



Plant Based Diets What's New in 2016?

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Disclosures

No relevant disclosures to this presentation.

Other disclosures:

Consulting Fees – BI



Not Really!



Carnism: 2016

- Melanie Joy PhD

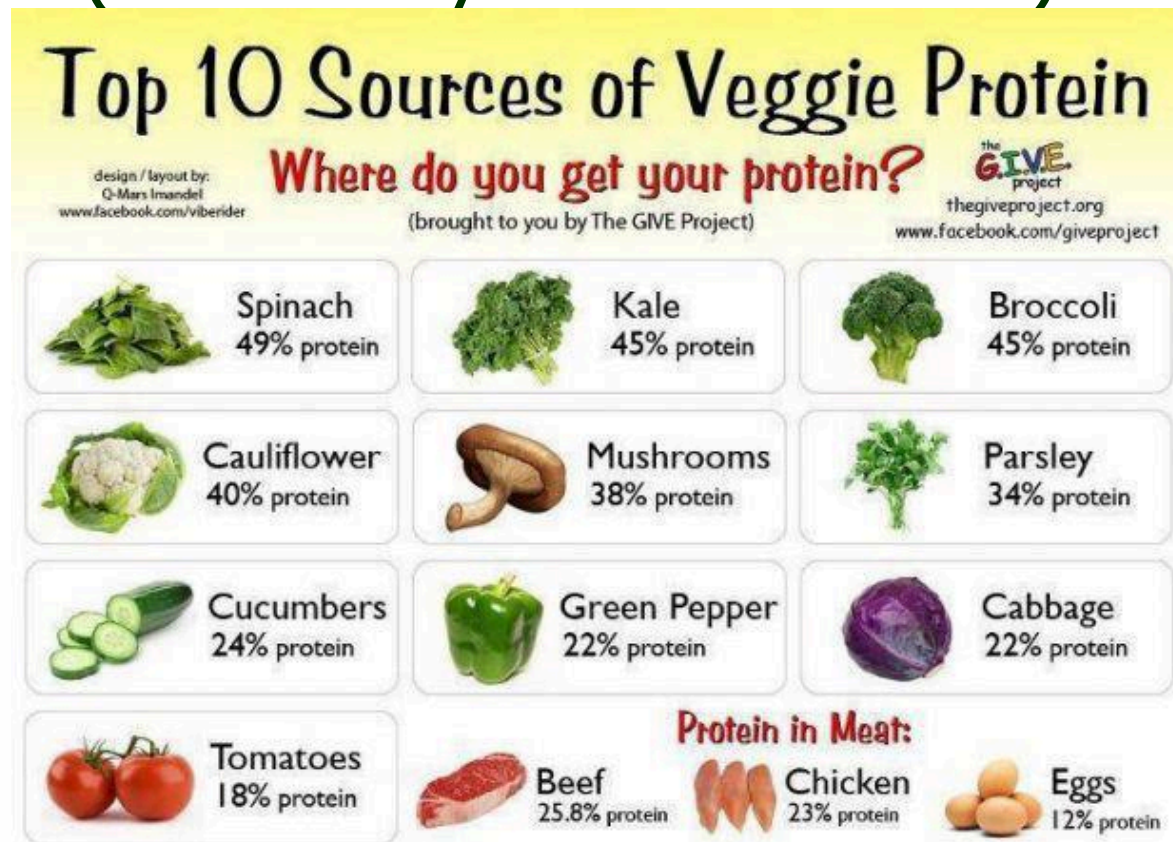


Beyond Carnism and toward Rational, Authentic Food Choices | Melanie Joy | TEDxMünchen



Getting Enough Protein?

- Yes, yes, yes. Only 30 grams per day needed (and maybe even less).



Notice

- It is impossible to do a nutrition study purely without imprisoning people and ensuring nutritional intake.
- Many studies are observational, and do not show cause, but show significant relationships.



Childhood Obesity

- Fast growing epidemic
- Childhood obesity = later life cardiac risk
- Low fat vegan diets reduce the risk of heart disease in obese children, compared to AHA diet
- Small study of 28 children followed for 1 month
- Improvement of 9 biomarkers: BMI, systolic blood pressure, mid-arm circumference, total cholesterol, LDL cholesterol, insulin, weight, myeloperoxidase and high sensitivity C-reactive protein.

Macknin M, Kong T, Weier A, et al. Plant-based, no-added-fat or American Heart Association diets: impact on cardiovascular risk in obese children with hypercholesterolemia and their parents. J Pediatr. Published online on February 12, 2015.



Set Habits Early

- 2,506 participants as part of the Coronary Artery Risk Development in Young Adults (CARDIA) study
- Followed 20-years
- Those who consumed **7-9 servings of fruits and vegetables** a day experienced less plaque accumulation
- **25% less likely** to have heart disease, compared with those who consumed fewer servings of fruits and vegetables.

Miedema MD, Petrone A, Shikany JM, et al. The association of fruit and vegetable consumption during early adulthood with the prevalence of coronary artery calcium after 20 years of follow-up: the CARDIA study. *Circulation*. Published online October 26, 2015.



Start Young



- 2,185 adolescent females as part of the National Heart, Lung, and Blood Institute's Growth and Health Study.
- Followed for for about 10 years.
- Diet records assessed sodium and potassium intakes.
- **Consuming more potassium (plants) had lower diastolic and systolic blood pressure rates when they reached adulthood when compared to those who consumed the least**



Buendia JR, Bradlee L, Daniels SR, Singer MR, Moore LR. Longitudinal effects of dietary sodium and potassium on blood pressure in adolescent girls. *JAMA Pediatr*. Published online April 27, 2015.

Coffee



- Definitely our friend
- Swedish study that tracked 1,629 people who developed MS as well as 2,807 people who didn't
- Six or more cups of coffee per day were **33% less likely** than non-drinkers to be diagnosed with multiple sclerosis the following year

● Mowry et al. *Neurology* April 6, 2015 vol. 84 no. 14 Supplement S45.004

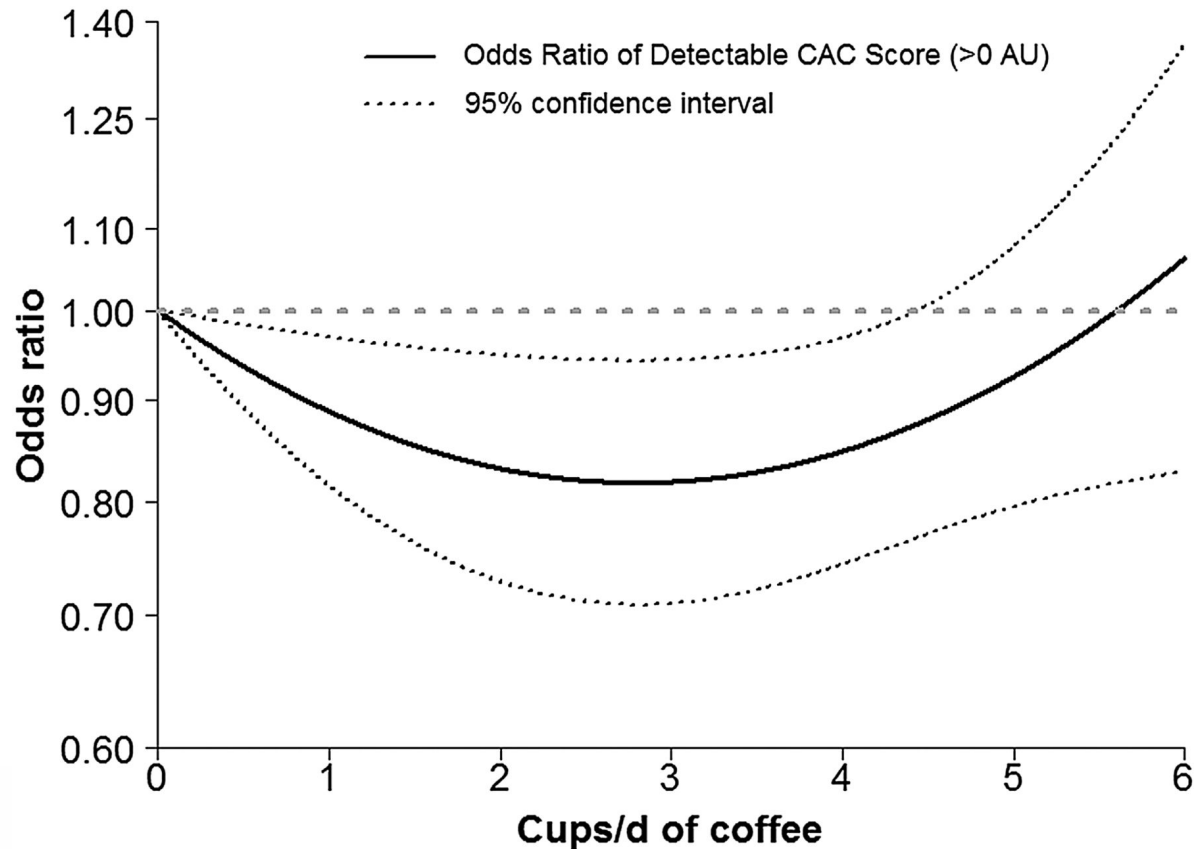


Coffee and Coronary Calcium

- 25,000 people in South Korea without known cardiovascular disease
- Coffee drinkers were less likely to have calcium in their coronary arteries than nondrinkers based on CT.
- The relationship was U-shaped, with the **lowest levels occurring in people who drank 3 or 4 cups daily.**



Coffee and Coronary Calcium

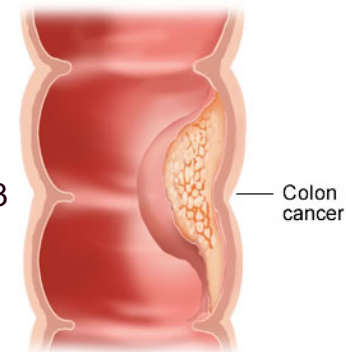


Coffee and Colon Cancer

- Colon cancer patients consuming 4 cups/d or more of total coffee = adjusted hazard ratio (HR) for colon cancer recurrence or mortality of 0.58 (95% CI, 0.34 to 0.99), compared with never drinkers.
- **This means a 42% risk reduction!**



Guercio et al. J Clin Oncology Coffee Intake, Recurrence, and Mortality in Stage III Colon Cancer: Results From CALGB 89803 (Alliance). Published online before print August 17, 2015, doi: 10.1200/JCO.2015.61.5062



Coffee Outcomes Continued

- 74,890 women in the Nurses' Health Study (NHS), 93,054 women in the NHS 2, and 40,557 men in the Health Professionals Follow-up Study
- Coffee intake by questionnaire
- 1 cup = 6% risk reduction of dying
- Up to 3 cups = 8% risk reduction
- **Up to 5 cups = 15% risk reduction**
- More than 5 cups = 12% risk
- Better strength of effect with caffeinated coffee

Ding et al. CIRCULATION AHA.115.017341 published online before print November 16, 2015



Sugar Sweetened Beverages

- A population-based cohort comprising 42 400 men, 45–79 years of age, was followed from 1998 through 2010.
- Men having 2+ servings of sweetened beverages/day = higher risk of developing HF (23%, 95% CI 1.12 to 1.35) compared to men who were non-consumers.

Larsson et al. *Heart* doi:10.1136/heartjnl-2015-307542



Whole Grains and Heart Disease

- Meta analysis of 18 studies that included 400,492
- Highest whole-grain intake amount compared with the lowest amount was significantly associated with reduced risk for CHD (relative risk 0.787, 95% CI = 0.743 to 0.833),
- Tang G, Wang D, Long J, Yang F, Si L. Meta-analysis of the association between whole grain intake and coronary heart disease risk. *Am J Cardiol.* 2015;115:625-629.



Meta-analysis of Lipid RCT

- First meta-analysis of randomized trials of vegetarian diets on blood lipids
- 11 Studies Analyzed
- Total cholesterol = -0.36 mmol/L (95% CI -0.55 to -0.17 ; $P < 0.001$)
- LDL cholesterol = -0.34 mmol/L (95% CI -0.57 to -0.11 ; $P < 0.001$)
- **About 14 points (mg/dL) on US scale**



EPIC Lifestyle?



- Diets of 450,000 European adults as part of the European Prospective Investigation into Cancer and Nutrition (EPIC)
- Followed for about 12 years
- Highest fruit and vegetable intake = **20% risk reduction in MI risk**

Lassale C, Beulens J, Van Y, et al. A pro-vegetarian food pattern and cardiovascular mortality in the Epic study. Report presented at: The Epidemiology and Prevention and Lifestyle and Cardiometabolic Health 2015; March 4, 2015: Baltimore, MD.



Colon Cancer Update

- ~ 80,000 adults from the Adventist Health Study 2
- Divided into five dietary groups: vegan (8% of the population), lacto-ovo vegetarian (29%), pesco-vegetarian (10%), semi-vegetarian (6%), and non-vegetarian (48%).
- Followed for 7 years
- **Compared with non-vegetarians, all vegetarians combined had 22% lower risk for colorectal cancer (HR of 0.78).**

Orlich et al. *JAMA Intern Med.* 2015;175(5):767-776.



Beans Beans The Musical Fruit

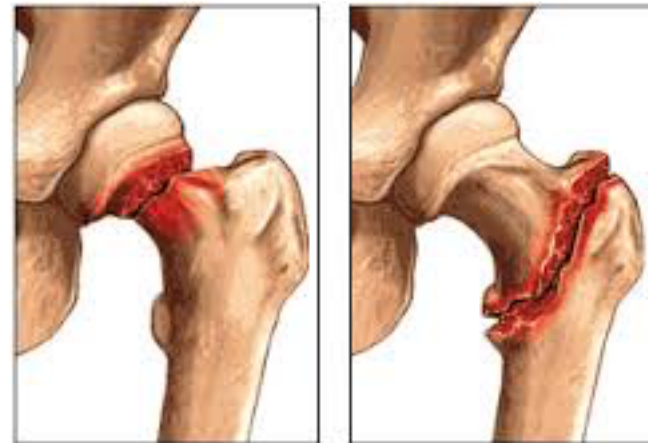
- 14 studies encompassing 1,903,459 participants.
- Those who consumed the most legumes, especially soybeans, **had the lowest risk for colon cancer.**
- Legumes' many health benefits and protective effects are likely to dietary fiber and protein, high amounts of vitamins B6 and E, and high concentration of isoflavones, which inhibit cancer cell growth.



Zhu B, Sun Y, Qi L, Zhong R, Miao X. Dietary legume consumption reduces risk of colorectal cancer: evidence from a meta-analysis of cohort studies. *Sci Rep.* 2015;5:8797.

Osteoporosis and Milk

- Meta-analysis in women (6 studies, 195,102 women, 3574 hip fractures)
- There was no overall association between total milk intake and hip fracture risk (pooled RR per glass of milk per day = 0.99; 95% confidence interval [CI] 0.96-1.02; Q-test $p = .37$). **= NO BENEFIT FOR MILK**
- In men (3 studies, 75,149 men, 195 hip fractures), the pooled RR per daily glass of milk was 0.91 (95% CI 0.81-1.01). **= NO BENEFIT FOR MILK**



J Bone Miner Res. 2011 Apr;26(4):833-9.



3 Glasses of Milk = 93% Higher Death?

- Two large Swedish cohorts, one with 61,433 women (39-74) and one with 45,339 men (45-79)
- Followed for about 20 years
- **In women the adjusted mortality hazard ratio for three or more glasses of milk a day compared with less than one glass a day was 1.93** (95% confidence interval 1.80 to 2.06).
- With each glass of milk **hip fractures increased** (1.09, 1.05 to 1.13).



BMJ. 2014 Oct 28;349



Yogurt?



- 4,445 participants as part of the ENRICA (Nutrition and Cardiovascular Risk in Spain) study for 3.5 years
- **1+ serving of yogurt = no improvement in mental or physical health**

(Based on the Physical Composite Summary and Mental Composite Summary – both validated survey instruments)

J Acad Nutr Diet. 2015 Jan;115(1):31-9



Blood Pressure



- Evaluated the diets of 121 patients with type 2 diabetes.
- Divided into two groups according to blood pressure – uncontrolled ($\geq 135/85$ mm Hg) or controlled ($\leq 135/85$ mm Hg).
- Three-day diet analysis, **the group with uncontrolled blood pressure consumed more protein and meat** than the group with controlled blood pressure.
- The controlled blood pressure group also consumed a **diet higher in carbohydrates.**

Mattos CB, Vianna LC, Paula TP, et al. Increased protein intake is associated with uncontrolled blood pressure by 24-hour ambulatory blood pressure monitoring in patients with type 2 diabetes. *J Am Coll Nutr.* 2015;0:1-8.

Eat Your Greens



- New work followed the diets and cognitive abilities of ~950 older adults with an average age of 81 for 2-10 years
- **1-2 servings of greens per day = significant decrease in the rate of cognitive decline**
- AND the cognitive ability of a person **11 years younger** than those who consumed none.

Morris MC, Booth SL, Dawson-Hughes B, Barnes LL, Bennett DA, Wang Y. Relations to cognitive change with age of micronutrients found in green leafy vegetables. Report presented at: American Society for Nutrition annual meeting; March 28-April 1, 2015: Boston, MA.



So, Eat Carrots!

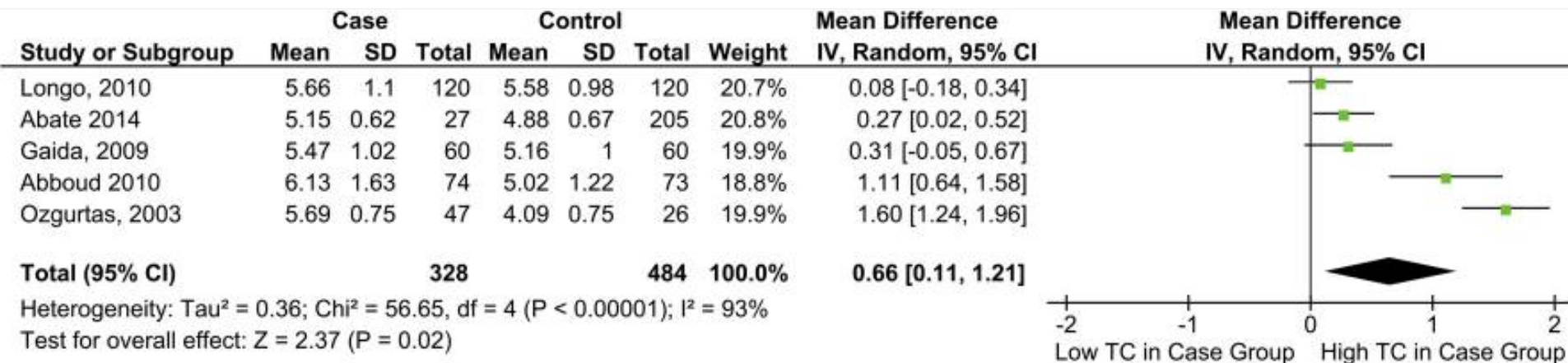
- **Eating fruit and vegetables is associated with greater flourishing in daily life.**
- 405 young adults (67% women; mean age 19.9 [SD 1.6] years)
- Diary entries for 13 days
- Fruit and vegetable consumption predicted greater well-being, curiosity, and creativity at the between- and within-person levels.

Br J Health Psychol. 2015 May;20(2):413-27.



Cholesterol and Joint Pain

- 17 Studies, 2612 participants
- Those with the **most pain = higher LDL and triglycerides**
- Tendon injuries, inflammation also higher with higher cholesterol



Gout and Protein Sources

- 63,257 people part of the Singapore Chinese Health Study
- Those who consumed the most poultry and fish had **the most risk for gout.**
- Those who consumed **the most soy protein and legumes experienced the lowest risk.**



Teng GG, Pan A, Yuan JM, Koh WP. Food sources of protein and risk of incident gout in the Singapore Chinese Health Study. *Arthritis Rheumatol*. Published online March 25, 2015.

Why Bother? Meat is Meat

- 76 samples of meat (beef, chicken, and lamb) of two modes of production (organic and conventional) and quantified their levels of 33 carcinogenic persistent organic pollutants (POPs).
- **“Strikingly, the consumption of organically produced meat does not diminish this carcinogenic risk, but on the contrary, it seems to be even higher, especially that associated with lamb consumption.”**

Environ Sci Pollut Res Int. 2015 Apr 19.



So How About Fish

- A re-visit to the Eskimos
- The notion that coronary artery disease (CAD) is rare among Greenland Eskimos due to high fish intake, gained acceptance in the 1970s (Bang and Dyerberg).
- Bang and Dyerberg did not even investigate CAD



So How About Fish

- New review done of 43 manuscripts after filtering out > 700
- “Our conclusion is that this hypothesis lacked a solid foundation.”
- Most studies found that the Greenland Eskimos as well as the Canadian and Alaskan Inuit have CAD as often as the non- Eskimo populations.



So How About Fish

- Eskimos have a similar prevalence of CAD (coronary artery disease) as non-Eskimo populations
- They have excessive mortality due to strokes
- Their overall mortality is **twice as high** as that of non-Eskimo populations
- Life expectancy is approximately **10 years shorter** than the Danish population.



Fodor GJ, Helis E, Yazdekhashti N, Vohnout B, "Fishing" for the origins of the "Eskimos and heart disease" story. Facts or wishful thinking? A review, *Canadian Journal of Cardiology*

Walnuts



- 112 participants at risk for diabetes into two groups
 - 1 - received dietary counseling
 - 2 - no counseling
- Both groups were further divided into subgroups that were instructed to eat 56 grams (roughly 2 ounces) of walnuts per day or avoid walnuts all together.
- Participants switched subgroups after 3 months.
- **Those who consumed walnuts improved their endothelial function and lowered total and LDL cholesterol levels**
- However, the group instructed to eat the daily serving of walnuts without calorie restriction saw an increase in total body fat – **calories count, too!**

Njike VY, Ayettey R, Petraro P, Treu JA, Katz DL. Walnut ingestion in adults at risk for diabetes: effects on body composition, diet quality, and cardiac risk measures. *BMJ Open Diab Res Care*. Published online

November 23, 2015.

What About Eggs?

- Analysis of 14 studies found that those who consumed the most eggs:
- 19% and 68% percent increased risk for developing cardiovascular disease and diabetes, respectively, compared with those who ate the fewest eggs.
- For those who already had diabetes, the risk for developing heart disease from eating the most eggs jumped to 83%.
- Author conclusion: "Our study suggests that there is a dose-response positive association between egg consumption and the risk of CVD and diabetes."

Li Y, Zhou C, Zhou X, Li L. Egg consumption and risk of cardiovascular diseases and diabetes: A meta-analysis. *Atherosclerosis*. Published ahead of print April 17, 2013.



1 Egg

- 187mg cholesterol



More On Eggs...

FDA requirement for “healthy” (or related terms)

The saturated fat
level must be...

1 g or less of
saturated fatty acids per
100 g and less than 10
percent calories from
saturated
fat

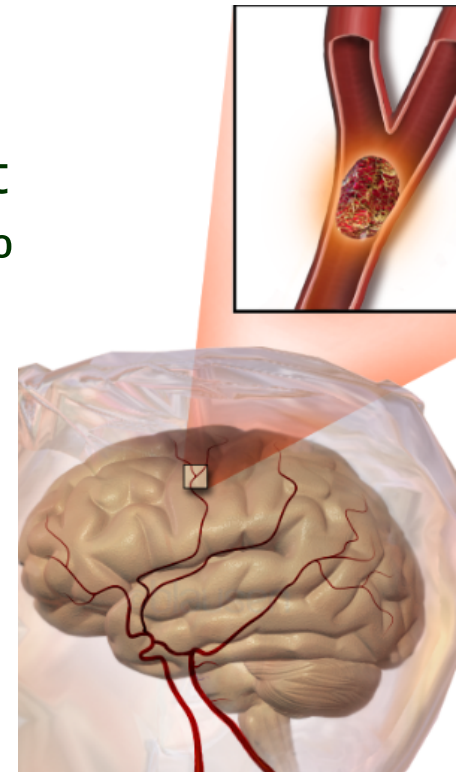
The cholesterol
must be...

90 mg or less per labeled
serving



Eggs + Meat for Stroke

- 11,601 participants from the Atherosclerosis Risk in Communities (ARIC) Study
- The highest intakes of red and processed meat products increased risk for total stroke by 41% (red) and 24% (processed)
- In a subanalysis of stroke type, those who consumed the most red meat had a 47% increased risk for ischemic stroke, compared with those who consumed the least.
- Most eggs eaten = 41% increased risk for hemorrhagic stroke, compared with those who consumed the least.



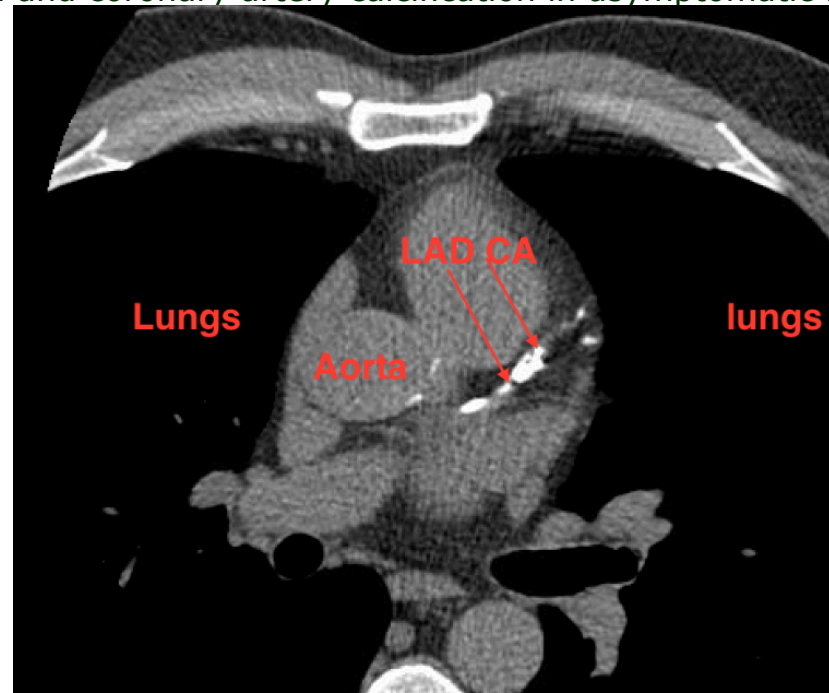
Haring B, Misialek JR, Rebholz CM, et al. Association of dietary protein consumption with incident silent cerebral infarcts and stroke: the ARIC study. *Stroke*. Published online October 29, 2015.



Eggs and Coronary Calcium

- 23,417 South Korean participants through the Kangbuk Samsung Health Study
- Those who ate the most eggs, compared with those who ate the least, **had 80% higher coronary artery calcium scores**, a measure of heart disease risk.

Choi Y, Chang , Lee JE, et al. Egg consumption and coronary artery calcification in asymptomatic men and women. *Atherosclerosis*. 2015;241:305-312.



US Dietary Guidelines 2015-20

The Cholesterol Story...

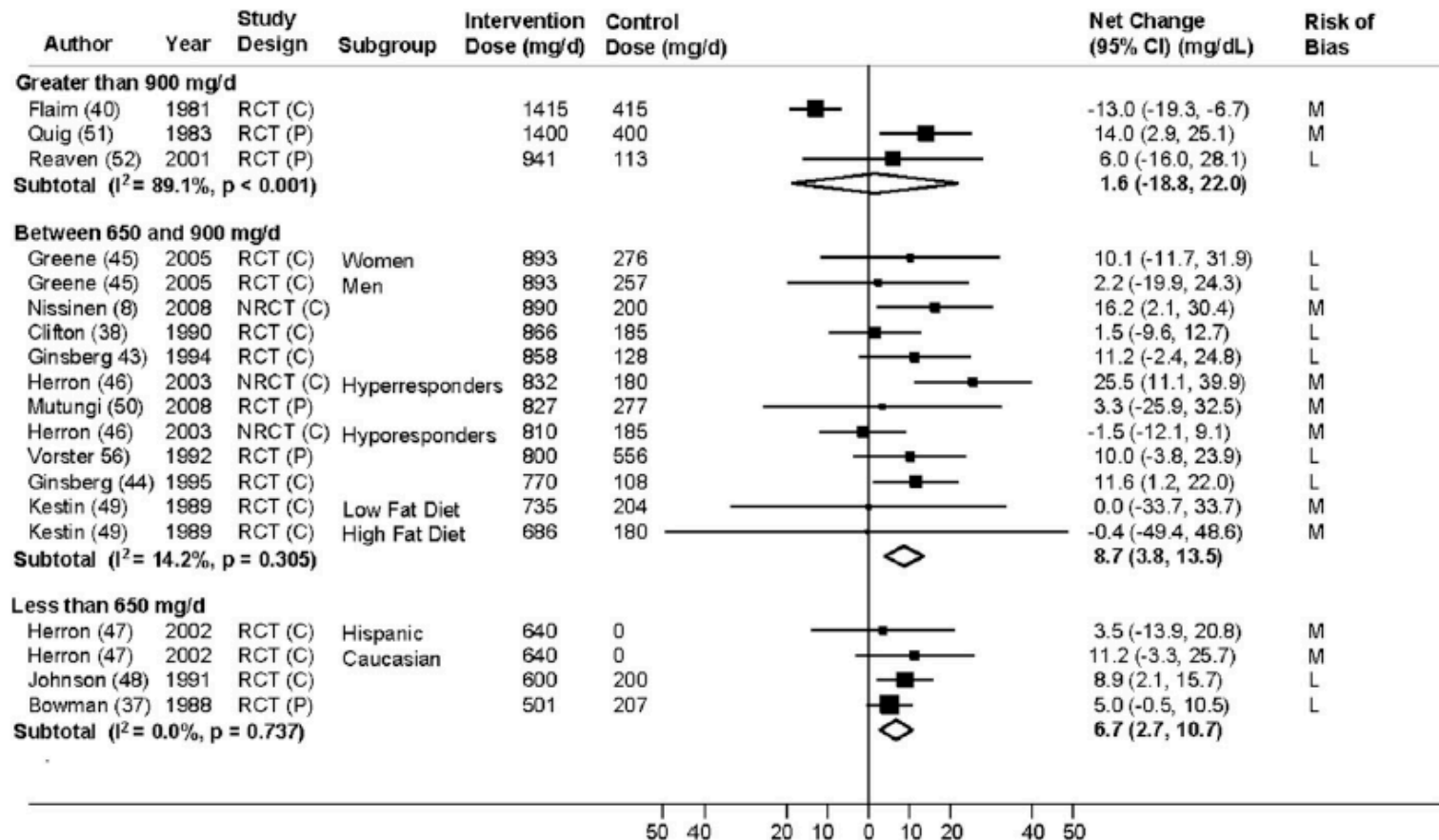
- 300mg no more
- “Eat as little cholesterol as possible”
- What happened?
- Vegetarian Diet, Mediterranean Diet, “Healthy American” Diet



2015 Meta Analysis

14 of 19

BERGER ET AL.



Berger et al. Am J Clin Nutr doi: 10.3945/ajcn.114.100305.

Stepping...

In the Right Direction?

HEART-HEALTHY NUTRITION

Talk with your doctor
& heart team about a
diet that's right for you.



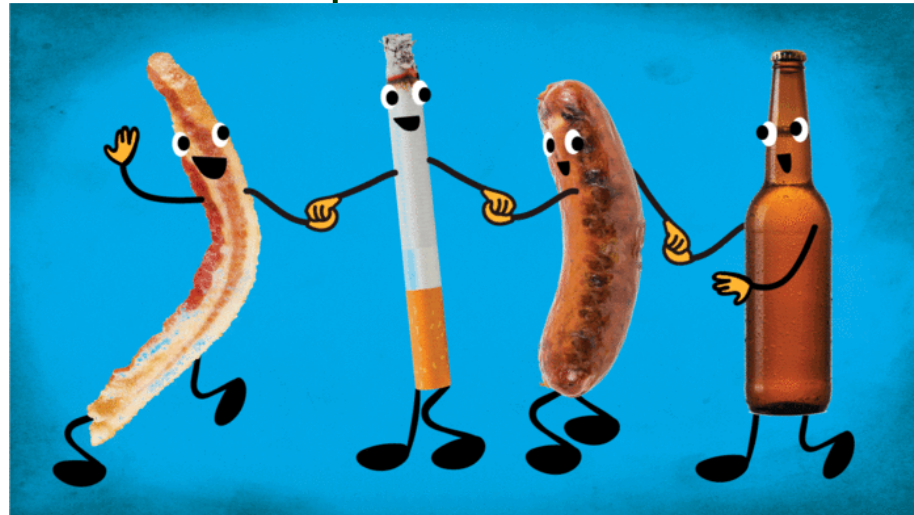
Information provided for educational purposes only. Please consult your health care provider regarding your specific health needs.

➡ For more information, visit **CardioSmart.org/Nutrition**

If you would like to download or order additional posters on various topics, visit CardioSmart.org/Posters

Now the WHO

- "Overall, the Working Group classified consumption of processed meat as 'carcinogenic to humans' on the basis of sufficient evidence for colorectal cancer," the report reads.
- Additionally, a positive association with the consumption of processed meat was found for stomach cancer. The Working Group classified consumption of red meat as 'probably carcinogenic to humans'," it added.
- "Consumption of red meat was also positively associated with pancreatic and with prostate cancer."



Ok But What IS Red Meat?

- "Red meat refers to unprocessed mammalian muscle meat—for example, beef, veal, pork, lamb, mutton, horse, or goat meat—including minced or frozen meat; it is usually consumed cooked."
- "Processed meat refers to meat that has been transformed through salting, curing, fermentation, smoking, or other processes to enhance flavor or improve preservation. Most processed meats contain pork or beef, but might also contain other red meats, poultry, offal (eg, liver), or meat byproducts such as blood."
- The report specifically names **ham, hot dogs, sausages and jerky.**

Bouvard et al. Lancet Oncology.
Volume 16, No. 16, p1599–1600, December 2015



Brain Power

- Diet records and cognitive health tests from 27,860 men and women as part of the ONTARGET (Ongoing Telmisartan Alone and in Combination with Ramipril Global Endpoint Trial) and TRANSCEND (Telmisartan Randomised Assessment Study in ACE Intolerant Subjects with Cardiovascular Disease) studies were reviewed.
- **Those who consumed the most fruits, vegetables, and whole grains had the lowest risk for cognitive decline after a 56-month observation period.**

Smyth A, Dehghan M, O'Donnell M, et al.
Healthy eating and reduced risk of cognitive decline: a cohort from 40 countries.
Neurology. 2015;84:1-8.



Low Carb?

- Analysis of the the 2013 Primary Prevention of Cardiovascular Disease with a Mediterranean Diet (PREDIMED) Trial.
- Those who ate large quantities of protein and a small amount of carbohydrates:
 - **Were almost twice as likely to gain more than 10% of their body weight**
 - **59% increase in all-cause mortality during the study.**

Bull MC. Association of high dietary protein intake with t risk of cardiovascular disease. Report presented at: 22n 9, 2015: Prague, CZ.

Subjects at high 5) 2015; May 6-



Cutting Fat Better than Cutting Carbs

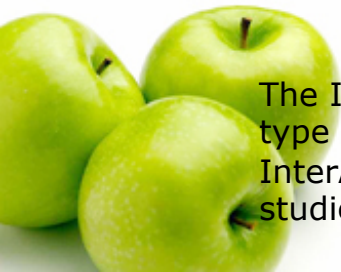
- 19 obese adults were admitted to the metabolic unit of the NIH Clinical Center for the study.
- Participants consumed an energy-balanced diet for 5 days, after which they were randomized to follow a reduced-fat or reduced-carbohydrate diet for 6 days.
- **Overall, the reduced fat diet was associated with significantly greater body fat loss than the reduced-carb diet (89 vs. 53 g/day of body fat).**
- **Perhaps all calories aren't equal?**

Hall et al. Cell Metabolism Volume 22, Issue 3, p427–436, 1 September 2015

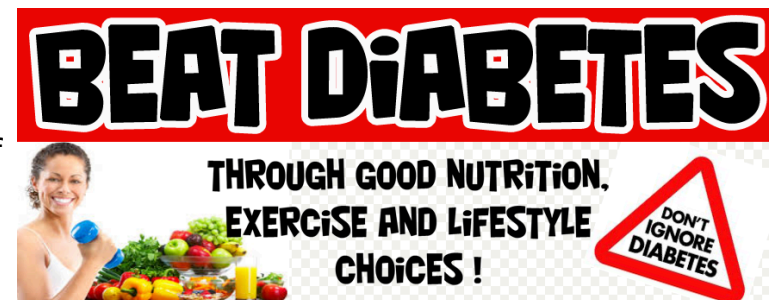


Fighting Diabetes

- Monitored fiber intake from cereal, fruit, and vegetables for participants in the European Prospective Investigation into Cancer and Nutrition (EPIC)-InterAct study for about 11 years.
- Those who ate the most fiber (>26 grams per day):
 - **18% drop in diabetes risk** compared to those who consumed the least (<19 grams per day).
- High fiber consumption also led to lower body weight.
- Further meta-analysis of 18 studies showed **a 9% drop in risk for every 10 grams of fiber consumed.**
- Fiber from cereals contributed the highest risk reduction of **up to 25%.**



The InterAct Consortium. Dietary fibre and incidence of type 2 diabetes in eight European countries: the EPIC-InterAct Study and a meta-analysis of prospective studies. *Diabetologia*. Published online May 29, 2015.



Diabetes

- 12 cohort studies of > 200,000 people
- Those who consumed the most eggs had a 39% higher chance for diabetes development
- Interestingly, the effect was present in the US, but not outside for unclear reasons

Djousse L et al. Am J Clin Nutrition Jan 6 2016.



Diabetes



- Really a disease of **fat excess**
- 12 college-aged men on either a standard diet or a diet high in saturated fat for five days.
- Muscle biopsies were used to assess changes in insulin sensitivity.
- Those who consumed the high-fat diet experienced an almost three-fold increase in endotoxins one hour after their meal and lost some ability to metabolize glucose.



Anderson AS, Haynie KR, McMillan RP, et al. Early skeletal muscle adaptations to short-term high-fat diet in humans before changes in insulin sensitivity. *Obesity*. 2015;23:720-724.

Dr. Walter Kempner

- Duke University in the 1940s
- Fed patients a diet of white rice and fruit (i.e. sugar)
- Marked improvements in weight, blood pressure, and diabetes



Kempner W. Treatment of heart and kidney disease and of hypertensive and arteriosclerotic vascular disease with the rice diet. *Ann Intern Med.* 1949;31:821–856, illust.



Kempner Continued

B Newborg, W Kempner.
Analysis of 177 cases of
hypertensive vascular
disease with
papilledema; one
hundred twenty-six
patients treated with rice
diet. Am J Med. 1955
Jul;19(1):33-47.

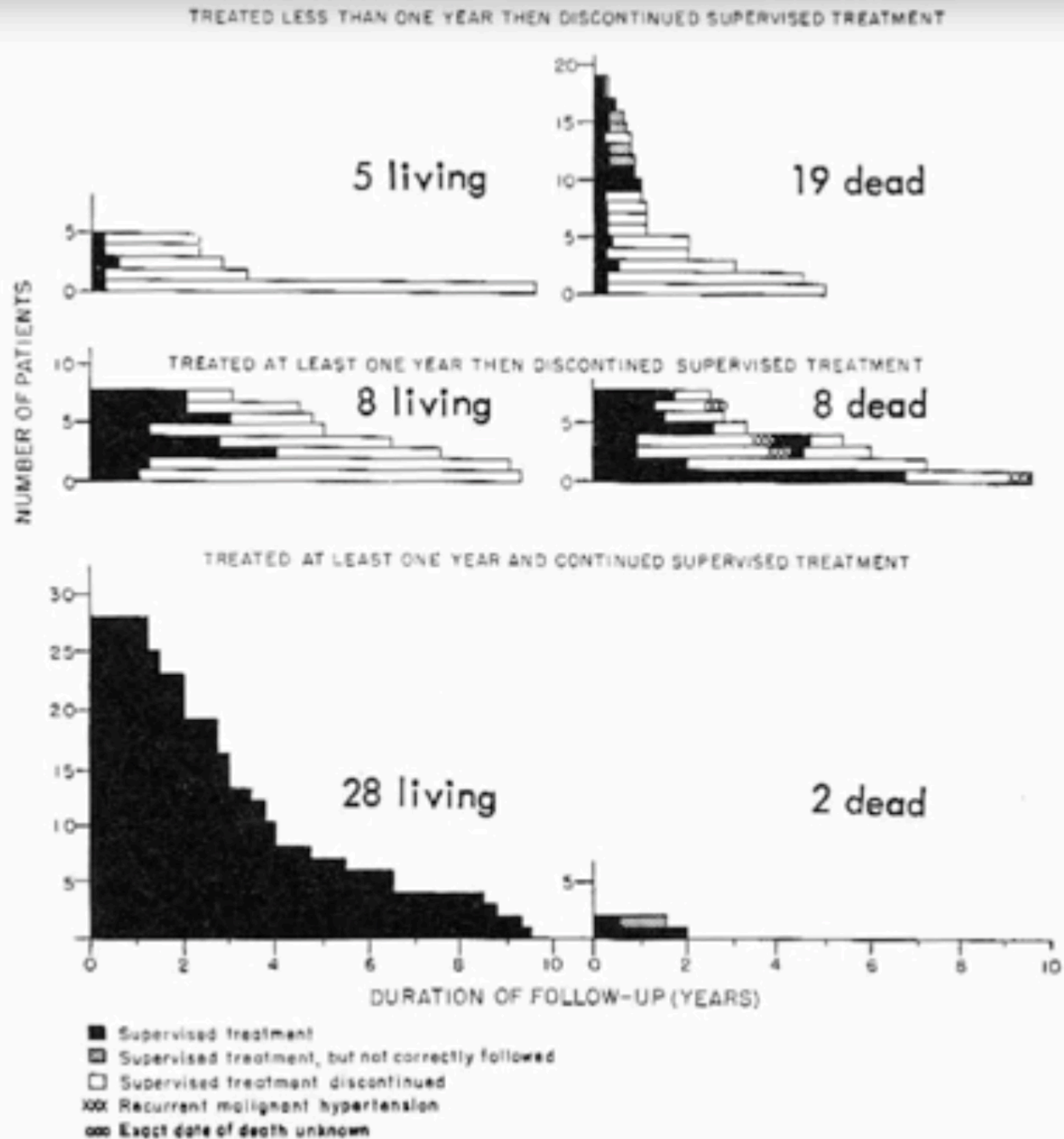
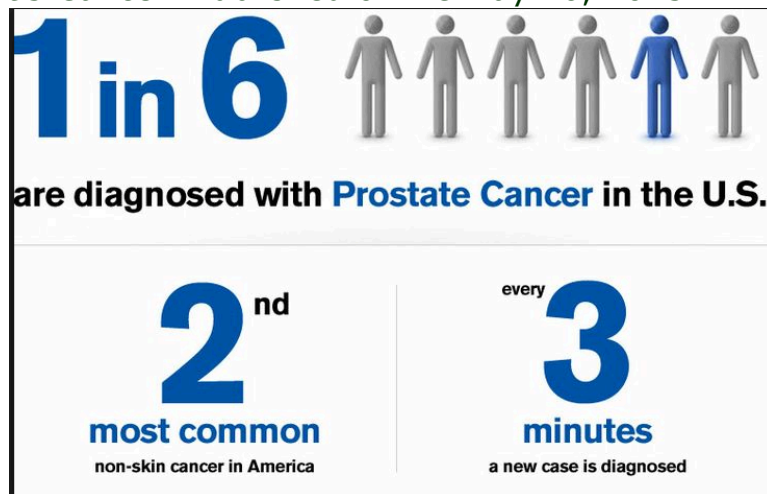


FIG. 2. Survival time and period of treatment (seventy patients, total PSP excretion in two hours, 36 per cent or more). Living, forty-one patients; dead, twenty-nine patients.

That Poor Prostate

- 926 men diagnosed with prostate cancer as part of the Physician's Health Study for 10 years.
- Those who consumed 3+ servings of dairy products a = **76% more death and a 141% higher risk for death due to prostate cancer** compared to those who consumed less than one serving.
- Both high- and low-fat dairy products were associated with increased mortality.

Yang M, Kenfield SA, Van Blarigan EL, et al. Dairy intake after prostate cancer diagnosis in relation to disease-specific and total mortality. *Int J Cancer*. Published online May 20, 2015.



That Poor Prostate - 2

- 15 Study Meta-analysis
- Followed 842,000 men
- **4 eggs a week = 14% higher risk** of advanced prostate cancer (particularly seen in N Americans)

Int J. Cancer 138:2368,2016



Vegan Diet = Prostate Protector

- 26,346 participants from the Adventist Health Study-2
- Those who followed a vegan diet were less likely to be obese and experienced **35% less prostate cancer risk** than those following a nonvegetarian, lacto-ovo-vegetarian, pesco-vegetarian, or semi-vegetarian diet.

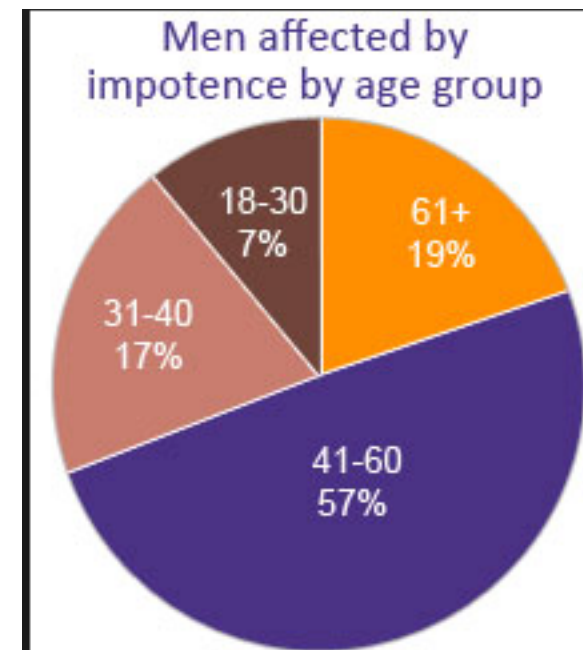
Tantamango-Bartley T, Knutsen SF, Knutsen R, et al. Are strict vegetarians protected against prostate cancer? *Am J Clin Nutr*. Published online November 11, 2015.



Help for ED

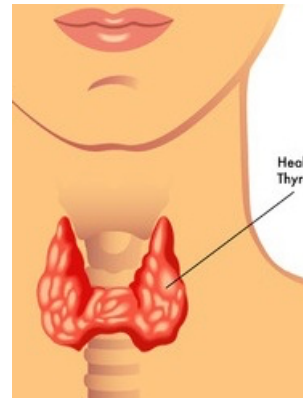
- New Study: > 50,000 middle-aged men
- Highest intakes of anthocyanins, flavones, flavanones, found in fruits/berries **lowered ED by 14%**
- **Combined with exercise = 21% reduction**

A. Cassidy, M. Franz, E. B. Rimm. **Dietary flavonoid intake and incidence of erectile dysfunction.** *American Journal of Clinical Nutrition*, 2016; DOI: 10.3945/ajcn.115.122010



Speaking of Glands

- Analysis of dietary patterns and hyperthyroid treatment histories of 66,000 individuals in the United States and Canada as part of the Adventist Health Study-2 (AHS-2)
- Vegans had **52% lower odds of prevalent hyperthyroidism** (defined by treatment over the past year) compared with omnivores.
- Previously, vegan diets were associated with a lower risk of hypothyroidism.



Tonstad S, Nathan E, Oda K, Fraser GE. Prevalence of hyperthyroidism according to type of vegetarian diet. *Public Health Nutr.* 2015;18:1482-1487.

Tonstad S, Nathan E, Oda K, Fraser G. Vegan diets and hypothyroidism. *Nutrients.* 2013;5:4642-4652.



Dairy Virus and Human Breast Cancer

- 239 donated breast tissue samples from the Cooperative Human Tissue Network archives for exposure to the **bovine leukemia virus (BLV)**.
- BLV in breast tissue was strongly associated with breast cancer diagnosis, as the virus appeared in 59% of those with cancer.
- The researchers found 38% of cows used for beef and 84% of cows used for dairy were infected with BLV



Buehring GC, Shen HM, Jensen HM, Jin DL, Hudes M, Block G. Exposure to bovine leukemia virus is associated with breast cancer: a case-control study. *PLoS One*. 2015;10:e0134304..

Our Old Friend, the Beet

- Previously reported to lower blood pressure
- More work now continues to show boosted exercise performance
- Reduced oxygen consumption for equal or better performance



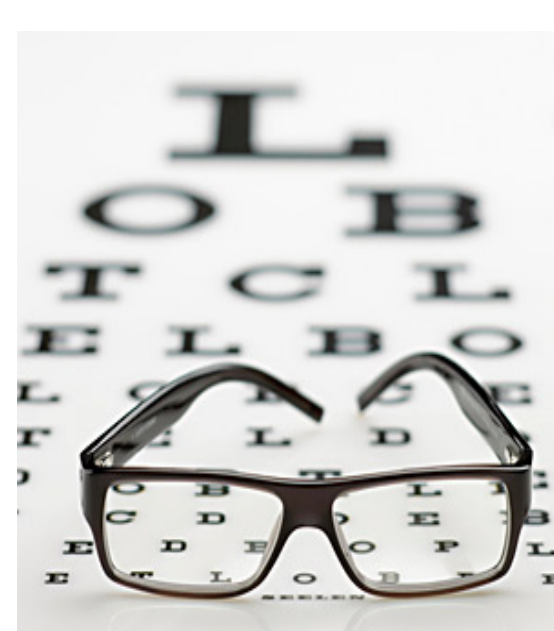
A M Jones. Influence of dietary nitrate on the physiological determinants of exercise performance: a critical review. *Appl Physiol Nutr Metab*. 2014 Sep;39(9):1019-28.

M Murphy, K Eliot, R M Heuertz, E Weiss. Whole beetroot consumption acutely improves running performance. *J Acad Nutr Diet*. 2012 Apr;112(4):548-52.

After All These Slides, How's My Eyesight?

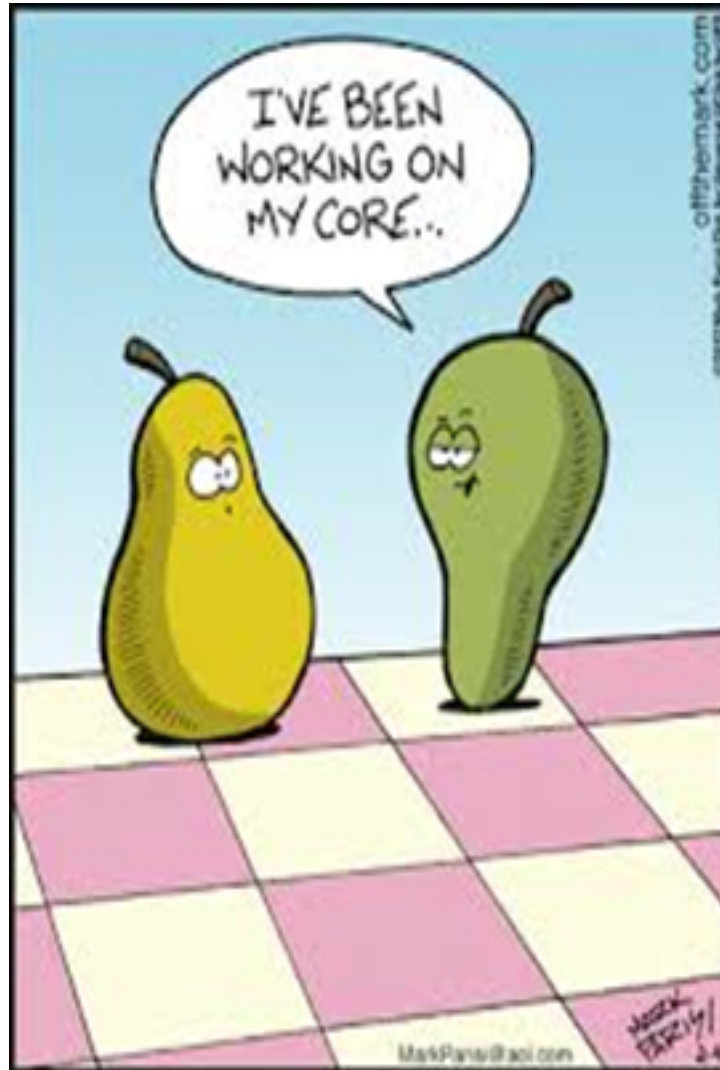
- 102,046 participants from the Nurses' Health Study + Health Professionals Follow-up Study
- Those who consumed the most carrots, tomatoes, spinach, oranges, and other foods rich in carotenoids, specifically lutein and zeaxanthin

→ 35% less risk for Acute Macular Degeneration



Wu J, Cho E, Willett WC, Sastry SM, Schaumberg DA. Intakes of lutein, zeaxanthin, and other carotenoids and age-related macular degeneration during 2 decades of prospective follow-up. *JAMA Ophthalmol*. Published online October 8, 2015.

Exercise



Environmental Impact

- 1 kg of Beef = 27 kg of greenhouse gases
- Going vegan is the equivalent of not driving 1160 miles
- For each acre of forest cleared for urbanization, **SEVEN** are cleared to raise meat livestock.

Hur, R. Are High Fat Diets Killing Our Forests. Vegetarian Times Feb 1984.



Water Footprints



650 Barley
litres of water for one pound (500 g)



650 Wheat
litres of water for one pound (500 g)



1400 Sorghum
litres of water for one pound (500 g)



2500 Millet
litres of water for one pound (500 g)



650 Toast
litres of water for one package (500 g)



750 Cane Sugar
litres of water for one package (500 g)



90 Tea
litres of water for one pot (750 ml)



840 Coffee
litres of water for one pot (750 ml)



2500 Burger
litres of water for one burger (150 g beef)



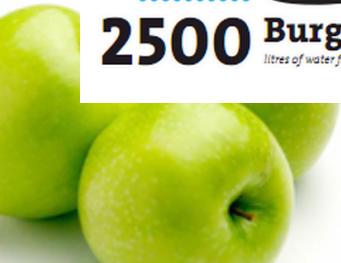
4650 Beef
litres of water for one steak (300 g)



1000 Milk
litres of water for one litre



2500 Cheese
litres of water for one big piece (500 g)



Economics

- 75% of the \$2.8 trillion in annual health care costs in the United States is from chronic diseases that can often be reversed or prevented altogether by a healthy lifestyle.

Ornish. NY Times Editorial

http://www.nytimes.com/2012/09/23/opinion/sunday/the-optimal-diet.html?_r=0



There Is Hope

Director James Cameron's wife opened first all-vegan school as he filmed Avatar



Deni Kirkova for Metro.co.uk Thursday 12 Nov 2015 4:55 pm



25.8k



<http://metro.co.uk/2015/11/12/director-james-camerons-wife-opened-first-all-vegan-school-as-he-filmed-avatar-5496654/>

MUSE School in Calabasas Highlands, Monday, November 11, 2011. (Picture: Zuma Press)



Really

philly.com

The Inquirer
DAILY NEWS

NEWS SPORTS BUSINESS HEALTH ENTERTAINMENT FOOD OPINION OBITUARY



REPRINTS

News — Politics

Soda tax passes; Philadelphia is first big city in nation to enact one

Updated: JUNE 16, 2016 — 8:36 PM EDT



DAVID SWANSON / STAFF PHOTOGRAPHER

People hold signs as City Council passes a 1.5-cents-per-ounce levy on sugar-sweetened and diet beverages, making Philadelphia the first big city in the nation to do so.

by Tricia L. Nadolny, STAFF WRITER

Looking to raise millions for a bold expansion of early childhood education, Philadelphia City Council on Thursday approved a 1.5-cent-per-ounce tax on sugar-

Success

- Low fat, 100% whole grain, minimally processed, whole food, plant-based diet



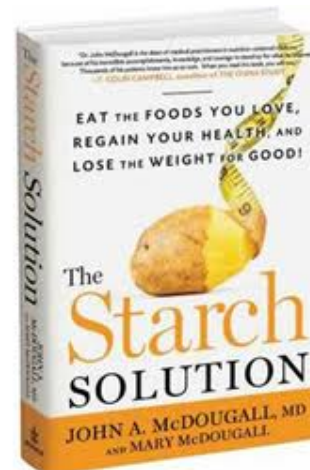
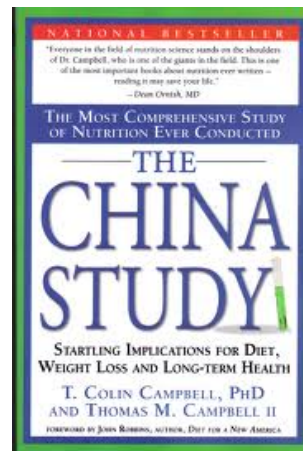
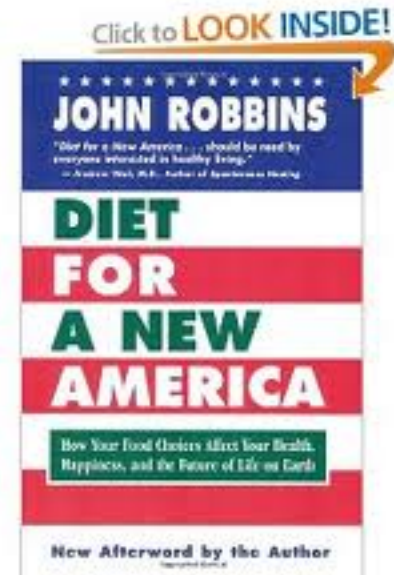
Geniuses Agree...

“Nothing will benefit human health and increase our chances of survival for life on Earth as much as the evolution to a vegetarian diet.” – Albert Einstein



Convinced?

- Forks Over Knives
- The China Study
- The Starch Solution
- Diet for a New America
- Planeat



The Real Test

Oh you think vegans are
"extreme."

I bet you'd choose a vegan
over a slaughterhouse worker to
babysit your child though.



facebook.com/BloodyDairy



The Break Up

"It's not you, it's meat"

- vegan break up

