

The Epidemic of the 21st Century in America

Presented by:

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Chief Medical Officer

LifeGuard HEALTH

Remembering an Epidemic from the Past

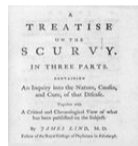
The following are symptoms of a disease
that caused illness in epidemic proportions:

- Nausea
- Tiredness
- Muscle and joint pain
- Easy bruising
- Swollen and bleeding gums
- Loosening of teeth
- Wounds healing slowly and poorly
- Old fractures separating
- Dry skin and hair
- Bleeding into muscle and joints, causing pain
- Irritability & Anxiety
- Sleep disorder

What is this Disease?



The answer:
Scurvy



Scurvy was found to be a severe lack of
Vitamin C in the diet



A Nutritional Deficiency Disease



Remembering an Epidemic From Recent Times

The following are results of another disease
that caused defects in epidemic proportions:

- Spina Bifida
- Anencephaly
- Other Neural Tube Defects



What is this Disease?



The answer:
Folic Acid Deficiency

Folic Acid Deficiency
is a severe lack of B-9 Vitamin
in a woman's diet

A Nutritional Deficiency Disease

Symptoms of a 21st Century Epidemic

The following are symptoms of a disease currently causing illness in epidemic proportions:

- | | |
|---|--|
| <input type="checkbox"/> Arthritis/Fibromyalgia | <input type="checkbox"/> High Cholesterol |
| <input type="checkbox"/> Adult & Childhood ADD/ADHD | <input type="checkbox"/> Poor Exercise Recovery |
| <input type="checkbox"/> Alzheimer's Disease | <input type="checkbox"/> Poor Immune Function |
| <input type="checkbox"/> Cognitive Decline | <input type="checkbox"/> Poor Pre-Natal Health |
| <input type="checkbox"/> Asthma & Allergies | <input type="checkbox"/> Poor Respiratory Function |
| <input type="checkbox"/> Anxiety, Depression, & Bipolar | <input type="checkbox"/> Skin Disorders |
| <input type="checkbox"/> Cancer | <input type="checkbox"/> Weight Gain |
| <input type="checkbox"/> Decreased Visual Function | |

What is this Disease?



The answer:
Omeganemia™

Lack of Omega-3
Essential Fatty Acids (EFAs)

A Nutritional Deficiency Disease

Ockham's Razor

"All things being equal, the simplest solution is most frequently the correct solution."

Hanlon's Razor

"Never attribute to malice that which can be adequately explained by stupidity"

What do all these diseases have in common?

Lack of an essential nutrient in the diet results in a nutritional deficiency disease/disorder and concomitant medical conditions and problems

- Scurvy caused by lack of Vitamin C
- Neural Tube Defects caused by lack of Folic Acid
- Omeganemia caused by lack of Omega-3 EFAs

**Essential Nutrients cannot be made or stored:
must be consumed**

Omeganemia™:

The Scurvy of the 21st Century

The "Inconvenient Truth" of
American Medicine today

The Changes in the American Diet

- Past (19th Century)
 - 30 Million Farmers/100 Million People
 - Many small farms producing locally
 - Short shelf life
 - Omega-3s In



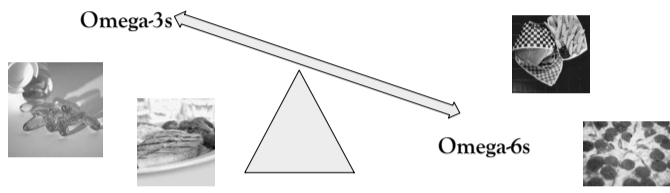
- Present (20th Century)
 - Agribusiness - 3 Million Farmers/300 Million People
 - Many large farms producing globally
 - Long shelf life
 - Omega-3s Out/Omega-6s In



- Future (21st Century)
 - Add-Back Hoax
 - ALA/Insufficient quantities

Typical American Diet Today Severe Omega Imbalance

- A healthy diet consists of 1:1 ratio of Omega-3s to Omega-6s
- The average American Diet is 1:25, as high as, 1:50
- This occurred when healthy unsaturated fats were replaced with trans fatty acids and diets full of processed foods (high in Omega-6)



All Omegas (Polyunsaturated Fatty Acids -PUFAs) Are NOT Created Equal

- | | |
|--|---|
| <ul style="list-style-type: none"> ❑ Omega-6s <ul style="list-style-type: none"> - Pro-Inflammatory - Vegetable Oils - Saturated Fats - Processed Foods - Animal Fat - Corn Fed Cattle - High fructose corn syrup | <ul style="list-style-type: none"> ❑ Omega-3s <ul style="list-style-type: none"> - Anti-Inflammatory - Polyunsaturated Fats - Plants - Fish |
|--|---|

All Omega-3 Essential Fatty Acids (EFAs) Are NOT Created Equal

- | | |
|--|--|
| <ul style="list-style-type: none"> ❑ ALA (alpha-linolenic acid)-
found in green leafy
vegetables flaxseed, soybeans,
canola oil and walnuts
<i>(parent Omega-3)</i> | <ul style="list-style-type: none"> ❑ DHA (docosahexaenoic acid)
- <i>Brain Food</i> ❑ EPA (eicosapentaenoic acid)
- <i>Anti-Inflammatory</i> |
|--|--|

➡ Unfortunately, ALA converts poorly (<1%) to EPA & DHA which are the only two EFAs proven to have significant health benefits

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Physiological compartmental analysis of
a-linolenic acid metabolism in adult
humans

Journal of Lipid Research
Volume 42, 2001

Outcomes

30% Genetics

70% Choices

Type I Diabetes

Omega-3 Polyunsaturated Fatty Acid Intake and Islet Autoimmunity in Children at Increased Risk for Type 1 Diabetes

Source: Jama, September 26, 2007-Vol 298, No.12

JAMA®

Implications of Omega Imbalance

Why should we care?

Chronic Inflammation

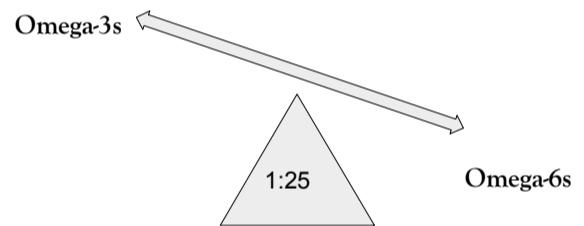
“The Fire Within”



Scientists believe they may have found a common link in diseases from cancer to Alzheimer's to heart disease. Here's the story behind the search for **the secret killer**

By David Stipp
Source: Fortune

The Common Link is Chronic Inflammation



The Cause is Omega Imbalance

Inflammatory Pathways (Omega-6 Mediated)

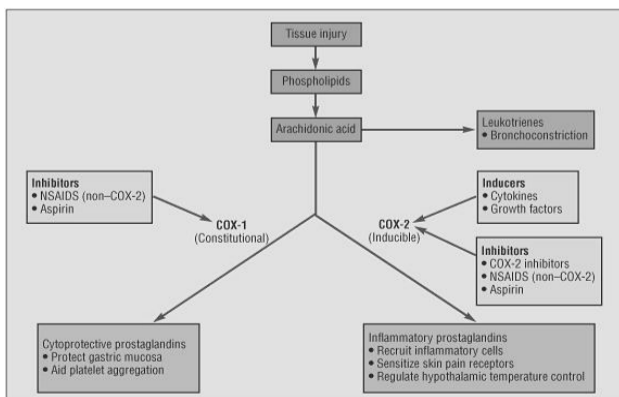
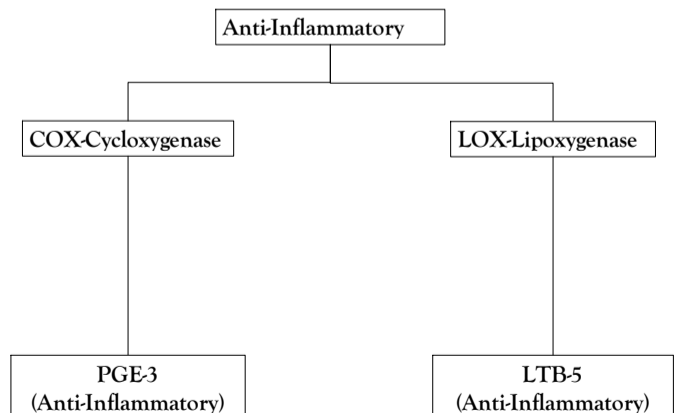
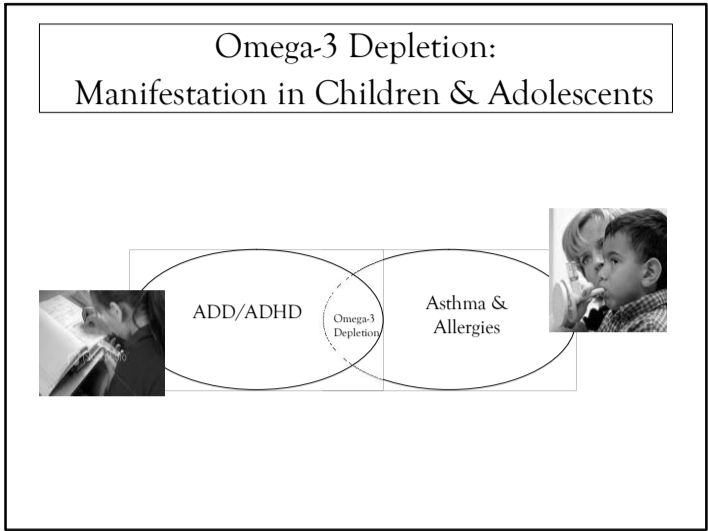
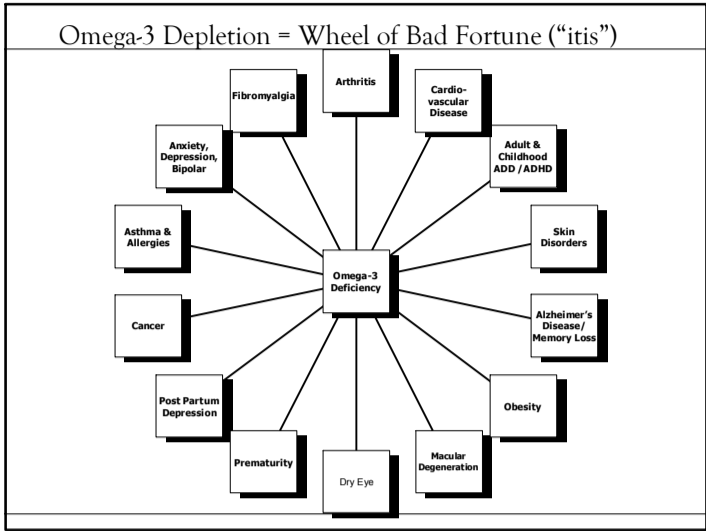


FIGURE 1. Algorithm of the biochemical pathway shows that the formation of prostaglandins occurs via both cyclooxygenase enzymes (COX-1 and COX-2).

Anti-Inflammatory Pathway (EPA, DHA)





Adolescent Asthma

“Low Dietary Nutrient Intakes and Respiratory Health in Adolescents”

Source: CHEST: 2007 Jul: 132 (1): 238-45

ADD/ADHD

“Fatty acid metabolism in neurodevelopmental disorder: a new perspective on associations between attention-deficit hyperactivity disorder, dyslexia, dyspraxia and the autistic spectrum”

Source: Society of Biological Psychiatry 2207: 61-551-553

Autism

Presently in the USA

1:150 all births
1:90 male births
1:20 second sibling

Autism

Omega-3 Fatty Acids Supplementation in Children with Autism: A Double-blind Randomized, Placebo-controlled Pilot study

Source: Society of Biological Psychiatry 2007 61:551-553

Role EFAs Play in Our Body

DHA ↔ EPA

Structure ↔ Function

Benefits of DHA

- ❑ DHA is the most abundant fatty acid in the brain and eyes (retina). DHA represents about 97% and 93% of all omega-3 fatty acids in the brain and eyes, respectively. 1-2

1. Martinez M. Tissue levels of polyunsaturated fatty acids during early human development. *Pediatr*, 1992. 120: S129-38
2. Lauritzen L, et al. The essentiality of long chain n-3 fatty acids in relation to development and function of the brain and retina. *Prog Lipid Res*, 2001. 40: 1-94

Benefits of DHA

- ❑ DHA is important for healthy visual and mental development of the infant in utero and throughout infancy 14

1. Martinez M. Tissue levels of polyunsaturated fatty acids during early human development. *Pediatr*, 1992. 120: S129-38
2. Lauritzen L, et al. The essentiality of long chain n-3 fatty acids in relation to development and function of the brain and retina. *Prog Lipid Res*, 2001. 40: 1-94
3. Salem, N Jr, et al. Mechanisms of action of docosahexaenoic acid in the nervous system. *Lipids*, 2001. 36:945-59
4. Crawford MA. The role of essential fatty acids in neural development: implications for perinatal nutrition. *Am J Clin Nutr*, 1993. 57:703S-709S.

Benefits of DHA

- ❑ Higher levels of DHA in breast milk were associated with an infant's ability to easily adjust to changes in surroundings (measured using Brazelton Neonatal Behavioral Assessment scale).31

31. Hart SL, et al. Brief report: newborn behavior differs with docosahexaenoic acid levels in breast milk. *J Pediatr Psychol*, 2005. 31:221-6

Benefits of DHA

- ❑ A study using a statistical model of risk-benefit analysis, designed by Harvard Center for Risk Analysis estimated that increasing maternal DHA intake by 1 g/day increases child IQ by 1.3 points.36

36. Cohen JT, et al. A quantitative analysis of prenatal intake of n-3 polyunsaturated fatty acids and cognitive development. *Am J Prev Med*, 2005. 29:366-374

Benefits of EPA

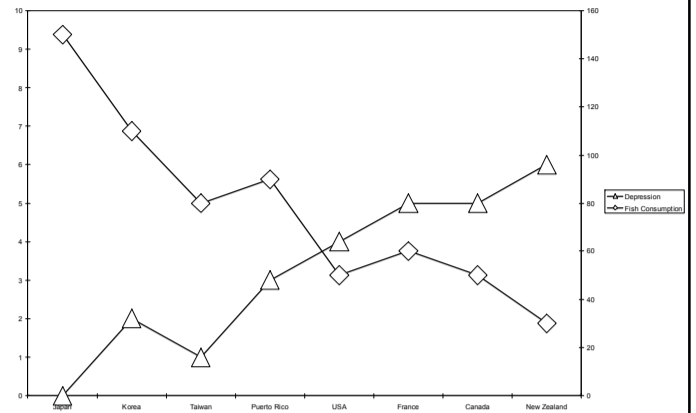
- ❑ Production of neurotransmitters
- ❑ Modulation of the immune system (anti-inflammatory)
 - Asthma
 - Allergies
 - Eczema/Psoriasis
- ❑ Prevention and Treatment of Mood Disorders (i.e. anxiety, depression, & bipolar disease)

Benefits of DHA

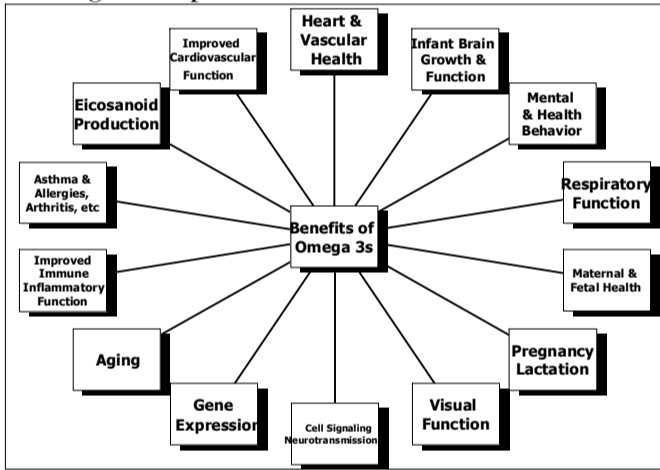
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Fish Consumption



Omega-3 Repletion = Wheel of Good Fortune

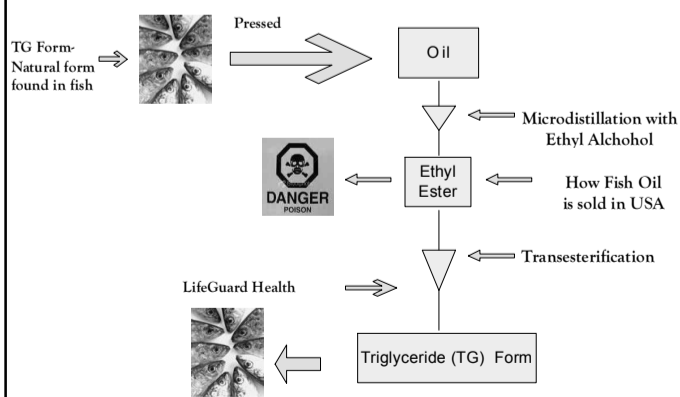


Sources of Omega-3s



- Plants & Nuts - ALA
- Fish - EPA & DHA with contamination
- Dietary Supplements in the same form of the fish (Natural TG) - the only viable source

Fish Oil Production



What makes a superior dietary Omega-3 EFA dietary supplement?

- Quality & Purity: Pharmaceutically Licensed
- No "fish" taste
- Bioavailability: Natural TG form
- Age, Lifestyle, and Condition Specificity
- Price

cGMP
Pharmaceutical Grade
Manufacturing

Fish Oil Absorption

TG (Natural Triglyceride Form)
is 300% more absorbable
than Ethyl Ester form with no toxicity

References

[1] Lawson LD, Hughes BG., 1988. Absorption of eicosapentaenoic acid and docosahexaenoic acid from fish oil triacylglycerols or fish oil ethyl esters co-ingested with a high-fat meal. *Biochem Biophys Res Commun.* Oct 31; 156(2):960-3

[2] Beckermann B., Benke M, Steitz I., 1990. Comparative bioavailability of eicosapentaenoic acid and docosahexaenoic acid from triglycerides, free fatty acids and ethyl esters in volunteers. *Arzneimittelforschung.* June; 40(6):700-4

[3] Yang LY, Kuksis A, Myher JJ., 1990. Lipolysis of menhaden oil triacylglycerols and the corresponding fatty acid alkyl esters by pancreatic lipase in vitro: a reexamination. *J Lipid Res.* 1990 Jan; 31(1):137-47

Potency = Concentration x Absorption

- Most Commercial Brands (Ethyl Ester)
 - 30% concentration/30% absorbability = 9% potency
- Higher Concentrated Forms (Ethyl Ester)
 - 60% concentration/30% absorbability = 18% potency
- Highest Concentrated Form-Lovaza (formerly Omacor) (Ethyl Ester)
 - 90% concentration/30% absorbability = 27% potency
- Natural TG Form
 - 60% concentration/90% absorbability = 54% potency

Ethyl ester (ethyl alcohol form of fish oil) is only sold as a prescription in Japan, Germany, Finland, Denmark, Australia, etc. because of **DANGER!**



Credibility



All product claims made are those substantiated by well controlled studies in peer reviewed journals



Patients are always urged to consult with their doctor



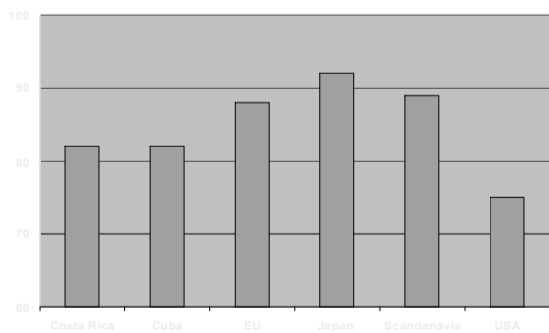
PEDIATRICS

NEUROSCIENCE

Medscape
from WEBMD

Mayo Clinic.com
Go to healthcare.com

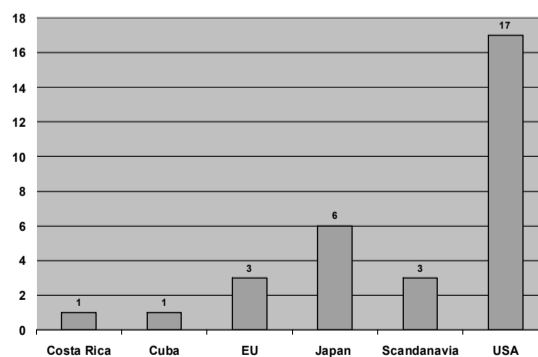
Average Life Span

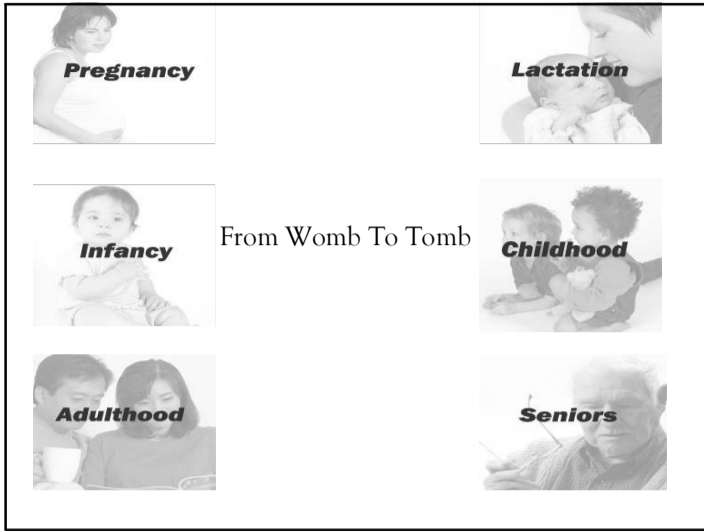


Annual per capita consumption of fish

Japan is one of the highest at 152.1 pounds and USA is one of the lowest at 46.1

Healthcare as a Percentage of Gross National Product (GNP)






Hippocrates 400 BC

Do No Harm

Honor & Respect the Healing Power of Nature

Thy Food is Thy Remedy

Physician Heal Thy Self



Eradicating the Epidemic

It Can Be Done