



Chemical structure of alpha-linolenic acid (ALA), an essential omega-3 fatty acid, (18:3 ω 9c,12c,15c). Although chemists count from the carbonyl carbon (blue numbering), physiologists count from the omega (ω) carbon (red numbering). Note that from the omega end (diagram right), the first double bond appears as the third carbon-carbon bond (line segment), hence the name "omega-3"

Talk on Fats and Essential Fatty Acids, September 9, 2006

The following is a quote from the book *Laboratory Evaluations in Molecular Medicine* by J. Alexander Bradley, Ph.D.:

“Fatty acids are common denominators for all life forms. The same oleic acid that is found in the cell membranes of olive trees is also critical for the cellular structure and function of bacteria, fungi, and humans. Plant seeds are filled with fatty acids as they are the most efficient form of stored energy. Thin layers of fatty acids form the membranes that separate the inside of living cells from the outside. Powerful hormones are formed from essential fatty acids. Fatty acids flow into multiple metabolic pathways where their constant supply is critical to normal human function. The essential nature of dietary fats and oils in maintaining health is widely appreciated by nutritional scientists, but the public and many health professionals continued to perceive fats as bad and make no distinction between good and bad fats. Rather, the perception is that ALL fat is bad.

Years of negative associations of dietary fat with calories, body fat, cholesterol, and cancer have resulted in a general attitude that foods containing fats are simply to be avoided. Many food manufacturers have taken advantage of this attitude by modifying fat content and labeling wherever possible to tout "low-fat" as equivalent to "heart healthy" foods. Advertisements for such foods further instill the notion that dietary fat is bad. Amid the clamor over the largely mistaken problems associated

with dietary fats, many very real problems have been created by the large-scale use of modified fats by food suppliers. Individuals do not feel the effects of poor dietary fat intake on the short term because of the presence of many protective mechanisms that cause health threats from fatty acid deficiencies and imbalances to be insidious and unrecognized.

Modern diets of fast foods and packaged dinners tend to be rich in saturated fats and hydrogenated oils and are frequently lacking in the balance of essential fatty acids. We now know that not only the amount but also the type (and balance) of dietary fat plays a major role in maintaining health... Dietary fats simultaneously supply the major cellular energy source, influence the function of all biological membranes, determine the integrity of nerve tissue, and served to form powerful paracrine hormones. Polyunsaturated essential fatty acids flow in the pathways that supply eicosanoids, which are powerful cell regulators....Eicosanoids possess extremely potent biological activities, and their homeostatic functions in regulating blood vessel leaking, lipid accumulation, and immune cell behavior are relevant to the initiation and progress of heart and blood vessel disease. These compounds, in turn, are used to amplify and balance signals to the organs, the blood clotting system and the immune system.”

FOR YOUR NOTES:

New government food pyramid:

30-35% of daily calories from healthy fats!

Very low fat diets have been proposed for healthy hearts, but people on these diets become deficient in the essential fatty acids and this brings a different set of problems.

Polyunsaturated vs.

Monounsaturated vs.

Saturated Fat

Essential Fatty Acids:

Omega 6, Omega 3, Omega 9

Fats that promote inflammation

vs. fats that are anti-inflammatory

TJ's Organic Olive Oil Label:

“Nutrition Facts:

1 Tbsp

Calories 120

Fat Calories 120

Total Fat 14 g. (22% DV)

Sat Fat 2 g (10% DV)

Trans fat 0 g.

Polyunsat Fat 1.5 g

Monounsat Fat 10 g.

Percent Daily Values (DV) based on a 2,000 calorie diet”

What is the other 0.5 gram of fat not accounted for here?

WE NEED ESSENTIAL fatty Acids
(that is why they are called essential)

Where do we get these?

AKA What should I stock in my kitchen?

Hemp Oil

Fish Oil (Carlson)

Olive Oil

Flax Oil

Walnut Oil

Butter, preferably clarified butter = ghee (can be heated and used for cooking)

Coconut Oil (can be heated and used for cooking)

Why can't I cook with Olive oil?

How do I cook without oil?

What should I PHASE OUT of my kitchen?

Use up the other vegetable oils in your kitchen.
When you buy new, get the oils listed above.

What should I THROW OUT of my kitchen?

Margarine

Canola oil and products that contain it

Anything with trans fats (partially hydrogenated, mono-hydrogenated or modified fat)

IMPERATIVE that you read labels. "0 trans fats" may not mean NO TRANS FATS!

Products with Cottonseed oil, and any and all artificial sweeteners, including products with high fructose corn syrup. (use stevia)

**Looking for a ratio of (Omega-6) to (Omega-3)
of somewhere between 1:1 and 3:1**

Type of Oil	Ratio of Omega-6 : Omega-3
Fish Oil	1 : 4
Flax Oil	1 : 3
Hemp Oil	3 : 1
Walnut Oil	5 : 1
Olive Oil	13 : 1
Grapeseed Oil	700 : 1
Peanut Oil	No Omega-3

Calculate your own intake of essential fatty acids. Use the table above, and the information on the nutrition labels of the foods you eat to figure the ratio of Omega-6 : Omega-3 in your diet. You will quickly see that our diets are rich in Omega-6, and poor in Omega-3. Most of us need to add more Omega-3 to our diets. To your health.

