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NATURE'S SUNSHINE™

## Omega 3s—A Key Nutrient for Good Heart Health

Laurence Smith, CNC, B.A

## Understanding Fats

Saturated fat

Monounsaturated fat

Polyunsaturated fat

Trans-fatty acids

Partially hydrogenated

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Omega 3 fats

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Omega 6 fats

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Omega 9 fats

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Short chain

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Medium chain

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Long chain fatty acids

## Basic Construction of Fat

All fats are made of the same basic elements-carbon, oxygen, and hydrogen.

There can be from four to twenty-eight carbons in the chain, so each type of fatty acid can be classified as short-, medium-, or long-chained.

- The carbon chain carries hydrogen atoms.
- Think of a gooseneck lamp

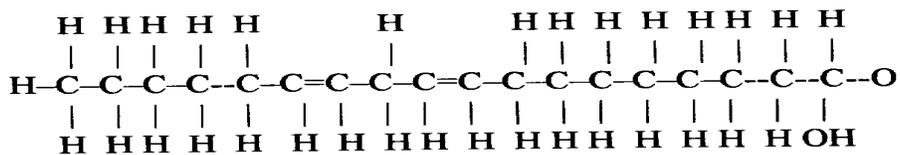




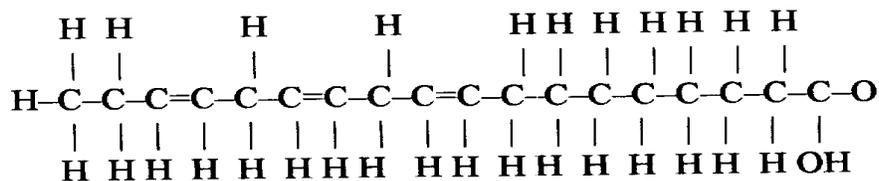
Such as corn, soybean, and sunflower oils. Contain fewer hydrogen atoms--from four to twelve fewer atoms.

The fewer the hydrogen atoms, the more kinks in the chain.

The more kinks, the more fluid the fat



**POLY-UNSATURATED FAT**  
**LINOLEIC ACID**  
**Omega-6 Fat**  
**Vegetable Oils**

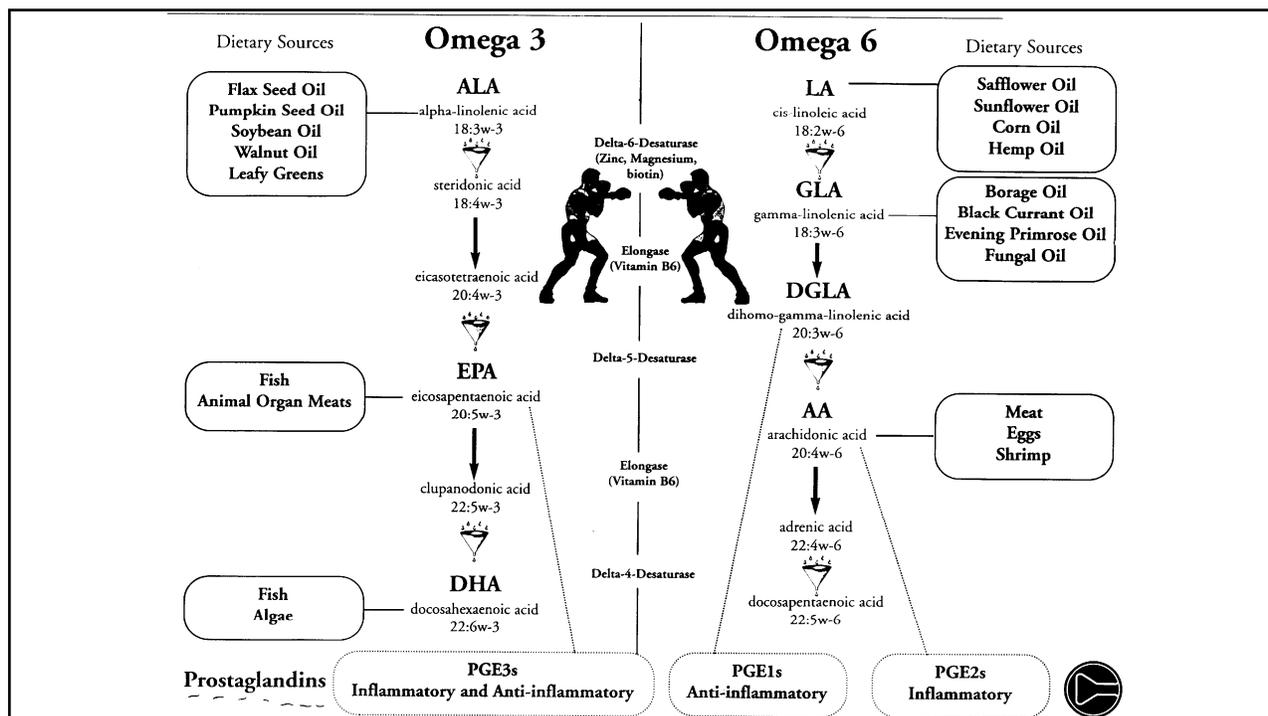


**PUFA - ALPHA LINOLENIC ACID**  
**Omega-3 Fat**  
**Flax Seed Oil**  
 18 carbon atoms long



## Nature's Anti-freeze

- Affected by the climate.
- Omega-3s help to keep cell membranes fluid & flexible.
- Fish do not produce omega-3s.
  - phytoplankton



## *Trans-fatty acids*

- Such as margarine and shortening.
- Hydrogenation.
- Hardens the oils
  - longer shelf life.
- Destroys essential nutritional character.
- **Block the use of normal essential fatty acids.**

## *EFA's*

- **Necessary for:**
- Healthy cell function
- Regulators that control the body's well-being.

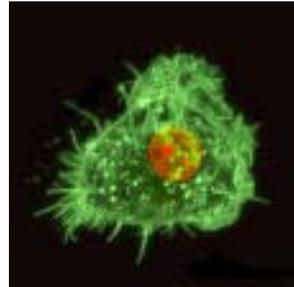


## *Our cells*

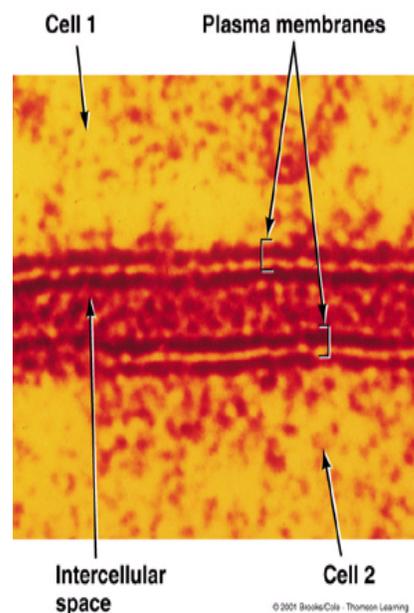
- The cell is a tiny factory, taking in raw materials from the surrounding fluid and sending out various chemicals and waste.



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- Everything going into or coming out of the cell has to pass through the cell's outer surface—its membrane.
- The membrane depends on essential fatty acids to remain fluid and flexible. Without them, the membrane becomes stiff and unable to do its job.



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Cells attempt to compensate by incorporating saturated fats in cell membranes.

The result is a stiff and ineffectual structure.

Blake Graham, BSc, AACNEM •  
www.ProHealth.com • July 7, 2009

## *Omega-6 vs. Omega-3*

- A ratio of roughly 1:1 or 2:1 is optimal.
- Ratio as high as 40:1.
- We can convert ALA into EPA and DHA,
  - process is slow
  - rate of conversion varies according to age, gender, and other factors.

## Omega-6 up 1,000-fold

- Changing the composition of our brains and bodies.

Ashley Steinbrinck on March 12, 2013 in Health News  
Ashley Steinbrinck on March 12, 2013 in Health News

# Essential Fatty Acid DEFICIENCY



99%

**At Least 99% of Americans Are Deficient in Omega 3 EFA's**

**The Omega 6/Omega 3 Ratio Should Be:**

1 TABLESPOON OMEGA 3'S TO 1 TABLESPOON OMEGA 6'S

**But Most People Consume A Ratio Of:**

15 TABLESPOONS OMEGA 6'S TO 1 TABLESPOON OMEGA 3'S

*Essential Fatty Acid Deficiency*  
 By Ashley Steinbrinck on March 12, 2013 in Health News

## Lack of Omega 3's & Imbalanced Ratio Promotes:

Acne • ADD/ADHD • Alzheimer's Disease • Arthritis • Asthma • Cancer • Diabetes • Eczema  
 Eye Diseases • Growth Retardation • Hair Loss • Heart disease • High Blood Pressure  
 Immune Dysfunction • Kidney Deterioration • Memory Loss • Psoriasis • Schizophrenia  
 Learning Disabilities • Depression • Obesity

## EFA Deficiency Signs & Symptoms Include:

Dry, Scaly, Dull, Oily & Dry, Patchy Bumpy or Flaky Skin • Fatigue • Thick or Cracked Calluses  
 Dandruff/Cradle Cap • Dry, Lackluster, Brittle or Unruly Hair • Stiff or Painful Joints  
 Soft, Fraying, Splitting, Dull, Slow Growing or Brittle Fingernails • Dry Eyes • Dry Mouth/Throat  
 Inadequate Vaginal Lubrication • Menstrual Cramps • Premenstrual Breast Pain/Tenderness  
 Excessive Ear Wax • Excessive Thirst • Allergies (Eczema/Asthma/Hay Fever/Hives)  
 Craves Fatty Foods • Constipation • Frequent Colds • Depression • Poor Concentration

*Essential Fatty Acid Deficiency*

By Ashley Steinbrinck on March 12, 2013 in Health News

## *Omega Oils and the Body's Regulators*

- EFAs create a variety of chemicals, called *eicosanoids*, (*eye-KAH-sah-noids*) that regulate a wide variety of bodily processes.
- The Omega-3 and Omega-6 families each produce their own eicosanoids.

## Wellness Requires Eicosanoid Balance

### "Good" Eicosanoids

- Inhibit platelet aggregation
- Vasodilators
- Anti-inflammatory
- Control cellular proliferation
- Enhance immune function

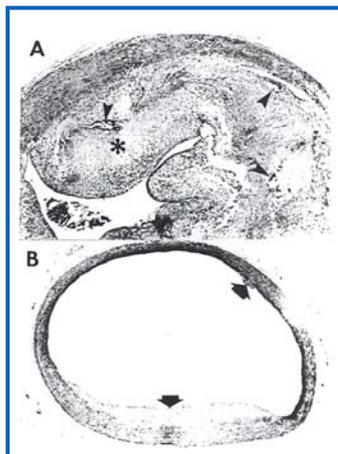
### "Bad" Eicosanoids

- Promote platelet aggregation
- Vasoconstrictors
- Pro-inflammatory
- Increase cellular proliferation
- Suppress immune function

The bulk of our illnesses today are not infectious problems but lifestyle and nutrition problems—something we can, and must change.

**We can change it by doing for ourselves and our clients what any good mechanic would do for our car— change the oil.**

## Fish Oil and Blood Flow



**A. TC=565,  
LDL=273**

**B. TC=546,  
LDL=298**

Dr. Barry Sears, Omega Rx Zone Presentation.

## In The News

### Dramatic evidence shows omega-3 fatty acids reduce risk of heart attack



A growing body of research shows omega-3 fatty acids, found in fish and fish oil supplements, reduce the risk of heart disease and sudden heart-related causes.

A study published in the April 10, 2002 issue of the *New England Journal of Medicine* (NEJM) revealed that women who consumed a minimum of five servings of fish a 16-year period lowered their risk of heart disease (CHD) by more than 50%. Even subjects who consumed fish three times per month lowered their risk of fatal heart disease by 20%. A third study reported in the 2002 issue of the *New England Journal of Medicine* determined that men with heart disease were 81% less likely to die from death due to fatal heart disease when their blood levels of omega-3 fatty acids were high regardless of smoking habits or amount of fatty acids in their blood.

Despite concerns that omega-3 fatty acids reduce heart disease and sudden heart-related causes, medical professionals continue to have conflicting messages on how to reduce the risk of heart disease. Life Extension has long recommended eating cold-water fish and taking omega-3 fatty acids from fish, fl

- Dramatic evidence shows Omega-3 fatty acids reduce risk of heart attacks

—EJ  
July 2002

## Omega-3 fatty acids reduce risk of heart attack

- 1000 mg a day of a fish oil concentrate reduced the risk of sudden death from heart-related causes by 45%

- April 9, 2002 issue of Circulation



### *Study 2*



- Women who consumed a minimum of five servings of fish per week over a 16-year period lowered their risk of coronary heart disease (CHD) by more than a third, and reduced their risk of fatal heart attack by half.

- April 10, 2002 issue of JAMA

### Study 3

- Men without heart disease were 81% less likely to experience sudden death due to fatal **arrhythmia** (irregular heartbeat) when their blood levels of omega-3 fatty acids were high regardless of their age, smoking habits or amount of other types of fatty acids in their blood.
  - NEJM, April 11, 2002, 346:1113-1118



## n-3 Fatty Acids Reduce Mortality Risk in Heart Disease Patients

A five-year follow-up study in Finland shows that fish consumption and high serum levels of n-3 fatty acids protect patients with coronary artery disease (CAD) by reducing the risk of dying.\* The study was reported in the *American Journal of Clinical Nutrition* (July 2003).



Participants included 285 men and 130 women, aged 33 to 74 years, with clinically established CAD. Investigators determined dietary intakes through food records and measured fatty acid composition in serum components. The study endpoints included deaths of all causes; cardiovascular disease, coronary artery diseases; nonfatal acute myocardial infarct (AMI); nonfatal stroke; coronary artery bypass grafting; and coronary angioplasty. The results showed that patients who ate fish and had high serum levels of alpha linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) reduced their risk of all-cause mortality in direct relation to the amounts consumed. Patients who consumed 57 grams per day of fish had a 55% lower risk of death from cardiovascular disease, heart attack, and stroke, and a 51% lower risk of death from coronary artery disease.

The study's authors concluded that "ALA, EPA, and DHA are nutritional factors that could potentially reduce risk of death in patients with CAD."

—Carmia Borek, Ph.D.

**Reference**  
\*Ekkila AT, Lehto S, Pyorala K, Uusitupa MI. n-3 fatty acids and 5-y risks of death and cardiovascular disease events in patients with coronary artery disease. *Am J Clin Nutr* 2003 July; 78:65-71.

## Omega-3s Reduce Mortality Risk In Heart Disease Patients

- Patients who ate fish and had high serum levels of (EPA), and (DHA) reduced their risk of all-cause mortality in direct relation to the amounts consumed. Patients who consumed the most n-3 had a 55% lower risk of death from heart attack, and stroke, and a 51% lower risk of death from coronary artery disease.

- American Journal of Clinical Nutrition (July 2003).

Who Do You Know That Needs This  
Information?

Care Enough to Share

## Herbal Showcase



Steven Horne, Master Herbalist

Wednesday, March 21<sup>st</sup> at 11 AM Mountain



NATURE'S SUNSHINE<sup>®</sup>

## Thank You!



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