



Farm as Pharmacy by Jerry Brunetti

Growing Health
Conference 2010
October 2010
Binghamton, NY

American Health & Vitality

- Ranked #24 in Healthy Life Expectancy
- Ranked #8 in Women's Life Expectancy
- Ranked #15 in Men's Life Expectancy
- Ranked #20 in Infant Mortality



The Dark Side of the All-American Meal

Fast Food Nation

- Americans Eat **1/5 of Their Meals** in Cars
- Americans Feed **1/3 of Their Children Daily** in Fast Food Restaurants
- N.I.H. Diabetes Forecasts on Children Born 2000-
“The Class of 2018”
 - 35% Caucasian
 - 40% African-American
 - 52% Hispanic
- 2008- 25 Million Diabetics
- 2050- 50 Million Diabetics
- 2000- 60-75 Million “Syndrome X”

**Will Contract Type II Diabetes
(A.K.A. Adult Onset Diabetes)**

American Gluttony

2001

- 60% Americans Overweight
- 20% Americans Obese

2020

- 75% Americans Overweight
- 40% Americans Obese



Heart-Healthy “Experts” Dietary Recommendations

Since 1980....

- Grain Consumption Increased 60 lbs per capita
- HFCS Consumption Increased 30 lbs per capita
 - 10% of American Adult Calories
 - 20% of American Children Calories
- 1910 American Consumed 10 lbs Vegetable Oil/Year
- 2010 American Consumed 75 lbs Vegetable Oil/Year
- 1946 Americans Consumed 10.5 gallons Soda/Year
- 2010 Americans Consumed 57.5 gallons Soda/Year

Breakfast of Champions

Kids Cereal	Serving Size (grams)	Sugar (grams)	% Sugar	Protein (grams)	Fiber (grams)
Cap'n Crunch	27	12	44%	1	1
Froot Loops	30	13	43%	1	1
Trix	32	13	40%	1	1
Cocoa Puffs	27	12	44%	1	1
Lucky Charms	27	11	40%	2	1
Frosted Flakes	30	11	36%	1	1

\$10-12 Billion/Year Advertising to Children (Institute of Medicine)

Cancer



Diagnosis= 41% of All Americans

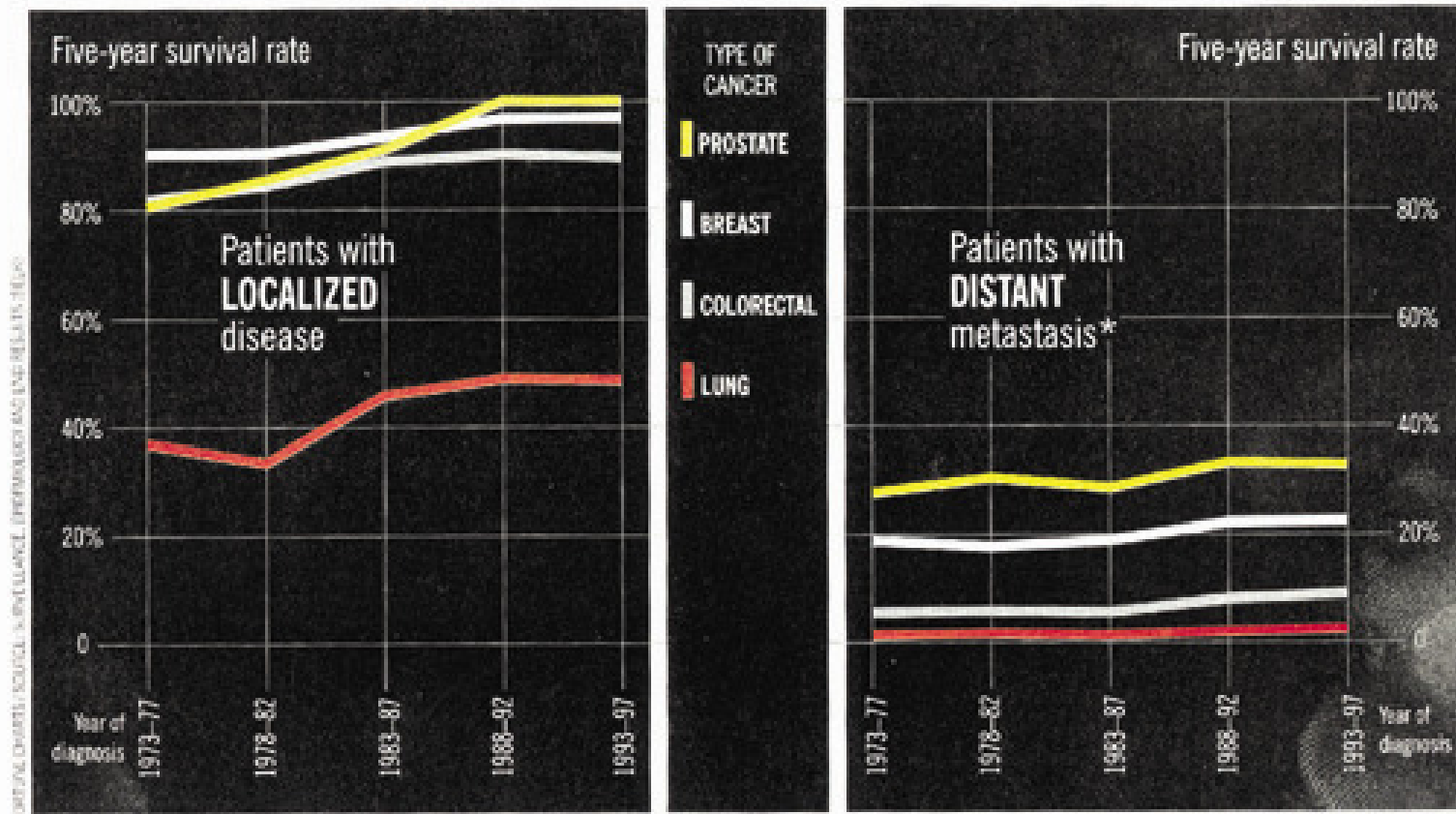
Mortality= 20% of All Americans

1.3 Million Annual Diagnosis/600,000 Annual Deaths

CANCER'S BIG FOUR KILLERS

In 1971, when the war on cancer began, 50% of people diagnosed with the disease went on to live at least five years. Today, 33 years and some \$200 billion later, the five-year survival rate is 63%, a modest 13-point gain. But a look behind the numbers for the four biggest killers—lung, colon and rectal,

breast, and prostate cancer—reveals that progress isn't being made where you might think it is. With the help of early detection and treatment, more patients are living longer. Once a cancer has spread, however, chances of survival are scarcely better now than they were three decades ago.



*Cancer that has spread beyond the primary site region.

FEBRUARY 23, 2004

BUSH'S
MILITARY RECORDS
IS DISNEY MOUSETRAPPED?

TIME

THE SECRET KILLER

- The surprising link between **INFLAMMATION** and **HEART ATTACKS, CANCER, ALZHEIMER'S** and other diseases
- What you can do to fight it



www.time.com AOL Keyword: TIME



The **FIRES** Within

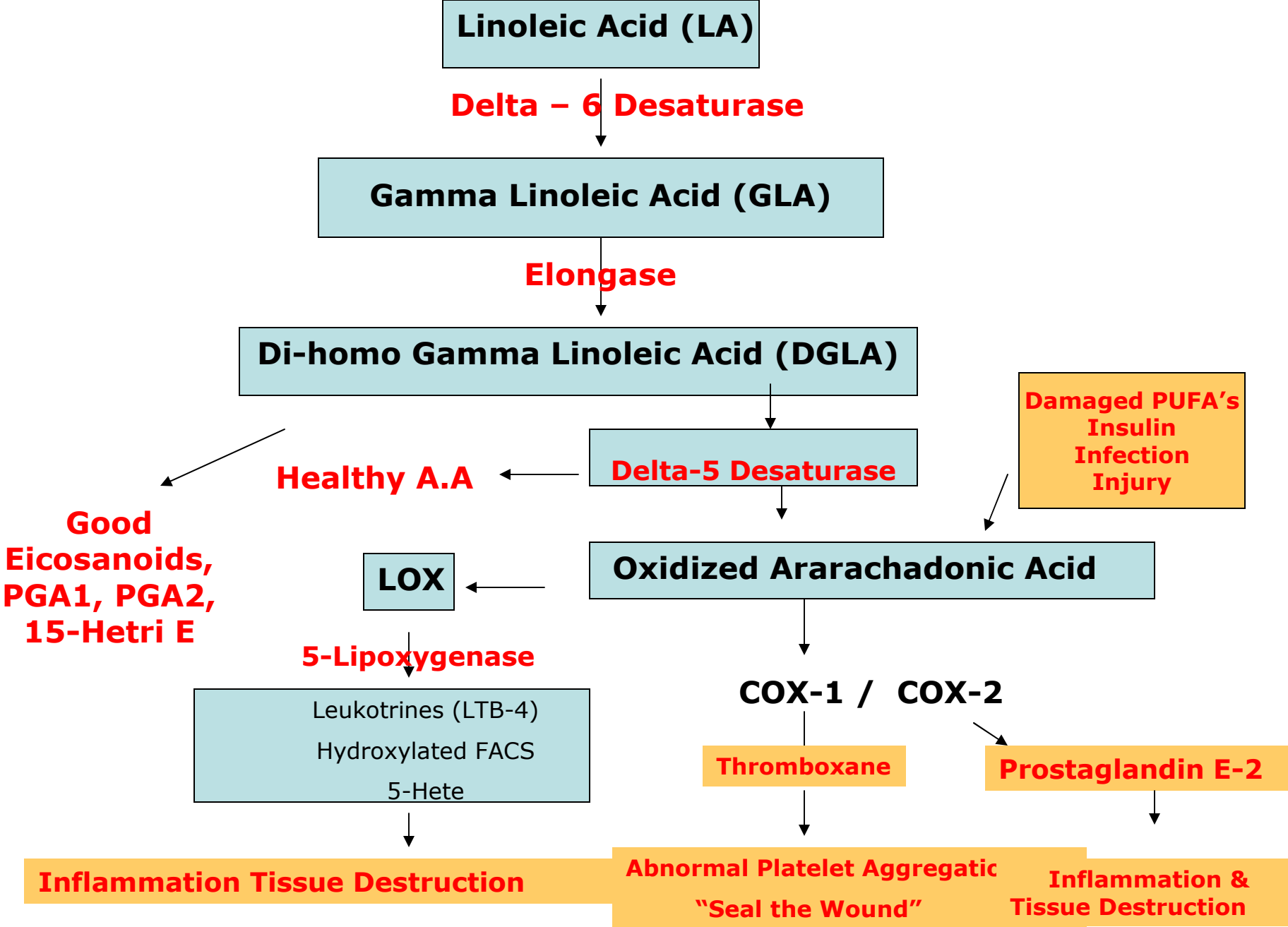
Inflammation is the body's first defense against infection, but when it goes awry, it can lead to heart attacks, colon cancer, Alzheimer's and a host of other diseases

Illustration for TIME by Brian Stauffer

INFLAMMATORY CYTOKINES (Vioxx or Celebrex??!!)

- Tumor Necrosis Factor-alpha (TNF-a)
 - Interleukin 1-beta (IL-1b)
 - Interleukin 6 (IL-6)
 - Interleukin 8 (IL-8)
 - Nuclear Factor Kappa B (NF-kB)

INFLAMMATORY EICOSANOIDS & ENZYMES



INFLAMMATORY CYTOKINES (Vioxx or Celebrex??!!)

- Result of Excessive Insulin (Sugar!)
- Result of Excessive Omega 6's (Grain)
- Result of Deficiency of Omega 3's

CHD Risk Factors

	Optimum	Risk	Serious Risk
C-Reactive Protein	<1	>2	>3
Fasting Glucose	87	>100	>110
Fibronogen	<235	>235	>350
Homocysteine	<8	>8	>12
Lipoprotein (a)	<20	>25	30
HDL (Men)	>60	<50	<40
HDL (Women)	>70	<60	<50
Triglycerides	<100	>100	>150
TG:HDL Ratio	1:1	2:1	4:1

From Cereal Killer, by Alan Watson

**“THAT WHICH IS LACKING
IN THE PRESENT WORLD IS
A PROFOUND KNOWLEDGE OF THE
NATURE OF THINGS”**

Frithjot Schuon

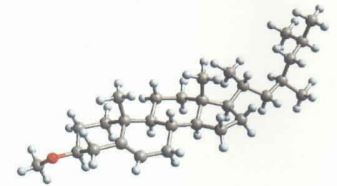
Heart Attacks Per 100,000 People

Country	Rate	Fat in the Diet
Japan	34	Low fat, high fish consumption
France	58.6	High fat, high butter consumption
Italy	94.7	High fat, high olive oil consumption
United States	170	High fat, low fish, butter & olive oil consumption

Source: U.S. Department of Commerce, 1996



**The
Cholesterol Myths**
EXPOSING THE FALLACY
THAT SATURATED FAT AND CHOLESTEROL
CAUSE HEART DISEASE



Uffe Ravnskov, MD, PhD

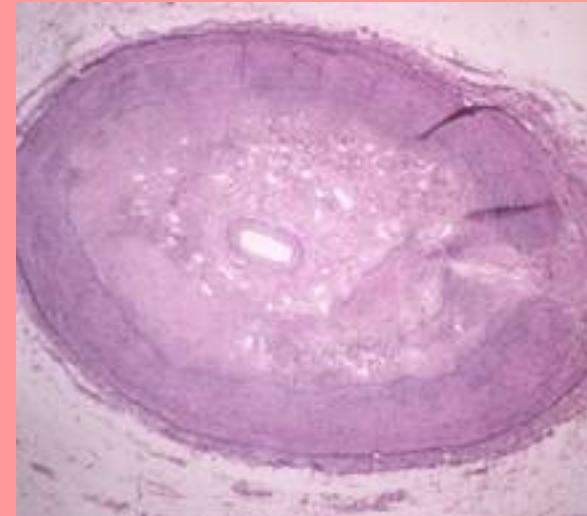
CHOLESTEROL & DIET

Comparison of Sexagenarians' Diets

Masai	Meat, animal fat, milk, butter	140 mg/100 gms
Trappist Monk	Vegetarian, eggs, milk	190 mg/100 gms
Thai	Unpolished rice, fish, vegetables	140 mg/100 gms
Japanese	Polished rice, fish, vegetables	165 mg/100 gms
American	60% calories from sugar, saturated fat	270 mg/100 gms
	Reduce to low fat, unsaturated	232 mg/100 gms
Vilhjalmur Stefannson (80% calories=saturated fat)	18 months all meat diet	192 mg/100 gms

ANALYSIS OF ARTERIAL PLAQUE FAT

- 25% fat is saturated
- 75% fat is polyunsaturated
- Heart attack incidence in 1900 was a fraction of 2002
but blood cholesterol has remained constant



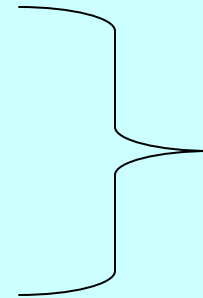
USDA Fat Records (per capita)

	1909-1913	1985
Omega 6	7 gms	25 gms
Saturated Fats	52 gms	58 gms
% of Total Fat as Saturated Fat	42%	34%

Saturated Fats Are Poor Competitors of Omega 3

The Food Pyramid Paradox

- CVD has increased
- Obesity has increased
- Diabetes has increased



Dietary Cholesterol
& Saturated Fat
have decreased

Only 10% of cholesterol is in Blood

2010 Dietary Guidelines for Americans

WIC Program

- Serves 50% of all Infants
- Serves 25% of all Children Ages 1-4
 - Prohibits Yogurt
 - Prohibits Whole Milk without a Prescription (!) for Children Over Two Years Old
 - Pays for Soy-Based Beverages & Formulas

CHOLESTEROL'S VITAL IMPORTANCE

- Necessary to synthesize Vitamin D (needed for mineral absorption, insulin production, healthy nerves)
- Synthesis of bile salts
- Production of hormones (anti-stress & sex hormones)
- Cell membrane elasticity & strength
- Anti-oxidant
- Necessary for brain & nerve development
- Serotonin availability to brain

LOS ANGELES TIMES

JANUARY 13, 2004

In some respects, the marine diet has made the Inuit among the world's healthiest people.

Beluga whale meat has 10 times the iron of beef, twice the protein and five times the Vitamin A.

Omega 3 fatty acids in the seafood protect the Inuit from heart disease and diabetes. Seventy-year-old Inuit men have coronary arteries as elastic as those of 20-year-old Danes, said Dr. Gert Mulvad of the Primary Health Care Clinic in Nuuk.

Government officials and doctors fear that Inuit will switch to imported processed foods loaded with carbohydrates and sugar, risking malnourishment, vitamin deficiencies, heart disease, diabetes and obesity. "The level of contamination is very high in Greenland, but there's a lot of Western food that is worse than the poisons,"



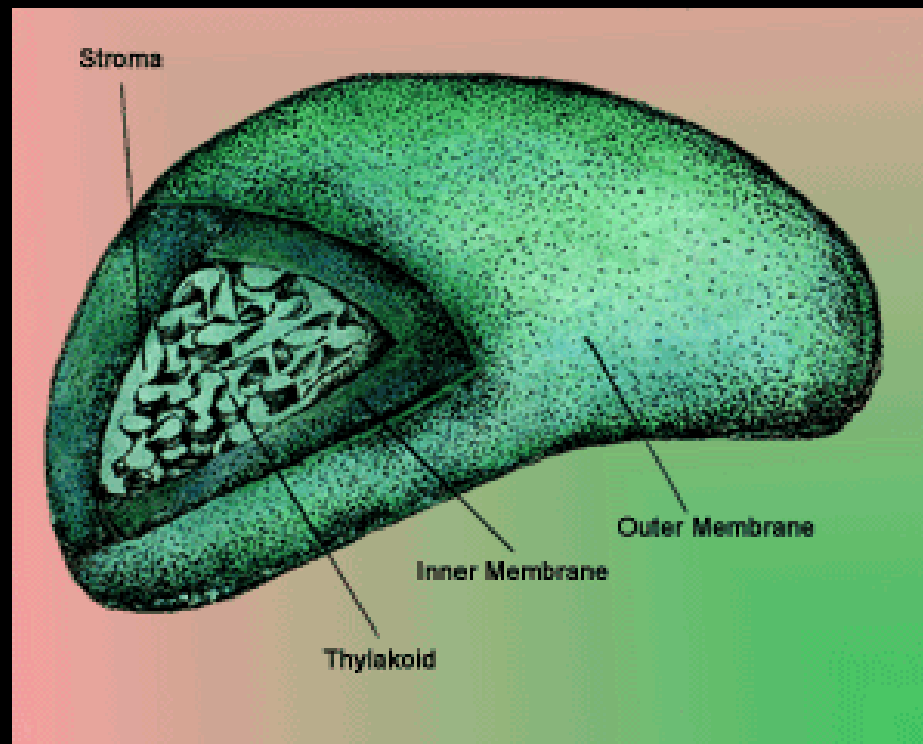
Percentage of Essential Fatty Acids in Human Body Fat (1991-1992)

Society	% Omega-6	% Omega-3	Ratio
New Zealand Maori	2.6	0.93	2.8:1
Japanese	14.8	3.2	4.6:1
American	10.2	0.58	17.6:1

(Source: Erasmus, 1993)

Alpha Linolenic Acid (Parent Omega 3)

- Most abundant Fatty Acid on Earth
- The cell membrane of the chloroplast



Distribution of Plant Lipids

Leaves: Omega 3 $\xrightarrow{\text{Desaturase enzyme}}$ Omega 6

Seeds: Omega 6 $\xrightarrow{\text{Desaturase enzyme}}$ Omega 3
Storage Fat
Less Oxidizable
Cell Membrane
of chloroplast for
photosynthesis

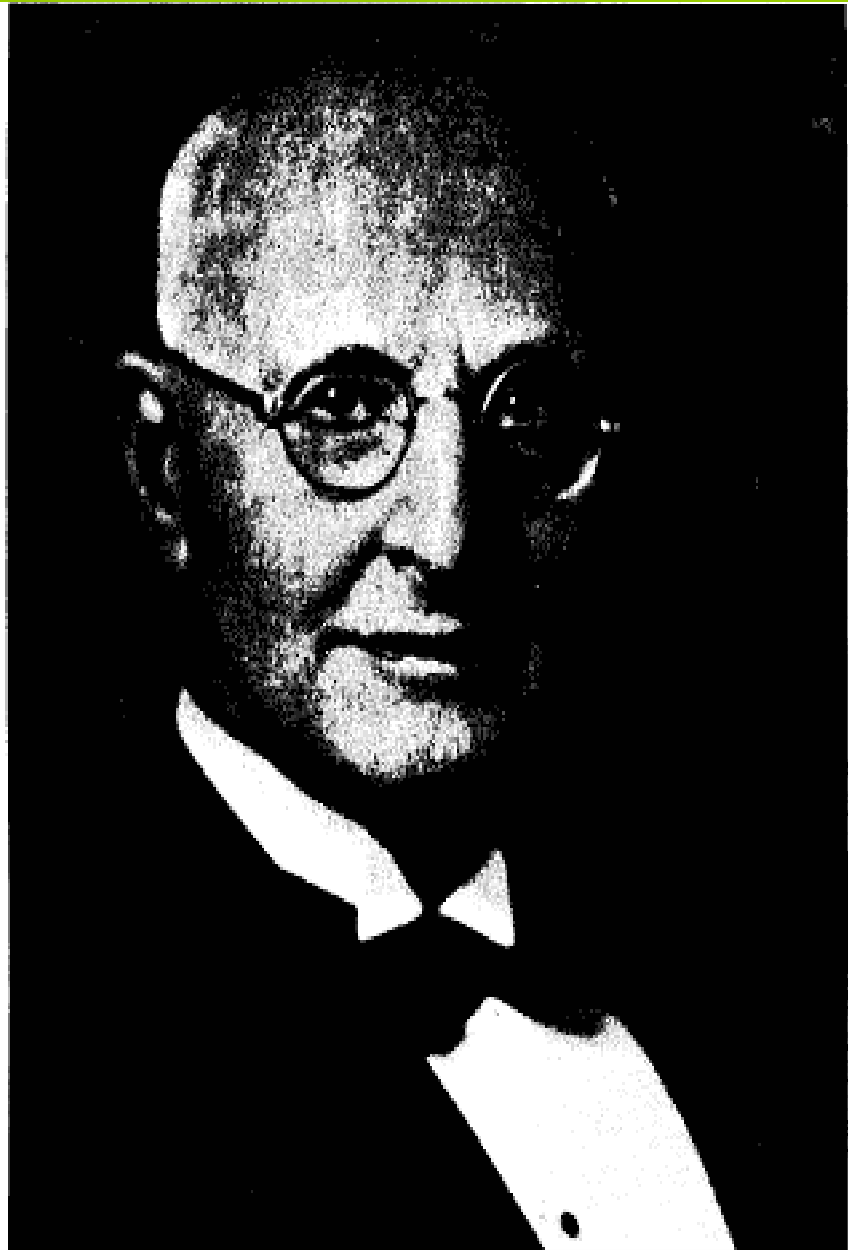
DHA

The Longest & Most Unsaturated Omega 3

- Most Concentrated in Brain/Eyes
- Second most concentrated in Sperm
- Third most concentrated in heart muscle

BIG PHARMA'S Anti-Health Campaign

- “More Omega-3 Fats Didn’t Aid Heart Patients” (N Engl J Med 29 Aug 2010)
- 4800 men/women history of heart attacks
 - 40 months on margarine-enriched with EPA/DHA/ALA
 - Margarine considered “placebo”
 - Funded by Unilever, et. al.



Nutrition and Physical Degeneration

6th Edition

Weston A. Price, D.D.S.

With forewords to previous editions by
Earnest A. Hooten, Professor of Anthropology,
Harvard University,
Granville F. Knight, M.D.
and Abram Hoffer, M.D., Ph.D.

Nutrients in Traditional Diets Compared to 20th Century Western Diets (Numbers Represent Percentage Greater in Traditional Diets)

	Calcium	Phosphorous	Magnesium	Iron	Fat-Soluble Vitamins
Eskimo	540%	500%	790%	150%	1,000+%
Swiss	370	220	250	310	1,000+
Gaelics	210	230	130	100	1,000+
Australian Aborigine	460	620	170	5,060	1,000+
New Zealand Maori	620	690	2,340	5,830	1,000+
Melanesians	570	640	2,640	2,240	1,000+
Polynesians	560	720	2,850	1,860	1,000+
Peruvian Indians	660	550	1,360	510	1,000+
African (cattle raising)	750	820	1,910	1,660	1,000+
Africans (agricultural)	350	410	540	1,660	1,000+

(Source: Price, 1938)

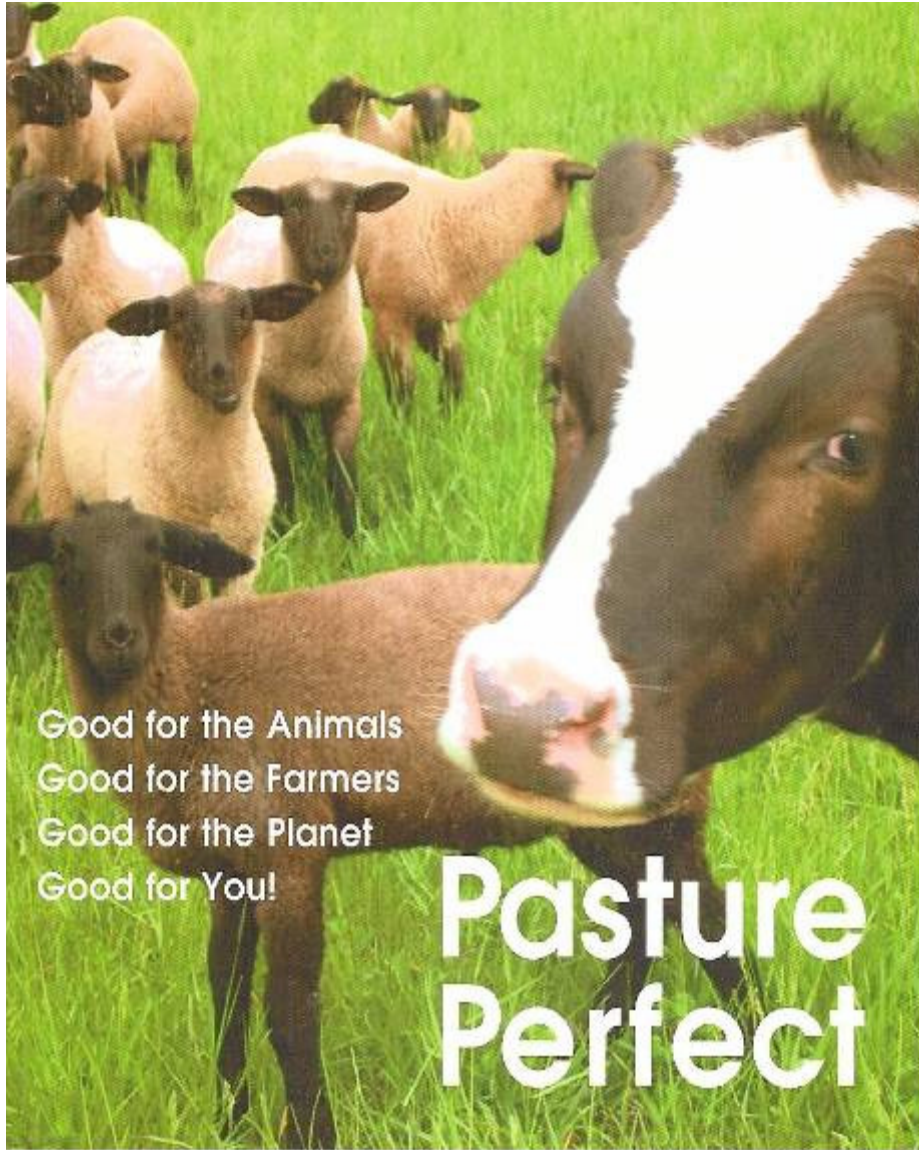
Cancer Inversely Related to Decrease in Diversity

- iKung Bushman (Kalahari Desert) 75(+) plants in their diet: Cancer virtually unknown
- Hunter-Gatherers (before Agriculture) ate between 10,000-80,000 Foods Seasonally
- 1900 America Diet
 - 100 types of apples
 - 50 types of vegetables
 - 30 types of meat
- 2006 American Diet
 - 5-10 plants

CONJUGATED LINOLEIC ACID



THE CANCER
FIGHTING,
WEIGHT LOSS
FATTY ACID



Good for the Animals
Good for the Farmers
Good for the Planet
Good for You!

Pasture Perfect

The Far-Reaching Benefits of Choosing
Meat, Eggs, and Dairy Products
from Grass-Fed Animals

by Jo Robinson

CLA RESEARCH

- First Discovered by Australian Lipid Biochemist Dr. Peter Parodi in Early 1980's
- Continued Research at University of Wisconsin by Biochemist Michael Pariza et. al.

CANCER & CLA



· 1996 Study of 4,697 Women: The More Whole Fat Milk in the Diet (More CLA) = Lower Risk of Breast Cancer. Women Drinking the Most Milk Had a 60% Lower Risk of Breast Cancer

· Rats Fed 1.5% of Calories as CLA = Tumor Size Reduced 60%

· Dr. Tikal Dhiman at Utah State University: One Can Lower Cancer Risk by Consuming Daily, One Ounce of Cheese, One Serving of Grassfed Meat & One Glass of Whole Milk From Pastured Cattle.

WEIGHT LOSS & CLA



Obesity

THREE MONTH STUDY: 20
INACTIVE MEN & WOMEN

- Treated Group (3 Grams
CLA/Day vs. Control
(Placebo)

- CLA Group Lost 5 Pounds
& 15-20% Drop in Body Fat

(Lipoprotein Lipase Enzyme
Blocked by CLA)

MUSCLE GAIN & CLA



- CLA Group of Men Could Bench Press 30 Pounds More in 28 Days

- Control (Placebo) Group Improved by 9 Pounds

- Enhances Hormone Sensitive Lipase to Break Down Fat Already Deposited in Cells

**GRASSFED MEAT & MILK HAS 4-5
TIMES MORE CLA THAN GRAIN FED
MEAT: T. DHIMAN PhD, 1996.**



Botanical Composition of Pastures

	Grass Average	Legume Average	Compositae Average	Rosacea Average	Plantaginace Average
Lowlands	52.5%	47.5%	0%	0%	0%
Mountains	63.7%	7.3%	3.1%	2.5%	2.45%
Highlands	40.20%	9.2%	15.6%	5.6%	5.3%

Grams Fatty Acids/100g Fat

	Lowlands	Mountains	Highlands
CLA C18:2c9t11	0.81	1.50	2.18
Σ CLA	0.87	1.61	2.36
C18:1t10(+)t11	2.11	3.66	5.10
Σ Trans Fatty Acids	4.55	6.44	8.44

Conjugated and trans fatty acids in summer milk fat from lowlands, mountains and highlands (g. fatty acids/100g fat)

Swiss Federal Research Station, Liebefeld, Berne, Switz. 12/8/2000

NUTRITIVE VALUE OF OMEGA EGGS



	Omega Egg 60 g – large egg	Standard Egg 60 g – large egg
Calories	75.0	75.0
Protein	6 grams	6 grams
Carbohydrate	.6 grams	.6 grams
Total Fat	6.0 grams	6.0 grams
Saturated Fat	1.5 grams	2.2 grams
Polyunsaturated Fat	1.35 grams	.90 grams
n-6 Fatty Acids	750 mg	800 mg
n-3 Fatty Acids	350 mg	60 mg
C18:3	250 mg	40 mg
C22:6 DHA	100 mg	20 mg
n-6:n-3 Ratio	2.6	13.0
Monounsaturated Fats	2.8 grams	2.4 grams
Cholesterol	180 mg	210 mg
Vitamin A	660 i.u.	470 i.u.

COMPARED TO STANDARD EGGS

Lutein

Carotene

Vitamin E

Cysteine

Choline

?

Vitamin K₁ (Phylloquinone)

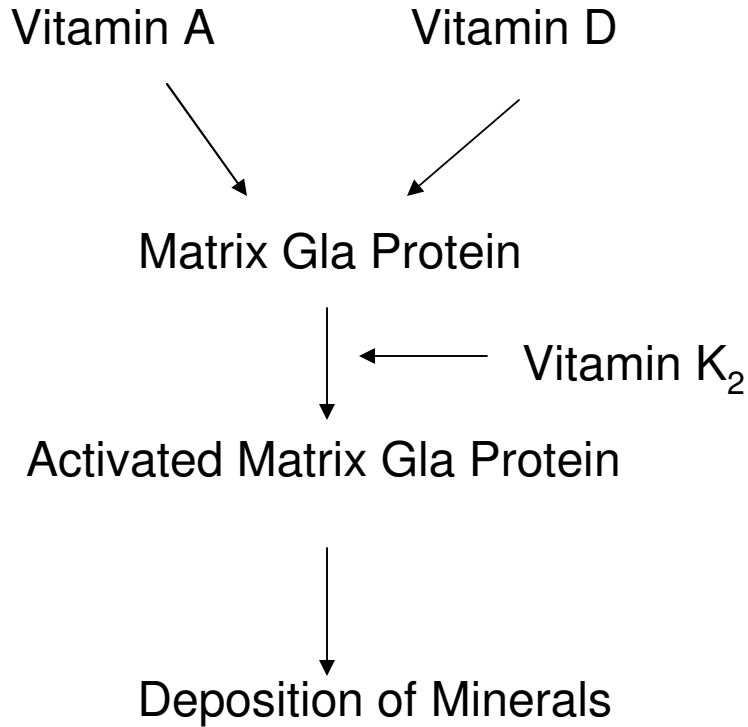
- Pre-cursor to activator 'X' (K₂)
- Found in chloroplast
- Bridge between chlorophyll and iron-sulfur centers

Vitamin K₂ (Price's Activator 'X')

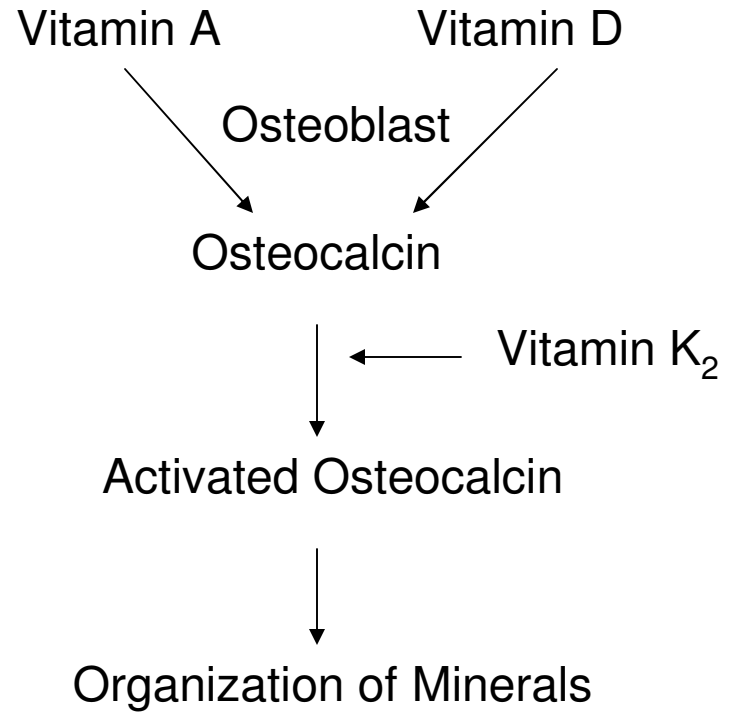
Menaquinone

- Converted from K₁ by animal tissue
- Butter fat
- Animal fat
- Animal organs
- From livestock on rapidly growing green grass
- Highest percentage from mineralized soils (varied 50 fold over 20,000 butter samples)

Bones & Teeth

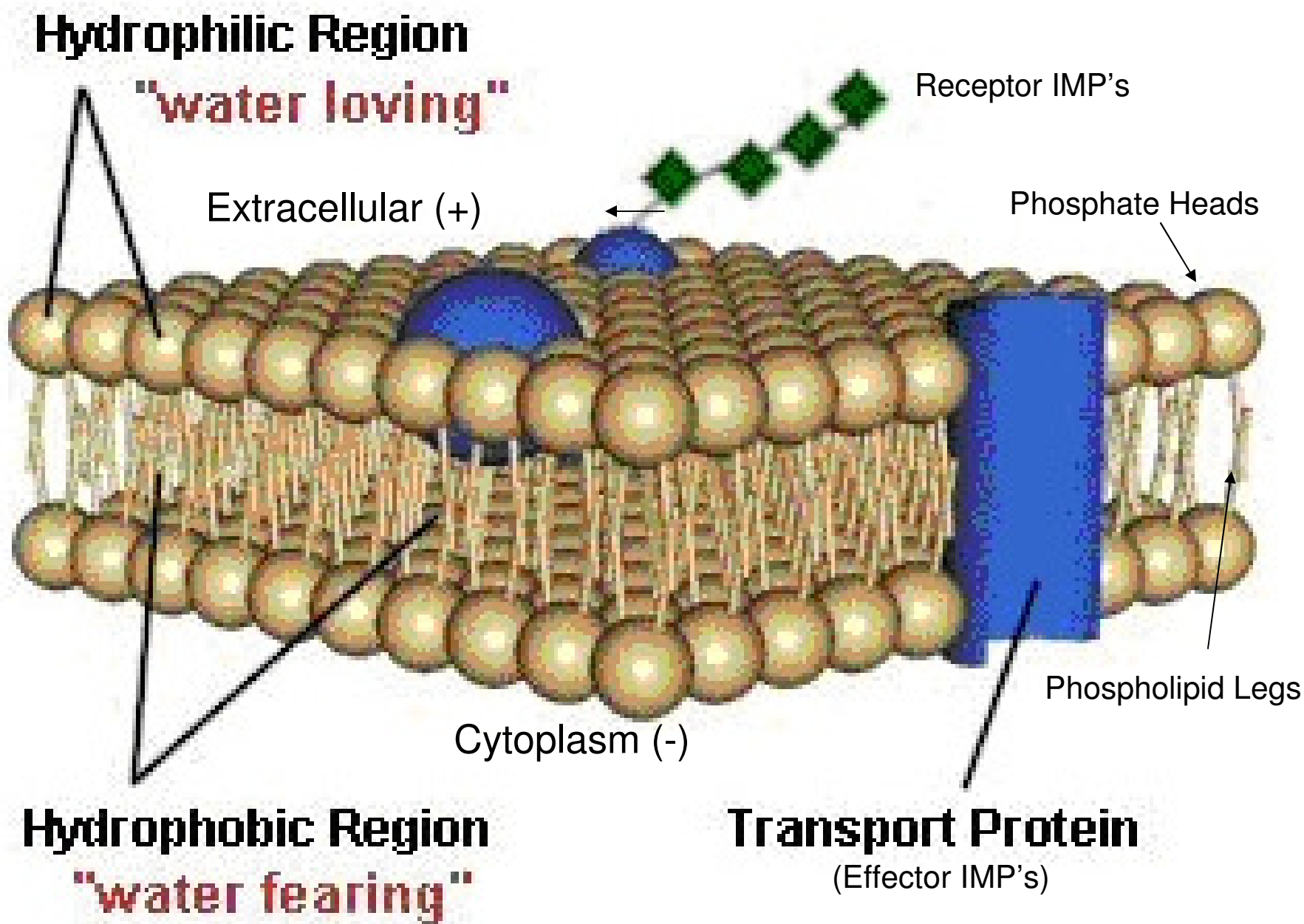


Keeps soft tissues from calcifying



Bone Mineralization

Growth



The Necessity of Saturated Fat

- Cell membranes: 50% of Fats in cell membranes must be saturated for proper functioning
- Lung function (palmitic acid= 68% Lung Surfactant)
- Kidney function
- Brain & Nervous System
- Immune System
- Anti-Infective
- Heart/Cardio-Vascular Health
- Vitamin/Nutrient Carrier: A, D, CLA

Flavor (and Medicine) is in Fat

- Aromatics (Secondary Plant Metabolites) are Fat Soluble
- Wild Animals: 30% PUFA's
- Domesticated Animals: 2% PUFA's

Plant Secondary Metabolites as Defense

- Grazing Animals (tannins, essential oils, alkaloids)
- Ultra Violet Radiation
- Bacteria, Fungi, Virus
- Defense Against Competing Plants (walnuts)
- Vulnerable Fruits & Younger Tissue are higher in PSM's



Black Walnut.
Juglans nigra.

“SOMEWHERE OVER THE RAINBOW.....”

You will find:

Lutein

Resveratrol

Lycopene

Proanthocyanadins

B-carotene

Ellagic Acid

Tocatrianols

Bioflavinoids

Quercertin

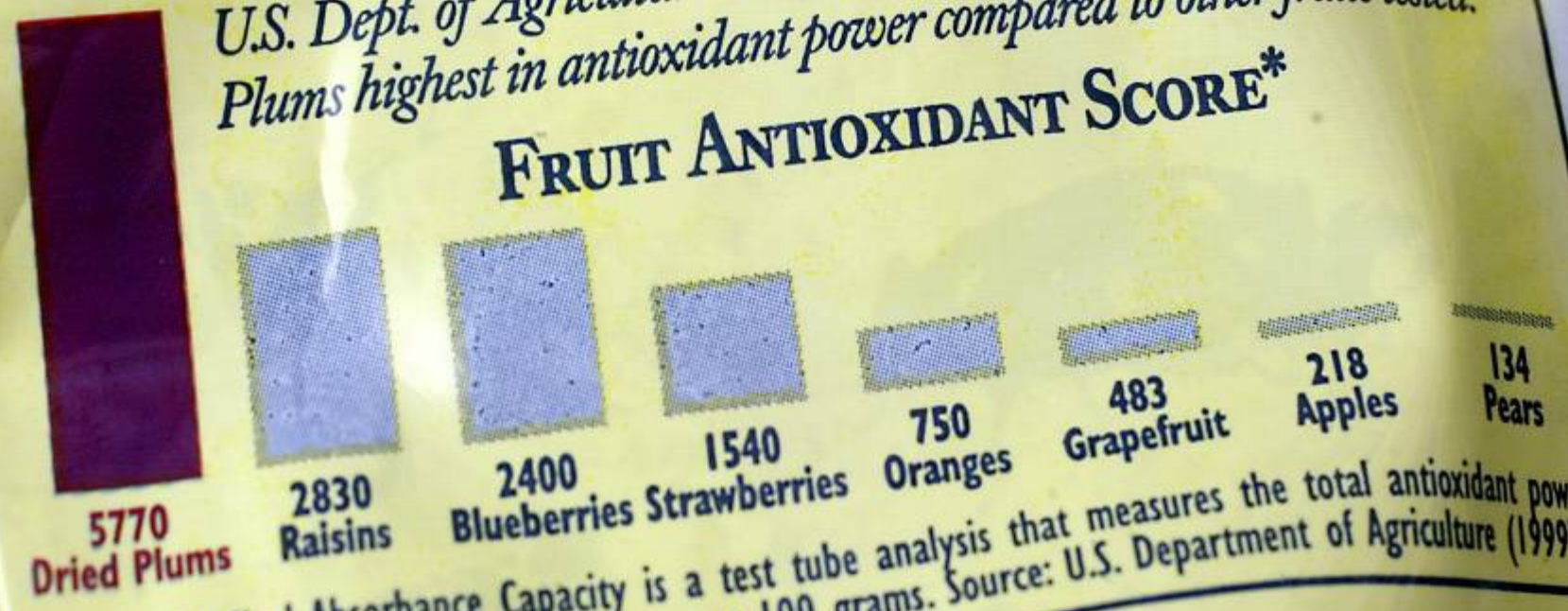
Chlorophyll



- **POTASSIUM: 8% RDI.** *Helps control normal blood pressure.*
- **FAT FREE, CHOLESTEROL FREE FOOD ... NATURALLY.**

PRUNES/DRIED PLUMS ARE THE #1 ANTIOXIDANT FRUIT!

U.S. Dept. of Agriculture scientists at Tufts University ranked Dried Plums highest in antioxidant power compared to other fruits tested.



*Oxygen Radical Absorbance Capacity is a test tube analysis that measures the total antioxidant power of foods and other chemical substances, per 100 grams. Source: U.S. Department of Agriculture (1999).



Nutrition experts recommend a diet low in fat and high in fiber, which includes at least 5 servings of fruit and vegetables every day for better health.

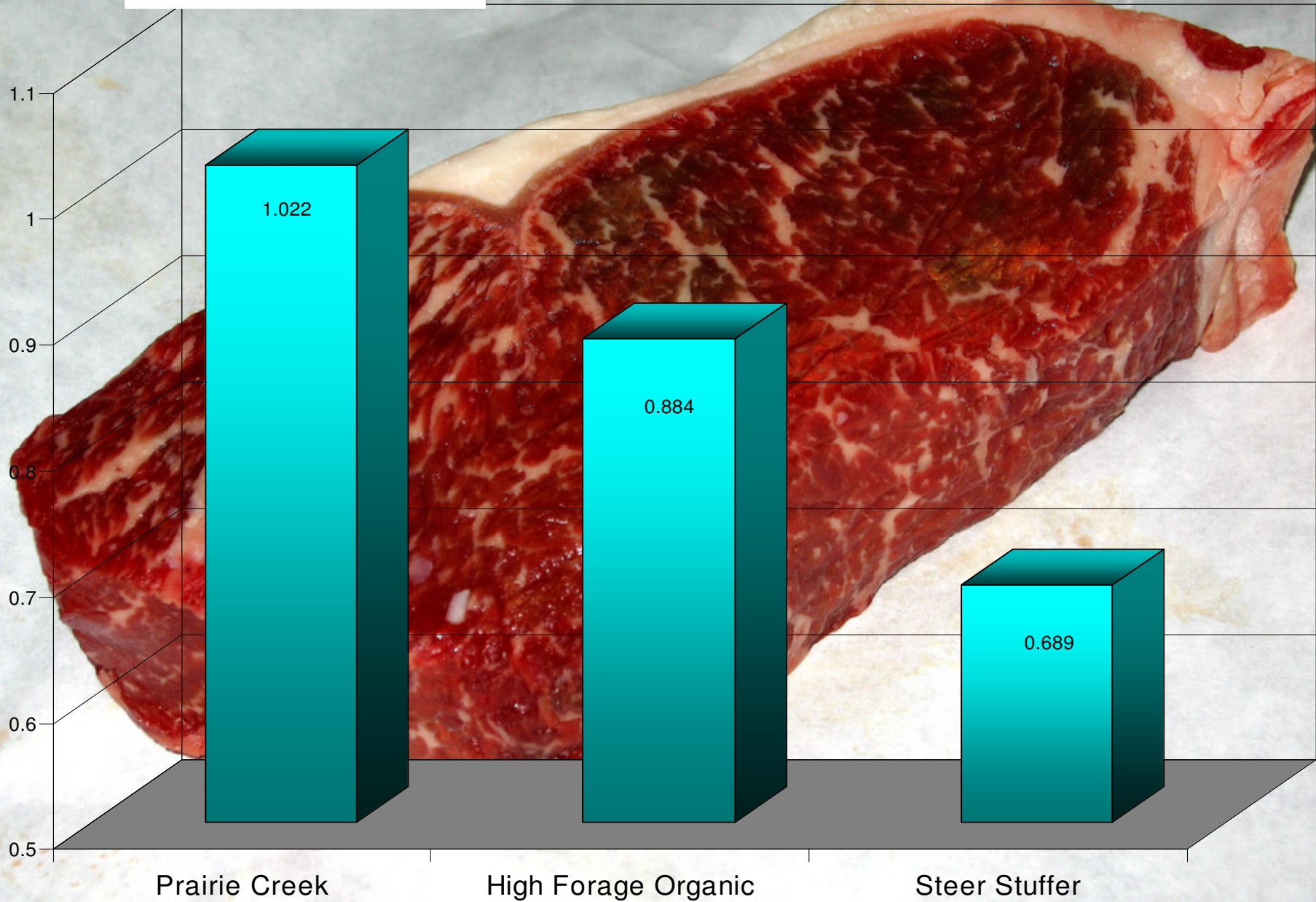
Daily From
 Sugar 13g
 Protein 1g
 Vitamin A
 Calcium
 * Percent
 calorie
 or lower
 Total F
 Sat.
 Chol
 Sod
 Pot
 Tot
 D
 Ca
 F
 IN
 S
 C

Organic Milk's Grass Pigments

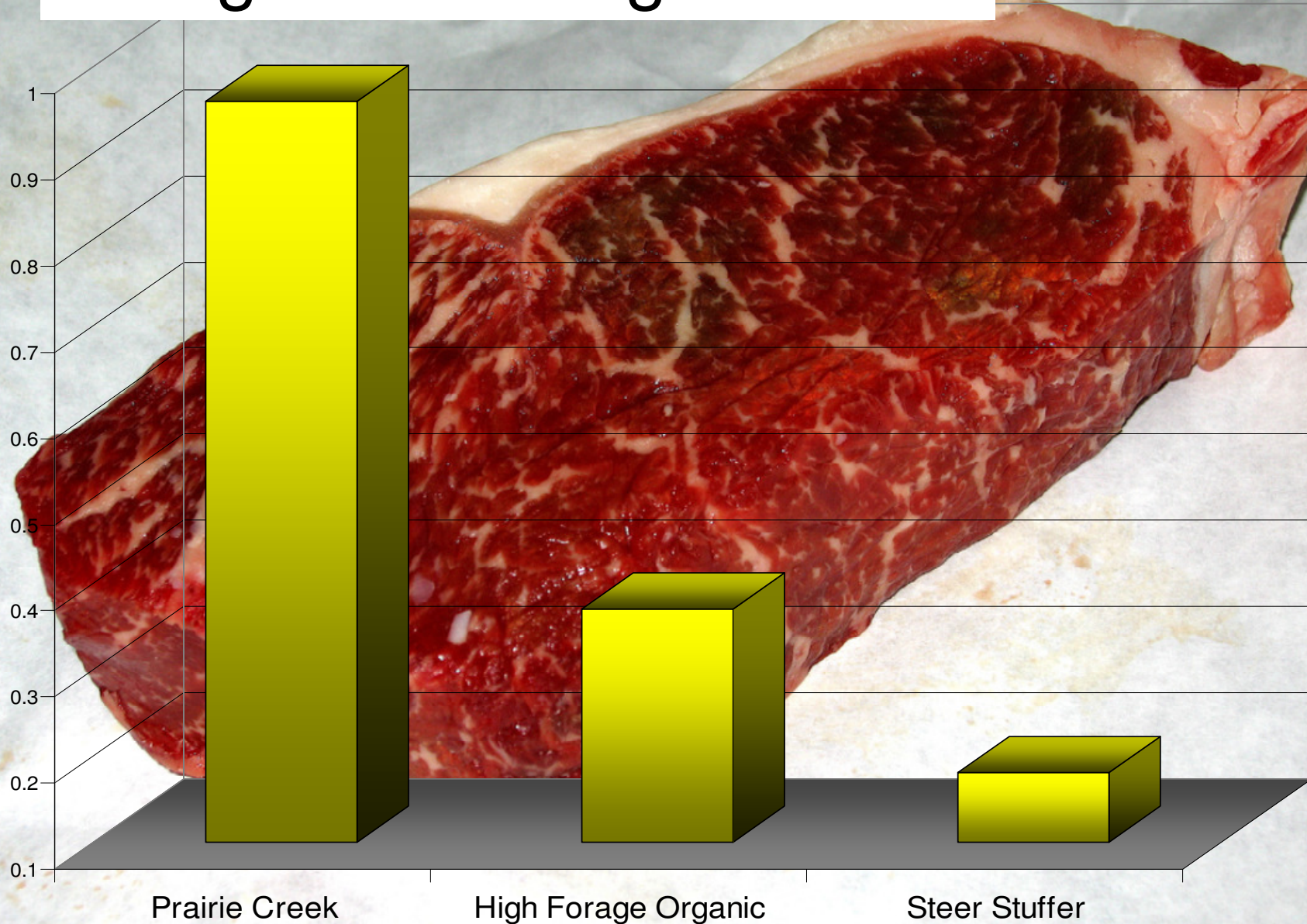
(Danish Institute of Agricultural Research)

- 50% More Vitamin E
- 75% More Beta Carotene
- 200-300% More Lutein & Zeaxanthine
- 15 Million Americans have Macular Degeneration: 10X Increase in 30 Years (Dr. Paul Beaumont- Macular Degeneration Foundation)

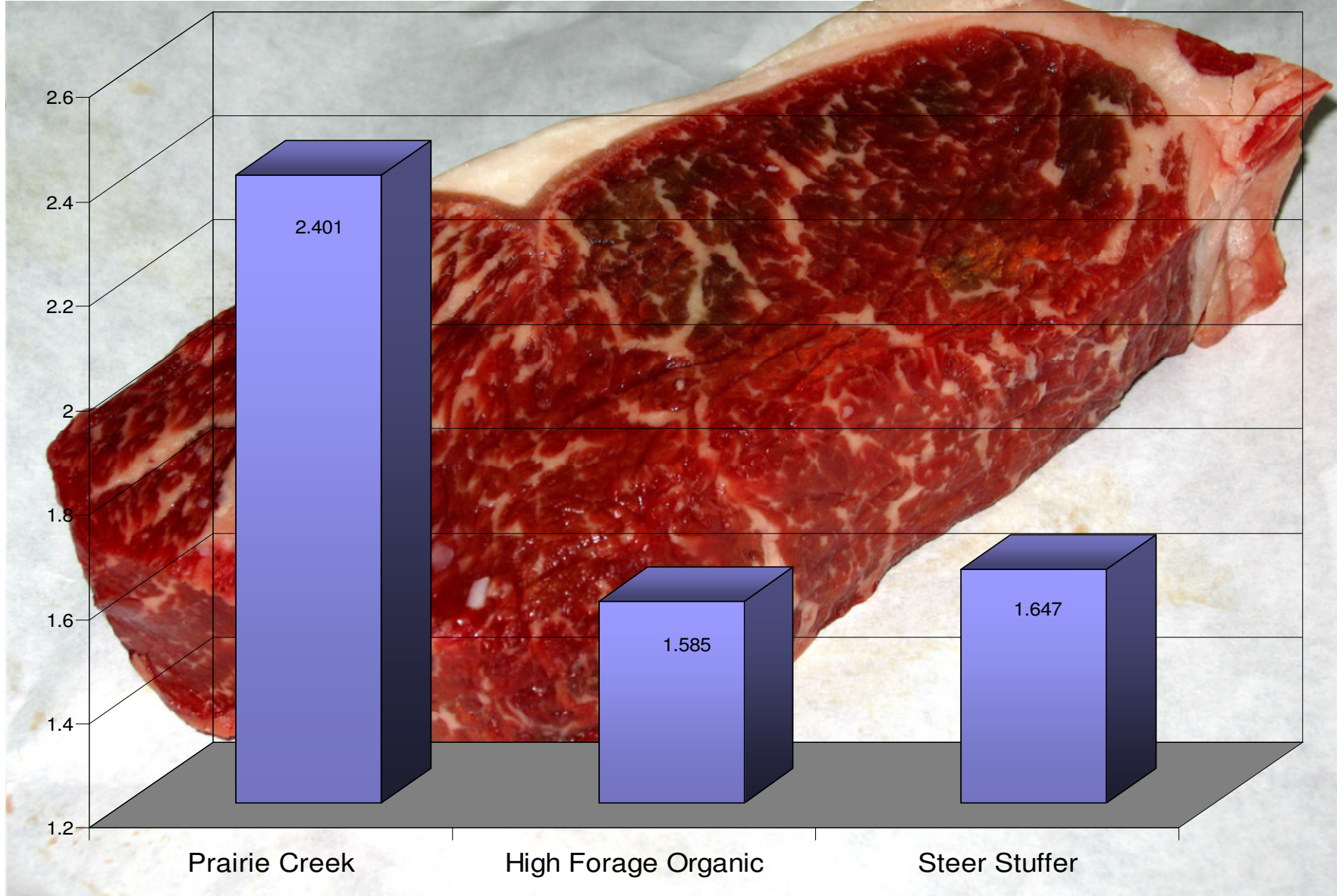
Total CLA



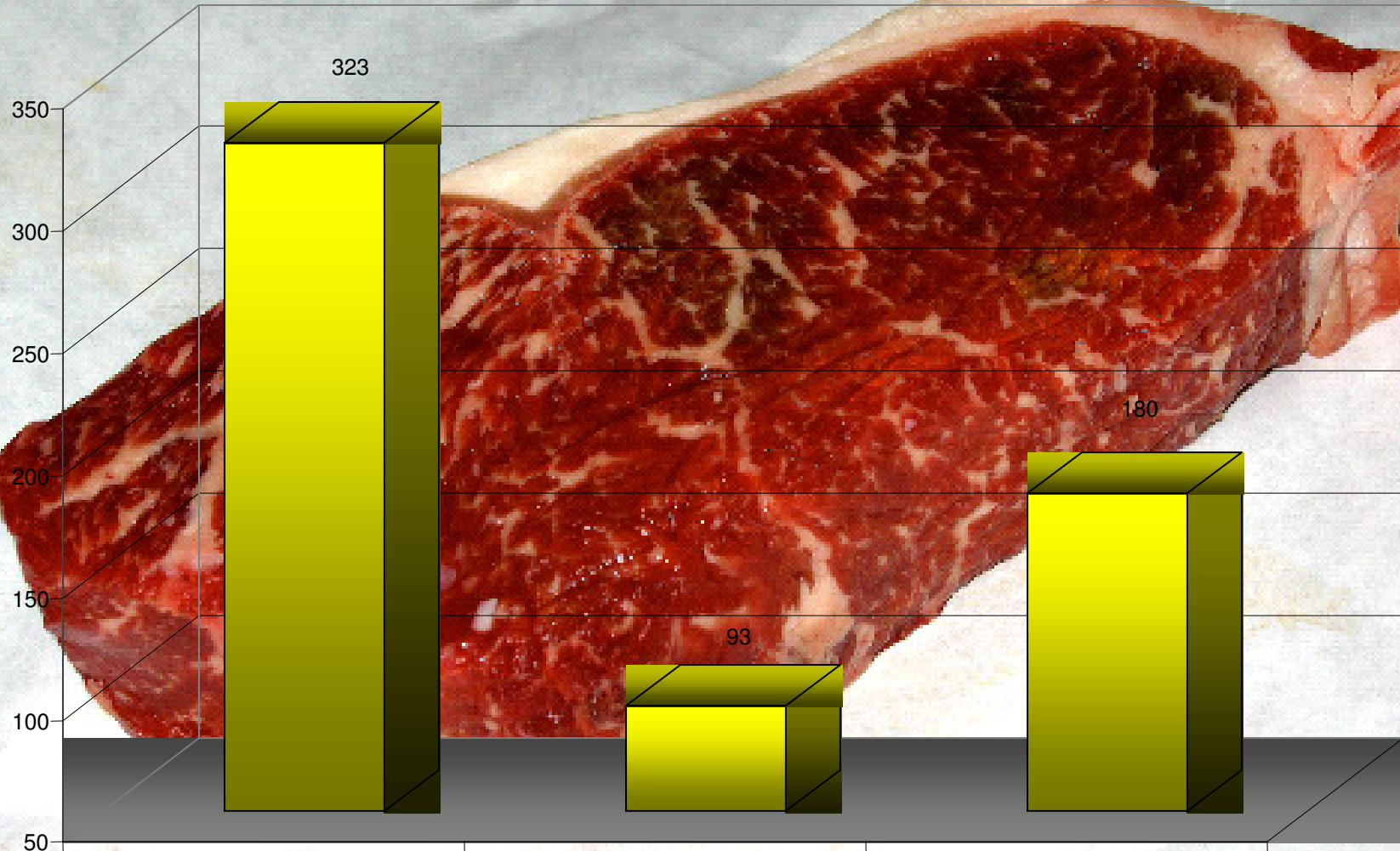
Omega 3 to Omega 6 Ratio



Total Trace Elements (ppm)



Strontium (ppb)

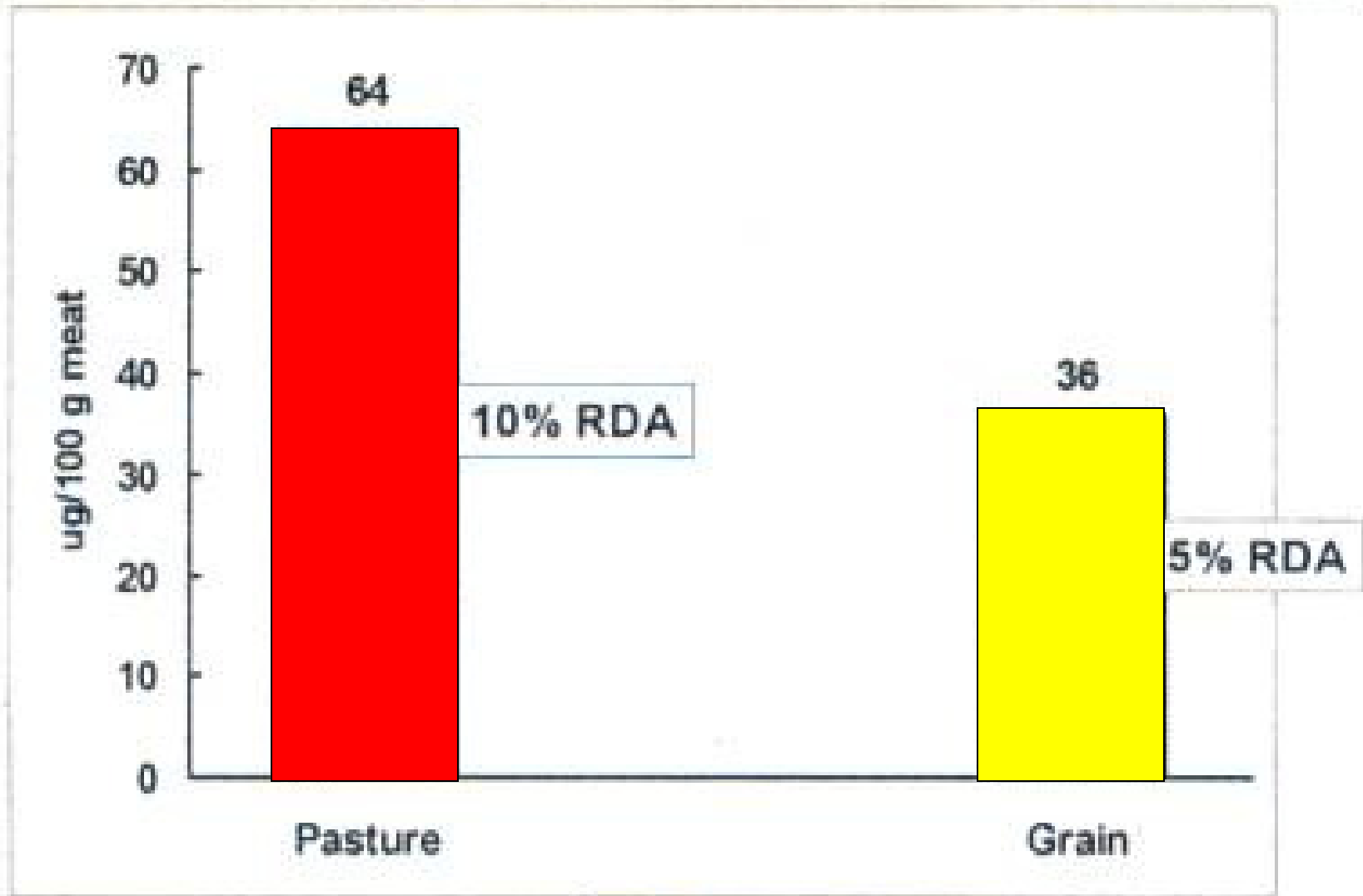


Prairie Creek

High Forage Organic

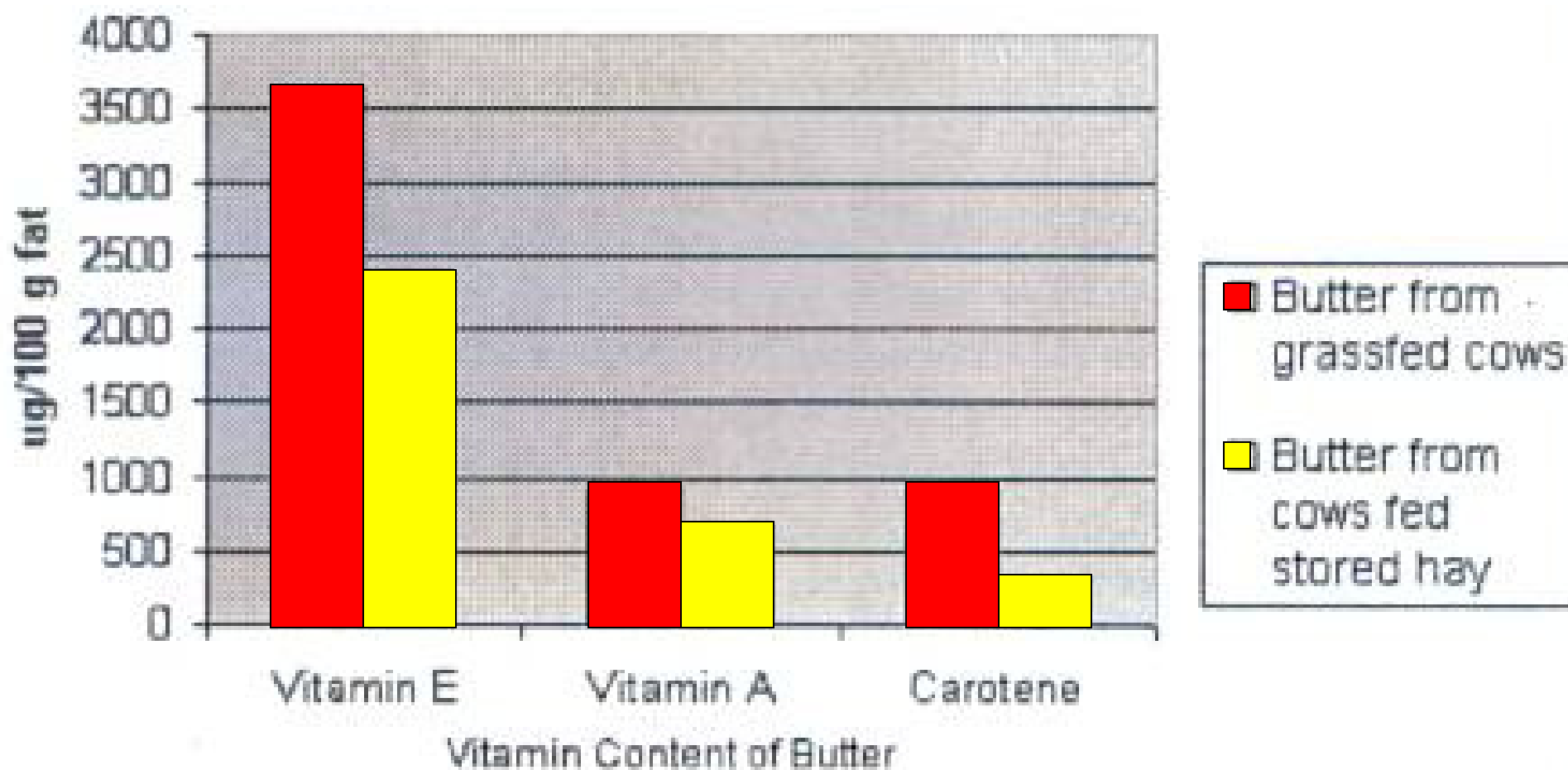
Steer Stuffer

High β -Carotene in grass fed meat

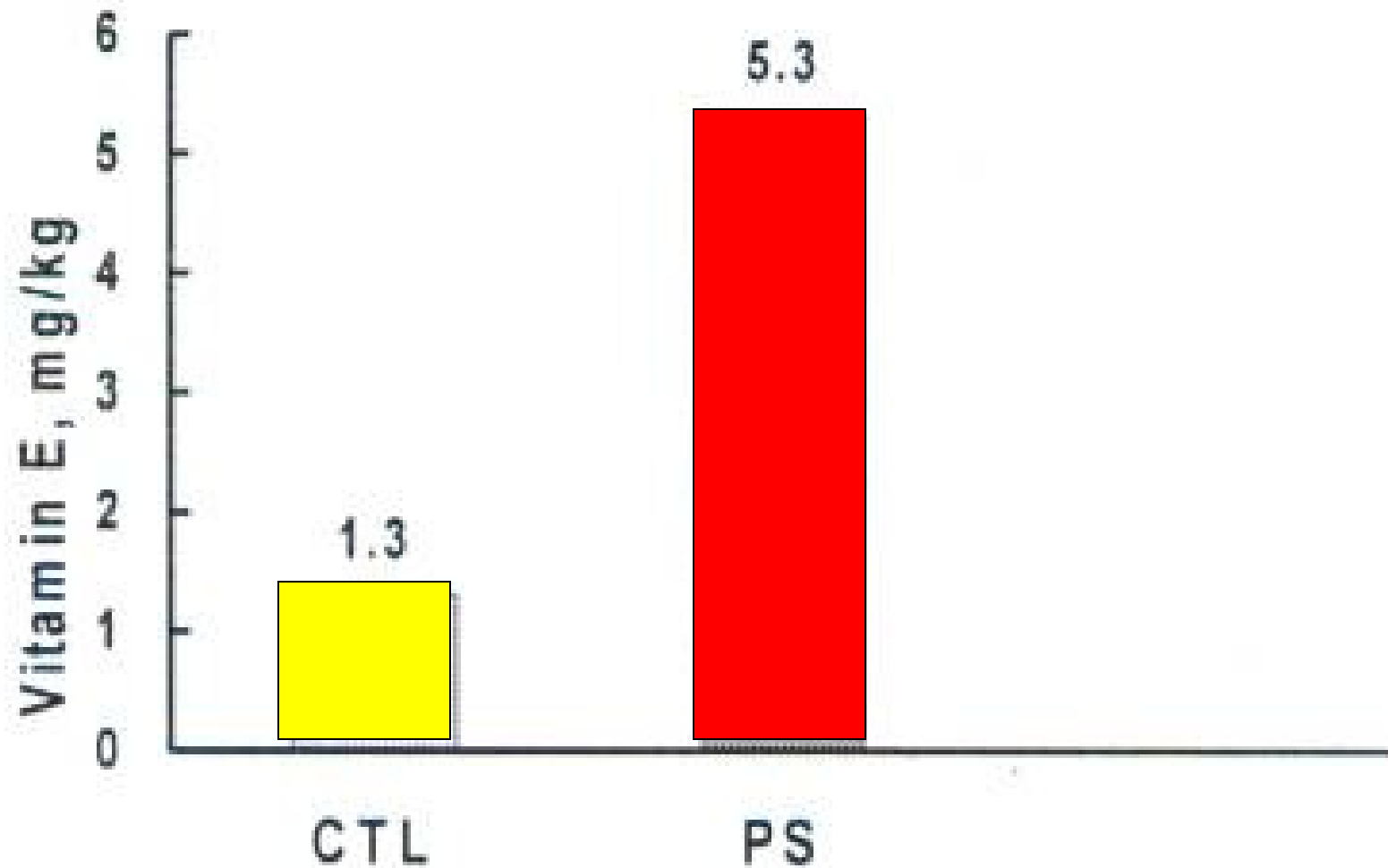


3.5 Oz beef in woman

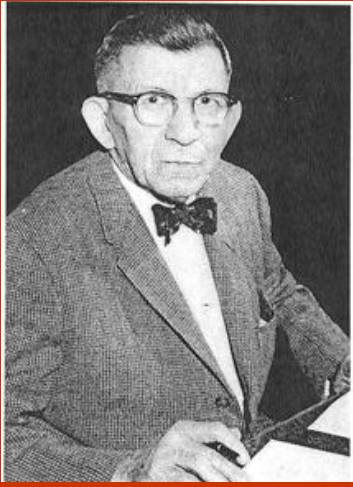
Why Butter from Grassfed Cows Is Better



Vitamin E in beef



4X increase, Shelf-life



William Albrecht PhD.

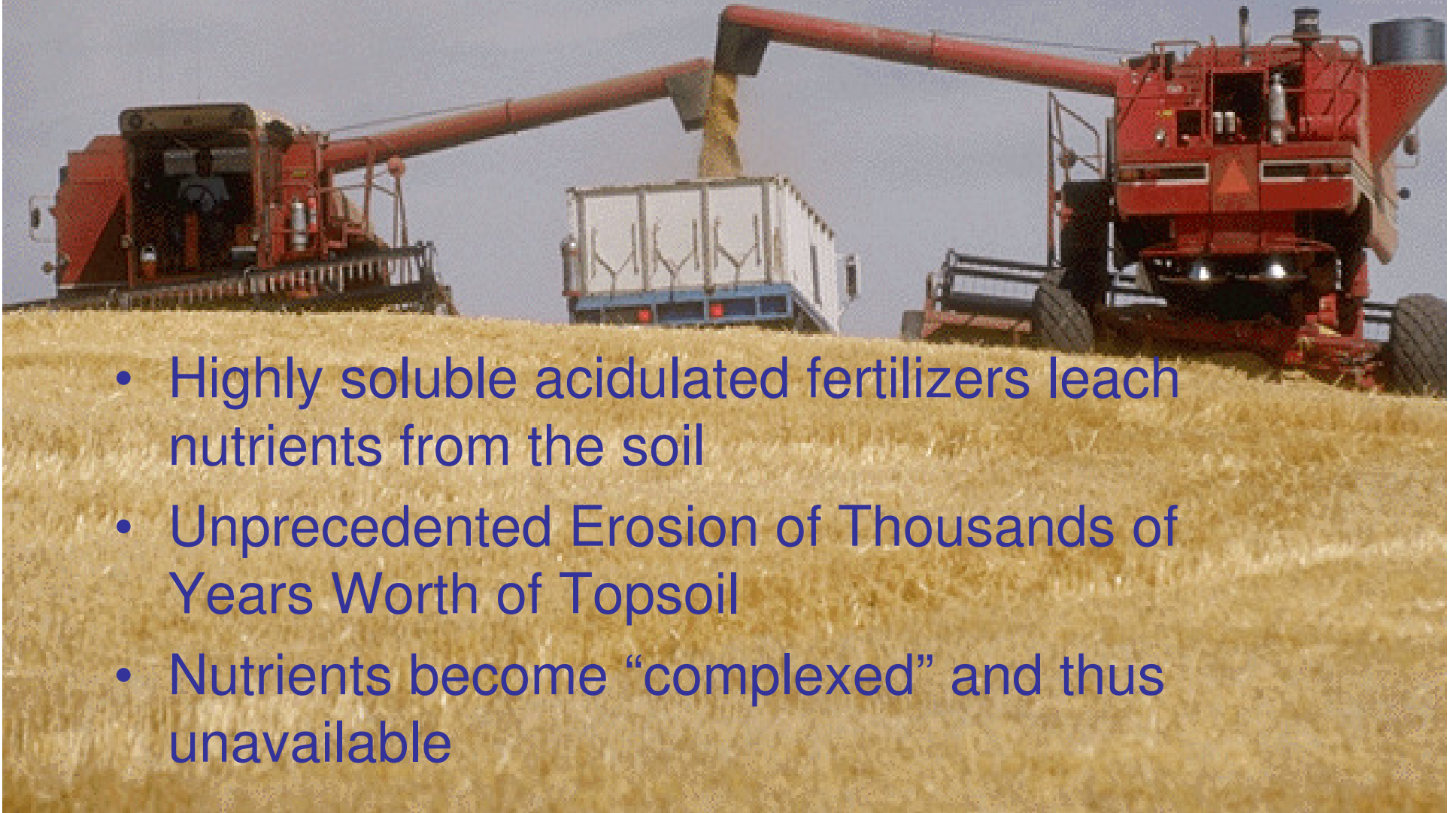
- Head of Agronomy at the University of Missouri
- Founder of Brookside Labs
- Author of The Albrecht Papers Vol 1-13.

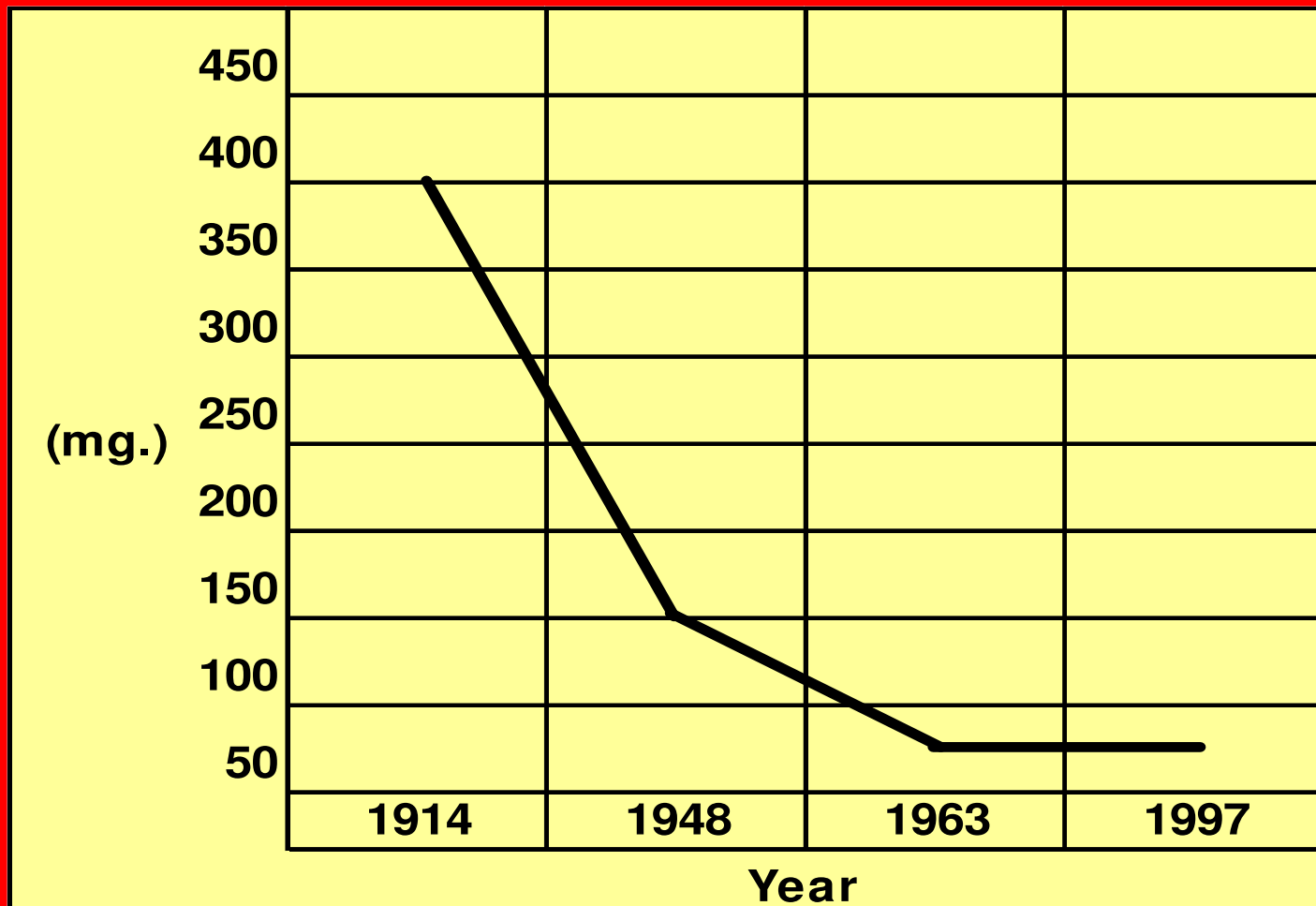


Apatite Soils

Industrialized Agricultural = Empty Harvest

- Highly soluble acidulated fertilizers leach nutrients from the soil
- Unprecedented Erosion of Thousands of Years Worth of Topsoil
- Nutrients become “complexed” and thus unavailable





Average mineral content in selected vegetables, 1914-1997. Sums of averages of calcium, magnesium and iron in cabbage, lettuce, tomatoes and spinach. (Sources: Lindlahr, 1914; Hamaker, 1982; and U.S. Department of Agriculture, 1963 and 1997)

Disappearing Trace Elements in Food, 1948-1992 (Per 100 Grams of Food)

	1948 (Highest)	1948 (Lowest)	1992 (Average)	% Difference Between 1948 Low & 1992 Ave
<i>Snap Beans</i>				
iron	22.7 mg.	1.0 mg.	1.04 mg.	0
manganese	6.0 mg.	0.2 mg.	0.214 mg.	0
copper	6.9 mg.	0.3 mg.	0.069 mg.	-77%
<i>Cabbage</i>				
iron	9.4 mg.	2.0 mg.	0.59 mg.	-70%
manganese	6.0 mg.	0.2 mg.	0.159 mg.	-20%
copper	4.80 mg.	0.04 mg.	0.023 mg.	-42%
<i>Lettuce</i>				
iron	193.8 mg.	0.9 mg.	0.5 mg.	-44%
manganese	9.4 mg.	0.2 mg.	0.151 mg.	-25%
copper	5.3 mg.	0.3 mg.	0.028 mg.	-90%
<i>Tomatoes</i>				
iron	158.4 mg.	0.1 mg.	0.45 mg.	+350
manganese	51.6 mg.	2.0 mg.	0.105 mg.	-94%
copper	3.2 mg.	0	0.074 mg.	0
<i>Spinach</i>				
iron	22.7 mg.	1.9 mg.	2.71 mg.	+142%
manganese	6.0 mg.	0.9 mg.	0.097 mg.	-89%
copper	6.9 mg.	0.5 mg.	0.13 mg.	-74%

Changes in the Mineral Content of Grains, 1963-1992 (Per 100 Grams)

	1963	1992	% Change
<i>Wheat, red winter, hard</i>			
calcium	46 mg.	29 mg.	-36.96
phosphorus	354 mg.	288 mg.	-18.64
iron	3.40 mg.	3.19 mg.	-6.18
potassium	3.70 mg.	363 mg.	-1.89
magnesium	160 mg.	126 mg.	-21.25
<i>Oats, rolled</i>			
calcium	53 mg.	52 mg.	-1.89
phosphorus	405 mg.	474 mg.	+17.04
iron	4.5 mg.	4.2 mg.	-6.67
potassium	352 mg.	350 mg.	-0.57
magnesium	169 mg.	148 mg.	-12.43
<i>Buckwheat</i>			
calcium	114 mg.	18 mg.	-84.21
phosphorus	282 mg.	347 mg.	+23.05
iron	3.1 mg.	2.2 mg.	-29.03
potassium	448 mg.	460 mg.	+02.68
magnesium	229 mg.	231 mg.	+00.87
<i>White rice</i>			
calcium	24 mg.	9 mg.	-62.50
phosphorus	94 mg.	108 mg.	+14.89
iron	0.8 mg.	.08 mg.	0.00
potassium	92 mg.	86 mg.	-6.52
magnesium	28 mg.	35 mg.	+25.00

Changes in Nutrient Content of Beef and Chicken, 1963-1992 (Per 100 Grams)

	1963	1992	% Change
Beef, ground			
calcium	10 mg	8 mg	-20.00
iron	2.70 mg	1.73 mg	-35.93
magnesium	17 mg	16 mg	-5.88
phosphorus	156 mg	130 mg	-16.67
potassium	236 mg	228 mg	-3.39
vitamin A	40 IU	0.00	-100.00
thiamine	0.80 mg	0.03 mg	-52.50
riboflavin	0.16 mg	0.151 mg	-5.63
niacin	4.30 mg	4.48 mg	+4.19
Chicken			
calcium	12 mg	10 mg	-16.67
iron	203 mg	198 mg	-2.46
magnesium	1.30 mg	1.03 mg	-20.77
phosphorus	285 mg	238 mg	-16.49
potassium	23 mg	23 mg	0.00
vitamin A	150 IU	45 IU	-70.00
thiamine	0.10 mg	0.069 mg	-31.00
riboflavin	0.12 mg	0.134 mg	+11.67
niacin	7.70 mg	7.87 mg	+2.21



Dr. Harvey Wiley

Pure Food Act of 1906

Founder

U.S. Public Health Service

Dr. Charles Northern M.D.

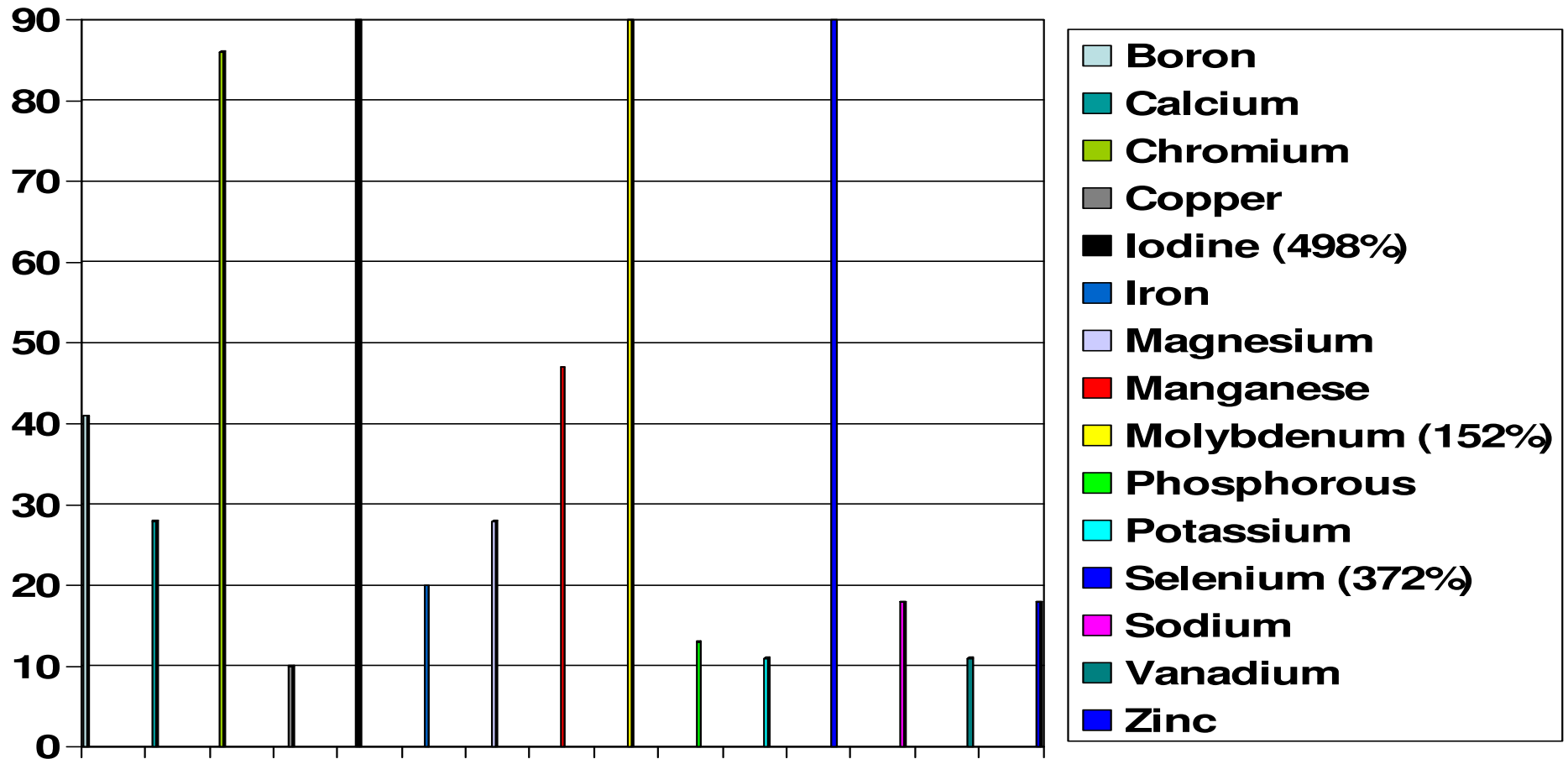
U.S. Senate Document 264- 1936

The Critical Significance of Colloidal Minerals

Elevating Anti-oxidant Levels in Food Through Organic Farming

By Charles Benbrook, PhD

Mean Percent Additional Mineral Content in Organic Compared to Conventional Crops



Note: Iodine, Molybdenum and Selenium would go way beyond the 90% increase!

Where's the Research???!!!

- Good Calories, Bad Calories by Gary Taubes
- The Modern Nutritional Diseases- and How to Prevent Them by Alice and Fred Ottoboni, PhDs.
- Healthy Aging by Andrew Weil, MD
- Nutrition and Physical Degeneration by Weston A. Price, DDS
- The Homocysteine Revolution by Kilmer McCully, MD
- Optimal Nutrition by Jan Kwasniewski, MD
- Natural Health & Weight Loss by Barry Groves
- The Cholesterol Hoax by Sherry Rogers, MD
- The Great Cholesterol Con by Malcolm Kendrick, MD
- The Cholesterol Myths by Uffe Ravnskov, MD
- Lipid Nutrition by Michael Gurr, PhD
- Nourishing Traditions by Sally Fallon
- Syndrome X by Gerald Reaven, MD
- Cereal Killer by Alan Watson

Pharmacognosy

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Jean Bruneton

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*"We have seen the future
of medicine and the future
is food."*

Dr. Mitch Gaynor

New York Strang Center
for Cancer Prevention

“To the illumined mind, the whole world burns and sparkles with light”

~Emerson