FOOD AS MEDICINE
by Jerry Brunetti
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Northern Michigan Small Farm Conference
Grayling, MI    January 27, 2007
HEALTH COMES FROM CONSUMING FULL- SPECTRUM, NUTRIENT- DENSE SUSTENANCE
Foods are Medicines!
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.

Fruit Antioxidant Score*

<table>
<thead>
<tr>
<th></th>
<th>Oxygen Radical Absorbance Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dried Plums</td>
<td>5770</td>
</tr>
<tr>
<td>Raisins</td>
<td>2830</td>
</tr>
<tr>
<td>Blueberries</td>
<td>2400</td>
</tr>
<tr>
<td>Strawberries</td>
<td>1540</td>
</tr>
<tr>
<td>Oranges</td>
<td>750</td>
</tr>
<tr>
<td>Grapefruit</td>
<td>483</td>
</tr>
<tr>
<td>Apples</td>
<td>218</td>
</tr>
<tr>
<td>Pears</td>
<td>134</td>
</tr>
</tbody>
</table>

*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).

American Heart Association

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.

FAT FREE, CHOLESTEROL FREE FOOD ... NATURALLY.
“SOMEBWHERE OVER THE RAINBOW…..”

You will find:

Lutein    Resveratrol    Lycopene    Proanthocyanadins
B-carotene Ellagic Acid  Tocatranols  Bioflavinoids
Quercertin                         Chlorophyll
Pigments are Powerful

Antiviral / bacterial
Anti-oxidants
Immune Fuels
Free Radical Scavengers

Endocrine balancers
Source of Enzymes
Detoxifiers
Tissue Repair
Organic Milk’s Grass Pigments
(Danish Institute of Agricultural Research)

- 50% More Vitamin E
- 75% More Beta Carotene
- 200-300% More Lutein & Zeaxanthine
THE GRAPE CURE

Tannins

Caffeic Acid
Resveratrol
Grapes & Japanese Knotweed

- Phytoalexins: Protects Against Plant Diseases, Climatic Stress
  - Blocks Progression of Estrogen Related Cancers
  - Inhibits Metastasis
  - Maintains Normal Estrogen Activity
  - Inhibits, Even Kills Development of Cancer Cells in All Three Phases: Initiation, Promotion, Progression
  - Effective Against Development of Amyloid Beta Protein Deposits in Alzheimers
  - Increases Nitric Oxide to Relax Blood Vessels
  - Reduces Abnormal Blood Clots & Blockages
  - Inhibits COX-2 Inflammatory Response
  - 70% Lower in Grapes Treated with Fungicides
Blueberries

USDA Human Nutrition Center: #1 Rank in Anti-Oxidant Activity vs 40 Fruits & Vegetables

• Anthocyanin (Blue Pigment)
• Protection From Urinary Tract Infection
• Prevents Brain Damage From Strokes
  • Reduce LDL
• Prevents/Reverses Macular Degeneration
• Vitamins A, C, Zinc, Potassium, Iron, Calcium & Magnesium
  • High in Fiber
• Anti-Bacterial/Viral (Especially G.I. Tract)
Strawberries

• USDA Human Nutrition Center: Rank #2 in Anti-Oxidant Activity vs. 40 Fruits & Vegetables
  • Richest Berry in Vitamin C
  • High in Anthocyananins & Ellagic Acid
  • Inhibit Oxidation of LDL
  • High in Folic Acid, Potassium
Raspberries

- High in Ellagic Acid - Anti Cancer
- High in Coumaric & Ferulic Acid
- Rich in Pectins (Lowers Cholesterol)
- Protective Against Esophageal Cancer
Cranberries

- Bacterial Anti-Adhesion (Mannose)
  - Urinary Tract Infections
  - Tooth Decay & Gum Disease
  - Stomach Ulcer
- Inhibits the Growth of Cancers:
  - Prostrate
  - Colon
  - Cervix
  - Breast
  - Lung
  - Leukemia
- Lowers Total Cholesterol/Raises HDL
- Richest Berry in Phenols
Apples

• 30% Reduced Risk of Asthma (U.K.)
• Very High Levels of Quercetin
• Anti-Oxidant/Bioflavonoid
• Rich in Trace Elements (Including Selenium)
The Healing Power of a Wholesome Diet for Tumor Patients

By

Jeanne M. Wallace, Phd, CNC

www.tbts.org

Anti-Oxidant Capacity of Selected Fruits, Vegetables and Spices in ORAC (oxygen radical absorbing capacity) UNITS

>3000  Blueberries

> 2000  Oregano, pomegranate juice, figs, cinnamon

> 1000  Prunes, pomegranates, turmeric, raspberries, blackberries, Brussels sprouts, green tea, strawberries, spinach, kale

> 500   Oat bran, oranges, plum, red cabbage, cranberries, broccoli, parsley beets, basil
Sambuca (Elderberries)

Norwegian Study

Types A & B Flu Recovery

3.1 days (treated) vs.
7.1 days (placebo)
Cilantro

• *Dodecenal*: Twice as Effective as Gentamicin in Killing Salmonella
  (University of California)

• Powerful Chelator of Heavy Metals Such As Lead, Mercury, Aluminum
  (Dr. Yoshioke Omura- Heart Research Foundation, NYC)
CHERRY JUICE

• Rich in Melatonin (45ng/gm)
• High Levels of Perillyl Alcohol (Limoneno)
• Anthocyanins (Cox-1, Cox-2 Inhibitors)
  • (1/2 cup/day; 2 TBL Concentrate)
• Blocked 89% Enzyme Activity Causing Decay
  (Forsyth Dental Center, Boston, MA)
Lycopene du Jour
Tis the season to eat in season
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 20\textsuperscript{th} Century Western Diets (Numbers Represent Percentage Greater in Traditional Diets)

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

(Source: Price, 1938)
SELENIUM

• Potentiates Chemotherapy for Prostate & Colon Cancer
• Drew University of Medicine and Science
  – Significant Increase in Apoptosis and Decrease in DNA Synthesis in Cancers of Breast, Lung, Small Intestines, Colon and Liver

• 10 Year Study on 1312 Subjects
  – Prostate Cancer Reduced 63%
  – Colon Rectal Cancer Reduced 58%
  – Lung Cancer Reduced 46%

• Dose: Use Se-Methylselenocystiene: and Selenium Yeast: 400-600 mcg/day. Take with Vitamin E (Tocotrienols and Gamma Tocophenol) 400-800 IU/day
Traditional Sources of Iodine

SEA VEGETABLES & SEAFOOD
IODINE (ANION)

- Concentrated in the thyroid and ovaries & lacteal glands
- Involved in energy metabolism, Vitamin A metabolism, body temperature, growth and immune function
- Reproduction: Silent estrus, abortion, extended gestation; depressed libido & poor sperm quality
- Immune Function: Foot Rot, mastitis, respiratory ills, actinomycosis
- Goitrogenic: Brassicas, Soybeans, thiocyanates (clover), nitrates
- Seaweeds: Up to 0.6% I
- Pastures: 60-180 ppb
- Daily intake is 25-50 mg/day
- Ruminant ration ranges from 2.0-5.0 ppm
- Seafood, eggs and free range hens are rich in iodine
<table>
<thead>
<tr>
<th>Food</th>
<th>Vitamin D IU/3½ oz.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eel</td>
<td>4700 IU</td>
</tr>
<tr>
<td>Pilchard</td>
<td>1500 IU</td>
</tr>
<tr>
<td>Sardines, fresh</td>
<td>1500 IU</td>
</tr>
<tr>
<td>Herring, fresh</td>
<td>1500 IU</td>
</tr>
<tr>
<td>Red Salmon</td>
<td>800 IU</td>
</tr>
<tr>
<td>Pink Salmon</td>
<td>500 IU</td>
</tr>
<tr>
<td>Mackerel</td>
<td>500 IU</td>
</tr>
<tr>
<td>Chinook Salmon</td>
<td>300 IU</td>
</tr>
<tr>
<td>Herring, canned</td>
<td>225 IU</td>
</tr>
<tr>
<td>Chum Salmon</td>
<td>200 IU</td>
</tr>
<tr>
<td>Tuna</td>
<td>200 IU</td>
</tr>
<tr>
<td>Milk</td>
<td>100 IU</td>
</tr>
</tbody>
</table>

**FOODS HIGH IN VITAMIN D**

Cream & Butter?!
Lard?!
# OMEGA 3 FATTY ACIDS IN FRESH SEAFOOD (mg/3½ oz raw)

<table>
<thead>
<tr>
<th>Roe, Fin Fish</th>
<th>2345 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic Mackerel</td>
<td>2299 mg</td>
</tr>
<tr>
<td>Pacific Herring</td>
<td>1658 mg</td>
</tr>
<tr>
<td>Atlantic Herring</td>
<td>1571 mg</td>
</tr>
<tr>
<td>Pacific Mackerel</td>
<td>1441 mg</td>
</tr>
<tr>
<td>Sable Fish</td>
<td>1395 mg</td>
</tr>
<tr>
<td>Chinook King Salmon</td>
<td>1355 mg</td>
</tr>
<tr>
<td>Spanish Mackerel</td>
<td>1341 mg</td>
</tr>
<tr>
<td>Whitefish</td>
<td>1258 mg</td>
</tr>
<tr>
<td>Blue Fin Tuna</td>
<td>1173 mg</td>
</tr>
<tr>
<td>Sockeye Red Salmon</td>
<td>1172 mg</td>
</tr>
<tr>
<td>Pink Salmon</td>
<td>1005 mg</td>
</tr>
<tr>
<td>Greenland Turbot</td>
<td>919 mg</td>
</tr>
<tr>
<td>Shark (Mixed)</td>
<td>843 mg</td>
</tr>
<tr>
<td>Ohio Silver Salmon</td>
<td>814 mg</td>
</tr>
<tr>
<td>Blue Fish</td>
<td>771 mg</td>
</tr>
<tr>
<td>Striped Bass</td>
<td>754 mg</td>
</tr>
</tbody>
</table>
# Percentage of Essential Fatty Acids in Human Body Fat (1991-1992)

<table>
<thead>
<tr>
<th>Society</th>
<th>% Omega–6</th>
<th>% Omega-3</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand Maori</td>
<td>2.6</td>
<td>0.93</td>
<td>2.8:1</td>
</tr>
<tr>
<td>Japanese</td>
<td>14.8</td>
<td>3.2</td>
<td>4.6:1</td>
</tr>
<tr>
<td>American</td>
<td>10.2</td>
<td>0.58</td>
<td>17.6:1</td>
</tr>
</tbody>
</table>

(Source: Erasmus, 1993)
THE SECRET KILLER

- The surprising link between INFLAMMATION and HEART ATTACKS, CANCER, ALZHEIMER'S and other diseases
- What you can do to fight it
INFLAMMATORY CYTOKINES (Vioxx or Celebrex??!!)

• Result of Excessive Insulin (Sugar!)
• Result of Excessive Omega 6’s (Grain)
• Result of Deficiency of Omega 3’s
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 EICOSANOID & ENZYMES

Linoleic Acid (LA)

Delta – 6 Desaturase

Gamma Linoleic Acid (GLA)

Elongase

Di-homo Gamma Linoleic Acid (DGLA)

Good Eicosanoids, PGA1, PGA2, 15-HetE

Delta – 6 Desaturase

blocked by EPA/DHA

Eicosanoids

PGE2

Thromboxanes (TXA2)

Leukotrienes (LTB-4)

Hydroxylated FACS

5-Hete

TUMOR GROWTH

COX

Insulin

TUMOR GROWTH
VEGETABLES OF THE CROSS

CRUCIFEROUS VEGETABLES

◊ RADISH ◊ KOHLRABI
◊ BROCCOLI ◊ MUSTARD
◊ KALE ◊ RUTABAGA
◊ CABBAGE ◊ TURNIP
◊ CRESS ◊ BRUSSEL SPROUTS
◊ CAULIFLOWER ◊ HORSERADISH
CRUCIFEROUS VEGETABLES
Anti Cancer Compounds: chlorophyll, dithiothiones, flavonoids, indoles, isothiocyanates, phenols (coffeic & ferulic acids), Vitamins C & E

"Number One" Vegetables in Protecting Against Cancer (Univ. of Minnesota, Suny-Buffalo, John Hopkins, NCI)

- Stimulates Production of Antibodies
  - Powerful Detoxifiers
    - Glutathione
    - Enzymes that attach Glutathione

Affect cancers of: colon, rectum, esophagus, larynx, prostate and bladder
Eating Cruciferous Vegetables

• University of Hawaii: 1600 Men
  – Cut Prostate Cancer Risk 40%
  – Cut Colorectal Cancer by 50+%  

• Harvard University
  – Cut Bladder Cancer by 50%

• Vanderbilt University: China Study
  – 50% Reduction in Breast Cancer
I3C (INDOLE 3 CARBINOL)

- Inhibits Growth of Estrogen-Receptor Positive Breast Cancer Cells by 90% vs. Tamoxifen @ 60%
- Stops Human Cancer Cells From Growing (54-61%) and Initiated Apoptosis
- Increases Conversion of Estradiol to Estriol by 50% in (1) Week (12 Subjects)
- Prevented Aflatoxin Induced Liver Cancer, Leukemia, Colon Cancer & Chemically Induced Breast Cancer 70-96% (Lab Rats)
- Restores p21 and Other Proteins That Correct Adducts (Tamoxifen No Effect)
- Hoechst Marrion Roussel: New Generation of Indole Drugs to Replace Estrogen Drugs
- Dose 200 mg 2-4x / Day As Per Body Wt.
Soil Sulfur

Glucobrassicin

Glucoraphanin

Glucosinolates (14 identified) e.g. Crobene, Neoglucobrasssin, Glucoerucin, Glucobrassicin, Glucoraphanin

I3C (Indole 3 Carbinol)

Ascorbigen

Glutathione

I3C

I3CA, I3A, ICZ, DIM, Ltr, HI-IM

Sulforaphane
Fermented Vegetables
Sauerkraut, Kimchi, Relishes, Chutneys
FERMENTATION CHEMISTRY

- LACTIC ACID
- BENZOIC ACID
- LACTOPEROXIDASE
  - NICIN
  - ACIDOLIN
- HYDROGEN PEROXIDE
  - ENZYMES (!)
  - VITAMIN C
  - VITAMIN $K_2$
  - VITAMIN B-12
• Pre-Digests Foods
• Enlivens Foods
• Creates Nutriceuticals
OPTIMAL DIGESTION

• The G.I. Tract Has More Neurons Than the Spinal Cord
• The G.I. Tract Is The First Defense of Immunity
  – Digestive Secretions (HCL, Bile, Pancreatic Enzymes)
  – Peyer’s Patches
  – Probiotic Eco-System: Up to Several lbs. of Microbes (more cells than the human body)
    – Anti-Biotic Secretions
    – Protective Sheath on Villi
    – Decontaminating Enzymes
    – Producers of Vitamin K, B-12
Salicylic Acid

- Found in Most Fruits & Vegetables
- Needed for Senasence, Insect & Disease Protection in Plants
- Anti-Clotting, Anti-Inflammatory without Side Effects of Stroke, G.I. Bleeding
  - Organic Vegetables 6X More S.A. than Non-Organic
- Contributes to Lower CRP From Mediterranean Diet
Salicylic Acid-Rich Fruits

- Raisins
- Prunes
- Raspberries
- Apricots
- Blackberries
- Boysenberries
- Cantaloupe
- Cherries
- Cranberries
- Currants
- Dates
- Guava
- Grapes
- Loganberries
- Oranges
- Pineapples
- Plums
- Strawberries
Salicylic Acid-Rich Vegetables

- Broccoli
- Chili Peppers
- Cucumbers
- Okra
- Spinach
- Squash

- Sweet Potatoes
- Canned Tomatoes
- Tomato Paste/Sauce
- Green Peppers
- Radishes
- Zucchini
EGGS FROM GRASS: FOOD "OVA-TION"

Primary Source of Essential Fatty Acids

• 1:1 Ratio of Alpha Omega 3’s and 6’s
• Rich in EPA/DHA (Landlubber Salmon)
  • Arachidonic Acid
  • Cholesterol (!)
• Cysteine- Pre-cursor to Glutathione
  • Fat Soluble Vitamins

◊ Vitamin A (as Retinol vs. Carotene)
  ◊ Vitamin E

• Lecithin
• Choline: Necessary for Liver Detox
# NUTRITIVE VALUE OF OMEGA EGGS

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

**COMPAARED TO STANDARD EGGS**

- **Lutein**
- **Carotene**
- **Vitamin E**
- **Cysteine**
- **Choline**
### Some Beneficial Substances in Virgin Olive Oils

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta-carotene</td>
<td>Antioxidant</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>Antioxidant</td>
</tr>
<tr>
<td>Chlorophyll (contains magnesium)</td>
<td>Nourishes the heart</td>
</tr>
<tr>
<td>Squalene</td>
<td>Protects the heart</td>
</tr>
<tr>
<td>Phytosterols</td>
<td>Reduce cholesterol</td>
</tr>
<tr>
<td>Oleic Acid (monosaturated)</td>
<td>75%</td>
</tr>
<tr>
<td>Saturated</td>
<td>13%</td>
</tr>
<tr>
<td>Omega 6</td>
<td>10%</td>
</tr>
</tbody>
</table>

Big, black & beautiful. Manzanillo olives.
COCONUT OIL

• Contains medium chain fatty acids
• Rich in antimicrobial lauric acid
• 92% saturated = very resistant to rancidity
FLAX SEED OIL

• “THE” Omega-3 cereal
  57% Omega-3, 16% Omega 6, 18% Omega-9

• Need magnesium, zinc, B-6, Vitamin C to convert to EPA/DHA
Starch from below and above
Don’t “Wonder” why you’re a success!
MILK AS MEDICINE
FRESH & FERMENTED GRASS BASED DAIRY

PURE UNADULTERATED MILK (WHICH IS ALSO “RAW”)

• Fat Soluble Vitamin A “Retinol” for Immune Function and Mucosal Membrane Health
• Vitamin D: Fat Soluble Premier of Calcium Ionization; The Ultimate Alkalizer and Bone Builder
• Lactic Acid Producing Organisms
• Proteins: 22 Amino Acids Including 8 Essential
• Fats: 500 Saturated and Unsaturated Fatty Acids (Needed to Metabolize Protein & Calcium)
• Minerals: 100% Metabolically Available (Calcium, Chlorine, Magnesium, Potassium, Phosphorous, Sodium and Sulfur; 24 Trace Minerals)
• Enzymes: (35 Identified) Including Phosphatase, Lipase, Lactose, Galactose, Catalase, Diastase, and Peroxidase
• CLA: Powerful Anti-Carcinogen, Immune Augmentor 500% Higher in Pastured Cows
Lactoferrin

- Effective Anti-Biotic Against H. pylori, Salmonella, E. coli
- Increases Natural Killer Cells & Cytotoxicity of White Blood Cells
- Inhibits Angiogenesis
- Scavenges “Free Iron” Necessary for Growth of Neoplastic Cells & Microbes
- Reduced Incidence of Colon Cancer to 27% vs. Controls in Lab Rats
Lactoferrin

- Toxin Binding
- Platelet Binding
- Wound Healing
- Anti-Inflammatory
  - Anti-HHSV-1
Lactoperoxidase

- Works synergistically with Lactoferrin
- Dental Wound Treatment
- Inhibits Human Herpes Simplex Virus-1
- Most abundant enzyme in milk (50 mg/l)
- Heat stable up to 60°C/30 minutes, or 72°C/15 seconds
Thiocyanates + Hydrogen Peroxide

\[
\text{Lactoperoxidase} \quad \text{OSCN}^- + \text{H}_2\text{O}
\]

Thiocyanates  Hydrogen Peroxide  Hypothiocyanate  Water

(Clover & Brassicas)

\[
\text{OSCN}^- \text{ oxidizes bacterial enzyme } (-\text{SH groups})
\]

Hypothiocyanate
HYPER-IMMUNE MILK
“THE ORAL VACCINE”

• The Merck Patent of 1946

• Ralph Stolle’s Immune Milk “The Ohio Survey”

• Dr. William Petersen- University of Minnesota

• Quantum Research and AIE-10 Dr. Jesse Stoff (NK Increases by 2000%)
# Some Beneficial Constituents in Butter

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wulzen (anti-stiffness) factor</td>
<td>Protects against degenerative arthritis, hardening of the arteries, and cataracts</td>
</tr>
<tr>
<td>Short- and medium-chains fatty acids</td>
<td>About 15 percent of butterfat. Absorbed directly by the small intestine without emulsification by the bile. Antimicrobial, anti-tumor, immune stimulating, antifungal</td>
</tr>
<tr>
<td>Conjugated linoleic acid</td>
<td>Anticancer</td>
</tr>
<tr>
<td>Glycosphingolipids</td>
<td>Protect against gastrointestinal infections</td>
</tr>
<tr>
<td>Trace minerals</td>
<td>Chromium, iodine, manganese, selenium, and zinc</td>
</tr>
</tbody>
</table>

(Source: Fallon, 1995)
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
Fat of the land = Fat of the sea
THE MAYO FOUNDATION

J.E. CREWE, M.D – COFOUNDER

“RAW MILK CURES MANY DISEASES”

Published in 1929
“For 15 years, ...(I) have employed the certified milk treatment in various diseases... The results obtained in various types of disease have been so uniformly excellent, that one’s conception of disease and its alleviation is necessarily changed. The method is so simple that it does not greatly interest most doctors...”

J.E. Crewe, M.D.
THE ENZYME CONNECTION

5,000 Known Enzymes: 3 Groups

- Metabolic Enzymes (Breathing, Talking, Walking, Immune System, Metabolism, Thinking, Vision, Hearing, etc.)

- Digestive Enzymes: Assembled Primarily by Pancreas

- Food Enzymes: Initiate Digestion in Mouth and Stomach
OPTIMAL DIGESTION

• The G.I. Tract Has More Neurons Than the Spinal Cord
• The G.I. Tract Is The First Defense of Immunity
  – Digestive Secretions (HCL, Bile, Pancreatic Enzymes)
  – Peyer’s Patches
  – Probiotic Eco-System: Up to Several lbs. of Microbes (more cells than the human body)
    – Anti-Biotic Secretions
    – Protective Sheath on Villi
    – Decontaminating Enzymes
    – Producers of Vitamin K, B-12
• The Body-Brain Connection

• Gut Flora: The Most Cellular Organ
FOOD ENZYME DEFICIENCY LEADS TO

- Over Enlargement Of Pituitary Gland
- Brain Size Decreases
- Thyroid Enlargement
- Premature Aging
- Food Enzymes Destroyed Starting At 118°F (48°C)
THE POTTENGER CAT STUDIES

Dr. Francis M. Pottenger M.D.

- Published 50+ Peer-Reviewed Articles on Nutritional Medicine
- President of Los Angeles Medical Association
- President of American Therapeutic Society
- President of American Academy of Applied Nutrition
TEN YEAR CAT STUDY
(1932-1942)
INVOLVING 900 CATS EVALUATING
General Vitality
Mortality
Morbidity
Behavior
Microbial/Parasitical Susceptibility
Reproduction
Neo-Natal Survivability
Mothering Instincts
Generation Decline
Manure Quality
FERMENTATION
CHEMISTRY & BIOLOGY

Lactic Acid
Lactoperoxidase
Nicin
UGF’s or Unidentified Growth Factors

Acidolin
Lactic Acid
B-Vitamins

B-Vitamins
Effect of dietary *L. brevis* on the immune system response

<table>
<thead>
<tr>
<th>Period of dietary bacterial supplementation</th>
<th>Alpha-interferon activity</th>
<th>Natural killer cell activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 weeks</td>
<td>65%</td>
<td>68%</td>
</tr>
<tr>
<td>4 weeks</td>
<td>59%</td>
<td>47%</td>
</tr>
<tr>
<td>Substance</td>
<td>Producing species</td>
<td>Substance</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Acidolin</td>
<td>L. acidophilus</td>
<td>Lactolin</td>
</tr>
<tr>
<td>Acidophilin</td>
<td>L. acidophilus</td>
<td>Plantaricin B</td>
</tr>
<tr>
<td>Lactacin B</td>
<td>L. acidophilus</td>
<td>Lactolin 27</td>
</tr>
<tr>
<td>Lactacin F</td>
<td>L. acidophilus</td>
<td>Helveticin J</td>
</tr>
<tr>
<td>Bulgarin</td>
<td>L. bulgaricus</td>
<td>Reuterin</td>
</tr>
<tr>
<td>Plantaricin</td>
<td>L. plantarum</td>
<td>Lactobrevin</td>
</tr>
<tr>
<td>SIK-83</td>
<td>L. plantarum</td>
<td>Lactobacillin</td>
</tr>
<tr>
<td>Plantaricin A</td>
<td>L. plantarum</td>
<td></td>
</tr>
</tbody>
</table>
FERMENTATION SOLVES LACTOSE INTOLERANCE

*American Journal of Clinical Nutrition*

“The use of fermented dairy foods is most common in areas of the world where lactase deficiency is prevalent. Recently, we have shown that the digestion of lactose in yogurt is enhanced as compared to that from pasteurized milk.”

“This enhanced digestion is apparently due to inherent B-galactosidase in yogurt, which is active in the gastrointestinal tract after consumption. Pasteurization of the yogurt eliminated the enhanced digestion of lactose and reduced the inherent lactase activity of the yogurt by 10 fold.”

NOTE: Human Breast Milk Has Almost Twice the Lactose as Cow’s Milk!
CONJUGATED LINOLEIC ACID

THE CANCER FIGHTING, WEIGHT LOSS FATTY ACID
CLA RESEARCH

- First discovered by Australian lipid biochemist Dr. Peter Parodi in the early 1980s.
- Continued research at the University of Wisconsin by biochemist Michael Pariza et al.

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
CANCER & CLA


- 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

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.
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,”

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.
The End

Any Questions?