

Back To Chiropractic Continuing Education Seminars

Nutrition ~ 6 Hours

Welcome:

This course counts as 6 Hours of CE for Nutrition for the Chiropractic Board of Examiners for the state of California.

There is no time element to this course, take it at your leisure. If you read slow or fast or if you read it all at once or a little at a time it does not matter.



How it works:

- 1. Helpful Hint: Print exam only and read through notes on computer screen and answer as you read.**
 - 2. Printing notes will use a ton of printer ink, so not advised.**
 - 3. Read thru course materials.**
 - 4. Take exam; e-mail letter answers in a NUMBERED vertical column to marcusstrutzdc@gmail.com.**
 - 5. If you pass exam (70%), I will email you a certificate, within 24 hrs, if you do not pass, you must repeat the exam. If you do not pass the second time then you must retake and pay again.**
 - 6. If you are taking the course for DC license renewal you must complete the course by the end of your birthday month for it to count towards renewing your license. I strongly advise to take it well before the end of your birthday month so you can send in your renewal form early.**
 - 7. Upon passing, your Certificate will be e-mailed to you for your records.**
 - 8. DO NOT send the state board this certificate.**
 - 9. I will retain a record of all your CE courses. If you get audited and lost your records, I have a copy.**
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The Board of Chiropractic Examiners requires that you complete all of your required CE hours BEFORE you submit your chiropractic license renewal form and fee.

NOTE: It is solely your responsibility to complete the course by then, no refunds will be given for lack of completion.

Enjoy,

Marcus Strutz DC

CE Provider

Back To Chiropractic CE Seminars

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Nutrition and Your Practice

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Author

Eat Your Ass Off...Literally

Seminar Topics

- Chronic Inflammation – it's role in the disease process.
- Human Nutrients – Where, what, when and why
- Digestion Problems – Cause and Effect
- Helping your patients with quick, easy and reliable nutrient protocols

2 Types of Injury

1. Acute; sudden, rapid onset insult
2. Chronic; repetitive, slow progressive insult
 - Today we will talk about Chronic (Pathology)
 - Specifically, Diet Induced Pathology

Dietary Induced Pathology

- Eating for Health??
- Eating for Death??
- It is your choice and your destiny
- Approximately 90% of Chronic illness is dietary induced or influenced

Our body has a wonderful system of defending, repairing and rebuilding itself. When needed, the body responds to insult/injury via the inflammation pathway. The inflammation pathway stimulates the immune system to work at a higher rate and launch the healing process.

Pro-Inflammatory chemicals are made by our body from items found in certain foods. The inflammation system is important in helping to maintain good health.

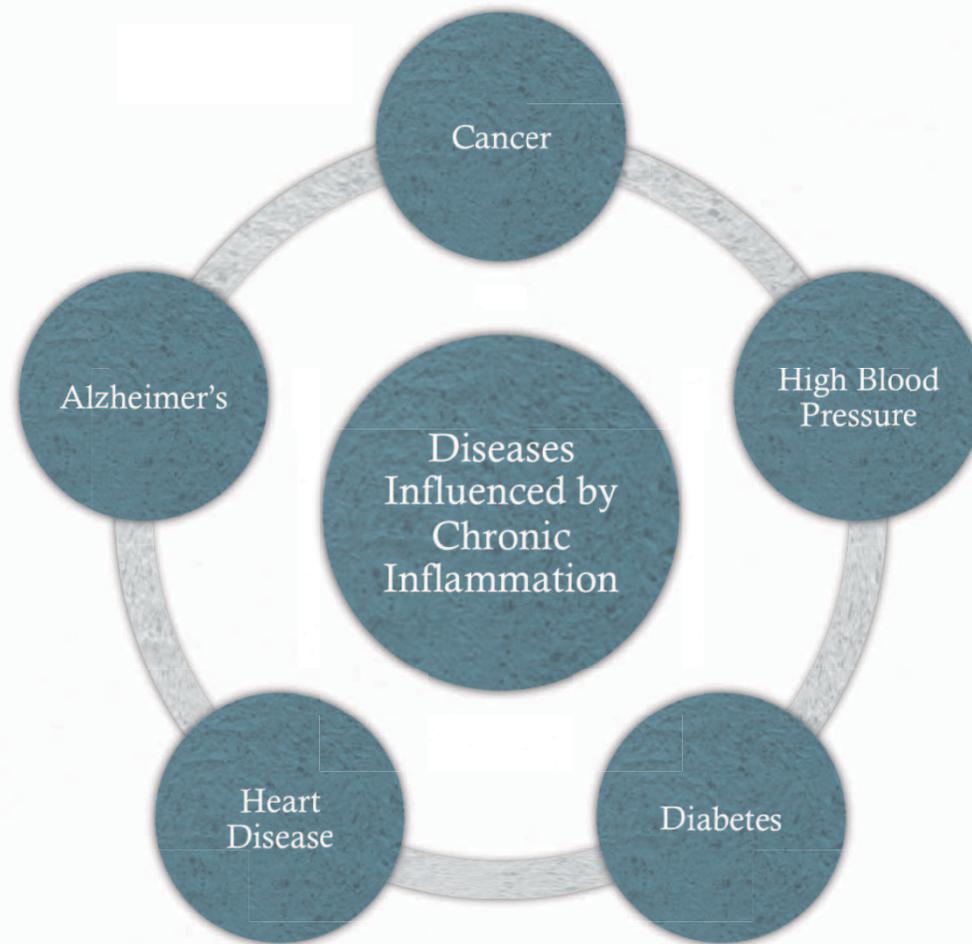
The body also creates anti-inflammatory chemicals to breakdown and eliminate the inflammation soon after the immune system has been activated. These anti-inflammatory products are also made from the nutrients contained in the food we eat.

So when we need inflammation to heal, there is a shut off mechanism to remove the excess inflammation and restore balance.

Since we get the components for helping our immune system stay strong from foods, your food choices are the most influential daily activity shaping your health. The age old adage “we are what we eat” is very accurate. Chronic pain and illness is a condition of dis-ease which is a condition or state that simply lacks the appropriate nutrient balance to maintain good health.

This imbalance occurs when we cumulatively consume foods or products that promote inflammation and destruction and do not eat enough foods that have anti-inflammatory and rebuilding properties.

Chronic Inflammation is Foundational to Disease



Why Are We so Inflamed??

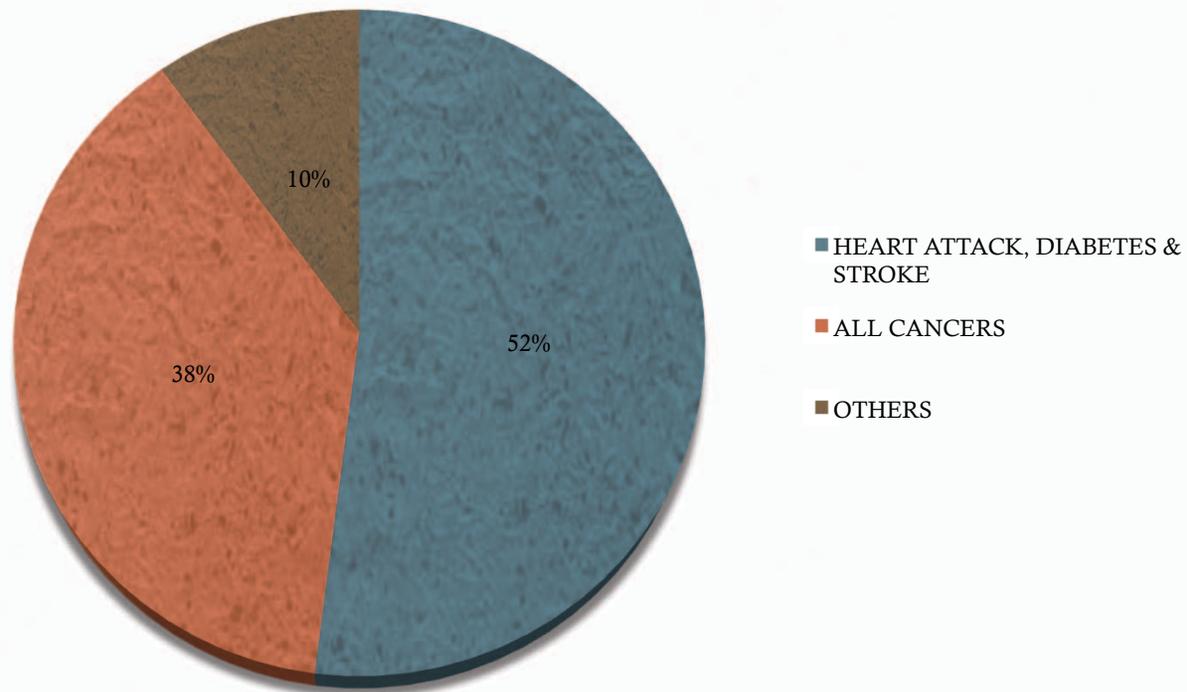
- We eat too many toxic and inflammatory foods not designed for our bodies
- We eat too many refined food products (junk foods)
- We do not eat enough life giving healing food

Most of our dietary habits and knowledge stem from marketing. Our choices revolve around catchy commercial jingles and strategic marketing campaigns.

As doctors, we have known since the late 1930's that a diet high in refined foods, animal fat and protein will promote poor health. CV disease, HBP, diabetes type II, osteoporosis, cancers, obesity are all directly linked to diet.

Top Killers of Americans Ages 55-75

Linked to poor diet (World Health Organization Stats)

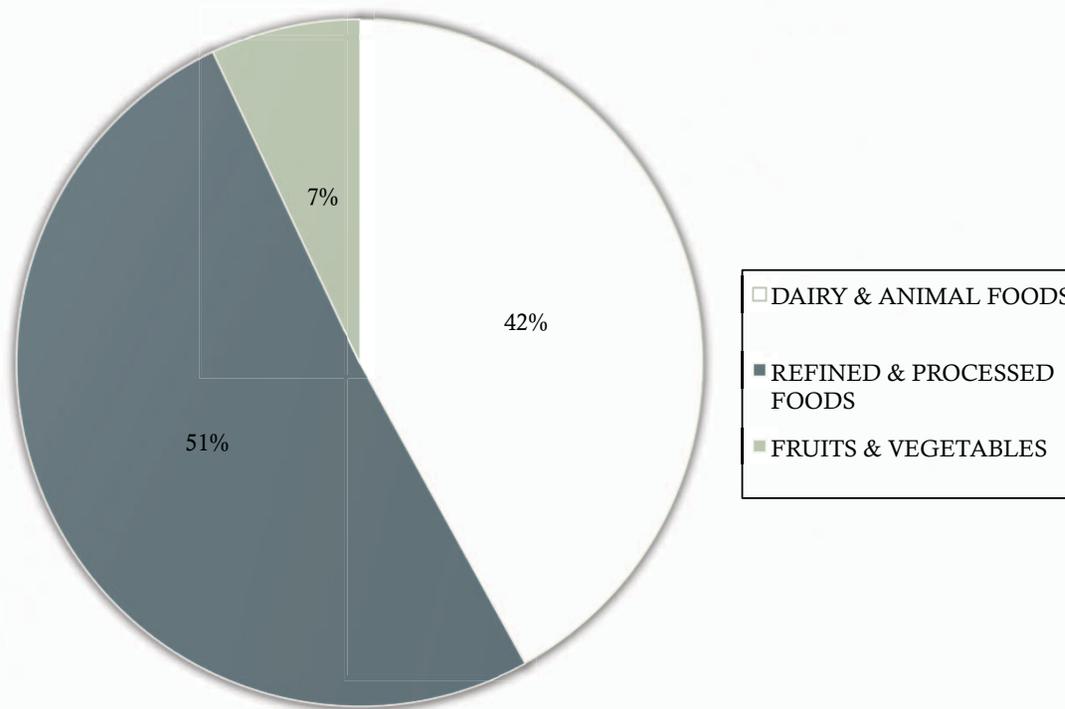


Scientific research is unfolding and showing, plant based foods offer the body the vast amount of nutrients required for optimum health. Diets heavy in animal based foods and refined food products accelerate inflammation, stimulate pain and decrease our feeling of well being.

It is important to understand what our body requires on a physiological level to maintain good health. With all the fad diets out there, it is easy to see why there is so much confusion as to what to eat.

U.S. Food Consumption by Calories

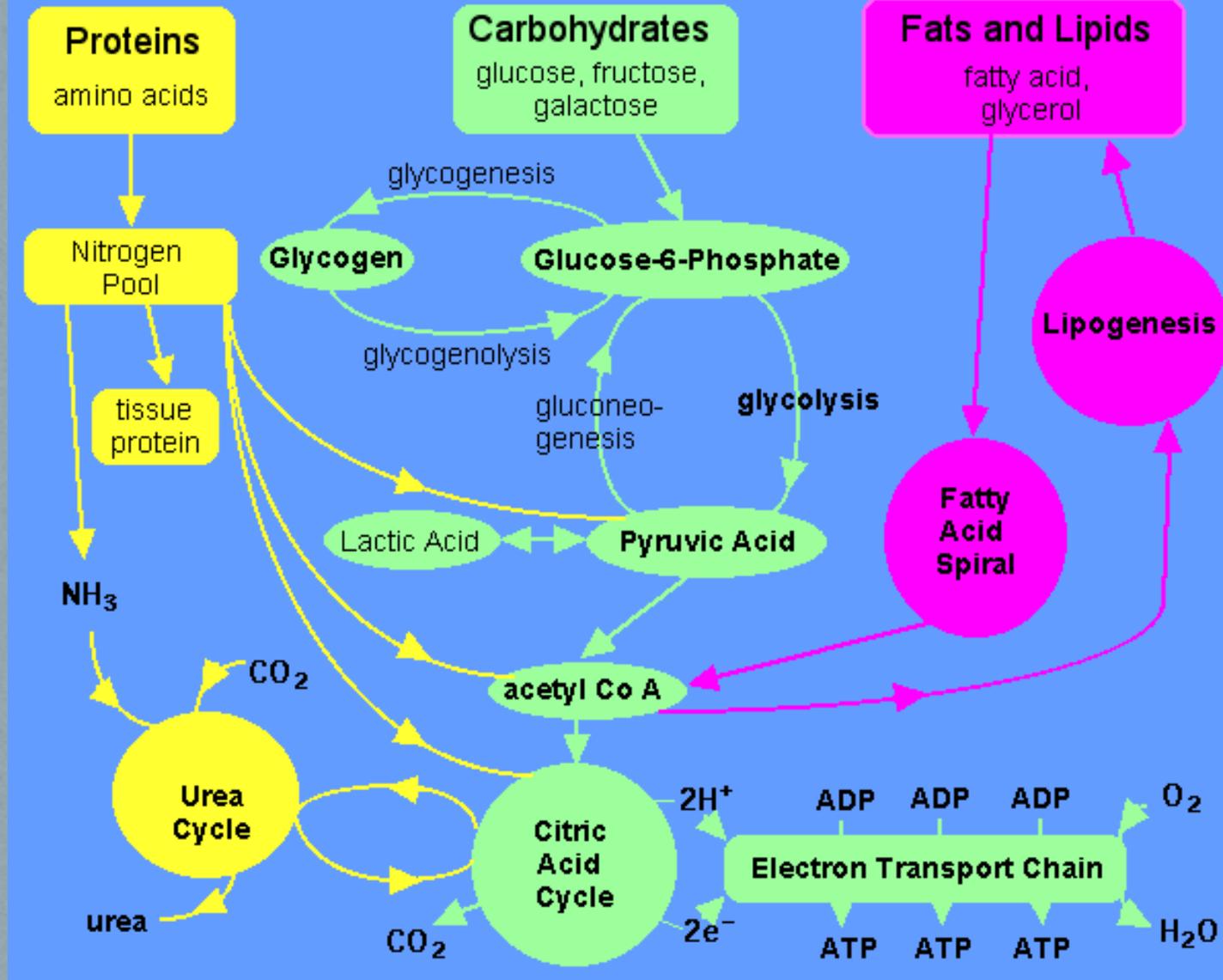
Americans currently consume about 42 percent of their calories from fiber less animal foods and another 51 percent from highly processed refined carbohydrates and extracted oils.



7 Things You Need for Optimum Health

1. Complex Carbohydrates
2. Protein
3. Fats
4. Vitamins/Minerals
5. Fiber
6. Phytonutrients
7. Fresh Water

Metabolism Summary



The American Diet

- 70% Meat & Dairy
- 20% Starch
- 5% Fruit
- 5% Vegetables

The Nutrient Packed Foods

- Whole Grains
- Legumes
- Vegetables of all colors
- Seeds and nuts
- Fruits
- Oils (raw and cooked)



Carbohydrates!!??

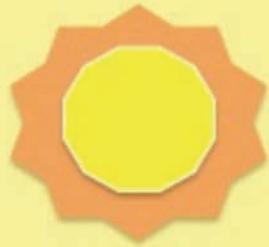
We must eat carbs for energy, repair and homeostasis. However, it is important to understand what is nature's Carbs and what is a toxic carb.

In my clinical opinion, refined carbohydrates are not carbs, they are a food industry invention. They do not occur naturally in nature.

- Your body burns carbohydrates as its primary fuel. You need complex carbs for energy, metabolic activities, neurological functions, and repair. Your body looks to burn carbohydrates in the form of glucose as the first choice for fuel. Therefore, your diet must include sufficient carbs.
- Specifically – Starches

What is Starch?

- Plants use water, carbon dioxide, and energy from the sun to form simple sugars through a process called photosynthesis. The most basic carbohydrate is the simple sugar glucose.
- Inside the plant's cells, simple sugars are linked into chains, some of them arranged in a straight line (amylose) and others in many branches (amylopectin).



Energy from the Sun



To Plants



Photosynthesis



Creating Chlorophyll, Anti-oxidants & Phytonutrients in Plants

Consumed by Humans for Optimal Health 😊

Whole Grains – Oh, that's what that means!

- When these sugar chains gather in large quantities inside a plant's cells, they form starch grains, also called starch granules (amyloplasts). Plants store in their roots, stems, leaves, flowers, seeds, and fruits the starch they produce.
- The stored starch provides them with a source of energy when they need it later, keeping them alive through the winter and fueling their reproduction the following spring.

- It's what makes starchy vegetables, legumes, and grains so healthy to eat: Their high concentration of carbohydrates not only sustains the plants but also provides the energy needed to sustain human life.
- The enzyme amylase in our saliva and intestine breaks down the long carbohydrate chains, turning them back into simple sugars. Digestion is a slow process that gradually releases these simple sugars from the small intestine into the bloodstream, providing our cells with a ready supply of energy.

Nature's Carbs

Fiber

Food sources of fiber include whole wheat, bran, fresh or dried fruits, and vegetables

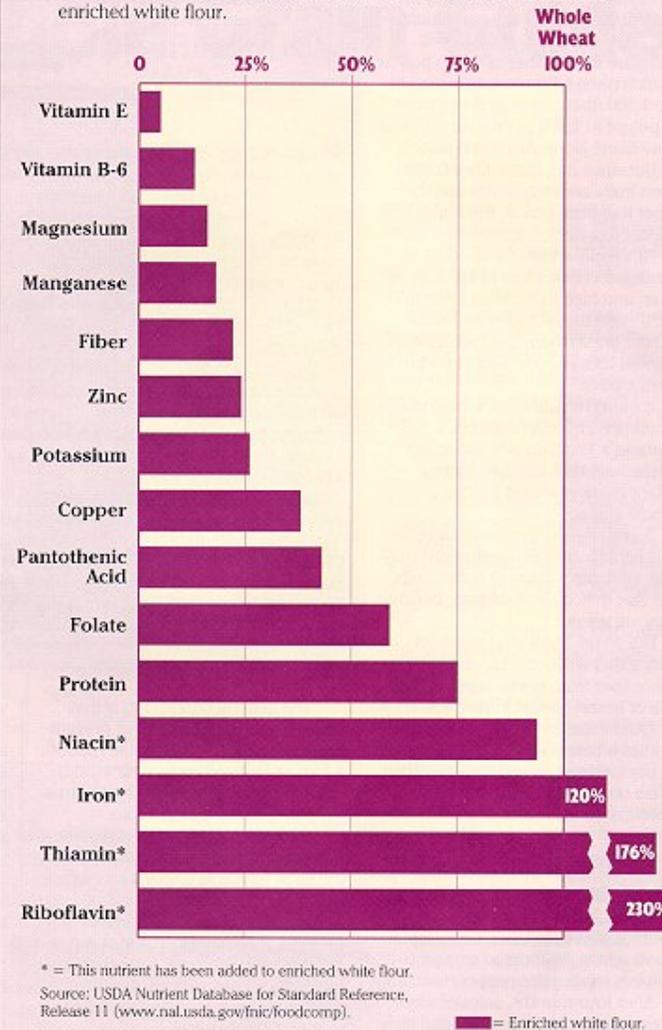


America's Carbs

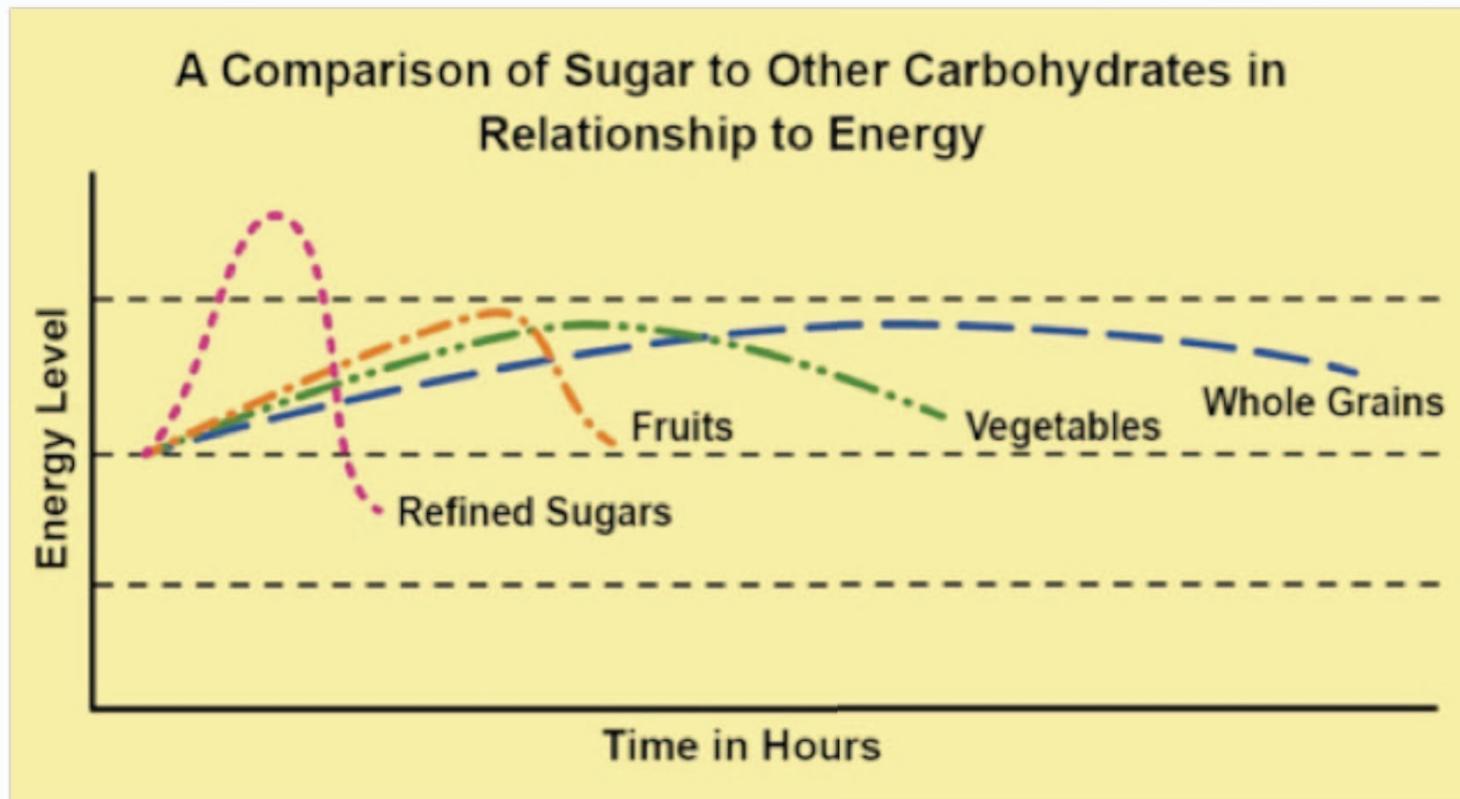


Whole vs. Refined

What's lost when whole grains are refined? This graph shows how much of 15 nutrients in whole wheat flour is left after it's milled into enriched white flour.



Refined Sugars Causes Blood Spike and Crash



- If you do not eat a sufficient supply of naturally balanced carbs (starches) in your diet, the body will “steal” glucose from your muscles for fuel. (Living muscle tissue is mostly blood, glucose, and water) This accounts for the large amount of “weight” loss in low carb diets.

Low Carb Diets

Atkins Diet

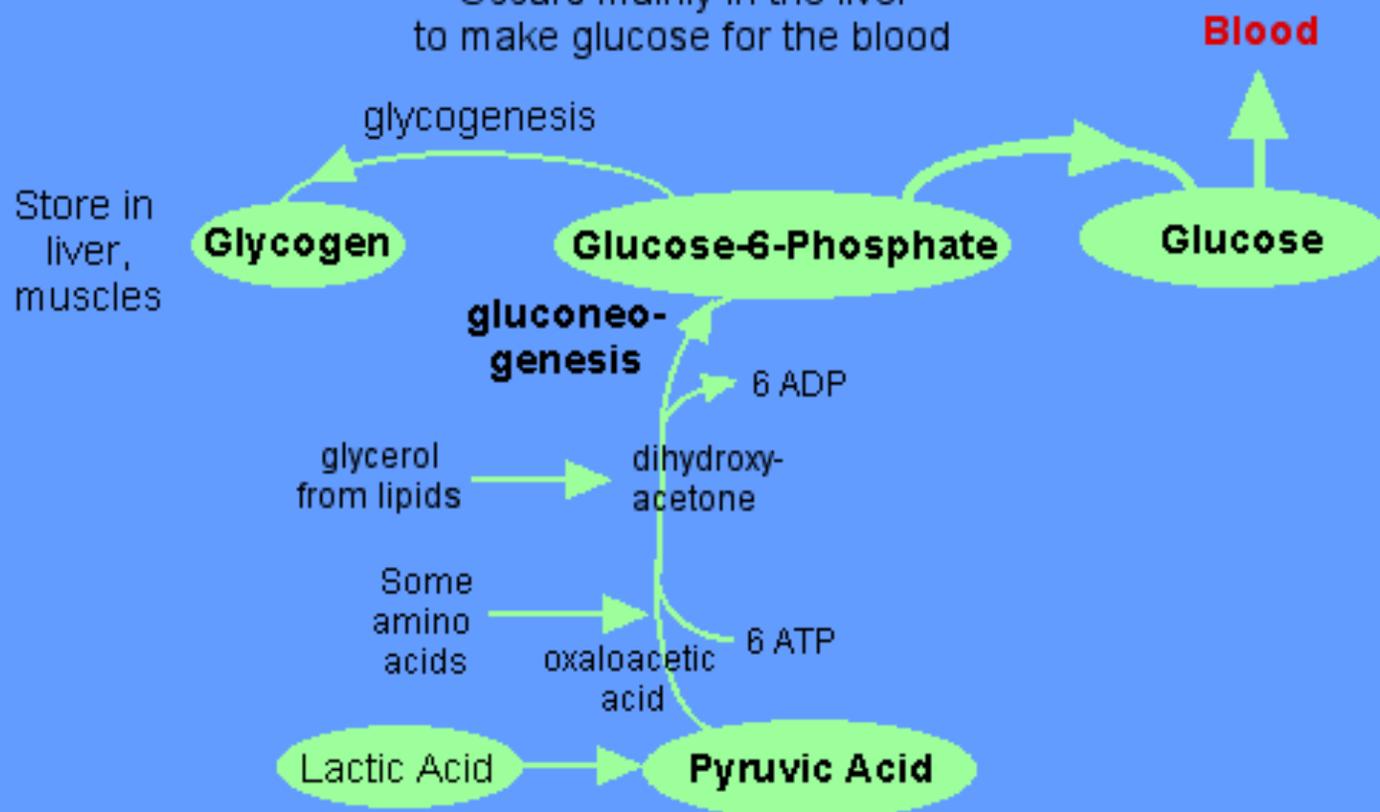
South Beach Diet

Zone Diet

If the body runs low on glucose, the body will borrow glucose from the muscles. Muscle weighs more than fat, therefore weight loss appears successful.

Gluconeogenesis

Occurs mainly in the liver
to make glucose for the blood

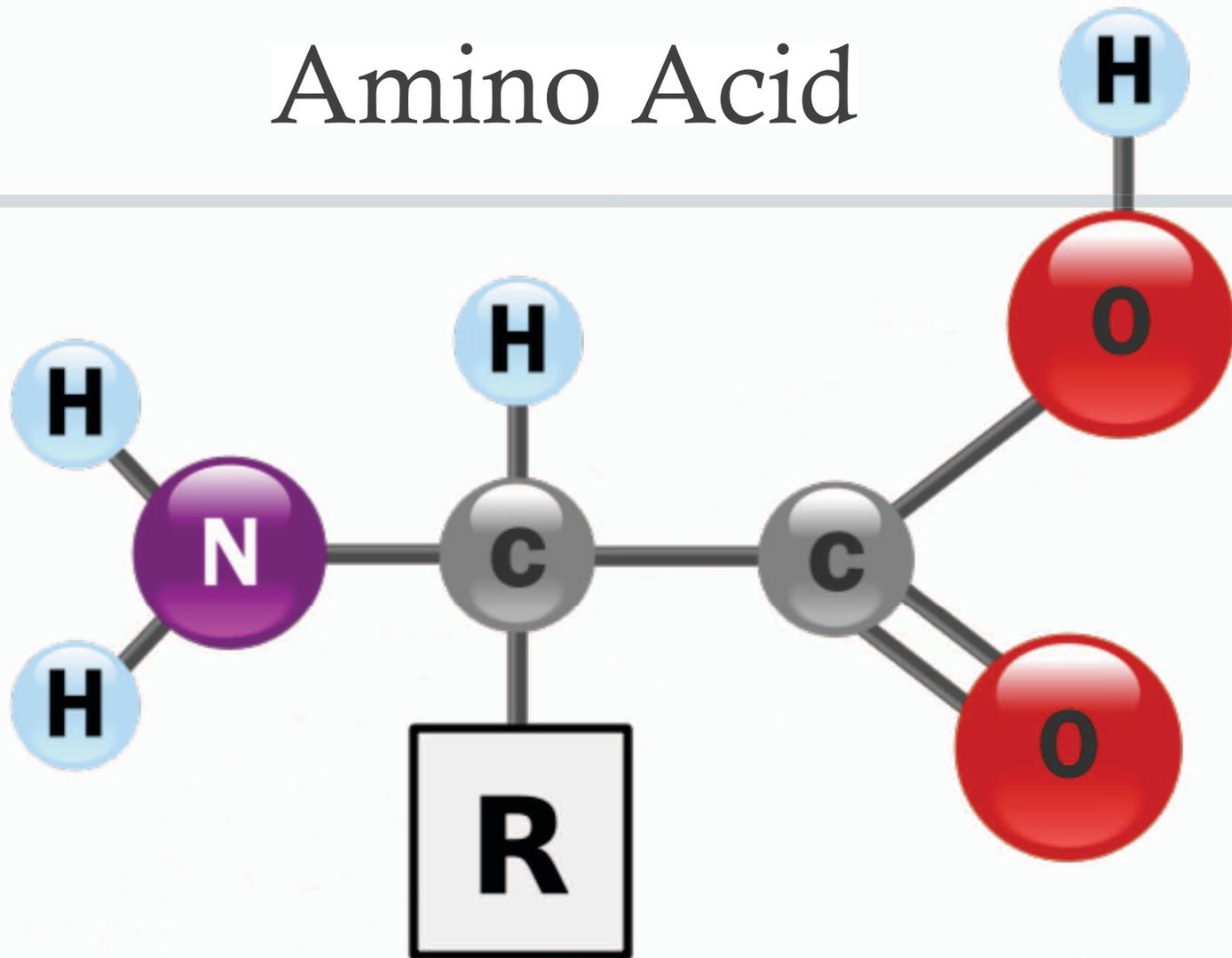


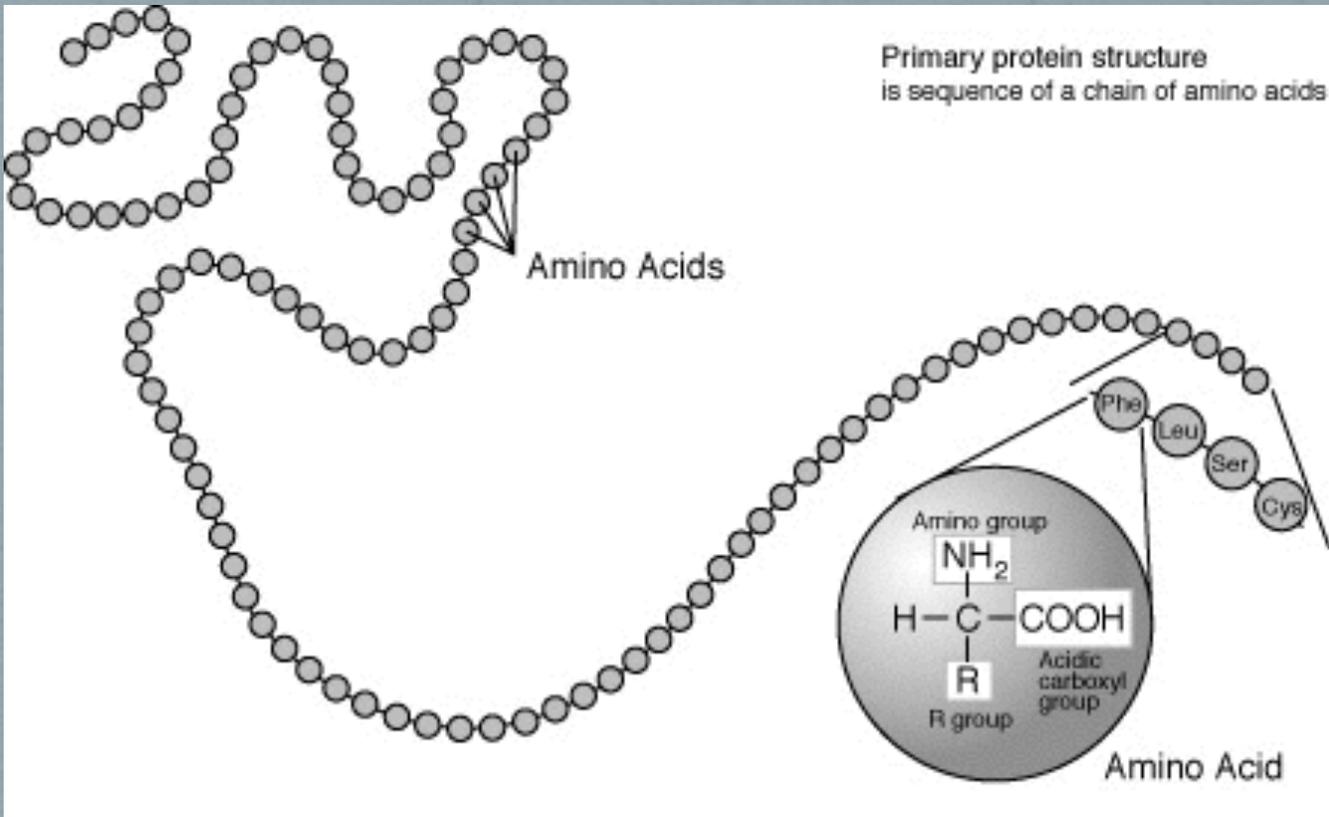
Protein

Protein is essential to the body for growth and repair. Protein is also important to transport oxygen, make antibodies for immunity, and helps to balance water within your cells.

The building blocks of protein are amino acids. The majority of amino acids can be made within your body. There are 9 “essential” amino acids. They are called “essential,” as your body cannot make them; therefore these 9 must be obtained from the foods you eat

Amino Acid

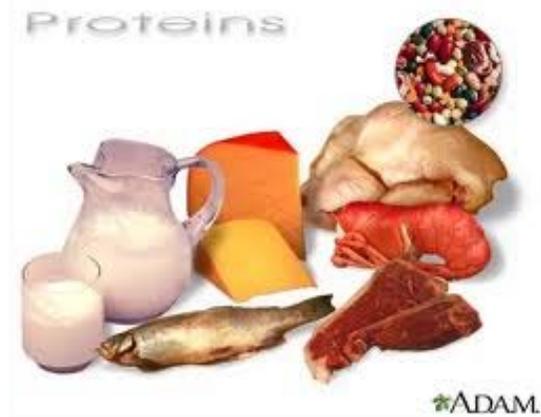
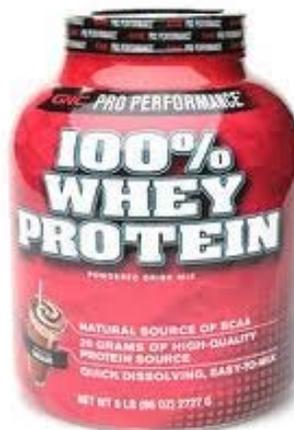
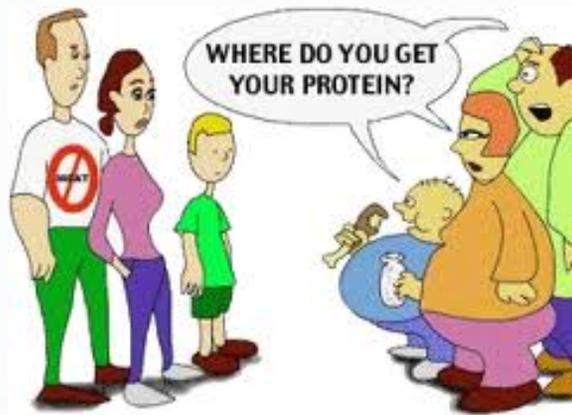




Nature's Protein



America's Protein



Too Much Protein is Harmful

Within the Standard American Diet (SAD), the average American consumes nearly double the daily requirement for protein. To compound this problem, the majority of protein consumed is derived from animal products. These animal products also are high in **unhealthy fat and cholesterol**. It is well documented, the over consumption of proteins in general, specifically animal protein, shows a direct link to health conditions such as:

- Cardiovascular Disease (heart disease)
- Osteoporosis
- Impaired kidney function.
- Cancers of the brain, breast, colon, intestines, leukemia, lymphoma, ovarian, pancreatic, prostate and stomach.

(SAD) is deficient in methyl
group compounds

High Protein Diets Can Decrease Methyl Groups

Why is Methylation Important ?

Methylation (the chemical transfer of a CH₃- group) is an essential metabolic process that takes place in each of the cells of the body. Adequate methylation is required to attain a state of maximum physical and mental health. Conversely, lack of sufficient methylation is associated with poor health that is reflected in conditions such as heart disease, stroke, cancer, loss of memory, depression, chronic fatigue, arthritis, autoimmune diseases and aging.

Methylation Reactions Related to Neuroendocrine Function

- Production of Acetylcholine
- Production of Epinephrine (adrenalin)
- Methylation is Required to Repair DNA
- Detoxication of Excess Neurotransmitters
- Detoxication of Excess Steroid Hormones
- Cell Communications are Enhanced Methylation
- Control of Histamine Excess by Methylation

Homocysteine

a methyl killer

- Homocysteine is a powerful oxidant that attacks the lipid membranes of the endothelial cells that line the arteries and veins of the circulatory system.
- The homocysteine theory is based on the fact that a dietary imbalance between too much methionine (an essential amino acid) and a deficiency of methylating nutrients (B6, B12, folic acid and methyl donors such as trimethylglycine [also known as betaine])

“When methionine reaches too high a level, our body tries to protect itself by transforming it into a particular amino acid called homocysteine,” lead researcher *Domenico Praticò*, an associate professor of pharmacology in the School of Medicine, Temple University From the 2009 Study:

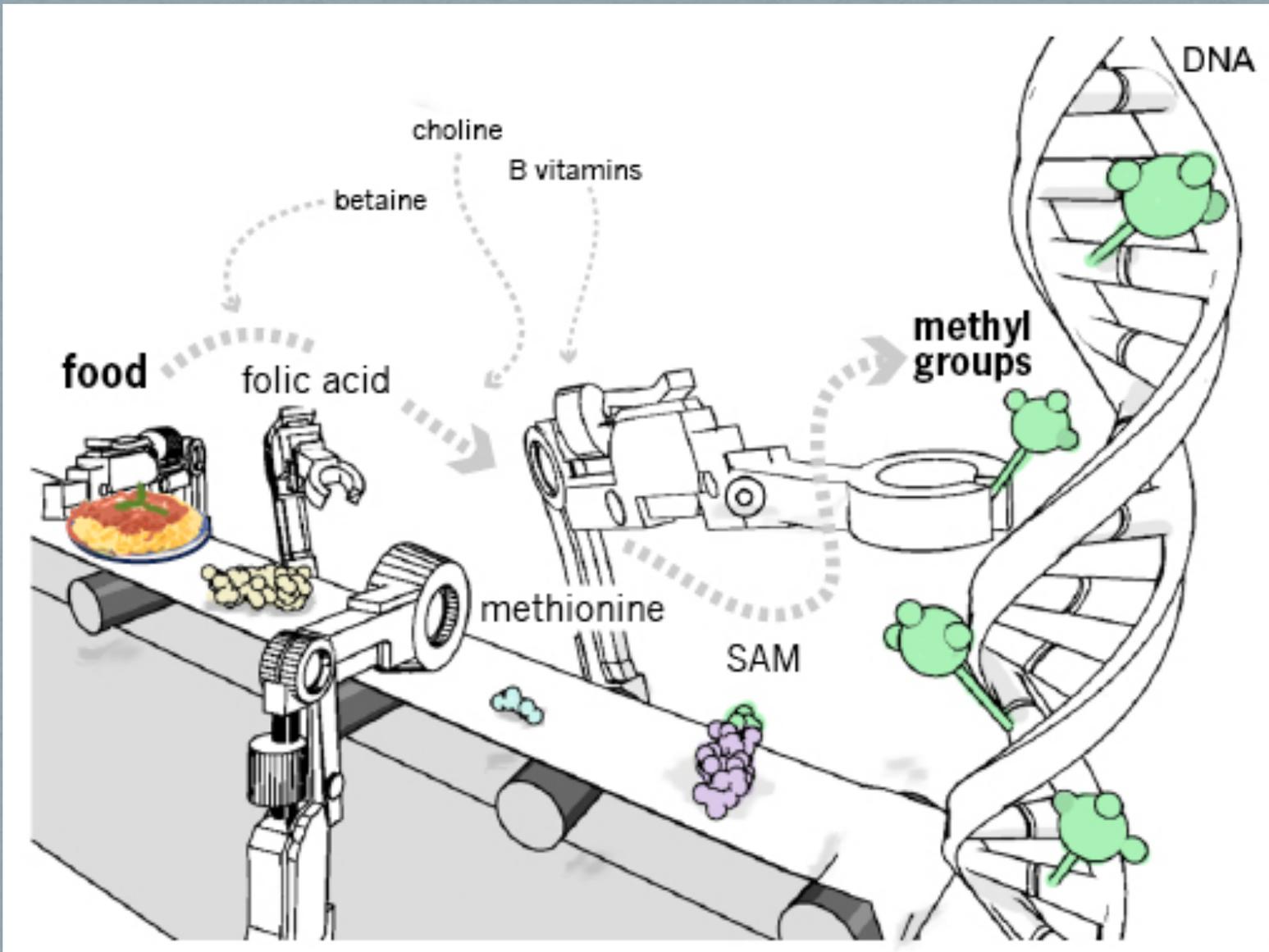
Diet high in methionine could increase risk of Alzheimer’s

Methionine

(methionine) Organic compound, one of the 20 amino acids, commonly found in animal proteins.

Betaine

- A nutrient known as a methyl donor, other such nutrients are S-adenosylmethionine (SAME), folic acid, and vitamins B6 and B12. This means that betaine carries and donates methyl molecules in the body to help make chemical processes work. Donation of methyl molecules is involved in proper liver function and cellular reproduction.
- beta een



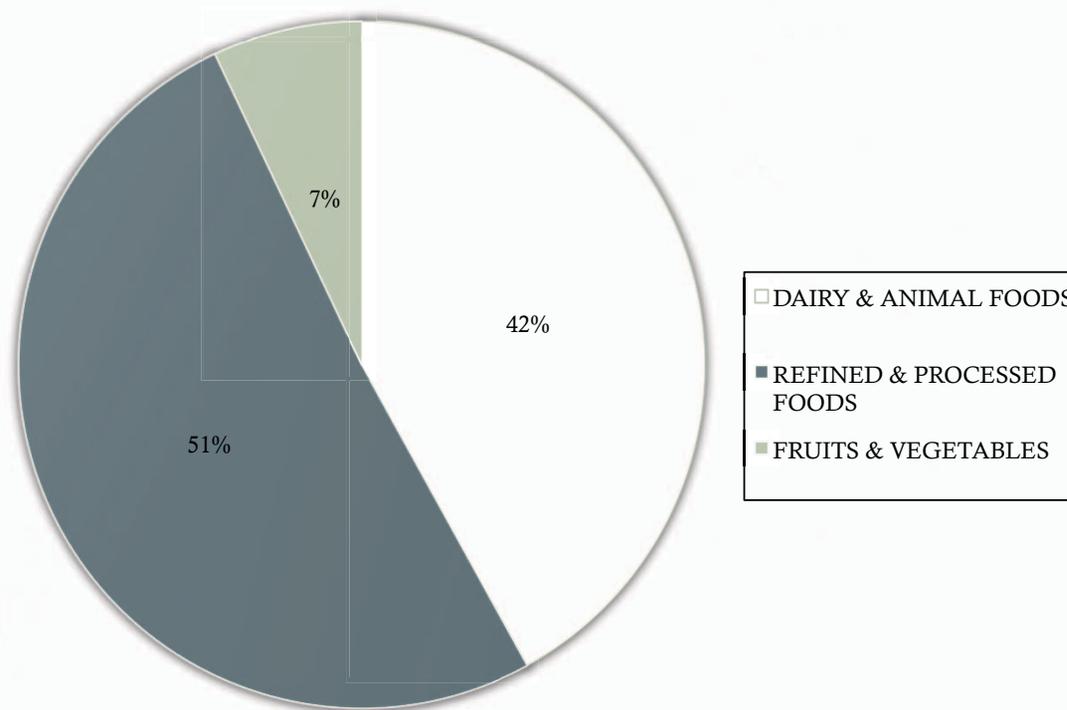
Dietary Sources of Betaine

- Include beets, broccoli, whole grains, and spinach.



U.S. Food Consumption by Calories

Americans currently consume about 42 percent of their calories from fiber less animal foods and another 51 percent from highly processed refined carbohydrates and extracted oils.



How Much Protein Do I Need??

An estimator used for daily protein intake is 0.36 grams per 1 pound of body weight. But remember, if you are overweight to begin with, do not use this estimator for your current body weight because this will calculate a higher protein intake number than you really need and you will perpetuate your health problems.

$$\text{Formula} = 0.36 \text{ grams/pound of body weight}$$

E.g. if you weigh 155 lbs. $\times .36 = 56$ grams per day

Example

If you have a 10-gallon gas can and filled it with 15 gallons of gas, obviously 5 gallons would spill out all over and make a very dangerous mess. This holds true for protein consumption. Human requirements for protein are specific and filling your system with excessive protein creates the “spilling over” problem. It has to go somewhere. This excess protein damages your entire body, specifically, blood vessels, heart, liver, kidneys and bones. In other words, excessive protein is toxic to your entire system.

The body can store fat and carbohydrates but it does not store protein. The protein must be processed, utilized and the excess eliminated. Too much intake is just that = Too Much.

Daily Protein Intake Guidelines

Males (14 yrs+)

50-75 grams

Females (14 yrs+)

45-60 grams

Pregnant Females

(Breast-feeding Mommies too)

70-85 grams

Children

1-3 yrs

15-20 grams

4-8 yrs

22-25 grams

9-13 yrs

35-45 grams

Alternate Protein Foods (low inflammatory)

Almond Butter	2 T	5 g
Black Beans	1 Cup	15 g
Broccoli	1 Cup	5 g
Brown Rice	1 Cup	5 g
Cashews	¼ Cup	5 g
Garbanzos	1 Cup	15 g
Kale	1 Cup	3 g
Lentils	1 Cup	18 g
Seitan	4 Oz	15 g
Quinoa	1 Cup	10 g
Soy Milk	8 Oz	6 g
Spinach	1 Cup	6 g
Tahini	1 T	3 g
Tempeh	3 Oz	22 g
Tofu	6 Oz	20 g
Whole Grain Bread	1 Slice	4 g

Fat in the Diet

Fats are essential for the body. The body uses fats in many metabolic functions. Dietary fats are important for the transport of the fat-soluble vitamins A, D, E and K, and aid in the absorption of other vitamins, minerals and phytonutrients. Fats also play a crucial role in stabilizing blood sugar levels, the making of hormones, and contributing to a healthy immune system. There are good and bad fats.

Good Fats

For humans are found in plant sources and will provide you the fat requirements you need without increasing your risk of poor health. Unrefined (raw) plant fats are best for health and cooking. Cold pressed plant oils are actually helpful by providing you with the “essential” fats you need for good health.



Bad Fats

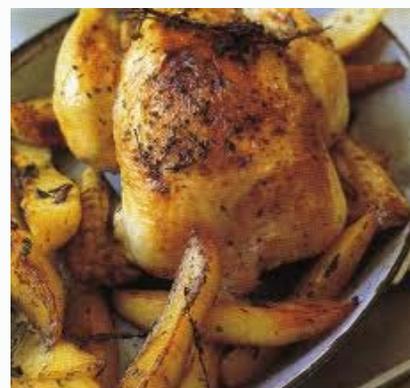
As I have said before, animal tissue is not ideal for human consumption. It is structured for very large carnivores like a tiger or great white shark. Animal flesh is full of fat and cholesterol, which requires a physiological design that humans do not have. There is a **huge** physiological difference between humans and carnivores. Carnivores eat large amounts of meat at one time and then don't eat for several weeks. Try that yourself and you will quickly see that you are built just like all the other plant-based consuming animals. You need to eat nearly every day and your system performs better on plant-based foods.

The other “bad fats” that are highly toxic to you are called “fats” by the food industry, but should not be classified as fats at all. These are “**trans fats**” (also known as hydrogenated or partially-hydrogenated oils). Trans fats are **chemically changed fats**. What was once natural oil, “trans fats” have been radically changed via chemistry and become industrialized cooking oils, as well as a major ingredient in processed food products. Trans fats are toxic to your body and have no nutritional value. Fast food products contain a lot of these toxic “fats,” as they are cheap and have a long shelf life. (See trans fats below.) Trans fats are highly-toxic substances you should avoid.

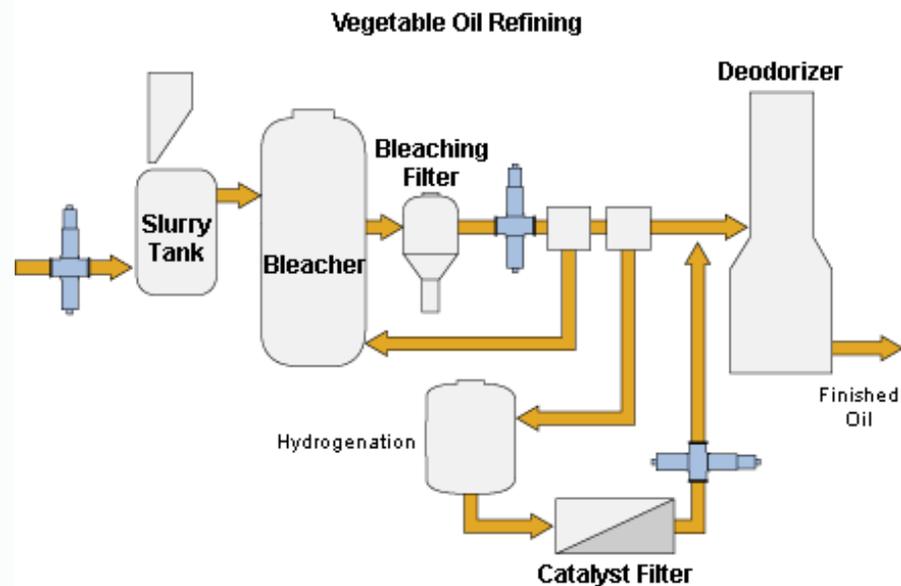
Trans-Fat Mechanism

- According to research reports Trans-fats may promote cardiovascular disease by triggering the inflammatory process in the cells lining the blood vessels.
- Scientific reports show that trans-fats raise serum levels of LDL's and reduce HDL's
- These two mechanism together are catastrophic to the cardiovascular system.

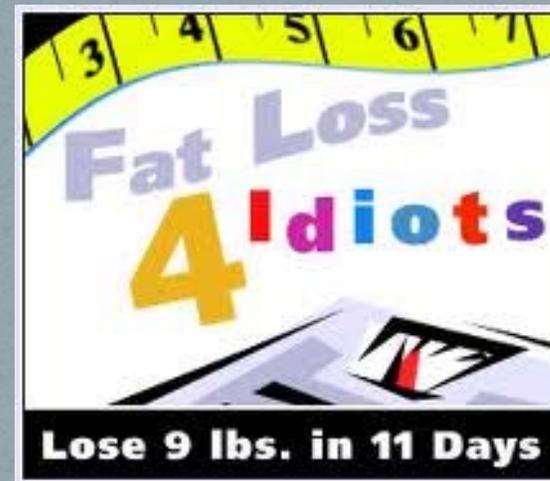
America's Marketed Ideas of Low Fat Foods



America's Fat Reality



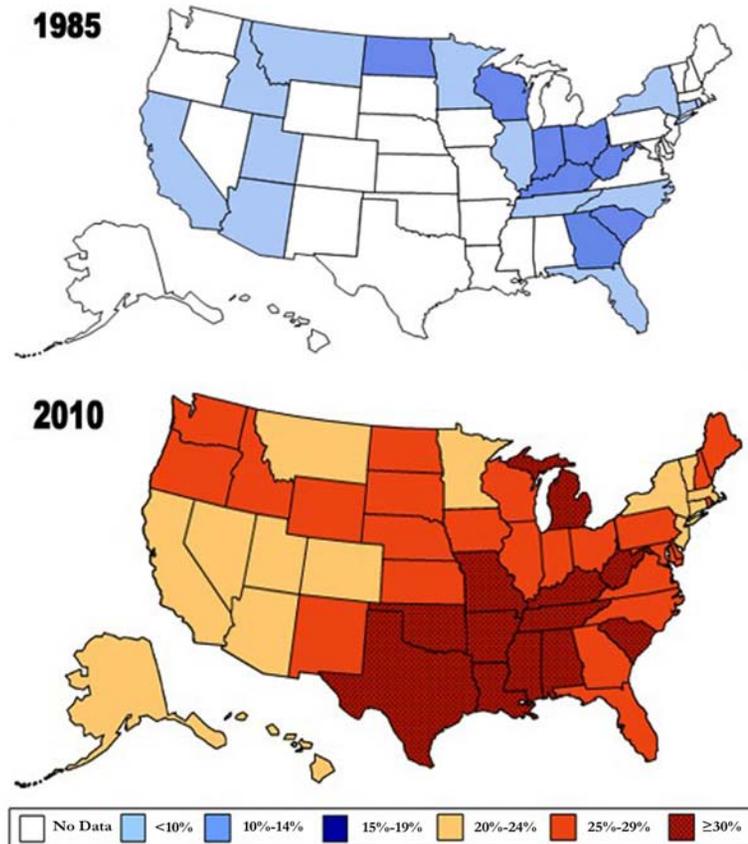




Sad but True



Steady Increase in Obesity From 1985-2010 (CDC)



Fats are still fats

- While there are good fats and bad fats, remember, a high FAT diet of any kind does not promote health.
- The Fat You Eat is the Fat You Wear!
- Be realistic with Good Fats – less than 25% of dietary intake

Antioxidants, Vitamins, Minerals

- Doctors everywhere are telling patients to eat more Antioxidants, Vitamins, & Mineral based foods.
- So what foods are high in these nutrients??

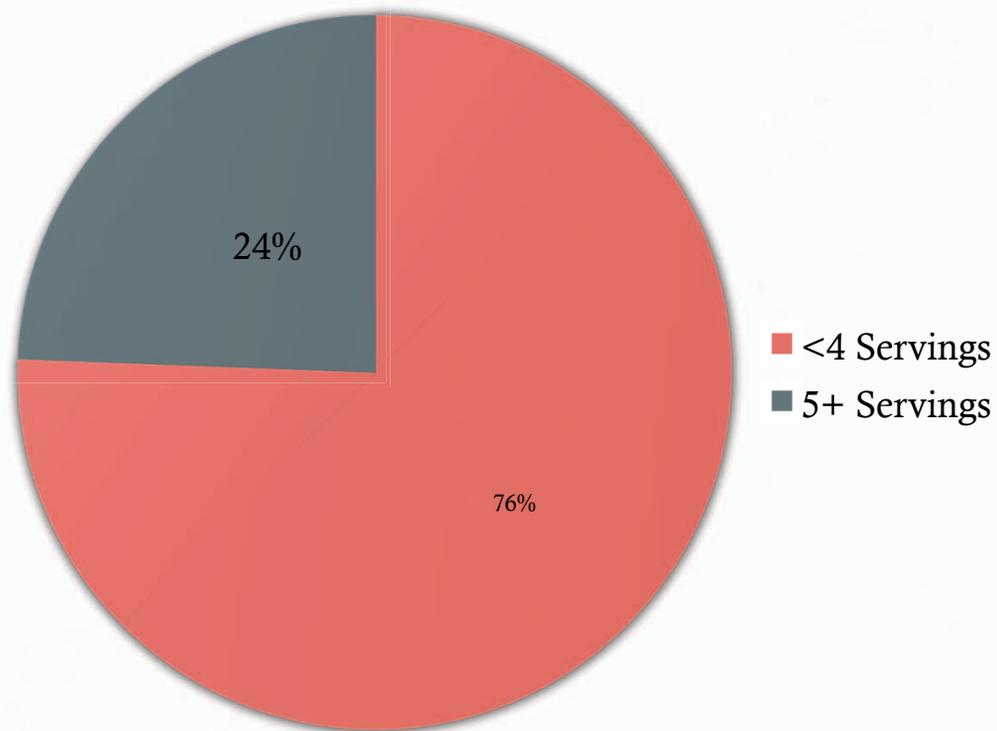
Healthy Foods have Nutritional Gifts

Fiber: You have quite an extensive digestive tract. Your intestines are long by design so your body can extract the nutrients out of the food you have eaten and absorb them into your system. Fiber is essential, as it promotes bowel health and helps rid the body of toxins. In other words, fiber keeps you “regular,” which helps decrease your risk of hemorrhoids, varicose veins, cancers, diabetes and constipation.

Phytonutrients

“Phyto” (meaning plant) nutrients are substances of plant origin that have significant health value. These compounds appear to provide added natural protection against diseases like cardiovascular disease, cancers and degeneration. They have anti-oxidant properties, which help with immunity, inflammation, growth, repair, and overall good health. The powerful Phytonutrients are “gifts” that benefit your health just by eating. Fruits, vegetables, legumes, whole grains and nuts are rich in Phytonutrients. Animal parts have no Phytonutrients. Once again, proof that nature loves you!

Average Fruit & Vegetable Consumption per Day Nationwide-2009



Current Medical Evidence

Animal Protein Linked to Increased Diabetes Risk

01/22/10

Diabetes risk increases with higher intake of total protein and animal protein, according to a new study in this month's issue of *Diabetes Care*. Researchers analyzed the diets of 38,094 Dutch participants from the European Prospective Investigation into Cancer and Nutrition (EPIC) study and found that for every 5 percent of calories consumed from protein instead of carbohydrate or fat, the risk of developing diabetes increased 30 percent. Increased animal protein intake coincided with increased intakes of saturated fat, cholesterol, and heme iron, and with increased body mass index, waist circumference, and blood pressure. Vegetable protein intake was not associated with diabetes risk.

Sluijs I, Beulens JWJ, Van Der A DL, Spijkerman AMW, Grobbee DE, Van Der Shouw YT. Dietary intake of total, animal, and vegetable protein and risk of type 2 diabetes in the European Prospective Investigation into Cancer and Nutrition (EPIC)-NL study. *Diabetes Care*. 2010; 33:43-48.

Ischemic Stroke Hospitalizations Decline in Middle Aged, Elderly, Increases in Young

02/11

The number of acute ischemic stroke hospitalizations among middle-aged and older men and women fell between 1994 and 2007, but sharply increased among those under age 35 — including teens and children — according to research presented at the *American Stroke Association's International Stroke Conference 2011*.

Analysts at the *U.S. Centers for Disease Control and Prevention (CDC)*, reviewing hospitalization data by age and gender, identified declining rates of 51 percent in girls 0-4 years and 25 percent in men and 29 percent in women over 45. However, the number of ischemic stroke hospitalizations increased 51 percent in males between ages 15 and 34 during the period studied. The rate increased 17 percent in females between 15 and 34; among children and teens, they found a 31 percent increase in boys between 5 to 14 years and a 36 percent increase among girls 5 to 14 years. Among the younger middle-aged set, they found a 47 percent increase among men 35-44 and a 36 percent increase among women 35-44.

Researchers are unclear on the reasons for the increase, but said obesity and hypertension may be factors.

Red Meat and Dairy Products Significantly Increase Risk of Pancreatic Cancer

06/29/09

According to a new study, fat from red meat and dairy products is associated with increased risk of pancreatic cancer. As part of the *National Institutes of Health-AARP Diet and Health Study*, researchers followed and analyzed the diets of more than 525,000 participants to determine whether there is an association between dietary fat and pancreatic cancer. This same study found no association between plant-food fat and pancreatic cancer.

Thiébaud ACM, Jia L, Silverman DT, et al. Dietary fatty acids and pancreatic cancer in the NIH-AARP Diet and Health Study. *J Natl Cancer Inst.* 2009;101:1001-1011.

Animal Protein Bad for Bones

03/03/10

Animal protein is associated with decreased bone health, according to a study in this month's British Journal of Nutrition. In Beijing, China, 757 girls with an average age of 10 years were randomly assigned to a group consuming cow's milk fortified with calcium, one consuming cow's milk fortified with calcium and vitamin D, or a third group that served as controls and made no changes. Bone mass was measured at the beginning of the study and at 12, 24, 48, and 60 months. While calcium intake was positively associated with bone health, animal protein, especially from meat and eggs, was negatively associated with bone mineral density and content.

Zhang Q, Ma G, Greenfield H, et al. The association between dietary protein intake and bone mass accretion in pubertal girls with low calcium intakes. *Br J Nutr.* 2010;103:714-723

Red and Processed Meat Increases Risk of Prostate Cancer

10/08/09

Meat consumption increases the risk of prostate cancer, according to a recent study looking at more than 175,000 men as part of the *NIH-AARP Diet and Health Study*. The men who consumed the most red meat had a 30 percent increased risk of cancer, compared with those who consumed the least. Processed red meat was associated with a 10 percent increased risk of prostate cancer with every 10 grams (about one-third of an ounce) of increased intake. Researchers also investigated cooking method and content of heme iron and nitrites and nitrates for the various types of meat consumed. Heme iron intake, nitrite and nitrate consumption, and grilling and barbecuing all were associated with higher risk.

Sinha R, Park Y, Graubard BI, et al. Meat and meat-related compounds and risk of prostate cancer in a large prospective cohort study in the United States. *Am J Epidemiol*. Advance access published October 6, 2009. DOI: 10.1093/aje/kwp280.

High-Fat Fast-Food Meals Cause the Heart to Beat Harder and Blood Pressure to Rise

04/26/07

A new study from the Journal of Nutrition finds that a single fatty meal can cause the heart to beat harder and blood pressure to rise. Researchers at the University of Calgary analyzed the affects of either a high-fat fast-food meal (42 grams of fat) or a meal with no more than 1.3 grams of fat among 30 healthy participants. The results showed that when both groups were subjected to a series of standard stress tests, those who ate the high-fat meal saw their blood pressure go up 1.25 to 1.5 times higher than the participants who ate the low-fat meal.

Jakulj F, Zernicke K, Bacon SL, Wielingen L, et al. A High-Fat Meal Increases Cardiovascular Reactivity to Psychological Stress in Healthy Young Adults. J Nutr. 2007;137:935-939.

Current Heart Disease Therapy Does Not Target Cause: The Western Diet

09/09/10

Renowned Cleveland Clinic researcher Caldwell Esselstyn, M.D., highlights the need to change standard approaches to heart disease in an article to be published next week in the *American Journal of Cardiology*. Dr. Esselstyn explains why common methods of treating heart disease, such as stent and bypass surgeries, may have their place among a minority of patients, but for the vast majority, they are not as effective as low-fat, plant-based diets. The author acknowledges that physicians' time constraints can limit the ability to provide information to patients. But ultimately, educated patients experience weight loss, blood pressure normalization, and improved or resolved diabetes, angina, and heart disease.

Esselstyn CB. Is the present therapy for coronary artery disease the radical mastectomy of the twenty-first century? *Am J Cardiol*. 2010;106:902-904.

High-Protein Diets Associated With Increased Cancer Risk

01/02/07

A new study published in the American Journal of Clinical Nutrition found that high protein intakes are associated with an increased cancer risk. Washington University researchers evaluated the relationship between diet and certain plasma growth factors and hormones that are linked to cancer. The study's "low-protein" group, who consumed the recommended amount of protein from plant sources (approximately 10 percent of calories), had significantly lower blood levels of IGF-1 (hormone substances associated with premenopausal breast and prostate cancer) than two high-protein groups consuming 17 percent of calories as protein from mostly meat and dairy products.

Fontana L, Klein S, Holloszy JO. Long-term low-protein, low-calorie diet and endurance exercise modulate metabolic factors associated with cancer risk. *Am J Clin Nutr* 2006;84:1456-1462.

Dairy Products Linked to Parkinson's Disease

06/25/07

A new study from the American Journal of Epidemiology shows that the consumption of dairy products is linked to an increased risk for Parkinson's disease. Researchers investigated the association between dairy products and risk among 388 men and women diagnosed with Parkinson's disease participating in the American Cancer Society's Cancer Prevention Study II. Results showed that as dairy product consumption increased, risk for Parkinson's also increased. Specifically, those who consumed the most dairy milk had a 70 percent greater risk for the disease.

Chen H, O'Reilly E, McCullough ML, Rodriguez C, et al. Consumption of Dairy Products and Risk of Parkinson's Disease. *Am J Epidemiol*. 2007;165:998-1006.

Meat Consumption Increases Risk of Breast Cancer

01/08/08

A sub study of the Diet, Cancer and Health study, a prospective cohort study established to evaluate the role of diet and cancer among 24,697 postmenopausal Danish women, was set up to evaluate the relationship between meat consumption and risk of breast cancer. This nested study looked at 378 women who developed breast cancer and matched them to controls who did not develop breast cancer. A higher intake of meat (red meat, poultry, fish, and processed meat) was associated with a significantly higher breast cancer incidence rate.

Egeberg R, Olsen A, Autrup H, et al. Meat consumption, N-acetyl transferase 1 and 2 polymorphism and risk of breast cancer in Danish postmenopausal women. *Eur J Canc Prev.* 2008;17:39-47.

Red Meat Again Linked to Colorectal Cancer

11/07/08

A recent study from the Ontario Family Colorectal Cancer Registry, established by the U.S. National Cancer Institute, compared the diets of people who had been diagnosed with colorectal cancer to the diets of people who did not have cancer. It turned out that those who ate the most red meat had a 67 percent higher risk of colorectal cancer, regardless of any genetic factors they may have had. However, some people with specific genes had a much higher risk from meat-eating—up to four times the cancer risk—compared to people who avoid meat.

Every year, 160,000 Americans are diagnosed with colorectal cancer. About half of all cases are already incurable when they are found.

Cotterchio M, Boucher BA, Manno M, Gallinger S, Okey AB, Harper PA. Red meat intake, doneness, polymorphisms in genes that encode carcinogen-metabolizing enzymes, and colorectal cancer risk. *Cancer Epidemiology Biomarkers and Prevention*. 2008;17:3098-3107

Fish and Fish Oil Linked to Diabetes Risk

08/14/09

A new Harvard study in the *American Journal of Clinical Nutrition* links fish and omega-3 oil consumption to type 2 diabetes. Following 195,204 adults for 14 to 18 years, researchers found that the more fish or omega-3 fatty acids participants consumed, the higher their risk of developing diabetes. The risk increase was modest for occasional fish eaters, but rose to a 22 percent increased risk for women consuming five or more fish servings per week.

Prior studies have suggested that fat accumulation within muscle cells can lead to insulin resistance which, in turn, contributes to diabetes. People who eat no animal products have less fat in their cells and much less risk of developing diabetes. A low-fat vegan diet has been shown to improve type 2 diabetes.

Kaushik M, Mozaffarian D, Spiegelman D, Manson JE, Willett WC, Hu FB. Long-chain omega-3 fatty acids, fish intake, and the risk of type 2 diabetes mellitus. *Am J Clin Nutr*. 2009 Jul 22.

[Epub ahead of print]

Goff LM, Bell JD, So PW, Dornhorst A, Frost GS. Veganism and its relationship with insulin resistance and intramyocellular lipid. *Eur J Clin Nutr*. 2005;59:291-298.

Erectile Dysfunction Linked to Heart Disease

04/02/10

Erectile dysfunction is associated with increased risk of fatal heart attacks, according to a new study in the journal *Circulation*. Among 1,519 adult male research participants, those with ED had twice the risk of death from any cause, compared with those without ED. Men with ED were also 60 percent more likely to have a heart attack, stroke, or heart-related hospitalization or death.

Bohm M, Baumhakel M, Teo K, et al. Erectile dysfunction predicts cardiovascular events in high-risk patients receiving Telmisartan, Ramipril, or both. The ON going Telmisartan Alone and in combination with Ramipril Global Endpoint Trial/Telmisartan Randomized Assessment Study in ACE intolerant subjects with cardiovascular Disease 2010;121:1439-1446.

Western Diet Linked to Birth Defects

08/10/07

A new study from the Netherlands that analyzed the diets of 381 mothers found that a Western diet is linked to birth defects. Those women with a “Western dietary pattern,” characterized by high intakes of organ meat, red meat, processed meat, pizza, legumes, potatoes, French fries, condiments, and mayonnaise, but low intakes of fruits had a higher risk of a cleft lip or cleft palate among their offspring. Women who consumed the greatest amount of these foods had nearly double the risk compared with those who consumed the least.

Vujkovic M, Ocke MC, Van der Spek P, Yazdanpanah N, et al. Maternal Western dietary patterns and the risk of developing a cleft lip with or without a cleft palate. *Obstet Gynecol.* 2007;110:378-384.

Mushrooms Protect Against Breast Cancer

03/18/09

Mushrooms may reduce the risk of breast cancer, according to a case-control study conducted in southeast China. Researchers analyzed dietary records from more than 2,000 pre- and postmenopausal women with breast cancer and a group of matched healthy controls. Intake of fresh mushrooms (greater than or equal to 10 grams per day) and dried mushrooms (greater than or equal to 4 grams per day) decreased risk by 64 percent and 47 percent, respectively. The most commonly eaten mushroom in this study was the white button mushroom; one small white button mushroom weighs 10 grams.

An additional protective effect was seen when mushrooms and green tea were both consumed.

Zhang M, Huang J, Xie X, Holman CD. Dietary intakes of mushrooms and green tea combine to reduce the risk of breast cancer in Chinese women. *Int J Cancer*. 2009;124:1404-1408.

Cruciferous Compound May Prevent Respiratory Inflammation

3/10/09

Sulforaphane, found in cruciferous vegetables including broccoli, cabbage, cauliflower, kale, and collards, may help reduce the risk of respiratory inflammation that leads to chronic diseases such as asthma and chronic obstructive pulmonary disease, according to a new study from the University of California, Los Angeles. Study participants received escalating oral dosages of broccoli sprouts. Researchers found that those at the highest dose had as much as three times as many antioxidant enzymes in their upper airway cells compared to baseline. No effect was seen in the placebo group. These protective antioxidant enzymes help fight against common environmental pollutants.

Riedl MA, Saxon A, Diaz-Sanchez D. Oral Sulforaphane increases Phase II antioxidant enzymes in the human upper airway. *Clin Immunol.* 2009;130:244-251.

Walnuts Improve Artery Flexibility

10/17/06

A new study from the American Journal of Cardiology shows that adding walnuts (a healthy plant source of omega-3 fatty acid) to a high-fat meal reduces negative changes in arteries. Researchers from Barcelona's Hospital Clinical compared how arteries are affected by five teaspoons of olive oil versus eight walnuts when added to a fatty meal.

While both walnuts and olive oil decreased inflammation, walnuts increased the elasticity and flexibility of the arteries (called flow-mediated dilation, or FMD) by 24 percent for those with high cholesterol, and FMD was unchanged in the healthy control group. In comparison, those who consumed olive oil showed a 36 percent and 17 percent decrease in FMD for high-cholesterol and control participants, respectively.

Cortes B, Nunez I, Cofan M, et al. Acute Effects of High-Fat Meals Enriched With Walnuts or Olive Oil on Postprandial Endothelial Function. *J Am Coll Cardiol*. 2006;48:1666-1671.

Plant-Based Diet Helps Reduce Premature Aging and Disease Risk

09/16/08

In a study released today by The Lancet Oncology, Dean Ornish, M.D., and colleagues found that comprehensive lifestyle changes, including a low-fat vegan diet, increase the body's ability to fight premature aging, cancer, heart disease, and other chronic diseases. Twenty-four men participating in a prostate cancer study switched to a plant-based diet and added daily exercise and relaxation techniques. Among other beneficial effects that were previously reported, the intervention led to increased levels of telomerase, an enzyme that protects and repairs DNA. Blood levels of telomerase increased by an average of 29 percent during the study.

Ornish D, Lin J, Daubenmier J, et al. Increased telomerase activity and comprehensive lifestyle changes: a pilot study. *Lancet Oncol* [advance online publication]. September 16, 2008; DOI 10.1016/S1470-2045(08)70234-1.

Vegetarian Diet and Healthy Lifestyle Rejuvenate Coronary Arteries

2/02/10

A low-fat vegetarian diet may help prevent heart attacks, according to a new study in this month's *American Journal of Cardiology*. Researchers found that individuals who followed a low-fat vegetarian diet, along with a moderate exercise plan and stress management, measurably improved the function of their endothelium—the inner lining of arteries that is key to preventing heart attacks. This 12-week study included 43 participants in Dr. Dean Ornish's Multisite Cardiac Lifestyle Intervention Program. In the control group, the endothelial function worsened.

Dod HS, Bhardwaj R, Sajja V, et al. Effect of intensive lifestyle changes on endothelial function on inflammatory markers of atherosclerosis. *Am J Cardiol*. 2010;105:362-367.

Eat Beans Weigh Less

4/10/06

A presentation at the recent Experimental Biology Conference revealed that people who include beans in their diets have healthier diets overall, lower body weights, and reduced risk of obesity. Researchers used data from the National Nutrition and Health Examination Survey (1999-2002) to study the associations between bean consumption, nutrient intake, and certain health parameters among children and adults.

Children who ate beans not only had greater intakes of fiber (more than one-third higher), magnesium, and potassium, but showed a trend toward reduced risk of being overweight. Bean-consumers between the ages of 12 and 19 weighed 7 pounds less and had nearly an inch smaller waist circumference than their non-bean-consuming peers. Similar results were found among adults. Those who ate beans frequently averaged 6.5 pounds less and had a 22 percent reduced risk of being obese.

Papanikolaou Y, Fulgoni SA, Fulgoni VL, Kelly RM, Rose SF. Bean consumption by adults is associated with a more nutrient dense diet and a reduced risk of obesity. Presented at: The Experimental Biology Conference; April 1-5, 2006; San Francisco, Ca.

Fulgoni VL, Papanikolaou Y, Fulgoni SA, Kelly RM, Rose SF. Bean consumption by children is associated with better nutrient intake and lower body weights and waist circumferences. Presented at: The Experimental Biology Conference; April 1-5, 2006; San Francisco, Ca.

Fruit and Vegetable Consumption Offers Protection Against Osteoporosis

06/22/06

A new American Journal of Clinical Nutrition study finds that increased fruit and vegetable consumption may strengthen bones. Researchers at the University of Surrey, UK, explored the association between fruit and vegetable intakes and bone mineral status in a cross-sectional study including participants from five age and sex cohorts (adolescent boys and girls, young women and older men and women).

Fruit and vegetable intake was positively associated with increased total body bone mineral density and bone mineral content in adolescent girls and boys. In older women a positive association was found between bone mineral content and fruit intake. Based on these results, a doubling of fruit intake in older women would be expected to result in a five percent increase in bone mineral content of the spine.

Prynne CJ, Mishra GD, O'Connell MA, Muniz G, et al. Fruit and vegetable intakes and bone mineral status: a cross-sectional study in 5 age and sex cohorts. *Am J Clin Nutr.* 2006;83:1420-1428.

Vegetable Intake Increases Ovarian Cancer Survival Rates

03/17/10

Women with the highest fruit and vegetable intakes have better ovarian cancer survival rates than those who generally neglected these foods, according to a new study in the *Journal of the American Dietetic Association*. Researchers examined food patterns prior to ovarian cancer diagnosis in 341 Illinois women. They found that yellow and cruciferous vegetables, in particular, contributed to longer survival, whereas consumption of dairy products and red and processed meats shortened lifespan. The authors concluded that low-fat, plant based diets are not only beneficial for cancer prevention—they may also play a role in increasing survival time after diagnosis. Ovarian cancer is the fifth leading cause of cancer-related death among women in the United States.

Dolecek TA, McCarthy BJ, Joslin CE, et al. Prediagnosis food patterns are associated with length of survival from epithelial ovarian cancer. *J Am Diet Assoc.* 2010;110:369-382.

Prostaglandins

Similar to Let's Make a Deal – Do you want:

Door Number 1 or Door Number 2 ??

Inflammation Pathway

Link to Pathology

There are three types of prostaglandins: PG_1 , PG_2 , and PG_3 .

PG_1 have many beneficial effects, including reducing inflammation, inhibiting blood clotting, and maintaining various regulatory states in the body. The strong anti-inflammatory properties help the body recover from injury by reducing pain, swelling and redness.

PG_2 have the opposite effects of PG_1 . They have been found to strongly increase inflammation, constrict blood vessels, and encourage blood clotting. These properties come into play when the body suffers a wound or injury, for without these prostaglandins, a person could bleed to death from the slightest of cuts. However, in excess, these prostaglandins may be harmful.

PG_3 have a mixture of functions in the body. In general, they are important in protecting the body from various modes of injury. One of their most important functions however, is their role in decreasing the rate at which PG_2 are formed. Because of their role in reducing inflammation caused by PG_2 , PG_3 are often described as having anti-inflammatory properties.

Essential Omega 3 & 6

- Omega-3 and omega-6 fats are called essential because we cannot manufacture them ourselves. They must come from the foods we eat.
- These fatty acids are named for their carbon-to-carbon double bond on a carbon chain. The omega-3 fatty acids have their double bond at the third carbon position from the omega (methyl) end of the chain and omega-6 fatty acids have theirs at the sixth carbon position.
- What's important to understand is that only plants are able make a double bond at the third or sixth carbon position. There is no fish nor animal nor human that create their own Omega 3 or Omega 6 FA's. The most up to date (non-industry funded) research is showing humans obtain the appropriate amount of EFA's with an adequate diet of the precursors.

Essential Fatty Acids Pathways

Although most omega-3 and omega-6 fatty acids are generally referred to as "essential" fatty acids, only linoleic acid (LA) of the omega-6 family and alpha-linolenic acid (ALA) of the omega-3 family are truly "essential". Once we have either LA or ALA, our body has enzymes that can convert these fatty acids into all the other different types of omega-6 and omega-3 fatty acids.

It turns out that both the omega-3 and omega-6 pathway utilize the same enzymes, and both omega-6 and omega-3 fatty acids have to compete for these enzymes in order to produce their final product. Studies have reported that the enzymes used in these pathways were found to prefer the omega-3 pathway. It turns out, that diets high in omega-3 fatty acids, most of the enzymes will be "busy" converting the omega-3 acids.

The omega-6 fatty acids, (DGLA) in particular, can be converted to either the anti-inflammatory PG_1 or into arachidonic acid (AA), a precursor of PG_2 . Conversion of DGLA into PG_1 does not require any enzymes, but conversion of DGLA into AA requires the enzyme delta-5 desaturase. In diets high in omega-3, most of the delta-5 desaturase will be used in the omega-3 pathway; few delta-5 desaturase will be available to convert DGLA into arachidonic acid, and subsequently, PG_2 . DGLA ends up being converted into the anti-inflammatory PG_1 and inflammation is therefore decreased.

In a diet low in omega-3 fatty acids, large quantities of delta-5 desaturase enzymes are available to convert DGLA into AA. The available AA is then converted into the inflammatory PG_2 . Thus, the more omega-3 fatty acids present in our body, the fewer enzymes are available for converting omega-6 fatty acids into the inflammatory prostaglandins. A balance of omega-6 and omega-3 fatty acids is therefore essential for proper health. However, the typical Western diet has evolved to be high in omega-6 and low in omega-3 fatty acids. While omega-6 fatty acids are not necessarily bad, a skewed ratio in favor of too much omega-6 can be detrimental to one's health.

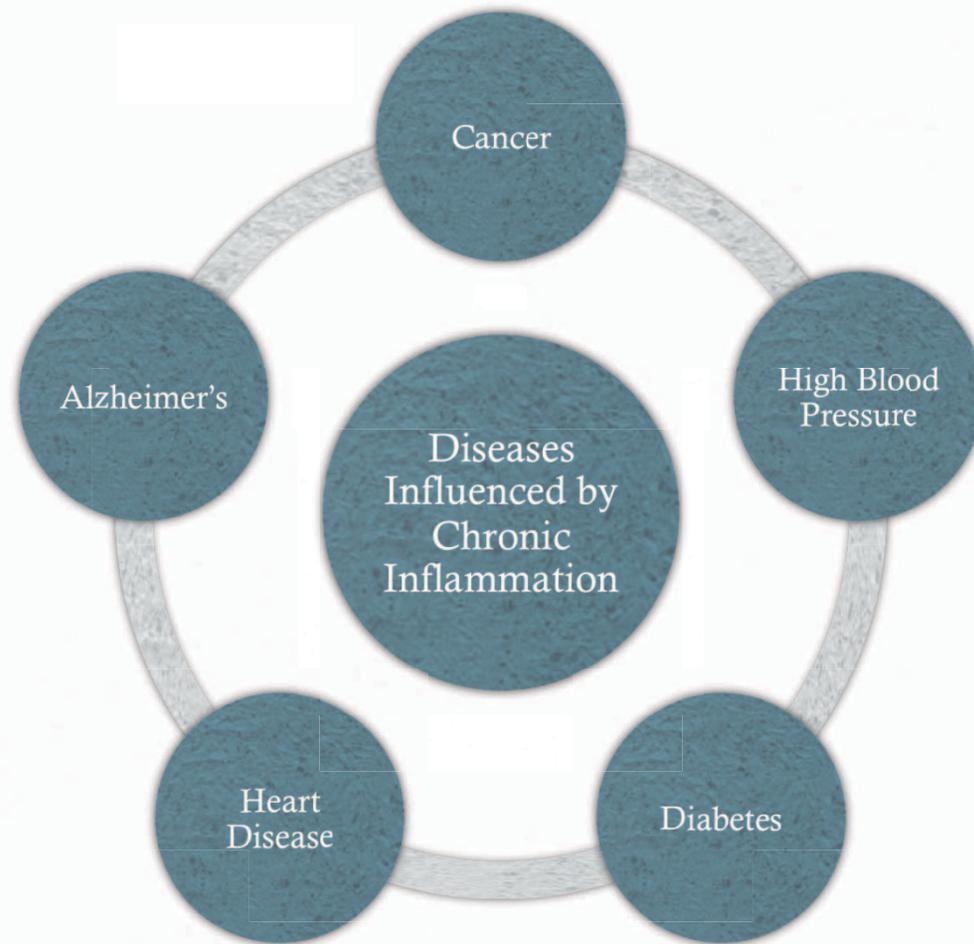
Fish Oil Supplements No Help to Heart or Brain

June 13, 2012

Two new studies found that omega-3 supplements, often sold in the form of fish oil, do not improve the health of the brain or heart. After following more than 12,500 type 2 diabetes patients over the age of 50 for an average of 6.2 years, researchers saw no difference in heart health between those taking an omega-3 supplement versus a placebo. Diabetes patients are two to four times more likely to suffer from heart disease or a stroke, compared with people without diabetes. Another recent meta-analysis came to the same conclusion for people with a history of heart problems. Additionally, in a new review looking at omega-3 supplementation for brain health, researchers found no link between omega-3 supplements and the prevention or improvement of dementia.

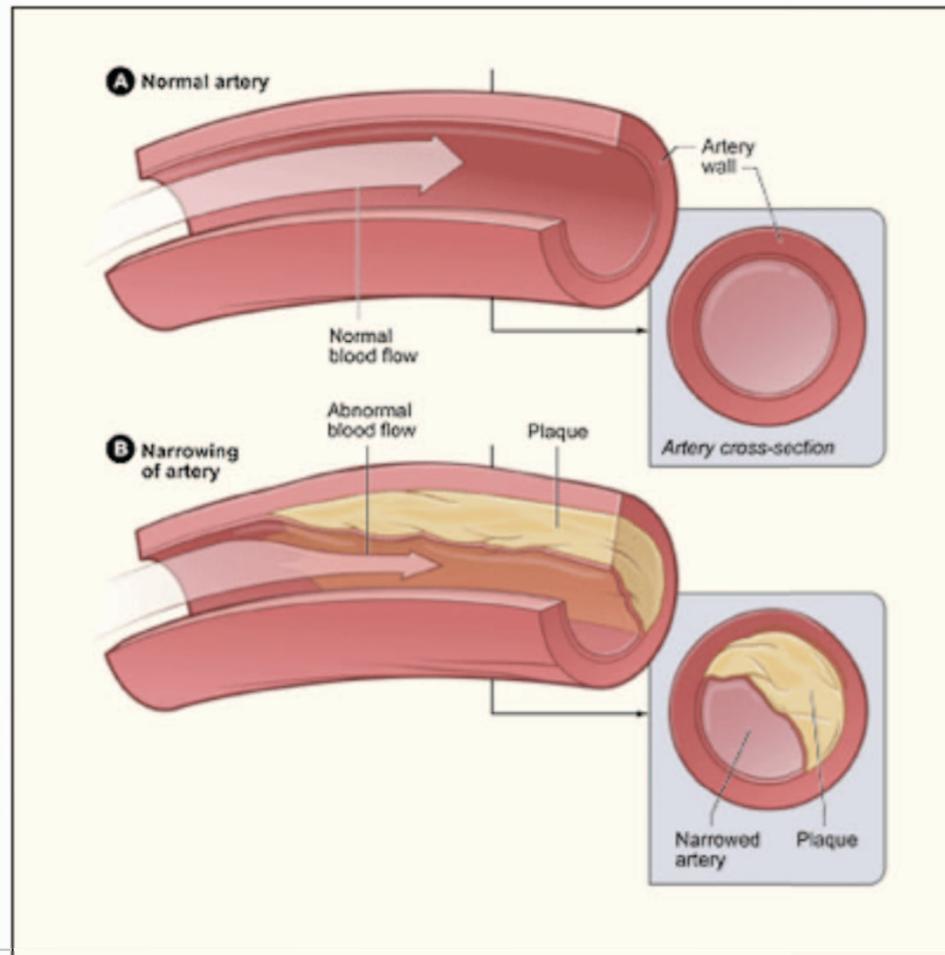
Bosch J, Gerstein HC, Diaz R, et al. n-3 fatty Acids and cardiovascular outcomes in patients with dysglycemia. *N Engl J Med*. Published online June 11, 2012. Kwak SM, Myung SK, Lee YJ. Efficacy of omega-3 fatty acid supplements (eicosapentaenoic acid and docosahexaenoic acid) in the secondary prevention of cardiovascular disease: a meta-analysis of randomized, double-blind, placebo-controlled trials. *Arch Intern Med*. Published ahead of print, April 9, 2012. Dangour AD, Andreeva VA, Sydenham E, Uauy R. Omega 3 fatty acids and cognitive health in older people. *Br J Nutr*. 2012;107:S152-S158.

Chronic Inflammation is Toxic



Heart Disease

is from Diet.....Period



	NOMANCLATURE AND MAIN HISTOLOGY	SEQUENCES IN PROGRESSION OF ATHEROSCLEROSIS	EARLIEST ONSET	MAIN GROWTH MECHANISM	CLINICAL CORRELATION
ENDOTHELIAL DYSFUNCTION ↓	Initial lesion <ul style="list-style-type: none"> • histologically "normal" • macrophage infiltration • isolated foam cells 		from first decade	growth mainly by lipid addition	clinically silent
	Fatty streak mainly intracellular lipid accumulation				
	Intermediate lesion <ul style="list-style-type: none"> • intracellular lipid accumulation • small extracellular lipid pools 		from third decade	increased smooth muscle and collagen increase	clinically silent or overt
	Atheroma <ul style="list-style-type: none"> • intracellular lipid accumulation • core of extracellular lipid 				
	Fibroatheroma <ul style="list-style-type: none"> • single or multiple lipid cores • fibrotic/calcific layers 		from fourth decade	thrombosis and/or hematoma	
	Complicated lesion <ul style="list-style-type: none"> • surface defect • hematoma-hemorrhage • thrombosis 				

Chronic Inflammation

- Cell Death
- Apoptosis - programmed cell death vs.
- Necrosis - premature cellular death

Necrosis

- Due to a poor diet, environmental toxins and somatic dysfunction, Cellular necrosis is happening everyday throughout the body.
- The inflammation/necrosis death/inflammation carousel is never stopped.

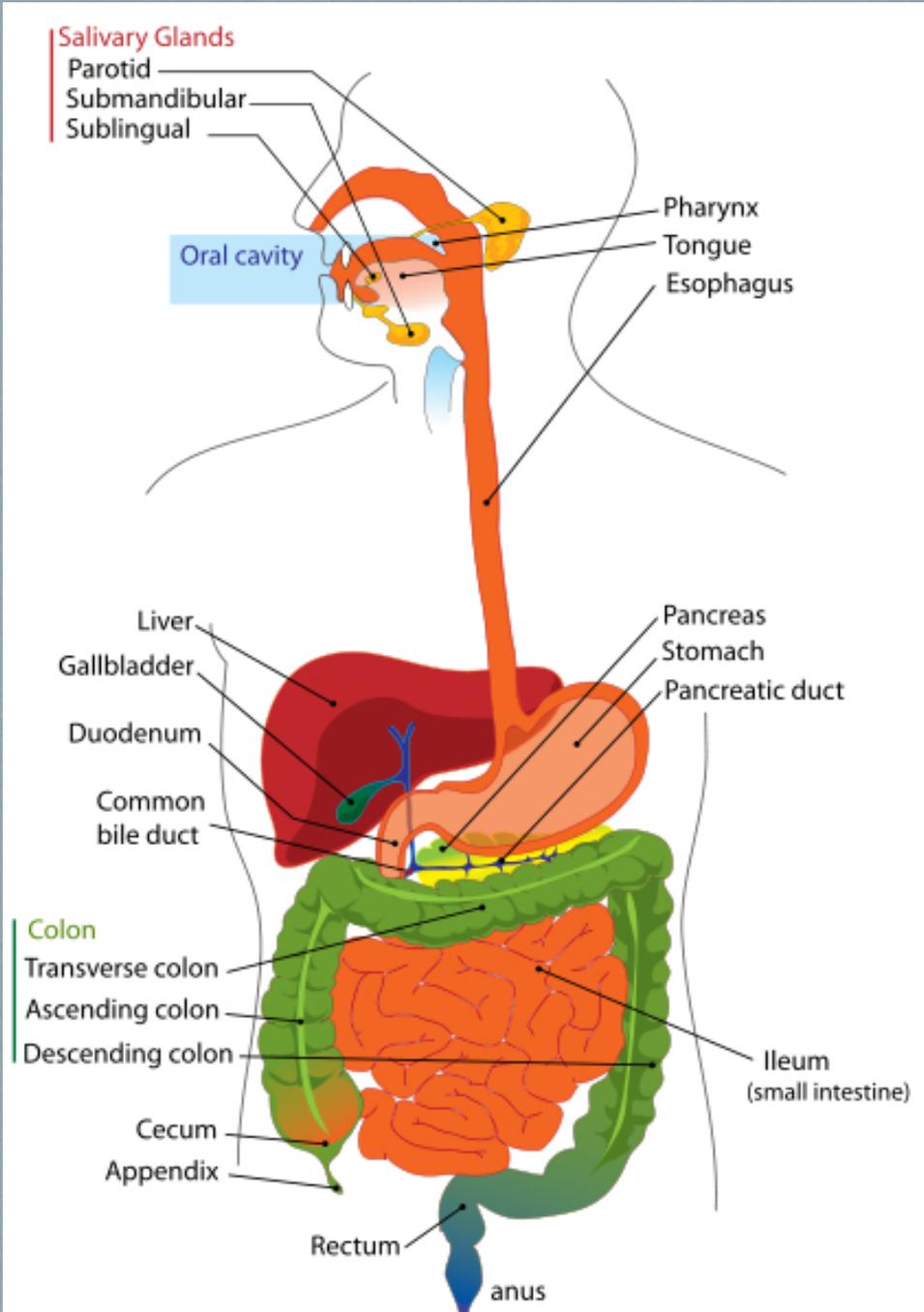
You are what you
eat?

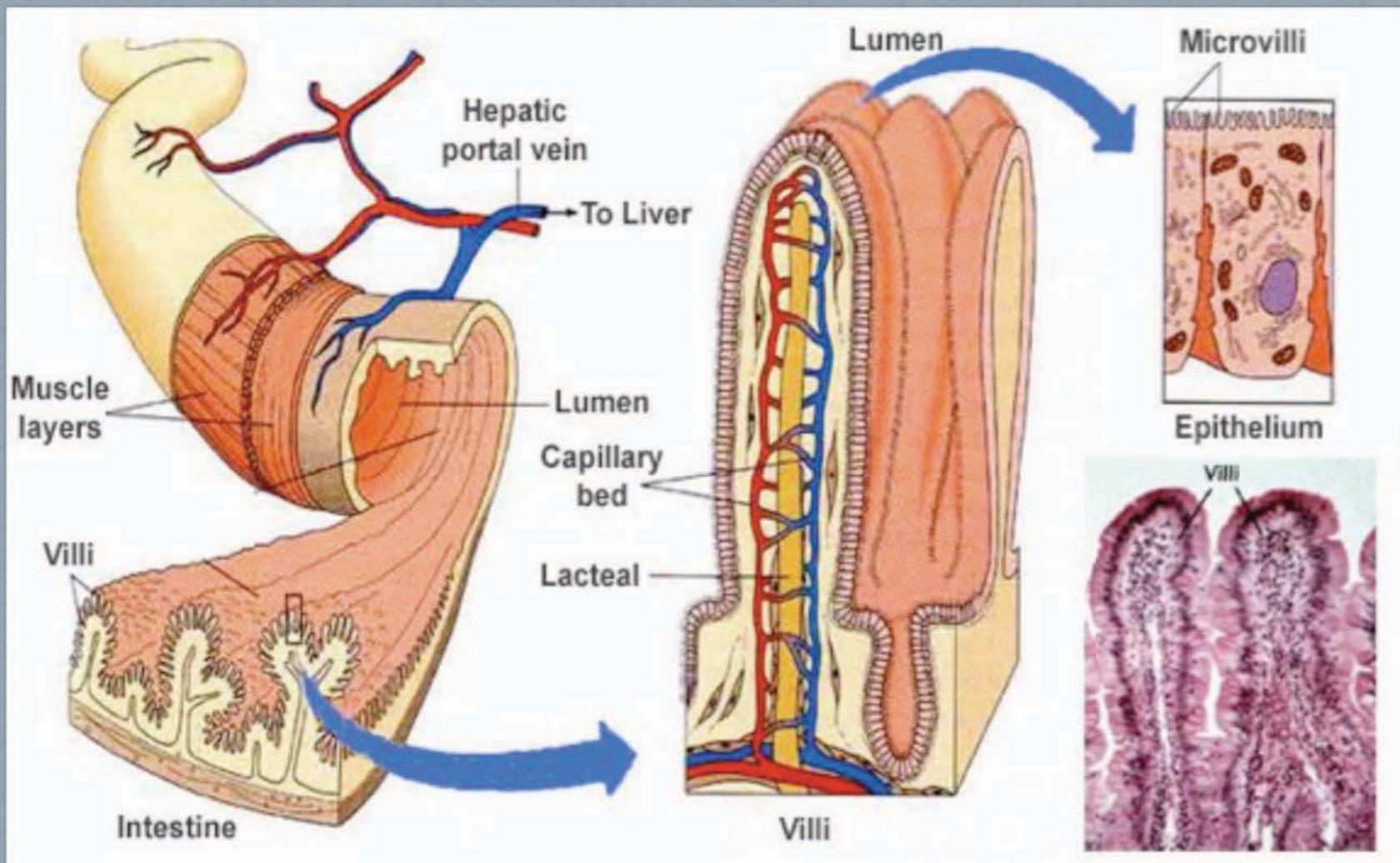


You are what you absorb!!!

The Digestive System

- All roads lead to Rome
- The Functionality of the Patient's Digestive System will determine the level of health.





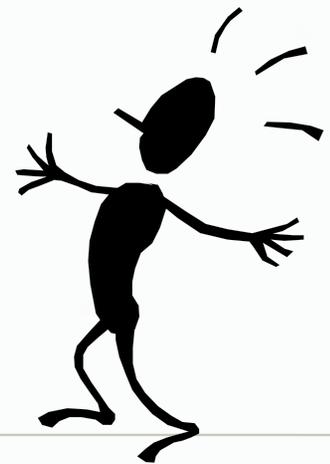
Digestion is a North to South Plumbing System

[Digestion video](#)

[Digestion 2](#)

[Gastric Bypass](#)

Conditions you will see
in everyday practice
even if you don't
recognize it.



Digestive System Dysfunction

Nutrient Deficient Patients

i.e.: most Americans

- Acid Indigestion
- Biliary Insufficiency
- Colitis
- Constipation
- Dysbiosis
- Leaky Gut Syndrome

Acid Indigestion

Individuals suffering with stomach and intestinal problems most frequently assume that heartburn, indigestion, gas, and reflux are caused by overproduction of stomach acid. This common misconception has been strongly re-enforced by our conventional medical profession, whose practitioners routinely prescribe stomach acid blocking medications at the slightest sign of stomach dysfunction, failing to properly diagnose the digestive problem by first monitoring the stomach's acid producing function, using scientific methods and neglecting to provide patients with common sense dietary recommendations.

Related Conditions

- Acid Reflux
- Gastric Esophageal reflux disease (GERD)
- Hydrochloric acid deficiency
- Pseudohiatal hernia
- Deficient gastric HCL

Causes

- Sympathetic dominance (digestion occurs under parasympathetic control) Sympathetic = STRESS
- Excess refined & process food products
- Excess sugar & alcohol consumption
- Dysbiosis, Candida albicans, H. pylori
- Zinc Deficiency

Gallbladder Surgeries on the Rise

- 600,000 Gallbladder removal surgeries performed in the US (2011)
- The NIH estimates operations and hospitalizations cost more than \$5 Billion a year. Gallbladder problems are the most common and costly digestive disease requiring hospitalization.

Practice Management?

- What is the “crisis” management Standard of Care for chronic acid reflux? = Prilosec, et al. (anti-acids)
- Continual use of an Anti-Acid = decrease HCL = Gallbladder Surgery
- The Medical Standard of Care creates a bigger problem:
- less HCL = less Bile Production = Gallbladder Pathology = Gallbladder Surgery
- What can you help your patient? Fix the problem!

Biliary Insufficiency

- Biliary Stasis (Liver Congestion)
- Gall Bladder dysfunction/inflammation
- Constipation
- Light colored or clay colored stools

Causes

- High intake of hydrogenated oils
- Excess processed food products
- obesity
- Sedentary lifestyle
- decreased gastric HCL

Colitis

Inflammation of the Colon

- Irritable bowel
- Mucus colitis
- Diverticulitis & losis
- Constipation
- Diarrhea
- Alternating constipation/diarrhea

Causes

- Incomplete digestion & absorption
- Dysbiosis
- Hypochlorhydria (low HCL secretion)
- Liver/Gallbladder/Pancreatic insufficiency
- psychological stress

Dysbiosis

- Candidiasis
- Parasites
- Bowel Flora imbalance
- Vaginal fungus
- Lymph congestion
- Chronic inflammation

Causes

- Hypochlorhydria
- Antibiotic use
- Steroid and NSAIDS
- BCP's
- Biliary insufficiency
- Diet of processed food products esp. sugar

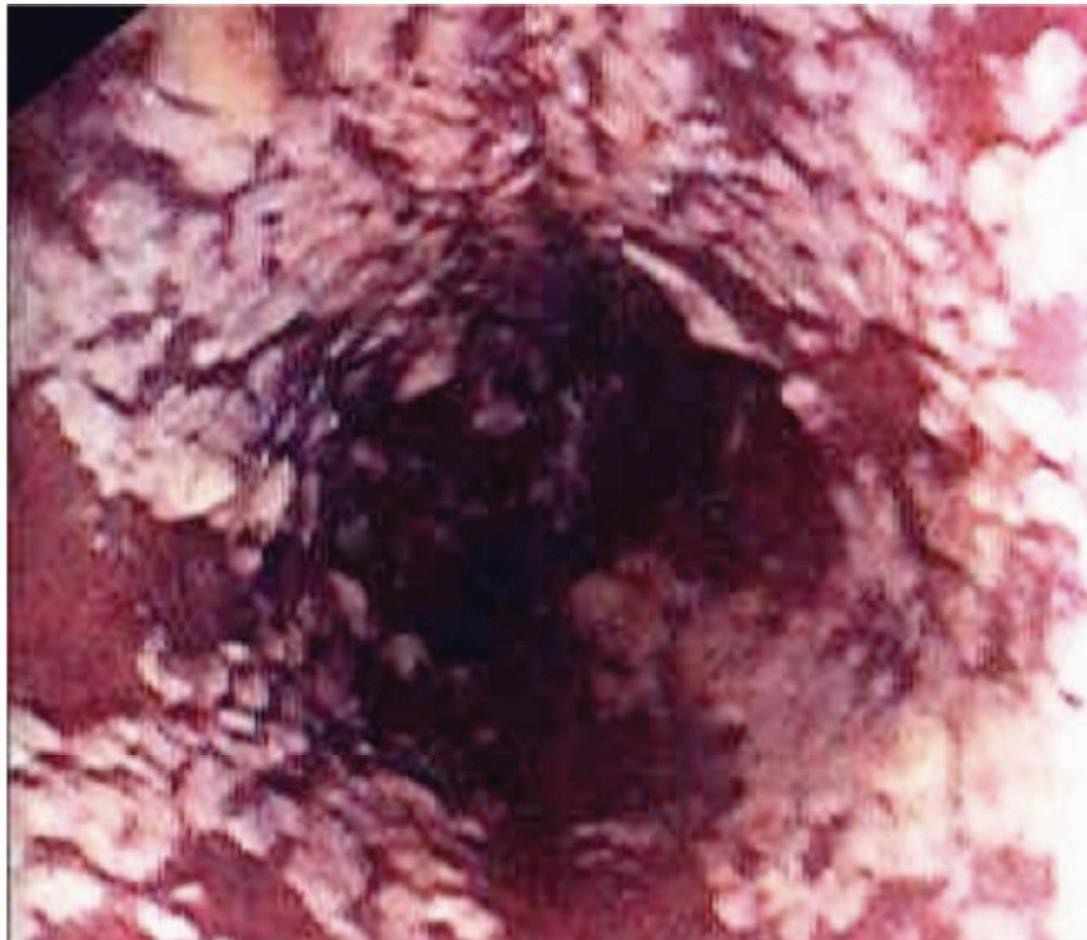
Disease-causing Bacteria & Yeasts

DYSBIOSIS

“dys” = “bad”

“biosis” = “life”

Intestinal Candidiasis

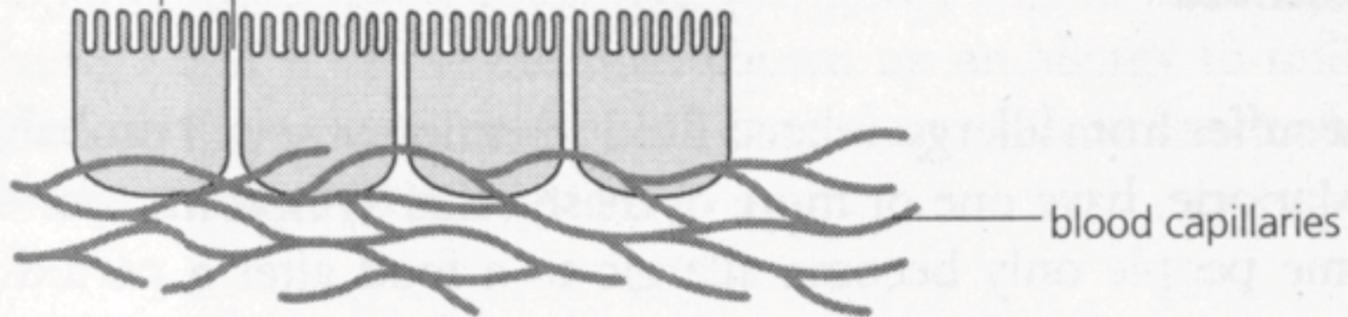


Leaky Gut Syndrome

- Separation of cellular membrane allowing proteins and other foreign molecules to “leak” into the bloodstream.
- Anything leaking into the blood stream is a BAD thing.

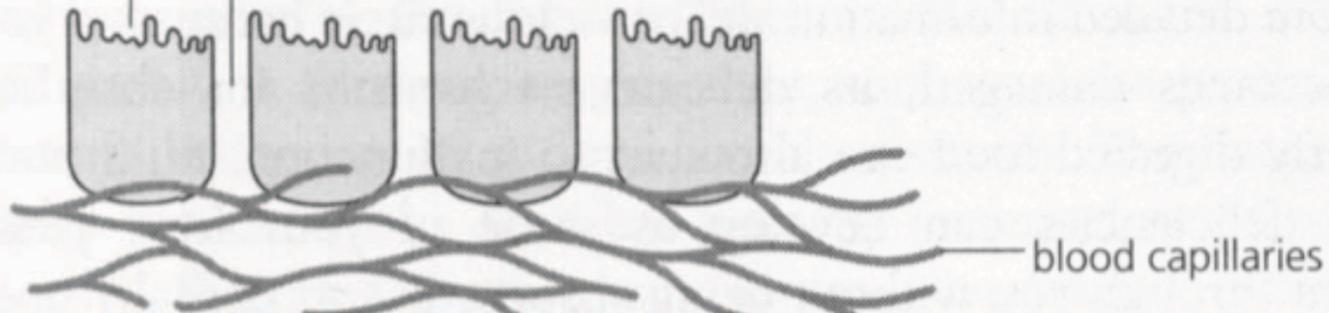
Healthy Intestinal Lining

'brush-like' absorption surface of cells lining the small intestine
cells fit tightly together

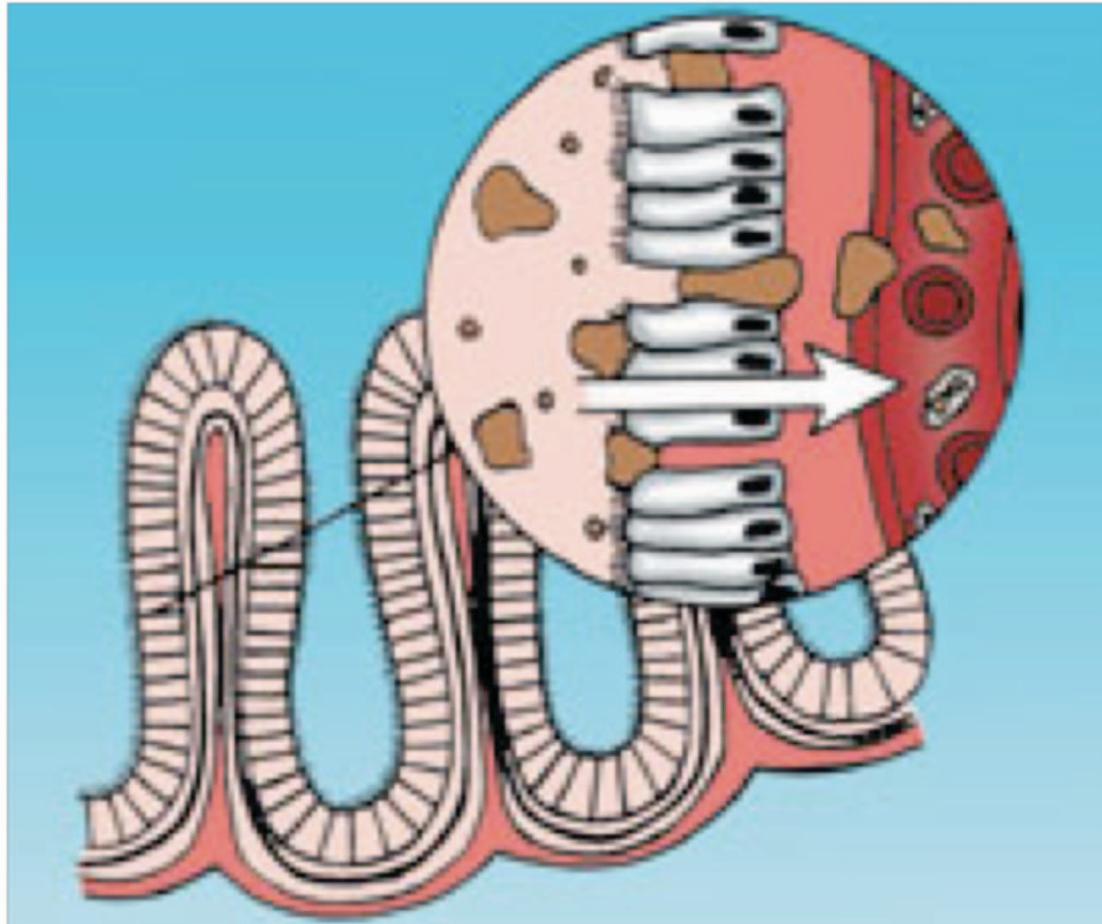


Leaky Gut

damaged absorption surface of cells lining the intestine
gaps between cells are wider – partially digested food particles
can slip through



Leaky Gut



Could be Causing

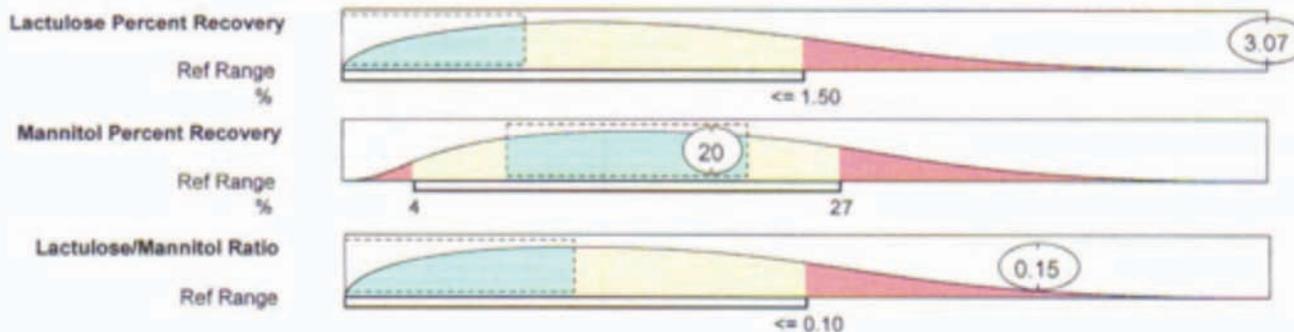
- IBS [Inflammatory Bowel Disease]
- Gastritis, Colitis, Ileitis, Crohn's Disease
- Food Allergies
- Inflammatory Joint Disease [Arthritis]
- Chronic Skin Disorders
- Malabsorption
- Failure To Thrive
- Worsening Of Gluten Sensitivity

Leaky Gut Test

Intestinal Permeability Test

- Lactulose & Mannitol Recovery in Urine

Intestinal Permeability

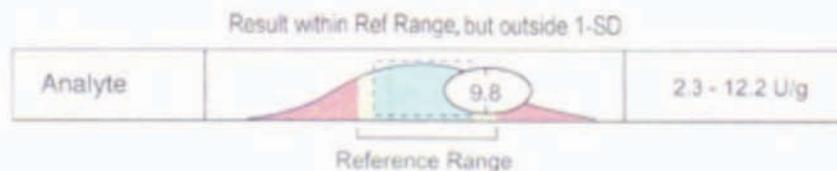


Commentary

This test has been developed and its performance characteristics determined by Genova Diagnostics, Inc. It has not been cleared or approved by the U.S. Food and Drug Administration.

The **Reference Range** is a statistical interval representing 95% or 2 Standard Deviations (2 S.D.) of the reference population.

One Standard Deviation (1 S.D.) is a statistical interval representing 68% of the reference population. Values between 1 and 2 S.D. are not necessarily abnormal. Clinical correlation is suggested. (See example below)



Commentary is provided to the practitioner for educational purposes, and should not be interpreted as diagnostic or treatment recommendations. Diagnosis and treatment decisions are the responsibility of the practitioner.

Understanding measurements of intestinal permeability in healthy humans with urine lactulose and mannitol excretion.

Neurogastroenterol Motil. 2010 Jan;22(1):e15-26. Epub 2009 Jul 13.

Camilleri M, Nadeau A, Lamsam J, Nord SL, Ryks M, Burton D,
Sweetser S, Zinsmeister AR, Singh R.

Clinical Enteric Neuroscience Translational and Epidemiological
Research Group, Mayo Clinic, Rochester, MN 55905

Having no symptoms is NOT an indication of health.

Lack of medical evidence for the existence of illness (by routine physical examinations and typical lab tests that can only detect advanced pathology) is NOT a demonstration of health.



Why Blood Lab Analysis?

- Accurate and Comprehensive
- Objective, Consistent and Reproducible
- The Gold Standard: Accepted Scientifically, Medically, Legally, Publicly
- Supports Your Treatment Plans

Assessing “Normal” Values

- Normal range does not necessarily mean healthy
- “Normal” values are established by averaging blood values from the blood draws of the public.....the American Public....Yikes!

Find the Healthy Range in the “Normal Range”

- Calculate Middle 33% for Healthier Range
- Clinical Range is 10 – 50
- $50 - 10 = 40$, $40 \times 33\% = 13.2$
- $13.2 + 10 = 23.2$
- $50 - 13.2 = 36.8$
- Healthy Range $23.2 - 36.8$

What Labs to Run

- CBC
- Comprehensive Metabolic Panel
- Liver Panel
- Lipid Panel
- Thyroid Panes

CBC

- White Blood Count
- Red Blood Count
- Hemoglobin
- Hematocrit
- MCV
- MCH
- MCHC
- Platelets
- Polys [SEGS-PMNS]
- Lymphocytes
- Monocytes
- Basophils

Comp Metabolic Panel

- Uric Acid
- Blood Urea Nitrogen
- Creatinine
- BUN/
Creatinine
Ratio
- eGFR
- Sodium, total
- Potassium
- Chloride
- Magnesium
- Calcium
- Phosphorus
- Calcium/
Albumin
Ratio
- Total Protein
- Albumin
- Globulin
- A/G Ratio
- Bilirubin
- Alkaline
Phosphatase
- LDH
- SGOT [AST]
- SGPT [ALT]
- GGT
- Serum Iron
- Ferritin

Liver Panel

- SGOT [AST]
- SGPT [ALT]
- GGT

Lipid Panel

- Total Cholesterol
- Triglyceride
- HDL Cholesterol
- LDL Cholesterol
- VLDL Cholesterol
- Cholesterol/HDL Ratio

Thyroid Panel

- T4 (Thyroxine)
- T3 Uptake
- Free Thyroxine Index (FT1/T7)
- TSH

Blood Labs Correlating a □ Nutrients

- □ Hemoglobin – Iron
- □ Hematocrit – B12, Folic Acid
- □ MCV – B6, Iron □ MCV – B-12, Folic Acid
- □ MCH – Iron, B-12, Folic Acid
- □ □ MCHC – Iron, B-12, Folic Acid
- □ WBC – B-12, Folic Acid

Iron Deficiency

- **Prevalence of Iron deficiency anemia: 1 in 4 North American Women are iron deficient**
- **Estimated 40% of females ages 15-55 are iron deficient (WHO)**

Iron & TIBC

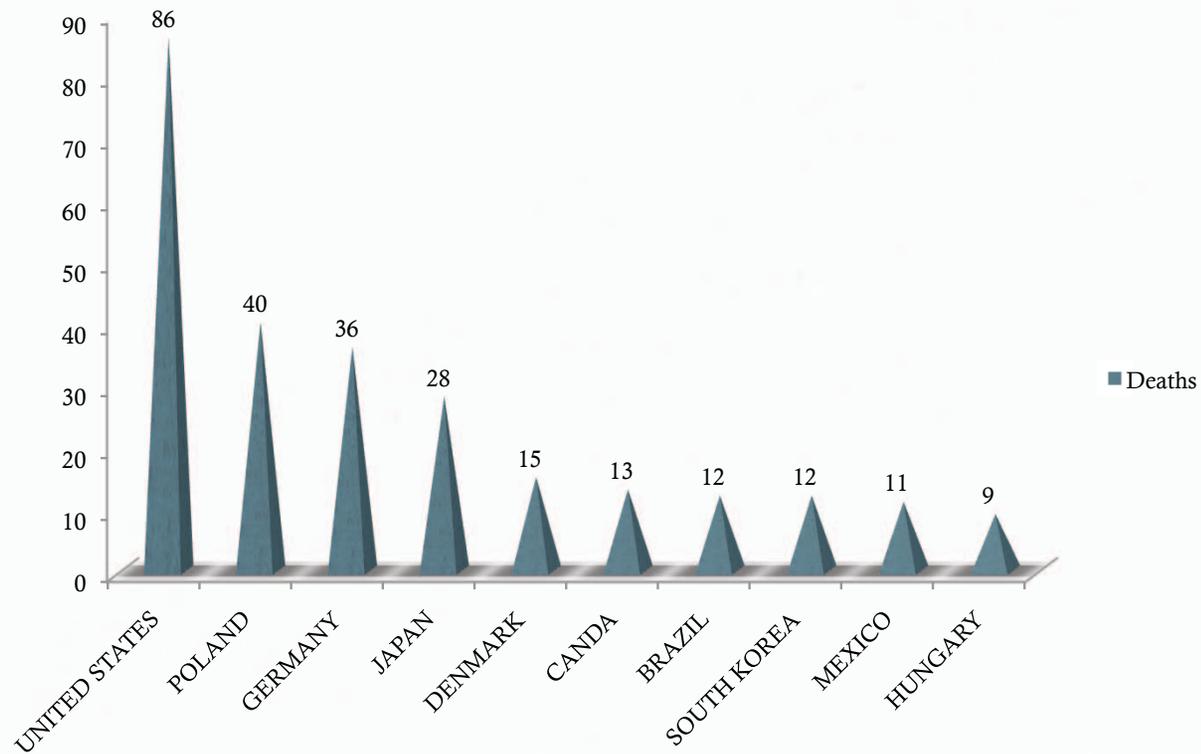
- Iron Deficiency
- Iron - Low
- TIBC (transferrin) - High (The liver produces more transferrin, presumably attempting to maximize use of the little iron that is available.)
- Ferritin - Low
- % Transferrin Saturation – Low
- Do not supplement Iron w/out Ferritin test- R/O Hemochromatosis (Too much Iron in Blood)

Supplements need direction too

- Prescriptions: 20% annual growth rate.
- Large segments of the population are still continuing to buy natural remedies, but it appears the downturn in the economy and a lack of real knowledge about what to expect from vitamins and supplements has driven interest down resulting in a leveling off of supplement use.
- -The Leading Edge Vol 3 Number3

B-12 Deficiency

World Wide Deaths (WHO Stats)



In Office Assessment

- As Chiropractors we are the most gifted palpation experts on the planet.
- Functional Assessments

**What Can You Do To
Help?**

**Answer:
Nutraceuticals**

Nutrient Deficient Patients

i.e.: most Americans

- Acid Indigestion
- Biliary Insufficiency
- Colitis
- Constipation
- Dysbiosis
- Leaky Gut Syndrome

First and Foremost Have Patient Reduce Self Induced Damage

- Reduce and ideally eliminate:
- Refined Food Products; sugars, flours, coffee, alcohol, fried foods, NSAID's, Antibiotics.
- Increase Fresh Fruits, Vegetables and Water intake.
- (Note: Biotics Research is one of the companies I use and I display them in my presentations, however, I am not a paid spokesperson for Biotics and this is not an endorsement for Biotics or any specific manufacturer. Work with companies you prefer for best results.)

Acid Insufficiency

Signs & Symptoms:

- Chronic Halitosis
- Gas Shortly After Eating (within 15-30 minutes)
- Indigestion 30-60 minutes after eating (may last 2-3 hrs)
- Loss of Taste
- Undigested foods in stool
- Acid or Spicy Food Cause “stomach” upset
- Taking Rx for Acid Reflux

HCL with Enzymes



Hydro-Zyme™
Product # 1262
90 Tablets

Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Vitamin B6 (as pyridoxine hydrochloride)	2 mg	100%
Betaine Hydrochloride	150 mg	*
Glutamic Acid (as L-glutamic acid hydrochloride)	50 mg	*
Ammonium Chloride	35 mg	*
Pancreatin 4X (porcine)	10 mg	*
Pepsin (1:10,000)	10 mg	*

*Daily Value not established

Other ingredients: Vegetable culture†, cellulose, stearic acid (vegetable source), modified cellulose gum, silica and food glaze.

† Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

RECOMMENDATION: One (1) tablet with each meal as a dietary supplement or as otherwise directed by a healthcare professional.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.

Sealed with an imprinted safety seal for your protection.

NDC# 55146-01262 Rev. 06/10

Instructions

- Take One Tablet with Each Full Meal
- Most cases will improve dramatically within 4-6 weeks. As the body normalizes, HCL can be reduced or eliminated.
- Use as needed after improvement occurs

Biliary Insufficiency

Signs & Symptoms:

- Lower bowel gas or bloating several hours after eating
- Frequent Headaches over eyes
- Chronic Nausea, queasiness after eating
- Light brown or yellow stools
- Pain between shoulder blades
- Dark circles under eyes
- “Acid” breath

Biliary Insufficiency Enzyme Formula to Help with Fat Digestion and Emulsification



Beta TCP™
Product # 1216
180 Tablets

Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Vitamin C (ascorbic acid)	60 mg	100%
Taurine	100 mg	*
Pancrelipase (porcine)	50 mg	*
Organic Beet Concentrate** (Beta vulgaris) (whole)	100 mg	*
Superoxide Dismutase (from vegetable culture †)	20 mcg	*
Catalase (from vegetable culture †)	20 mcg	*

*Daily Value not established

Other ingredients: Cellulose, stearic acid (vegetable source), magnesium stearate (vegetable source) and food glaze.

† Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

**Whole beet concentrate from certified organically grown beets.

RECOMMENDATION: One (1) tablet with each meal as a dietary supplement or as otherwise directed by a healthcare professional.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.

Sealed with an imprinted safety seal for your protection.

NDC #55146-01216 Rev. 6/09

Instructions

- 3 Tablets with each meal for 3-4 weeks depending on severity of dysfunction
- These patients may have to use product for a full 2-3 months.

Intestinal Dysfunction

Look to the North First

- Check hx and cc for primary digestion problems
- R/O Chronic Gastric & Liver problems
- Exam for Intestinal Dysfunction via palpation of
R/L lower quadrants

Intestinal Dysfunction

Signs & Symptoms:

- Coated or fuzzy tongue
- Pass large amounts of foul smelling gas
- Irritable bowel or mucous colitis
- Constipation, diarrhea or combination of both
- Pain and/or “hard” areas in R/L lower quadrants
- Burning or itching anus
- Laxative use

Probiotic Type of Formula



BioDoph-7 Plus®
Product # 1285
60 Capsules

Supplement Facts

Serving Size: 1 Capsule

	Amount Per Serving
Proprietary Blend	400 mg
Inulin (from Chicory root) *	
Arabinogalactans (from Larch) *	
Marshmallow (Althea officinalis) (root) (extract) *	
Bifidobacterium bifidum *	
Bifidobacterium lactis *	
Bifidobacterium breve *	
Lactobacillus paracasei *	
Lactobacillus plantarum *	
Lactobacillus salivarius *	
Streptococcus thermophilus *	

*Daily Value not established

Other ingredients: Vegetarian capsule shell (modified cellulose).

Lactose (from dairy) was used in the fermentation of some ingredients.

Each capsule of **BioDoph-7 Plus®** contains more than 20 billion organisms at time of manufacture.

RECOMMENDATION: One (1) capsule taken one (1) to two (2) times each day as a dietary supplement or as otherwise directed by a healthcare professional.

The long term viability of probiotic organisms is enhanced by refrigeration.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.
Sealed with an imprinted safety seal for your protection.

NDC #55146-01285 Rev. 5/09

Instructions

Take Probiotics between meals

1. One hour before
2. Two hours after

How do You Know Your Probiotics are Alive???

Test Them, They Should Curdle Milk

- Place Probiotic in a bowl of milk or soy milk
- After 24-48 hours you should have:
Chunks of curdled milk, a film of yogurt or CO₂ bubbles AND a smell of sour milk
- If not, you have an expensive jar of powder



Leaky Gut Repair

- Must Remove Injury Items: Sugars, Alcohol, Coffee, Gluten, Drugs etc
- Repair Barrier:
 - Quercetin 250-500 mg twice daily
 - Glutamine 250-500 mg twice daily
 - Re-Establish Normal Flora with Probiotic Formula
 - Eat a lot of fresh fruits & vegetables

Dietary Focus

- What you should eat (nutrient rich plant based foods)
- Forget counting calories
- Let food become your medicine
- Plant based diet is packed with anti-inflammatory and immune system building precursors

Clinical Recommendations

“The” Nutraceuticals to prescribe or recommend:

- Betaine HCL for gastric insufficiency
- Liver Support Formula with Enzymes
- Probiotic Formula for intestinal conditions
- Vitamin C formula 500-1000mg tablets or powder
- B Complex formula
- B 12 lozenge -1000mcg per week
- Liquid Iron Source – Floradix liquid



Avoid

- Excessive amounts of protein of any kind, animal or plant based
- Refined/Processed foods (junk or fast foods)
- Bad Fats: hydrogenated oils -TRANS-FATS, lard, butter
- Mucus forming foods: dairy milk, cheese, whey

Big Picture

- 16/21 is a complete program to implement and succeed in improving your health and quality of life.
- Hit 16 solid meals and snacks per week.
- Don't worry about 5 meals or snacks per week, eat whatever you would like.
- Over time, you will see the 16 increases and the 5 decreases.

Eat Your Ass Off Redefines the Dietary Approach to Eating Healthier

Eat Your Ass Off...Literally provides realistic, practical tools to help you make better food choices to promote optimal health. Easy to follow, with quick recipes, this book is a working manual for anyone who wants to improve their life and health.

"If you are looking for a delicious, yet do-able way to "healthy up" your diet and your life, look no further. Follow Dr. Mark Emerson's 16/21 Diet Solution and watch your unwanted pounds and health problems do down and your energy level go up!!"

~ Michael Klaper, MD
Physician, Author and Nutritional Researcher

"DocEmerson's recipes and diet advice are outstanding, I was skeptical how eating this healthy could taste this good, but now I am a true fan!!"

~ Steve Mariucci
NFL Network Analyst and Former NFL Head Coach

Dr. Mark D. Emerson is an Author, Lecturer and Chiropractic physician who specializes in clinical nutrition and natural treatment methods for patients of all ages. Understanding the important link between diet and disease, his educational seminars teach optimal health through proper nutrition and realistic diet protocols. Throughout his career, Dr. Emerson has been a health and wellness consultant to elite athletes of the NFL, PGA Tour, NCAA and USA Track and Field, as well as many entertainment celebrities and high-profile CEO's.



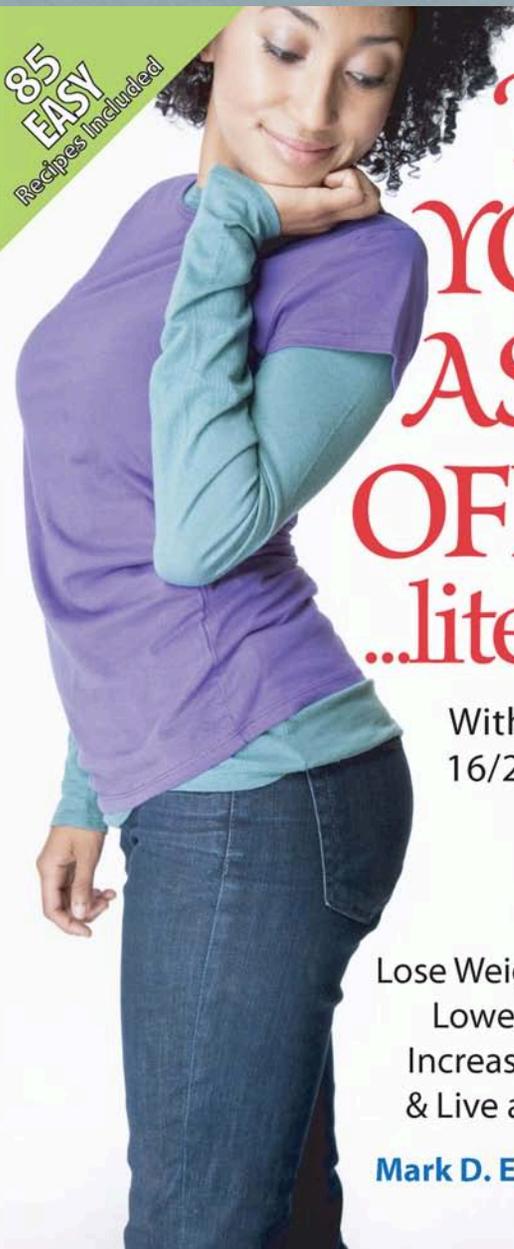
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Eat Your Ass Off...Literally with Dr. Emerson's 16/21 Diet Solution

Mark D. Emerson, DC, CCSP

85 EASY
Recipes Included



EAT YOUR ASS OFF ...literally!

With Dr. Emerson's
16/21 Diet Solution

Lose Weight & Keep It Off
Lower Cholesterol
Increase Your Energy
& Live a Healthier Life

Mark D. Emerson, DC, CCSP

Thank You

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