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Weston Price Foundation Wise Traditions Presentations

- Powerpoint Presentations at the [Weston A. Price Wise Traditions 15th Annual Conference Indianapolis November 7-10, 2014](#).
Pesticides, Antibiotics, Vaccines and Pharmaceuticals: Are They the Cause of our Current Health Crisis?
 1. Nutrition ([Powerpoint Slides](#)) ([PDF Version](#))
 2. Pesticides: Focus on Roundup ([Powerpoint Slides](#)) ([PDF Version](#))
 3. Vaccines, Antibiotics, and Microbes ([Powerpoint Slides](#)) ([PDF Version](#))
 4. Pharmaceutical Drugs: Focus on Statins ([Powerpoint Slides](#)) ([PDF Version](#))

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Drugs.pdf Nutrition.pdf antibiotics_vaccines.pdf glyphosate_new.pdf

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Pesticides, Antibiotics, Vaccines and Pharmaceuticals: Are They the Cause of our Current Health Crisis?

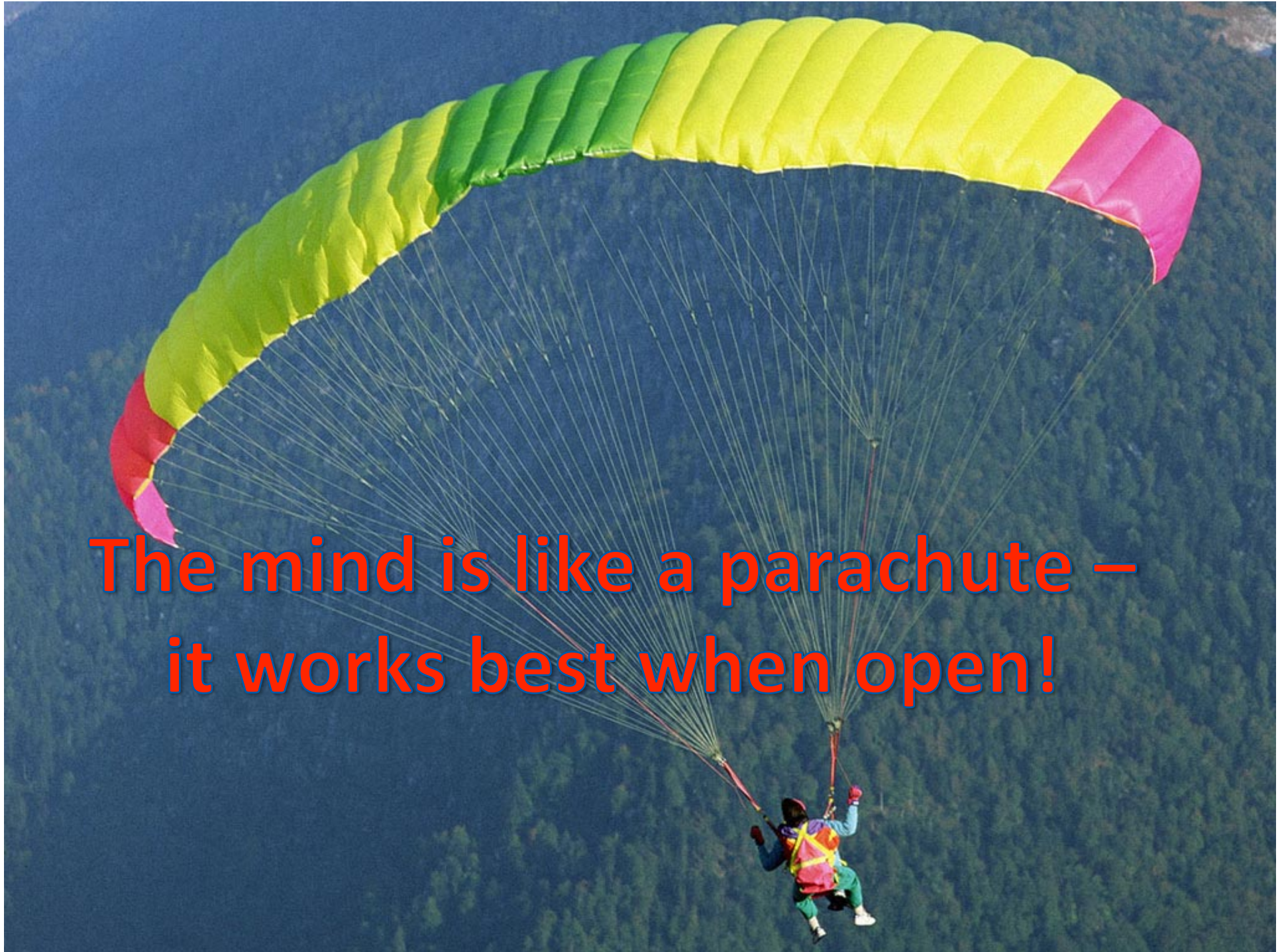
Stephanie Seneff

MIT CSAIL

Nov. 7 2014

WAPF Wise Traditions Workshop
Indianapolis, Illinois





**The mind is like a parachute –
it works best when open!**

"If people let the government decide what foods they eat and what medicines they take, their bodies will soon be in as sorry a state as are the souls who live under tyranny"

Thomas Jefferson (1743 - 1826)

Outline

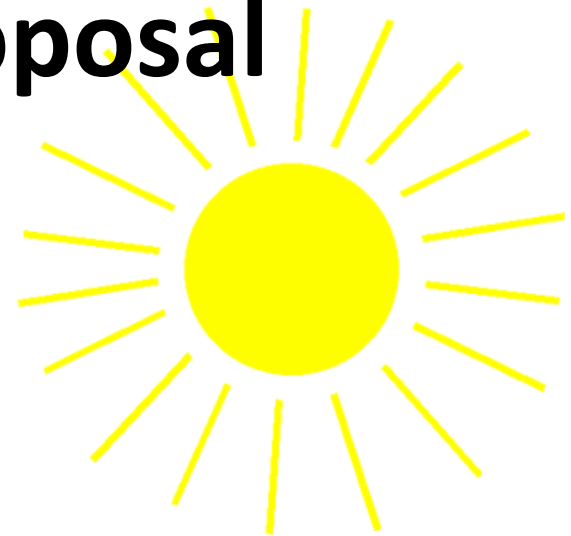
- Very brief overview
- Nutrition and health
- Pesticides: focus on Roundup
- Vaccines, antibiotics and microbes
- Pharmaceutical drugs: focus on statins

Outline

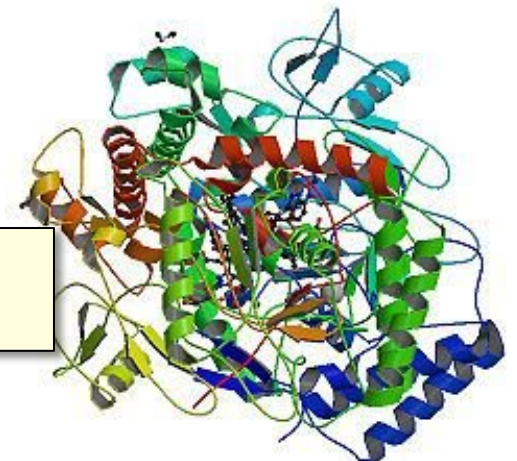
- **Very brief overview**
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A Provocative Proposal

- Cholesterol sulfate supplies oxygen, sulfur, cholesterol, energy and negative charge to all the tissues
- Sulfate is synthesized from sulfide in skin and blood stream utilizing energy in sunlight
 - Protects from UV damage and keeps microbes out
- Endothelial Nitric Oxide Synthase (eNOS) performs the magic



The skin is a solar powered battery!



A Provocative Proposal

- Cholesterol sulfate supplies



BOLD CLAIM:

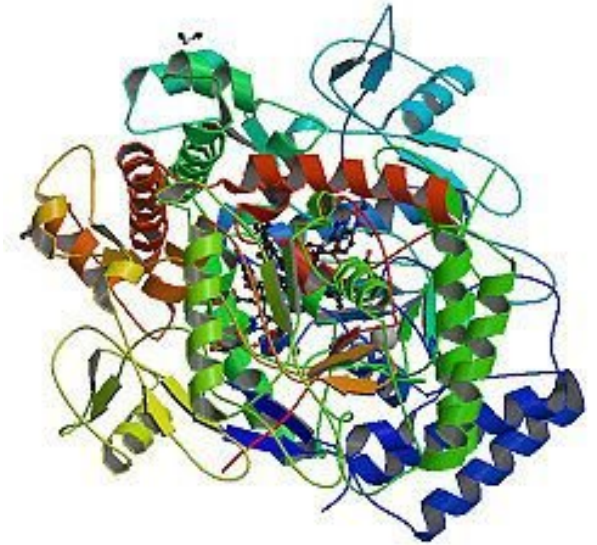
Deficiencies in cholesterol and sulfate supplies to the blood and to the tissues are the most important factor behind modern diseases

The skin is a solar powered battery!



eNOS is Very Vulnerable*

- eNOS depends on:
 - Cobalamin (vitamin B12, cobalt)
 - Heme iron, sulfur, zinc, oxygen
 - Glutathione
 - Sunlight
 - Tryptophan: converts UV to blue light; source of NAD
- eNOS is a cytochrome P450 enzyme:
 - Highly vulnerable to various environmental toxicants like mercury, aluminum, glyphosate, etc.

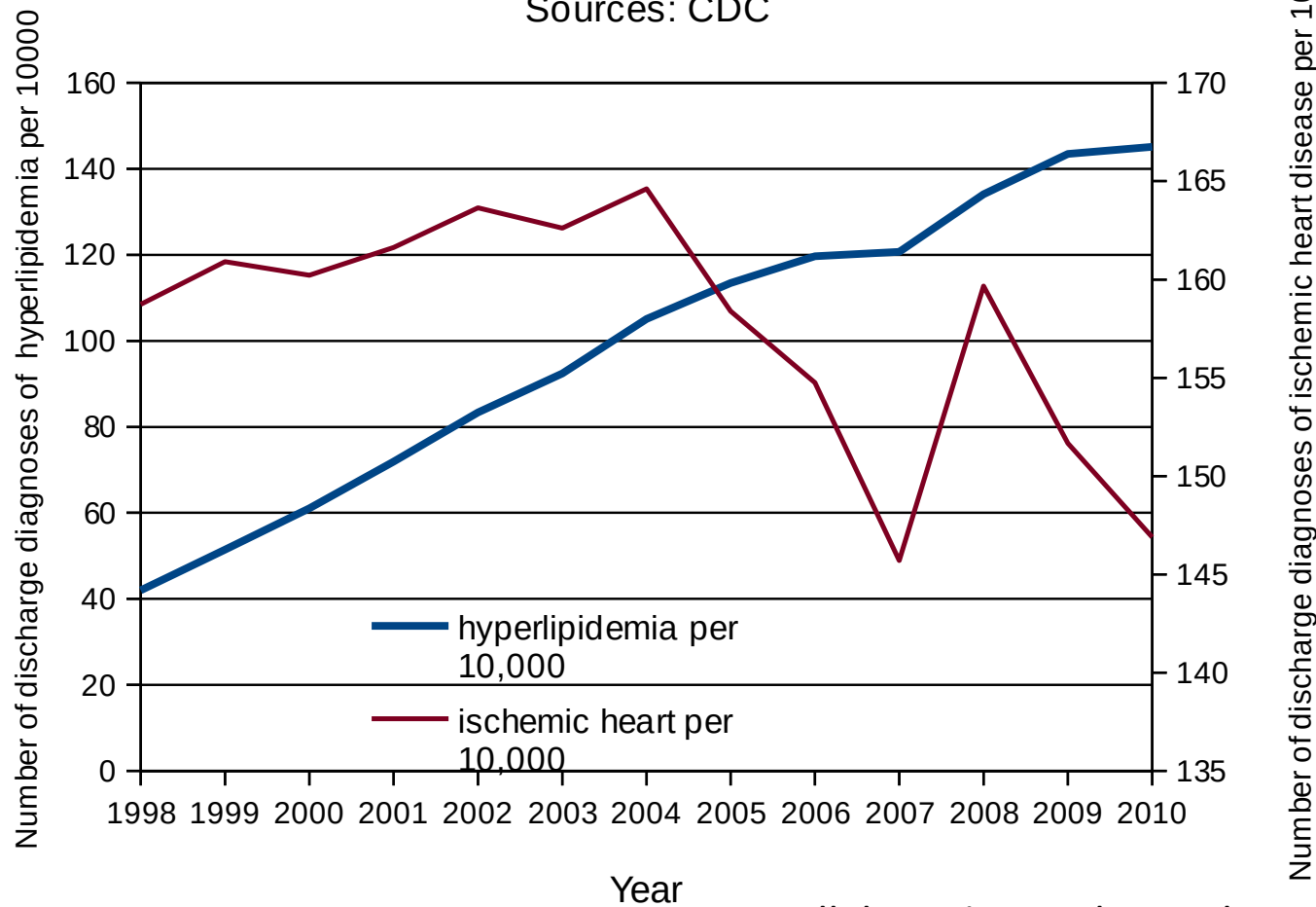


*S. Seneff et al., Entropy 2012, 14, 2492-2530.

High Serum Lipids is **Not** Correlated with Ischemic Heart Disease!

Hospital Discharge Diagnoses of Hyperlipidemia (ICD 272.0-4)
& Ischemic Heart Disease (ICD 410-414)

$R = 0.3885, p < 0.19$
Sources: CDC



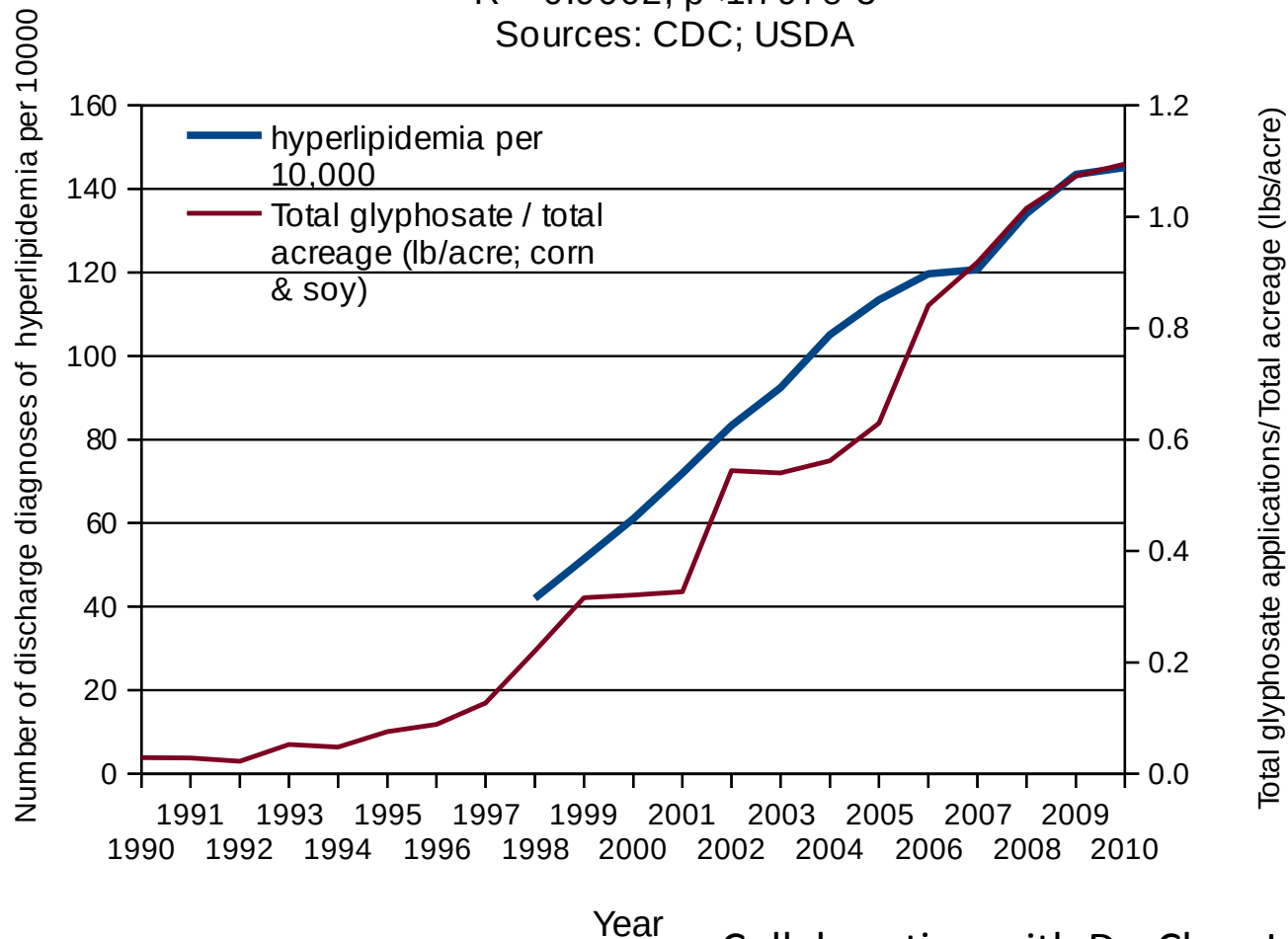
Collaboration with Dr. Chen Li and Dr. Nancy Swanson

High Serum Lipids *IS* Correlated with Glyphosate Usage

Hospital Discharge Diagnoses of Hyperlipidemia (ICD 272.0-4)
& Glyphosate applied to corn & soy crops

$R = 0.9662, p < 1.797e-5$

Sources: CDC; USDA



Collaboration with Dr. Chen Li and Dr. Nancy Swanson

What happens to us in the modern world

- Toxic chemicals in the food destroy the gut and then the liver and then the kidneys and the heart and the brain
- Vaccines work synergistically with pesticides to cause harm to the brain
- Drugs make things worse by disrupting essential biological pathways
- We develop many painful and debilitating chronic illnesses

At the Cellular Level...

- Cells deficient in cholesterol sulfate can't recycle their garbage
- They have two options:
 1. Proliferate to dilute the garbage
 2. Die and let a macrophage clean up the mess
- When even the macrophages are sick:
 - Proliferation is the only option → cancer
 - Prostate cancer cells produce cholesterol sulfate
 - Breast cancer cells produce estrone sulfate → good substitute for cholesterol sulfate



At the Cellular Level...



Neurons in the brain clear their cellular debris while we sleep, and they depend upon sulfate to do this.

- Prostate cancer cells produce cholesterol sulfate
- Breast cancer cells produce estrone sulfate → good substitute for cholesterol sulfate

Wake-Sleep Cycle*

“Circadian signals are more important than food or exercise for wellness. Wellness is about optimized circadian signal specificity and sensitivity.”

Jack Kruze, MD

*jackkruse.com/tensegrity-4-magnetism-electrons-sleep/
(Thanks to Lienke Katz for pointing me to Jack Kruze's writings)

Wake-Sleep Cycle*

**Healthy circadian rhythms
depend on sulfate**

Jack Kruze, MD

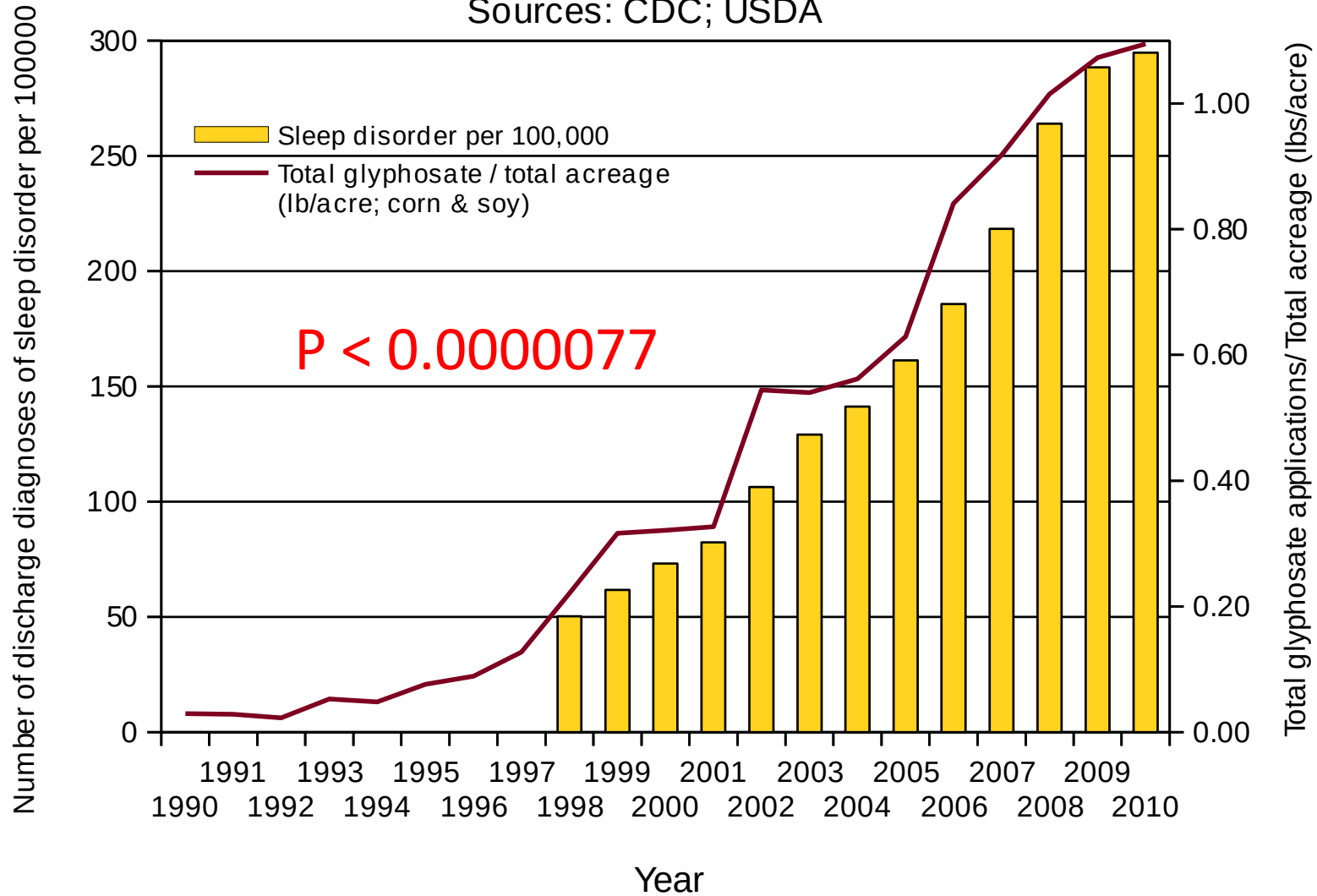
*jackkruse.com/tensegrity-4-magnetism-electrons-sleep/
(Thanks to Lienke Katz for pointing me to Jack Kruze's writings)

GLYPHOSATE

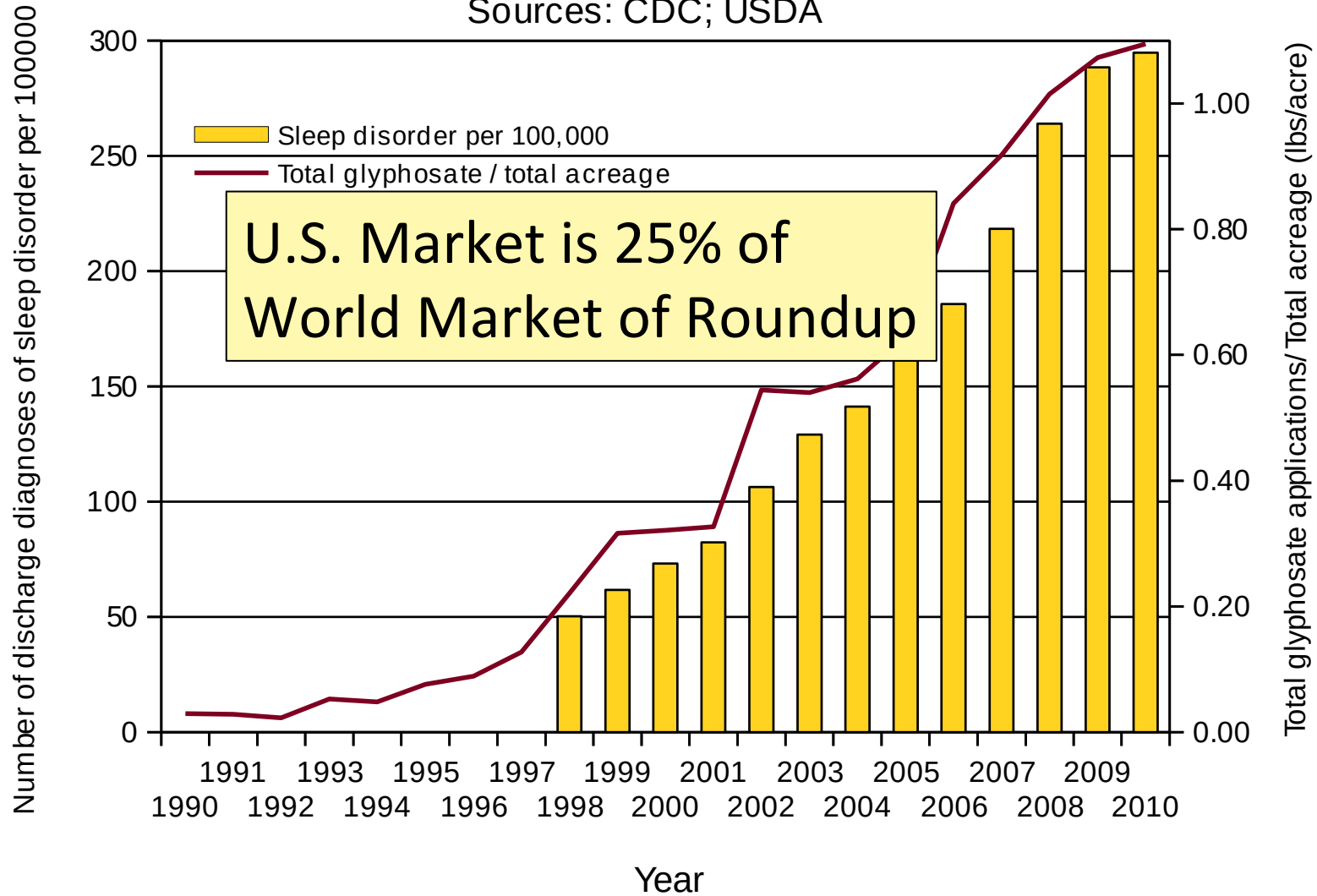


Hospital Discharge Diagnoses of Sleep Disorders (ICD 327, 780.50-59, 307.41-49) & Glyphosate applied to corn & soy crops

R= 0.9876, p<=7.744e-06
Sources: CDC; USDA



Hospital Discharge Diagnoses of Sleep Disorders
 (ICD 327, 780.50-59, 307.41-49)
 & Glyphosate applied to corn & soy crops
 $R = 0.9876$, $p \leq 7.744e-06$
 Sources: CDC; USDA

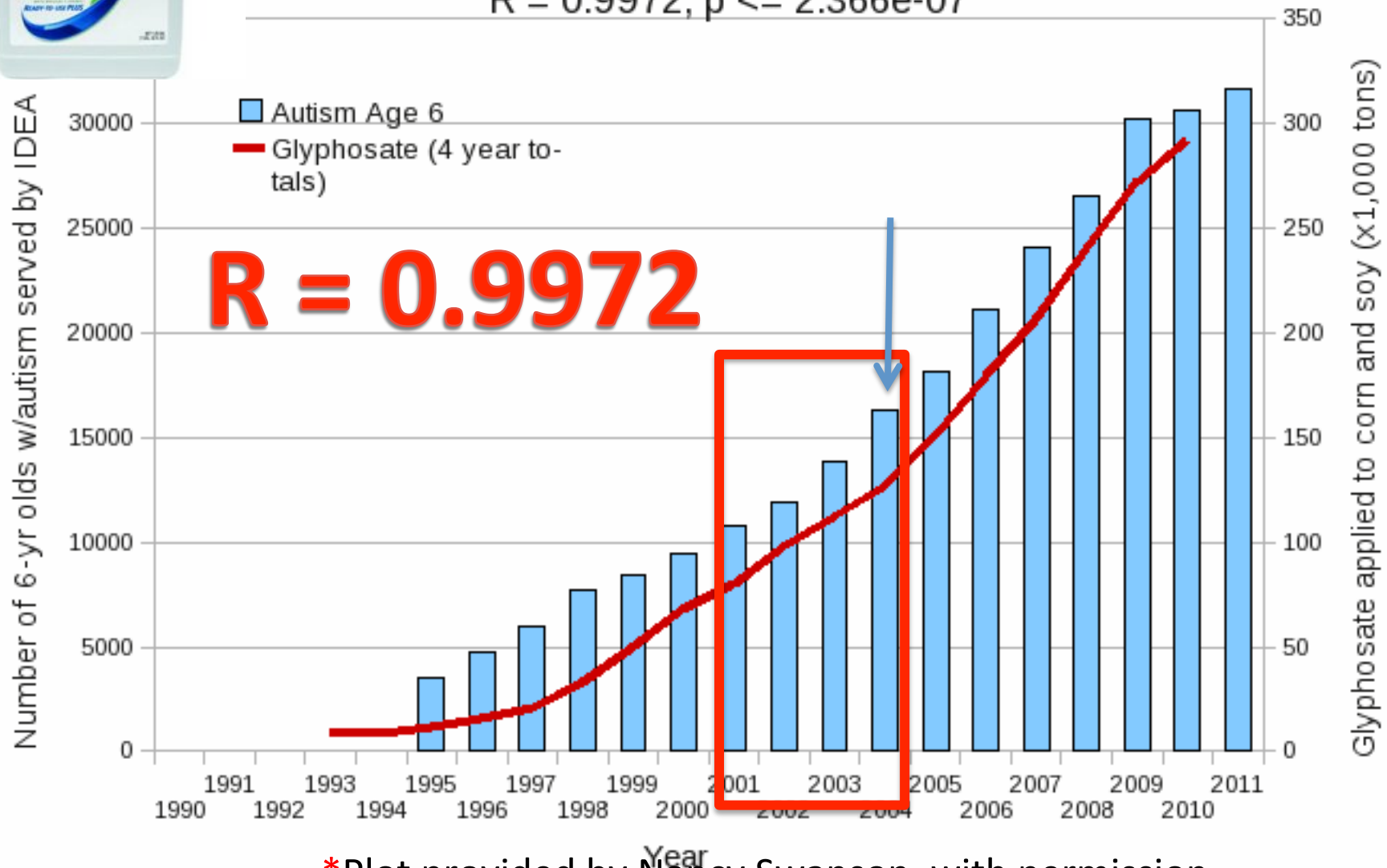


Sleep disorder is associated with depression, Alzheimer's disease, dementia, Parkinson's disease, ADHD, multiple sclerosis and autism.



Autism Prevalence: 6 year olds

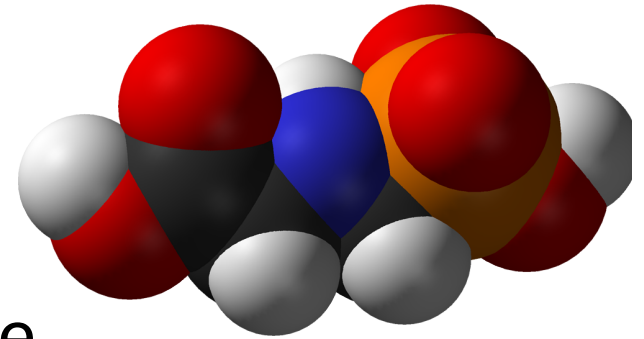
glyphosate is total of year indicated + 3 previous years
 $R = 0.9972, p \leq 2.366e-07$



* Plot provided by Nancy Swanson, with permission

Data sources: autism: US Department of Education; Glyphosate: US Department of Agriculture

Is Glyphosate Toxic?



- Monsanto has argued that glyphosate is harmless to humans because our cells don't have the shikimate pathway, which it inhibits
- However, our gut bacteria DO have this pathway
 - We depend upon them to supply us with essential amino acids (among many other things)
- Other ingredients in Roundup greatly increase glyphosate's toxic effects
- Insidious effects of glyphosate accumulate over time
 - Most studies are too short to detect damage

Main Toxic Effects of Glyphosate*

- Kills beneficial gut bacteria and allows pathogens to overgrow
- Interferes with function of cytochrome P450 (CYP) enzymes
- Chelates important minerals (iron, cobalt, zinc, manganese, etc.)
- Interferes with synthesis of aromatic amino acids and methionine
 - Leads to shortages in glutathione, critical neurotransmitters and folate
- *Disrupts sulfate synthesis and sulfate transport*

*Samsel and Seneff, *Entropy* **2013**, 15, 1416-1463

The Enhancing Effect of Adjuvants*

“Adjuvants in pesticides are generally declared as inerts, and for this reason they are not tested in long-term regulatory experiments. It is thus very surprising that they amplify *up to 1000 times* the toxicity of their APs [Active Principles] in 100% of the cases where they are indicated to be present by the manufacturer.”

*R. Mesnage et al. BioMed Research International 2014; Article ID:179691.

Roundup Safety Claims Disputed*

“It is commonly believed that Roundup is among the safest pesticides. ... Despite its reputation, *Roundup was by far the most toxic among the herbicides and insecticides tested.* This inconsistency between scientific fact and industrial claim may be attributed to huge economic interests, which have been found to falsify health risk assessments and *delay health policy decisions.*”

*R. Mesnage et al., Biomed Research International, Volume 2014 (2014), Article ID 179691

How to protect yourself?

Go Organic!



How Much Does it Cost?

Food	Organic	Conventional
celery	2.99	1.99
cauliflower	4.99	2.99
Bartlett pears	2.69	1.99
orange juice	3.99	2.99
eggs	5.69	3.99
milk	4.69	2.99
cereal	4.56	3.91
TOTAL	29.60	20.85

increase bill by ~40%

Probiotics! – Maintain Healthy Gut



Escape to a sunny place in winter!



If you Live in Canada, Use a Sunlamp!



Epsom Salts!

Magnesium Sulfate in hot bath water is a cheap and easy way to get sulfate supply to the skin
Infrared heat also beneficial!





Don'ts!



We are Too Comfortable with Aluminum!



Outline

- Very brief overview
- **Nutrition and health**
- Pesticides: focus on Roundup
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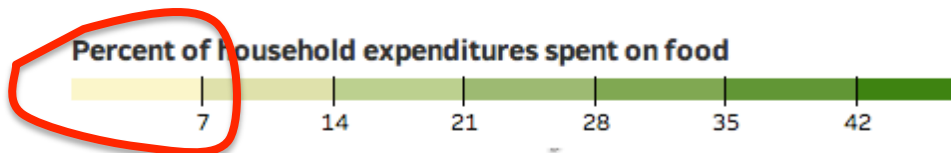
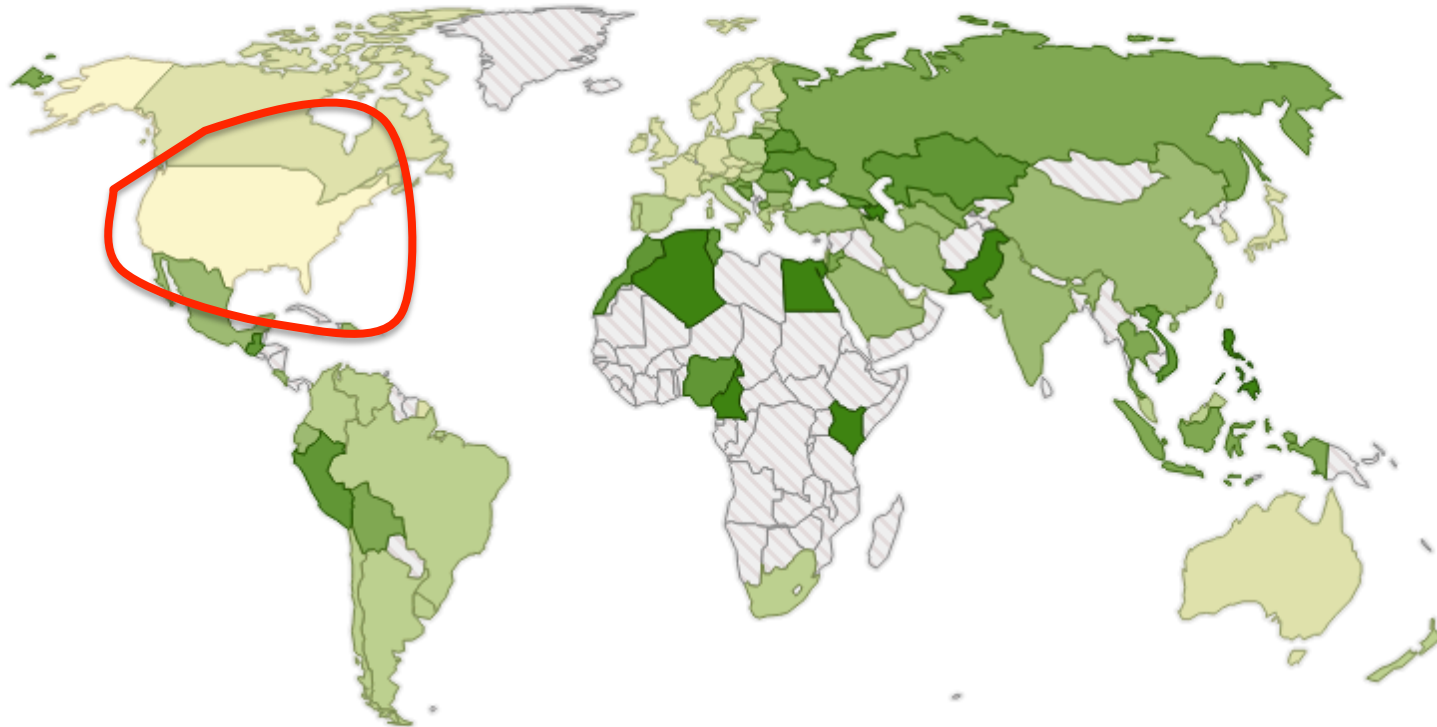
Outline

- Overview
- Sulfur Containing Foods and Supplements
- Flavonoids and Polyphenols
- Dietary Fats: Myths and Facts
- Cancer, Sun and Micronutrients
- Summary

Overview

Food spending around the world

As a percent of household expenditures, 2012

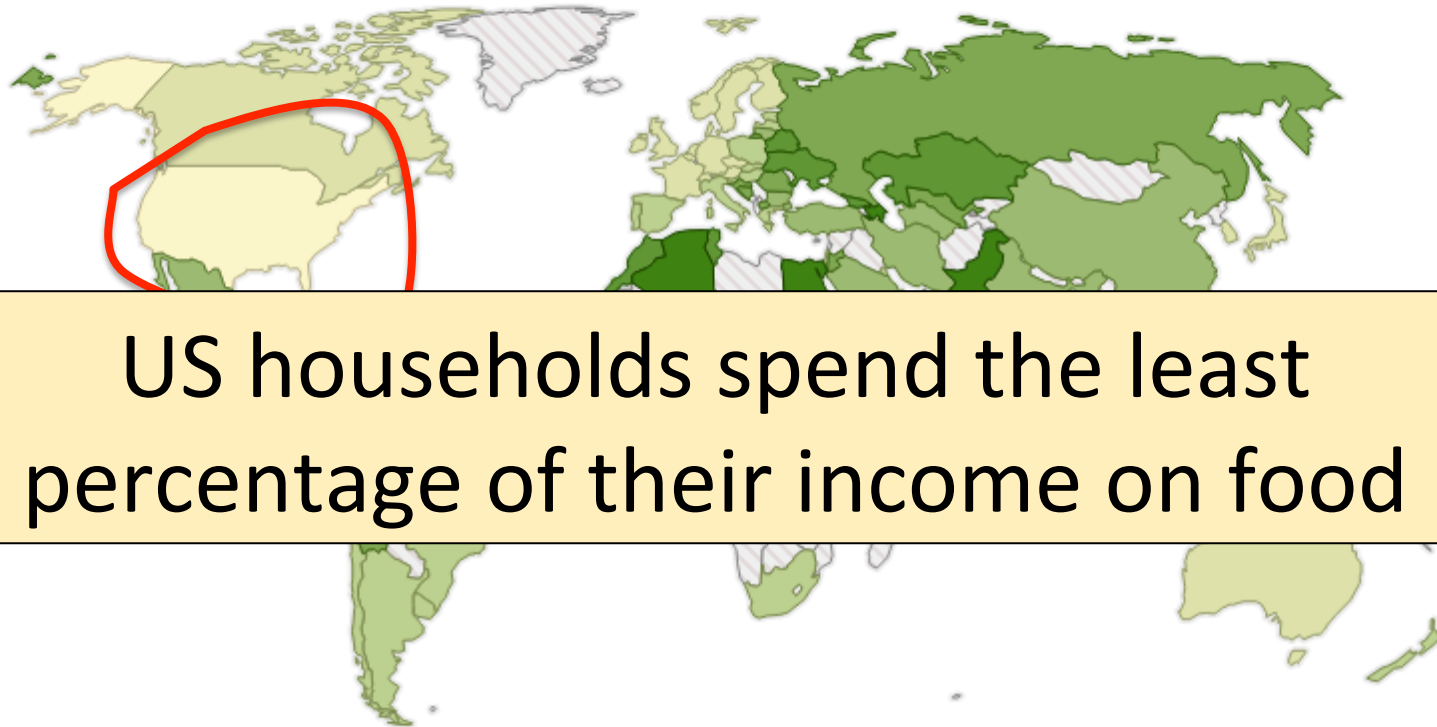


Source: USDA, Economic Research Service.

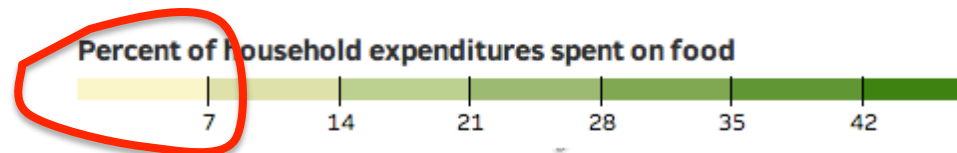


Food spending around the world

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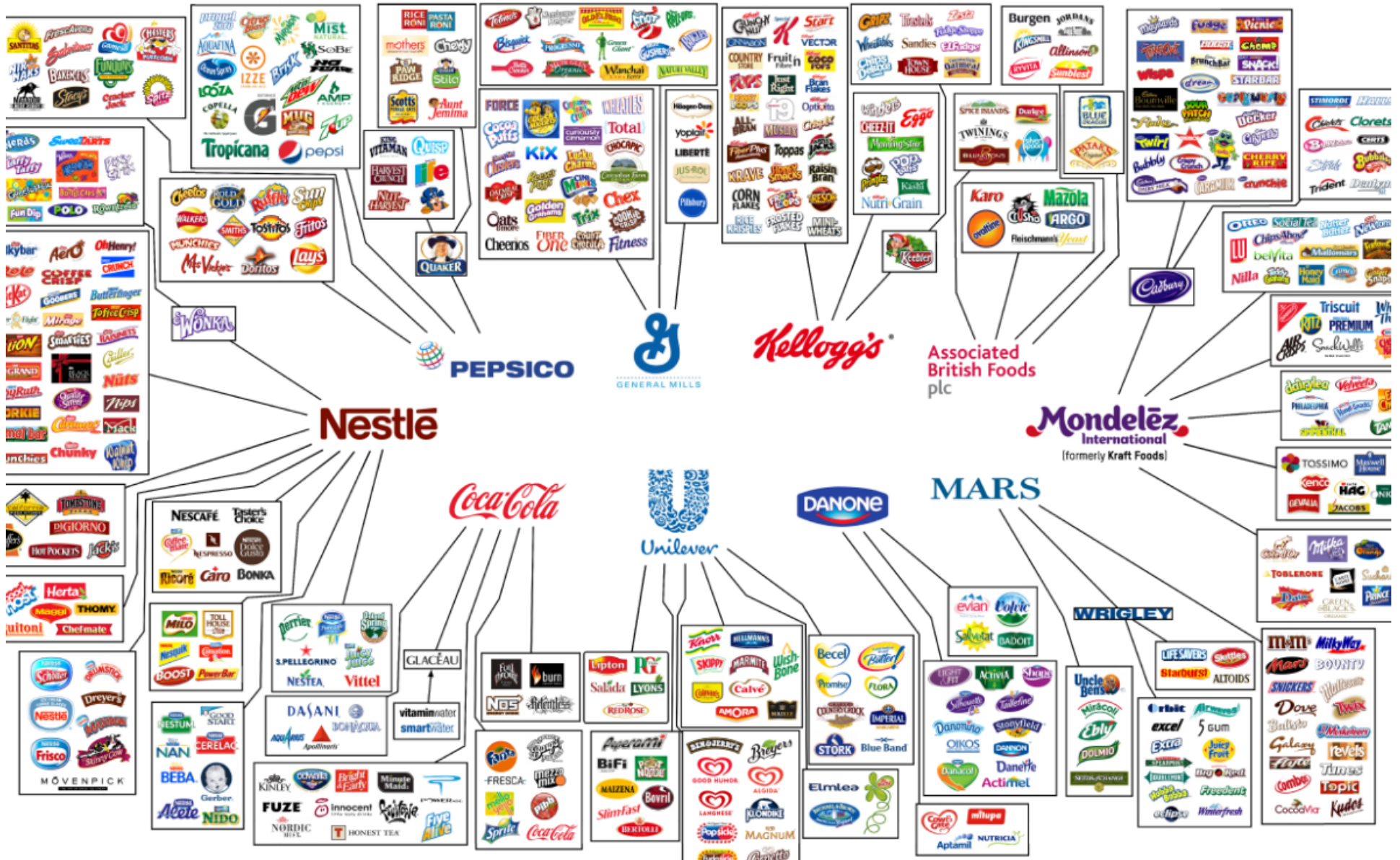
US households spend the least percentage of their income on food



Source: USDA, Economic Research Service.



Ten Food Companies Control What We Eat*



*businessinsider.com/10-companies-that-control-what-we-buy-2014-7

Sugar-Sweetened Beverages*

- Sugar-sweetened beverages are the largest source of added sugar in our diet
- In the US, high-fructose corn syrup is the major source of sweetener
- 40% increase in HFCS consumption over past 30 years
 - Higher than any other food product
- American Heart Association meeting report implicated 180,000 deaths/year to consumption of sugars in beverages



* AH Malik et al., Am J Cardiol. 2014 May 1;113(9):1574-80

But don't just switch to non-calory sweeteners!*

"[W]e demonstrate that consumption of commonly used non-caloric artificial sweeteners formulations *drives the development of glucose intolerance* through induction of compositional and functional alterations to the *intestinal microbiota*."

*J Suez et al., Nature 2014, published online Sep 17, 2014

Sugar, fat or protein?

- Sugar's bad
- Fat's bad
- Protein's bad
- And it's all bad for the same reason



Toxic Chemicals

Organic Food is Better!*

- Higher concentrations of polyphenols such as flavanones, stilbenes, flavones, flavonols and anthocyanins
- Pesticide residues four times lower
- Cadmium (toxic metal) levels significantly lower



*M. Barańska et al., British Journal of Nutrition 2014, 112(05), 794-811.

Industrial Agriculture is Depleting the Soil and Plants of Minerals*

- The Earth's soil is a dynamic mixture of rock particles, water, gases, and microorganism
 - Just one cup of soil contains more microorganisms than there are people on the planet
- We've destabilized our soil ecosystems through widespread use of monocrops, fertilizers, pesticides and insecticides
- There's a crisis in worldwide soil health that is rapidly becoming a crisis in human health.

*www.organicconsumers.org/articles/article_30899.cfm

Making Bone Broth a Staple in Your Diet May Be the Key to Improving Your Health*



*articles.mercola.com/sites/articles/archive/2014/09/21/hilary-boynton-mary-brackett-gaps-cookbook-interview.aspx

Sulfur-Containing Foods and Supplements

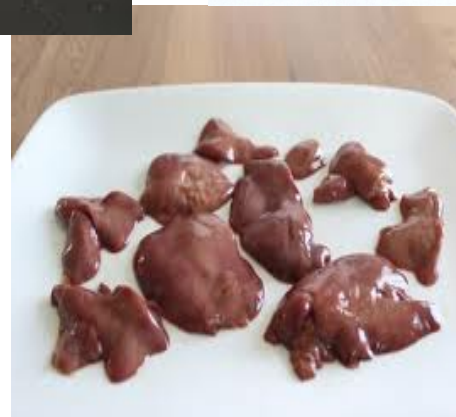
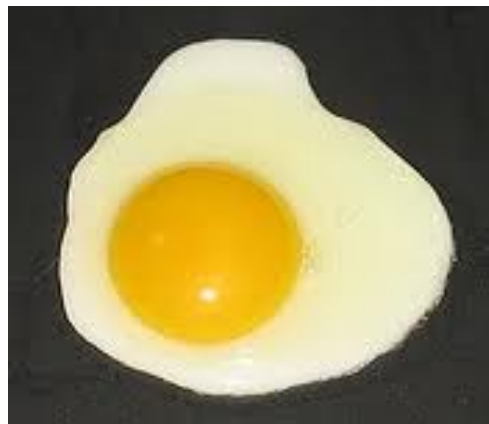
Are We Getting Enough Sulfur in Our Diet?*

- Most abundant mineral element behind calcium and phosphorus
- Chondroitin sulfate, glucosamine sulfate, etc. used to treat diseases of the joints

“Out of this study came information that suggested that a significant proportion of the population that included disproportionately the *aged*, may not be receiving sufficient sulfur and that these dietary supplements, were very likely exhibiting their pharmacological actions by supplying inorganic *sulfur*.”

*ME Nimni et al., *Nutrition & Metabolism* 2007, 4:24

Eat Foods Containing Sulfur!



Supplemental Sources of Sulfur*

- glucosamine sulfate
- chondroitin sulfate
- glutathione
- N-acetylcysteine
- alpha lipoic acid
- taurine
- DMSO, MSM
- S-adenosylmethionine (SAME)
- Epsom salts (Mg-sulfate)

These can have many beneficial effects and are nearly nontoxic

My personal favorite is Epsom salt baths:
Magnesium sulfate uptake through the skin

*S Parcell, Alternative Medicine Review 7(1), 2002, 22-44

Supplemental Sources of Sulfur*

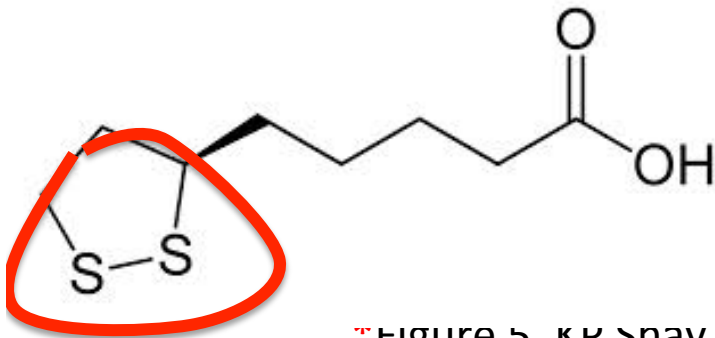
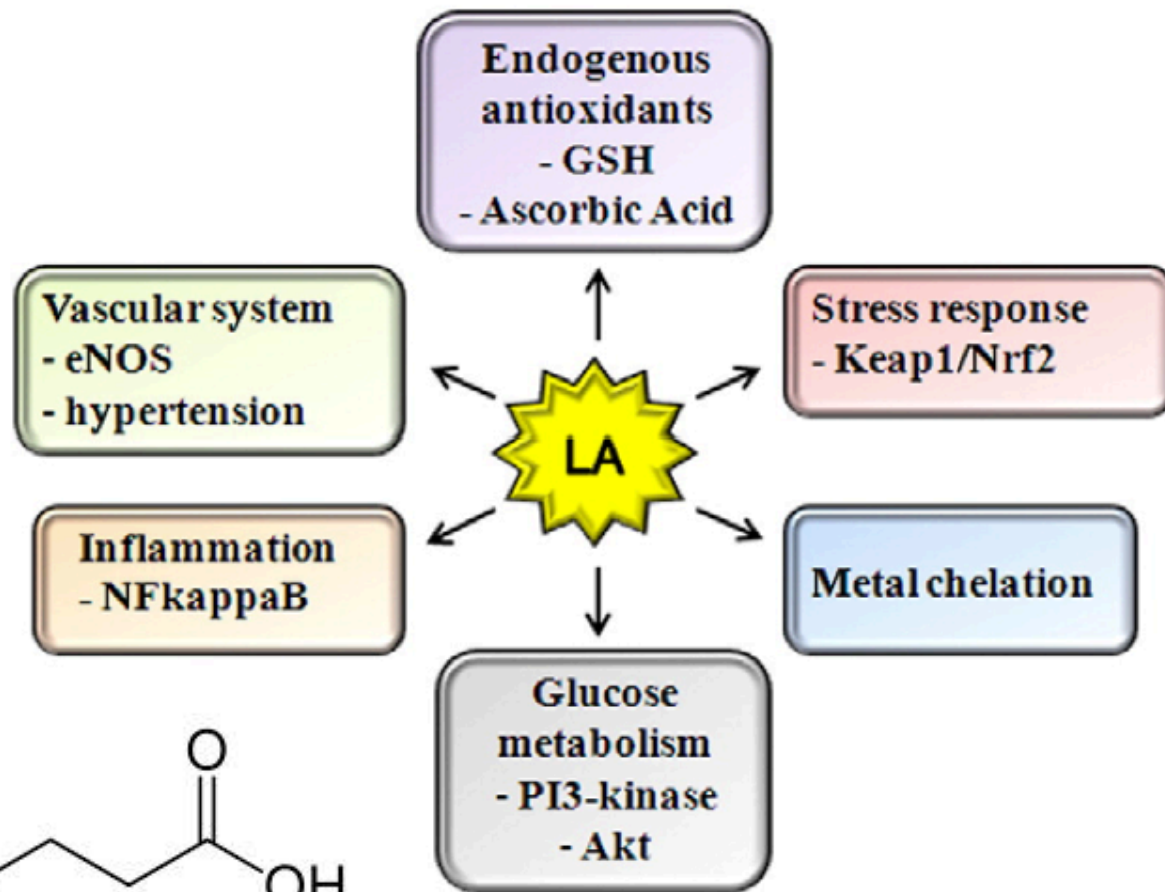
- glucosamine sulfate
- chondroitin sulfate
- glutathione
- N-acetylcysteine
- *alpha lipoic acid*
- taurine
- DMSO, MSM
- S-adenosylmethionine (SAME)
- Epsom salts (Mg-sulfate)

These can have many beneficial effects and are nearly nontoxic

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Magnesium sulfate uptake through the skin

*S Parcell, Alternative Medicine Review 7(1), 2002, 22-44

Alpha Lipoic Acid Has Many Health Benefits*



*Figure 5, KP Snay et al., Biochimica et Biophysica Acta 1790 (2009) 1149–1160

Garlic!*

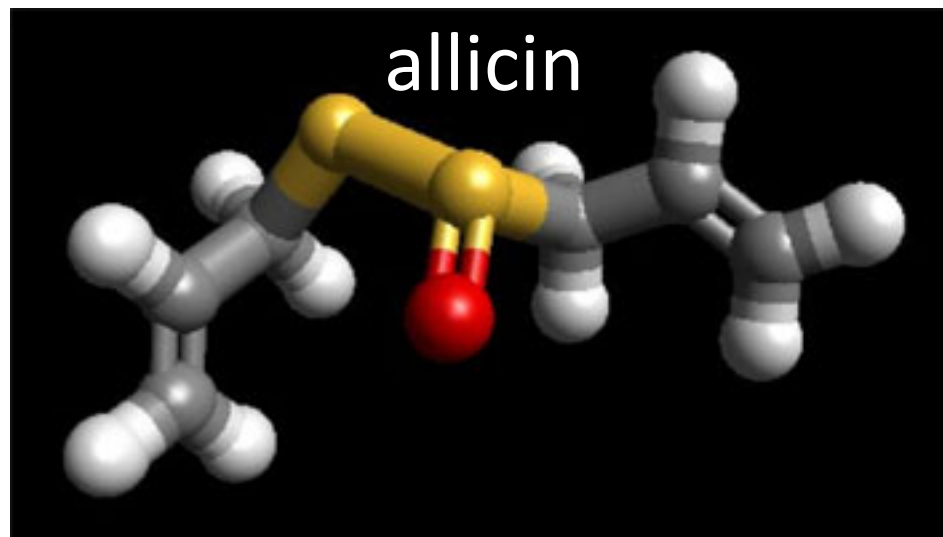
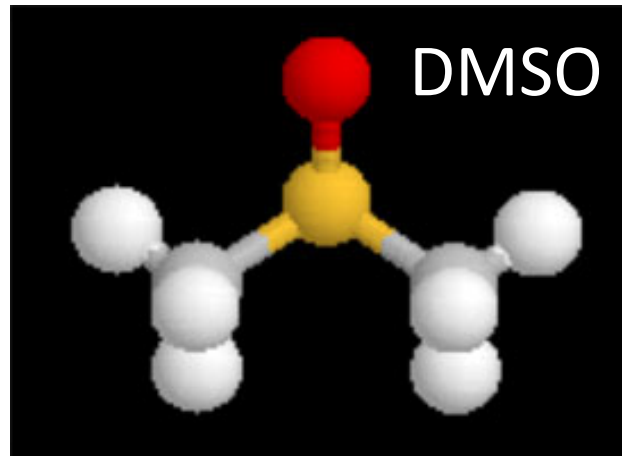
- Garlic is among the best known medicinal plants
- Anticarcinogenic, antithrombotic, antiatherosclerotic, hypolipidemic, antihypertensive, and antimicrobial



“Since early times, it is known that most of such properties are given by *volatile sulfur-containing compounds* that are not present in the intact plant, but are formed after tissue disruption via enzymatic reactions.”

**O. Calvo-Gómez et al., J. Chromatogr. A 1036 (2004) 91–93*

DMSO and Allicin (in Garlic)



Antimetastatic Activity of Sulforaphane*

- Study on mice with induced metastatic lung cancer
- Simultaneous supplementation with sulforaphane reduced proliferation and invasion of melanoma cells by inhibiting matrix metalloproteinases
 - 95.5% inhibition of lung tumor nodule formation
 - 94% increase in life span of tumor-bearing animals.
 - GGT levels substantially lowered



*P Thejass and G Kuttan, Life Sci. 2006 May 22;78(26):3043-50.

Bitter Taste May Battle Asthma*

- Bitterness makes the muscles in the bronchial tubes relax and protects against asthma attack
- “Bitter foods contain sulfur-based compounds which support the natural detoxification pathways in the liver”**

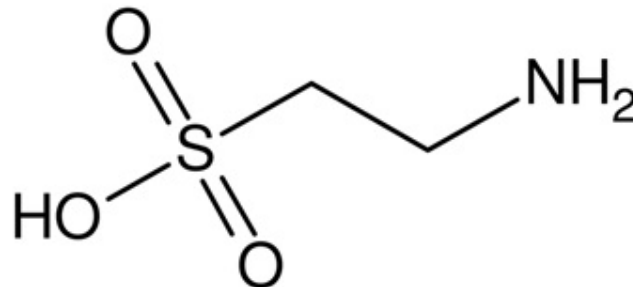


*scientificamerican.com/podcast/episode/bitter-taste-may-battle-asthma-13-04-17/

**naturesunshine.com/Blog/post/5-Reasons-Why-You-Should-Eat-Bitter-Foods-and-Herbs.aspx

Taurine Protects from Obesity*

- Taurine reduces body fat in C elegans and rodents
- Taurine enhances anorexigenic action of insulin
- Intracerebroventricular injection of taurine reduces food intake and locomotor activity
 - Likely through signaling pathways in the hypothalamus



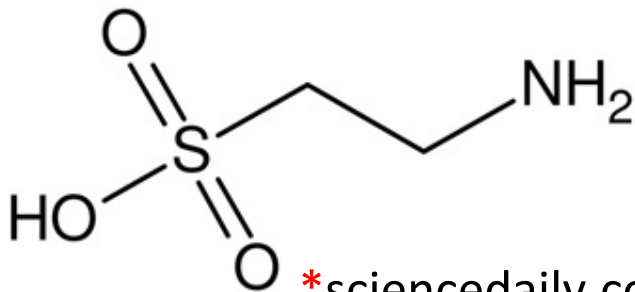
*CS Solon et al., Amino Acids. 2012 Jun;42(6):2403-10.

Chicks Fed Taurine Learn Better*

“We found that taurine has a significant impact on the personality and memory of the birds.

Those who were fed

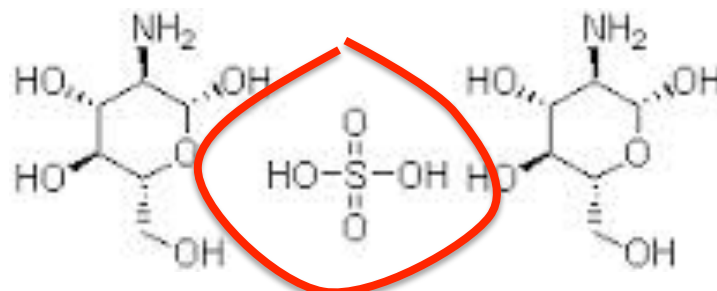
taurine as chicks were on average much *bolder* and *better at learning* in adulthood, than their counterparts who were not fed the extra taurine.”



*sciencedaily.com/releases/2007/08/070824220328.htm

Glucosamine Sulfate: It's the Sulfate!*

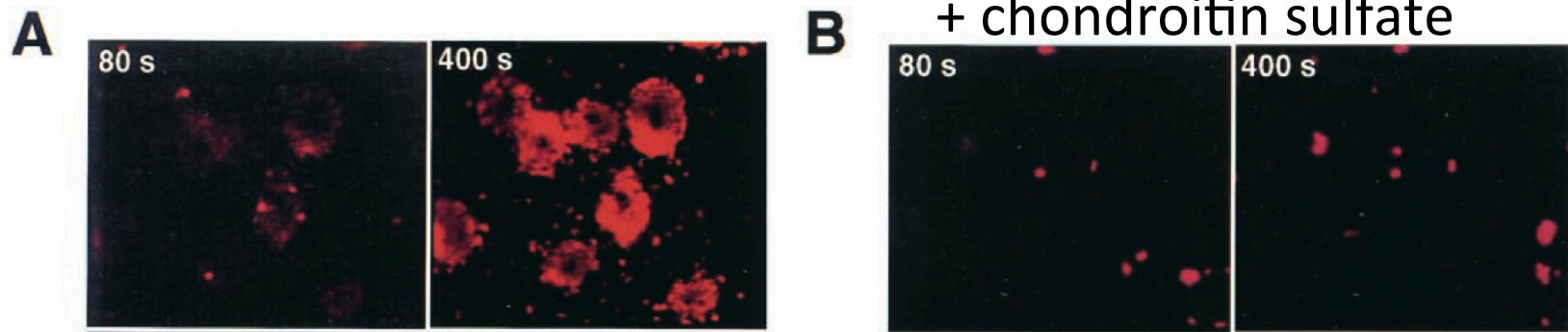
- 7 subjects
- 1 g glucosamine sulfate ingested
 - Mean serum sulfate increased:
331 → 375 $\mu\text{M/L}$
- 1 g of acetaminophen annihilated the result:
 - 331 → 290 $\mu\text{M/L}$
 - *Chronic acetaminophen use depletes sulfate*



*LJ Hoffer et al., Metabolism 50(7), 2001, 767-770.

Chondroitin Sulfate Prevents Calcium Uptake by Mast Cells*

- Mast cells respond to IgE and cytokines by releasing inflammatory mediators like histamine, leukotrienes, prostaglandins and tryptase
- Mast cells also secrete heparin -- the most sulfated molecule known to biology
- Chondroitin sulfate blocks mast cell secretions by suppressing calcium uptake



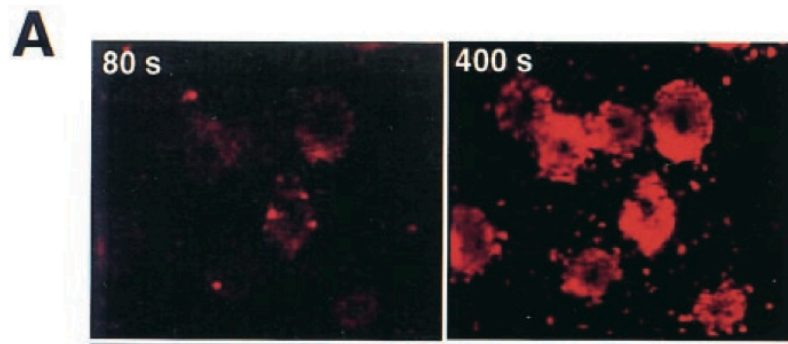
Chondroitin Sulfate Prevents Calcium Uptake by Mast Cells*

- Mast cells respond to IgE and cytokines by

I believe it's the sulfate in chondroitin sulfate that is protective

sulfated molecule known to biology

- Chondroitin sulfate blocks mast cell secretions by suppressing calcium uptake



Hydrogen Sulfide Gas as a Treatment*

- If stressed cells are treated with AP39 (slowly releases hydrogen sulfide gas), mitochondria are protected and cells stay alive
 - Prevents mitochondrial DNA damage
 - Reverses blood vessel stiffening and lowers blood pressure
- Cells naturally produce small amounts of hydrogen sulfide, which relaxes the arteries

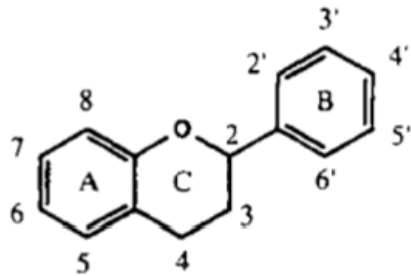
*medicalxpress.com/news/2014-07-rotten-egg-gas-key-healthcare.html



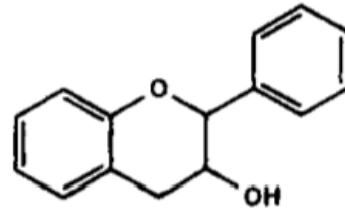
Flavonoids and Polyphenols!



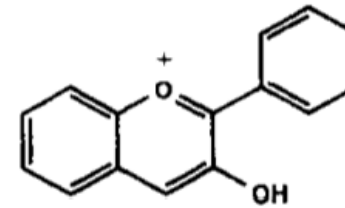
Flavonoids: Three Hexagonal Rings



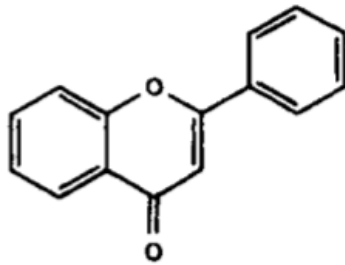
Flavonoid



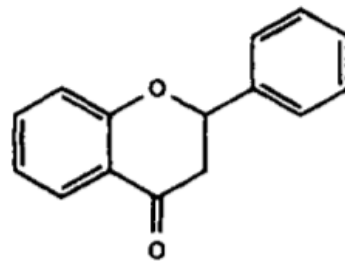
Flavan-3-ol



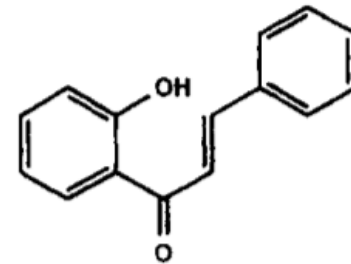
Anthocyanidin



Flavone



Flavanone



Chalcone

Flavonoids Transport Sulfate!

- Flavonoids are found in fruits, vegetables, nuts, seeds, herbs, spices, stems, flowers, tea and red wine.
- Flavonoids suppress nitric oxide synthesis in macrophages (inflammatory response)
- In plants, they generally occur as glycosylated and **sulfated** derivatives

Red Wine is Antimicrobial*

“Our results show that red wine, at moderate concentration, inhibits the growth of some pathogenic species in an oral biofilm model.”

- Propose polyphenols in wine are antimicrobial
- This is likely protective against dental caries



*I Muñoz-González, J. Agric. Food Chem. 2014, 62, 4731–4737

Curcumin Has Many Benefits*

- Suppresses carcinogenesis in skin, stomach, colon, breast and liver
- Induces apoptosis in a wide variety of tumor cells
- Downregulates various proinflammatory cytokines



There is a low incidence of colorectal cancer in India where curcumin is heavily used in curries

* SK Varid et al, *Cancer Epidemiol Biomarkers Prev* 2008;17:1411-1417.

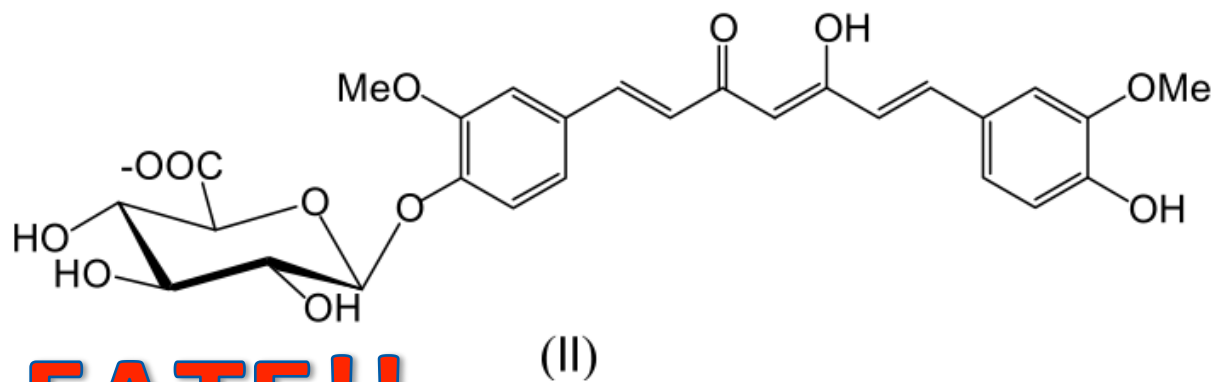
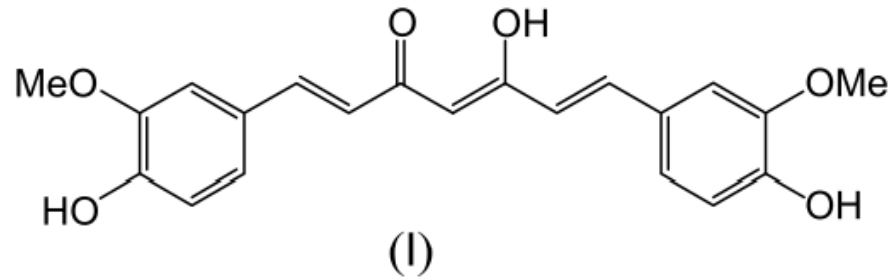
Curcumin Has Many Benefits*

- Loss of body fat and adipose-associated macrophages
- Reduced inflammatory-related atherogenesis
- Antidiabetic effect
 - Lower Hemoglobin A1c
- Lower total cholesterol and LDL-C
- Higher HDL-C.

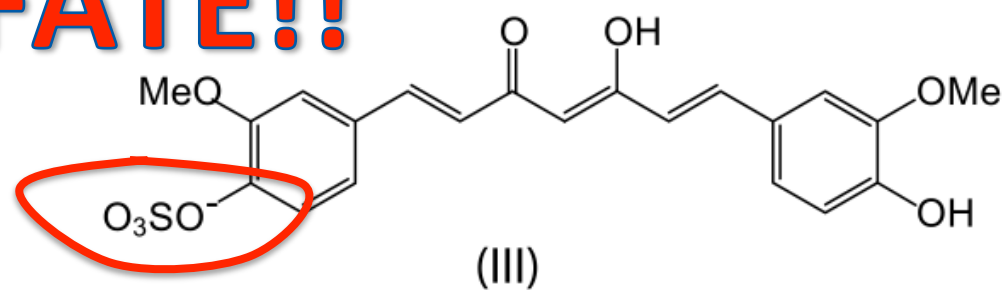


*S Cuengsamarna et al., journal of Nutritional Biochemistry 25 (2014) 144–150.

Three Forms of Curcumin*

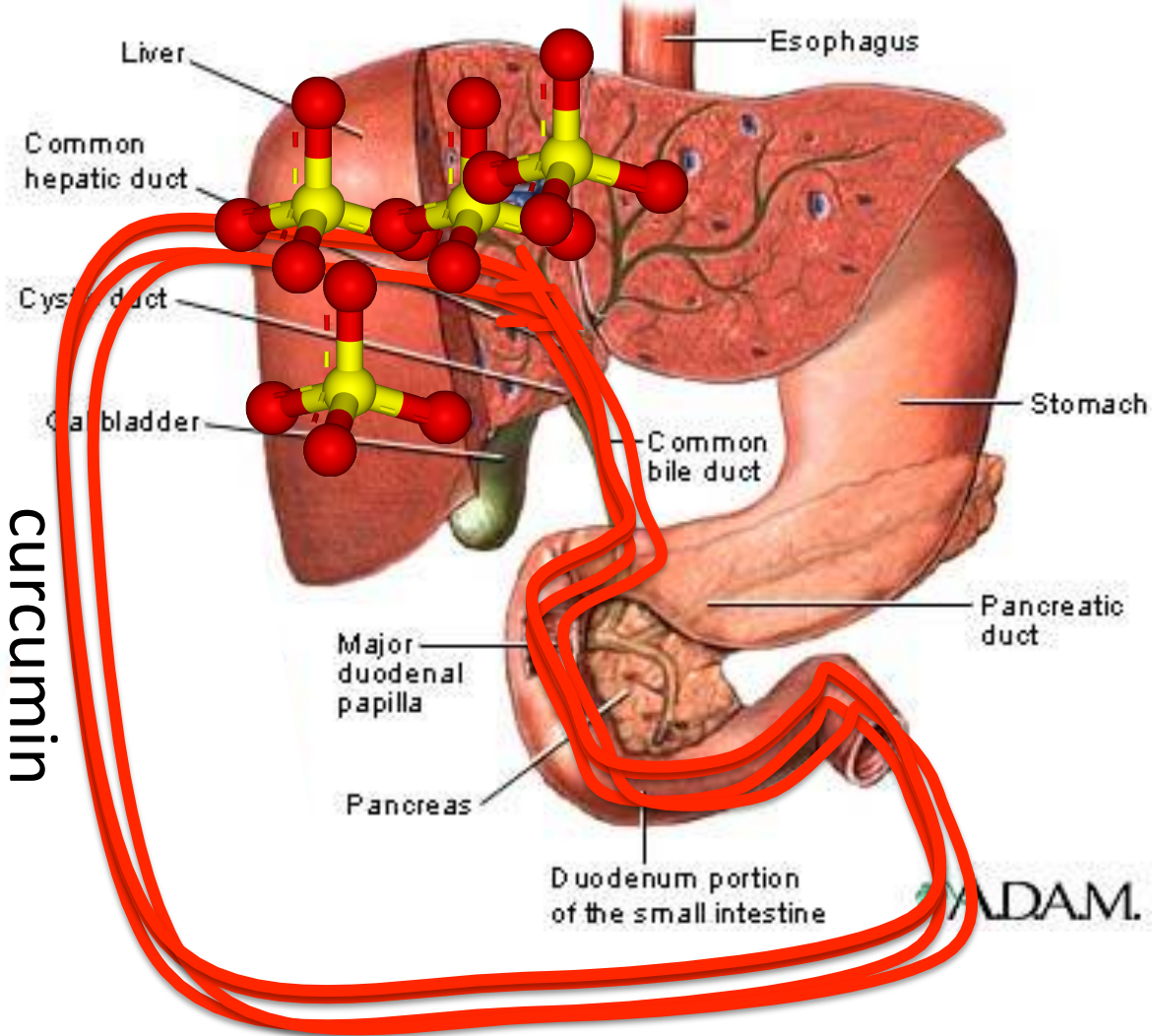


SULFATE!!



* Figure 1 in SK Varid et al, *Cancer Epidemiol Biomarkers Prev* 2008;17:1411-1417.

Curcumin Goes Around and Around Delivering Sulfate to Liver!



Curcumin Prevents Diabetes*

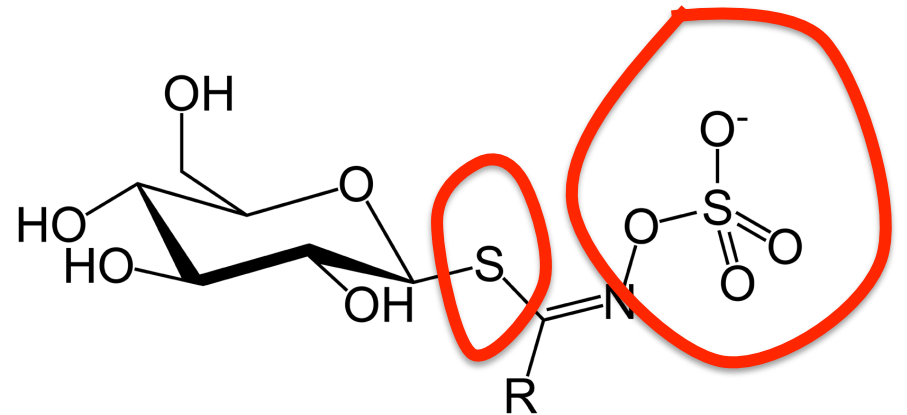
CONCLUSIONS:

“A 9-month curcumin intervention in a prediabetic population significantly lowered the number of prediabetic individuals who eventually developed type 2 diabetes. In addition, the curcumin treatment appeared to improve overall function of [pancreatic] beta-cells, with very minor adverse effects.”

*S Chuengsamarn et al., Diabetes Care 35, 2012, 2121-2127

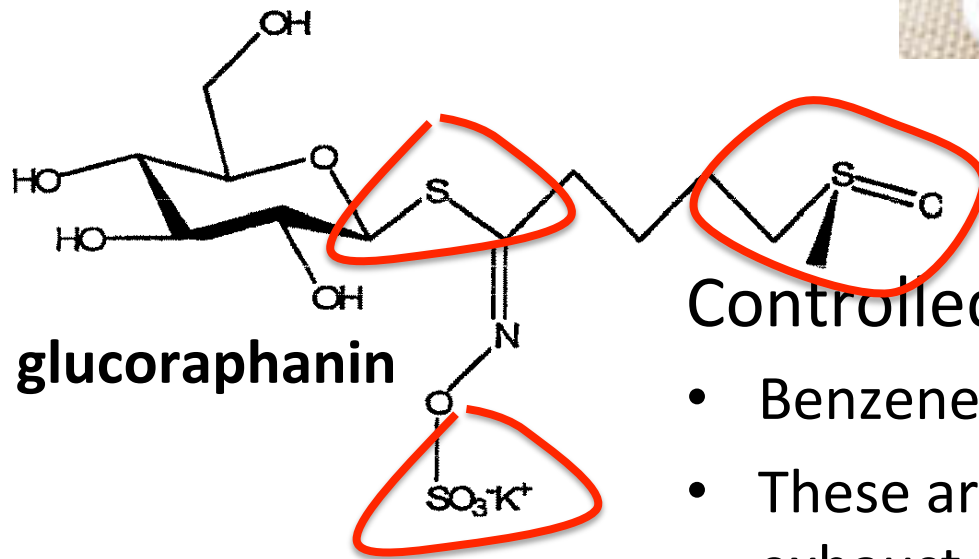
Glucosinolates!

- Natural components of many pungent plants such as mustard, cabbage and horseradish
- Contribute to plant defense against pests and diseases



Broccoli Sprouts*

- Sprouts contain 30x nutrients of organic vegetables
- Grow your own and eat them raw!

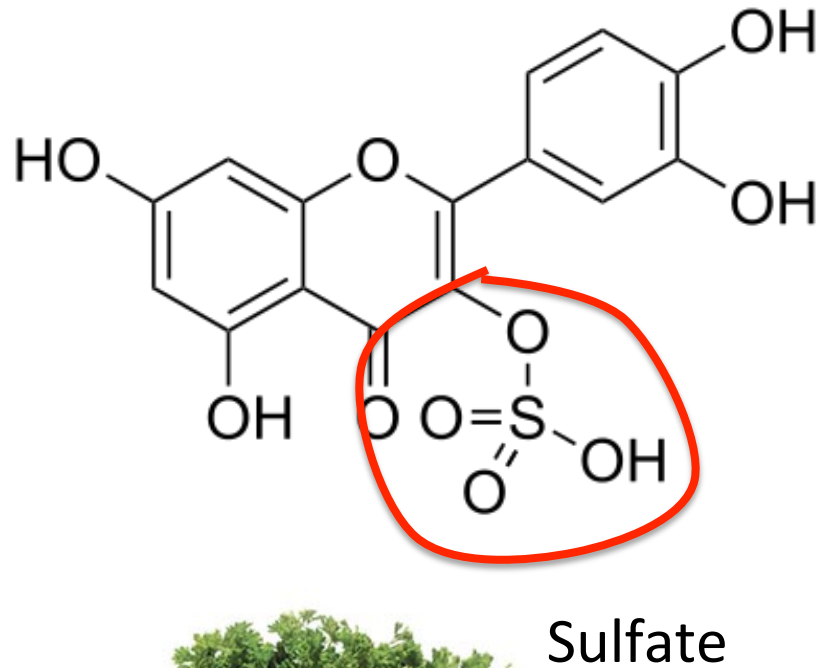
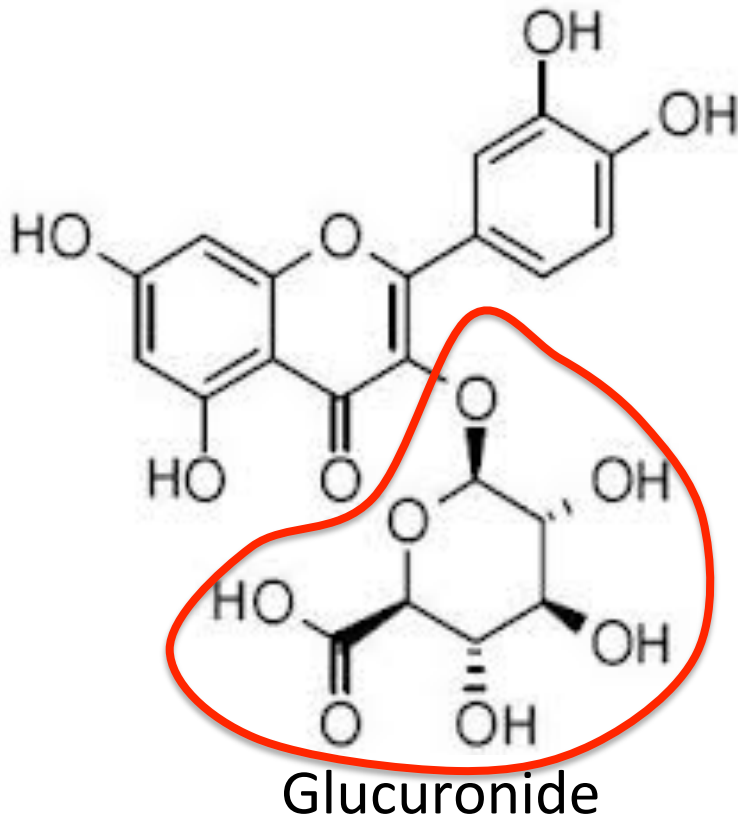


Controlled study in China:

- Benzene and acrolein detoxed into urine
- These are chemicals in dirty air from car exhaust and burning fuels

*articles.mercola.com/sites/articles/archive/2014/06/30/broccoli-sprout-detox.aspx

Quercetin: A Sulfate Transporter*



Net effect:
gut delivers sulfate to the liver



*IR Rowland, Toxicol Pathol 1988 16:147-153.

Sulfated Flavonol Fights HIV*

- Rutin is a citrus flavonoid found in buckwheat and asparagus
- Sulfated rutin exhibited 50% inhibition against HIV viruses
 - Blocked viral entry and virus-cell fusion
 - Likely acts by interacting with envelope glycoproteins
- Also inhibited Herpes virus
- *Unsulfated form had no activity against any HIV virus*



*J. Tao et al., Antiviral Research 2007;75(3):227-233.

Coffee Gets Sulfated in the Gut*

“All the metabolites released in the digestive tract can be absorbed and further metabolized in the *enterocyte* and the liver by phase-II enzymes into their *sulfated* and/or glucuronidated conjugates.”



*R Fumeaux et al, *Org. Biomol. Chem.*, 2010, **8**, 5199–5211.

Coffee Drinking Lowers GGT*

- GGT is a liver enzyme that's a strong marker for liver disease (and also diabetes and heart disease)
- Coffee drinkers in Japan had lower GGT levels
- GGT breaks down glutathione to release free cysteine
 - Cysteine is a source of sulfate



*S kono et al., Am J Epidemiol. 1994 Apr 1;139(7):723-7.

“Dark Chocolate Acutely Improves Walking Autonomy in Patients With Peripheral Artery Disease”*

- “Intermittent claudication” is a clinical diagnosis given for muscle pain (ache, cramp, numbness or sense of fatigue), usually in the calf muscle, occurring during exercise, such as walking
 - Often associated with arteriosclerosis
- Dark chocolate was effective in improving symptoms

*L Loffredo et al., *J Am Heart Assoc.* 2014;3:e001072

Polyphenols Protect Corn from Fungus*

- Resistance to ear rot and common smut (fungal infections) in Maize crops correlated with high content of polyphenols
- These polyphenols also inhibited glycation and accumulation of AGEs
 - This was correlated with resistance to fungal infections
- Authors propose treating diabetes with these polyphenols

*DA Farsi et al., Phytother Res. 2008 Jan;22(1):108-12.

How Do Polyphenols Protect?*

“There is no evidence that the beneficial effects of polyphenol-rich foods can be attributed to the antioxidant properties of these foods.”

- Oxygen Radical Absorbance Capacity (ORAC)
 - USDA has removed ORAC Database from NDL website due to mounting evidence that antioxidant capacity is irrelevant to health benefits

*ars.usda.gov/News/docs.htm?docid=15866

Ginkgo biloba protects from glyphosate*

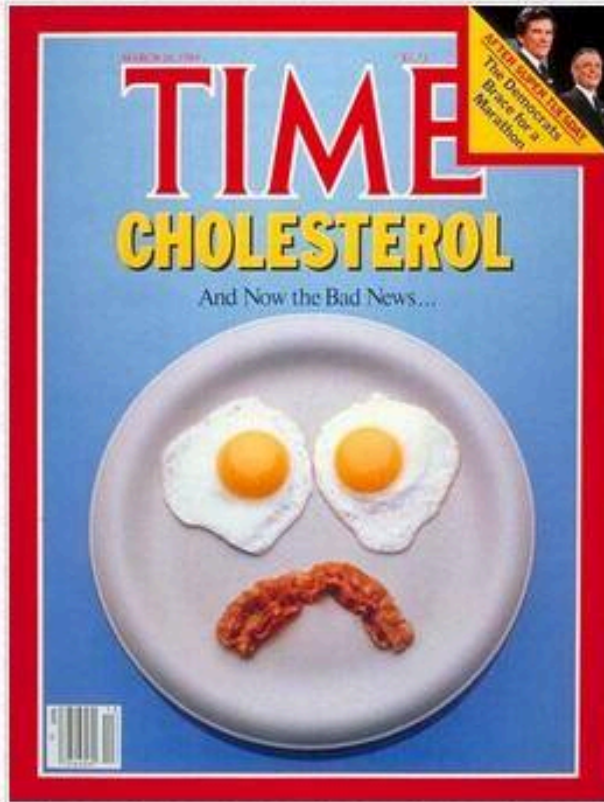


"Treatment with *G. biloba* produced amelioration in indices of hepatotoxicity, nephrotoxicity, lipid peroxidation, and genotoxicity relative to Group II."

*K Cavuşoğlu, J Med Food. 2011 Oct;14(10):1263-72.

Dietary Fats: Myths and Facts

What a Difference Three Decades can Make!



TIME Magazine Cover March 1984



TIME Magazine Cover June 2014

Cover story, Time Magazine, June 23, 2014



DIABETES

HIGH
CHOLESTEROL

Don't Blame Fat

For decades, it has been the most vilified nutrient in the American diet. But new science reveals fat isn't what's hurting our health

By Bryan Walsh

Ending the War on Fat*

“We cut the fat, but by almost every measure, Americans are sicker than ever. The prevalence of Type 2 diabetes increased 166% from 1980 to 2012. Nearly 1 in 10 American adults has the disease, costing the health care system \$245 billion a year, and an estimated 86 million people are prediabetic. ... Cardiovascular disease remains the country’s No. 1 killer.”

*Brian Walsh, TIME magazine, June 12, 2014

“People talk and write about cholesterol as ‘artery-clogging fat’. But this idea that you eat something, it gets into your bloodstream and it clogs your arteries is just false. Nothing remotely like that is happening.”

- Dariush Mozaffarian, cardiologist, Harvard Medical School

washingtonpost.com/national/health-science/you-probably-know-less-about-cholesterol-than-you-think-you-do-heres-some-help/2014/06/16/d9fa9350-e4fa-11e3-8f90-73e071f3d637_story.html

Low-Carb Diet Reduces Inflammation*

- A low-carbohydrate diet, but not a low-fat diet, reduces inflammation in patients with type 2 diabetes
 - Diets had similar effects on weight loss
- Research conducted at Linköping University in Sweden.

*L Jonasson et al., *Annals of Medicine* May 2014 46(3): 182-7.

“Dietary Carbohydrate restriction as the first approach in diabetes management. Critical review and evidence base”*

- “Here we present 12 points of evidence supporting the use of low-carbohydrate diets as the first approach to treating type 2 diabetes”
- “The 12 points are sufficiently compelling that we feel that the burden of proof rests with those who are opposed”

*RD Feinman et al., Nutrition, July 15, 2014 [Epub ahead of print]

Saturated vs Unsaturated Fat??



Saturated Fat Protects from Heart Disease*

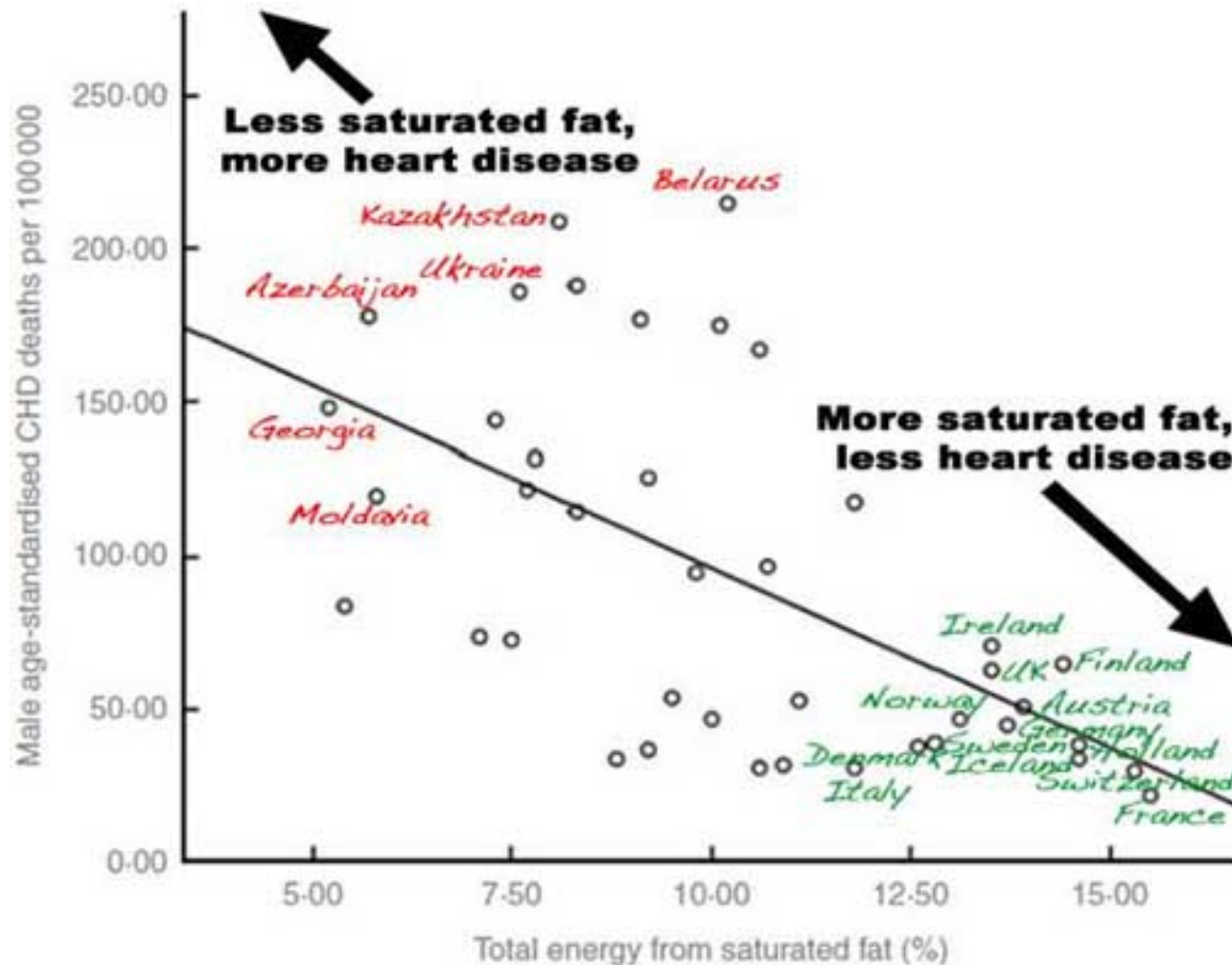


Fig. 1. Saturated fat intake and CHD mortality in Europe (1998). R^2 linear = 0.339.

*Figure from Hoenselaar, R. *British Journal of Nutrition*, 2012. (in article by Dr. Mercola)

(OLD!) Experiment on Calves*

- Fed three different fats: tallow, lard, soybean oil
- Soybean oil group:
 - more cholesterol in aorta, liver, muscle fat and coronary arteries
 - persistent loose stools and intermittent diarrhea
 - poor growth
 - osteoporosis
 - weight gain improved dramatically following cholesterol supplementation



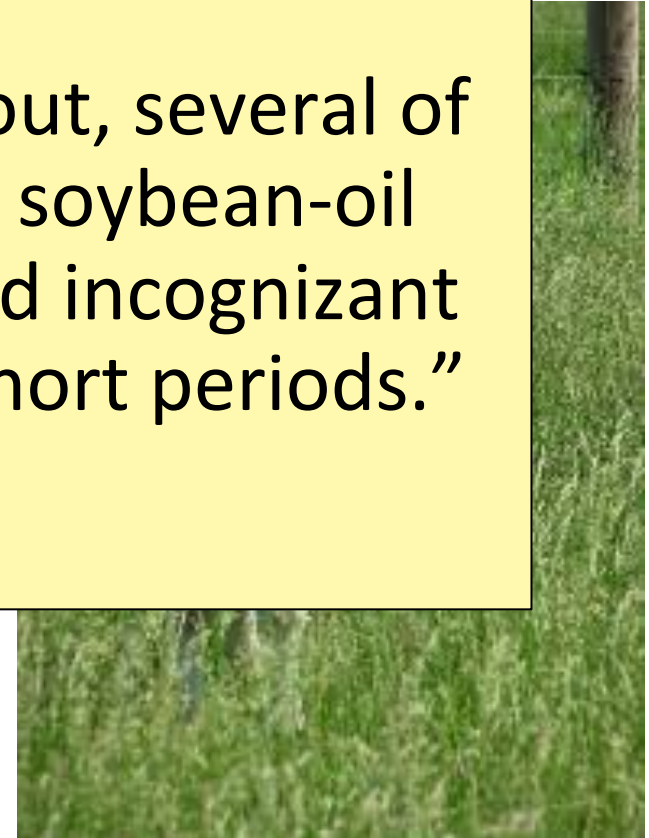
*NL Jacobson et al., J Nutr. 1974 May;104(5):573-9.

(OLD!) Experiment on Calves*

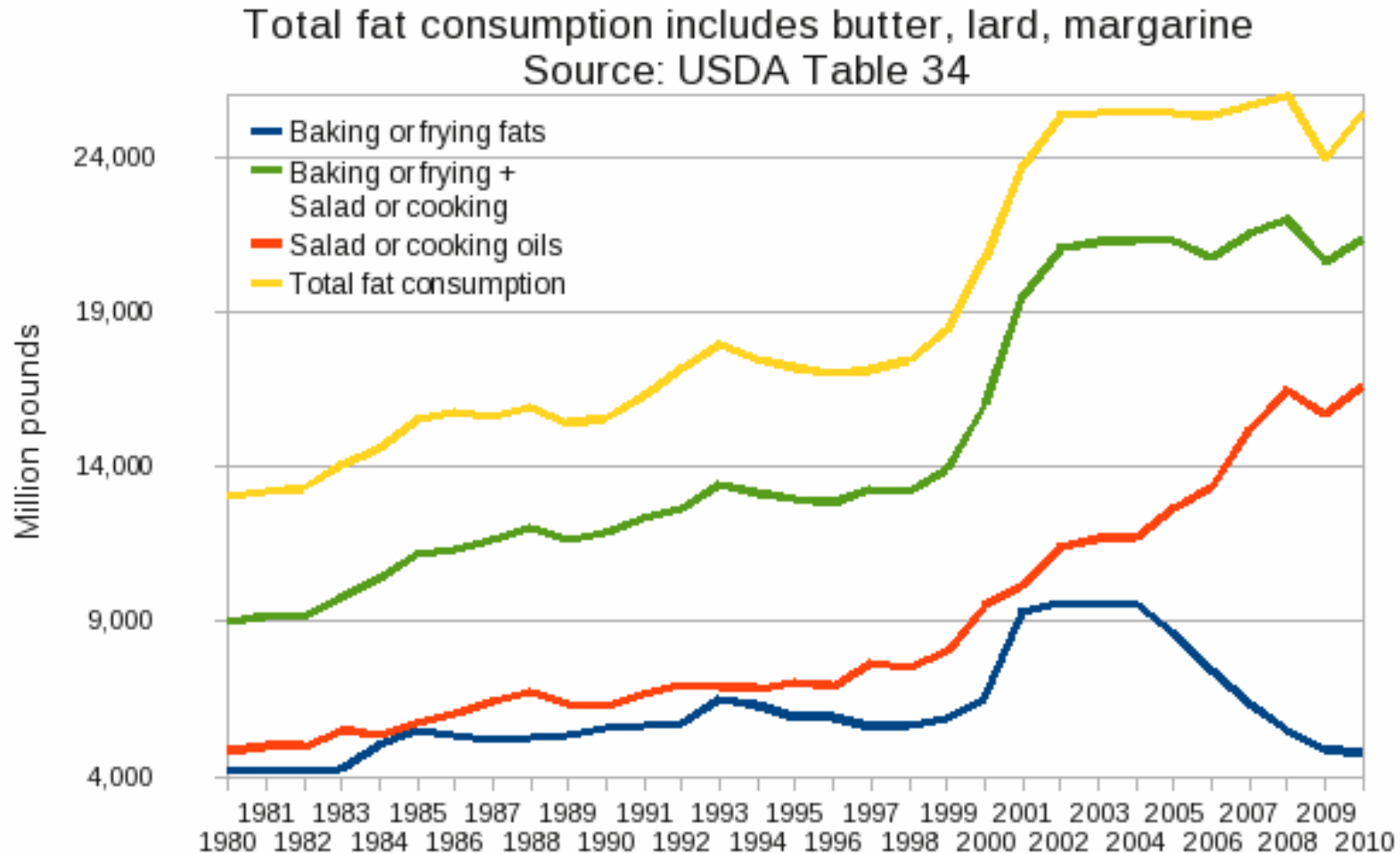
-
- “When forced to move about, several of the animals receiving the soybean-oil diets collapsed and seemed incognizant of their surroundings for short periods.”

- osteoporosis
- weight gain improved dramatically following cholesterol supplementation

*NL Jacobson et al., J Nutr. 1974 May;104(5):573-9.

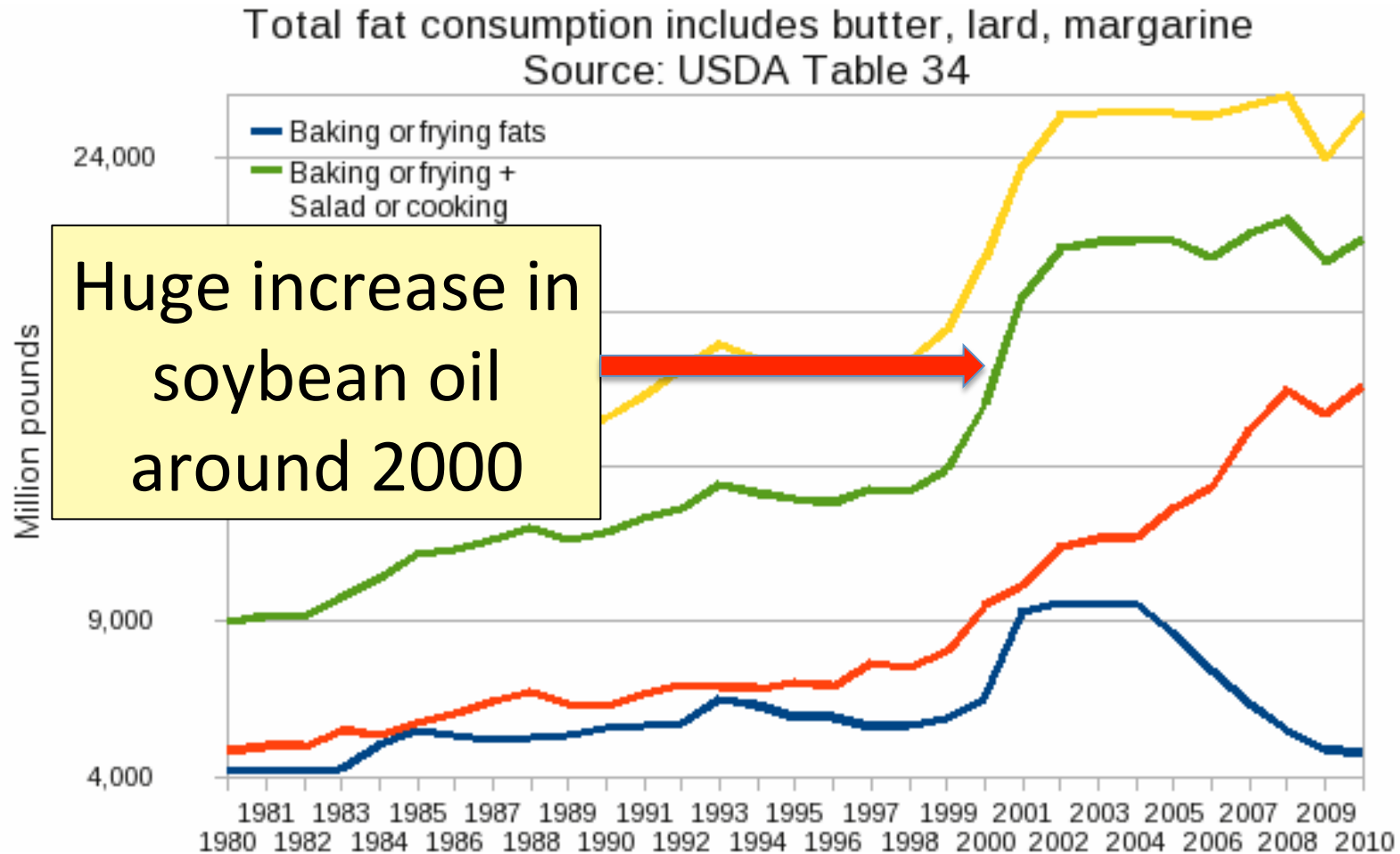


Fat and Oil Consumption: US*



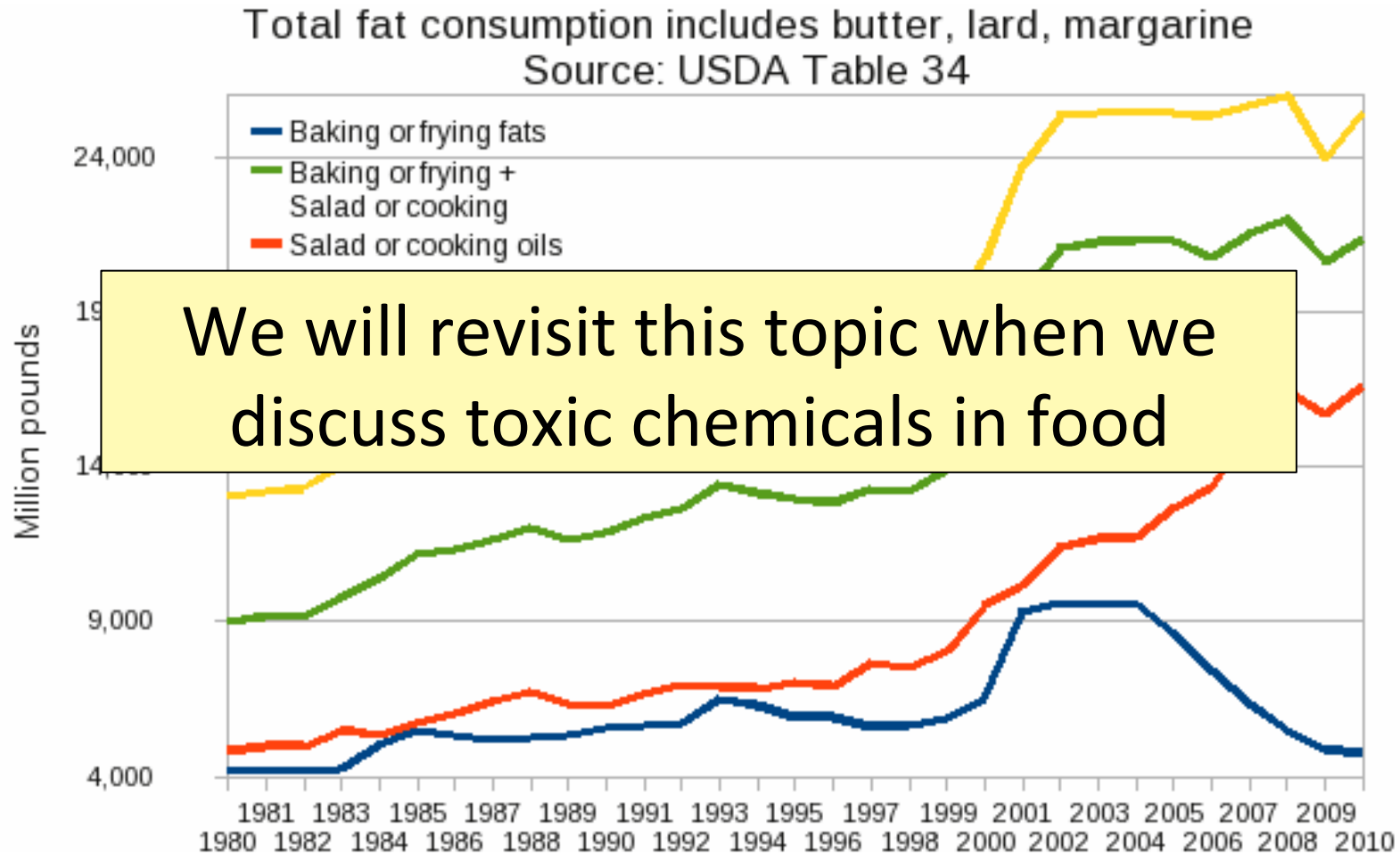
*Graphs provided by Dr. Nancy Swanson, with permission

Fat and Oil Consumption: US*



*Graphs provided by Dr. Nancy Swanson, with permission

Fat and Oil Consumption: US*



*Graphs provided by Dr. Nancy Swanson, with permission

Low saturated fat diets don't curb heart disease risk or help you live longer*

“And anyone who has had a heart attack should not be thinking of replacing saturated fats with refined carbs or omega 6 fatty acids—particularly those found in processed vegetable oils containing large amounts of corn or safflower oil.”

Dr James DiNicolantonio

*www.sciencedaily.com/releases/2014/03/140305191429.htm

Are Polyunsaturated Fats Good?*

“Conclusion: Current evidence does not clearly support cardiovascular guidelines that encourage high consumption of polyunsaturated fatty acids and low consumption of total saturated fats.”



* R. Chowdhury et al. Ann Intern Med. 2014;160(6):398-406.

Book by Nina Teicholz

Reducing the saturated fat in our diets has been disastrous for our health as a nation, and we can, guilt-free, welcome these whole fats back into our lives. Eggs, whole milk, meat, butter ...



“Whole Kernel Unrefined Fresh-Pressed Virgin Coconut Oil”



The Vegetarian Myth*

- We have big brains because of animal-based foods
- Agriculture → bones and teeth fall apart
- She was vegan for 20 years starting at 16 years old –save the planet, etc. but then changed her mind!
- Meat is nutrient dense food
 - Complete proteins (sulfur!)
 - Fat-soluble nutrients: vitamins A, D, K2, E
 - Coenzyme Q10, heme iron, fats!
- Way too much sugar in modern diet – requires insulin
 - Cancer and heart disease are unknown among hunter-gatherers

*The Vegetarian Myth, Lierra Keith

<https://www.youtube.com/watch?v=rNON5iNf07o>

Sustainable Agriculture is the Answer*

- Soil bacteria are essential for plant health
 - Toxic pesticides and GMO Bt gene kill them
- Chemical agricultural methods cause massive loss of carbon from soil → air → climate change
- GMO Roundup-Ready corn for ethanol?

Cattle grazing on grass improve grass and soil



Why You Should buy Meat from Small Farms*

- Antibiotic resistant bacteria are present in 81% of ground turkey, 69% of pork chops 55% of ground beef and 39% of raw chicken parts
- Ractopamine and Zilmax are drugs that increase protein in muscle
 - Ractopamine is banned in 160 countries
- Porcine Epidemic Diarrhea virus has wiped out 10% of american pigs
 - Due to their unhealthy eating habits?
 - Blood mixed from large numbers of animals is fed back to the animals

*articles.mercola.com/sites/articles/archive/2014/07/02/us-food-manufacturing-drugs.aspx

Cancer, Sun and Micronutrients

Swedish Population Study on Sun Exposure*

“We found that all-cause mortality was inversely related to sun exposure habits. The mortality rate amongst avoiders of sun exposure was approximately *twofold higher* compared with the highest sun exposure group”



*PG Lindqvist et al., Journal of Internal Medicine, 2014, 276; 77–86

Top Ten Melanoma States?*

1. Delaware—32.6
2. Vermont—32.3
3. New Hampshire—31.4
4. Wyoming—30.1
5. Oregon—29.6
6. Montana—29
7. Iowa—27.8
8. Washington—27.5
9. Utah—27.4
10. Maine—26.5

*Data from the CDC

Top Ten Melanoma States?*

1. Delaware—32.6
2. *Vermont*—32.3
3. *New Hampshire*—31.4
4. *Wyoming*—30.1
5. *Oregon*—29.6
6. *Montana*—29
7. Iowa—27.8
8. *Washington*—27.5
9. Utah—27.4
10. *Maine*—26.5

*Northern Latitude
and/or Rainy*

*Data from the CDC

Skin Cancer and Sunscreen – What's Going On?

- Cutaneous malignant melanoma is the most rapidly increasing cancer in white populations
 - This despite enormous increases in the use of sunscreen over the past 30 years
- Melanin, the tanning agent that protects from burn, is produced from *phenylalanine*
- Nicotinamide (niacin, B3) supplements protect from UV radiation

Skin Cancer and Sunscreen – What's Going On?

- Cutaneous malignant melanoma is the most

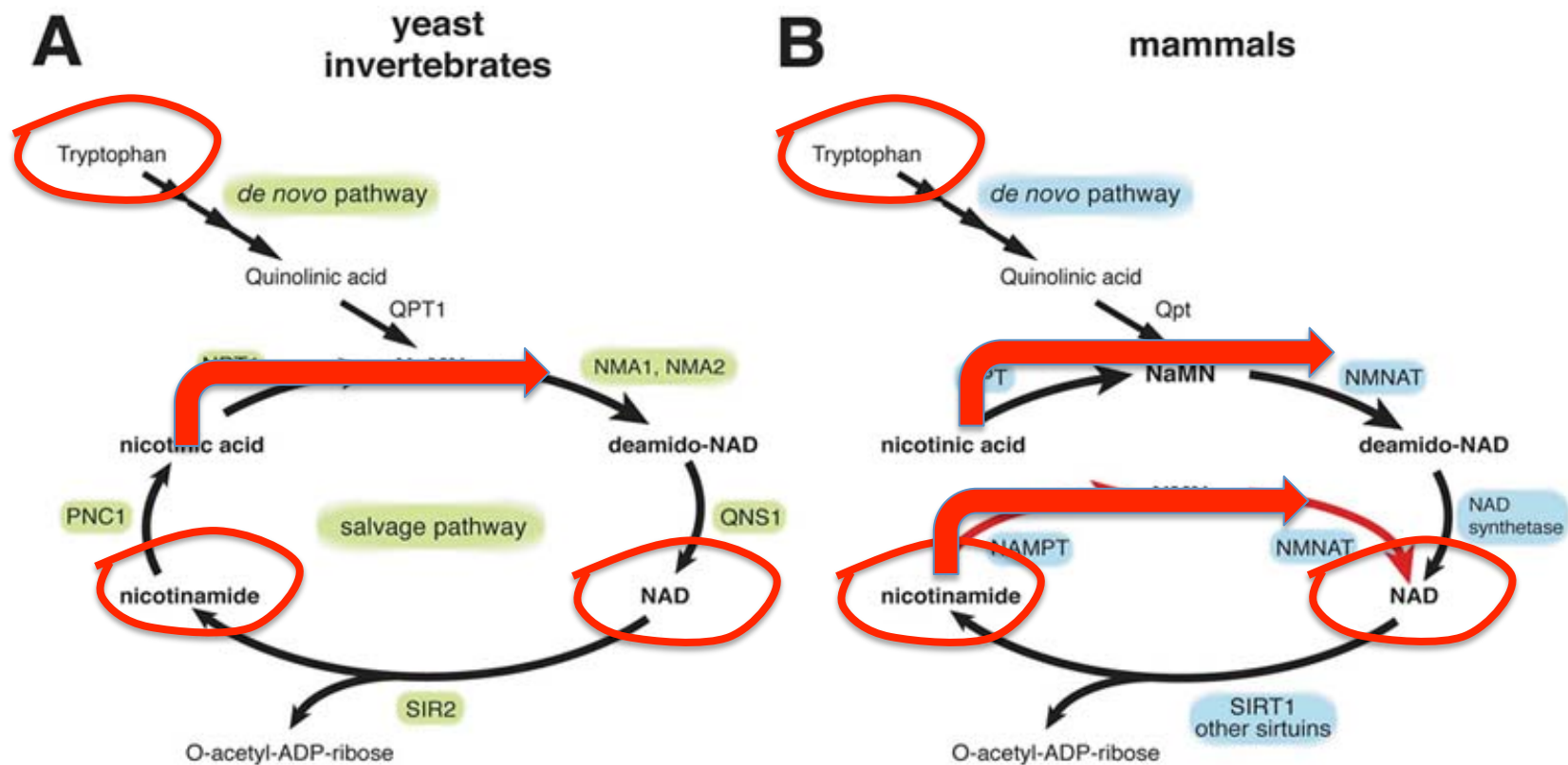
Phenylalanine is produced in plants and gut bacteria using the shikimate pathway, which glyphosate disrupts

melanin, the tanning agent that protects from

burn, is produced from *phenylalanine*

- Nicotinamide (niacin, B3) supplements protect from UV radiation

NAD Synthesis Depends on Tryptophan*



*<http://www.bioscience.org/2009/v14/af/3428/fig3.jpg>

Food Sources of Niacin

Eggs, bran, peanuts, meat, poultry, fish, red meat, legumes and seeds



Niacin and Breast Cancer*

- Niacin is a precursor to NAD⁺
- Cancer cells have low ratio of NAD⁺ to NADH because they overuse glycolysis for glucose processing, which reduces NAD⁺ to NADH
- Low ratio is indicator of potential for metastasis
- High dietary niacin can reverse this trend

*AF Santidrian, J Clin Invest 123(3), March 2013, 1068-1081.

Niacin and Breast Cancer*

“Strategies aimed at killing tumor cells by interfering with mitochondrial functions or NAD+ synthesis could, if not effectively lethal, inadvertently produce even more aggressive tumor cell phenotypes.”

High dietary niacin can reverse this trend

*AF Santidrian, J Clin Invest 123(3), March 2013, 1068-1081.

Food sources of tryptophan



Chris Kresser on Vitamin K2*

- Vitamin K2 has effects well beyond those of vitamin K1
 - Both are involved in blood clotting
 - Only K2 protects from prostate cancer and arterial calcification (hardening of the arteries)
- Cows fed GM corn/soy feed in feed lots have very low levels of K2
 - K2 is a product of the shikimate pathway, which glyphosate disrupts
 - Butter from grass-fed cows has much more K2 than butter from feed lot cows

*chriskresser.com/vitamin-k2-the-missing-nutrient

Food Sources of Vitamin K2



Iron Deficiency and Autism

- Low maternal iron intake is linked with a five-fold greater risk of autism if the mother is 35 or older at the time of her child's birth, or if she has hypertension or diabetes*
- Hypertension and diabetes are both going up in frequency in step with glyphosate usage on corn and soy crops
- Glyphosate chelates iron and disrupts heme synthesis

*<http://www.medicalnewstoday.com/articles/282867.php>

“Iodine: What Cancer, Your Brain and Thyroid Have In Common”*

- Discovered in 1811 by Bernard Courtois
- Seaweed is an excellent source
- Protects from breast cancer
- Concentrated in thyroid glands, cerebrospinal fluid, saliva, breasts
 - Thyroxin: regulates metabolism
 - Goiter – thyroid becomes enlarged due to iodine deficiency
- Iodine was added to bread in 1960’s
 - Later, iodine replaced with bromine
 - Fluoride in toothpaste and water makes things worse
 - Selenium is needed to metabolize iodine
- Iodine deficiency single largest cause of mental retardation
 - ADHD?



*[youtube.com/watch?v=lt_7592f67M&feature=youtu.be](https://www.youtube.com/watch?v=lt_7592f67M&feature=youtu.be)

Selenium and Thyroid*

- With insufficient selenium, thyroid operates in a state of stress
- Highest selenium concentrations are in liver, kidneys and thyroid gland
- Activation and deactivation of thyroid hormone depend on selenium
- Selenium deficiency leads to inflammation in thyroid gland and autoimmune thyroid disease

Food Sources of Selenium



Nutrition to Treat Alzheimer's*

- DHA/EPA, coconut oil, medium chain triglycerides
- Prebiotics, probiotics
- Curcumin resveratrol, ascorbate, blueberries
- Selenium, zinc, thiamine, NAC, α -lipoic acid
- Homocysteine, vitamin B12, vitamin K2, vitamin D
- Low carb diet
- Yoga, meditation, music, exercise

*DE Bredesen, Reversal of cognitive decline: A novel therapeutic program. Aging Sep 2014 6(9), 1-11.

Nutrition to Treat Alzheimer's*

“It is noteworthy that the major side effect of this therapeutic system is improved health and optimal BMI (body mass index), a result in stark contrast to monopharmaceutical treatments.”

*DE Bredesen, Reversal of cognitive decline: A novel therapeutic program. Aging Sep 2014 6(9), 1-11.

Summary

- Good nutrition is essential for good health
- Chemical farming methods deplete nutrition in foods
- Important foods to consume:
 - Sulfur containing foods
 - Foods high in saturated fat, omega-3 fats and cholesterol
 - Polyphenols
 - Foods rich in micronutrients: B-vitamins, minerals, etc.
- This basically means a diet full of organic animal-based foods and organic fresh green vegetables and nuts
- Getting plenty of sunlight exposure is also important
- These changes may even reverse Alzheimer's disease