


INE: Managing Inflammation With Dietary Fats and Other Nutrients



Managing Inflammation with Dietary Fats and Other Nutrients

Dr. Ritamarie Loscalzo


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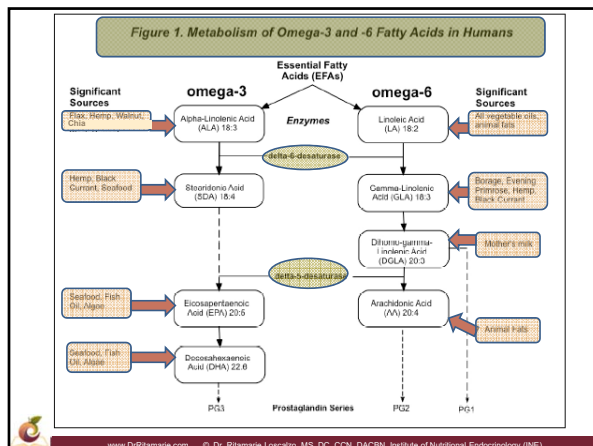
Health Benefits of Omega-3 Fatty Acids

- ✓ Improves heart health
- ✓ Reduces hypertension
- ✓ Improves autoimmune diseases
- ✓ Reduces inflammation
- ✓ Reduces depression
- ✓ Improves vision
- ✓ Cancer prevention and support
- ✓ Reduces risk of osteoporosis



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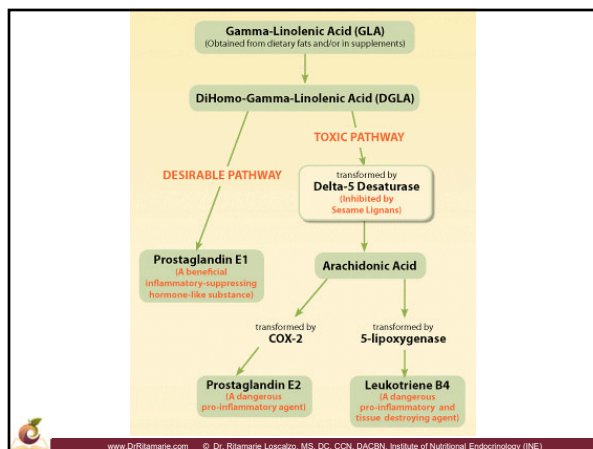
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Eicosanoids

- ✓ Prostaglandins
- ✓ Thromboxanes
- ✓ Leukotrienes
- ✓ Lipoxins
- ✓ Hydroxylated fatty acids
- ✓ Aspirin-triggered Epi-lipoxins
- ✓ Isoprostanooids
- ✓ Epoxyeicosatrienoic acids
- ✓ Endocannabinoids

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Delta-6 Desaturase (D6D) Inhibitors

Conversion** from ALA to EPA/DHA estimated to be 2% to a high of 8%, average 3.8%
One study measured it at 36% in females

- ✓ Trans fatty acids: margarine, shortening, and hydrogenated fats
- ✓ Excess omega-6 fatty acids
- ✓ Excess of oleic acid (olive oil)
- ✓ Sugar
- ✓ Caffeine
- ✓ Alcohol
- ✓ Food additives
- ✓ Protein deficiency
- ✓ Deficiencies of biotin, zinc, magnesium, and vitamins E, B₃, B₁₂, B₆
- ✓ Smoking



**less efficient in babies and elderly

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Things That Improve Delta-6 Desaturase

- ✓ Coconut Oil: Lauric Acid
- ✓ Biotin
- ✓ Vitamin E
- ✓ Vitamin C
- ✓ B Vitamins: B12, B2, and B6
- ✓ Zinc
- ✓ Magnesium



**When lauric acid is present in the diet, the long chain omega-6 fatty acids accumulate in the tissues even when consumption of essential fatty acids is low.

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How Much Omega-3 Do We Need?

According to the Scientific Advisory Commission, you need a **minimum of 0.45g long-chain fatty acids a day** or 3g a week to help keep your heart in good shape.

Scientific Advisory Committee on Nutrition, Committee on Toxicity

Generally recommended intakes to be safe:

- ✓ **ALA:** 2.2 g per day
- ✓ **EPA/DHA:** .65 g/day, FDA American Heart Association say 800 mg if no heart disease, 2 g if heart disease risk

If it takes 10 times the amount of ALA to convert to EPA/DHA (range is 3 – 50 times depending on diet and lifestyle), vegans should add an extra 6.5g ALA. **Coconut improves conversion.**

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Conditions That Inhibit Delta-6 Desaturase

- ✓ Diabetes
- ✓ Poor Pituitary Function
- ✓ Low Thyroid Function
- ✓ Cancer

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Omega-3 and Omega-6 Ratios

<http://www.nal.usda.gov/fnic/foodcomp/search/>

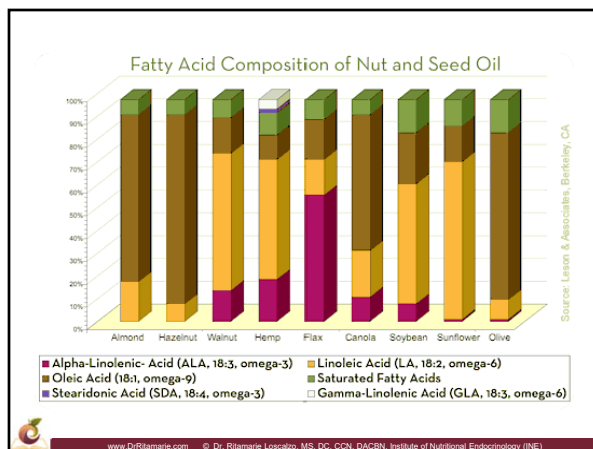
n-3 is Omega 3 Alpha Linolenic Acid; n-6 is Linoleic Acid

Seeds		Total n-3 FA (g)	Total n-6 FA (g)	n-6/n-3 Ratio
Flax seeds	1 oz.	1.8	0.4	0.2
Hemp Seeds	1 oz.	2.8	8.4	3
Chia Seeds	1 oz.	5	1.6	0.32
Pumpkin seeds, shelled	1 oz.	0.1	5.4	107.8
Poppy seeds	1 oz.	0.1	8.6	96.0
Sesame seeds	1 oz.	0.1	6.7	67
Sunflower Seeds	1 oz.	0.1	8.5	85

Fish		Total n-3 FA (g)	Total n-6 FA (g)	n-6/n-3 Ratio
Salmon	3 oz.	0.27 251 EPA 948 DHA	0.14	.1

For people who don't eat fish, recommended intake of ALA is 10 g per day.
(1 ounce of chia seed, 2 ½ tablespoons, is 5 grams)


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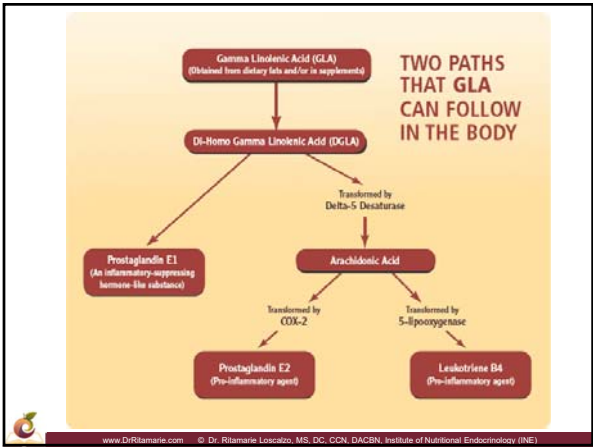
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Inflammation Marker: AA/EPA Ratio

- ✓ Optimum ratios are usually between 1.5 and 3.0
- ✓ It is considered “unwell” to have a ratio above 10
- ✓ Anything exceeding 15 means a high level of inflammation in the blood
- ✓ Average American serum AA/EPA ratio is 11
- ✓ People with chronic illness and disease typically have scores above 15



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Interpretation Scale for Blood Spot Fatty Acid Test

Inflammatory Risk	Omega-3 Dominance	Low	Mild	Moderate	High
AA/EPA Ratio	<2.2	2.2-8.0	8.1-13.0	13.1-30.5	> 30.5

The inflammatory risk corresponds to data published by Dr. Barry Sears based on serum specimens. The ranges on this report are based on bloodspot data. Reference ranges have been adjusted to correlate with Sears' data. (Sears, B. *The Omega Rx Zone: the miracle of the new high-dose fish oil*. 1st ed. New York, NY: ReganBooks, 2002.)

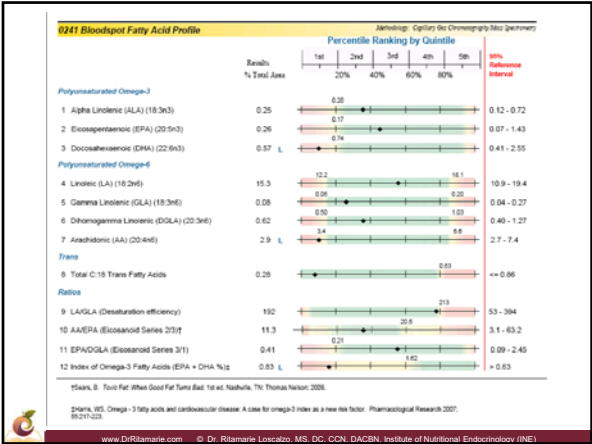
Relative Disease Risk Index*	High	Intermediate	Low
Index of Omega-3 Fatty Acids	< 0.67	0.67-1.4	> 1.4

*Harris WS, von Schacky C. The Omega - 3 Index: A new risk factor for sudden cardiac death? *Prev Med* 2004; 39:212-20.




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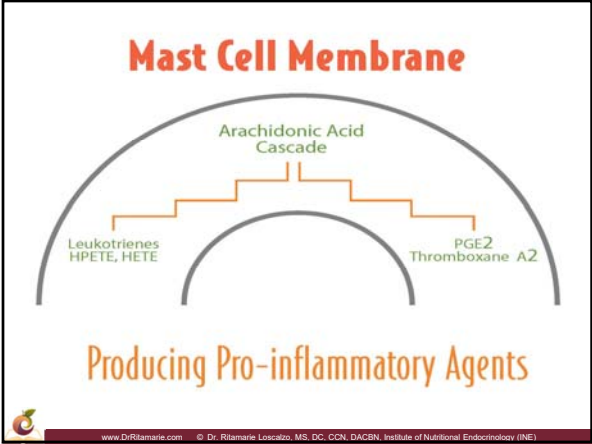


GLA Sources

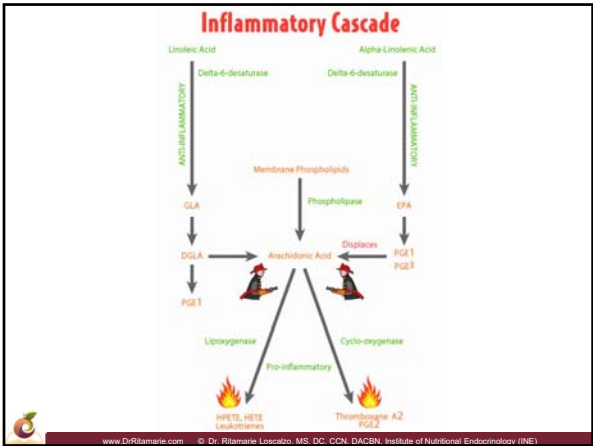
- ✓Hemp: 2-4%
- ✓Evening primrose oil: 7%
- ✓Black currant seed oil: 15%
- ✓Borage oil: 23%

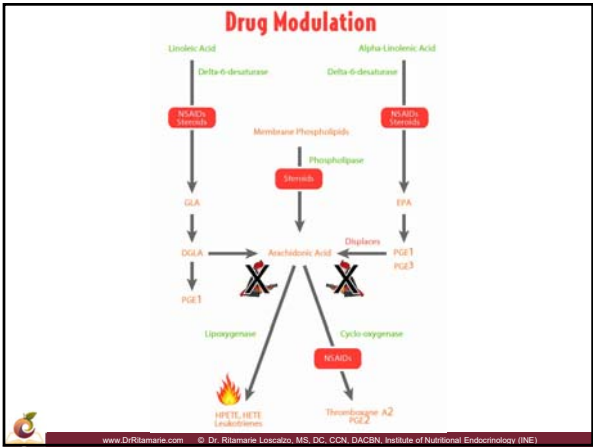


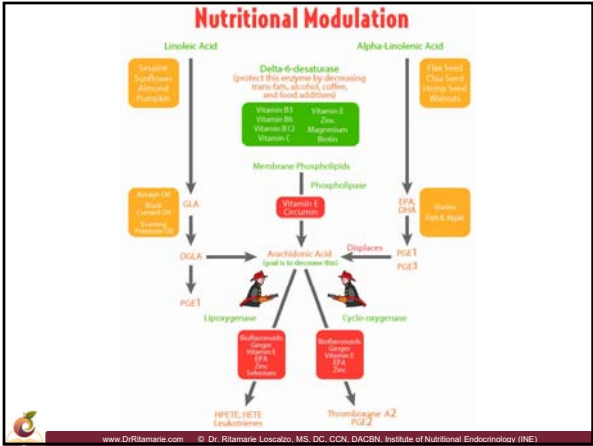
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