

Sustainably Incorporating Health-Promoting Omega-3 Fatty Acids into the American Diet

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OMEGA-3 FATTY ACIDS AID WITH:

- High Cholesterol
- High Blood Pressure
- Heart Disease
- Diabetes
- Rheumatoid Arthritis
- Systemic Lupus Erythematosus (SLE)
- Osteoporosis
- Depression
- Bipolar Disorder
- Schizophrenia
- Attention Deficit/Hyperactivity Disorder
- Skin Disorders
- Inflammatory Bowel Disease (IBD)
- Asthma
- Macular Degeneration
- Menstrual Pain
- Colon Cancer
- Breast Cancer
- Prostate Cancer

COSTS OF LOW OMEGA-3 INTAKE

- Heart disease kills 600,000 Americans/year
- 2004: 36% of deaths were caused by cardiovascular disease
- 2010: Cardiovascular disease expenses were \$503 billion

ABSTRACT

Omega-3 fatty acids are essential, polyunsaturated fatty acids that reduce risk factors for chronic diseases when consumed. Numerous government agencies have urged Americans to consume marine sources of omega-3 fatty acids to reduce cardiovascular disease risks. This study evaluates the unsustainability of marine sources and questions the safety of these products. Finally, it offers an alternative, multi-faceted approach to increasing omega-3 fatty acid consumption in Westerners' diets through a variety of sources including hen eggs, grass fed meats, genetically modified meats, meats from alga fed animals, and sources of stearidonic acid.

PROBLEMS WITH MARINE SOURCES

- Unsustainable
- Limited cultural acceptance
- Heavy metal poisoning
- Oil cannot be incorporated into many other foods
- Limited accessibility
- Expensive



ALTERNATE OMEGA-3 SOURCES

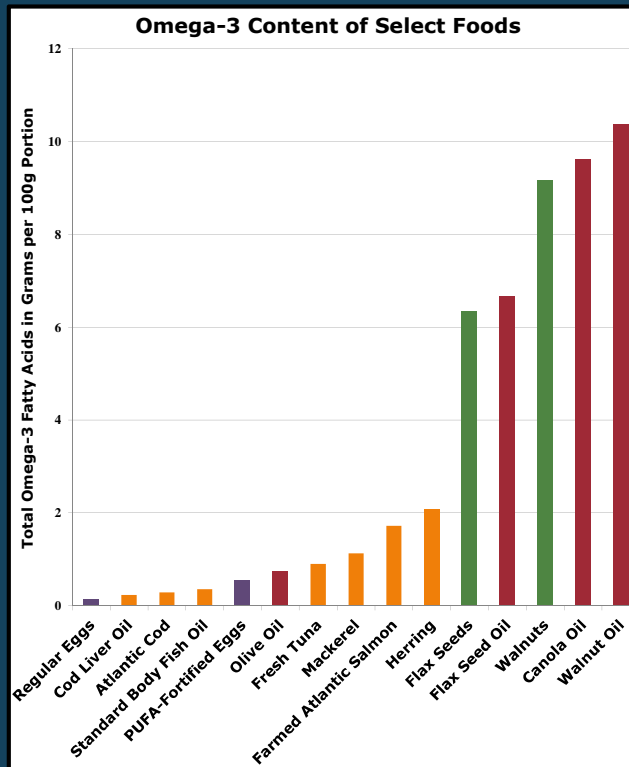
- Hen Eggs
- Grass Fed Meats
- Genetically Modified Meats
- Algae Fed Meats
- Modified Soybean Oil (Stearidonic Acid)



ALA AND SDA CONVERSION TO EPA

- Plants such as walnut, canola, and flax seeds are rich sources of alpha-linolenic acid
- However, only 0.01 to 8% of alpha-linolenic acid (ALA) is converted to EPA
- Genetically modified soybean oil is a rich source of SDA
- SDA is an intermediate product of the ALA to EPA conversion process
- 17-27% of stearidonic acid (SDA) is converted to EPA

Omega-3 Content of Select Foods



American Heart Association EPA & DHA Recommendations

