

The Health Benefits of Eating Fish

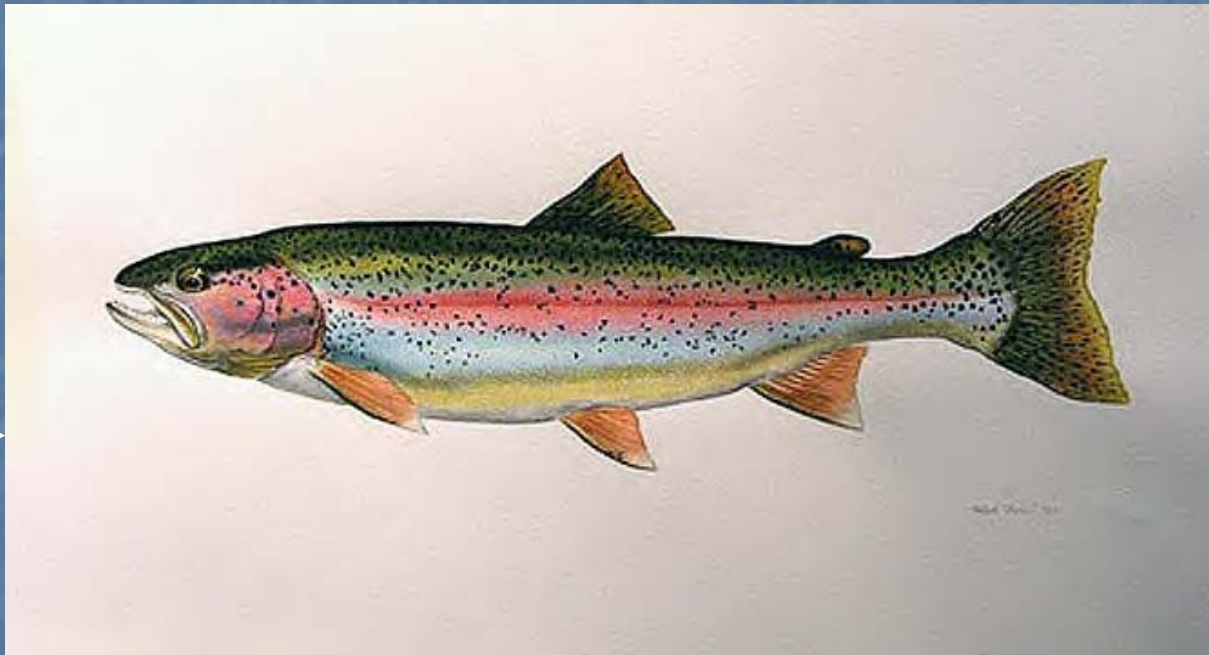
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NUTRIENTS FOUND IN FISH

Omega 3 Fats

Vitamin D

High Quality Protein



Low in Saturated Fats

Selenium

Taurine

Magnesium

High in Polyunsaturated Fats

WHAT ARE THE CURRENT
RECOMMENDATIONS FOR FISH
CONSUMPTION?

Institute Of Medicine of the National Academies' Recommendations for Fish Consumption

General Population: Consume a **variety
of fish more than 2 times a week.**

Women of child-birth or breast feeding age and children (up to 12 years): consume two 3-ounce servings, but can safely consume 12 ounces per week.

Balancing the Benefits and Risks of Eating Fish

Possible Risks

- Mercury may effect a developing nervous system in infants.

Benefits

- Women ate omega 3 fatty acids:
 - Longer gestation periods.
 - Infants may have better vision.
 - Infants have better brain development.

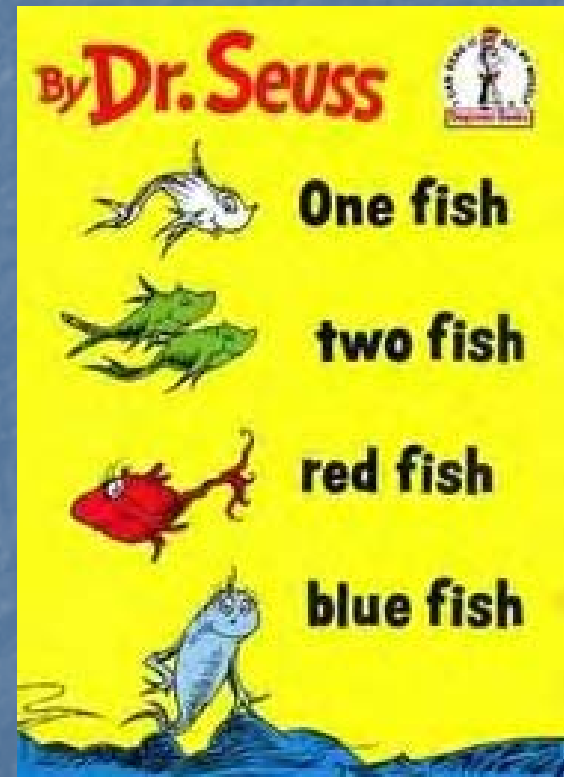
FISH WITH THE HIGHEST MERCURY CONTENT

- Shark
- Swordfish
- King Mackerel
- Golden Bass
- Limit albacore [white] tuna

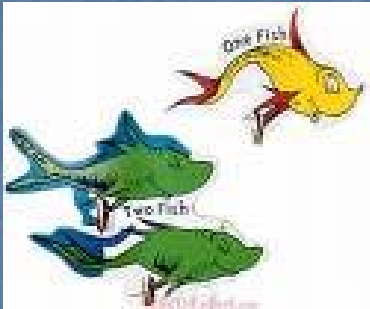
Consume a **Variety** of Fish Species

FRESH WATER FISH

- Trout
- Catfish
- Tilapia
- Carp
- Blue Gill
- Salmon



SALT WATER Fish:



- Orange Roughy
- Halibut
- Haddock
- Pollock



“Overall, the health benefits of eating fish greatly outweigh risks”. JAMA Oct 18, 2006

Fats

- Saturated
- Monounsaturated
- Polyunsaturated

Omega 3 Fatty Acid Family

Anti-Inflammatory

Alpha-Linolenic Acid (ALA)

Green leafy vegetables, legumes, flax seed, canola oil, soybean oil



Eicosapentaenoic Acid (EPA)

Fish and Fish Oils



Docosahexaenoic Acid (DHA)

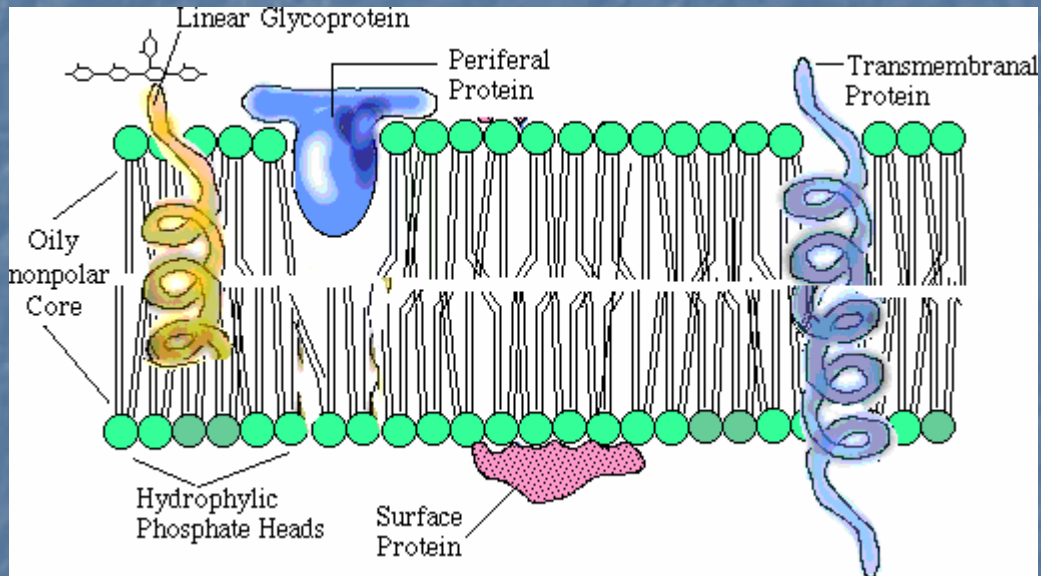
Fish and Fish Oils

Omega 6 Fatty Acid Family Inflammatory

Linoleic Acid

Corn Oil, Sunflower Seed Oil, Safflower Oil,
Soybean Oil

CELL MEMBRANE



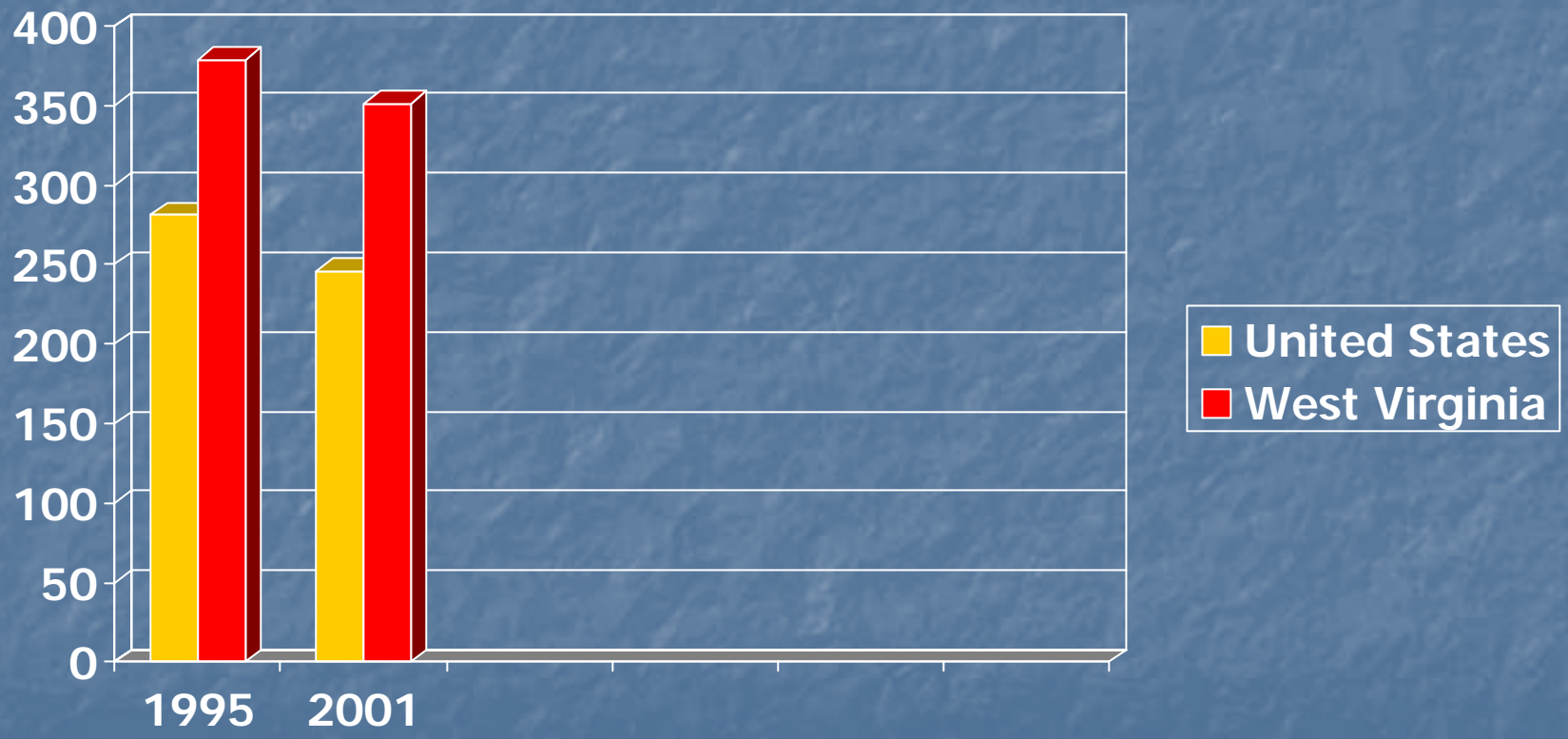
Imbalance of Fatty Acids: Consuming More Omega 6 than Omega 3 Fatty Acids

- Paleolithic Diet from which humans evolved:
1-2:1
- United States: 15:1 - 20:1 (current)
- Sweden: 5:1
- Japan: 2:1

Healthy???

Around 5:1 to 10:1 from Institute of Medicine

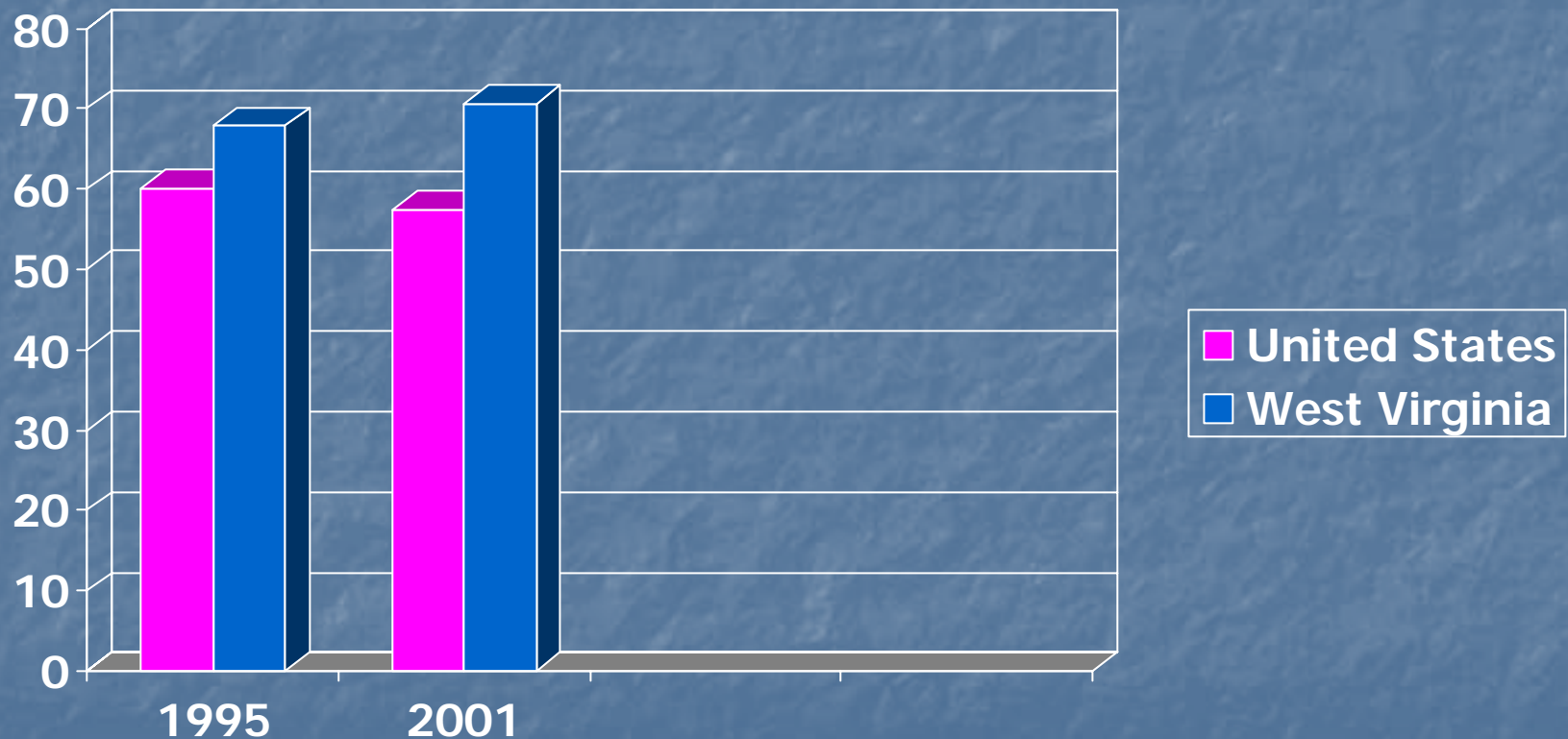
Mortality Rates for Heart Disease rates per 100,000



Source: National Center for Health Statistics, 2003)

Mortality Rates for Stroke 1995 and 2001

rates per 100,000



Source: National Center for Health Statistics, 2003)

BENEFITS OF OMEGA 3 FATTY ACIDS

- Decrease the risk of arrhythmias (leads to sudden cardiac death)
- Decrease triglyceride levels
- Decrease growth rate of atherosclerotic plaques
- Lowers blood pressure (slight association)

AMERICAN HEART ASSOCIATION RECOMMENDATIONS

- 0.5 to 1.8 grams per day of EPA + DHA
- 1.5-3 grams of Alpha-Linolenic Acid

COMMON SOURCES OF EPA + DHA

Data from USDA Nutrient Data Laboratory

	Grams per 3 oz edible fish	Required to give 1 gm/day
Tuna, light canned	0.25	12 oz
Salmon, farmed	1.09-1.83	1.5-2.5 oz
Salmon, wild	.9-1.56	2-3.5 oz
Trout, farmed	0.98	3 oz
Trout, wild	0.84	3.5 oz
Catfish, farmed	0.15	20 oz

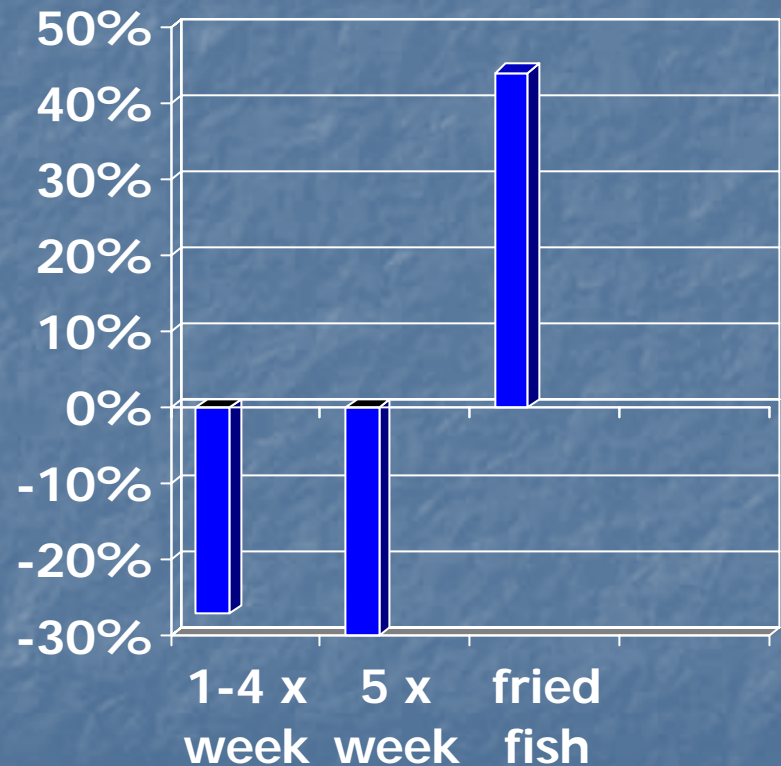
OTHER ORGANIZATIONS RECOMMENDING FISH CONSUMPTION

- American Diabetes Association
 - “eating non-fried fish 2 or 3 times a week”
- American Dietetic Association
 - “two 4oz servings of fish per week”
- WHO recommends 1-2 servings of fish per week with 200-500 mg EPA + DHA per day.

Cardiovascular Health Study

Risk for Ischemic Stroke

- 12 year follow-up study: n=626
- Ate fish 1-5 times a week reduced risk for an ischemic stroke.
- Eating fried fish increased risk for stroke.



DEMENTIA AND ALZHEIMER'S DISEASE

- Approx. 40% of the fatty acids in the brain are made of DHA.
- Individuals with dementia have lower plasma DHA levels compared to controls.

Omega 3 F.A. and Alzheimer's Disease

- Prospective studies reported 1 serving of fish per week decreases risk for Alzheimer's disease by 60%.

POSSIBLE BENEFITS OF OMEGA 3 FATTY ACIDS

- Depression: Epidemiologic data reveals nations with the highest seafood intakes have the lowest levels of major depression, bipolar disorder, and homicide.

Rheumatoid Arthritis, Asthma, and Inflammatory Bowel Disease

- Possible improvement with supplementation for Rheumatoid Arthritis.
- The evidence is weak, but promising for Crohn's Disease.
- Studies for asthma were inconclusive.

Omega 3 Fatty Acid Supplements versus Eating Fish?

NUTRIENTS FOUND IN FISH

Omega 3 Fats

Vitamin D

High Quality Protein



Low in Saturated Fats

Selenium

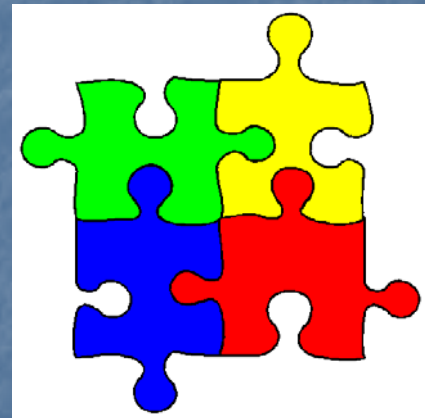
Taurine

Magnesium

High in Polyunsaturated Fats

PUTTING THE PUZZLE PIECES TOGETHER

- Include fish in your diet 2-3 x a week.
- Eat a variety of different types of fish.
- Bake, broil, or grill the fish.

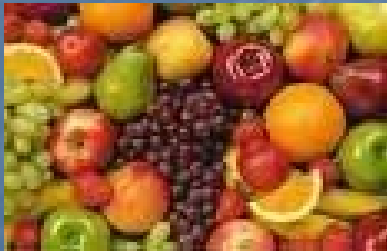


LIMIT YOUR FAT INTAKE

- Change the ratio of omega 6 to omega 3 fats in your diet.
- When cooking, use canola oil, olive oil, walnuts, and flax seed to increase ALA.
- Portion Size Counts!!

5-9 Vegetables and Fruits

- Dark, leafy vegetables are a good source of ALA.
- All vegetables and fruits are good.
- Eat a variety of “colors”.



INCLUDE

- Whole Grains



- Low Fat Dairy Products