

“Nutrition for the Dental Team”



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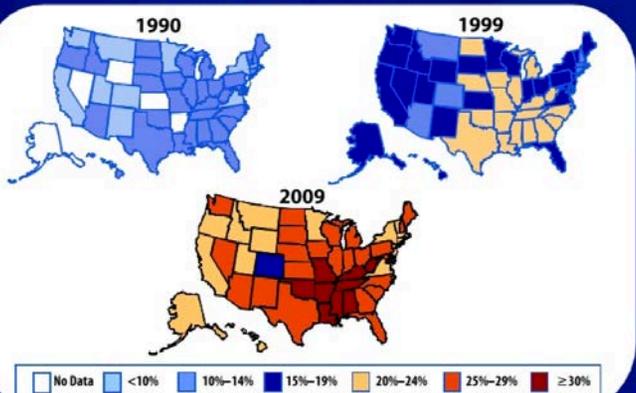
You and Food

- What is your first “food” memory?
- What is your favorite food?
- How mindful are you when you eat?
- Who makes the food choices at home?
- Do you shop the perimeter of the store?
- Do you consciously choose “healthy” food?

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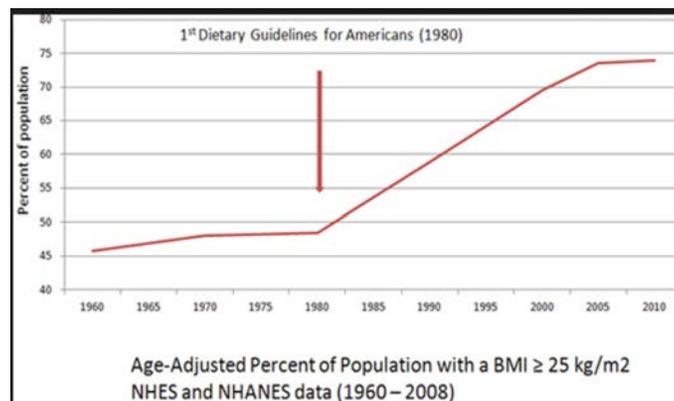
Rapid Increases in Adult Obesity in the U.S. BRFSS: 1990, 1999, 2009



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Diet and Obesity in US



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Nutrition in the 21st Century



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Do Not Focus on Weight



- Focus on:
 - Healthy food
 - Healthy movement
 - Healthy rest
 - Healthy relationships

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CARBOHYDRATES



- Provide majority of calories in most diets
- The body's preferred fuel source
- Largest contributor to glucose control
- Half of carbohydrates in North American diet come from: bread, soft drinks, cakes, cookies, donuts, quick breads, sugars, syrups, jams, white potatoes (including chips) and breakfast cereals

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**Refined Sugar
The Other
White Drug**

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November 2016

Sugar Industry and Coronary Heart Disease Research

A Historical Analysis of Internal Industry Documents

Cristin E. Kearns, DDS, MBA^{1,2}; Laura A. Schmidt, PhD, MSW, MPH^{1,3,4}; Stanton A. Glantz, PhD^{1,5,6,7,8}

> Author Affiliations

JAMA Intern Med. 2016;176(11):1680-1685. doi:10.1001/jamainternmed.2016.5394

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Abstract

Early warning signals of the coronary heart disease (CHD) risk of sugar (sucrose) emerged in the 1950s. We examined Sugar Research Foundation (SRF) internal documents, historical reports, and statements relevant to early debates about the dietary causes of CHD and assembled findings chronologically into a narrative case study. The SRF sponsored its first CHD research project in 1965, a literature review published in the *New England Journal of Medicine*, which singled out fat and cholesterol as the dietary causes of CHD and downplayed evidence that sucrose consumption was also a risk factor. The SRF set the review's objective, contributed articles for inclusion, and received drafts. The SRF's funding and role was not disclosed. Together with other recent analyses of sugar industry documents, our findings suggest the industry sponsored a research program in the 1960s and 1970s that successfully cast doubt about the hazards of sucrose while promoting fat as the dietary culprit in CHD. Policy-

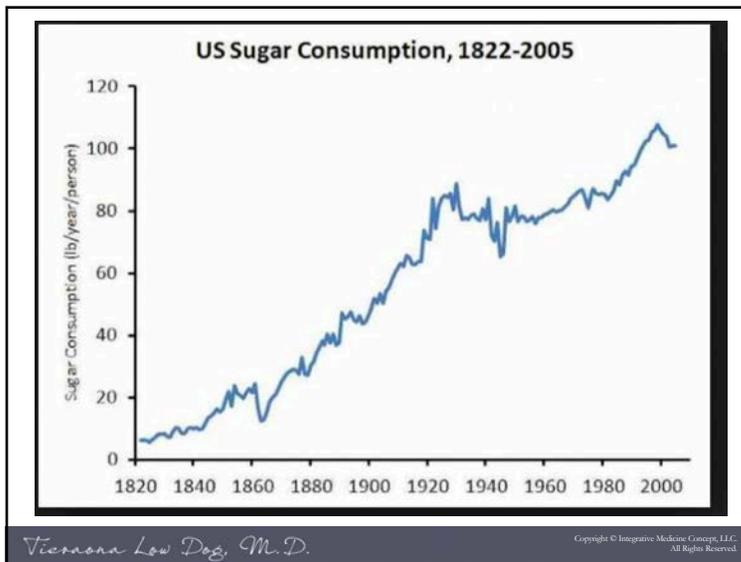
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Soda

- One 12 ounce soda per day contains 10 grams of sugar
- That equals 31 pounds of sugar per year

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Glycemic Index and Load

- Glycemic Index: ranks carbohydrates based upon the impact of 50 grams of carbohydrate food on blood glucose response.
- Glycemic load: helps predict blood glucose response to more typical serving size of a specific carbohydrate food.

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Influences on Glycemic Load of Foods

- Amount of processing (increases surface area)
- Fiber content (decreases GL)
- Fat content and protein slow stomach emptying and lower the glycemic load
- Many “fat-free” foods are high GL and contribute to obesity



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Food and Mood

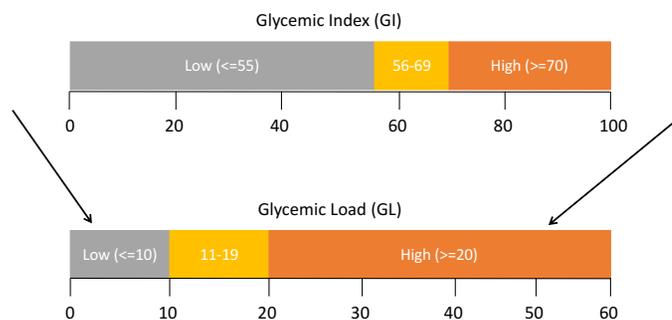
- 82 healthy weight and healthy overweight/obese, adults enrolled in randomized, crossover controlled feeding study.
- Consumption of high GL diet resulted in 38% higher score for depressive symptoms (P = 0.002), 55% higher score for TMD (P = 0.05), and 26% higher score for fatigue/inertia (P = 0.04), compared to low GL diet.

Breymeyer KL, et al. *Appetite* 2016; Dec 1;107:253-259.

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Glycemic Index & Glycemic Load Rating Chart



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Glycemic Load

Individual Food Portion

Whole Day

Low	0-10	Low	< 80
Moderate	11-19	Moderate	80-120
High	20+	High	>120

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Food	Serving Size	Glycemic Load
Grapefruit	½ large	3
Apple	1 medium	6
Banana	1 large	14
Raisins	1 small box	20
Watermelon	1 cup	8
Carrots	1 large	5
Orange	1 medium	6
Sweet potato	1 cup	17
Baked potato	1 medium	28
French fries	1 medium serving	26
Snickers	1 bar	35
Reese's cup	1 miniature	2
White table wine	5 ounces	1
Red table wine	5 ounces	1
Grape juice	6 ounces	12

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Food	Serving Size	Glycemic Load
Asparagus	½ cup	2
Broccoli	1 cup	4
Green beans	1 cup	3
Tomato	1 medium	2
Subway sandwich Turkey breast	6 inch	17
Butter pecan ice cream	5.5 ounces (small)	22
Vanilla ice cream cone	4.5 ounces (small)	19
Potato chips, fat free	1 bag (8 ounces)	49
Tortilla chips, white corn	3.5 ounces	38
Eggo oat waffles	1 serving	13
Maple syrup	4 Tbsp	39
Egg, hard boiled	1	2
Apple juice	8 ounce	6

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Food	Serving Size	Glycemic Load
Spaghetti	1 cup	38
Brown rice	1 cup	23
White rice	1 cup	33
White bread	1 slice	10
Whole grain bread	1 slice	5
Bagel, cinnamon raisin	1 3.5 inch	24
Pumpernickel bread	1 slice	6
Macaroni and cheese	1 cup prepared	31
Chocolate doughnut	1 doughnut (80 g)	25
Glazed doughnut	1 doughnut (80 g)	12
Kellogg's Frosted Flakes	¼ cup	20
Kellogg's Special K	1 cup	14
Post Bran Flakes	¼ cup	12
Post Raisin Bran	1 cup	25

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Pictures of Low/High GI Meals & Snacks



GI = 60 GL = 48



GI = 42 GL = 31

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Pictures of Low/High GI Meals & Snacks



GI = 80 GL = 32



GI = 61 GL = 12

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Resources

- The New Glucose Revolution by Jennie Brand-Miller, PhD
- The Glycemic Load Diet by Rob Thompson MD
- The Glycemic Load Diet Cookbook by R. Thompson
- The Easy GL Diet Handbook by Fedon Lindberg MD
- The 150 Healthiest 15-Minutes Recipes on Earth by Jonny Bowden, PhD

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Celiac Sprue

- Gluten is the name for the storage proteins found in wheat, barley, rye and related cereal grains – triticale, spelt and kamut.
- In patients with celiac disease, a strict gluten-free diet is the only treatment and requires lifelong elimination of all gluten containing foods.
- Prevalence ~ 1% of population

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Symptoms of Celiac (many people go undiagnosed)

- Recurring bloating, gas, or abdominal pain
- Chronic diarrhea or constipation or both
- Unexplained weight loss or weight gain
- Pale, foul-smelling stool
- Unexplained anemia
- Bone or joint pain
- Behavior changes/depression/irritability
- Vitamin K Deficiency
- Fatigue, weakness or lack of energy
- Delayed growth or onset of puberty
- Failure to thrive (in infants)
- Missed menstrual periods
- Infertility male & female
- Spontaneous miscarriages
- Canker sores inside the mouth
- Tooth discoloration or loss of enamel

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Gluten Containing Grains

	Barley		Rye
	Bulgur		Semolina (Couscous, Cream of Wheat, Pasta, Orzo)
	Farina (Cream of Wheat)		Spelt
	Durum Wheat (Pasta, Semolina)		Triticale
	Kamut (Khorasan wheat or Oriental wheat)		Wheat (All purpose flour, Enriched flour, Cake flour, Whole-wheat flour, Wheat berries)
	Farro		

NOTE: OATS are naturally gluten-free but may be contaminated with gluten during processing.

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Gluten Free

	Amaranth		Popcorn
	Buckwheat		Quinoa (pseudocereal)
	Corn Corn on Cob, Corn kernels		Rice *White Rice, Brown Rice, Wild Rice
	Millet		Sorghum
	Mintina (Indian Rice Grass)		Teff
	Oats * *Steel cut oats, Rolled Oats, Quick Oats		Whole-grain Cornmeal

*May be contaminated with gluten; but oats are gluten-free, naturally.

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Fermentable Oligo-, Di- and Mono-saccharides And Polyols

- FODMAP: highly fermentable but poorly absorbed short-chain carbohydrates and polyols.
- Can increase small intestinal water volume, colonic gas production, and intestinal motility.
- Studies suggest elimination of wheat derivatives, lactose-containing dairy products, many vegetables and pulses, and several types of fruits (low FODMAP) can improve IBS.

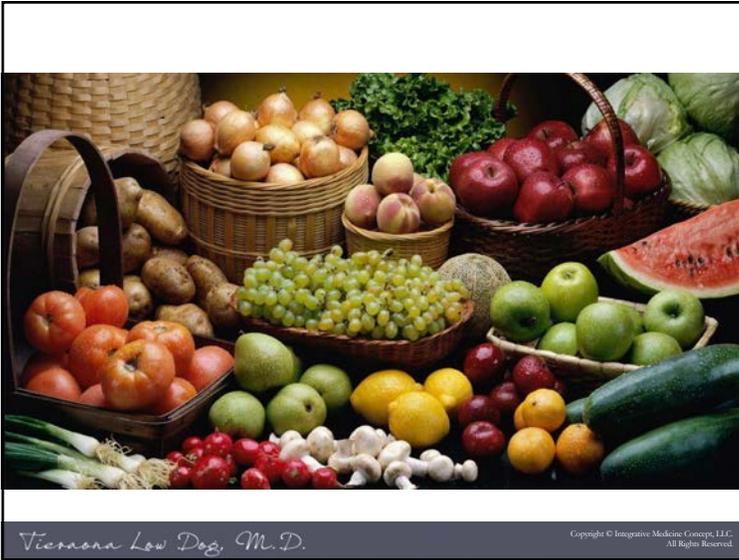
Barrett JS. J Gastroenterol Hepatol 2017; Mar;32 Suppl 1:8-10.

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F	Fermentable: Fermentable carbohydrates are sugars that are broken down and digested by bacteria in our intestines, producing gas and other by-products.
O	Oligosaccharides: Oligosaccharides are short chains of carbohydrate molecules linked together. <ul style="list-style-type: none"> • Fructans (a chain of fructose molecules) and galacto-oligosaccharides (a chain of galactose molecules) are oligosaccharides that humans cannot break down and properly absorb in the small intestine.
D	Disaccharides: Disaccharides are two carbohydrate molecules linked together. <ul style="list-style-type: none"> • Lactose, the sugar found in milk and dairy products, is a disaccharide composed of glucose and galactose. Lactose must be broken down by the digestive enzyme lactase before it can be absorbed in the small intestine. In people with lactose intolerance, the level of lactase enzyme is insufficient to properly digest lactose and lactose travels to the colon where fermentation occurs.
M	Monosaccharides: Monosaccharides are single carbohydrate molecules. <ul style="list-style-type: none"> • Fructose, the sugar found in many fruits and some vegetables, is a monosaccharide and does not require any digestion before it is absorbed. When foods containing equal amounts of fructose and glucose are eaten, glucose helps fructose to be completely absorbed. However, when fructose is present in greater quantities than glucose, fructose absorption depends upon the activity of sugar transporters located in the intestinal wall. The ability to absorb excess fructose varies from person to person. In people with fructose malabsorption, the capacity of sugar transporters is limited and excess fructose travels to the colon where fermentation occurs.
A	And
P	Polyols: Polyols, or sugar alcohols, are a type of carbohydrate that humans can only partially digest and absorb in the small intestine. <ul style="list-style-type: none"> • Polyols, such as sorbitol, mannitol, xylitol, maltitol and isomalt, mimic the sweetness of sucrose (table sugar), however, because their absorption is much slower, only a small amount of what is eaten is actually absorbed. Polyols are often used as low-calorie sweeteners in sugar-free and diet products.

www.CDHF.ca

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Eating an organic diet for one week significantly reduced pesticide exposure in adults. Mean total organophosphate metabolites were 89% lower than when participants were eating conventional foods. Similar results have been shown in children.

Oates L, et al. Environ Res 2014; 132:105-11
 Bradman A, et al. Environ Health Perspect 2015; 123(10):1086-93

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SHOPPER'S GUIDE TO PESTICIDES

DIRTY DOZEN <i>Buy These Organic</i>		CLEAN 15 <i>Lowest in Pesticides</i>	
WORST	1 Celery	BEST	1 Onions
	2 Peaches		2 Avocado
	3 Strawberries		3 Sweet Corn
	4 Apples		4 Pineapple
	5 Blueberries		5 Mangos
	6 Nectarines		6 Sweet Peas
	7 Bell Peppers		7 Asparagus
	8 Spinach		8 Kiwi
	9 Kale		9 Cabbage
	10 Cherries		10 Eggplant
	11 Potatoes		11 Cantaloupe
	12 Grapes (Imported)		12 Watermelon
			13 Grapefruit
			14 Sweet Potato
			15 Honeydew Melon

ENVIRONMENTAL WORKING GROUP
www.foodnews.org

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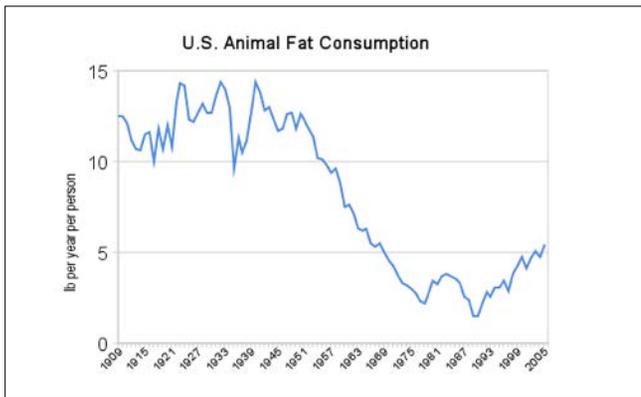
FAT



- Most concentrated source of energy, more than twice that of carbohydrates or proteins.
- Act as messengers in reactions that help control growth, immune function, reproduction and basic metabolism.
- Help absorb fat soluble vitamins (A, D, E, K).
- Certain fats, like linoleic acid and alpha linolenic acid, are “essential” because our bodies cannot produce them.
- Make foods flavorful and help us feel full.

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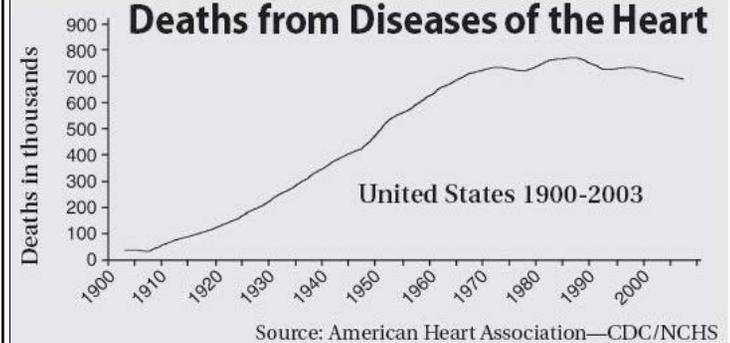
Does Eating Fat Give You Heart Disease?



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Deaths from Diseases of the Heart



Source: American Heart Association—CDC/NCHS

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Saturated Fat Debate



- Three large meta analyses (21 studies, 12 studies, and 76 studies) have all failed to show any significant evidence that saturated fat increases the risk for heart disease.
- It also has failed to find any significant evidence that increasing polyunsaturated fats and decreasing saturated fats lowers your heart risk.
- Choose a healthy variety of fats in the diet.....

Siri-Tarino, *Amer J Clin Nutr* 2010; 91 (3): 535-46.

Schwingshacki L, et al. *BMJ Open* 2014; 4(4):e004487.

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

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Eggs

- Provide essential fatty acids, proteins, choline, vitamins A and B12, selenium, and other critical nutrients at levels above or comparable to those found in other animal-source foods.
- Meta-analysis suggests that egg consumption is not associated with the risk of CVD and cardiac mortality in the general population.
- New dietary guidelines does not limit cholesterol. Eggs are back on the good list.

Shin JY, et al. *Am J Clin Nutr* 2013; 98(1):146-59

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Choline

- Water soluble nutrient in the B-vitamin family that is particularly crucial during pregnancy and the first three years of a child's life.
- Deficiency may be associated with permanent changes in brain function that negatively impact intelligence, memory, mood regulation, and stress response.
- Preclinical studies show choline partially ameliorates memory and learning deficits from prenatal alcohol exposure.
- New DV set by FDA in 2016: 550 mg per day

Jiang X, et al. Trends Endocrinol Metab 2014; 25(5):263-73.

Jiang X, et al. FASEB J. 2012;26(8):3563-3574.

Wozniak JR, et al. Nutr Res 2013; 33(11):897-904

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Choline and Cognition



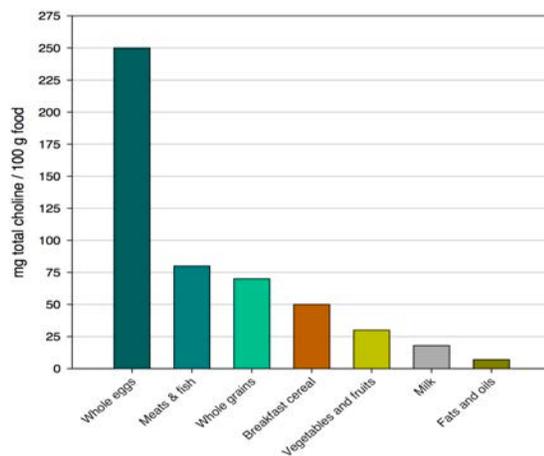
- Prospective study involving 154 healthy mother-infant pairs conducted in Vancouver, Canada (72% white, 15% Asian). All women were taking PNV.
- Maternal blood collected at 16 and 36 weeks gestation and infant neurodevelopment assessed at 18 months age for 154 mother-infant pairs. Babies were all singletons and full-term.
- Significant *positive* associations found between infant cognitive test scores and maternal plasma free choline and betaine ($p=0.009$) and a strong trend towards gross motor development.

Wu BT, et al. *PLoS One* 2012; 7(8):e43448.

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Choline in Foods: <http://nalcd.nal.usda.gov/download/47335/PDF>



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What Your Egg Label Really Means



	UNCAGED	FREE TO WALK, NEST AND ENGAGE IN OTHER NATURAL BEHAVIORS	OUTDOOR ACCESS	BEAK-CUTTING AND STARVATION-BASED FORCED MOLTING PROHIBITED*
CAGE-FREE	YES	YES	NO	NO
FREE-RANGE FREE-ROAMING	YES	YES	YES	NO
PASTURE-RAISED	YES	YES	YES	NO
CERTIFIED ORGANIC	YES	YES	YES	NO

*Certain voluntary certification programs prohibit one or both of these practices.

Designations with no relevance to animal welfare:
Vegetarian-fed, Natural, Farm Fresh, Fertile, Omega-3 enriched, Pasteurized

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Omega 3 Fatty Acids from Plants and Animals

Dark green vegetables, walnuts, freshly ground flax seeds and other plant foods. **Converts to** **ALA**

Converts to **Intermediate Molecules**

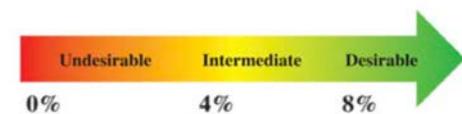
DHA (Supplies) **EPA** (Supplies)

Cold water fish, fish oil, fresh seaweed, clean animal foods like free range chicken, eggs, and grass fed beef.

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Omega 3 Index

HS-Omega-3 Index® Target Zones



0% 4% 8%

Percent of EPA + DHA in RBC

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No Fish Story

- Omega-3 Index test is now the gold standard for omega-3 biostatus testing. It is used as a compliance marker for randomized controlled trials with fish oil supplements, and in epidemiological research.
- In 2008 Dr. Bernadine Healy, cardiologist and past President of the AHA and first woman Director of the NIH said, “Before long, your personal Omega-3 Index just could be the new cholesterol—the number you want to brag about.”

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American Heart Association

- “Omega-3 fish oil supplements prescribed by a healthcare provider may help prevent death from heart disease in patients who recently had a heart attack and may prevent death and hospitalizations in patients with heart failure.”
- There was insufficient evidence to evaluate the role of fish oil supplements in primary prevention of CVD.

Siscovick DS, et al. Circulation 2017; Mar 13.

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Omega 3 and Pregnancy

- Critical for neurological and early visual development, particularly in 3rd trimester.
- Reduces risk of allergies
- Reduces risk of preterm labor and birth
- Increases birth weight
- FDA recommends 2-3 servings of low mercury fatty fish per week during pregnancy.

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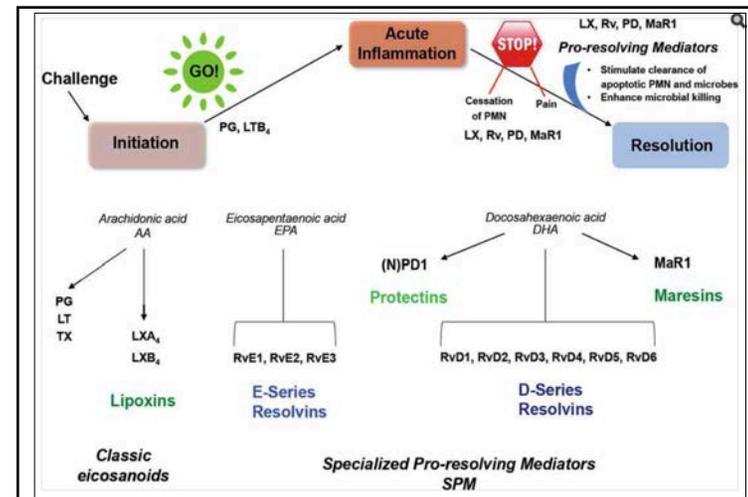
Omega 3 and Asthma

- Reduced intake of omega-3 fatty acids may be a contributing factor to the increasing prevalence of wheezing disorders.
- Reviewers found that supplementation with omega-3 fatty acids in the third trimester of pregnancy reduced the absolute risk of persistent wheeze or asthma and infections of the lower respiratory tract in offspring by approximately 33%.

Bisgaard H, et al. N Engl J Med 2016; Dec 29;375(26):2530-9

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Serhan CN, Chiang N. Curr Opin Pharmacol 2013; 13(4):632-40.

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Seafood Calculator

www.ewg.org/research/ewg-s-consumer-guide-seafood/seafood-calculator

Calculations are based on 4 oz. serving size

CATEGORY	SPECIES	WEEKLY MERCURY	SUSTAINABILITY	CONCLUSION
EWG'S BEST BETS! Very High Omega-3s, Low Mercury, Sustainable	SALMON	NaN%	Best Choice: Wild Alaska	
	SARDINES	NaN%	Best Choice: Pacific	
	MUSSELS	NaN%	Best Choice: Farmed	
	RAINBOW TROUT	NaN%	Best Choice: Farmed	
	ATLANTIC MACKEREL	NaN%	Best Choice: Not Trawled	

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Different Types of Fish Oil

- Supplementation is an alternative to eating fish; however, all supplements are not equal.
- Randomized, crossover study of 35 healthy individuals compared four popular brands/types of omega 3 fatty acids:
 - Concentrated triglyceride (rTG)
 - Ethyl ester (EE)
 - Phospholipid krill oil (PL)
 - Triglyceride salmon oil (TG)

Laidlaw M, et al. Lipids Health Dis 2014; 13:99

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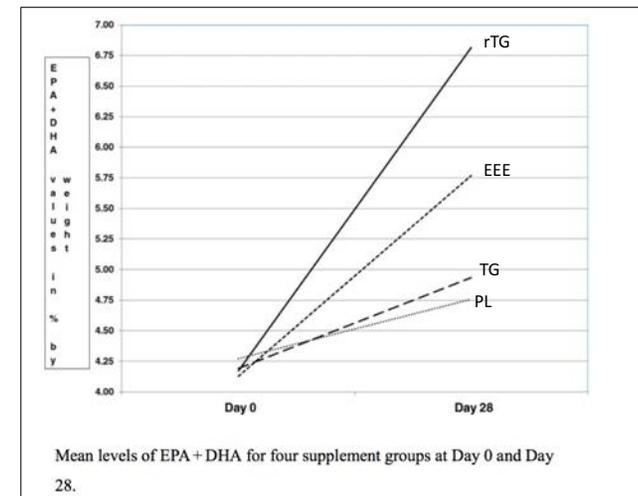
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Dosing According to Manufacturer's Recommendations

TRT	Product	EPA & DHA per capsule*	Tested values	Label use: caps/day	Daily dosage of EPA + DHA
rTG	Nordic Naturals ProOmega®	325 mg EPA	329.6 mg EPA	2	EPA: 650 mg
	Triglyceride	225 mg DHA	226.0 mg DHA		DHA: 450 mg
EE	Minami MorEPA®	756 mg EPA	774.2 mg EPA	1	EPA: 756 mg
	Platinum Ethyl Ester	228 mg DHA	233.7 mg DHA		DHA: 228 mg
PL	Source Naturals ArcticPure®	75 mg EPA	78.0 mg EPA	2	EPA: 150 mg
	Krill Oil Phospholipid	45 mg DHA	46.7 mg DHA		DHA: 90 mg
TG	New Chapter				
	Wholemega® Salmon	90 mg EPA	96.4 mg EPA	2	EPA: 180 mg
	Oil Triglyceride	110 mg DHA	109.5 mg DHA		DHA: 220 mg

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Olive Oil

- Cornerstone of Mediterranean diet. Rich in antioxidants, particularly vitamin E.
- Oleocanthal mimics effect of ibuprofen in reducing inflammation.
- Protects against heart disease; lowers total blood cholesterol, LDL-C, triglycerides; improves HDL.
- Nurses Health Study found that greater adherence to Mediterranean diet was associated with longer telomeres (health and longevity).

Hemaez A, et al. *Arterioscler Thromb Vasc Biol* 2014; 34(9):2115-9.

Crous-Bou M, et al. *BMJ* 2014;349:g6674

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Avocado

- Avocados second only to olives for level of monounsaturated fat.
- Randomized, crossover trial of 45 overweight/obese participants found inclusion of one avocado per day was superior to low-fat or moderate fat diet high in oleic acid for lowering cholesterol.
- Only avocado group had significantly decreased LDL particle number, small dense LDL-C and ratio of LDL/HDL.

Wang L, et al. *J Am Heart Assoc* 2015; 4(1). pii: e001355.

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Protein



- From the Greek word *protos*, “first.”
- Used to build new cells, maintain tissues (e.g., muscles, inner bone, hair, nails), create enzymes, make hemoglobin to carry oxygen, lipoproteins to transport cholesterol; present in inner and outer membrane of every living cell.
- Sources include meat, poultry, seafood, beans and peas, eggs, soy products, nuts, nut butters, and seeds.

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Protein Rich Foods

Food	Portion Size	Protein (g) (approximate)
Meat, fish, or poultry	75g (2 1/2 oz) / 125 mL (1/2 cup)	21
Firm tofu	150g / 175 mL (3/4 cup)	21
Egg, chicken	2 large	13
Cheese	50 g (1 1/2 oz)	12
Fortified soy beverage	250 mL (1 cup)	6-8.5
Cooked dried beans, peas, or lentils	175 mL (3/4 cup)	12
Cow's milk	250 mL (1 cup)	9
Yogurt	175 mL (3/4 cup)	8
Peanut butter or other nut spread	30 mL (2 Tbsp)	8
Nuts or seeds	60 mL (1/4 cup)	7
Bread	1 slice (35g)	3
Cereals, cold	30 g	3
Cereals, hot	175 mL (3/4 cup)	3
Pasta or rice	125 mL (1/2 cup)	3
Vegetables	125 mL (1/2 cup) or 250 mL (1 cup)	2
Fruit	1 fruit or 125 mL (1/2 cup)	1

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WCRF/AICR Recommendations to *Reduce Cancer Risk*

- Limit consumption of red meats (beef, pork, lamb) and avoid processed meats.
- Strive for less than *18 ounces per week* of red meat.

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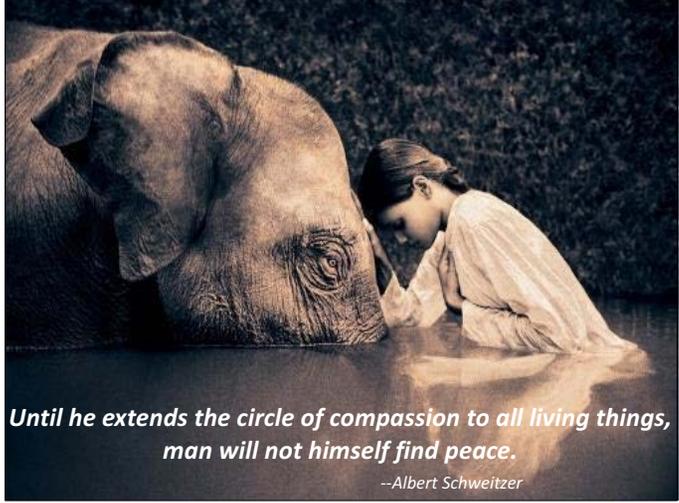
- **Red meat** refers to beef, pork and lamb – *foods like hamburgers, steak, pork chops and roast lamb.*
- **Processed meat** is red meat that is preserved by smoking, curing, salting or adding other chemical preservatives. *Sausage, bacon, ham and lunch meats (such as bologna, salami and corned beef) are processed meats.*
 - The evidence is convincing that processed meats raise your risk of colorectal cancer, but the risk is considerably greater. *For every ounce and half of processed meat eaten per day, risk rises by 21 percent.*

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Consumer's Union Guide to Environmental Eco-labels

Eco-Label			
Organization	USDA	Humane Farm Animal Care	Food Alliance ³
Per Consumer Union	Highly meaningful	Highly meaningful	Highly meaningful
Antibiotic Use	Prohibited	Animals raised on a diet without antibiotics. Antibiotics only used to treat sick animals	No feed additive (non-therapeutic) antibiotics. Antibiotics only used to treat sick animals

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*Until he extends the circle of compassion to all living things,
man will not himself find peace.*
--Albert Schweitzer

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- Studies show dairy products are beneficial in muscle building, lowering blood pressure, preventing tooth decay, diabetes, colorectal cancer, and obesity.
- Emphasis on yogurt and cheese.

Tunick MH, et al. J Agric Food Chem 2014; Nov 19

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DELICIOUS NON-DAIRY MILK ALTERNATIVES			
SOYA MILK	RICE MILK	HEMP MILK	OAT MILK
 <p>Rich and creamy. Great all rounder. Ideal for drinking straight, cooking, baking etc. Can curdle in hot drinks. Always choose organic soya milk.</p>	 <p>Has a thin, quite watery consistency. Light and naturally sweet. It's great on cereal and in cooking but a little too watery for hot drinks.</p>	 <p>Creamy, with a stronger robust flavour than other non-dairy milks so not ideal in hot drinks. Good for cooking, especially in savoury dishes.</p>	 <p>Creamy and naturally sweet. Great in cooking but a little heavy for baking. Easy to make at home by simmering oats and water, cooling and straining.</p>
ALMOND MILK	HAZELNUT MILK	COCONUT MILK	CASHEW MILK
 <p>Creamy and slightly nutty. Great in tea and coffee and in cooking and baking. Easy to make at home by soaking nuts overnight, blending with water and straining. Can be sweetened.</p>	 <p>Light with a rich nutty flavour. Great in drinks and light desserts but not really suitable for cooking and baking. Easy to make at home by soaking nuts overnight, blending with water and straining.</p>	 <p>Smooth and fresh and not highly flavoured. Comparable to semi-skimmed dairy milk in consistency. Ideal for all uses, especially good for on cereal and in hot drinks and smoothies.</p>	 <p>Smooth, creamy, slightly nutty and sweet. Great for cooking, desserts and for making cream. Easy to make at home by soaking nuts overnight, blending with water and straining.</p>

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Soy



- Soy contains isoflavones (which have been studied most), saponins, phenolic acids, phytic acid, phytosterols, and protein kinase inhibitors.
- Soy inhibits the growth of prostate cancer cells and studies suggest that consuming soy in childhood and adolescence may help protect against breast cancer later in life.
- Including 1-2 servings/d of minimally processed and/or fermented soy in diet can be a healthy practice.

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Soy and Breast Cancer

- LACE trial saw a 60% reduction in risk of breast cancer recurrence in women taking tamoxifen who were in the highest quintile of soy intake.
- Supplemental soy isoflavones significantly reduce hot flash frequency and severity, particularly those that provide a minimum of 18 mg/d of genistein.

Korde LA, et al. *Cancer Epidemiol, Biomarkers Prev* 2009; 18(4): 1050-1059.
 Fritz H, et al. *PLoS One*. 2013; 8(11): e81968
 Taku K, et al. *Menopause* 2012; 19(7):776-790

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HEALTHY PROTEIN SOURCES

- Soy and other legumes (lentils, beans, etc)
- Nuts and seeds
- Low mercury cold water fish
- Organic poultry
- Grass fed beef, pork, lamb
- Wild game
- Milk and dairy without hormones
- Omega 3 enriched eggs

Roughly 8 grams of protein per 20 pounds of body weight is generally recommended

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Sodium Recommendations?



- In May 2013, Institute of Medicine found limited evidence linking association between low sodium intake (1500-2300 mg/d) and improved health outcomes in those with diabetes, kidney disease, heart disease, hypertension or borderline hypertension; those 51 years of age and older; or African Americans (National Research Council).

Sodium Intake in Populations: Assessment of Evidence. Washington, DC: The National Academies Press, 2013.

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Iodine in Pregnancy

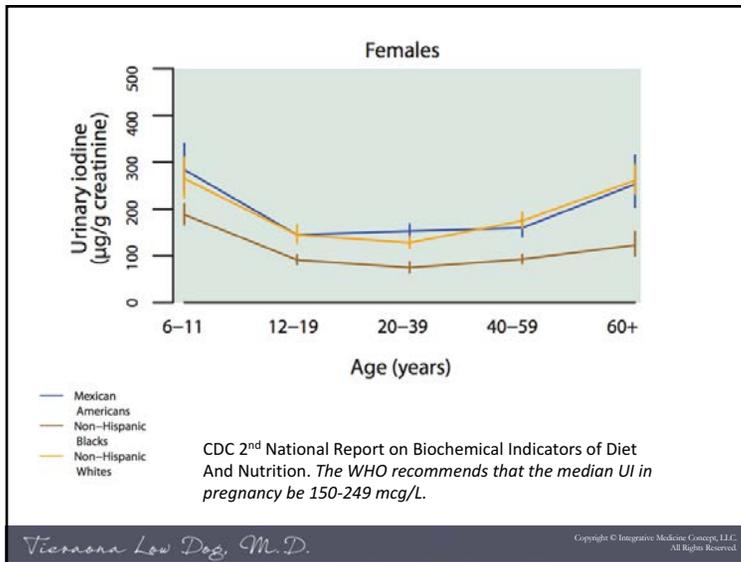


- Many reproductive aged women in US have marginal iodine status; salt in processed foods is not iodized.
- Deficiency associated with pregnancy loss and prematurity, cretinism, and neurocognitive defects in the fetus.
- Mild to moderate iodine deficiency associated with higher incidence of ADHD and lower IQ in the baby.
- American Thyroid Association recommends pregnant/lactating women supplement: 150 mcg/d potassium iodide.

Council on Environmental Health, et al. *Pediatrics* 2014; 133(6):1163-6.

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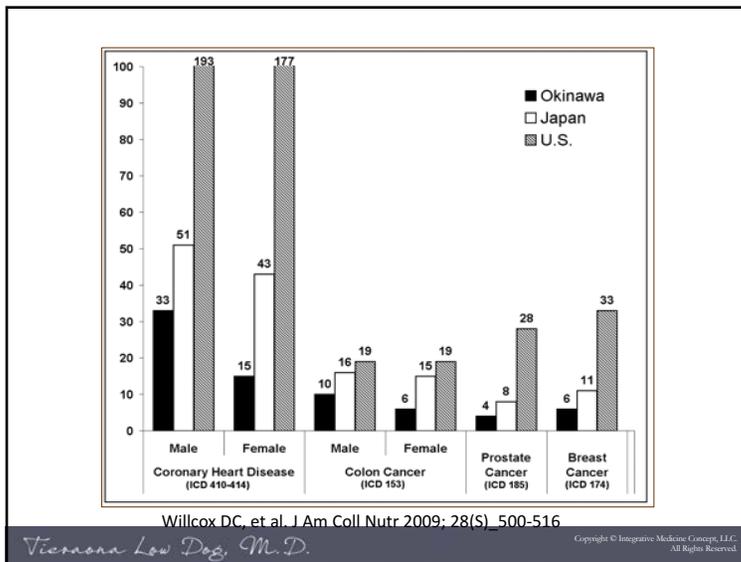
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Traditional Asian Diet

- Little question many people in Asian countries have low rates of diabetes, heart disease and cancer.
- There is no one “Asian” diet but some generalizations that can be made.
- Traditional Chinese diets have been explored through the [China-Cornell-Oxford project](#). This long-term study is discussed at length in the recent film [Forks over Knives](#), which promotes better health through a plant-based diet.

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Okinawan Dietary Pattern

- High consumption of vegetables
- High consumption of legumes (mostly soy)
- Moderate consumption fish products
- Low consumption meat and meat products
- Low consumption of dairy products
- Moderate alcohol consumption
- Low caloric intake
- Emphasis on low GL carbohydrates

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