

Aquaculture's Role In Nixing the 6, and Eating More Omega-3's

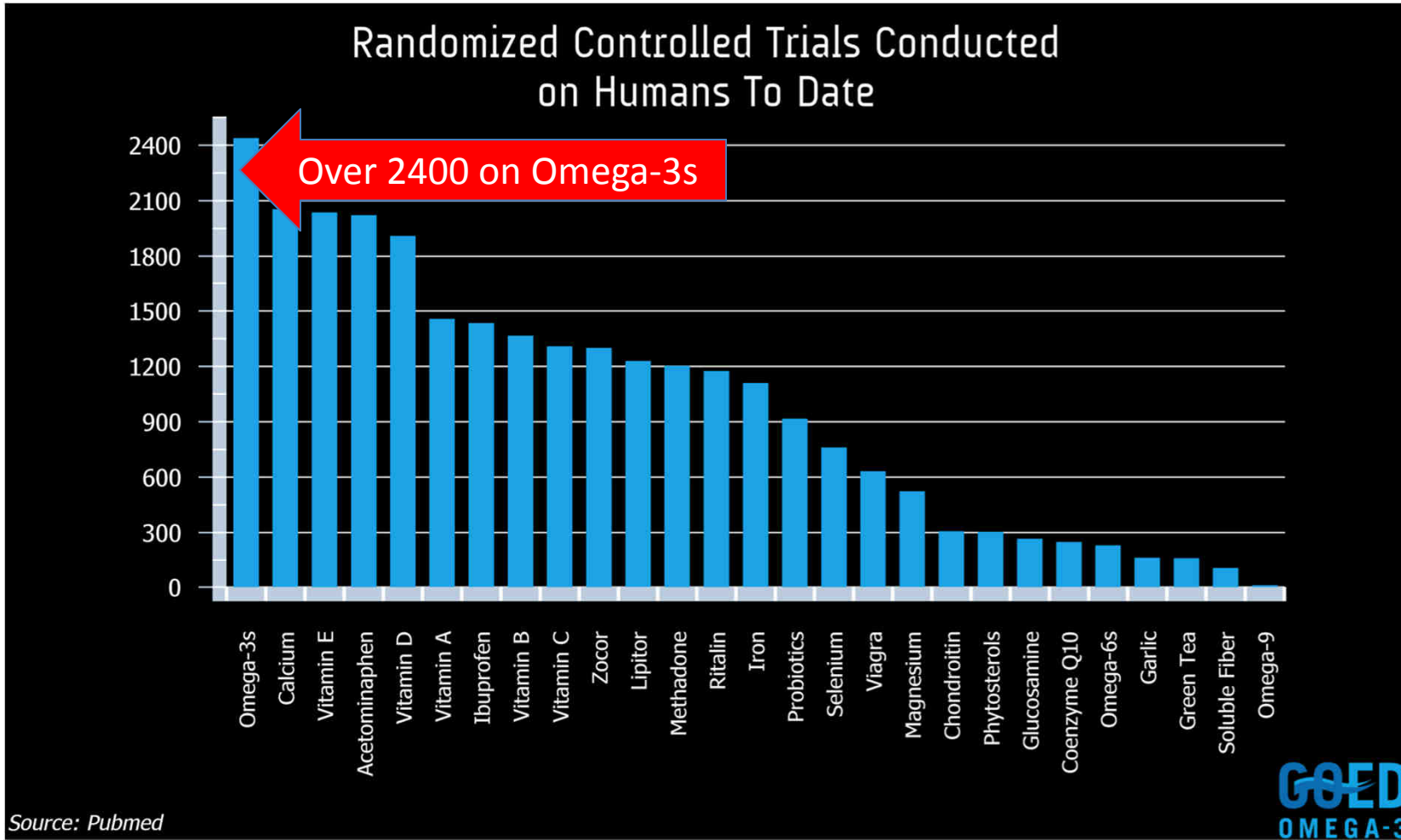


FOMENTO AL CONSUMO
DE PRODUCTOS PESQUEROS
Y ACUÍCOLAS MEXICANOS

WWW.FOROECONOMICO.CONAPESCA.GOB.MX



EPA & DHA most clinically studied ingredient in history



The First 1000 Days of Life

- Encourage omega-3 intake in women of child bearing ages, their breast milk and young children.
- Important public health focus
- Maternal and child health is supported through ample omega-3 intake
- Results in reduced risk of chronic diseases
- Lowers medical costs
- It's the right thing to do!

Global Summit on Nutrition, Health and Human Behavior, 2012

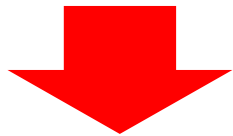
Brain and heart disorders resulting from Long Chain Omega-3 deficiency are the biggest challenges to the future of humanity

- Associated costs are currently bankrupting health care systems and threatening wider economic instability worldwide.
- Tissue concentrations of LC-Omega-3 (relative to omega-6) are the key variable for health – not dietary intakes.
- Increase Tissue Long Chain Omega-3 to 50%+ would protect 98% of population (most westernized people are <20%)
- **Recommend 1000 mg EPA/DHA intake per day**

250

mg/day

WHO and EU
Recommended
Intake



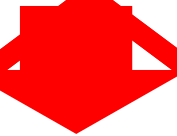
0.65

million tons
per year

400

mg/day

Omega-3
Mortality Paper



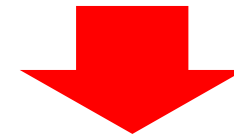
1.02

million tons
per year

1000

mg/day

Japanese
Recommended
Intake/Intern
Consensus

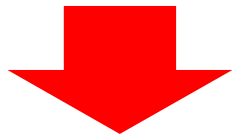


2.55

million tons
per year

250
mg/day

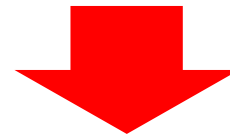
**WHO and EU
Recommended
Intake**



0.65
million tons
per year

The oceans do not provide enough EPA and DHA today and there are already fears about overfishing in many species.

**The Oceans'
Capacity**



0.53
million tons
per year

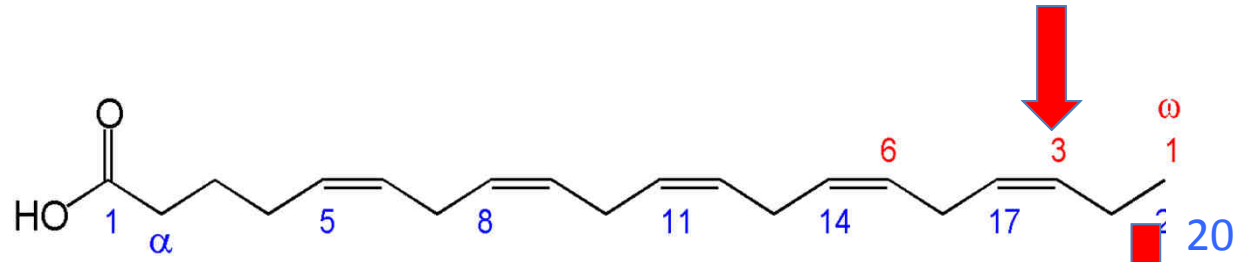
**Seafood Consumption: 0.125
Seafood Waste: 0.2
Reduction Fisheries: 0.205**

What do EPA, DHA and LA look like?

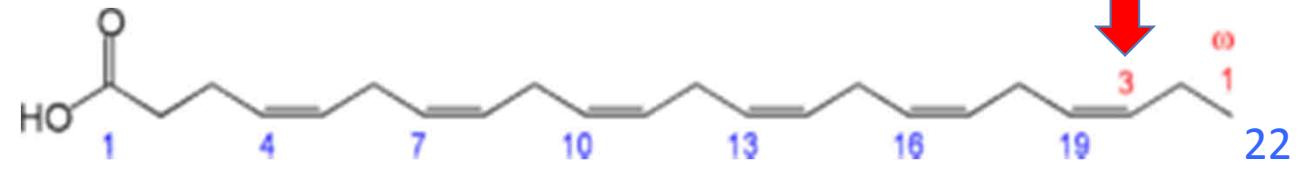
Long Chain

Omega-3

Eicosapentaenoic
Acid (**EPA**)

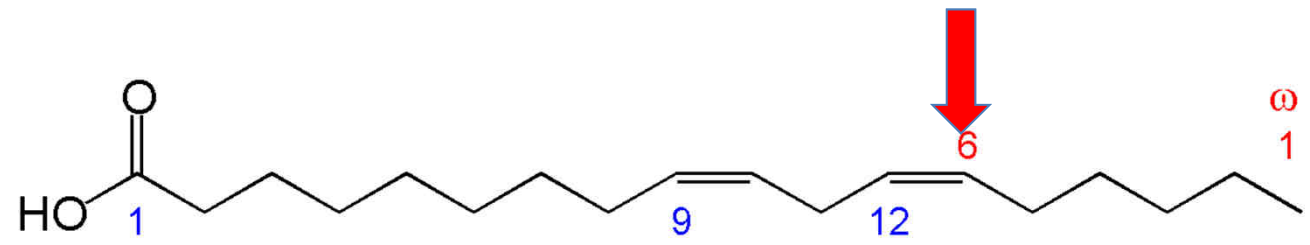


Docosahexaenoic
acid (**DHA**)

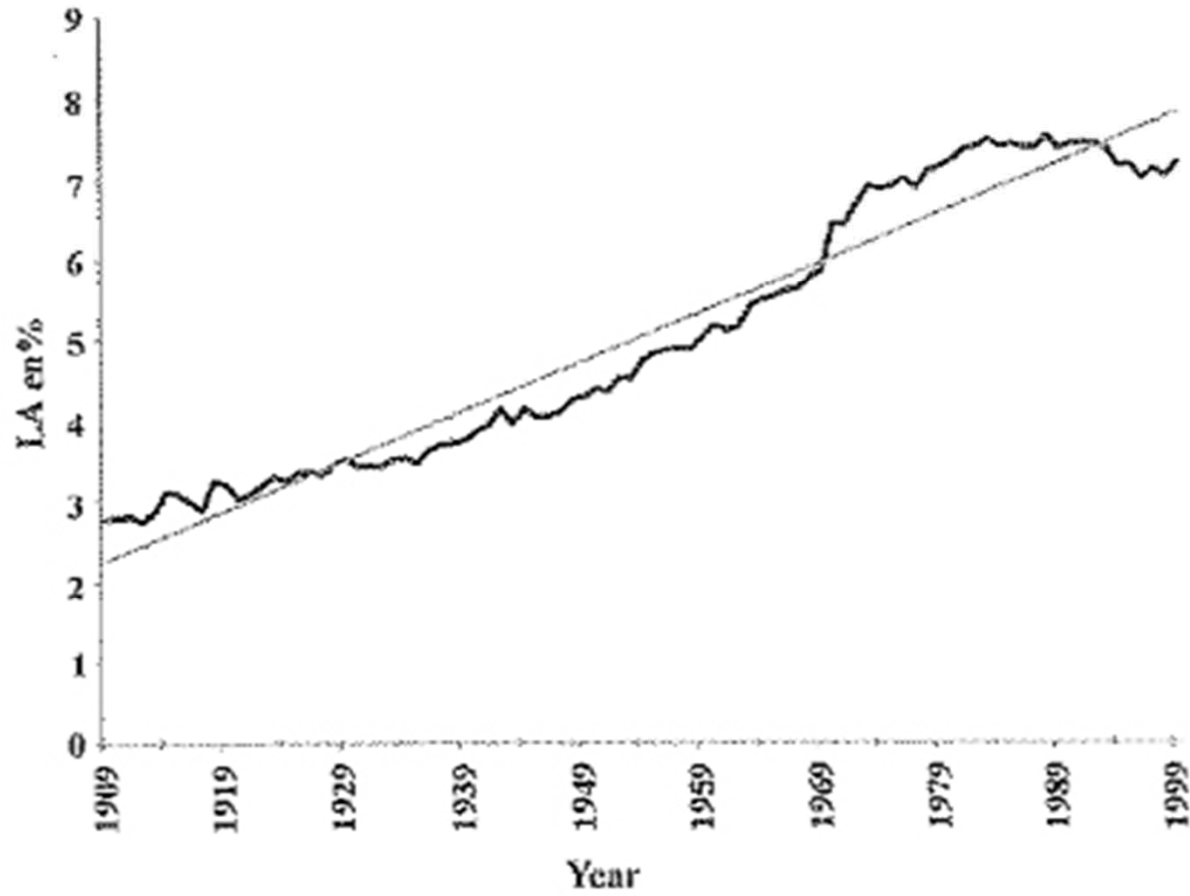


Omega-6

Linoleic Acid (LA)

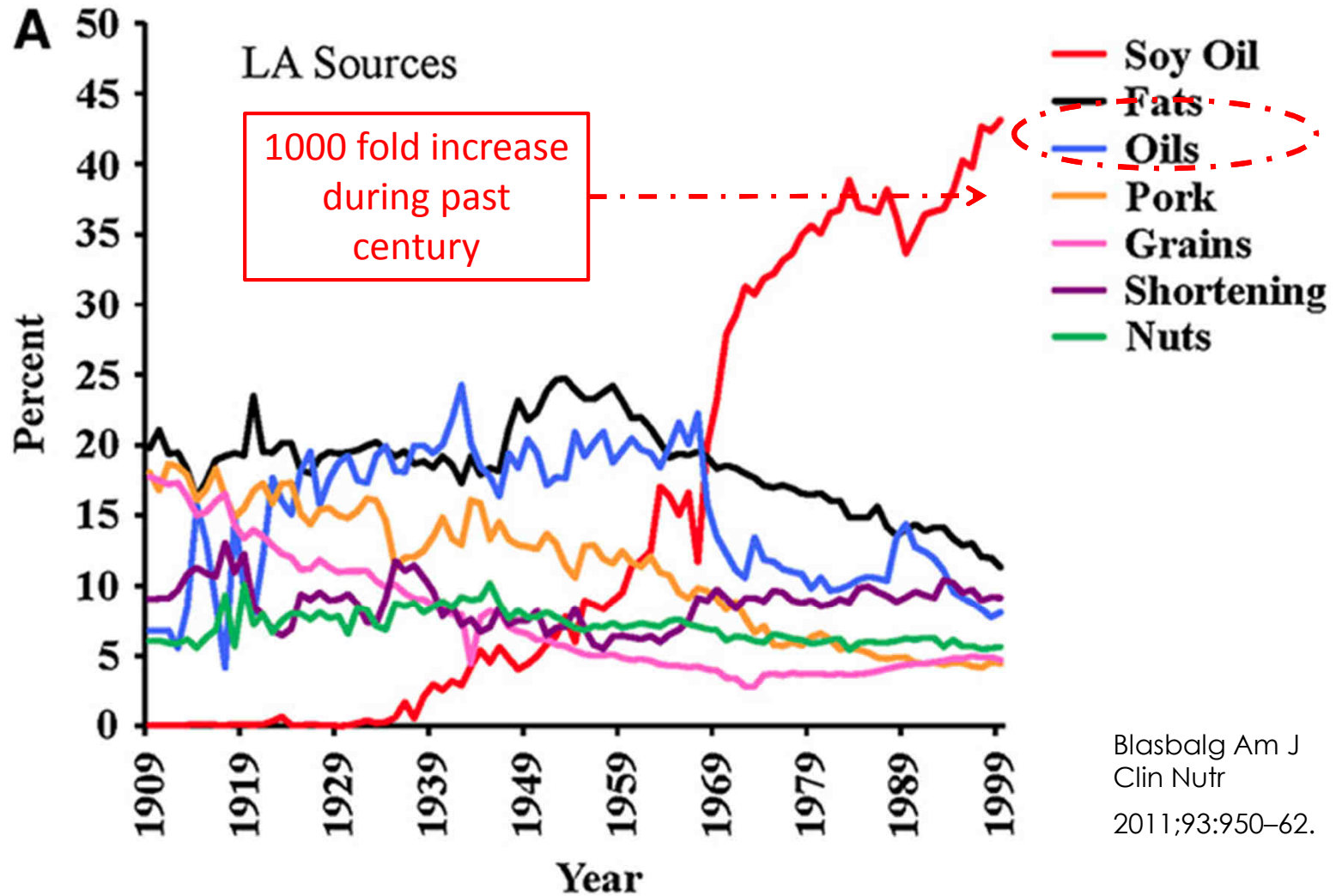


Rise in Omega-6



Blasbalg Am J Clin Nutr 2011;93:950–62.

Where is all this Omega-6 coming from?



Omega-3 vs Omega-6



Omega-3: Helps switch **OFF** inflammation
Helps the body make important metabolites

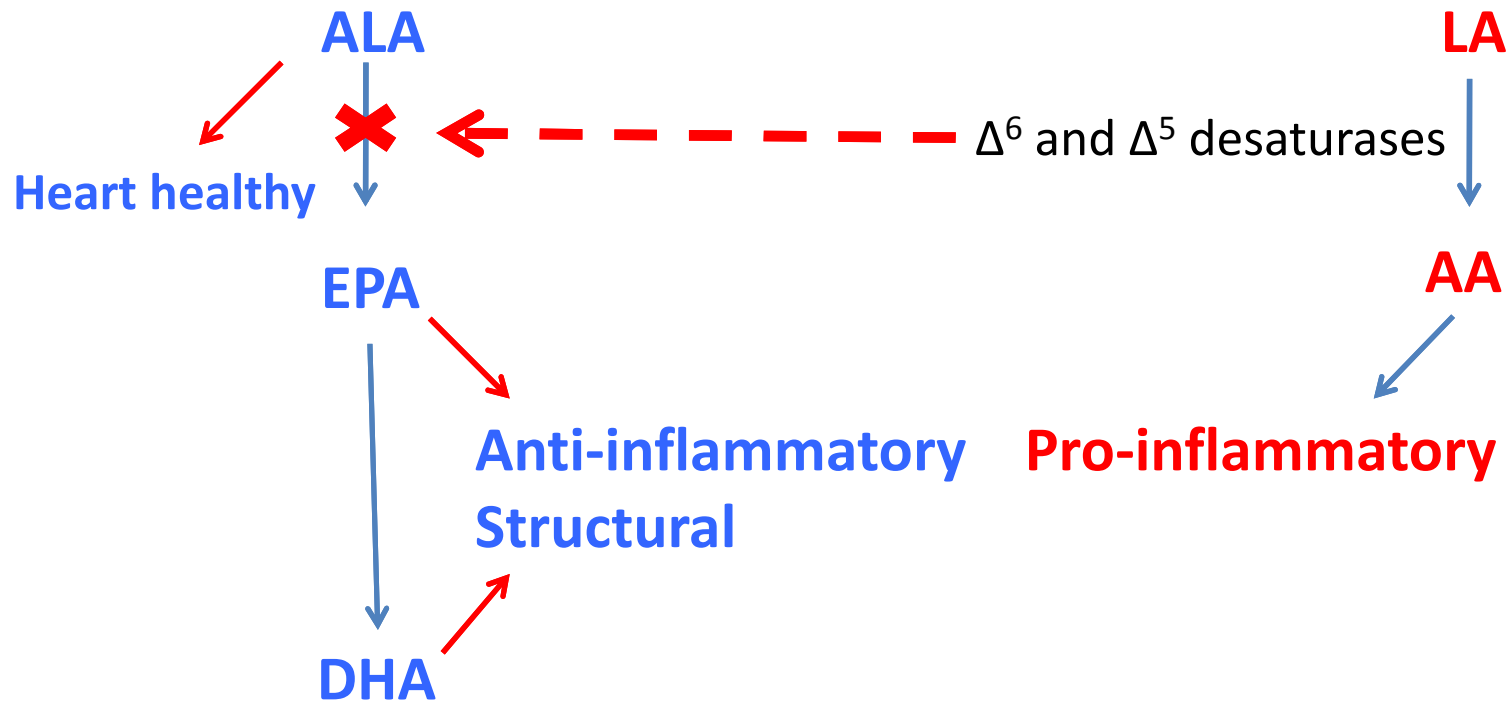


Omega-6 Fatty Acids: Turns **ON** Inflammation
Large amounts in Vegetable Oils (Fried Foods)
Essential fatty acids, but we consume too much

What Is Their Fate in Our Body?

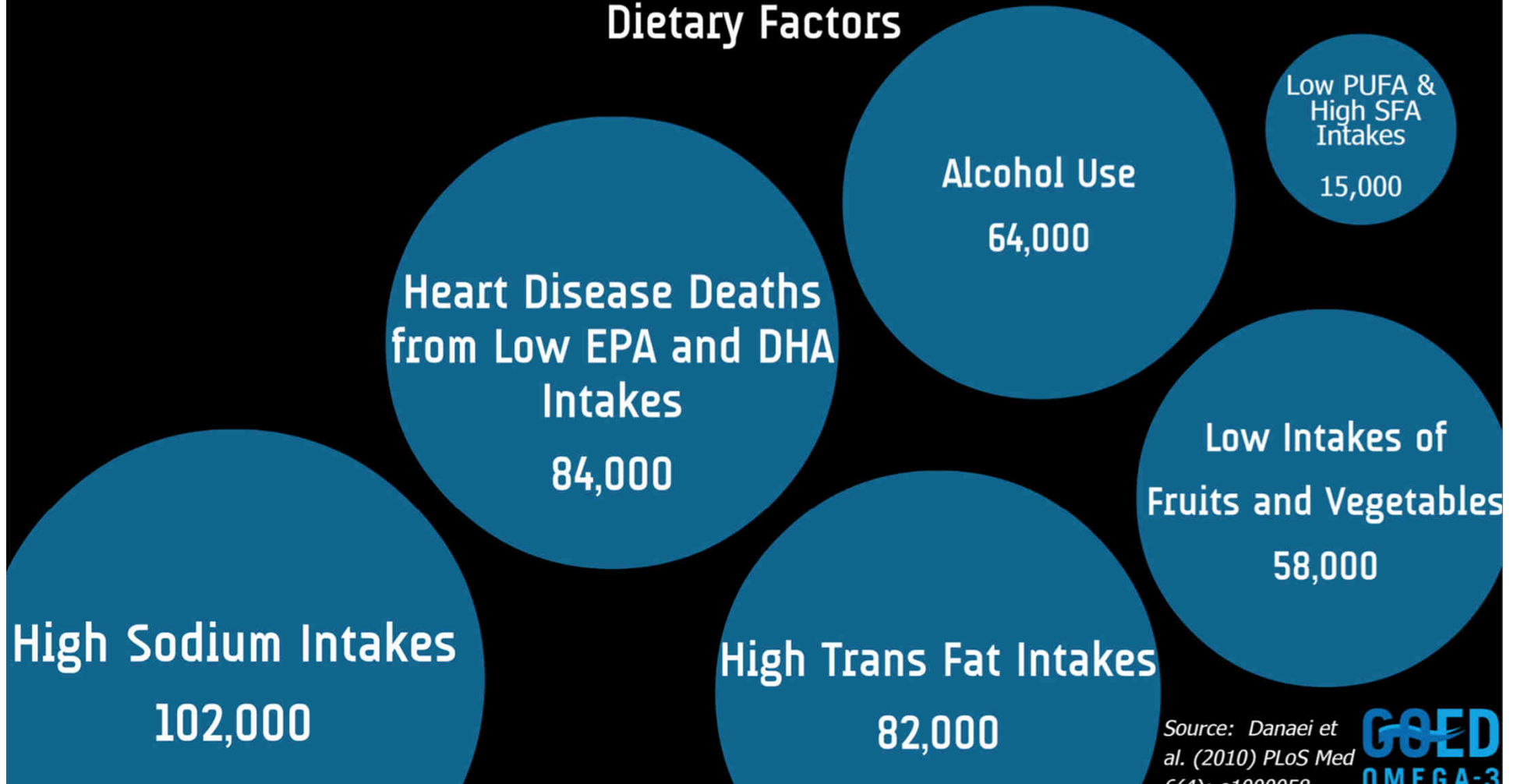
Omega-3 = flax, fish, algae and krill

Omega-6 = nuts/seeds and their oils



The public health impact of low EPA/DHA intakes is severe

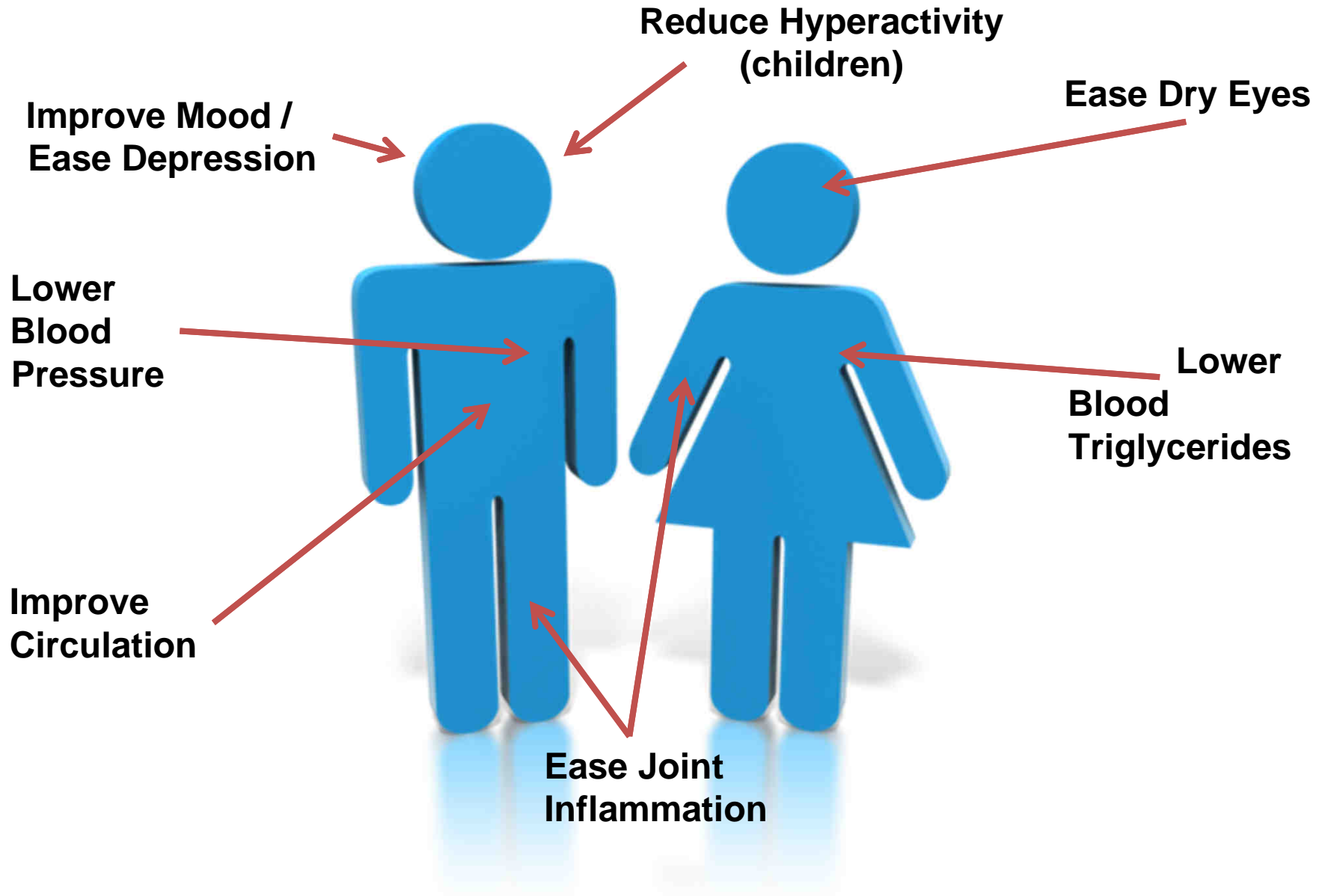
Annual US Deaths Preventable from Changes in Dietary Factors



Source: Danaei et al. (2010) PLoS Med 6(4): e1000058

GOED
OMEGA-3

How does EPA help the body?



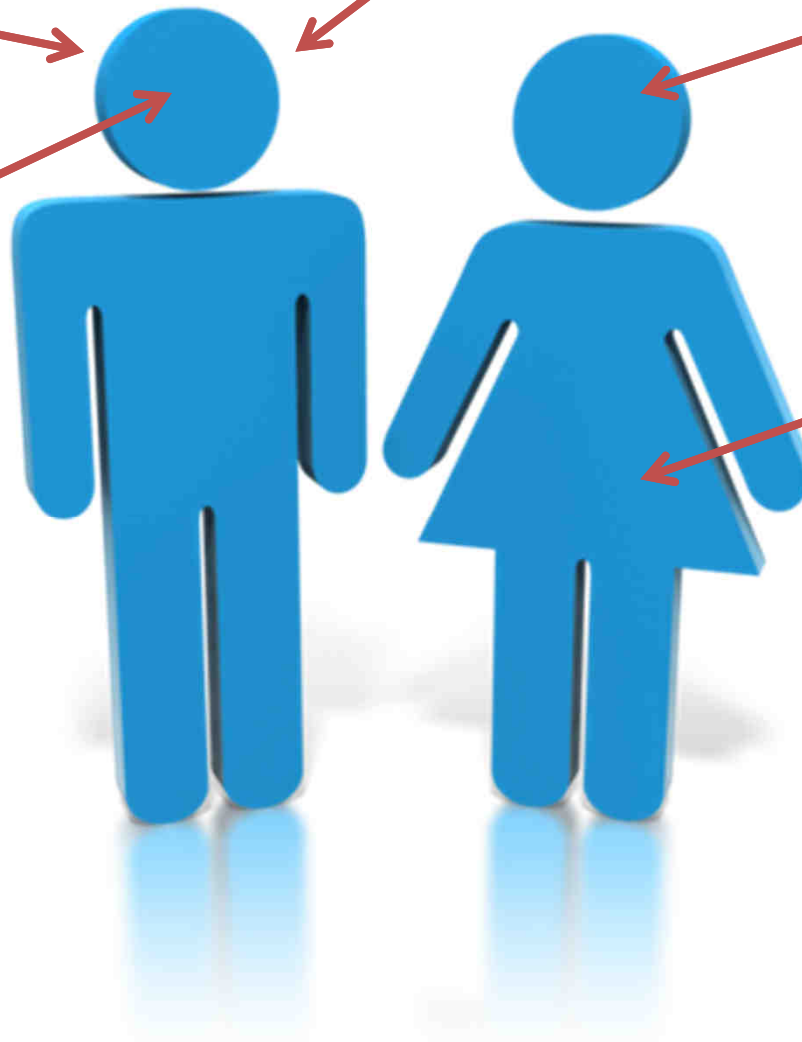
How does DHA help the body?

**Aids Cognition in
aging brains**

**Forms Myelin
(nerve sheaths)
In brain**

**Critical
Eye
Nutrient**

**Critical for
In Uterero
Development**



Countries with established RDIs for EPA & DHA Intake

Country	Amount
Japan & Korea	>1000mg
France	500mg
Norway	450mg
Denmark, Finland, Germany, Greece, Iceland, Ireland, Italy, Spain, Sweden, Switzerland, United Kingdom	250mg
Australia & NZ	160mg

It's no surprise that the US has 20x more Sudden Cardiac Deaths than Japan, where Fish Omega-3 consumption is high.

[Harris WS and von Schacky. *Prev Med* 2004;39:212-220. Itomura, *in vivo* 2008;22:131-136.]

Intake Recommendations of leading health organizations

Organization	Target	Amount of EPA + DHA
American Dietetic Assn.	general adult population	500mg EPA + DHA / day
American Heart Association	Adults with documented cardiovascular heart disease	1000mg/day
American Heart Association	Adults with high triglycerides	2000-4000mg/day
American Psychiatric Assn.	General population	Fish >2 times per week
American Psychiatric Assn.	Patients with mood, impulse-control, or psychotic disorders	1000-9000mg / day
World Assn. Of Perinatal Medicine	Pregnant and Lactating Women	200mg DHA /day

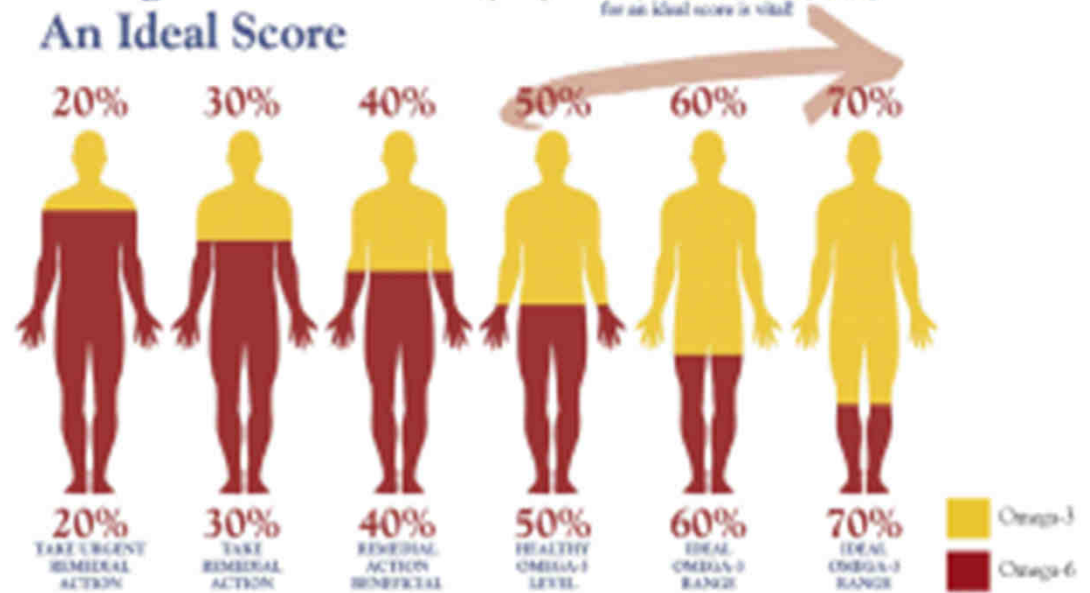
Source: The Omega-3 Handbook by Gretchen Vannice, MS RD , 2011

My Omega Blood Test



Omega Blood Count (%): An Ideal Score

Reaching a healthy level of Omega-3 is important, but constantly striving for an ideal score is vital!



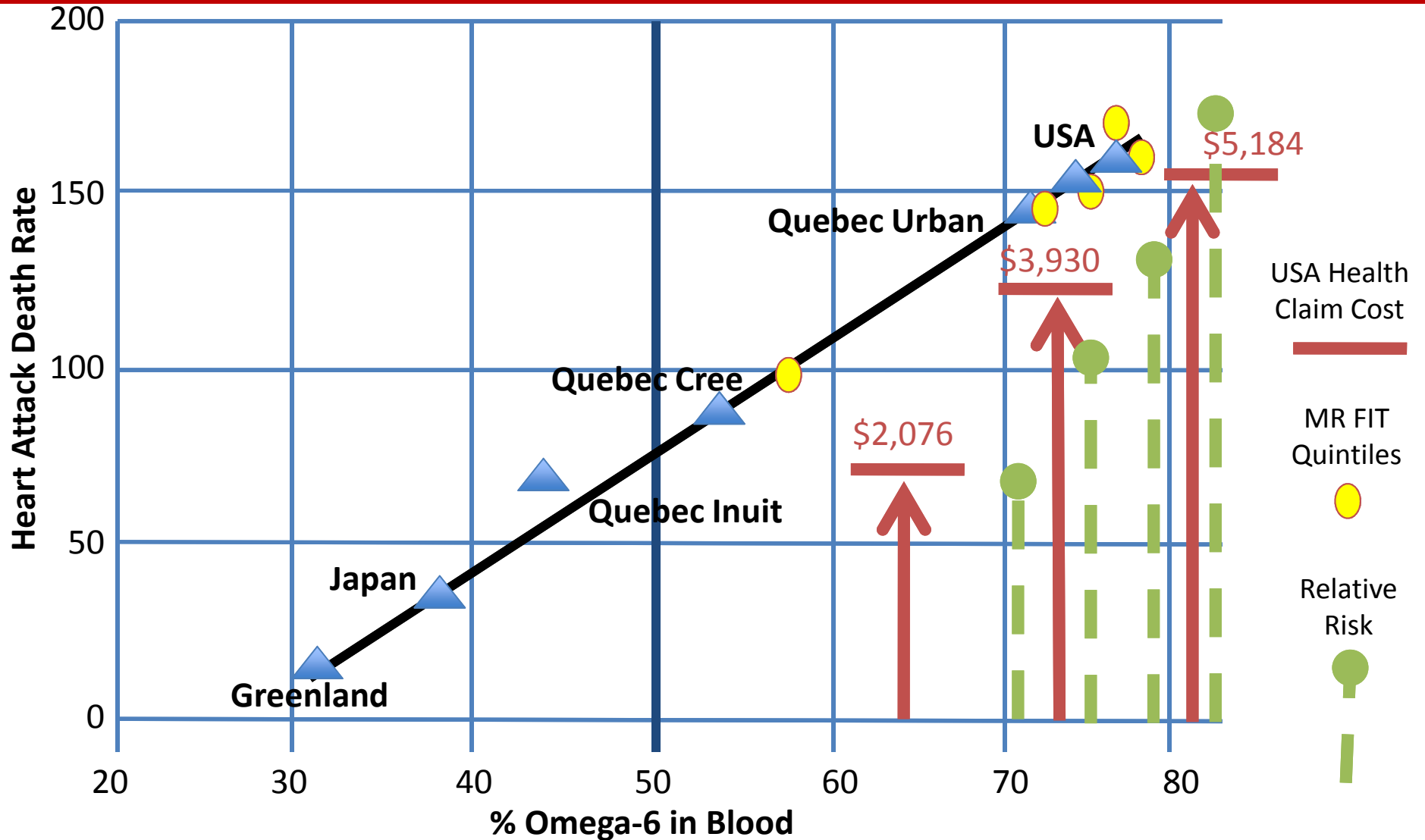
The amount of EPA/DHA needed to achieve 50% tissue concentration

Relative to the amount of omega-6 in the diet.....

	% Tissue Target for EPA and DHA	Omega -6 (LA) % total energy	Amount of EPA/DHA Needed (mg)
Philippines	50	0.80	133
Netherlands	50	4.23	1111
USA	50	8.91	2178

Adapted Hibbeln et al. Am J Clin Nutr 2006;83(suppl):1483S–93S.

% Tissue Omega-6, Coronary Heart Disease Mortality and Health Claim Costs



When people are healthy, treatment costs are not needed

Eat More Fish!

Omega-3 content in a 4oz portion (100g) of common fish species

Species	EPA + DHA mg
Wild Herring	1500-2000mg
Salmon (wild or Farmed)	1000-1500mg
Oysters or Mussels	500-1000mg
Alaskan Pollock	200-500mg
Canned Light Tuna	250-500mg
Scallops, Shrimp, and Lobster	<200mg
Tilapia	100mg

http://seafoodhealthfacts.org/seafood_nutrition/practitioners/omega3_content.php

Thank you!

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