Mouth Matters®
Carol Vander Stoep, RDH

Restore the Terrain: Renewing Health From the Inside Out

Carol Vander Stoep©

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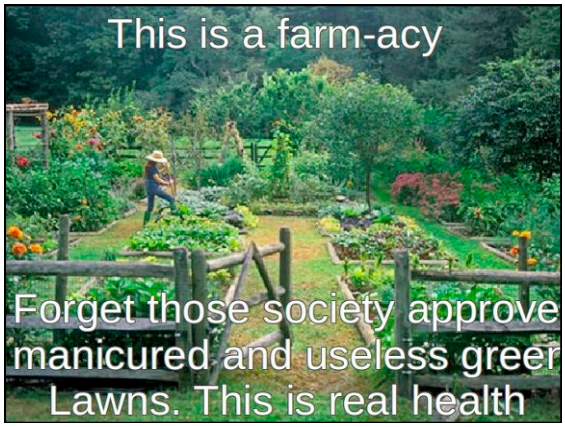
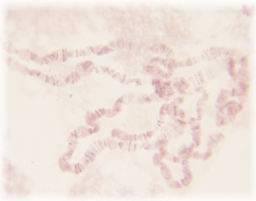


GMOs – Reduction in Nutrients

Third year, second cutting.
Glyphosate applied once in prior year

NUTRIENT	% REDUCTION COMPARED TO NON-RR
Nitrogen	13%
Phosphorus	15%
Potassium	46%
Calcium	17%
Magnesium	26%
Sulfur	52%
Copper	20%
Iron	49%
Manganese	31%
Zinc	18%
Boron	18%

Refined vs. Unrefined Salt



Enzymes and Cellular Nutrition

The Politics of Money

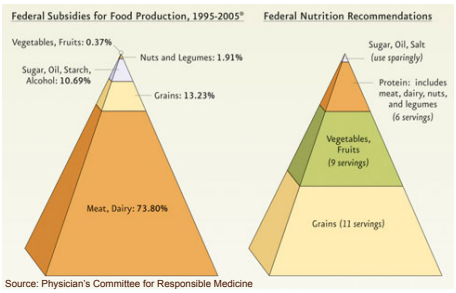
- What are our sources for information?
- Does advertising money influence media outlets?
- Does it influence you?
- Does it influence other health practitioners?

British Medical Journal "Missing Clinical Data"

Jan. 3, 2012 *BMJ 2012;344:d8158*

- Drug research, even from clinical trials sponsored by the federal government, is routinely suppressed.
- Only half of all NIH-funded clinical drug trials were published within 2.5 years.
- One third were never published.
- Avandia: 35/42 studies never published. GlaxoSmithKline knew of CV risks before FDA approval

Why Does a Salad Cost More Than a Big Mac?



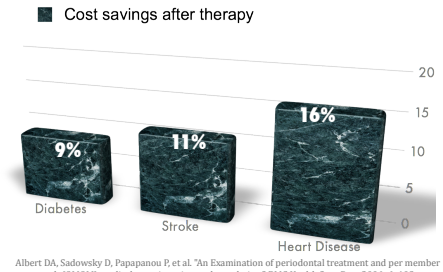
Source: Physician's Committee for Responsible Medicine

Is This Person Healthy Systemically?

What About This Person?

Aetna Study

Treating gum disease decreases costs for treating other degenerative diseases:



Albert DA, Sadowsky D, Papapanou P, et al. "An Examination of periodontal treatment and per member per month (OMOM) medical costs in an insured population." BMC Health Serv Res. 2006; 6: 103.

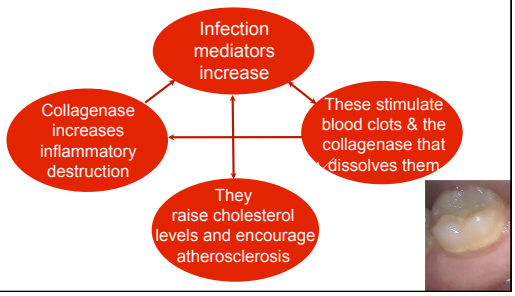
Heart Disease is *Not* about High Cholesterol Levels

- In only 50% of heart attacks are cholesterol numbers high.
- High cholesterol levels are merely the symptom of inflammation characterized by vascular changes. Discover the root causes, then modify them.
- Accountability: "Each person is his own doctor."

Injuries cause plaques to arise in blood vessel walls. Injuries derive from:

- •Gum disease and other infections that raise CRP levels
- •Viruses, fungi, parasites ... and bacteria!
- •Nicotine irritation from smoking
- •Constant release of cortisol, the stress hormone
- •Trans fat ingestion

ORAL-SYSTEMIC MEDICINE: Vascular Disease

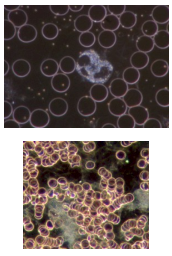


Total surface area of adult blood vessel walls: 1000^2 meters. The percent oral bacteria have been found to invade:

- *Porphyromonas gingivalis*: 100%
- *Fusobacterium nucleatum*: 80%
- *Tanerella forsythia*: ~50%
- *C. pneumoniae: ~30%*
- *Heliobacter pylori and H. influenzae: 4%*

Platelet Aggregation: Darkfield Microscopy

- TNF, IL-1s, and IL-6s create or enhance vascular lesions and...
- ...**cause the liver to make CRPs, thus fibrinogen, and other coagulation factors.**
- They also create lipid abnormalities.



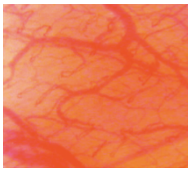
Interleukin Inflammatory Mediators

Il-6s play an active role in:

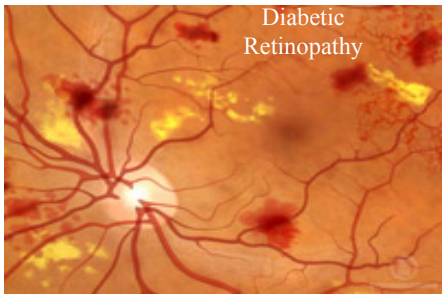
- Inflammation
- Bone metabolism (stimulates osteoclastic activity)
- Arthritis
- Cognitive decline
- Arterial plaque instability

Endothelial Function and Periodontal Disease

- There is an intimate relationship between the function of capillaries and seriousness of gum disease.
- Function of blood vessel walls and localized blood congestion improves following successful gum disease therapy.
- Microscopically, advanced periodontal lesions show considerably remodeled blood vessels – the deeper the lesion, the more vessels are increased in diameter and number **and the more leaky they will be.**



End Organ Diseases



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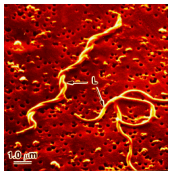
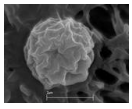
Biofilms and Mycoplasms

Survival strategies:

- Cell Wall Deficient (CSD) phase (cysts)
- Five time smaller than "active, recognized form"
- Antibiotics encourage non-motile dormant phase/proliferation.





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Blood vessel injuries derive from (continued):

- Elevated meat intake (high homocysteine levels)
- Inadequate intake of B complex-rich foods
- Glycation (AGE) damage from simple carbohydrates disassociated from fiber
- Trans fat ingestion
- Constant elevated insulin levels (pre-diabetes)
- High Blood Pressure
- Mercury toxicity

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FATS or SUGARS?

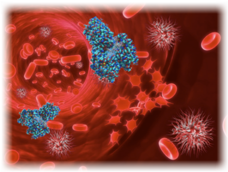
SUGARS
An Unrecognized American Addiction

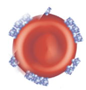
Yup, it *is* an addiction!

Sugar's Impacts on Health

- Sugars create AGE (glycation) products.
- Sugar compete with Vitamin C for absorption.
- Sugars, along with excess proteins, caffeine, and processed foods, create an acidic environment. Potassium (K) salts neutralize metabolic acids. Adequate Intake (AI) of K, at 4700 mg is nearly 4X that of calcium AI, at 1200 mg.
- Excess caffeine, penicillin, bronchodilators, and decongestants lower serum potassium levels.

AGEs: Glycated Hemoglobin/A1C





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Adequate AI for Potassium

Life Stage	Age	Males (mg/day)	Females (mg/day)
Infants	0-6 months	400	400
Infants	7-12 months	700	700
Children	1-3 years	3,000	3,000
Children	4-8 years	3,800	3,800
Children	9-13 years	4,500	4,500
Adolescents	14-18 years	4,700	4,700
Adults	19+ years	4,700	4,700
Pregnancy	14-50 years	.	4,700
Breast-feeding	14-50 years	.	5,100

Potassium Food Sources

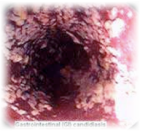
Food	Serving	Potassium (mg)
Banana	1 medium	422
Baked Potato w/skin	1 medium	926
Prune juice	6 fluid ounces	528
Plums, dried (prunes)	1/2 cup	637
Orange juice	6 fluid ounces	372
Orange	1 medium	237
Tomato juice	6 fluid ounces	417
Tomato	1 medium	292
Raisins	1/2 cup	598
Raisin bran cereal	1 cup	362
Artichoke, cooked	1 medium	343
Lima beans, cooked	1/2 cup	485
Acorn squash, cooked	1/2 cup (cubes)	448
Spinach, cooked	1/2 cup	420
Sunflower seeds	1 ounce	241
Almonds	1 ounce	200
Molasses	1 tablespoon	293

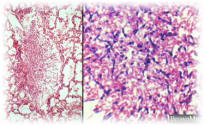
Sugar's Impacts on Health

- Refined sugars and flours are stripped of the enzymes, vitamins, and minerals necessary for their digestion. Metabolizing refined sugars and flours intereferes with the body's use of magnesium, copper, chromium, and other micronutrients.
- Sugars deplete zinc, a component of the insulin molecule that helps it move sugar out of the blood stream. Zinc keeps the immune system strong.
- A side effect of an acidic system from high sugar intake is a chronically inflamed gut.
- Sugars feed cancers.

Sugar's Impacts (continued)

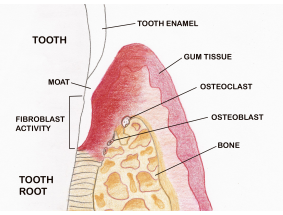
- Sugars impede memory by decreasing brains levels of BDNF. BDNF is a "memory food".
- Candida infections proliferate under conditions of high sugar availability and leaky-gut syndrome.
- Sugars raise insulin levels.





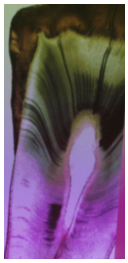
Sugar's Impacts (continued)

- High sugar levels cause fibroblasts to lose their chemical directives for reattachment.



Sugar's Impacts (continued)

- Sugars reverse the direction of self-cleansing fluids through dentin tubules.
- Sugars contribute to osteoporosis because they cause magnesium excretion.



Magnesium's Importance

- Mg is essential for the absorption and utilization of calcium.
- Mg activates most of the enzymes used for turning fats and sugars into energy.
- Mg is critical for omega-3 metabolism.
- Mg relaxes blood vessel walls.
- Mg is necessary for insulin's production and action. Without it, you become more insulin resistant.

Purselane

Fructose

Fructose, whether from sucrose or HFCS, is metabolized exactly like ethanol with but one exception – where each is metabolized. One doesn't sense fructose toxicity because it is metabolized in the liver, not the brain. Like alcohol, excessive fructose causes: liver dysfunction, heart problems, high blood pressure, improper fat metabolism, inflammation of the pancreas, obesity, fetal alcohol syndrome, and addictions.

Thirty percent of fructose ends up as fat, not glucose. In a six day study where medical students ate high fructose diets:

- **Triglycerides doubled**
- **Fat-making multiplied 5X**
- **Free fatty acids in the blood doubled**
- **Insulin resistance doubled**

Fructose (continued)

- Fructose confuses appetite suppression.
- Fructose is 7X more likely to cause AGEs.
- Fructose metabolism in the liver depletes phosphate.

- Almost 60% of fructose exits the liver as the fraction of LDLs (often called the "bad cholesterol") called VLDLs.

Some are born to their sugar addictions…

- They are born with a heightened sensitivity to carbohydrates and chronically low serotonin and beta-endorphin levels.
- Serotonins are responsible for feelings of wellbeing and curbing impulsive behavior. (SSRIs like Paxil, Effexor, Prozac and Zoloft)
- Beta-endorphins, far more potent than morphine, stimulate confidence and euphoria. Sugar, alcohol, heroin and morphine all activate beta-endorphin release.
- Epigenetics – changes express for at least two generations. Children and grandchildren of alcoholics are often born with low beta-endorphin transmitter and receptor levels.

- Lifestyle changes can manipulate neurotransmitters and their receptors. When and how a person sleeps, exercises, drinks, and copes with stress can rewire the brain.
- Women should manage these especially when estrogen levels are low just before menstruation when beta-endorphins are at low ebb.

Resetting Your Body Chemistry

Eat high quality proteins and vegetables at every meal.

- L-phenylalanine and L-tyrosine boost dopamine and norepinephrine; these increase energy and focus.
- Tryptophan or 5-Hydroxy Tryptophan (5HTP) is a precursor for serotonin, which helps you relax, feel full, and relieves insomnia, depression, and anxiety.
- Glutathione dampens carbohydrate cravings (whey or pea proteins, Immunocal, Complimentary R℞).
- GABA, found in green tea, signals satiety and reduces brain excitability.

Sugar Substitutes?

- Agave syrup is highly processed and is often only relabeled HFCS.
- Honey is still a sugar, though it has healing properties, too. Most bee keepers supplement their hives in winter with HFCS.
- Stevia: 200 – 300X sweeter than sugar with few calories and little effect on blood sugar readings.
- There is always xylitol, except for recipes requiring yeast.

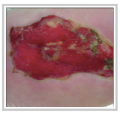
MADE FROM SUGAR SO IT TASTES LIKE SUGAR

Manufacturers manipulate serving sizes to write off calories.

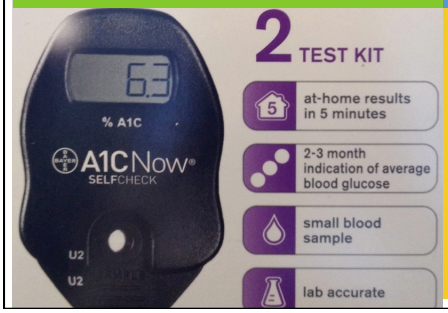
- If < 5 calories, a packet can advertise “no calories”.
- The familiar .5 and 1.0 gram packets of powered artifical sugar are >90% sugar: sucrose, dextrose, or maltodextrin are the bulking agents.
- Splenda No Calorie Sweetener® has 4 calories and is 99% sucrose.

Splenda® No Calorie Sweetener

DIABETES:
A Model For Accelerated Aging



A1CNow+



Checking blood sugar readings on a Smart Phone

This isn’t the app I was referring to on the audio, but interesting:

http://www.kxan.com/dpp/news/strange/diabetics-can-check-sugar-with-phone-nd12

Diabetes and Oral Healing

- High blood glucose levels decimate phagocytic index of WBCs.
- Sulcular plaques inflame nearby blood vessels and multiply the body’s load of inflammatory mediators. This in turn accelerates systemic and oral bone loss and other damage.
- Anaerobic germs thrive in a sugar-rich, acidic environment.
- Elevated glucose levels in the sulcus incapacitate fibroblasts.
- High blood glucose shortens life cycle of osteoblasts.
- Researchers believe circulating inflammatory mediators encourage insulin resistance.

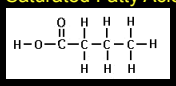
Blood vessel injuries derive from (continued):

- Elevated meat intake (high homocysteine levels)
- Inadequate intake of B complex-rich foods
- Glycation (AGE) damage from simple carbohydrates disassociated from fiber
- Trans fat ingestion
- Constant elevated insulin levels (pre-diabetes)
- High Blood Pressure
- Mercury and other heavy metal toxicity

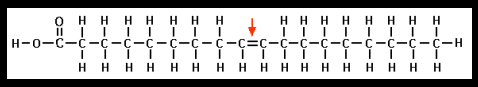
2. FATS – Guilty Pleasures or Life-Giving Nutrients?

Building Blocks of Fat

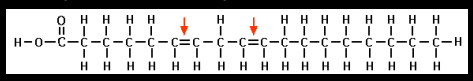
Saturated Fatty Acid



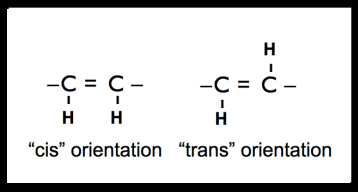
Mono-unsaturated Fatty Acid



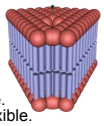
Poly-unsaturated Fatty Acid



Trans-fats



The Good . . .

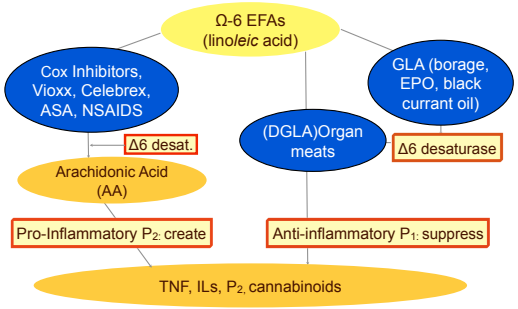


- Saturated fats keep you feeling full longer. Some fats, like saturated fats, are so important our bodies have the ability to manufacture them.
- Lipids comprise about 50% of each cell membrane. Saturated fats keep these membranes stiff, yet flexible.
- Fats are a major part of myelin and nearly half of a brain's dry weight.
- Fats carry minerals, vitamin A, D, E, and K, and convert carotenes to A.
- Fats are building blocks for pro- and anti-inflammatory prostaglandins.

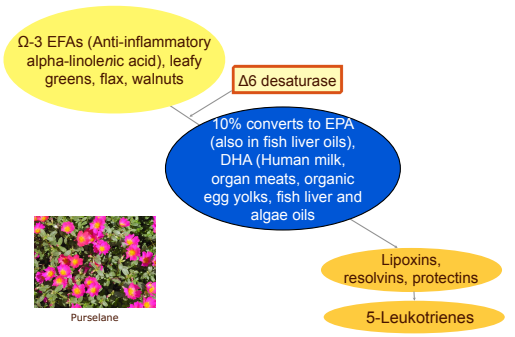
The Bad, and the Ugly... Essential Fatty Acids: Ω-3s and Ω-6s:

On the other hand, essential fatty acids (EFAs) are like vitamins. We must obtain them from our diets because our bodies cannot make them.

The Billion Dollar Highway



Anti-inflammatory Ω-3 EFAs



Ω-3 EFAs (continued)

- DHA maintains serotonin and dopamine neurotransmitter levels and aids nerve-signaling. People whose diets are rich in Ω-3 fatty acids may be happier!
- Omega-3 fatty acids promote bone strength when diets also include low levels of boron.
- Deficiencies in Ω-3s can compromise blood flow to the brain, compromise the blood-brain barrier, and decrease BDNF levels.
- **We need saturated fats to store and use Ω-3 EFAs.**

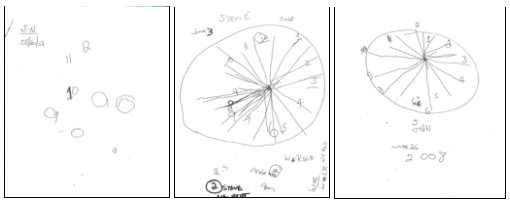
Delta-6 Desaturase Enzyme

- Both Ω-3 and Ω-6 pathways start with delta-6 desaturase.
- Diets overburdened with Ω-6s will consume it before it can process Ω-3s.
- Trans fats found in margarine, shortening, canola oil, and hydrogenated fats block this enzyme.
- Excessive alcohol and sugars inhibit its function.
- Delta-6 desaturase works with biotin, zinc, B and E vitamins and proteins.

Saturated vs. Unsaturated Fats

- Saturated fats keep you feeling full longer.
- Saturated fats keep cell membranes stiff, yet flexible.
- Saturated fats do not oxidize (go rancid), either within the body or while cooking.
- All omega-3 and -6 oils are polyunsaturated oils therefore they are vulnerable to oxidation. Respect smoking point of oils in cooking. Use oils from manufacturers that respect the fragility and value of these oils. Consume with antioxidants.

Alzheimers Disease Diagnosis: 58 year old man.
Prior to dietary intervention, MMSE of 14/30 points, and drew Clock #1.
Day one: 35 ml of coconut oil (~2 T), ~20 grams of medium chain triglyceride (MCT oil) with breakfast. Approximately 4 hours later he MMSE was 18/30, improved time and place orientation.
Day 14: Clock #2. After the first month, 2T were added to the evening meal. At 37 days he drew Clock #3.



Mouth Matters®
Carol Vander Stoep, RDH

www.mouthmattersbook.com

2.5 hour Patrick Timpone podcast:
Control Your Breath, Control Your Life