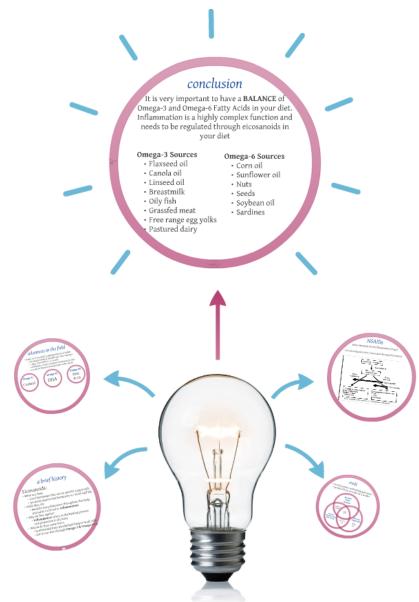


Eicosanoids: Inflammation in the Body

Stephanie Barbakoff, Jenessa Dyke, Cameron Penta, Grant Schoen





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a brief history

Eicosanoids:

- What are they:
 - Local hormones that act on specific target cells
 - paracrine/autocrine hormones w/ short half life
- What they do:
 - Mediate many functions throughout the body, primarily involved in inflammation
- Why do they matter:
 - Inflammation is key in the healing process and protection in the body
- Where do they come from:
 - Synthesized from phosholipid bilayer in all cells
 - Get in our diet through Omega-3 & Omega-6 FA





Pro-inflammator

FATTY ACIDS MADE SIMPLE

The Omega-6 Family

Linoleic Acid (LA)

(Found in vegetable oils, seeds and nuts.)

Your body converts LA into:



Gamma-Linolenic Acid (GLA)

(GLA is also found in borage and primrose oil.)

Your body converts GLA into:



Arachidonic Acid (AA)

(AA is also found in meat.)



The Omega-6 Family of Eicosanoids The Omega-3 Family

Alpha-Linolenic Acid (LNA)

(Found in green leafy vegetables, flax, flaxseed oil, canola oil, walnuts, and Brazil nuts.)

Your body converts LNA into:



Eicosapentaenoic Acid (EPA)

(EPA is also found in fish oil.)

Your body converts EPA into:



Docosahexaenoic Acid (DHA)

(DHA is also found in fish oil.)



The Omega-3 Family of Eicosanoids

Figure 1



PREZI

study

- 44 male patients with mild hypertension
- 3 groups (all put on a diet for 2 weeks)

Decrease Blood Pressure

Sunflower Seed Oil

??

Decrease Total Cholesterol (HDL & LDL) Decrease Triglycerides

Linseed Olive Oil

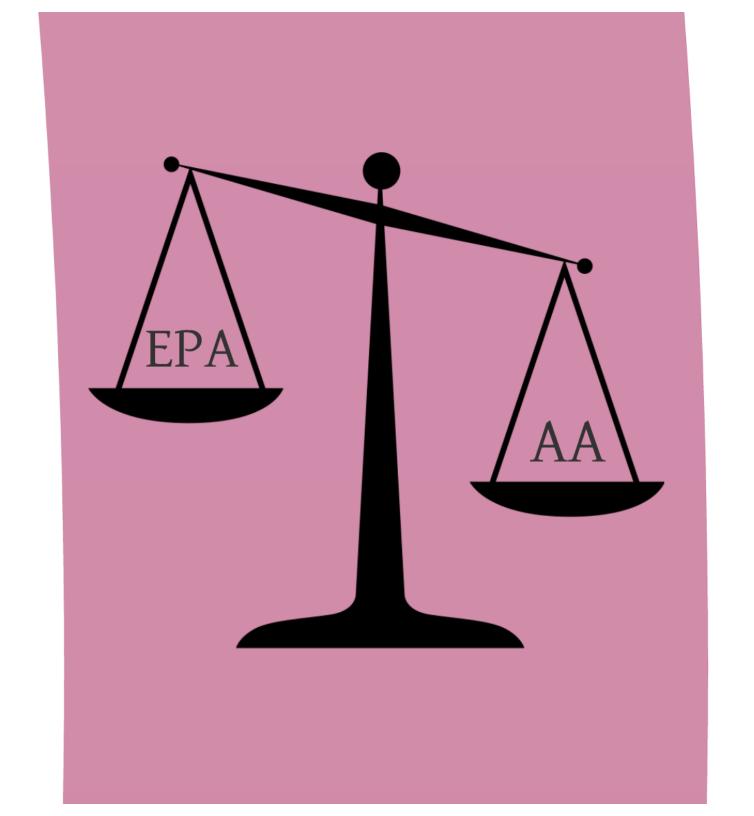


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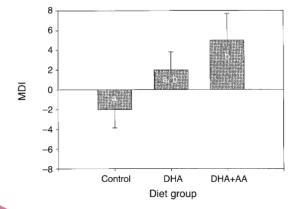


advances in the field

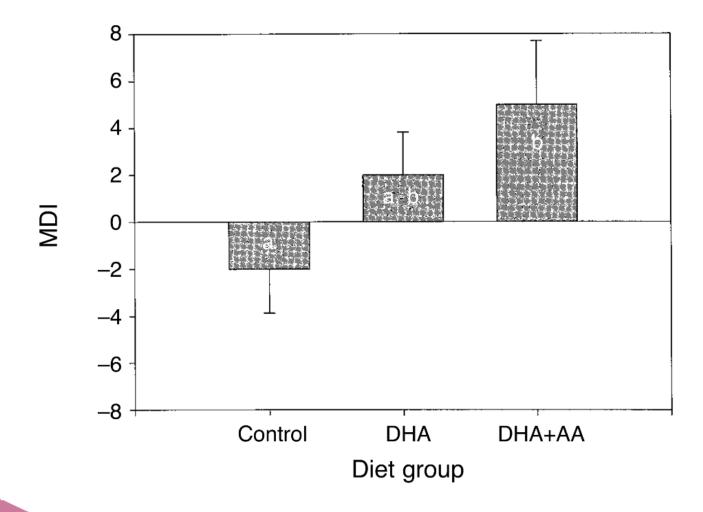
- Study on eicosanoid supplementation in babies
 - 56 infants (male & female) split into 3 groups
 - 5 days after birth to 17 weeks
 - used Bayley Scales of Infant Development test
 - scored on Mental Development Index (MDI)

Group #1 Control Group #2
DHA

Group #3
DHA
& AA

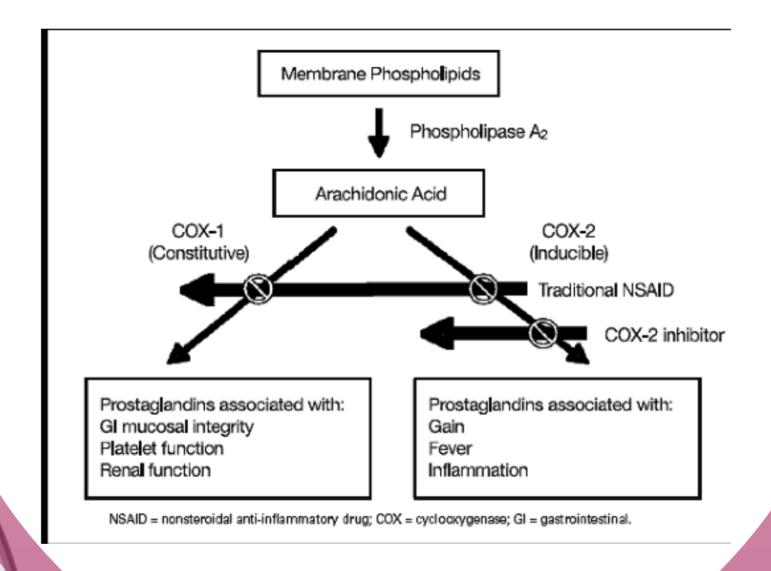








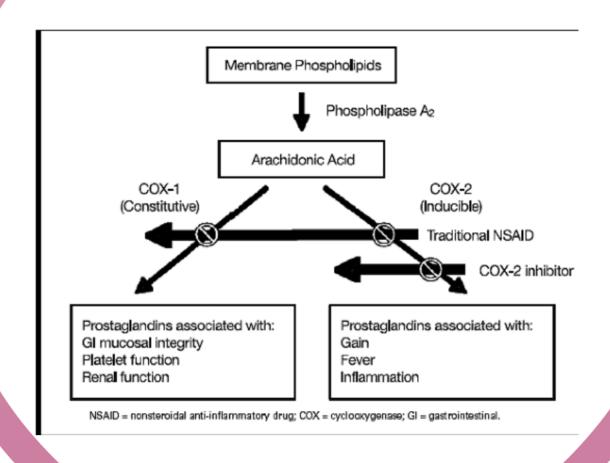
• Eicosanoid production is increased during inflammation



NSAIDs

(Non-Steroidal Anti-Inflammatory Drugs)

• Eicosanoid production is increased during inflammation





conclusion

It is very important to have a **BALANCE** of Omega-3 and Omega-6 Fatty Acids in your diet. Inflammation is a highly complex function and needs to be regulated through eicosanoids in your diet

Omega-3 Sources

- Flaxseed oil
- Canola oil
- Linseed oil
- Breastmilk
- Oily fish
- Grassfed meat
- Free range egg yolks
- Pastured dairy

Omega-6 Sources

- Corn oil
- Sunflower oil
- Nuts
- Seeds
- Soybean oil
- Sardines



Quiz:

What is the main function eicosanoids are associated with?

- A. Grounding
- B. Movement
- C. Inflammation
- D. Haircuts



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