Current Issues and Controversies in Nutrition

- Nutrition Science
- Dietary Guidelines for Americans
  - Dietary Fat Recommendations
    - Coconut oil
  - Dietary Sodium Recommendations
- The Paleo Diet
- Gluten
- Soy
- Organic and conventional Produce

Sheri Zidenberg-Cherr, PhD
UC Davis/UC-ANR
Nutrition Science Specialist

Beyond the Hype

- Nutrition is an inter-disciplinary science
  - **“Evidence-based”** recommendations
  - Understanding these recommendations can help you identify the hype from those with good scientific evidence

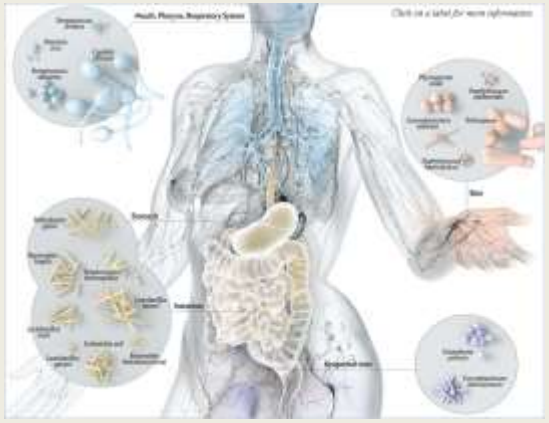
Why is there so much variability with respect to individuals' responses to diet?

Why so much variation?

GOAL: Personalized nutrition therapies to maximize genetic potentials, prevent chronic disease and improve treatment outcomes

Microbiome

- Billions of microorganisms that are on and in us
- Essential for normal functioning
- Differs from person to person, place to place and over time



http://www.scientificamerican.com/article/microbiome-graphic-explore-human-microbiome

Personalized Nutrition Recommendations

- Both our genetic make-up, epigenetic factors and our microbiome influence how we respond to our environment
- ***GOAL:*** Personalized nutrition therapies to maximize genetic, potentials, prevent chronic disease and improve treatment outcomes

Dietary Guidelines for Americans 2010

for a Healthier Life

Slides provided by
the USDA Center for Nutrition Policy and Promotion







Controversial Issues






Academy of Nutrition and Dietetics Commends Strong Evidence-Based Dietary Guidelines Report

Thursday, May 14, 2015

WASHINGTON, D.C. – The Academy of Nutrition and Dietetics, the world's largest organization of food and nutrition professionals, commends the 2015 Dietary Guidelines Advisory Committee for drafting a strong, evidence-based Scientific Report outlining recommendations and rationale for the forthcoming 2015 *Dietary Guidelines for Americans*. The Academy supports these recommendations that will improve how and what Americans eat.

The Academy applauds the evidence-based systematic review of the literature, which is vital to the DGAC's assessment of the science. We commend the Department of Health and Human Services and the Department of Agriculture for their commitment to the Nutrition Evidence Library and their ongoing efforts to strengthen the evidence-based approach for assessing the scientific literature for future dietary recommendations.

FOOD POLITICS

by Marion Nestle

FEB 20 2015

The 2015 Dietary Guidelines Advisory Committee releases its courageous report

The 2015 Dietary Guidelines Advisory Committee (DGAC) issued its more than 500-page report yesterday.

Before I say anything about it, please note that this report informs, but does not constitute, the Dietary Guidelines. The agencies—USDA and HHS—write the actual Guidelines and are not expected to do so until the end of this year.

Dietary Guidelines for Americans, 2010

- Balance calories with physical activity to manage weight
- Consume more of certain foods and nutrients such as fruits, vegetables, whole grains, fat-free and low-fat dairy products and seafood
- Consume fewer foods with sodium (salt), saturated fats, trans fats, cholesterol, added sugars and refined grains.

2015 DGA Report

Role of sodium in the body

- Sodium is responsible for fluid balance and electric potential
- Sodium is an essential nutrient, but intakes are rarely low
- Low serum sodium, results in abnormal mental status, convulsions, headaches, muscle weakness, nausea, vomiting, eventual death

Sodium

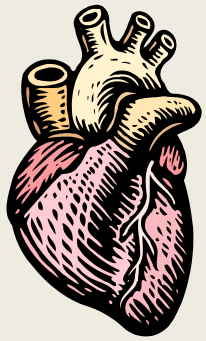
- Salt = NaCl
- 1 teaspoon salt = 6 gm NaCl
- Approx. 40 % is sodium
- 1 tsp = 2400 mg

CVD Risk Factors

- **Age & Sex** M ≥ 45 yr
  F ≥ 55 yr or premature menopause
- **Family history of premature CHD**

Potentially Modifiable Factors

- **Hypertension (>140/90 mm Hg)**
- **Hyperlipidemia (↑ LDL cholesterol)**
- **Low HDL cholesterol (< 40mg/dl)**
- **Cigarette smoking**
- **Diabetes**
- **Life habit risk factors: overwt/obesity, inactivity, atherogenic diet**



2010 Dietary Guidelines
Foods and Food Components to Reduce

Sodium

- Reduce intake to less than 2300 mg per day
- Further reduce intake to 1500 mg per day for
  - Adults ages 51+
  - African Americans ages 2+
  - People ages 2+ with high blood pressure, diabetes, or chronic kidney disease
- The 1500 mg recommendation applies to half the total population (ages 2+) and to the majority of adults
- Immediate, deliberate reduction in sodium content of foods is needed.

UK NEWS

GUESS WHAT? SALT IS GOOD FOR US AFTER ALL

A new study suggests that salt in the diet can lessen our chances of heart disease and strokes

Thursday November 10,2011

By Nathan Rao

ANYONE who cuts back on salt believing it is bad for them could be putting themselves at risk, said scientists yesterday.

After all these years as a no-no so far as doctors were concerned, a controversial new study suggests that salt in the diet can lessen our chances of suffering heart disease and strokes.

June 26, 2013, Vol 309, No. 24 >

Medical News and Perspectives | June 26, 2013

IOM Report: Evidence Fails to Support Guidelines for Dietary Salt Reduction

Mike Mitka, MSJ

JAMA. 2013;309(24):2535-2536. doi:10.1001/jama.2013.7110.

A report from the Institute of Medicine (IOM) finds no evidence that drastically reducing salt, and the sodium it contains, in individuals' diets reduces the risk of myocardial infarction, stroke, or death. The US Centers for Disease Control and Prevention (CDC) and the American Heart Association (AHA) beg to differ.

People in the United States consume on average about 3400 mg of sodium each day. Both the CDC and the AHA note that higher sodium consumption is associated with hypertension, which increases the risk for myocardial infarction, stroke, and death.

Sodium Restriction in Heart Failure: How Low Should You Go?

View/Print Figure

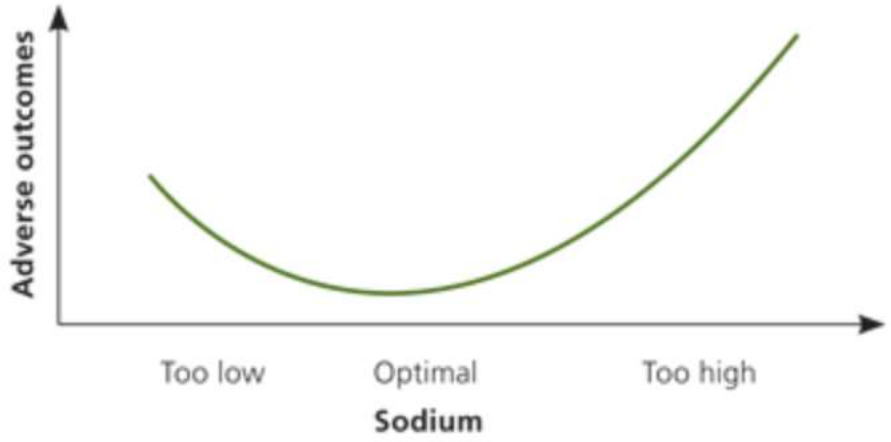


Figure 1.

J-shaped curve for sodium consumption. On the J-shaped curve, reduction of sodium consumption below the optimal level appears to increase the risk of adverse outcomes for patients with heart failure, including higher rates of hospital readmission and higher rates of death. But, sodium consumption above the optimal level increases the risk of adverse outcomes to a far greater degree.

American Family Physician 2014

Reducing Salt Intake Increases Risk to Heart Failure Patients

Submitted by Caroline Robinson on Tue, 12/29/2015 - 02:30

If you are a heart patient or at risk of heart disease, then you must be surely advised by your doctor to stop taking excess of salt. But, the new study proves that advice to be wrong claiming the decrease in the salt intake potentially increases the risk of heart failure or death or hospitalization. In the new study, researchers found 85% increased risk of death or hospitalization among patients with moderate heart failure and stuck to low-sodium diet.

Dr. Rami Doukky, a cardiologist and associate professor at Rush University Medical Center in Chicago, said as per conventional belief, consuming salt is bad for health. This happens so because the mineral causes the body to retain water and pull

JACC: Heart Failure, Vol 4, Issue 1, 2016

Salt: What to do?

- Typical US intakes considered high
  - American Heart Association recommends to reduce intake to 2,300 mg per day
  - Dietary Guidelines Report (2015)

    Reduce intake to 2,300 mg per day

    Removed the further reduction to 1,500 mg per day
  - Heart Failure Patients
    - Be aware of the recent concerns with sodium restrictions below 2,300 mg per day

No single nutrient lowers blood pressure.

Dietary nutrients are not ingested in isolation but as combined constituents of a complete diet and function interactively in the body and in their impact on BP regulation.

Because nutrients express their physiologic actions through integrated pathways, it is unrealistic to expect a uniform benefit in terms of BP control from modifying the intake of a single nutrient.

Molly E. Reusser, David A. McCarron
J Nutr 2006;136(4):1099-102

Diet and Hypertension

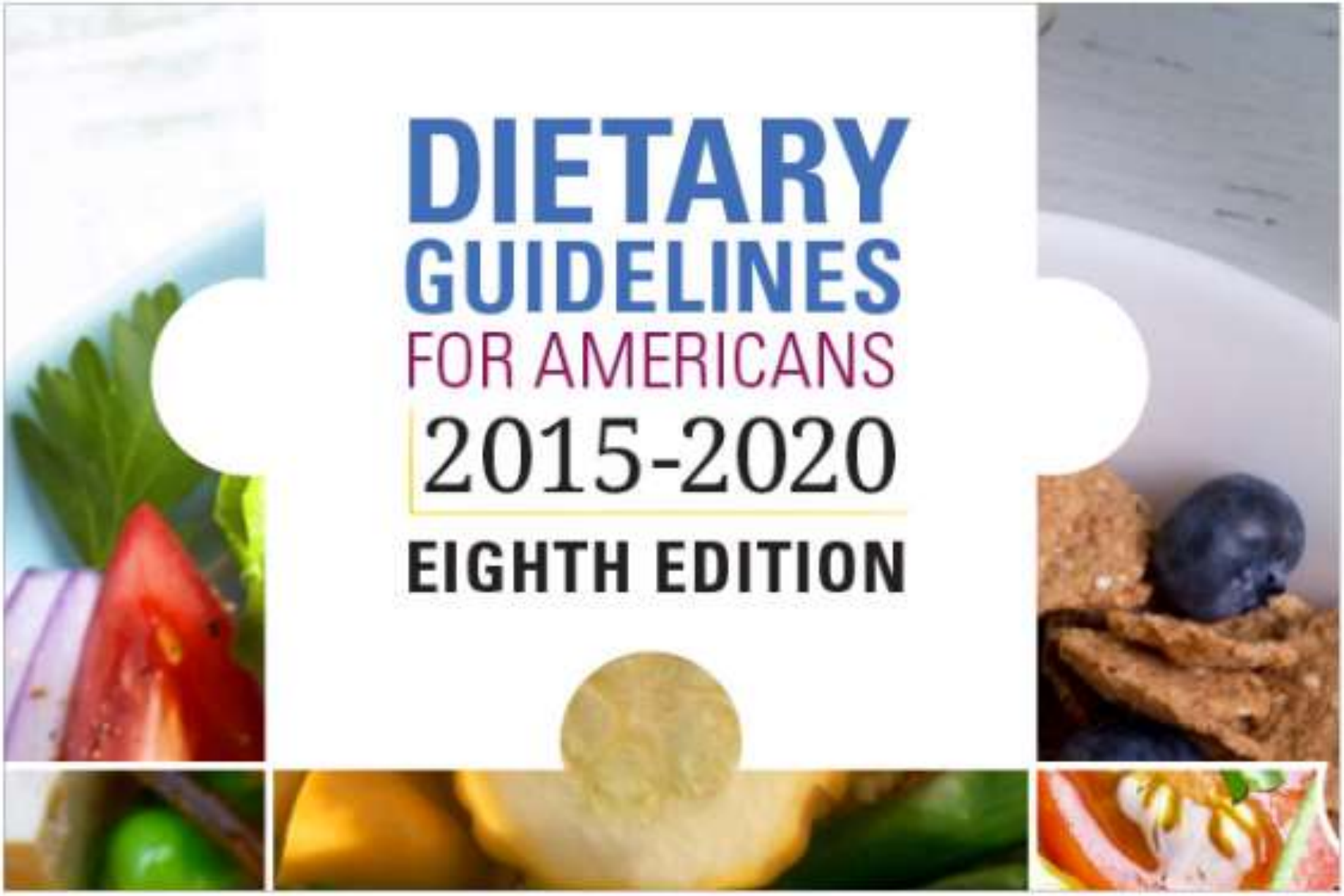
- DASH diet
  - **D**ietary **A**pproaches to **S**top **H**ypertension
  - Heart Healthy diet low in saturated fat, trans fat, cholesterol and sodium
    - Low in red meat, sweets and sugar beverages
  - Focus on fresh, whole foods including fruits vegetables whole grains
    - Includes small levels of lean meat, fatty fish, low-fat/nonfat dairy
  - Adequate Calcium, Potassium, Magnesium

Beyond Blood Pressure: New Paradigms in Sodium Intake Reduction and Health Outcomes

- http://scientificsessions.nutrition.org/2014/program/beyond-blood-pressure-new-paradigms-in-sodium-intake-reduction-and-health-outcomes/

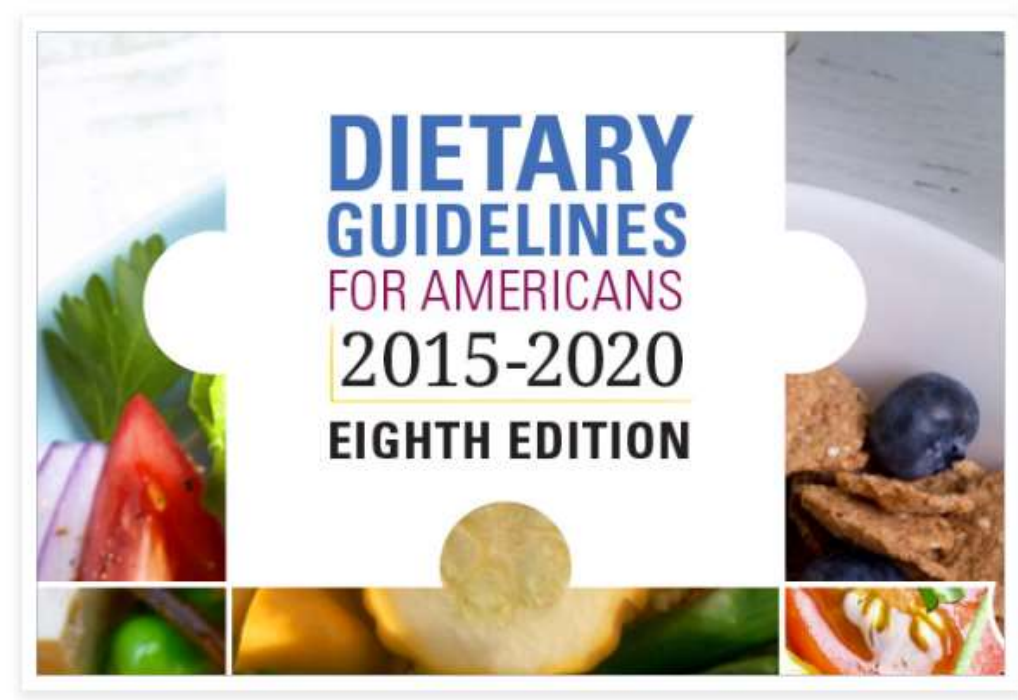
2016 Omnibus Spending Bill

- Prevents release and implementation of the Dietary Guidelines unless they are based upon significant scientific agreement and adhere to statutory language
- Delays implementation of whole grains for schools lunches for one year
- Holds sodium reductions until science justifies reduction.


DIETARY
GUIDELINES
FOR AMERICANS
2015-2020
EIGHTH EDITION

Dietary Guidelines for Americans (2015-2020)

- Eat for health and for the long run
- Start with small changes
- Support healthy choices for everyone



1. **Follow a healthy eating pattern across the lifespan.** All food and beverage choices matter. Choose a healthy eating pattern at an appropriate calorie level to help achieve and maintain a healthy body weight, support nutrient adequacy, and reduce the risk of chronic disease.

2. **Focus on variety, nutrient density, and amount.** To meet nutrient needs within calorie limits, choose a variety of nutrient-dense foods across and within all food groups in recommended amounts.

3. **Limit calories from added sugars and saturated fats and reduce sodium intake.** Consume an eating pattern low in added sugars, saturated fats, and sodium. Cut back on foods and beverages higher in these components to amounts that fit within healthy eating patterns.

4. **Shift to healthier food and beverage choices.** Choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. Consider cultural and personal preferences to make these shifts easier to accomplish and maintain.

5. **Support healthy eating patterns for all.** Everyone has a role in helping to create and support healthy eating patterns in multiple settings nationwide, from home to school to work to communities.

→ Follow a healthy eating pattern over time to help support a healthy body weight and reduce the risk of chronic disease.

A healthy eating pattern includes:

A healthy eating pattern limits:

Dietary Guidelines for Americans (2015-2020)

- Healthy eating patterns limit sodium. Adults and children ages 14 years and over should limit sodium to less than 2,300 mg per day, and children younger than 14 years should consume even less.
- Use the Nutrition Facts label to check for sodium, especially in processed foods like pizza, pasta dishes, sauces, and soups.

“What exactly is a healthy eating pattern?”

Consists of all foods and drinks that a person consumes over time;

is adaptable to a person’s taste preferences, culture, traditions, and budget;

Includes a variety of nutritious foods like vegetables, fruits, grains, low-fat and fat-free dairy, lean meats and other protein foods, and oils; and

Limits saturated fats, *trans* fats, added sugars, and sodium.

Total Dietary Fat

- Primary focus of dietary recommendations
  - 20-35% of total calories
  - Consumption above these ranges is associated with greater intake of energy and saturated fat
  - Consumption below these ranges associated with higher intake of carbohydrate

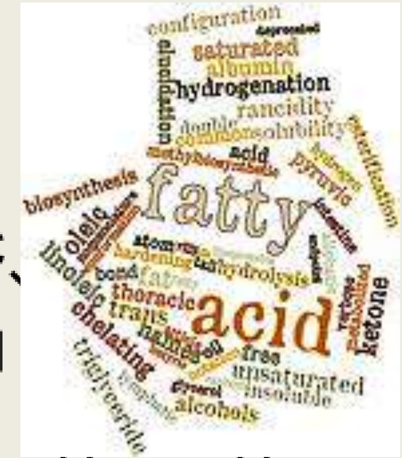
Nutrition science has moved beyond fat as a macronutrient[1]

- Role of specific fatty acids
  - Saturated fatty acids
  - Monounsaturated fatty acids
  - Polyunsaturated fatty acids
    - Omega 3
    - Omega 6
  - Trans-fatty acids

- [1]AND Position Statement 2014


OMEGA-3 FATTY ACID

Fatty Acids


configuration
saturated
hydrogenation
rancidity
fatty
acid
biosynthesis
oleic
linoleic
ketone
unsaturated
insoluble
alcohols
triglyceride


arachidonic
arthritis
inflammation
eicosanoids
diet
linoleic
polyunsaturated
prostaglandin
omega-6 fatty acid
overestimates
patients
health
enzyme
dietary
omega
sources
medications
interactions

What Are Omega-3 Fatty Acids?

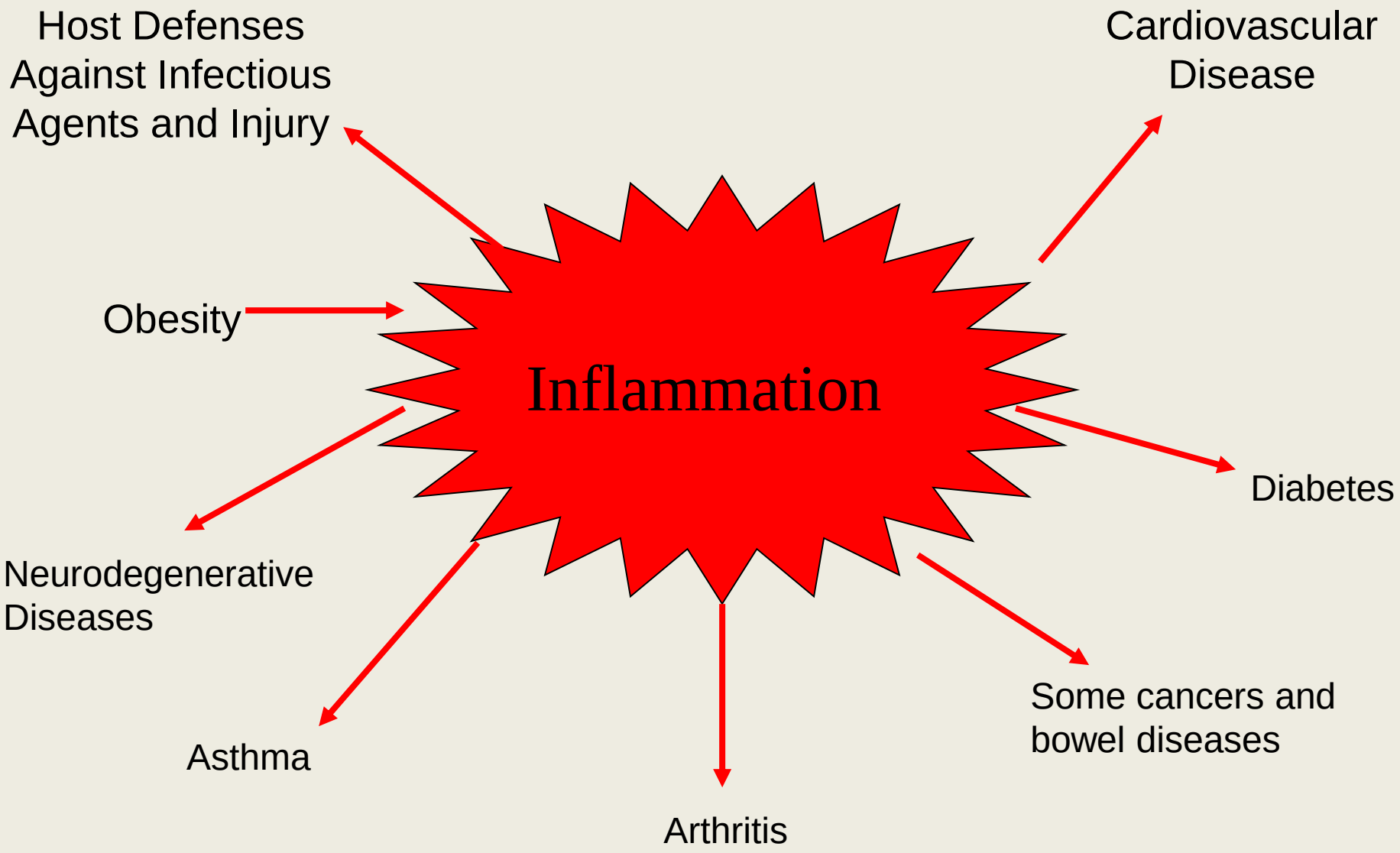
Alpha-linolenic acid (ALA)(“parent n-3 PUFA”)

↓

Eicosapentenoic Acid (EPA)

↓

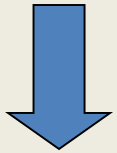
Docosahexenoic Acid (DHA)


Host Defenses Against Infectious Agents and Injury
Cardiovascular Disease
Obesity
Inflammation
Diabetes
Neurodegenerative Diseases
Asthma
Arthritis
Some cancers and bowel diseases

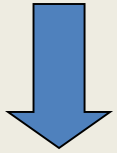
Omega-3

- Omega-3 tends to reduce inflammatory response

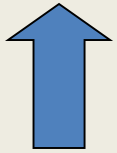
Health Effect of Dietary EPA and DHA (Omega 3 Fats)



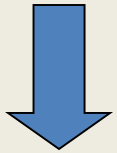
Blood Pressure



Risk of Cardiovascular Disease



Insulin Control in Type 2 Diabetes



Symptoms of Rheumatoid Arthritis

Dietary Guidelines for Americans, 2010

- New recommendation for seafood intake
- Moderate evidence shows that eating

  ---> 8 or more ounces per week

  ---> equivalent to 250 mg per day long chain omega 3 fatty acids

---> associated with reduced cardiac deaths

- Seafood:
  - Salmon, anchovies, herring, sardines, Pacific oysters, trout, and Atlantic and Pacific mackerel

DeBusk,Fogarty, Ordovas, Kornman, J AM Diet Assoc. 2005; 105: 589-598.

American Heart Association Recommendations: Omega-3 Fatty Acids

(Patients without cardiovascular disease)

- Eat a variety of fish (twice/week)
- Include oils and foods rich in alpha-linolenic acid (flaxseed, canola and soybean oils; flaxseed and walnuts)

AHA Recommendations: Omega-3 Fatty Acids

(Patients with cardiovascular disease)

- Eat about 1 gram long chain fatty acids (EPA+DHA) per day preferably from fatty fish.
- Capsule form could be considered in consultation with physician

AHA Recommendations: Omega-3 Fatty Acids

Patients who need to lower triglycerides

- Capsule form containing 2-4 grams of EPA and DHA per day
- Under care of a physician

Coconut Oil

"The Tokelauans…in the South Pacific…eat over 60% of their calories from coconuts and…are in excellent health, with no evidence of heart disease."

Coconut Oil

- Literature inconclusive on medium-chain fatty acids in coconut oil promoting weight loss
  - Coconut oil contains high amounts of saturated fatty acids
- Neither American Heart Association nor the Dietary Guidelines for Americans 2010 suggest coconut oil is preferable over other saturated fats
  - Limit intake of all saturated fats; recommend less than 10% of calories/day from saturated fats
- Very limited research on benefits of coconut oil

Agreement Amid The Fat Debate

- Total fat intake in not as important as type of fats
- MUFAs provide a similar but lesser effect on LDL and chol ratio than PUFA
- Omega 3 fatty acids are beneficial and should be included in the diet at least twice weekly

Agreement Amid The Fat Debate

- Trans fats are unhealthy and should be kept to a minimum in the diet
- Food-based dietary guidelines are essential to help consumers make healthier food choices
- The nutrition science and health community should be sending a message that encourages calorie balance and eating more healthful fats

The Paleo Diet

- Based on claims of “diseases of civilization”
  - Difficulty in constructing what <u>early humans</u> were eating
    - Diets of early humans depended upon
      - How early
      - Location
    - Scientists have discovered traces of seeds and grains on the teeth of fossilized early humans
    - Scientist have discovered remnants of grains on stone cooking tools

The Paleo Diet

- We are not who our ancestors were.
  - Microbiome
    - Billions of microorganisms that are on and in us
    - Essential for normal functioning
    - Differs from person to person, place to place and probably over time

The Paleo Diet

- Our food has changed from that of our ancestors
  - Early humans were not eating plants or animals that are close to what we eat today
  - Ancestors of apples and corn were not desirable
  - Current beef products, even grass-fed have been modified from its ancestors by breeding



The Paleo Diet

- Basic premise: “If it wasn’t on a caveman’s menu, it shouldn’t be on yours”
  - Plenty of meat, poultry, eggs, seafood, vegetables, fruit, honey and nuts
  - NO grains, beans, dairy foods, refined sugars, caffeine, or alcohol
  - “eat 20 ounces of meat, poultry or seafood and 12 cups of vegetables and fruit a day”

Paleo Diet: No large scale studies evaluating long-term outcomes!!

- Usually lower in calories because many of the high calorie “snack” foods are eliminated
- High in fruits and vegetables
- Low in sodium and low glycemic index/load
- Low in Calcium
- High in fat
- May be difficult to maintain
- Concerns about Bone and GI Health

Dwyer JT, Melanson KJ, MS US, et al. Dietary Treatment of Obesity. [Updated 2015 Feb 28]. In: De Groot LJ, Beck-Peccoz P, Chrousos G, et al., editors. Endotext [Internet]. South Dartmouth (MA): MDText.com, Inc.; 2000-. Available from: http://www.ncbi.nlm.nih.gov/books/NBK278991/

High Fructose Corn Syrup Is No Worse Than 'Real' Sugar

Melanson et. al., Nutrition, Vol 23, pp 103-112 Feb 2007

High Fructose Corn Syrup

- Credible experts and scientific societies:
  - "There is not a metabolic difference between high fructose corn syrup and sugar"

Increased caloric intake, not a single sweetener is the likely cause of obesity

Journal of Nutrition(2009): 139(6):1228S
Advances in Nutrition(2013): 4(2):246

When reading about studies….

- Experimental design: randomized controlled studies are the gold standard
- Subjects tested: human subjects
- Levels tested: range of fructose in diet is 5-17% of kcals
  - Be wary of studies that use excessive fructose levels in humans (25-50% of kcals) and animals (>60% of kcals)

Recommendations for Intake of Added Sugars

- American Heart Association
  - **9 teaspoons** per day for **men**
  - **6 teaspoons** per day for **women**
  - **3 teaspoons** per day for **children**

- Dietary Guidelines for Americans (2010)
  - As Solid Fats and Added Sugars (SoFAS)
    - 5-15% of total kcals
- Dietary Guidelines for Americans 2015 REPORT
  - Added sugars be limited to a maximum of 10% of total kcals (about 12 tsp for most Americans)

The **Average American** eats **22.2** teaspoons of added sugar per day

SUGAR IS SUGAR, SAY BAKERS, OUR BODIES DON'T DISTINGUISH BETWEEN 'NATURALLY OCCURRING' AND 'ADDED' VARIETIES

Should 'added sugars' be listed on the Nutrition Facts panel?

By Elaine Watson+

04-Aug-2014
Last updated on 20-Aug-2014 at 20:28 GMT

American Diabetes Association: 'While it is true that naturally occurring sugars and added sugars have the same physiological impact, the difference is significant when considering dietary quality'

Beverages: Coconut Water

"Dissolves kidney stones"

"Prevents atherosclerosis"

"Enhances immune system"

"Prevents glaucoma and cataracts"

"Balances blood sugar"

"Prevents cancer"

"Revives hair growth"

Beverages: Coconut Water

- Evidence in the literature
  - *Norton et al, Int J Exerc Sci: Conference Proceedings, 2013*
    - Both coconut water and low calorie sports drink effective at rehydrating exercise participants
  - *Saat et al, J Physiol Anthropol, 2002*
    - Coconut water, carbohydrate-electrolyte beverage, and pure water effective at rehydration during a 2 hour rehydration period following exercise-induced dehydration
    - Results indicate coconut water caused less nausea, fullness, and no stomach upset, as compared to carb-electrolyte beverage and pure water upon rehydration period
  - *Campbell-Falck et al, Am J Emerg Med, 2000*
    - Case study: Solomon Island patient was administered coconut water intravenously for rehydration

Gluten and Celiac Disease

- Gluten is a protein found in:
  - Wheat
  - Rye
  - Barley

What is celiac disease?

- An autoimmune disorder
- Exposure to gluten results in damage to the intestinal lining
- Damage to the lining of the intestine reduces ability to digest and absorb nutrients
- Treatment consists of completely eliminating gluten from the diet

Gluten-related Disorders

- Celiac Disease
- Wheat Allergy
- Gluten Sensitivity
  - Not diagnosed on allergic or autoimmune mechanisms
  - Subject to risk of placebo effect

SCIENCE*Life*

THE UNIVERSITY OF CHICAGO MEDICINE & BIOLOGICAL SCIENCES

Does Non-Celiac Gluten Sensitivity Exist?

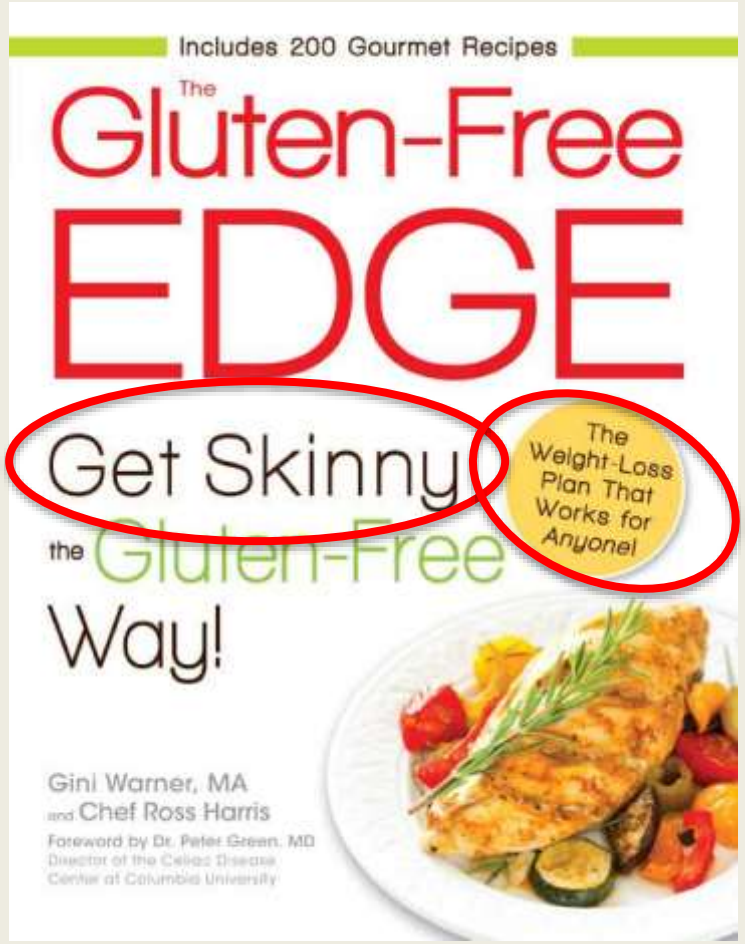
Posted on May 28, 2014 by Matt Wood in The Big Question

Fermentable, poorly absorbed, short-chain carbohydrates (fermentable, oligo-, di-, monosaccharides, and polyols [FODMAPs])

- No Effects of Gluten in Patients With Self-Reported Non-Celiac Gluten Sensitivity After Dietary Reduction of Fermentable, Poorly Absorbed, Short-Chain Carbohydrates
- DOI: http://dx.doi.org/10.1053/j.gastro.2013.04.051

Gluten-Free Diets

- Important for individuals with celiac disease
- Newest health fad
  - Claims of more energy, weight loss, etc
  - Very little research available to support or disprove claims



Downsides to Gluten-Free Diet

- Expense
  - Gluten-free products can be twice as expensive as gluten-containing products
- May be low in certain nutrients
  - Iron, folate, niacin, zinc, and fiber
- May be higher in calories

“Have Your Gluten-Free Candy This Halloween and Eat It Too”

Gluten Video

http://www.huffingtonpost.com/2014/05/06/gluten-free-people-have-no-idea-what-gluten-is_n_5273980.html?ncid=fcbklnkushpmg00000063

Soy Products and Human Health

- Macronutrients (protein and fatty acids)
- Isoflavones

Isoflavones

- found only in a limited variety of foods
- soybean products
- soy ingredients
- legumes

Why Should People Eat Soy?

- Regular consumption of plant-based protein foods may reduce risk for cancer, heart disease, and stroke

- Provide vitamins, minerals, fiber, flavonoids

What the Science Says

- Cardiovascular Disease
  - Can potentially reduce CHD through multiple mechanisms
  - Soy product can replace less healthful choices
- Hot flashes
  - Genistein-rich isoflavone supplements may relieve hot flashes
- Breast cancer
  - Not clear
    - Timing? Perhaps when started in adolescence?
  - Consumption is safe for women and breast cancer survivors
- Memory and Cognitive Function
  - Contradictory
- Bone Health
  - No effects

Messina, M. Am J Clin Nutr.2014
Messina, M. Fertil Steril 2010

Side Effects and Cautions

- Soy is considered safe for most people when used as a food.
- Minor stomach and bowel problems such as nausea, bloating, and constipation are possible.
- The safety of long-term use of soy isoflavones as supplements has not been established.

Recommendations for Soy

- US FDA
  - *"25 grams of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease. A serving of (name of food) provides ____ grams of soy protein."*

How to Meet the 25 Grams-A-Day Soy Protein Recommendation

Soy Product	Soy Protein
1/4 cup of firm tofu	10 grams
1/2 cup of silken tofu	9 grams
2 soy breakfast links	12 grams
1 soy-based burger	10-12 grams
8 ounces of plain soymilk	7 grams
1 soy protein bar	14 grams
1/2 cup tempeh	16 grams
1/2 cup roasted soy nuts	34 grams
1/2 cup edamame	35 grams

Are Organic Foods Safer or Healthier Than Conventional Alternatives?

Annals of Internal Medicine 2012; 157: 348-366

Current Organic Legislature

- As of October 2002, all foods with the USDA organic symbol must have at least 95% organic ingredients.
- Currently, the USDA makes no claims that organic foods are safer or more nutritious than conventionally produced food.
- This is a complex issue and there is not enough research to support a national recommendation regarding consumption of organic foods.

Why Do Consumers Purchase Organic Foods?

- Some people are concerned about the effects of conventional farming practices on:
  - The environment
  - Human health
  - Animal welfare
- Some people believe that organic foods are tastier or healthier than their conventional alternatives

About the Alliance for Food and Farming

- Non-profit formed in1989
- Organic and conventional farmers.
- Alliance contributors are farmers of fruits and vegetables; companies that sell, market or ship produce; or organizations representing farmers.
- Mission: to deliver credible information to consumers about the safety of fruits and vegetables.
- The Alliance does not engage in lobbying activities, nor does it accept money or support from the pesticide industry.

EWG's Dirty Dozen Report Lists The Most Pesticide-Heavy Fruits And Veggies Of 2015

The Huffington Post | By Sarah Klein

Posted: 02/26/2015 12:48 pm EST | Updated: 02/26/2015 12:59 pm EST

Scientific Basis of the “Dirty Dozen” is Lacking

- Risk = Exposure x Toxicity
- The “Dirty Dozen” list considers **exposure**, but makes no attempt to address toxicity
- There are reliable, well-established and accepted methods for assessing the risk of small doses of chemicals.
- The authors of the “Dirty Dozen” list acknowledge this and clearly state on their website that the list “**is not built on a complex assessment of pesticide risks.**”

Alliance for Food and Farming Expert Panel Conclusions

- Negative messages about food safety is not promoting consumption of fruits and vegetables.
- The Media/Internet may be increasing our fears about food safety, and lowering our faith in government oversight of the safety of our food.
- It is inaccurate to suggest that organic produce is the only "safe" choice.
- Some consumers feel like they are making inferior choices when they buy conventionally grown produce.
- The **key health message** should be – **eat your fruits and vegetables.**

SafeFruitsandVeggies.com

- ▶Promotes all fruits and vegetables.
- ▶Provides credible information
- ▶Developed by experts in nutrition,

  toxicology, risk assessment and farming.
- ▶Pesticide Residue Calculator
- ▶Farmer videos
- ▶Blog
- ▶Scientific Reports
- ▶Facebook, Twitter, YouTube

www.safefruitsandveggies.com

Why It's OK to Eat Fruits and Veggies with Pesticides

Response from Carl K. Winters on bestfoodfacts.org

- The U.S. Environmental Protection Agency determines Reference Doses of pesticide residue that are safe to consume
- The EPA only approves the use of pesticides that pose little to no threat to consumers

Why It's OK to Eat Fruits and Veggies with Pesticides

Response from Carl K. Winters on bestfoodfacts.org

- Bottom Line:
  - The amount of the chemical, not the "absence or presence" of it, determines its toxicity
  - Regardless of organic or conventional growth methods, detected levels of pesticide residue are very low
  - It is more important to consume a variety of fruits and vegetables than limit consumption due to a potential pesticide risk

Organic Advantages

Organic plant foods <u>may</u> have an advantage over conventionally grown foods by:

- Having an increased concentration in:
  - Vitamin C
  - Carotenoids
  - Polyphenols

Organic and Conventional Produce

Whether grown organically or conventionally, plant foods contain:

- Fiber
- Vitamins
- Minerals
- Phytochemicals

Are Organic Foods Safer or Healthier Than Conventional Alternatives?

- No differences in vitamin or mineral content between conventionally and organically grown fruits and vegetables

  - with the exception of phosphorus

- No differences in protein or fat content in milk from conventionally and organically raised animals

  - limited evidence for higher omega 3 fatty acids in milk from organically raised animals

- Pesticide levels of organic and conventional foods fell within allowable safety limits

  - lower levels of pesticide residues in urine of children consuming organic diets

Annals of Internal Medicine 2012; 157: 348-366

I Encourage You To . . .

- **Check out the website**

  www.safefruitsandveggies.com

- **Sign up for the newsletter**

Alkaline Water

- Claims
  - Neutralizes acid in your blood stream
  - Boosts your metabolism
  - Helps your body absorb nutrients more effectively
  - Helps prevent disease
  - Slows the aging process
  - No scientific evidence

Plain water is best

UC Davis
Department of Nutrition
Nutrition Information

- http://nutrition.ucdavis.edu
- http://cns.ucdavis.edu

Websites with Reliable Nutrition and Health Information

Academy of Nutrition and Dieteticshttp://www.eatright.org

National Institutes of Health
http://www.nih.gov

American Council on Science and Health
http://www.acsh.org

Food and Drug Administration http://www.fda.gov

Centers for Disease Control and Prevention
http://www.cdc.gov

Concluding Statements

It is our responsibility as nutrition scientists and educators to act as credible sources of science-based nutrition recommendations.

We must work to prevent the attitude:

“Just eat whatever the heck you want. One day something’s bad for you, one day it’s good for you. Maybe I’ll get lucky and smoking will be good for me too.”


GLUTEN FREE
ORGANIC
NO PESTICIDES
SUGAR FREE
CAGE FREE
EATS BOOGERS