Wise Food & Lifestyle Choices For Better Overall Health

THE IMPORTANCE OF OMEGA-3 IN YOUR DIET

FOOD FOR THOUGHT

WHY OMEGA-3 FATS MATTER

Did you know omega-3 fats are vital for your health? They play important roles in cell membranes and may help to reduce inflammation throughout your body. In the early years, the omega-3 fat, DHA supports the normal development of children's brain, eyes and nerves.¹ Omega-3 fats may also help to promote healthy blood vessels and protect heart health.^{2,3} That is why foods rich in omega-3 fats are recommended as part of a healthy diet.¹⁻⁴

WHAT ARE OMEGA-3 FATS?

Omega-3 fatty acids are polyunsaturated fats that our bodies depend on for good health throughout life. There are 3 main types of omega-3 fats in foods: the short-chain omega-3 fatty acid alpha-linolenic acid (ALA) and the long-chain omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

OMEGA-3 FATS Alpha-linolenic acid (ALA) Eicosapentaenoic acid (EPA) Docosahexaenoic acid (DHA)

ARE WE GETTING ENOUGH OMEGA-3?

Most Canadians have adequate intakes of the short-chain omega-3 fatty acid, ALA,⁵ which is found in vegetable oils such as canola oil as well as plant-based foods such as flax seeds and walnuts. However, experts believe many Canadians may not get enough EPA and DHA.⁶ These are the longerchain omega-3 fatty acids that are found primarily in fatty fish.

Although our bodies can convert some ALA to EPA and DHA, research suggests that the conversion to the end product, DHA, is very limited.⁷ Therefore, it is especially important to focus on getting enough EPA and DHA omega-3. Foods enhanced with omega-3 such as omega-3 eggs that contain EPA and DHA can help fill the gap to help meet your daily needs.

EGGS - A NATURALLY NUTRITIOUS CHOICE

Eggs are a naturally nutritious choice as part of a healthy diet. Canada's Food Guide recommends eggs as a protein food.⁸ Health Canada considers 2 eggs a serving.



RECOMMENDATIONS FOR EPA AND DHA OMEGA-3

The World Health Organization (WHO recommends a daily intake of 250 mg to 2000 mg of the longchain omega-3 fatty acids, EPA and DHA combined for adult men and women.⁴ For women who are pregnant or breastfeeding, the WHO recommends a minimum daily intake of 300 mg of EPA and DHA, including at least 200 mg DHA, to promote optimal health for mother and baby. Dietitians of Canada and the American Heart Association recommend two servings of fatty fish per week, which corresponds to a daily intake of about 500 mg of EPA and DHA for healthy adults.³

WHAT FOODS CONTAIN EPA AND DHA OMEGA-3?

EPA and DHA are primarily found in fatty fish such as salmon, tuna, swordfish, mackerel, sardines and herring, fish oil supplements, Omega Plus™ liquid eggs, omega-3 enhanced eggs and some other foods enhanced with EPA and DHA. Common plant sources of omega-3 fatty acids such as flax, walnuts and canola and soybean oils provide no EPA or DHA, only the short-chain omega-3, ALA. Table 3 shows where you can find omega-3 fats.

PREGNANCY AND BABY'S HEALTH

The omega-3 fatty acid DHA supports the normal development of a baby's brain, eyes and nerves, primarily in children under two. During pregnancy and throughout the first two years, baby's developing brain accumulates large amounts of DHA.¹ DHA is also concentrated in the retina of the eyes. That's why getting enough of the omega-3 fats EPA and DHA is especially important for women who are pregnant and breastfeeding.

A review concluded that omega-3 fatty acid (EPA and DHA) supplementation during pregnancy may help prevent early and preterm delivery.⁹ One study showed that eating DHA-enriched eggs during pregnancy significantly increased women's DHA intakes and higher DHA intakes were positively correlated with baby's birth weight.¹⁰

TABLE 1 – WHERE TO FIND OMEGA-3 FATS

FOOD SOURCE	SERVING SIZE
FISH/SEAFOOD (COOKED)	
Salmon (Atlantic, farmed)	100 g
Herring (Pacific)	100 g
Mackerel (Pacific and Jack)	100 g
Trout (Mixed species)	100 g
Halibut (Atlantic or Pacific)	100 g
Shrimp (Mixed species)	100 g
Tuna (Light, canned in water)	100 g
Cod (Atlantic)	100 g
EGG-BASED FOODS	
Naturegg™ Omega Plus™ liquid eggs	100 g
Naturegg™ Omega Plus™ eggs	105 g
Naturegg™ Omega 3 eggs (flax-based)	105 g
Regular eggs	105 g
PLANT-DERIVED FOODS	
Walnuts (Shelled)	30 g
Flaxseed (Ground)	30 g
Canola oil	10 mL
Soybean oil	10 mL
Beans (Navy, cooked)	100 g
Corn oil	10 mL
Olive oil	10 mL
Nuts (Mixed, dry roasted)	30 g

Source: Health Canada. Canadian Nutrient File, version 2015. Egg-based foods, Burnbrae Far

Researchers found that women who consumed plenty of DHA while breastfeeding also had higher levels of DHA in their breast milk.¹¹ Studies with infants given formula lacking DHA compared to infants given formula with DHA showed that providing infants with DHA early in their lives improved their performance on the mental development index.¹¹⁻¹³

OMEGA-3 FATS mg/SERVING		
TOTAL	DHA + EPA	ALA
2,609	2,506*	110
2,410	2,345*	70
2,050	2,006*	60
1,340	1.171*	190
666	255*	80
340	288*	10
269	279*	0
165	171*	1
600	200 (DHA only)	100
800	245 (DHA only)	550
800	150 (DHA only)	650
152	78	65
2,724	0	2,724
1,641	0	1,619
838	0	838
624	0	624
177	0	177
106	0	106
70	0	70
57	0	57

ms Ltd. * includes DPA another long-chain omega-3 fatty acid.

HEART HEALTH

Extensive research indicates that higher EPA and DHA intakes may help protect heart health.^{2,3,14-16} Omega-3 fats may help to reduce chronic inflammation, which is now recognized as an important factor in heart disease and stroke. Omega-3 fats help promote healthy blood vessels and prevent blood clots. Studies have found that higher blood levels of EPA and DHA are associated with a lower risk of death from all causes and from heart disease and stroke.^{17,18}

The omega-3 DHA supports the normal development of baby's brain, eyes and nerves.

The Canadian Cardiovascular Society 2016 guidelines recommend heart healthy dietary patterns that emphasize omega-3, omega-6 and omega-9 unsaturated fats.¹⁹ While the guidelines do not recommend omega-3 supplements to reduce cardiovascular events, they do acknowledge that some adults may choose to take high supplemental doses (2-4 g/day) of the long-chain omega-3 EPA and DHA to help manage high blood triglycerides with the advice of their doctor.

University of Guelph researchers demonstrated that daily consumption of a liquid egg product enriched with 125 mg of EPA and 125 mg of DHA lowered blood triglyceride levels by up to 32% over a 3-week period.²⁰ It also lowered blood pressure without negatively affecting blood cholesterol. High blood triglyceride levels and high blood pressure are both considered risk factors for heart disease and stroke.

MENTAL HEALTH

DHA is the most abundant fatty acid in the grey matter of the brain, hence its importance in brain development and function. Research suggests that higher omega-3 intakes, specifically DHA, may help protect mental health.^{21,22} Some studies have found that higher blood levels of EPA and DHA are associated with better cognitive functioning in older adults and a lower risk of Alzheimer's disease and other forms of dementia.^{23,24} Studies also suggest that higher omega-3, EPA and DHA intakes may be helpful for reducing symptoms of depression in adults and may have a positive effect on Attention Deficit Hyperactivity Disorder (ADHD) in children.²⁵⁻²⁷ The Canadian Network for Mood and Anxiety Treatments recommends omega-3 fatty acids among other treatments to help alleviate depression.26

IMMUNE HEALTH

Diets rich in omega-3 fats may also be helpful in the management of autoimmune conditions such as rheumatoid arthritis. Studies have found that dietary supplementation with omega-3 fats may help to reduce joint pain and morning stiffness as well as the use of nonsteroidal anti-inflammatory drugs in adults with rheumatoid arthritis.²⁸ Researchers believe that omega-3 fats can help to reduce inflammation common to many chronic health conditions.

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REFERENCES:

- Institute of Medicine. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. Washington, (DC): National Academies Press; 2005.
- Kris-Etherton PM et al. AHA Scientific Statement Fish Consumption, Fish Oil, Omega-3 Fatty Acids, and Cardiovascular Disease. Arterioscler Thromb Vasc Biol. 2003;23:e20-e31.
- Kris-Etherton PM and Innis S. Position of the American Dietetic Association and Dietitians of Canada: Dietary Fatty Acids. JADA, 2007; 107(9):1599-1611.
- World Health Organization. Interim Summary of Conclusions and Dietary Recommendations on Total Fat & Fatty Acids. From the Joint FAO/WHO Expert Consultation on Fats and Fatty Acids. WHO Geneva, 2010. W 4
- Health Canada. Do Canadian Adults Meet Their Nutrient Requirements Through Food Alone? Cat. H164-112/3-2009E-PDF.
- DHA EPA Omega-3 Institute. DHA/EPA and the Omega-3 Nutrition Gap / Recommended Intakes. http://www. dhaomega3.org/Overview/DHAEPA-and-the-Omega-3-Nutrition-Gap-Recommended-Intakes. Accessed September 16, 2014. 6
- Brenna JT et al. Alpha-linolenic Acid Supplementation and Conversion to N-3 Long-chain Polyunsaturated Fatty Acids in Humans. Prostaglandins Leukot Essent Fatty Acids, 2009; 80(2-3):85-91.
- Health Canada. Canada's Food Guide. 2019. Available at: food-guide.canada.ca. Accessed November 29, 2019.
- Kar S et al. Effects of Omega-3 Fatty Acids in Prevention of Early Preterm Delivery: a Systematic Review and Meta-analysis of Randomized Studies. Eur J Obstet Gynecol Reprod Biol. 2016 Mar, 198:40-46.
- Smuts CM et al. High-DHA Eggs: Feasibility as a Means to Enhance Circulating DHA in Mother and Infant. Lipids, 2003; 38(4):407-414.
- Helland IB et al. 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: e39-e44.
- Birch EE el al. A Randomized Controlled Trial of Early Dietary Supply of Long-Chain Polyunsaturated Fatty Acids and Mental Development in Term Infants. Dev Med Child Neurol, 2000; 42(3):174-181.
- Decsi T et al. N-3 Fatty Acids and Pregnancy Outcomes. Curr Opin Clin Nutr Metab Care, 2005; 8:161-166.
- Holub BJ. Docosahexaenoic Acid (DHA) and Cardiovascular Disease Risk Factors. Prostaglandins Leukot Essent Fatty Acids, 2009; 81(2-3):199-204.
- Mozaffarian D and Wu JHY. (n-3) Fatty Acids and Cardiovascular Health: Are Effects of EPA and DHA Shared or Complementary? J Nutr, 2012; 142: 6145–6255.
- 16. Anderson BM and Ma DWL. Are All N-3 Polyunsaturated Fatty Acids Created Equal? Lipids Health Dis, 2009; 8:33.
- Mozaffarian D et al. Plasma Phospholipid Long-chain Omega-3 Fatty Acids and Total and Cause-specific Mortality in Older Adults: A Cohort Study. Ann Intern Med, 2013; 158(7):515-525.
- Kleber ME et al. Omega-3 Fatty Acids and Mortality in Patients Referred for Coronary Angiography. The Ludwigshafen Risk and Cardiovascular Health Study. Atherosclerosis, 2016; 252:175-181
- Anderson TJ et al. 2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult. Can J Cardiol, 2016; 32: 1263-1282. 19. Preve
- Holub BJ. The Effect of an Emulsified Egg Product Containing Fish Oil on Selected Cardiovascular Risk Factors. 92nd AOCS Annual Meeting & Expo, May 13-15, 2001, Special Supplement.
- Bourre JM. Dietary Omega-3 Fatty Acids and Psychiatry: Mood, Behaviour, Stress, Depression, Dementia and Aging, J Nutr Health and Aging, 2005; 9:31-38.
- Bozzatello P et al. Supplementation with Omega-3 Fatty Acids in Psychiatric Disorders: A Review of Literature Data. J Clin Med, 2016; 5(8):67.
- Schaefer EJ et al. Plasma Phosphatidylcholine Docosahexaenoic Acid Content and Risk of Dementia and Alzheimer Disease: the Framingham Heart Study. Arch Neurol, 2006; 63(11):1545-1550.
- Nishihira J et al. Associations between Serum Omega-3 Fatty Acid Levels and Cognitive Functions among Community-Dwelling Octogenarians in Okinawa, Japan: The KOCOA Study. J Alzheimers Dis, 2016; 51(3):857-866
- Logan AC. Omega-3 Fatty Acids and Major Depression: A Primer for the Mental Health Professional. Lipids Health Dis, 2004; 3:35.
- Rovindran AV et al. Canadian Network for Mood and Anxiety Treatments (CANMAT) 2016 Clinical Guidelines for the Management of Adults with Major Depressive Disorder: Section 5. Complementary and Alternative Medicine Treatments: Canl Psychiatry, 2016, 61(9):576-587.
- Königs A and Kiliaan AJ. Critical Appraisal of Omega-3 Fatty Acids in Attention-Deficit/hyperactivity Disorder Treatment. Neuropsychiatr Dis Treat, 2016; 12:1869-1882.
- Souza PR and Norling LV. Implications for Eicosapentaenoic Acid- and Docosahexaenoic Acid-derived Resolvins as Therapeutics for Arthritis. Eur J Pharmacol, 2016; 785:165-73.

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