahexaenoic acid-functional food during pregnancy benefits infant visual acuity at four but not six months of age. Lipids 2007;42:117-122. [MORE INFORMATION](#)

Judge MP, Harel O, Lammi-Keefe CJ. Maternal consumption of a docosahexaenoic acid-containing functional food during pregnancy: benefit for infant performance on problem-solving but not on recognition memory tasks at age 9 mo. Am J Clin Nutr. 2007;85(6):1572-7. [MORE INFORMATION](#)

Brenna JT, Varamini B, Jensen RG et al. Docosahexaenoic and arachidonic acid concentrations in human breast milk worldwide. Am J Clin Nutr. 2007;85(6):1457-64. [MORE INFORMATION](#)

Salem N. What is the right level of DHA in the infant diet? Commentary on article by Hsieh et al. on page 537. Pediatr Res. 2007 May;61(5 Pt 1):518-9Comment on: Pediatr Res. 2007 May;61(5 Pt 1):537-45. [MORE INFORMATION](#)

Hsieh AT, Anthony JC, Diersen-Schade DA, et al. The influence of moderate and high dietary long chain polyunsaturated fatty acids (LCPUFA) on baboon neonate tissue fatty acids. Pediatr Res. 2007;61(5 Pt 1):537-45. [MORE INFORMATION](#)

Innis SM. Human milk: maternal dietary lipids and infant development. Proc Nutr Soc. 2007;66(3):397-404. [MORE INFORMATION](#)

Osendarp SJ, Baghurst KI, Bryan J, Calvaresi E, Hughes D, Hussaini M, Karyadi SJ, van Klinken BJ, van der Knaap HC, Lukito W, Mikarsa W, Transler C, Wilson C; NEMO Study Group. Effect of a 12-mo micronutrient intervention on learning and memory in well-nourished and marginally nourished school-aged children: 2 parallel, randomized, placebo-controlled studies in Australia and Indonesia. Am J Clin Nutr. 2007;86(4):1082-93. [MORE INFORMATION](#)

Bakker EC, Hornstra G, Blanco CE, Vles JS. Relationship between long-chain polyunsaturated fatty acids at birth and motor function at 7 years of age. Eur J Clin Nutr. 2009 Apr;63(4):499-504. [MORE INFORMATION](#)

Dunstan JA, Simmer K, Dixon G, Prescott SL. Cognitive assessment of children at age 2(1/2) years after maternal fish oil supplementation in pregnancy: a randomised controlled trial. Arch Dis Child Fetal Neonatal Ed. 2008 Jan;93(1):F45-50. Epub 2006 Dec 21. [MORE INFORMATION](#)

Hornstra G, Blanco CE, Vles JS Relationship between long-chain polyunsaturated fatty acids at birth and motor function at 7 years of age. Eur J Clin Nutr. 2007 Dec 19 [Epub ahead of print] [MORE INFORMATION](#)

Innis SM, Friesen RW Essential n-3 fatty acids in pregnant women and early visual acuity maturation in term infants. Am J Clin Nutr. 2008;87(3):548-57. [MORE INFORMATION](#)

Oken E, Østerdal ML, Gillman MW, Knudsen VK, Halldorsson TI, Strøm M, Bellinger DC, Hadders-Algra M, Michaelsen KF, Olsen SF. Associations of maternal fish intake during pregnancy and breastfeeding duration with attainment of developmental milestones in early childhood: a study from the Danish National Birth Cohort. Am J Clin Nutr. 2008;88(3):789-96. [MORE INFORMATION](#)

Innis SM. Dietary omega 3 fatty acids and the developing brain. Brain Res. 2008 Sep 9. [Epub ahead of print] [MORE INFORMATION](#)

Smithers LG, Gibson RA, McPhee A, Makrides M. Higher dose of docosahexaenoic acid in the neonatal period improves visual acuity of preterm infants: results of a randomized controlled trial. Am J Clin Nutr. 2008;88(4):1049-56. [MORE INFORMATION](#)

Makrides M, Gibson RA, McPhee AJ, Collins CT, Davis PG, Doyle LW, Simmer K, Colditz PB, Morris S, Smithers LG, Willson K, Ryan P. Neurodevelopmental outcomes of preterm infants fed high-dose docosahexaenoic acid: a randomized controlled trial. JAMA. 2009;301(2):175-82. [MORE INFORMATION](#)

Agostoni C, Zuccotti GV, Radaelli G, Besana R, Podestà A, Sterpa A, Rottoli A, Riva E, Giovanni M. Docosahexaenoic acid supplementation and time at achievement of gross motor milestones in healthy infants: a randomized, prospective, double-blind, placebo-controlled trial. Am J Clin Nutr. 2009;89(1):64-70. [MORE INFORMATION](#)

Carlson SE. Docosahexaenoic acid supplementation in pregnancy and lactation. Am J Clin Nutr. 2009;89(2):678S-84S. [MORE INFORMATION](#)

Koletzko B, Beblo S, Demmelmair H, Hanebutt FL. Omega-3 LC-PUFA supply and neurological outcomes in children with phenylketonuria

(PKU). *J Pediatr Gastroenterol Nutr.* 2009;48 Suppl 1:S2-7. [MORE INFORMATION](#)

Aberg MA, Aberg N, Brisman J, Sundberg R, Winkvist A, Torén K. Fish intake of Swedish male adolescents is a predictor of cognitive performance. *Acta Paediatr.* 2009;98(3):555-60. [MORE INFORMATION](#)

Bakker EC, Hornstra G, Blanco CE, Vles JS. Relationship between long-chain polyunsaturated fatty acids at birth and motor function at 7 years of age. *Eur J Clin Nutr.* 2009;63(4):499-504. [MORE INFORMATION](#)

Kim JL, Winkvist A, Aberg MA, Aberg N, Sundberg R, Torén K, Brisman J. Fish consumption and school grades in Swedish adolescents: a study of the large general population. *Acta Paediatr.* 2010 Jan;99(1):72-7. [MORE INFORMATION](#)

Birch EE, Carlson SE, Hoffman DR, Fitzgerald-Gustafson KM, Fu VL, Drover JR, Castañeda YS, Minns L, Wheaton DK, Mundy D, Marunycz J, Diersen-Schade DA. The DIAMOND (DHA Intake And Measurement Of Neural Development) Study: a double-masked, randomized controlled clinical trial of the maturation of infant visual acuity as a function of the dietary level of docosahexaenoic acid. *Am J Clin Nutr.* 2010 Apr;91(4):848-59. [MORE INFORMATION](#)

McNamara RK, Able J, Jandacek R, Rider T, Tso P, Eliassen JC, Alfieri D, Weber W, Jarvis K, Delbello MP, Strakowski SM, Adler CM. Docosahexaenoic acid supplementation increases prefrontal cortex activation during sustained attention in healthy boys: a placebo-controlled, dose-ranging, functional magnetic resonance imaging study. *Am J Clin Nutr.* 2010 Apr;91(4):1060-7. [MORE INFORMATION](#)

Jensen CL, Voigt RG, Llorente AM, Peters SU, Prager TC, Zou YL, Rozelle JC, Turcich MR, Fraley JK, Anderson RE, Heird WC. Effects of Early Maternal Docosahexaenoic Acid Intake on Neuropsychological Status and Visual Acuity at Five Years of Age of Breast-Fed Term Infants. *J Pediatr.* 2010 Dec;157(6):900-5. [MORE INFORMATION](#)

Makrides M, Gibson RA, McPhee AJ, Yelland L, Quinlivan J, Ryan P; DOMInO Investigative Team. Effect of DHA supplementation during pregnancy on maternal depression and neurodevelopment of young children: a randomized controlled trial. *JAMA.* 2010 Oct 20;304(15):1675-83. [MORE INFORMATION](#)

Muhlhausler BS, Gibson RA, Makrides M. Effect of long-chain polyunsaturated fatty acid supplementation during pregnancy or lactation

on infant and child body composition: a systematic review. *Am J Clin Nutr.* 2010 Oct;92(4):857-63. Epub 2010 Aug 4. [MORE INFORMATION](#)

Jans LA, Giltay EJ, Willem Van der Does AJ. The efficacy of n-3 fatty acids DHA and EPA (fish oil) for perinatal depression. *Br J Nutr.* 2010 Nov 16.;1-9. [MORE INFORMATION](#)

Jacques C, Levy E, Muckle G, Jacobson SW, Bastien C, Dewailly E, Ayotte P, Jacobson JL, Saint-Amour D. Long-term effects of prenatal omega-3 fatty acid intake on visual function in school-age children. *J Pediatr.* 2011 Jan;158(1):73-80, 80.e1. [MORE INFORMATION](#)

Drover JR, Hoffman DR, Castañeda YS, Morale SE, Garfield S, Wheaton DH, Birch EE. Cognitive function in 18-month-old term infants of the DIAMOND study: a randomized, controlled clinical trial with multiple dietary levels of docosahexaenoic acid. *Early Hum Dev.* 2011 Mar;87(3):223-30. Epub 2011 Feb 3. [MORE INFORMATION](#)

Boucher O, Burden MJ, Muckle G, Saint-Amour D, Ayotte P, Dewailly E, Nelson CA, Jacobson SW, Jacobson JL. Neurophysiologic and neurobehavioral evidence of beneficial effects of prenatal omega-3 fatty acid intake on memory function at school age. *Am J Clin Nutr.* 2011 May;93(5):1025-37. [MORE INFORMATION](#)

Sijben JW, Goedhart AC, Kamphuis PJ, Calder PC, Gottrand F, Koletzko B. Is it prudent to add n-3 long-chain polyunsaturated fatty acids to paediatric enteral tube feeding? *Clin Nutr.* 2011 Jun;30(3):273-81. [MORE INFORMATION](#)

Lassek WD, Gaulin SJ. Sex differences in the relationship of dietary Fatty acids to cognitive measures in american children. *Front Evol Neurosci.* 2011;3:5. [MORE INFORMATION](#)

Kohlboeck G, Glaser C, Tiesler C, Demmelmair H, Standl M, Romanos M, Koletzko B, Lehmann I, Heinrich J; LISApplus Study Group. Effect of fatty acid status in cord blood serum on children's behavioral difficulties at 10 y of age: results from the LISApplus Study. *Am J Clin Nutr.* 2011 Dec;94(6):1592-9. Epub 2011 Nov 9. [MORE INFORMATION](#)

Skilton MR, Ayer JG, Harmer JA, Webb K, Leeder SR, Marks GB, Celermajer DS. Impaired Fetal Growth and Arterial Wall Thickening: A Randomized Trial of Omega-3 Supplementation. *Pediatrics.* 2012 Feb 20. [Epub ahead of print] [MORE INFORMATION](#)

Meldrum SJ, D'Vaz N, Simmer K, Dunstan JA, Hird K, Prescott SL. Effects of high-dose fish oil supplementation during early infancy on neurodevelopment and language: a randomised controlled trial. *Br J Nutr.* 2012 Feb 21;116(2):1-12. [Epub ahead of print] [MORE INFORMATION](#)

Brantsæter AL, Birgisdottir BE, Meltzer HM, Kvaalem HE, Alexander J, Magnus P, Haugen M. Maternal seafood consumption and infant birth weight, length and head circumference in the Norwegian Mother and Child Cohort Study. *Br J Nutr.* 2012 Feb;107(3):436-44. [MORE INFORMATION](#)

Richardson AJ, Burton JR, Sewell RP, Spreckelsen TF, Montgomery P. Docosahexaenoic Acid for Reading, Cognition and Behavior in Children Aged 7-9 Years: A Randomized, Controlled Trial (The DOLAB Study). *PLoS One.* 2012;7(9):e43909. Epub 2012 Sep 6. [MORE INFORMATION](#)

Colombo J, Carlson SE, Cheatham CL, Shaddy DJ, Kerling EH, Thodosoff JM, Gustafson KM, Brez C. Long-term effects of LCPUFA supplementation on childhood cognitive outcomes. *Am J Clin Nutr.* 2013 Jun 26. [Epub ahead of print] [MORE INFORMATION](#)

Richardson AJ, Burton JR, Sewell RP, Spreckelsen TF, Montgomery P. Docosahexaenoic acid for reading, cognition and behavior in children aged 7-9 years: a randomized, controlled trial (the DOLAB Study). *PLoS One.* 2012;7(9):e43909. doi: 10.1371/journal.pone.0043909. Epub 2012 Sep 6. [MORE INFORMATION](#)

Colombo J, Carlson SE, Cheatham CL, Shaddy DJ, Kerling EH, Thodosoff JM, Gustafson KM, Brez C. Long-term effects of LCPUFA supplementation on childhood cognitive outcomes. *Am J Clin Nutr.* 2013 Jun 26. [Epub ahead of print] [MORE INFORMATION](#)

Periodontal disease

Iwasaki M, Yoshihara A, Moynihan P, Watanabe R, Taylor GW, Miyazaki H. Longitudinal relationship between dietary omega-3 fatty acids and periodontal disease. *Nutrition.* 2010 Jan 22. [Epub ahead of print] [MORE INFORMATION](#)

Huang CB, Ebersole JL. A novel bioactivity of omega-3 polyunsaturated fatty acids and their ester derivatives. *Mol Oral Microbiol.* 2010 Feb;25(1):75-80. [MORE INFORMATION](#)

Naqvi AZ, Buettner C, Phillips RS, Davis RB, Mukamal KJ. n-3 Fatty Acids and Periodontitis in US Adults. J Am Diet Assoc. 2010 Nov;110(11):1669-75. [MORE INFORMATION](#)

Elkhouli AM. The efficacy of host response modulation therapy (omega-3 plus low-dose aspirin) as an adjunctive treatment of chronic periodontitis (clinical and biochemical study). J Periodontal Res. 2011 Apr;46(2):261-8. doi: 10.1111/j.1600-0765.2010.01336.x. Epub 2011 Jan 25. [MORE INFORMATION](#)

Iwasaki M, Taylor GW, Moynihan P, Yoshihara A, Muramatsu K, Watanabe R, Miyazaki H. Dietary ratio of n-6 to n-3 polyunsaturated fatty acids and periodontal disease in community-based older Japanese: a 3-year follow-up study. Prostaglandins Leukot Essent Fatty Acids. 2011 Aug;85(2):107-12. [MORE INFORMATION](#)

Hasturk H, Kantarci A, Van Dyke TE. Paradigm shift in the pharmacological management of periodontal diseases. Front Oral Biol. 2012;15:160-76. Epub 2011 Nov 11. [MORE INFORMATION](#)

Van Dyke TE. Proresolving lipid mediators: potential for prevention and treatment of periodontitis. J Clin Periodontol. 2011 Mar;38 Suppl 11:119-25. doi: 10.1111/j.1600-051X.2010.01662.x. [MORE INFORMATION](#)

Pregnancy

Olsen SF, Hansen HS, Soerensen TIA, Jensen B, Secher NJ, Sommer S, Knudsen LB. Intake of marine fat, rich in (n-3)-polyunsaturated fatty acids, may increase birthweight by prolonging gestation. Lancet 1986;2:367-9. [MORE INFORMATION](#)

Secher NJ, Olsen SF. Fish-oil and pre-eclampsia. Br J Obst Gynecol 1990;97:1077-9. [MORE INFORMATION](#)

Olsen SF, Hansen HH, Sommer S, Jensen B, Soerensen TIA, Secher NJ, Zachariassen P. Gestational age in relation to marine n-3 fatty acids in maternal erythrocytes: A study of women in the Faroe Islands and Denmark. Am J Obstet Gynecol. 1991;164:1203-9. [MORE INFORMATION](#)

Olsen SF, Soerensen JD, Secher NJ, Hedegaard M, Henriksen TB, Hansen HS, Grant A. Randomised controlled trial of effect of fish-oil

supplementation on pregnancy duration. Lancet 1992;339:1003-7. [MORE INFORMATION](#)

Olsen SF, Secher NJ, Tabor A, Weber T, Walker JJ, Gluud C. Randomised clinical trials of fish oil supplementation in high risk pregnancies. Br. J. Obstet. Gynaecol. 2000;107:382-95. [MORE INFORMATION](#)

Dyerberg J, Bang HO. Pre-eclampsia and prostaglandins. Lancet 1985; i: 1267.

Bang HO, Dyerberg J. Urinary thromboxane metabolites in pre-eclampsia. Lancet 1990; 335: 1169.

Wynn AH, Crawford MA, Doyle W, Wynn SW. Nutrition of women in anticipation of pregnancy. Nutr Health 1991;7:69-88. [MORE INFORMATION](#)

Tobin A. Fish oil supplementation in pregnancy. Lancet 1992;340:118.

Hibbeln JR. Seafood consumption, the DHA content of mothers' milk and prevalence rates of postpartum depression: a cross-national, ecological analysis. J Affective Disorders 2002;69:15-29. [MORE INFORMATION](#)

Decsi T, Koletzko B. n-3 Fatty acids and pregnancy outcomes. Curr Opin Clin Nutr Metab Care 2005;8:161-6. [MORE INFORMATION](#)

Genus SJ, Schwalfenberg GK. J Perinatol. 2006;26:359-65. Time for an oil check: the role of essential omega-3 fatty acids in maternal and pediatric health. [MORE INFORMATION](#)

Helland IB, Saugstad OD, Saarem K, Van Houwelingen AC, Nylander G, Drevon CA. Supplementation of n-3 fatty acids during pregnancy and lactation reduces maternal plasma lipid levels and provides DHA to the infants. J Matern Fetal Neonatal Med. 2006;19:397-406. [MORE INFORMATION](#)

Olsen SF, Osterdal ML, et al, Duration of pregnancy in relation to seafood intake during early and mid pregnancy: prospective cohort," Eur J Epidemiol, 2006; 21(10): 749-58. [MORE INFORMATION](#)

Hibbeln JR, Davis JM, Steer C, et al. Maternal seafood consumption in pregnancy and neurodevelopmental outcomes in childhood (ALSPAC study): an observational cohort study. Lancet. 2007;369(9561):578-85. [MORE INFORMATION](#)

Oiu C, Sanchez SE, Larrabure G, et al. Erythrocyte omega-3 and omega-6 polyunsaturated fatty acids and preeclampsia risk in Peruvian women. Arch Gynecol Obstet. 2006;274(2):97-103. [MORE INFORMATION](#)

Oken E, Ning Y, Rifas-Shiman SL, et al. Diet During Pregnancy and Risk of Preeclampsia or Gestational Hypertension. Ann Epidemiol. 2007 May 21; [Epub ahead of print] [MORE INFORMATION](#)

Krauss-Etschmann S, Shadid R, Campoy C, Hoster E, et al. Nutrition and Health Lifestyle (NUHEAL) Study Group Effects of fish-oil and folate supplementation of pregnant women on maternal and fetal plasma concentrations of docosahexaenoic acid and eicosapentaenoic acid: a European randomized multicenter trial.. Am J Clin Nutr. 2007 May;85(5):1392-400. [MORE INFORMATION](#)

Salem N. What is the right level of DHA in the infant diet? Commentary on article by Hsieh et al. on page 537. Pediatr Res. 2007 May;61(5 Pt 1):518-9Comment on: Pediatr Res. 2007 May;61(5 Pt 1):537-45.

Olsen SF, Osterdal ML, Salvig JD, Weber T, Tabor A, Secher NJ. Duration of pregnancy in relation to fish oil supplementation and habitual fish intake: a randomised clinical trial with fish oil. . Eur J Clin Nutr. 2007;61(8):976-85. [MORE INFORMATION](#)

Mahomed K, Williams MA, King IB, Mudzamiri S, Woelk GB. Erythrocyte omega-3, omega-6 and trans fatty acids in relation to risk of preeclampsia among women delivering at Harare Maternity Hospital, Zimbabwe. Physiol Res. 2007;56(1):37-50. Epub 2006 Feb 23. [MORE INFORMATION](#)

Su KP, Huang SY, Chiu TH, Huang KC, Huang CL, Chang HC, Pariante CM. Omega-3 Fatty Acids for Major Depressive Disorder During Pregnancy: Results From a Randomized, Double-Blind, Placebo-Controlled Trial. . J Clin Psychiatry. 2008 Mar 18;;e1-e8 [Epub ahead of print] [MORE INFORMATION](#)

Innis SM, Friesen RW. Essential n-3 fatty acids in pregnant women and early visual acuity maturation in term infants. Am J Clin Nutr. 2008;87(3):548-57 [MORE INFORMATION](#)

Jacobson JL, Jacobson SW, Muckle G, Kaplan-Estrin M, Ayotte P, Dewailly Beneficial effects of a polyunsaturated fatty acid on infant development: evidence from the inuit of arctic Quebec. J Pediatr. 2008;152(3):356-64. [MORE INFORMATION](#)

Oken E, Radesky JS, Wright RO, Bellinger DC, Amarasiriwardena CJ, Kleinman KP, Hu H, Gillman MW. Maternal Fish Intake during Pregnancy, Blood Mercury Levels, and Child Cognition at Age 3 Years in a US Cohort. *Am J Epidemiol*. 2008 Mar 18 [Epub ahead of print] [MORE INFORMATION](#)

Koletzko B, Lien E, Agostoni C, Böhles H, Campoy C, Cetin I, Decsi T, Dudenhausen JW, Dupont C, Forsyth S, Hoesli I, Holzgreve W, Lapillonne A, Putet G, Secher NJ, Symonds M, Szajewska H, Willatts P, Uauy R; WAPM. The roles of long-chain polyunsaturated fatty acids in pregnancy, lactation and infancy: review of current knowledge and consensus recommendations. *J Perinat Med*. 2008;36(1):5-14. [MORE INFORMATION](#)

Ryan AS, Nelson EB. Assessing the effect of docosahexaenoic Acid on cognitive functions in healthy, preschool children: a randomized, placebo-controlled, double-blind study. *Clin Pediatr (Phila)*. 2008 May;47(4):355-62. [MORE INFORMATION](#)

van Eijsden M, Hornstra G, van der Wal MF, Vrijkotte TG, Bonsel GJ. Maternal n-3, n-6, and trans fatty acid profile early in pregnancy and term birth weight: a prospective cohort study. *Am J Clin Nutr*. 2008;87(4):887-95. [MORE INFORMATION](#)

Lien E, Agostoni C, Böhles H, Campoy C, Cetin I, Decsi T, Dudenhausen JW, Dupont C, Forsyth S, Hoesli I, Holzgreve W, Lapillonne A, Putet G, Secher NJ, Symonds M, Szajewska H, Willatts P, Uauy R; World Association of Perinatal Medicine Dietary Guidelines Working Group. The roles of long-chain polyunsaturated fatty acids in pregnancy, lactation and infancy: review of current knowledge and consensus recommendations. *J Perinat Med*. 2008;36(1):5-14. [MORE INFORMATION](#)

Henriksen C, Haugholt K, Lindgren M, Aurvåg AK, Rønnestad A, Grønn M, Solberg R, Moen A, Nakstad B, Berge RK, Smith L, Iversen PO, Drevon CA. Improved cognitive development among preterm infants attributable to early supplementation of human milk with docosahexaenoic acid and arachidonic acid. *Pediatrics*. 2008 Jun;121(6):1137-45. [MORE INFORMATION](#)

Strain JJ, Davidson PW, Bonham MP, Duffy EM, Stokes-Riner A, Thurston SW, Wallace JM, Robson PJ, Shamlaye CF, Georger LA, Sloane-Reeves J, Cernichiari E, Canfield RL, Cox C, Huang LS, Janciuras J, Myers GJ, Clarkson TW. Associations of maternal long-chain polyunsaturated fatty acids, methyl mercury, and infant development in the Seychelles Child

Development Nutrition Study. . Neurotoxicology. 2008 Jun 11. [Epub ahead of print] [MORE INFORMATION](#)

Cetin I, Koletzko B. Long-chain omega-3 fatty acid supply in pregnancy and lactation. *Curr Opin Clin Nutr Metab Care*. 2008 May; 11(3):297-302. [MORE INFORMATION](#)

Carlson SE. Docosahexaenoic acid supplementation in pregnancy and lactation. *Am J Clin Nutr*. 2009; 89(2):678S-84S. [MORE INFORMATION](#)

Magnusardottir AR, Steingrimsdottir L, Thorgeirsdottir H, Hauksson A, Skuladottir GV. Red blood cell n-3 polyunsaturated fatty acids in first trimester of pregnancy are inversely associated with placental weight. *Acta Obstet Gynecol Scand*. 2009; 88(1):91-7. [MORE INFORMATION](#)

Rees AM, Austin MP, Owen C, Parker G. Omega-3 deficiency associated with perinatal depression: Case control study. *Psychiatry Res*. 2009 Mar 4. [Epub ahead of print] [MORE INFORMATION](#)

Golding J, Steer C, Emmett P, Davis JM, Hibbeln JR. High levels of Depressive Symptoms in Pregnancy With Low Omega-3 Fatty Acid Intake From Fish. *Epidemiology*. 2009 Mar 10. [Epub ahead of print] [MORE INFORMATION](#)

Franke C, Verwied-Jorky S, Campoy C, Trak-Fellermeier M, Decsi T, Dolz V, Koletzko B. Dietary intake of natural sources of docosahexaenoic acid and folate in pregnant women of three European cohorts. *Ann Nutr Metab*. 2008; 53(3-4):167-74. [MORE INFORMATION](#)

Strøm M, Mortensen EL, Halldorsson TI, Thorsdottir I, Olsen SF. Fish and long-chain n-3 polyunsaturated fatty acid intakes during pregnancy and risk of postpartum depression: a prospective study based on a large national birth cohort. *Am J Clin Nutr*. 2009; 90(1):149-55. [MORE INFORMATION](#)

Warstedt K, Furuholm C, Duchén K, Fälth-Magnusson K, Fagerås M. The effects of omega-3 fatty acid supplementation in pregnancy on maternal eicosanoid, cytokine, and chemokine secretion. *Pediatr Res*. 2009; 66(2):212-7. [MORE INFORMATION](#)

Leung BM, Kaplan BJ. Perinatal depression: prevalence, risks, and the nutrition link--a review of the literature. *J Am Diet Assoc*. 2009 Sep; 109(9):1566-75. [MORE INFORMATION](#)

Tsourapas A, Roberts TE, Barton PM, Honest H, Forbes C, Hyde CJ,

KS. An economic evaluation of alternative test-intervention strategies to prevent spontaneous pre-term birth in singleton pregnancies. *Acta Obstet Gynecol Scand.* 2009;88(12):1319-30. [MORE INFORMATION](#)

Carlson SE, Colombo J, Gajewski BJ, Gustafson KM, Mundy D, Yeast J, Georgieff MK, Markley LA, Kerling EH, Shaddy DJ. DHA supplementation and pregnancy outcomes. *Am J Clin Nutr.* 2013 Apr;97(4):808-15. doi: 10.3945/ajcn.112.050021. Epub 2013 Feb 20. [MORE INFORMATION](#)

Rheumatoid arthritis - Inflammation

Nielsen GL, Faarvang KL, Thomsen BS, Teglbjærg KL, Jensen LT, Hansen TM, Lervang HH, Schmidt EB, Dyerberg J, Ernst E. The Effects of Dietary Supplementation with n-3 Polyunsaturated Fatty Acids in Patients with Rheumatoid Arthritis: A Randomized Double Blind Trial. *Eur J Clin Invest* 1992; 22: 687-91. [MORE INFORMATION](#)

Belch JJF, Ansell D, Madhok R, O'Dowd A, Sturrock RD. Effects of altering dietary essential fatty acids on requirements for non-steroidal anti-inflammatory drugs in patients with rheumatoid arthritis: a double blind placebo controlled study. *Annals of the Rheumatic Diseases.* 1988;47:96-104. [MORE INFORMATION](#)

Kremer JM. n-3 dietary supplementation in rheumatoid arthritis. *Omega-3 News.* 1989;IV:1-4.

Kremer JM. Clinical studies of omega-3 fatty acid supplementation in patients who have rheumatoid arthritis. *Rheum Dis Clin North Am.* 1991;17:391-402. [MORE INFORMATION](#)

Tulleken JE, Limburg PC, Wassenaar W, van Rijswijk MH. Nonsteroidal antiinflammatory drug demand during fish oil treatment in rheumatoid arthritis. *Hungarian Rheumatology.* 1991;32:127- [MORE INFORMATION](#)

Nielsen GL, Ernst E, Schmidt E. Fish oil and rheumatoid arthritis - a review of clinical studies. *Omega-3 News* 1994;IX:1-4.

Kremer JM, Lawrence DA, Petrillo GE, Litts LL, Mullaly PM, Rynes RI, Stocker RP, Parhami N, Greenstein NS, Fuchs BR, Mathur A, Robinson DR, Sperling RI, Bigaouette J. Effects of high-dose fish oil on rheumatoid arthritis after stopping nonsteroidal antiinflammatory drugs. *Arthritis Rheumatism* 1995;38:1107-14. [MORE INFORMATION](#)

Fortin PR, Lew RA, Liang MH, Wright EA, Beckett LA, Chalmers TC, Sperling RI. Validation of a meta-analysis: the effects of fish oil in rheumatoid arthritis. *Validation of a meta-analysis: the effects of fish oil in rheumatoid arthritis* 1995; 48:1379-90. [MORE INFORMATION](#)

Cleland LC, Hill CL, James MJ. Diet and arthritis. *Bailliere's Clinical Rheumatology*. 1995;9:771-85. [MORE INFORMATION](#)

Kremer JM. Effects of modulation of inflammatory and immune parameters in patients with rheumatic and inflammatory disease receiving dietary supplementation of n-3 and n-6 fatty acids. *Lipids* 1996;31:S234.-47. [MORE INFORMATION](#)

Hansen GV, Nielsen L, Kluger E, Thyssen M, Emmertsen H, Stengaard-Pedersen K, Hansen EL, Unger B, Andersen PW. Nutritional status of Danish rheumatoid arthritis patients and effects of a diet adjusted in energy intake, fish-meal, and antioxidants. *Scand J Rheumatol* 1996; 25:325-30. [MORE INFORMATION](#)

Volker D, Fitzgerald P, Major G, Garg M. Efficacy of fish oil concentrate in the treatment of rheumatoid arthritis. *J Rheumatol*. 2000;27:234-6. [MORE INFORMATION](#)

Calder PC. n-3 polyunsaturated fatty acids, inflammation and immunity: pouring oil on troubled waters or another fishy tale?. *Nutrition Res*. 2001;21:309-41.

Agency for Healthcare Research and Quality. March 2004. Evidence reports: health effects of omega-3 fatty acids on lipids and glycemic control in type II diabetes and the metabolic syndrome and on inflammatory bowel disease, rheumatoid arthritis, renal disease, systemic lupus erythematosus and osteoporosis.

Cleland LG, Caughey GE, James MJ, Proudman SM. Reduction of cardiovascular risk factors with longterm fish oil treatment in early rheumatoid arthritis. *J Rheumatol*. 2006;33:1973-9. [MORE INFORMATION](#)

Goldberg RJ, Katz J. A meta-analysis of the analgesic effects of omega-3 polyunsaturated fatty acid supplementation for inflammatory joint pain. *Pain*. 2007;129(1-2):210-23. [MORE INFORMATION](#)

Galarraga B, Ho M, Youssef HM, Hill A, McMahon H, Hall C, Ogston S, Nuki G, Belch JJ. Cod liver oil (n-3 fatty acids) as a non-steroidal anti-inflammatory

drug sparing agent in rheumatoid arthritis. *Rheumatology (Oxford)*. 2008; 47(5):665-9. [MORE INFORMATION](#)

Galarraga B, Ho M, Youssef HM, Hill A, McMahon H, Hall C, Ogston S, Nuki G, Belch JJ. Cod liver oil (n-3 fatty acids) as an non-steroidal anti-inflammatory drug sparing agent in rheumatoid arthritis. *Rheumatology (Oxford)*. 2008 May; 47(5):665-9. Epub 2008 Mar 24. [MORE INFORMATION](#)

Kolahi S, Ghorbanihaghjo A, Alizadeh S, Rashtchizadeh N, Argani H, Khabazzi AR, Hajjalilo M, Bahreini E. Fish oil supplementation decreases serum soluble receptor activator of nuclear factor-kappa B ligand/osteoprotegerin ratio in female patients with rheumatoid arthritis. *Clin Biochem*. 2010 Apr; 43(6):576-80. [MORE INFORMATION](#)

Reinders I, Virtanen JK, Brouwer IA, Tuomainen TP. Association of serum n-3 polyunsaturated fatty acids with C-reactive protein in men. *Eur J Clin Nutr*. 2011 Nov 23. doi: 10.1038/ejcn.2011.195. [Epub ahead of print] [MORE INFORMATION](#)

Reinders I, Virtanen JK, Brouwer IA, Tuomainen TP. Association of serum n-3 polyunsaturated fatty acids with C-reactive protein in men. *Eur J Clin Nutr*. 2011 Nov 23. doi: 10.1038/ejcn.2011.195. [Epub ahead of print] [MORE INFORMATION](#)

Miles EA, Calder PC. Influence of marine n-3 polyunsaturated fatty acids on immune function and a systematic review of their effects on clinical outcomes in rheumatoid arthritis. *Br J Nutr*. 2012 Jun; 107 Suppl 2:S171-84. [MORE INFORMATION](#)

Rangel-Huerta OD, Aguilera CM, Mesa MD, Gil A. Omega-3 long-chain polyunsaturated fatty acids supplementation on inflammatory biomarkers: a systematic review of randomised clinical trials. *Br J Nutr*. 2012 Jun; 107 Suppl 2:S159-70. [MORE INFORMATION](#)

Rontoyanni VG, Sfikakis PP, Kitas GD, Protogerou AD. Marine n-3 fatty acids for cardiovascular risk reduction and disease control in rheumatoid arthritis: "kill two birds with one stone"? *Curr Pharm Des*. 2012; 18(11):1531-42. [MORE INFORMATION](#)

Reinders I, Virtanen JK, Brouwer IA, Tuomainen TP. Association of serum n-3 polyunsaturated fatty acids with C-reactive protein in men. *Eur J Clin Nutr*. 2012 Jun; 66(6):736-41. doi: 10.1038/ejcn.2011.195. Epub 2011 Nov 23. [MORE INFORMATION](#)

Kantor ED, Lampe JW, Vaughan TL, Peters U, Rehm CD, White E. Association between use of specialty dietary supplements and C-reactive protein concentrations. *Am J Epidemiol*. 2012 Dec 1;176(11):1002-13. doi: 10.1093/aje/kws186. Epub 2012 Nov 8. [MORE INFORMATION](#)

Kantor ED, Lampe JW, Vaughan TL, Peters U, Rehm CD, White E. Association between use of specialty dietary supplements and C-reactive protein concentrations. *Am J Epidemiol*. 2012 Dec 1;176(11):1002-13. doi: 10.1093/aje/kws186. Epub 2012 Nov 8. [MORE INFORMATION](#)

Lee YH, Bae SC, Song GG. Omega-3 polyunsaturated fatty acids and the treatment of rheumatoid arthritis: a meta-analysis. *Arch Med Res*. 2012 Jul;43(5):356-62. doi: 10.1016/j.arcmed.2012.06.011. Epub 2012 Jul 24. [MORE INFORMATION](#)

Safety/Side effects

Schmidt EB, Møller J, Svaneborg J, Dyerberg J. Safety Aspects of Dietary n-3 Fatty Acids. In: *n-3 Fatty Acids: Prevention and Treatment in Vascular Disease*. Eds. Kristensen SD, Schmidt EB, De Caterina R, Endres S. Springer-Verlag London - Bi & Gi Publishers, Verona 1995; 195-206.

Ogden P, Piziak VK, Cain PT, CarpentierWR, Havemann DF. Reactive lymphoid hyperplasia after omega-3 fatty acid supplementation. *Ann Int Med* 1988;31:843-4. [MORE INFORMATION](#)

Smith P, Arnesen H, Opstad T, Dahl KH, Eritsland J. Influence of highly concentrated n-3 fatty acids on serum lipids and hemostatic variables in survivors of myocardial infarction receiving either oral anticoagulants or matching placebo. *Thromb Res*. 1989;53(5):467-74. [MORE INFORMATION](#)

Clarke JTR, Cullen-Dean G, Regelink E, Chan L, Rose V. Increased incidence of epistaxis in adolescents with familial hypercholesterolemia treated with fish oil. *J Pediatrics* 1990;116:139-41. [MORE INFORMATION](#)

Kaneda T, Miyazawa T. Lipid peroxides and nutrition. *Wld Rev Nutr Diet* 1987;50:186-214. [MORE INFORMATION](#)

Grubb BP. Hypervitaminosis A following long-term use of high-dose fish oil supplements. *Chest* 1990;97:1260. [MORE INFORMATION](#)

Chamberlain JG. Omega-3 fatty acids and bleeding problems. Am J Clin Nutr 1992;55:760. [MORE INFORMATION](#)

Tobin A. Fish oil supplementation in pregnancy. Lancet 1992;340:118.

Schmidt EB, Moeller JM, Svaneborg N, Dyerberg J. Safety aspects of fish oils. Experiences with an n-3 concentrate of re-esterified triglycerides (Pikasol). Drug Invest 1994;7:215-20.

Henderson WR, Astley SJ, Ramsey BW. Liver function in patients with cystic fibrosis ingesting fish oil. J Pediatrics 1994;125:504-5. [MORE INFORMATION](#)

Schmidt EB, Moeller J, Svaneborg N, Dyerberg J. Safety aspects of dietary n-3 fatty acids. n-3 Fatty Acids: Prevention and Treatment in Vascular Disease. Kristensen S,D; Schmidt E,B; De Caterina R (Eds) Bi & Gi Publishers, Verona - Springer Verlag London1995; p 195-206.

Eritsland J, Arnesen H, Seljeflot I, Kierulf P. Long-term effects of n-3 polyunsaturated fatty acids on haemostatic variables and bleeding episodes in patients with coronary artery disease. Blood Coagul Fibrinolysis. 1995;6(1):17-22. [MORE INFORMATION](#)

McGrath LT, Brennan GM, Donnelly JP, Johnston GD, Hayes JR, McVeigh GE. Effect of dietary fish oil supplementation on peroxidation of serum lipids in patients with non-insulin dependent diabetes mellitus. Atherosclerosis 1996;121:275-83. [MORE INFORMATION](#)

TakahataK, Monobe K-I, Tada M, Weber PC. The benefits and risks of n-3 polyunsaturated fatty acids. Biosc Biotechnol Biochem 1998;62:2079-85.

Axelrod L, Camuso J, Williams E, Kleinman K, Briones E, Schoenfeld D. Effects of a small quantity of w-3 fatty acids on risk factors in NIDDM. Diabetes Care 1994;17:37-44. [MORE INFORMATION](#)

Toft I, Boenaa KH, Ingebretsen OC, Nordoy A, Jenssen T. Effects of n-3 polyunsaturated fatty acids on glucose homeostasis and blood pressure in essential hypertension. A randomized, controlled trial. Ann Intern Med 1995;123:911-8. [MORE INFORMATION](#)

Friedberg CE, Heine RJ, Janssen MJFM, Grobbee DE. Fish oil and glycemic control in diabetes. Diabetes Care. 1998;21:494-500. [MORE INFORMATION](#)

Sirtori CR, Crepaldi G, Manzato E, Mancini M, Rivellesse A, Paoletti R, Pazzucconi F, Pamparana F, Stragliotto E. One year treatment with ethyl esters of n-3 fatty acids in patients with hypertriglyceridemia and glucose intolerance reduced triglyceridemia, total cholesterol and increased HDL-C without glycemic alterations. *Atherosclerosis* 1998;137:419-27. [MORE INFORMATION](#)

Albina JE, Gladden P, Walsh WR. Detrimental effects of an w-3 fatty acid-enriched diet on wound healing. *J Parentera Entera Nutr* 1993;17:519-21. [MORE INFORMATION](#)

Mostad IL, Bjerve KS, Bjorgaas MR, Lydersen S, Grill V. Effects of n-3 fatty acids in subjects with type 2 diabetes: reduction of insulin sensitivity and time-dependent alteration from carbohydrate to fat oxidation. *Am J Clin Nutr*. 2006;84:540-50. [MORE INFORMATION](#)

Bays HE. Safety considerations with omega-3 Fatty Acid therapy. *Am J Cardiol*. 2007;99(6A):S35-43. [MORE INFORMATION](#)

Bays HE. Safety considerations with omega-3 fatty acid therapy. *Am J Cardiol*. 2007;99(6A):35C-43C. [MORE INFORMATION](#)

Harris WS. Expert opinion: omega-3 fatty acids and bleeding-cause for concern? *Am J Cardiol*. 2007;99(6A):44C-46C. [MORE INFORMATION](#)

Jalili M, Dehpour AR. Extremely Prolonged INR Associated with Warfarin in Combination with Both Trazodone and Omega-3 Fatty Acids. *Arch Med Res*. 2007;38(8):901-4. [MORE INFORMATION](#)

Watson PD, Joy PS, Nkonde C, Hessen SE, Karalis DG. Comparison of bleeding complications with omega-3 fatty acids + aspirin + clopidogrel--versus--aspirin + clopidogrel in patients with cardiovascular disease. *Am J Cardiol*. 2009;104(8):1052-4. [MORE INFORMATION](#)

Akter K, Gallo DA, Martin SA, Myronyuk N, Roberts RT, Stercula K, Raffa RB. A review of the possible role of the essential fatty acids and fish oils in the aetiology, prevention or pharmacotherapy of schizophrenia. *J Clin Pharm Ther*. 2011 Apr 19. doi: 10.1111/j.1365-2710.2011.01265.x. [Epub ahead of print] [MORE INFORMATION](#)

Salisbury AC, Harris WS, Amin AP, Reid KJ, O'Keefe JH Jr, Spertus JA. Relation between red blood cell omega-3 fatty acid index and bleeding during acute myocardial infarction. *Am J Cardiol*. 2012 Jan 1;109(1):13-8. [MORE INFORMATION](#)

Tur JA, Bibiloni MM, Sureda A, Pons A. Dietary sources of omega 3 fatty acids: public health risks and benefits. *Br J Nutr.* 2012 Jun; 107 Suppl 2: S23-52. [MORE INFORMATION](#)

Park JH, Musa-Veloso K, Lynch B, Leslie H, Koo KH, Kim SB, Kang SN. 13-Week oral toxicity study of oil derived from squid (*Todarodes pacificus*) in Sprague-Dawley rats. *Regul Toxicol Pharmacol.* 2012 Aug 3. [Epub ahead of print] [MORE INFORMATION](#)

Ottestad I, Vogt G, Retterstøl K, Myhrstad MC, Haugen JE, Nilsson A, Ravn-Haren G, Nordvi B, Brønner KW, Andersen LF, Holven KB, Ulven SM. Intake of oxidised fish oil does not influence established markers of oxidative stress in healthy human subjects: a randomised controlled trial. *Br J Nutr.* 2012 Jul; 108(2): 315-26. [MORE INFORMATION](#)

Schizophrenia

Mellor JE, Laugharne JDE, Peet M. Omega-3 fatty acid supplementation in schizophrenic patients. *Human Psychopharmacology* 1996; 11: 39-46.

Peet M. Schizophrenia and omega-3 fatty acids. *ISSFAL Newsletter* 1997; 4: 2-5.

Puri BK, Richardson AJ, Horrobin DF, Easton T, Saeed N, Oatridge A, Hajnal JV, Bydder GM. Eicosapentaenoic acid treatment in schizophrenia associated with symptom remission, normalisation of blood fatty acids, reduced neuronal membrane phospholipid turnover and structural brain changes. *Int J Clin Pract* 2000; 54: 57-63. [MORE INFORMATION](#)

Assies J, Lieverse R, Vreken P, Wanders RJA, Dingemans PMJA, Linszen DH. Significantly reduced docosahexaenoic and docosapentaenoic acid concentrations in erythrocyte membranes from schizophrenic patients compared with a carefully matched control group. *Biol Psychiatry* 2001; 49: 510-22. [MORE INFORMATION](#)

Amminger GP, Schäfer MR, Papageorgiou K, Klier CM, Cotton SM, Harrigan SM, Mackinnon A, McGorry PD, Berger GE. Long-Chain {omega}-3 Fatty Acids for Indicated Prevention of Psychotic Disorders: A Randomized, Placebo-Controlled Trial. *Arch Gen Psychiatry.* 2010 Feb; 67(2): 146-54. [MORE INFORMATION](#)

Akter K, Gallo DA, Martin SA, Myronyuk N, Roberts RT, Stercula K, Raffa RB. A review of the possible role of the essential fatty acids and fish oils

in the aetiology, prevention or pharmacotherapy of schizophrenia. *J Clin Pharm Ther.* 2011 Apr 19. doi: 10.1111/j.1365-2710.2011.01265.x. [Epub ahead of print] [MORE INFORMATION](#)

Systemic Lupus Erythematosus

Wright SA, O'prey FM, McHenry MT, et al. A randomised placebo-controlled interventional trial of omega-3-polyunsaturated fatty acids on endothelial function and disease activity in systemic lupus erythematosus. *Ann Rheum Dis.* 2008;67(6):841-8.. [MORE INFORMATION](#)

Stroke

He K, Song Y, Davigluss ML, Liu K, van Horn L, Dyer AR, Goldbourt U, Greenland P. Fish consumption and incidence of stroke: a meta-analysis of cohorte studies. *Stroke* 2001;35:1538-42. [MORE INFORMATION](#)

Iso H, Rexrode KM, Stampfer MJ, Manson JE, Colditz GA, Speizer FE, Hennekens CH, Willett WC. Intake of fish and omega-3 fatty acids and risk of stroke in women. *JAMA* 2001;285:304-12. [MORE INFORMATION](#)

He K, Rimm EB, Merchant A, Rosner BA, Stampfer MJ, Willett WC, Ascherio A. Fish consumption and risk of stroke in men. *JAMA* 2002;288:3130-6. [MORE INFORMATION](#)

Mozaffarian D, Longstreth WT, Lemaitre RN, Manolio TA, Kuller LH, Burke GL, Siscovick DS. Fish consumption and stroke risk in elderly individuals. *Arch Int Med* 2005;165:200-6. [MORE INFORMATION](#)

Tanaka K, Ishikawa Y, Yokoyama M, Origasa H, Matsuzaki M, Saito Y, Matsuzawa Y, Sasaki J, Oikawa S, Hishida H, Itakura H, Kita T, Kitabatake A, Nakaya N, Sakata T, Shimada K, Shirato K; JELIS Investigators, Japan. Reduction in the recurrence of stroke by eicosapentaenoic acid for hypercholesterolemic patients: subanalysis of the JELIS trial. *Stroke.* 2008;39(7):2052-8. [MORE INFORMATION](#)

Virtanen JK, Siscovick DS, Longstreth WT Jr, Kuller LH, Mozaffarian D. Fish consumption and risk of subclinical brain abnormalities on MRI in older adults. *Neurology.* 2008 Aug 5;71(6):439-46. [MORE INFORMATION](#)

Freiberg JJ, Tybjaerg-Hansen A, Jensen JS, Nordestgaard BG. Nonfasting triglycerides and risk of ischemic stroke in the general population. *JAMA*. 2008;300(18):2142-52. [MORE INFORMATION](#)

Ninio DM, Hill AM, Howe PR, Buckley JD, Saint DA. Docosahexaenoic acid-rich fish oil improves heart rate variability and heart rate responses to exercise in overweight adults. *Br J Nutr*. 2008;100(5):1097-103. [MORE INFORMATION](#)

Virtanen JK, Mozaffarian D, Chiuve SE, Rimm EB. Fish consumption and risk of major chronic disease in men. *Am J Clin Nutr*. 2008;88(6):1618-25. [MORE INFORMATION](#)

Park Y, Park S, Yi H, Kim HY, Kang SJ, Kim J, Ahn H. Low level of n-3 polyunsaturated fatty acids in erythrocytes is a risk factor for both acute ischemic and hemorrhagic stroke in Koreans. *Nutr Res*. 2009 Dec;29(12):825-30. [MORE INFORMATION](#)

Lee SH, Shin MJ, Kim JS, Ko YG, Kang SM, Choi D, Jang Y, Chung N, Shim WH, Cho SY, Manabe I, Ha JW. Blood eicosapentaenoic acid and docosahexaenoic acid as predictors of all-cause mortality in patients with acute myocardial infarction--data from Infarction Prognosis Study (IPS) Registry. *Circ J*. 2009 Dec;73(12):2250-7. [MORE INFORMATION](#)

de Goede J, Verschuren WM, Boer JM, Kromhout D, Geleijnse JM. Gender-specific associations of marine n-3 fatty acids and fish consumption with 10-year incidence of stroke. *PLoS One*. 2012;7(4):e33866. Epub 2012 Apr 9. [MORE INFORMATION](#)

Larsson SC, Virtamo J, Wolk A. Dietary fats and dietary cholesterol and risk of stroke in women. *Atherosclerosis*. 2012 Mar;221(1):282-6. Epub 2012 Jan 8. [MORE INFORMATION](#)

Xun P, Qin B, Song Y, Nakamura Y, Kurth T, Yaemsiri S, Djousse L, He K. Fish consumption and risk of stroke and its subtypes: accumulative evidence from a meta-analysis of prospective cohort studies. *Eur J Clin Nutr*. 2012 Oct 3. doi: 10.1038/ejcn.2012.133. [Epub ahead of print] [MORE INFORMATION](#)

Chowdhury R, Stevens S, Gorman D, Pan A, Warnakula S, Chowdhury S, Ward H, Johnson L, Crowe F, Hu FB, Franco OH. Association between fish consumption, long chain omega 3 fatty acids, and risk of cerebrovascular disease: systematic review and meta-analysis. *BMJ*. 2012 Oct 30;345:e6698. doi: 10.1136/bmj.e6698. [MORE INFORMATION](#)

De Goede J, Verschuren WM, Boer JM, Kromhout D, Geleijnse JM N-6 and n-3 fatty acid cholesteryl esters in relation to incident stroke in a Dutch adult population: A nested case-control study. . Nutr Metab Cardiovasc Dis. 2012 May 24. [Epub ahead of print] [MORE INFORMATION](#)

Kim YJ, Kim OY, Cho Y, Chung JH, Jung YS, Hwang GS, Shin MJ. Plasma phospholipid fatty acid composition in ischemic stroke: Importance of docosahexaenoic acid in the risk for intracranial atherosclerotic stenosis. Atherosclerosis. 2012 Dec;225(2):418-24. doi: 10.1016/j.atherosclerosis.2012.09.007. Epub 2012 Sep 20. [MORE INFORMATION](#)

Larsson SC, Orsini N, Wolk A. Long-chain omega-3 polyunsaturated fatty acids and risk of stroke: a meta-analysis. Eur J Epidemiol. 2012 Dec;27(12):895-901. doi: 10.1007/s10654-012-9748-9. Epub 2012 Nov 20. [MORE INFORMATION](#)

Ikeya Y, Fukuyama N, Kitajima W, Ogushi Y, Mori H. Comparison of eicosapentaenoic acid concentrations in plasma between patients with ischemic stroke and control subjects. Nutrition. 2013 Jan;29(1):127-31. doi: 10.1016/j.nut.2012.05.003. Epub 2012 Sep 23. [MORE INFORMATION](#)