

***Nourishing  
Traditional Diets  
The Key to Vibrant Health***

**by Sally Fallon Morell, President  
The Weston A. Price Foundation**

# What is a Healthy Diet?



Even Lisa is confused!

Atkins Diet?

Vegetarian/Vegan?

Zone Diet?

Macrobiotic?

South Beach Diet?

Juicing?

Food Combining?

Metabolic Typing?

All Raw?

# Or is it the US Government Official Diet. . .



. . . designed to promote the products of  
commodity agriculture?



50  
ANNIVERSARY  
EDITION

# NUTRITION AND PHYSICAL DEGEN- ERATION

WESTON A. PRICE, D.D.S.

With introductions from the original editors by Clarence Albert Houston, Professor of Anthropology, Harvard University, Grenville Frank Knight, M.D., William A. Alvarez, Ph.D., Department of Zoology, University of Missouri, and new introductions and remarks from specially written for this Golden Anniversary Edition by Abram Heller, M.D., Ph.D., H. Ludo Abrams, Jr., Associate Professor of Anthropology, University System of Georgia, and Donald Deming Fawcett.

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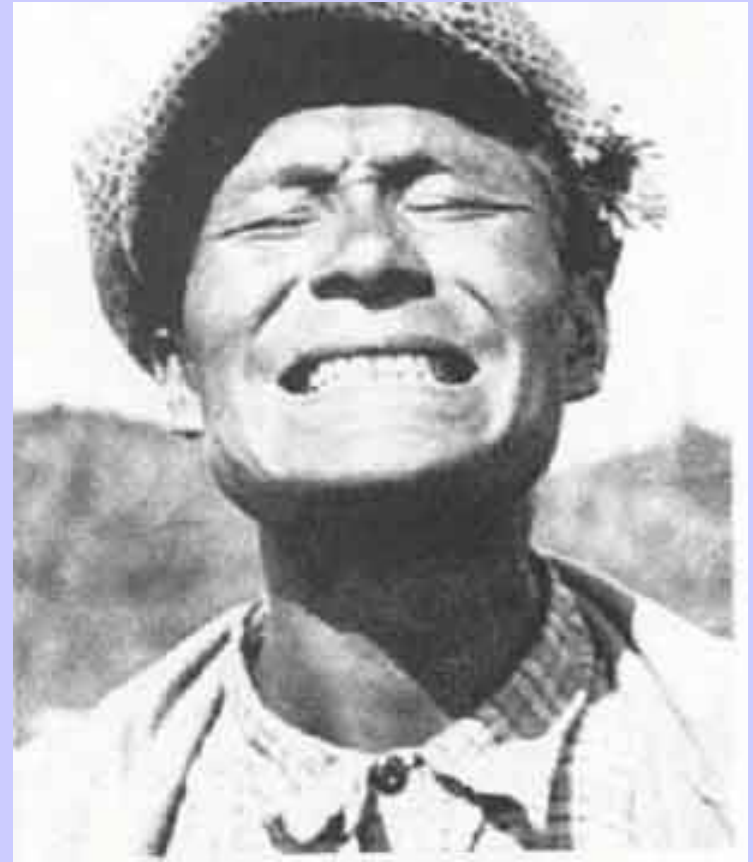


















# The Teeth Tell the Tale!

STRAIGHT TEETH	CROOKED, CROWDED TEETH
Plenty of room in head for pituitary, pineal, hypothalamus	Compromised space for master glands in the head
Good skeletal development, good muscles	Poor development, poor posture, easily injured
Keen eyesight and hearing	Poor eyesight and hearing
Optimal function of all organs	Compromised function of all organs
Optimistic outlook, learns easily	Depression, behavior problems, learning problems
Round pelvic opening, easy childbirth	Oval pelvic opening, difficult childbirth



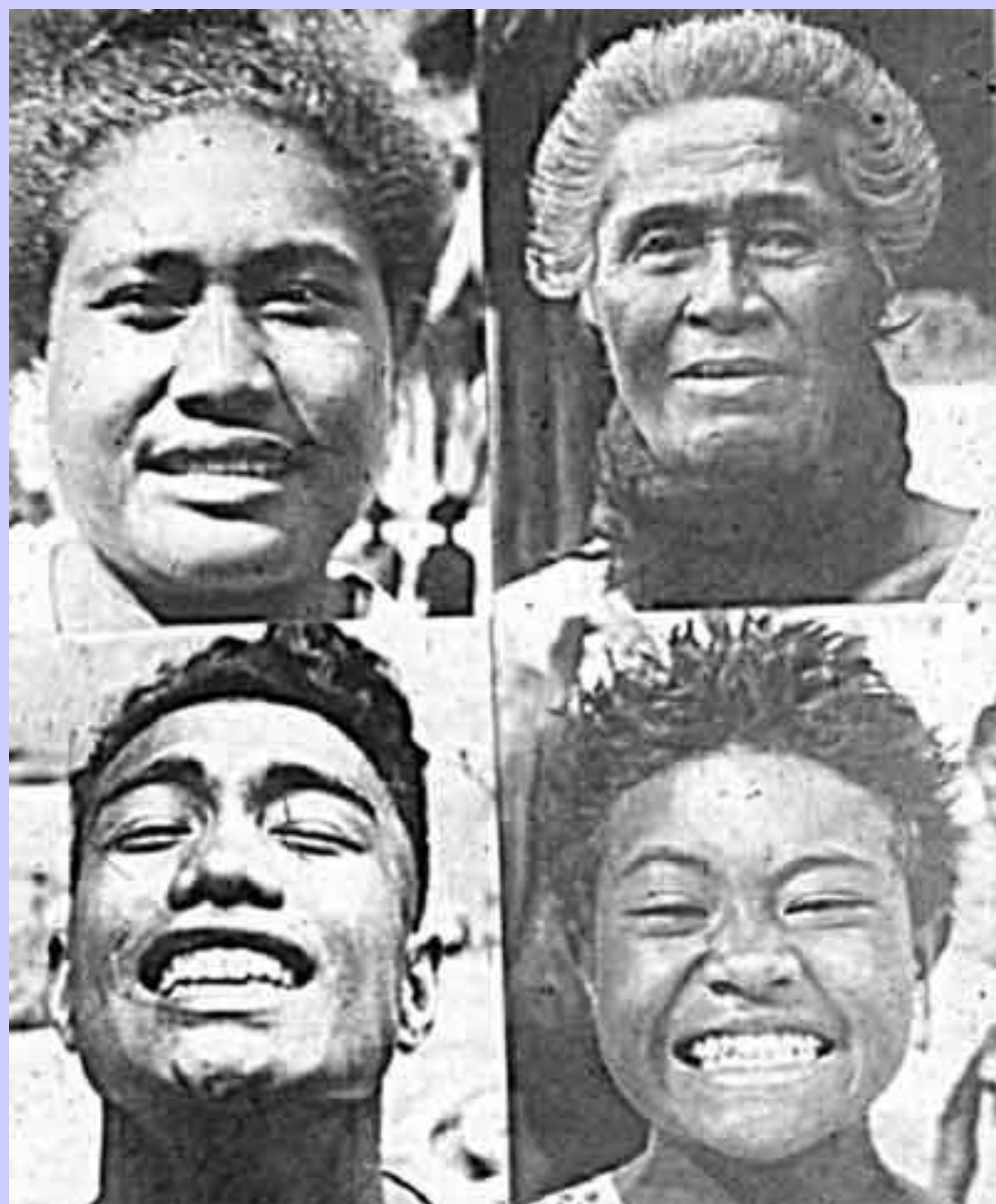




# SOUTH SEA ISLANDERS

MELANESIAN 5 and 6      POLYNESIAN 1-2-3-4-7-8



















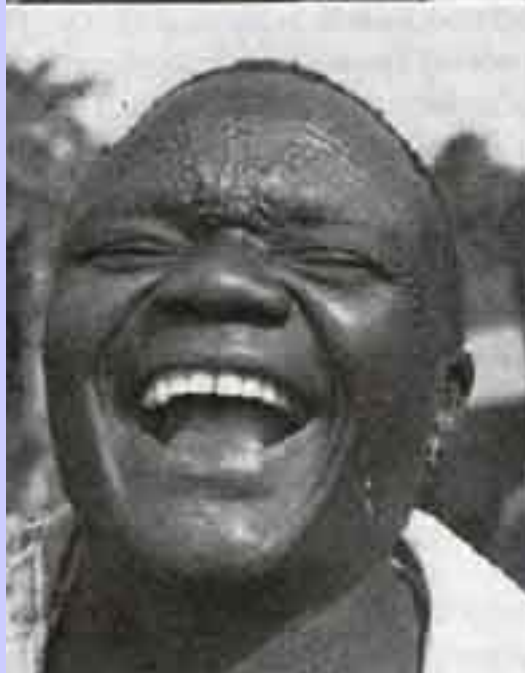
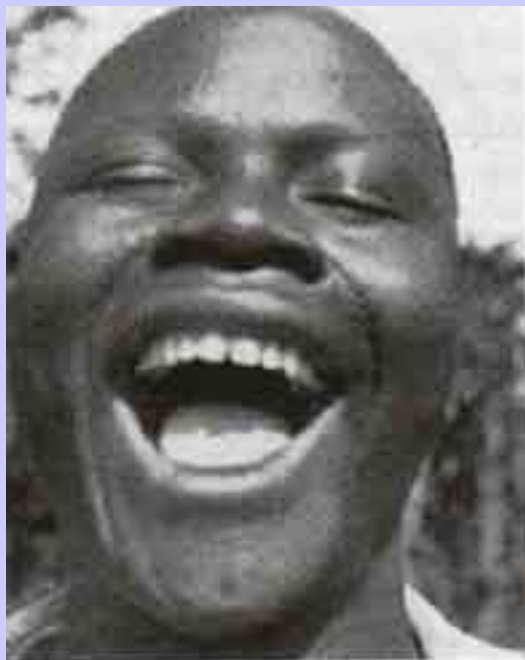




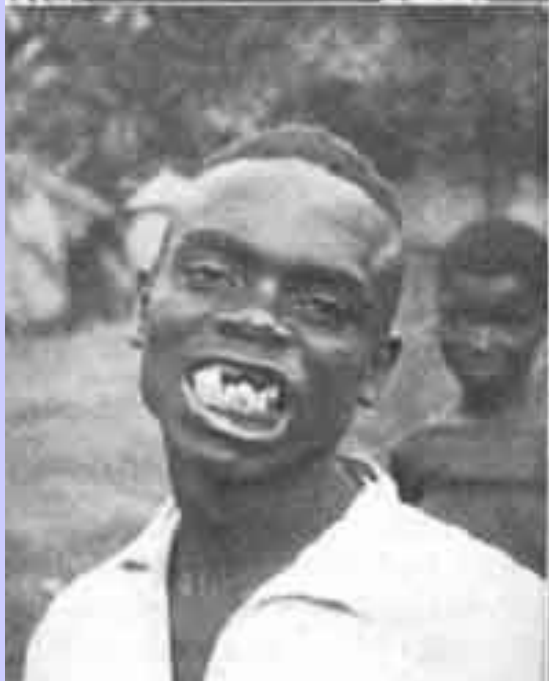


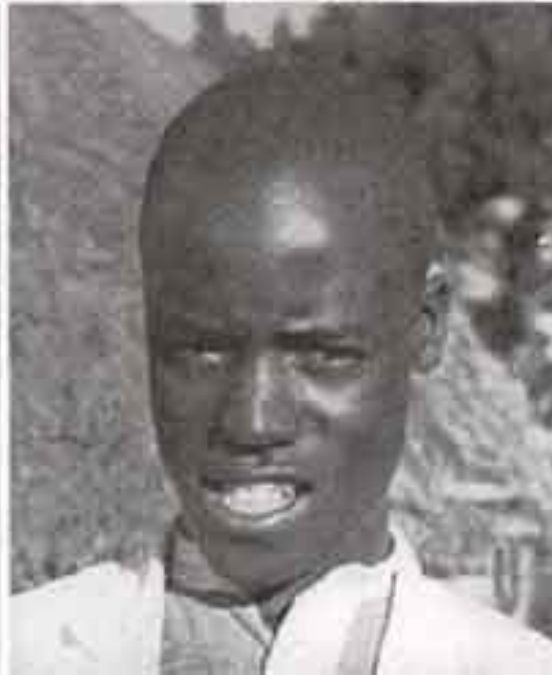








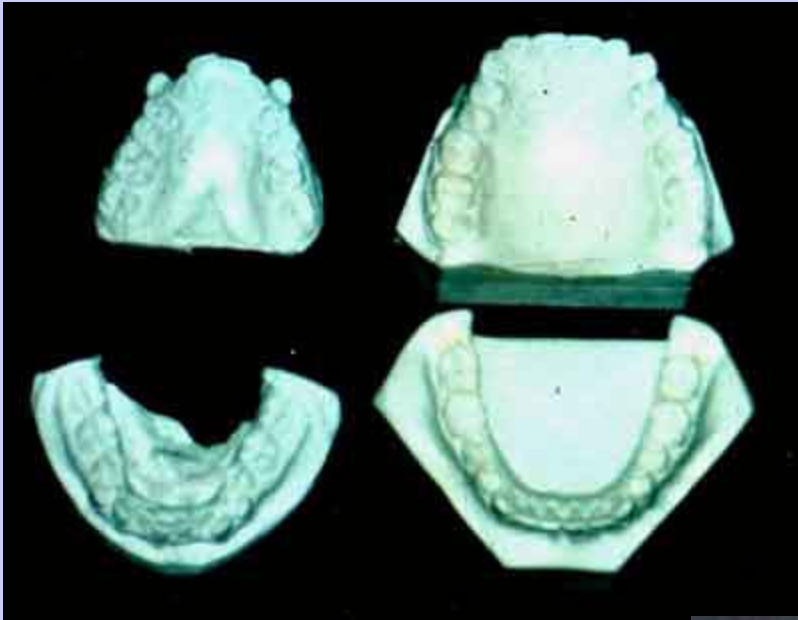




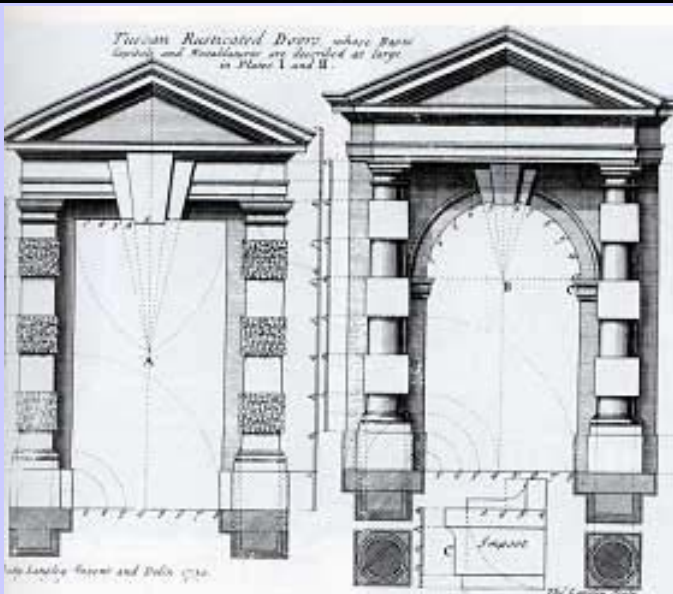
# African Boys







# Dental Casts of Modernized and Primitive Individuals



# Pottenger's Cats



# Dental Deformities



ANTERIOR CROSSBITE



POSTERIOR CROSSBITE



CROWDING



OPEN BITE

*An open bite is usually due to an oral habit.*



PROTRUSION



ECTOPIC ERUPTION

*Ectopically erupting maxillary incisors.*



COMPLETE CLASS III



DIASTEMA



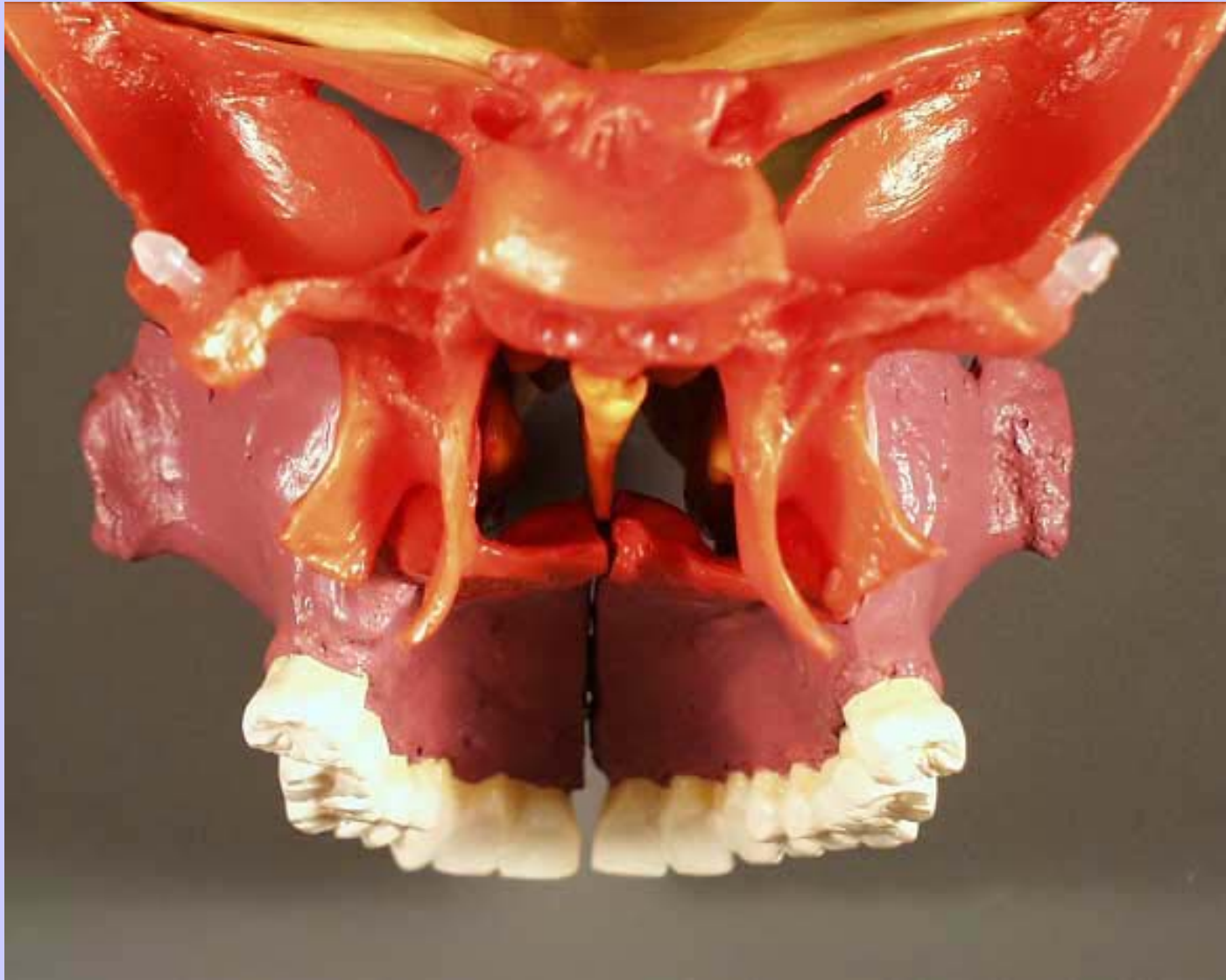
ORAL HABITS

# The Facial Bones



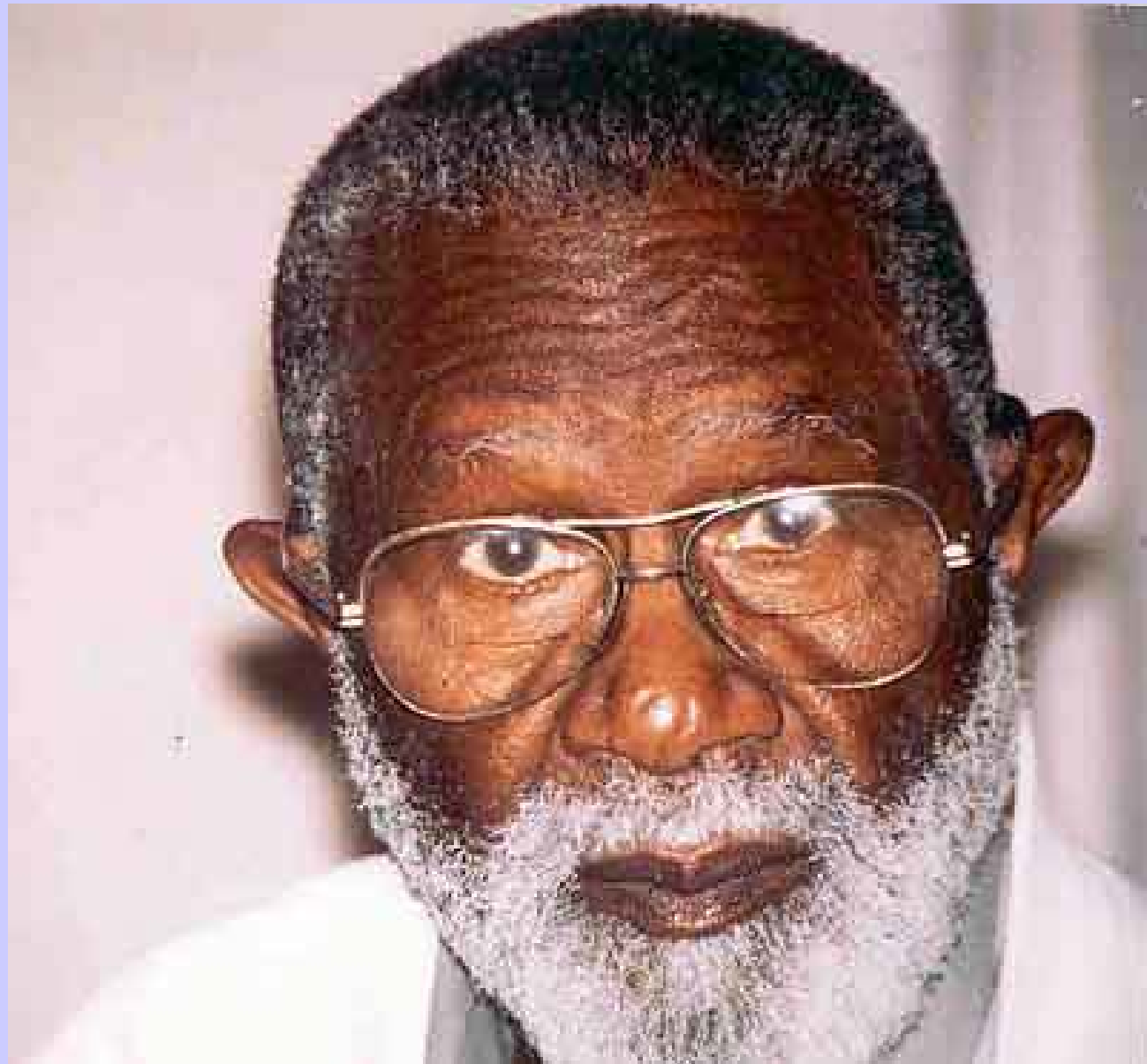


# The Sphenoid and Maxilla



















Bill Cody's Wild West Show  
1910



**Elvis Presley and his parents:  
Gladys and Vernon**

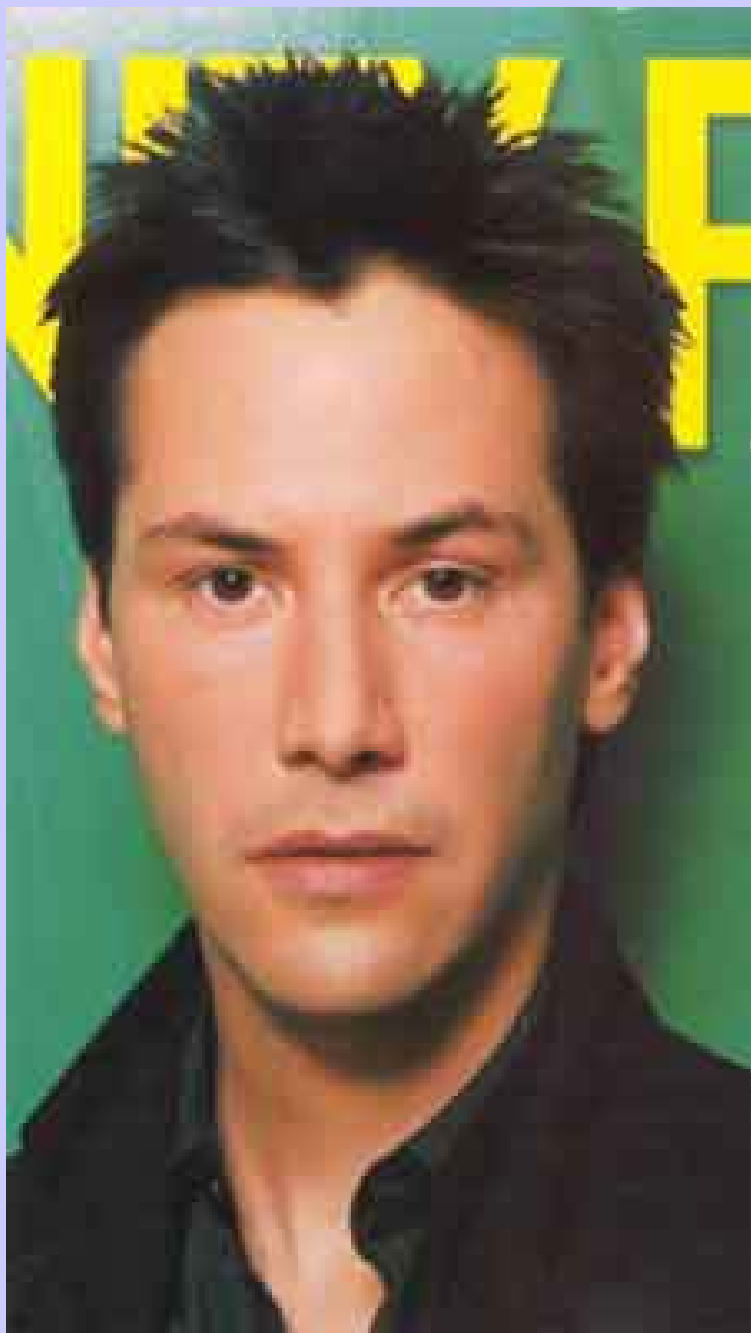
# South American Children





# Modern Children

**Most modern children have thin faces and need braces to straighten their teeth**









# Natural Beauty

Individual beauty is a matter of both design of the face and regularity and perfection of the teeth.

Nature always builds harmoniously if conditions are sufficiently favorable, regardless of race, color or location

Weston A. Price, DDS

# Great Variety in Traditional Diets

Some had no plant foods

Some had few animal foods

Some had mostly cooked foods

Some had large amounts of raw foods

Some had milk products; some did not

Some had grains; some did not

Some had fruits; some did not

What are the underlying characteristics  
of these healthy diets?

# 1. No refined or denatured foods

## **Refined and Denatured Food Components 1930's**

**Refined Sugar  
White Flour  
Vegetable Oils  
Canned Foods  
Condensed Milk**

## **Refined and Denatured Food Components Today**

**Refined Sugar  
High Fructose Corn Syrup  
White Flour  
Pasteurized Milk  
Skim and Low Fat Milk  
Hydrogenated Fats  
Refined Vegetable Oils  
Isolated Protein Powders  
Additives**



“Life in its fullness is Mother Nature obeyed.”  
Weston A. Price, DDS



Factory foods are not Mother Nature's foods!

## 2. Every diet contained animal products

**FISH AND SHELLFISH:** including organs, oil, bones, heads, etc. Weston Price found the best bone structure among those eating seafood

**BIRDS:** Chicken, ducks, geese, etc., including the organs, fat and skin.

**RED MEAT:** Beef, goat, sheep, game, etc., with ORGAN MEATS and FAT preferred.

### **MILK AND MILK PRODUCTS**

**EGGS**

**REPTILES**

**INSECTS**

# Animal Food Nutrients

THESE NUTRIENTS ARE  
FOUND ONLY IN ANIMAL  
PRODUCTS

Vitamin A

Vitamin D

Cholesterol

Vitamin B12

Very Long Chain,  
Superunsaturated  
fatty acids  
(AA, EPA and DHA)

THESE NUTRIENTS ARE  
MORE EASILY  
ABSORBED FROM  
ANIMAL PRODUCTS

Calcium

B6

Magnesium

Iron

Zinc

Copper

# Vitamin B12 Deficiency

EARLY SIGNS	PSYCHIATRIC DISORDERS	CHRONIC DISEASE
Fatigue	Depression	Multiple sclerosis
Tingling in hands and feet	Obsessive-compulsion	Anemia
Sleep disorders	Manic-depression	Cancer
Irrational anger	Dementia/ Alzheimer's	Heart disease

# Vitamin B12

**ONLY IN ANIMAL PRODUCTS:** Usable vitamin B12 is found *only* in animal products. Analogs in soy foods or blue-green algae actually increase body's need for B12.

**ABSORPTION DIFFICULT:** Absorbed through a complex process involving an “intrinsic factor,” secreted in the stomach.

**VEGETARIANS AND THE ELDERLY:** Deficiencies are most likely to appear in VEGETARIANS, who do not consume animal products, and in the ELDERLY and those deficient in hydrochloric acid or pancreatic enzymes, who cannot produce or use the intrinsic factor.

**PASTEURIZATION:** B-12 is almost completely destroyed by pasteurization.







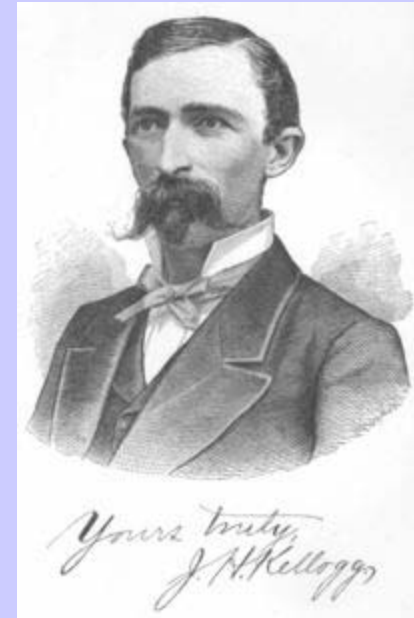
# Products that come from cows

Even strict vegans cannot escape dependence on animal products.

# The Origins of the Modern High-Fiber, Vegetarian Dietary Movement



SYLVESTER GRAHAM (1794-1851) advocated a whole grain, vegetarian diet to promote chastity and curb lust. Preached that excessive sexual desire caused disease.



## The Food Puritans!

JOHN HARVEY KELLOGG (1852-1943), Seventh Day Adventist who promoted a high-fiber, vegetarian diet to combat the twin evils of constipation and “natural urges.” Preached against sexual activity, even in marriage!

### 3. Dr. Price's Key Finding

**Primitive Diets contain 4 times the calcium and other minerals, and 10 times the fat-soluble vitamins as the modern American diet.**

# Sources of Vitamins A and D

## SEAFOODS

Fish Eggs

Fish Livers

Fish Liver Oil

Fish Heads

Shell Fish

Oily Fish

Sea Mammals



## LAND ANIMALS GRASS-FED!

Insects

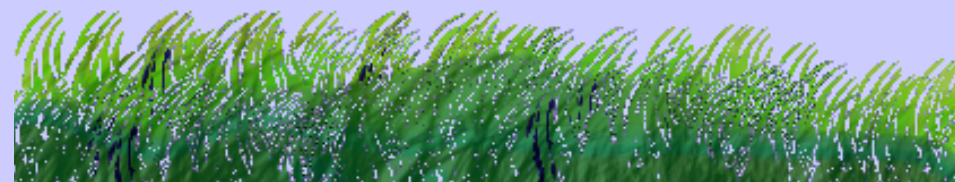
Butter and Cream

Egg Yolks

Liver, Organ Meats

Animal Fat

(Especially mono-gastric  
animals such as  
(birds, pig, bear, Guinea pig)



# The Fat-Soluble Activators A and D

A question arises as to the efficiency of the human body in removing all of the minerals from the ingested foods. Extensive laboratory determinations have shown that most people cannot absorb more than half of the calcium and phosphorus from the foods eaten. The amounts utilized depend directly on the presence of other substances, particularly fat-soluble vitamins.

It is at this point probably that the greatest breakdown in our modern diet takes place, namely, in the ingestion and utilization of adequate amount of the special activating substances, including the vitamins [A and D] **needed for rendering the minerals in the food available to the human system.**

**It is possible to starve for minerals that are abundant in the foods eaten because they cannot be utilized without an adequate quantity of the fat-soluble activators.**

Weston Price, DDS  
*Nutrition and Physical Degeneration*

# Bricks and Mortar



The body is like  
a house or temple,  
built of bricks and mortar

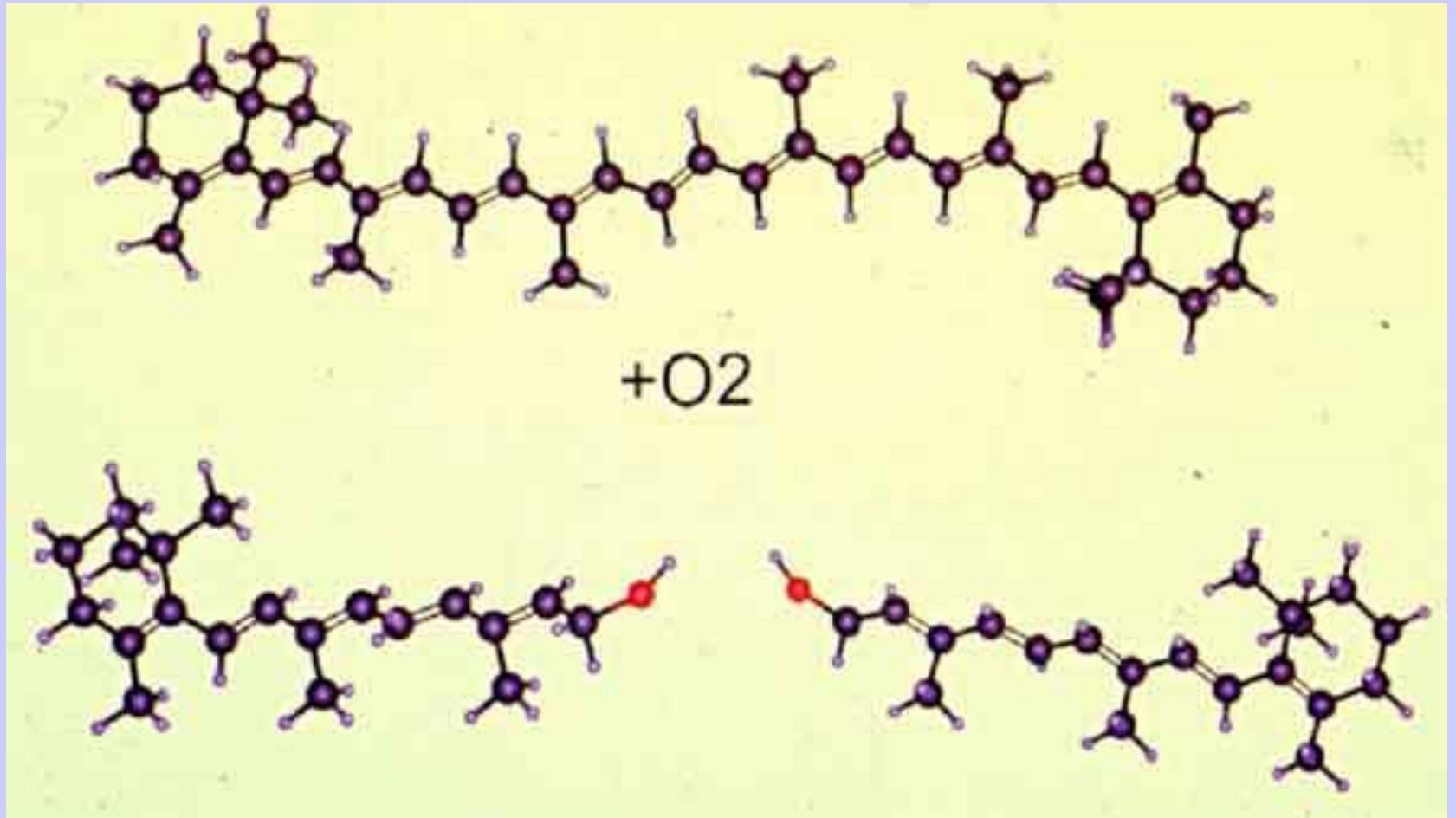
Bricks = Minerals

Mortar = Fat-Soluble Activators A and D





# Conversion of Beta-Carotene to Vitamin A



# Conversion Problems

## **Needed to Convert Carotene to Vitamin A**

Fats in the diet

Thyroid Hormone

Enzymes (as yet unknown)

Vitamin E

## **Conversion & storage is difficult or impossible for**

BABIES AND CHILDREN

DIABETICS

Individuals with poor thyroid function

Individuals with poor liver function

Individuals with poor intestinal absorption

Individuals with high intake of sodium nitrites and nitrates

Individuals exposed to pesticides and other toxins

Individuals who consume lots of carotene

**Even under optimal conditions, plant sources of carotene cannot supply sufficient vitamin A for optimum health.**

# **Vitamin A is Needed for**

**Protein assimilation**

**Calcium assimilation**

**Proper growth**

**Prevention of birth defects**

**Proper function of the glands**

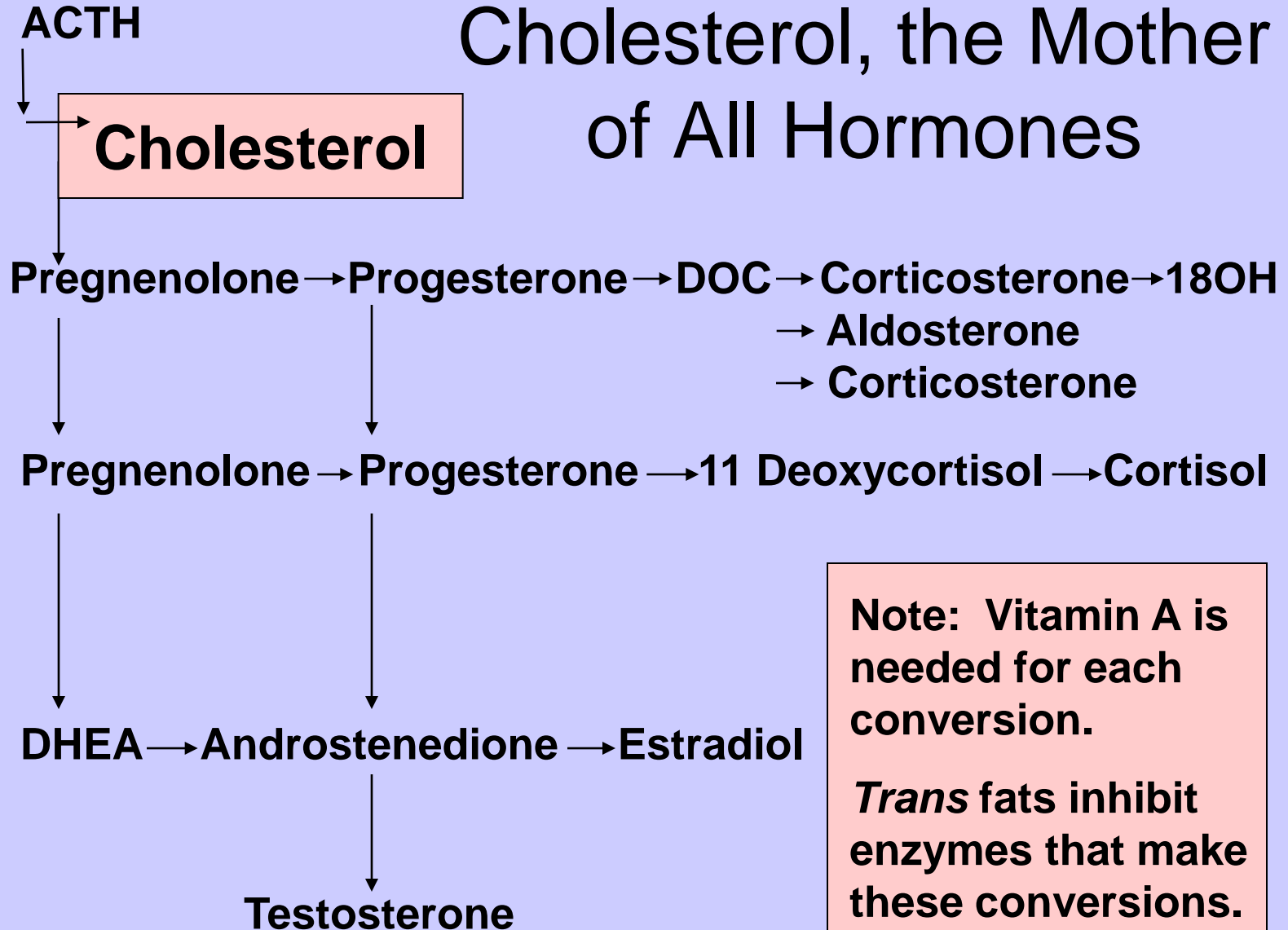
**Thyroid function**

**Immune system function**

**Production of stress and sex hormones**

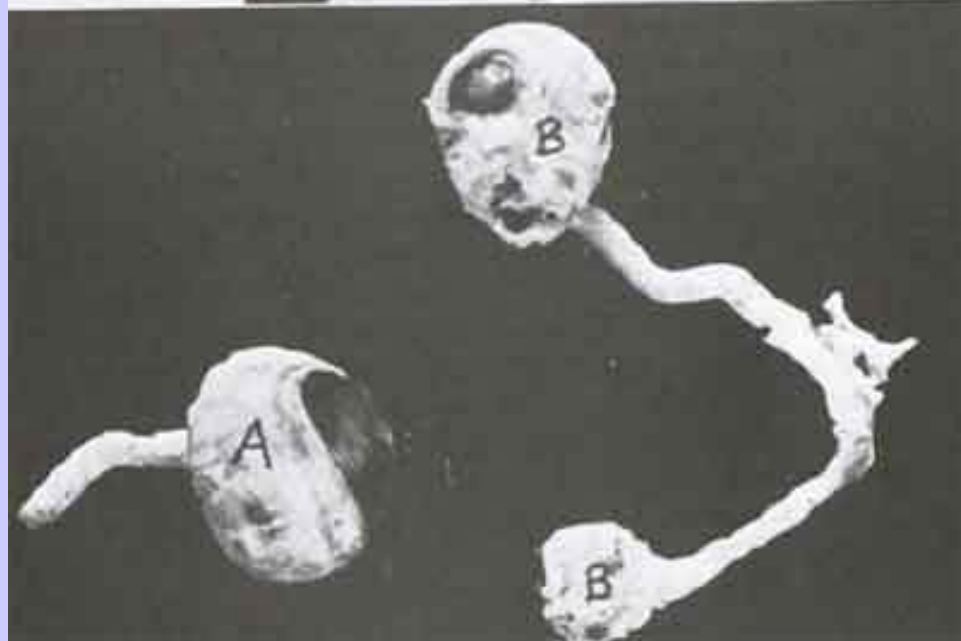
**Eyes, skin, bones**

# Cholesterol, the Mother of All Hormones



**Note: Vitamin A is needed for each conversion.**

***Trans* fats inhibit enzymes that make these conversions.**



# Vitamin A Stores are Depleted by

Stress

Excess Dietary Protein

Cold Weather

Fever and Illness

Physical Exertion

Exposure to Toxins



# Dioxins and Vitamin A

**DIOXINS DEplete** vitamin A stores in the liver. Vitamin A protects against dioxins - almost 80 scientific papers on the interaction of dioxins and vitamin A - take your cod liver oil!

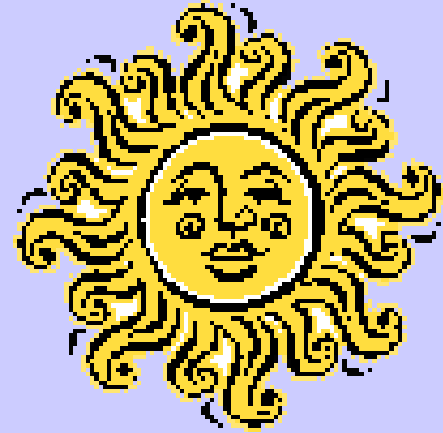
**FISH EATERS** in Japan do not have high levels of dioxin in the blood, meaning that there are protective factors in the diet.

**CHLOROPHYLL** prevents absorption of dioxin from the intestinal tract - eat your greens!

# Vitamin D Myth

**MYTH** - To get adequate vitamin D, just expose your face and hands to sunlight for 10 minutes every day.

**TRUTH** - The body makes one form of vitamin D out of cholesterol by the action of UV-B sunlight on the skin. However, except in the Tropics, UV-B is available only at MID-DAY during the SUMMER months.



# Vitamin D Food Sources

All healthy primitive groups, including those living in the tropics, had rich dietary sources of vitamin D.

Fish liver oils

Shell fish

Insects

Butterfat

Egg yolks

Organ meats

Fat of birds

Fat of pigs

# Roles of Vitamin D

Healthy bones

Proper growth

Mineral metabolism

Muscle tone

Reproduction

Healthy Skin

Insulin production

Immune system

Nervous system

Cell Function

Feel good chemicals

Longevity

# Synthetic Vitamin D<sub>2</sub>

**MADE FROM VEGETARIAN SOURCES**

**OPPOSITE EFFECT TO ANIMAL SOURCE D<sub>3</sub>**

Causes softening of the hard tissues  
(bones)

Hardening of the soft tissues  
(organs, arteries).

**ADDED TO PROCESSED VEGETARIAN FOODS**

Soy Milk

Rice Milk

Oat Milk

Almond Milk

# Vitamin A and D Toxicity?

**BALANCE:** When vitamin D is low, vitamin A can be toxic, even at low doses; when A is low, vitamin D can be toxic.

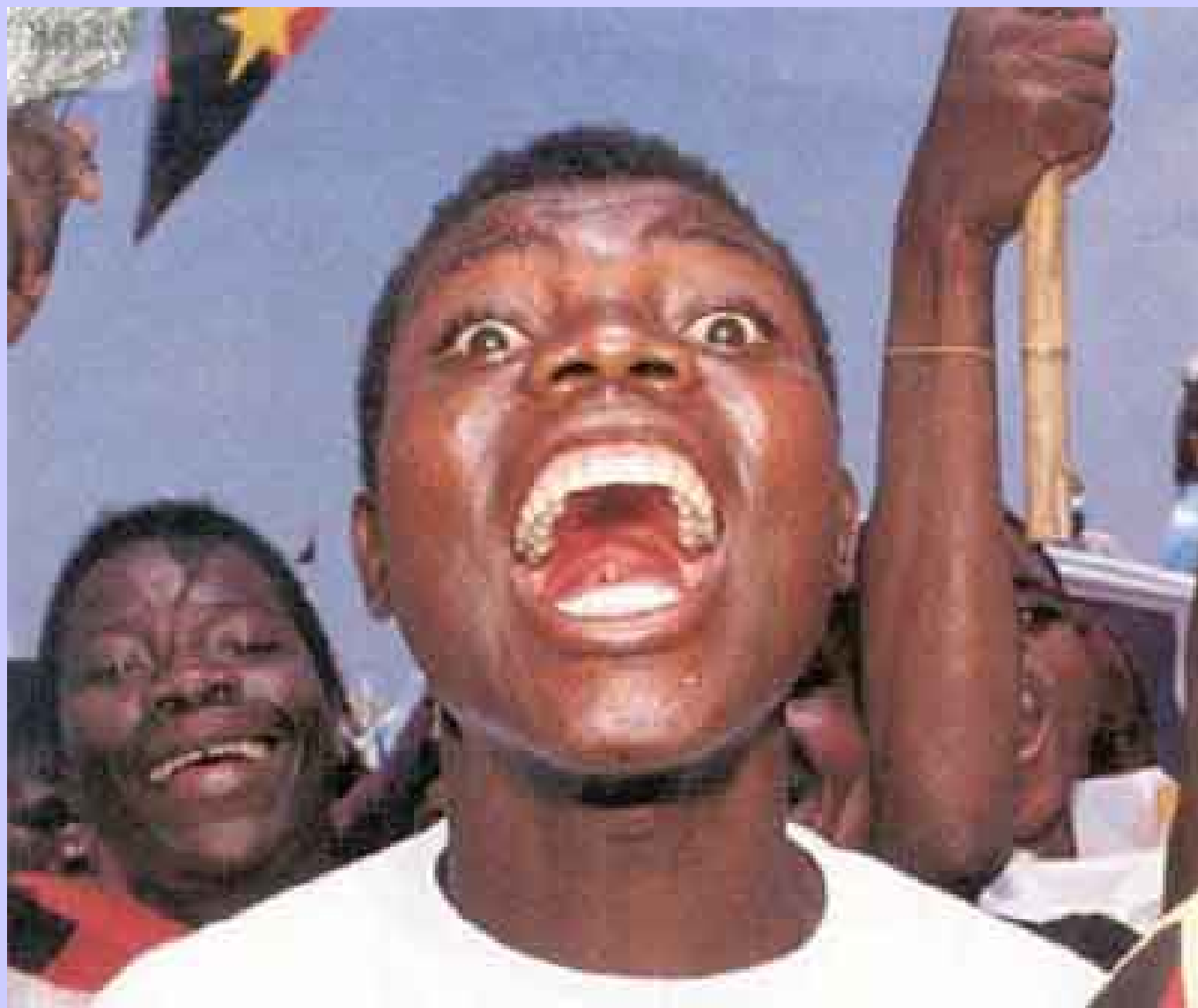
**ADEQUATE VITAMIN D:** With adequate vitamin D - **about 1000 IU per day** - vitamin A is not toxic even at very high doses.

**VITAMIN A FORTIFICATION:** Fortification of lowfat milk, cereals, etc. with vitamin A in northern countries, such as Sweden, where vitamin D intakes are inadequate, has led to osteoporosis.

**BEST RATIO:** The ratio of A to D in cod liver oil should be at 10 to 1 or less. Many brands of cod liver oil contain almost no vitamin D, which is removed during processing.

**HIGH VITAMIN COD LIVER OIL:** Available through our recommended suppliers, has good A/D ratios, and supplies a good level of vitamin A in small amounts of cod liver oil.







# Sources of Fat-Soluble Activators in the Traditional African Diet



# Sources of Fat-Soluble Activators in the Traditional American Diet



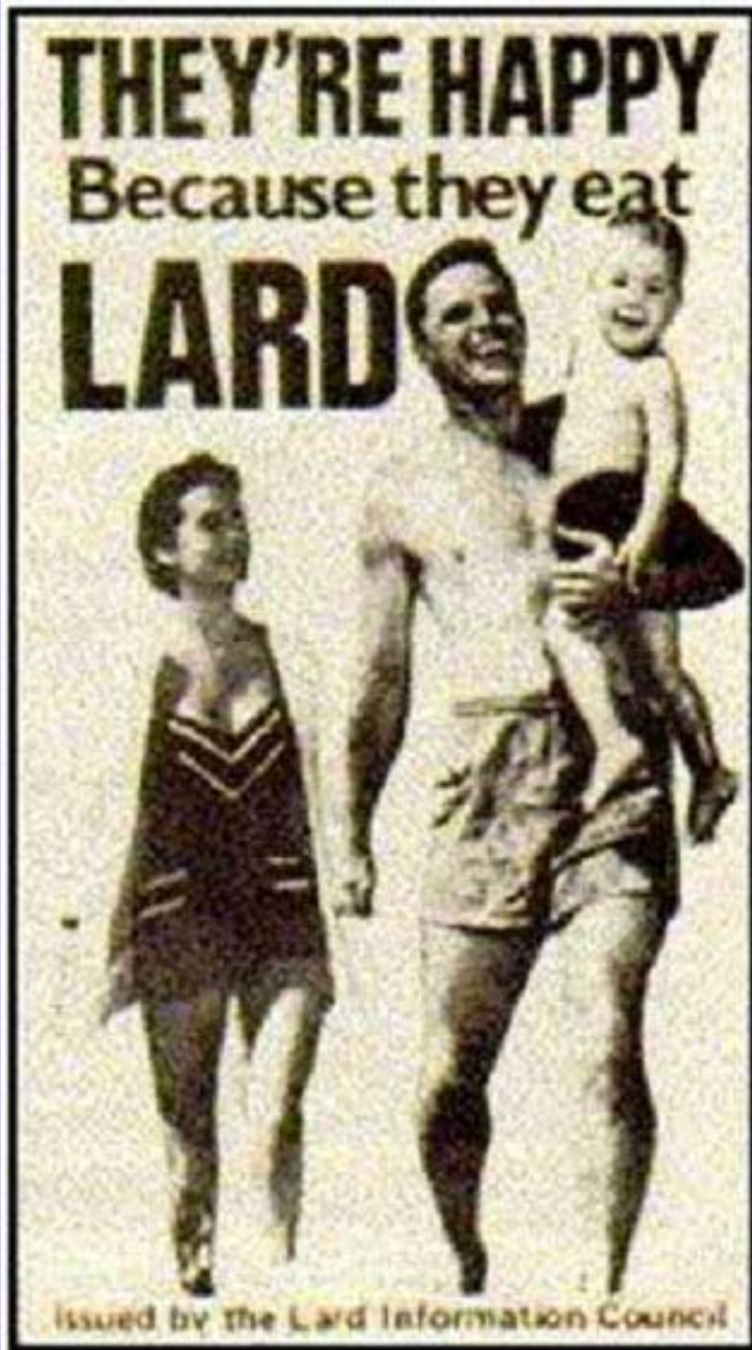
Also:  
Organ meats  
such as liver,  
and contained  
in sausage,  
scrapple,  
liverwurst,  
etc.

# Skinless Chicken Breasts?

	Vitamin A per 100 grams
Skinless breast	21 IU
Breast with skin	83 IU
Skinless dark meat	72 IU
Dark meat with skin	201 IU
Chicken livers	13,328 IU







Vitamin D in lard helps the body make neuro-chemicals that protect against depression.

# Price Factor or Activator X

**CATALYST:** Discovered by Weston Price, a potent catalyst for vitamin and mineral absorption.

**GROWTH:** Important factor in the growth of children; has potent curative powers.

**SACRED FOODS:** Found in foods considered sacred by primitive populations--liver and other organ meats from grazing cattle; marine oils, fish eggs and shellfish; and butter from cows eating rapidly growing green grass.

**BASIS:** Green growing plants which have an unknown factor that animals transform and store in certain fatty tissues.

**PRIMITIVE DIETS:** All healthy primitive groups had a source of the Price Factor in their diets.

# Activator X = Vitamin K<sub>2</sub>

**ANIMAL FORM:** K2 is the animal form of vitamin K, made from K1, the plant form

**GROWTH:** Plays important role, especially in facial development. (Sign of deficiency: Underdevelopment of middle third of the face.)

**BONES AND TEETH:** Needed for deposition of phosphorus and calcium in bones and teeth

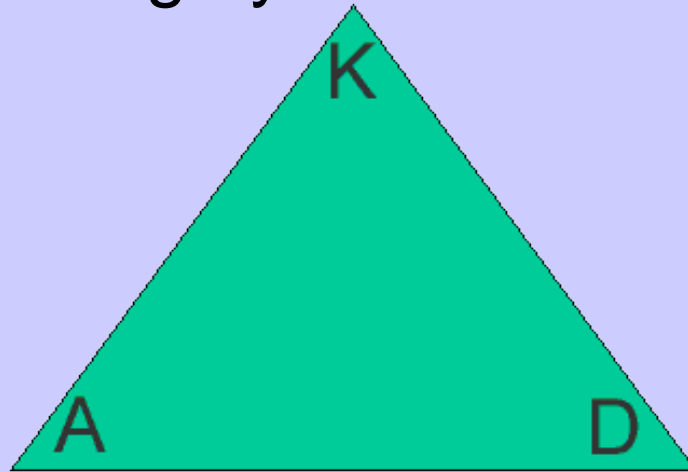
**HEART DISEASE:** Prevents calcification and inflammation of the arteries

**BRAIN:** Involved in synthesis of myelin sheath; supports learning capacity

**REPRODUCTION:** Vital for normal reproduction

# The Synergy of Vitamins A, D and K

Vitamin K activates proteins after signaling by Vitamins A and D



Vitamins A and D tell cells to make certain proteins

# Food Sources of Vitamin K

## TESTED SOURCES

Natto (fermented soy)

Goose Liver

Cheeses

Egg Yolk

Butter

Chicken Liver

Fatty Meats

Sauerkraut

## OTHER PROBABLE SOURCES

Goose, Duck and Chicken Fat

Crustacean "Butter"  
(Hepatopancreas)

Bone Marrow

Other Organ Meats

Fish Eggs

Fermented Cod Liver Oil



Peruvian Girl with  
Dried Fish Eggs. . .  
“for healthy babies.”

Activator X

Vitamin A

Vitamin D

Zinc

Iodine

Special Fatty Acids

All essential to healthy  
reproduction.



# High-Vitamin Cod Liver Oil and High-Vitamin Butter Oil

Dr. Weston Price found that **high-vitamin cod liver oil** (source of vitamins A and D) given with **high-vitamin butter oil** (source of vitamin K) was a very powerful combination for mineral absorption. He used this combination to treat tooth decay, bone and growth problems, arthritis and many other disease conditions.



If butter oil is not available, include other sources of vitamin K in the diet when taking cod liver oil.

# How Much Cod Liver Oil?

	<b>VITAMIN A</b>	<b>VITAMIN D</b>
<b>Maintenance Dose</b>	10,000 IU*	1000 IU
<b>Pregnancy and Lactation</b>	20,000 IU	2000 IU
<b>Illness or Recovery from Surgery</b>	Up to 90,000 IU for short period	9000 IU
<b>Babies and Children</b>	5000 IU	500 IU

- From 1 teaspoon high-vitamin CLO or 2 teaspoons regular cod liver oil. Use only WAPF-recommended brands.

# Taking Cod Liver Oil

**MIX WITH WATER, FRESH JUICE OR CREAM:** Much easier than taking CLO on a spoon! Give to babies in an eye dropper

**BOOKS ON INFANT FEEDING:** Before 1950, recommended 2 teaspoons cod liver oil for babies 3 months and older.

**SYNERGY:** Cod liver oil works synergistically with saturated fat. The best combination is cod liver oil in a diet containing butter from grass-fed cows.

**HIGH-VITAMIN BUTTER OIL:** Recommended in addition to CLO for pregnant, nursing women and those with health problems.

# Key Nutrients for Brain Development

**VITAMIN A:** Cod Liver Oil, Liver, Butter and Egg Yolks from Grass-Fed Animals

**VITAMIN D:** Cod Liver Oil, Lard, Butter and Egg Yolks from Grass-Fed Animals

**VITAMIN K:** Butter, Egg Yolks and Organ Meats from Grass-Fed Animals

**CHOLINE:** Liver, Egg Yolks

**DHA:** Cod Liver Oil, Liver, Butter, Egg Yolks

**ZINC:** Red Meat, Shell Fish

# Liver: No food higher in nutrients

Per 100 g	<b>Apple</b>	<b>Carrots</b>	<b>Red Meat</b>	<b>Liver</b>
Phosphorus	6 mg	31 mg	140 mg	476 mg
Iron	.1 mg	.6 mg	3.3 mg	8.8 mg
Zinc	.05 mg	.3 mg	4.4 mg	4.0 mg
Copper	.04 mg	.08 mg	.2 mg	12 mg
Vitamin B2	.02 mg	.05 mg	.2 mg	4.2 mg
Vitamin A	0	0	40 IU	53,400 IU
Vitamin C	7 mg	6 mg	0	27 mg
Vitamin B6	.03 mg	.1 mg	.07 mg	.73 mg
Vitamin B12	0	0	1.84 mg	111.3 mg

Eat liver fried, grilled, with bacon, in sausage, pate and liverwurst.

# Calcium

**PRIMITIVE DIETS:** At least 1500 mg per day

**US GOV'T RECOMMENDATION:** 800-1200 mg per day

**1500 Mg Calcium is in:**

- 5 Cups Whole Milk = 805 calories
- 7-8 Ounces Cheese = 900 calories
- 40 Carrots = 1680 calories
- 9 Cups Ice Cream = 2517 calories
- 32 Chocolate Cupcakes = 4117 calories
- 4.5 Cups Almonds = 4077 calories
- 78 Slices Whole Wheat Bread = 4305 calories





4. All cultures cooked some or most of their food...  
but they always ate some of their animal foods raw.

# Examples of Raw Animal Foods

**Raw milk, butter and cream**

**Raw cheeses**

**Raw and marinated fish**

**Raw shellfish (oysters, etc.)**

**Traditional ethnic raw meat dishes  
(steak tartare, carpaccio, kibbeh, etc.)**

# Vitamin B6 Deficiency Linked to

- **Diabetes**
- **Heart disease**
- **Nervous disorders**
- **Cancer**
- **Kidney failure**
- **Asthma**
- **PMS**
- **Morning sickness**
- **Toxemia of pregnancy**
- **Alcoholism**
- **Sickle cell anemia**
- **Carpel Tunnel Syndrome**



# 5. High Levels of Enzymes and Beneficial Bacteria



# Types of Enzymes

<b>METABOLIC</b>	<b>DIGESTIVE</b>	<b>FOOD</b>
(1,000s discovered)	(about 22)	(3 types)
Delta desaturase	Pancreatin	Amalyses
Superoxide dismutase	Pepsin	Lipases
Gluththione peroxidase	Trypsin	Proteases
Catalase	Lactase	
Lysyl oxidase	Galactase	
	Phosphatase	

When the diet contains food enzymes, the body is spared from making some digestive enzymes and therefore has more energy.

Food enzymes are destroyed at 118° F wet heat, 150° F dry heat.

# Examples of Enzyme-Rich Foods

**Raw dairy products**

**Raw meat and fish**

**Raw honey**

**Tropical fruits**

**Cold pressed oils (extra virgin olive oil)**

**Wine and unpasteurized beer**

**Lacto-fermented (enzyme enhanced)**

**vegetables**

**meats**

**dairy products**

**fruits**

**fish**

**beverages**



# Beneficial Bacteria

**OLD PARADIGM:** Healthy human body is sterile and microbes attack it, making us sick.

**NEW PARADIGM:** Healthy human body lives in symbiotic relationship with microorganisms.

**SIX POUNDS** of healthy bacteria in our digestive tract

- Digest our food

- Assist in assimilation

- Create nutrients

- Protect us against toxins

- Help us feel good

Without good bacteria, we are dead!

# Legion of Little Helpers in the Gut Keeps Us Alive

By RICK WEISS  
Washington Post Staff Writer

So you think you are the self-reliant type. A rugged individualist.

Well, give it up. You'd be nothing without the trillions of microbial minions toiling in your large intestine, performing crucial physiological functions that your highfalutin human cells wouldn't have a clue how to do.

That's one of the humbling truths emerging from the most thorough census yet of the bacterial tenants homesteading in our bodies. The new view, made possible by cutting-edge DNA screening methods, shows that the vaunted human genome — all the genes in our cells — is but a fraction of what it takes to make a human.

In fact, it's time to stop thinking of yourself as a single living thing at all, say the scientists behind the new work. Better to see yourself as a "super-organism," they say: a hybrid creature consisting of about 10 percent human cells and 90 percent bacterial cells.

"The numbers might strike fear into people, but the overall concept is one we have to understand and adjust to," said Steven Gill, a microbial geneticist who helped lead the study at the Institute for Genomic Research in Rockville.

A better understanding of the bacteria colonizing our bodies could have far-reaching medical implications. In the not-too-distant future, Gill and others predicted, doctors will test for subtle changes in the numbers and kinds of microbes in people's guts as early indicators of disease. Doctors may prescribe live bacterial supplements to bring certain physiological measures back into normal range. And drug companies will invent compounds that mimic or amplify the actions of helpful bacteria.

"These microbes are master physiological chemists," said Jeffrey I. Gordon of Washington University in St. Louis, another team member. "Understanding their biosynthetic capabilities and following the pathways by which they operate could be the starting point for a 21st-century pharmacopoeia."

Scientists have long recognized that the number of human cells in the body is dwarfed by the 100 trillion or so bacteria living in and on it. It's a daunting reality obscured by the fact that human cells are much bigger than bacterial cells. For all their numbers, bacteria account for only about three pounds of the average person's weight.

Just how important those three pounds

are, however, has been difficult to appreciate until now. Most bacteria are too finicky to grow in laboratory dishes. As a result, little was known about who these majority shareholders really are and what, exactly, they are doing to and for us.

The new study, described in last week's issue of the journal *Science*, took a novel approach. Rather than struggling to grow the body's myriad microbes and testing their ability to perform various biochemical reactions — the methods scientists traditionally use to classify bacteria — the team used tiny molecular probes resembling DNA Velcro to retrieve tens of thousands of snippets of bacterial DNA from smidgens of the intestinal output of two volunteers.

By comparing the DNA sequences of those snippets with those of previously studied bacteria, the team was able to sort many of the invisible bugs into known families.

Hundreds of others, it became clear, belong to microbial families unknown to science until now.

But the team members went further. By comparing the genetic puzzle pieces with similar sequences stored in databases, they were able to determine what biological functions many of these microbes are performing in the gut. And, as it turns out, no small number of those functions are crucial to human survival.

Some of the bacteria have the genetic machinery to make essential vitamins that are not found in the diet and that human cells can barely manufacture, including several B vitamins. Others make enzymes that can break the chemical bonds in plant fibers, or polysaccharides, where a plant's nutritional energy is stored.

"We have very few of those linkage-breaking enzymes encoded in our own genome, but these microbial genomes have a whole arsenal of gene products to degrade plant polysaccharides to energy," Gordon said.

Some bacteria in the gut break down flavonoids and other chemicals made by plants that could cause cancer or other illnesses if they were not neutralized in the intestines.

Others have the genetic capacity to scavenge hydrogen gas from the gut — a by-product of digestion that can kill helpful bacteria — and convert it into methane. That makes the intestines a more biologically friendly place, while contributing in sometimes embarrassing moments to Earth's accumulation of greenhouse gases.

And in one especially touching example, bacteria in the gut make generous quantities of an enzyme that facilitates the produc-

tion of butyryl coenzyme A, a fatty acid that is a favorite food of the cells that line the colon.

"We provide them a great place to live," study author David A. Relman of Stanford University said of the bacterial cells, "and they are feeding the lining of our gut."

The new work does not purport to be a complete survey of all microbes in the human gut. And it did not even take a stab at the body's other pockets of microbial diversity — primarily the nose and mouth, the vagina, and the skin. But it demonstrates that the DNA-based approach has the potential to reveal at last the metabolic details of our many mini-mes, said Claire M. Fraser-Liggett, president and director of the Institute for Genomic Research.

With the technology improving and getting cheaper, she said, it won't be long before it is easy to monitor a person's microbial changes from day to day — or compare bacterial population structures among individuals who have different diets or health histories.

"One question we need to tackle is: Is there such a thing as a core microbiome, a set of organisms or bacterial genes you find in most or all individuals?" Fraser-Liggett said. "It may be that microbes are very stable and diet doesn't play a huge role. Or it may be that this is a snapshot in time reflecting something they ate in their last meal."

With that kind of information in hand, doctors could think about prescribing particular "probiotic" foods or supplements to change a patient's microbiome in healthful ways, or adjusting a patient's diet to make a better fit with the bugs that the patient is saddled with.

"To ignore our microbial side would be to ignore an important contributor to our health and our biology," Gordon said.

Edward DeLong, a professor at the Massachusetts Institute of Technology who has used similar techniques to study marine microbial diversity, said he was not completely comfortable with the idea that people are super-organisms. "I'm not sure where the super-organism ends and the environment begins," he said.

But he said he appreciated the focus on the positive side of bacteria.

"We typically think of microbes as being associated with human disease," DeLong said. "But they are always with us and are associated most of the time with human health."

Researcher Meg Smith contributed to this report.



ILLUSTRATION BY PATTERSON CLARK — THE WASHINGTON POST; STOCK PHOTO

## Gut Bacteria: Our Essential Assistants

Five ways that intestinal microbes keep us alive, by doing what we can't:

- Vitamin synthesis, including several B vitamins.
- Breakdown of complex plant sugars to extract energy.
- Fermentation of dietary fiber.
- Conversion of hydrogen gas to methane.
- Breakdown of plant toxins that cause cancer and other diseases.

# Lacto-Fermented Condiments provide enzymes and good bacteria



**Beet relish**

**Ginger carrots**

**Cortido**

(spicy So. American sauerkraut)

**Pineapple chutney**

**Raspberry syrup**

**Apricot butter**



# Lacto-Fermented Beverages

**Kombucha**

**Kvass**

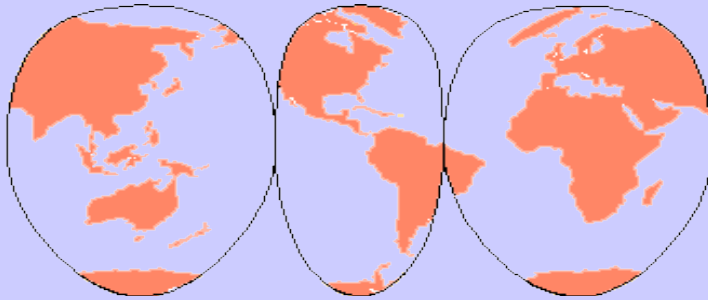
**Sour Grain  
Drink**



# Resources

***The Weston A. Price Foundation***

**[www.westonaprice.org](http://www.westonaprice.org)**



Quarterly Magazine

Informational Brochures

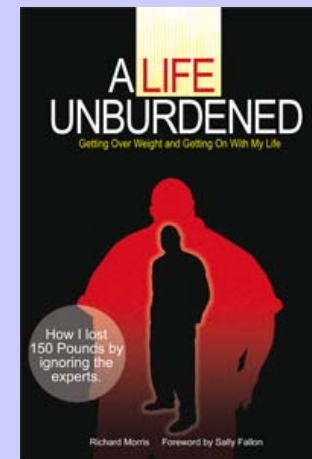
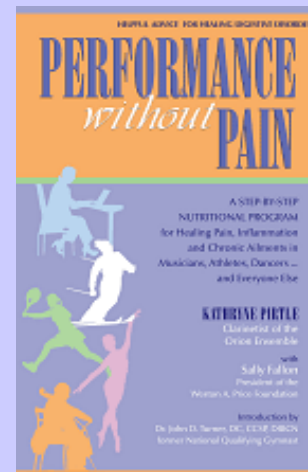
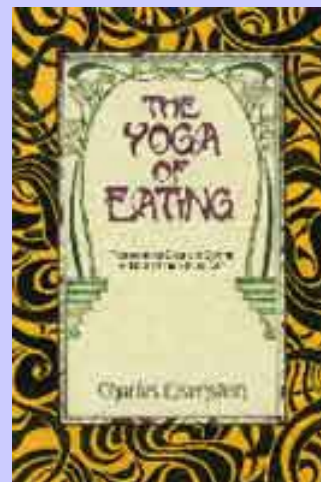
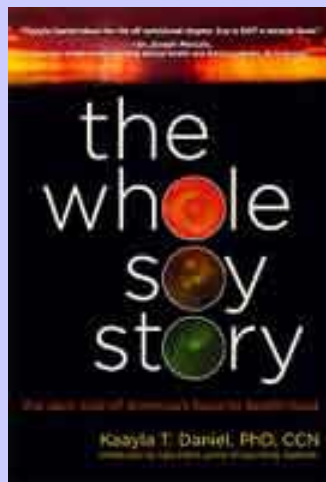
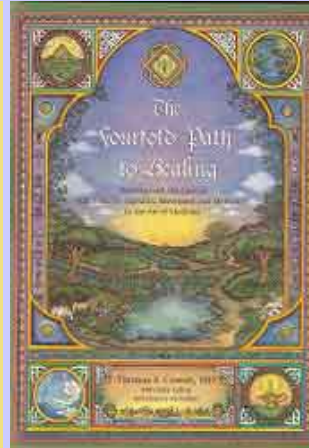
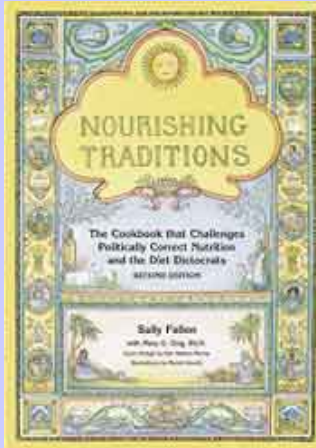
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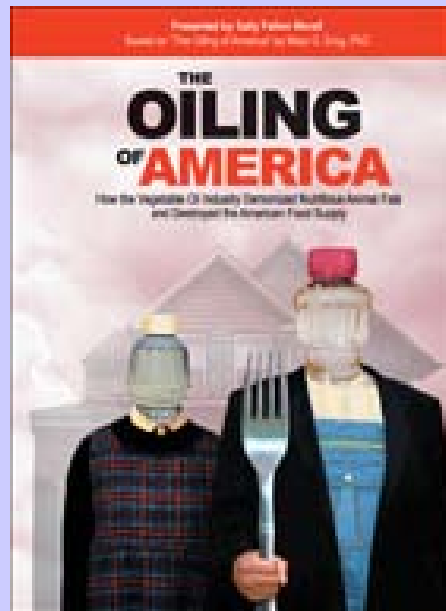
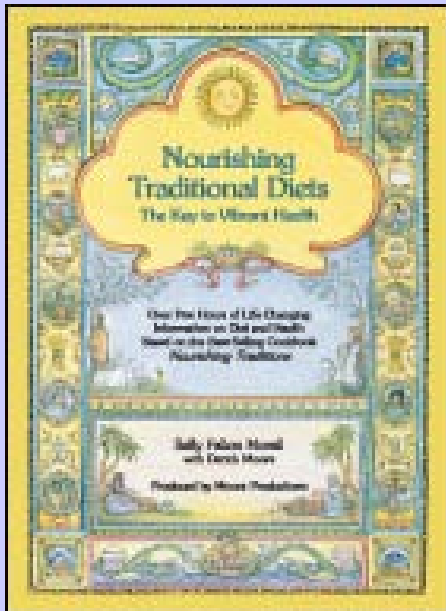
Local Chapters

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# NewTrends DVD Series

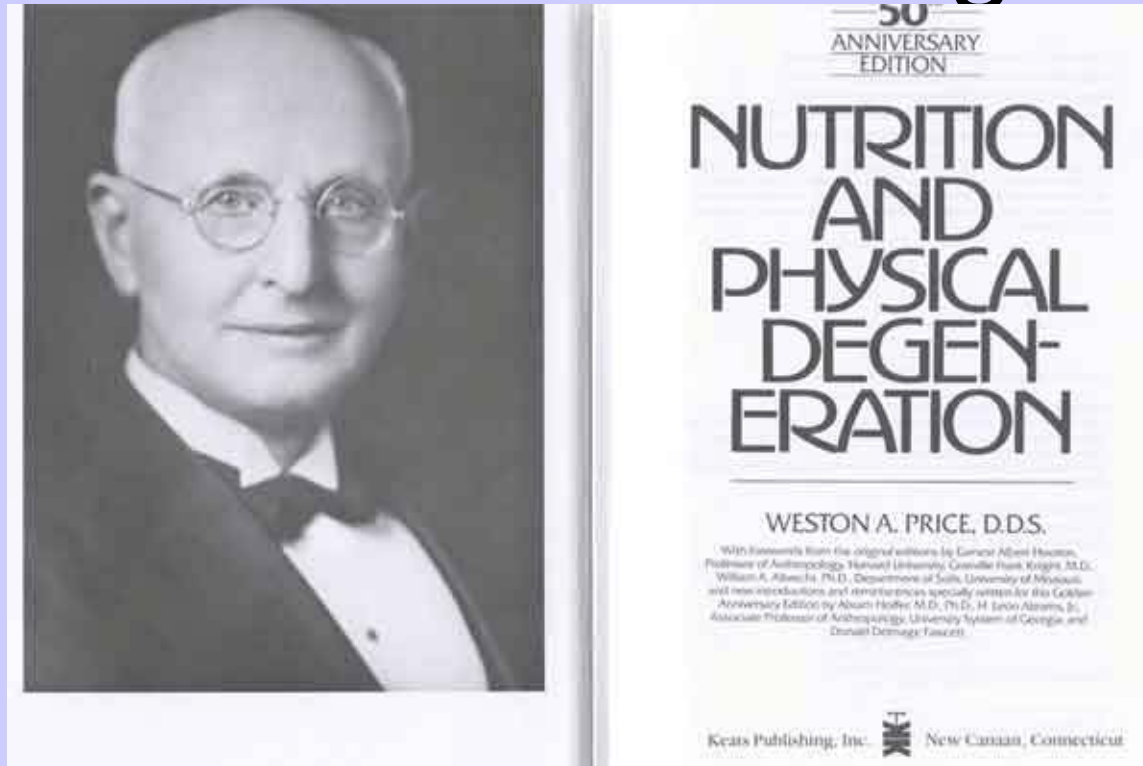


Five-Hour  
Seminar on  
Nourishing  
Traditional Diets

The Oiling of  
America



# Dr. Price's Pioneering Work



**The Price-Pottenger Nutrition Foundation**

**[www.price-pottenger.org](http://www.price-pottenger.org)**

**(619) 462-7600**

# Summary

Traditional diets *maximized* nutrients while  
modern diets *minimize* nutrients

## TRADITIONAL DIETS

Foods from fertile soil  
Organ meats over muscle meats  
Animal fats  
Animals on pasture  
Dairy products raw and/or fermented  
Grains and legumes soaked/fermented  
Bone broths  
Unrefined sweeteners (honey, maple syrup)  
Lacto-fermented vegetables  
Lacto-fermented beverages  
Unrefined salt  
Natural vitamins in foods  
Traditional Cooking  
Traditional seeds/Open pollination

## MODERN DIETS

Foods from depleted soil  
Muscle meats, few organs  
Vegetable oils  
Animals in confinement  
Dairy products pasteurized  
Grains refined, extruded  
MSG, artificial flavorings  
Refined sweeteners  
Canned vegetables  
Modern soft drinks  
Refined salt  
Synthetic vitamins added  
Microwave, Irradiation  
Hybrid seeds, GMO seeds