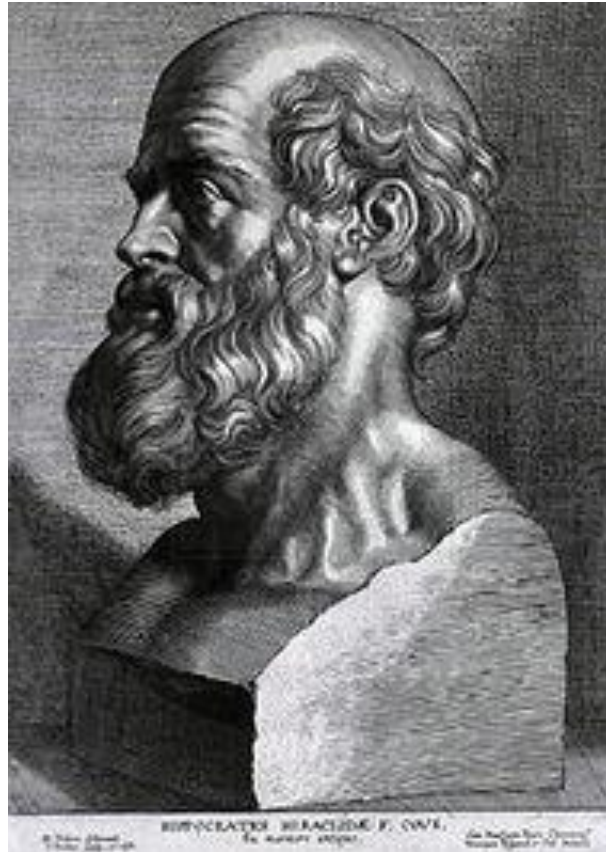# Food As Medicine

Kathy Tsapos Parmele, MD, IFMCP, FACEP

"Let food be thy medicine,

and medicine be thy food"

Educational Objectives

- Participants will be able to identify the different types of diets/food patterns currently available.

- Participants will understand and learn to recommend to their patients which food patterns are associated with improved health span and decreased disease risk.

- Participants will learn how to easily prepare a meal that meets the guidelines of a healthy dietary pattern.

About Me

- Greek immigrant-> grew up on whole food, Mediterranean diet

- Undergraduate: Harvard *magna cum laude* in biochemistry

- Medical School: University of Pennsylvania

- Residency: University of Pittsburgh Emergency Medicine

- Physician for 26 years (CalvertHealth ED)

- IFM Certified physician and Health & Wellness Coach- private practice since 2019

- 14-time marathon finisher and 10-time Ironman finisher

- No conflicts of interest

My Story- 1992

- 19 year old college student
- Ran 5-6 miles 3-4 times a week
- College meal plan: ate everything, and lots of it
- 30 pound weight gain in 4 years

Winter 1993

Start of med school

Med school

Pasta
+
Veggies/olive oil
+
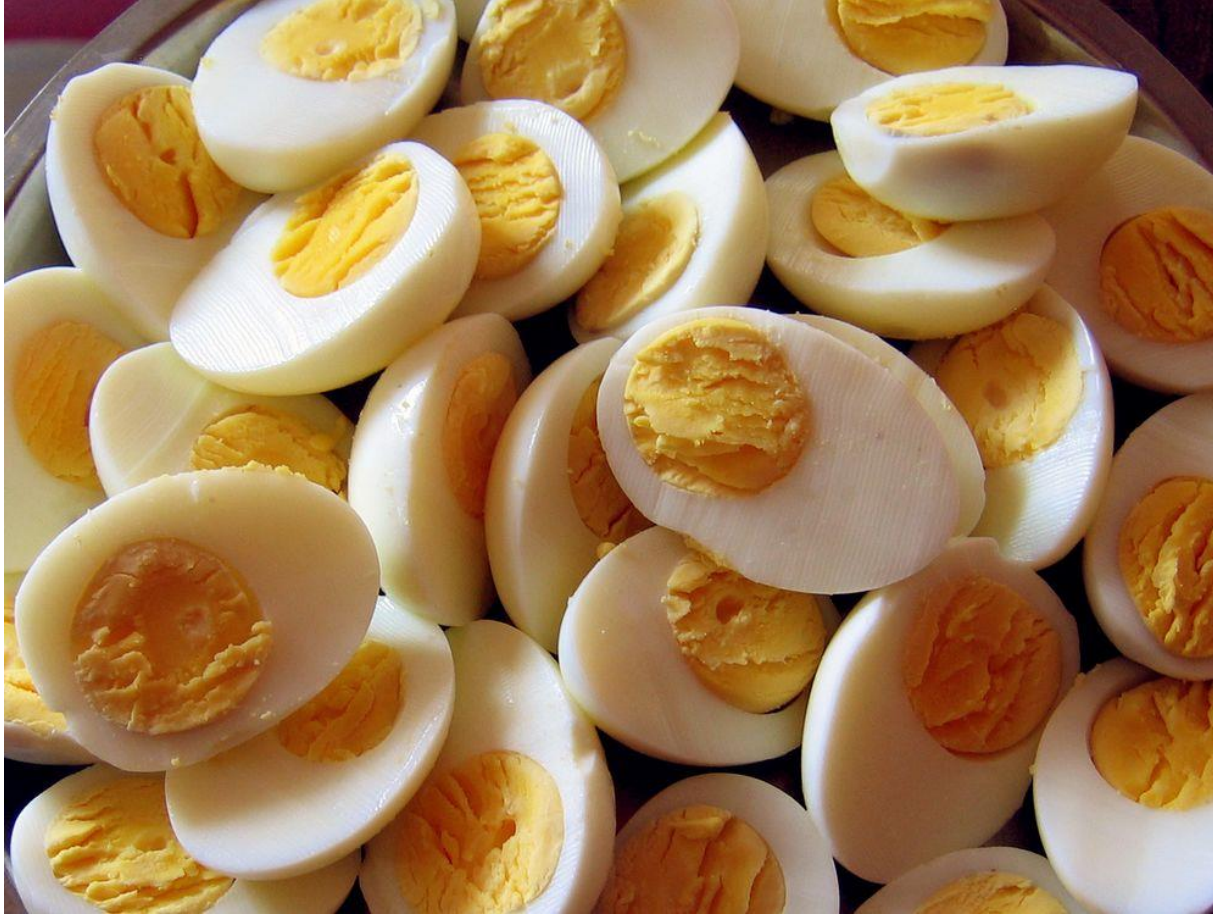Home cooking
=
Affordable & Easy

Winter 1993

Summer 1995

Clinicals and Residency

Keto Diet and Resistance Training

Why are athletes dying of heart attacks?

AHA: when a college hoops star died of a heart attack, his family got in the game

March 30, 2018 by The American Heart Association

Jordan Cornette (left) with brother Joel, who died of a heart attack at age 35. Photo: Cornette family

Cardiac Death During Triathlon 'Not Rare'

Debra L Beck
September 29, 2017

11 Read Comments f y in 8+ ✉ 🖶 ⊕ Add to Email Alerts

Annals of Internal Medicine®

LATEST   ISSUES   CHANNELS   CME/MOC   IN THE CLINIC   JOURNAL CLUB   WEB EXCLUSIVES   AUTHOR INFO

THIS ISSUE | NEXT ARTICLE ›

ORIGINAL RESEARCH | 17 OCTOBER 2017

Death and Cardiac Arrest in U.S. Triathlon Participants, 1985 to 2016: A Case Series

Kevin M. Harris, MD; Lawrence L. Creswell, MD; Tammy S. Haas, RN; Taylor Thomas, BS; Monica Tung, BA; Erin Isaacson, BS; Ross F. Garberich, MS; Barry J. Maron, MD

Conclusion: Deaths and cardiac arrests during the triathlon are not rare; most have occurred in middle-aged and older men. Most sudden deaths in triathletes happened during the swim segment, and clinically silent cardiovascular disease was present in an unexpected proportion of decedents.

https://medicalxpress.com/news/2018-03-aha-college-hoops-star-died.html

Ann Intern Med. 2017;167(8):529-535.

Was I Next?

https://tribwxmi.files.wordpress.com/2018/08/gettyimages-1006480588-1.jpg?quality=85&strip=all&w=400&h=225&crop=1

How do I balance a healthy
weight, athletic performance
and
long- term health?

Most medical students receive an average of 24 hours of nutrition training, some as little as two hours.

https://cdn.eatdrinkbetter.com/wp-content/uploads/2015/07/doctors-nutrition-600x800.jpg

When did
eating get so
COMPLICATED?

CARBS ARE KILLING YOU!
WHY EATING FAT DOESN'T MAKE YOU FAT

WARNING!
Your Healthy Diet
May Be Killling You

Why The FDA, The Giant Food
Manufacturers And Big Pharma
Are Purposely Sabotaging
Your Food

Barry Ferguson

HOW GRAINS ARE
KILLING
YOU
SLOWLY

Processed Cheese
May be Killing You

ADVOCATE
Gluten-Free Can Kill You
April 1, 2015   2 Comments

PROTEIN
AHOLIC
HOW OUR OBSESSION WITH MEAT
IS KILLING US AND
WHAT WE CAN DO ABOUT IT

GARTH DAVIS, M.D.
WITH HOWARD JACOBSON, Ph.D.

You're Obese, Can't Lose
Weight, And Fat Is Killing You

98% OF WATER CAN KILL YOU!!!

DANGER
Hazardous to health

Paid for by TPWDLBPSA

https://i.ytimg.com/vi/81K32I8Bo1E/maxresdefault.jpg

WHO CAN YOU TRUST?

Neighbor?

Social Media?

Facebook friend?

Trainer at the gym?

Celebrity?

Doctor?

http://retrobadge.co.uk/wp-content/uploads/13112-who-can-you-trust-badge-1.jpg

Hospital Food: Job Security?
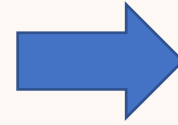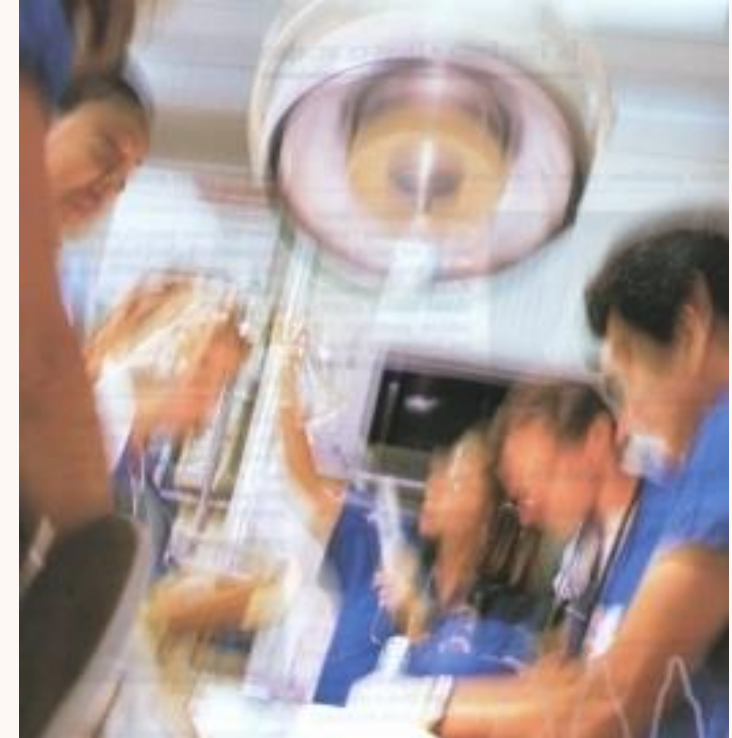
Standard American Diet (SAD)

CONFLICT OF INTERESTS?

We're Number 1!

90% of Americans think they're eating healthy

Past and projected future overweight rates in selected O.E.C.D. countries

Chart showing "Proportion overweight" (y-axis, 20% to 80%) versus "Years" (x-axis, 1970 to 2020) with lines for USA, England, Canada, Spain, Austria, Australia, Italy, France, and Korea.

http://globalsherpa.org/wp-content/uploads/2011/05/oecd-overweight-rates-past-future-chart.jpg
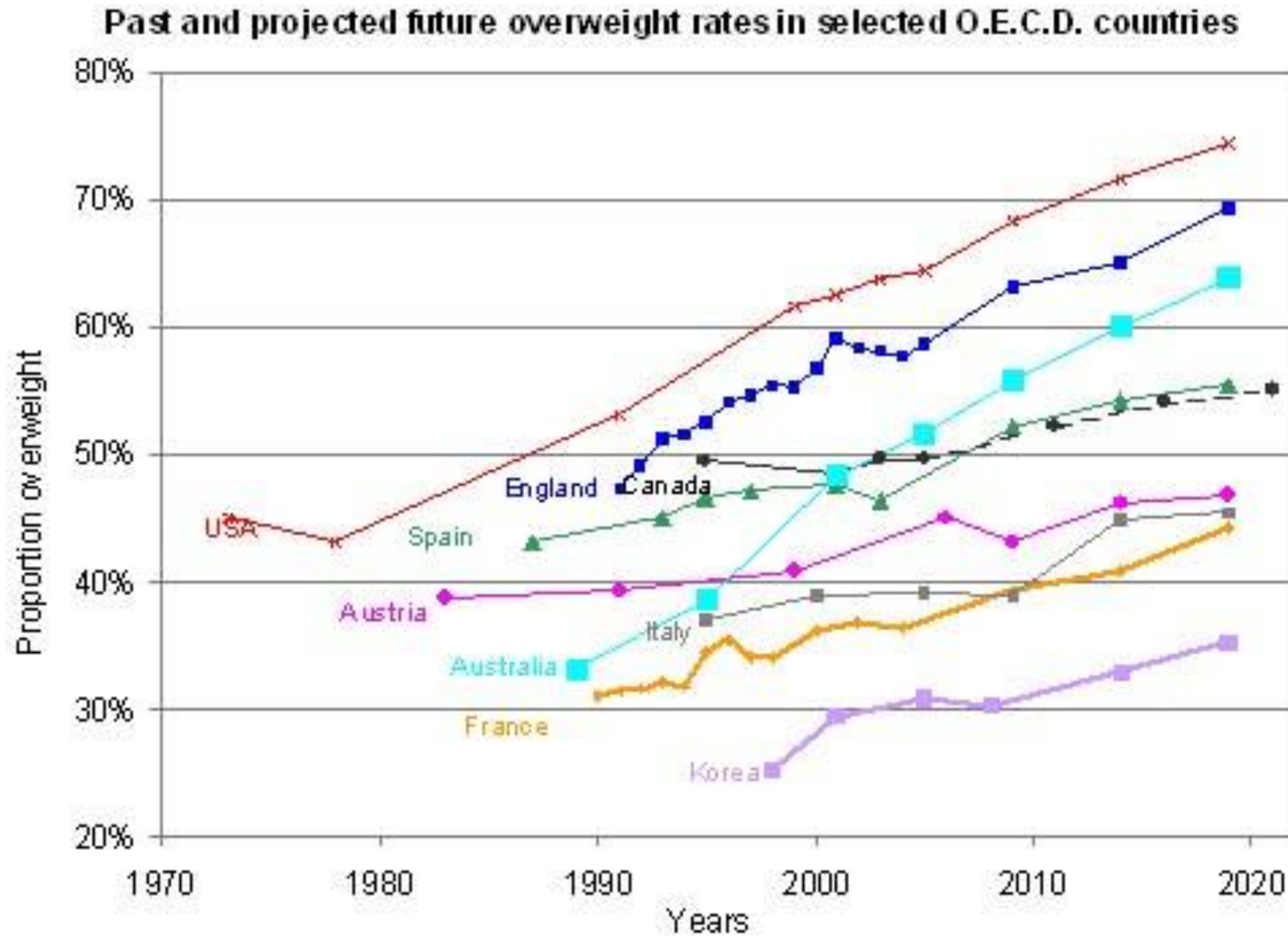
Age-Adjusted Prevalence of Diagnosed Diabetes and Obesity Among Adults, by County, United States (2004, 2009, 2014, 2019)

2004

Obesity (%)
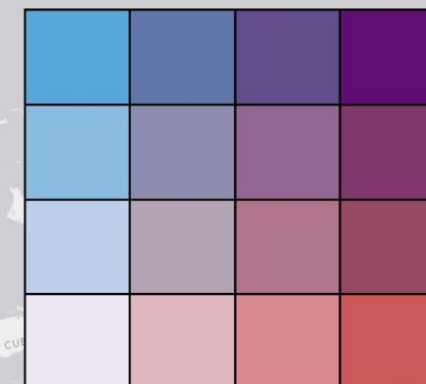
Diagnosed Diabetes (%)

Diagnosed Diabetes and Obesity estimates are percentage; natural breaks were used to create categories using all data from 2004-2019; Diagnosed Diabetes (%): <7.1, 7.1-8.6, 8.6-10.5, >10.5; Obesity (%): <21.2, 21.2-25.5, 25.5-30.5, >30.5

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

2019

Obesity (%)
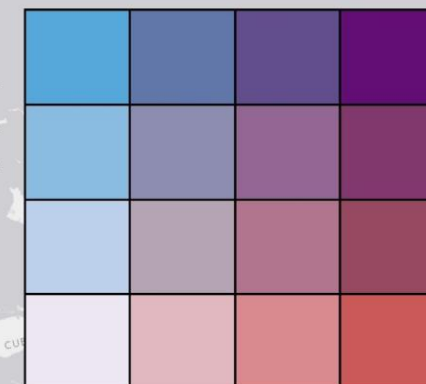
Diagnosed Diabetes (%)

Diagnosed Diabetes and Obesity estimates are percentage; natural breaks were used to create categories using all data from 2004-2019; Diagnosed Diabetes (%): <7.1, 7.1-8.6, 8.6-10.5, >10.5; Obesity (%): <21.2, 21.2-25.5, 25.5-30.5, >30.5

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

A | Risk factors and related deaths

Risk Factors

Dietary risks
Tobacco smoking
High blood pressure
High body mass index
Physical inactivity and low physical activity
High fasting plasma glucose
High total cholesterol
Ambient particulate matter pollution
Alcohol use
Drug use
Lead exposure
Occupational risks
Low bone mineral density
Residential radon
Ambient ozone pollution
Intimate partner violence
Childhood sexual abuse

Deaths

-50000 0   200000   400000   600000   800000

Diabetes Prevention Program

Food and Exercise

58% Reduction
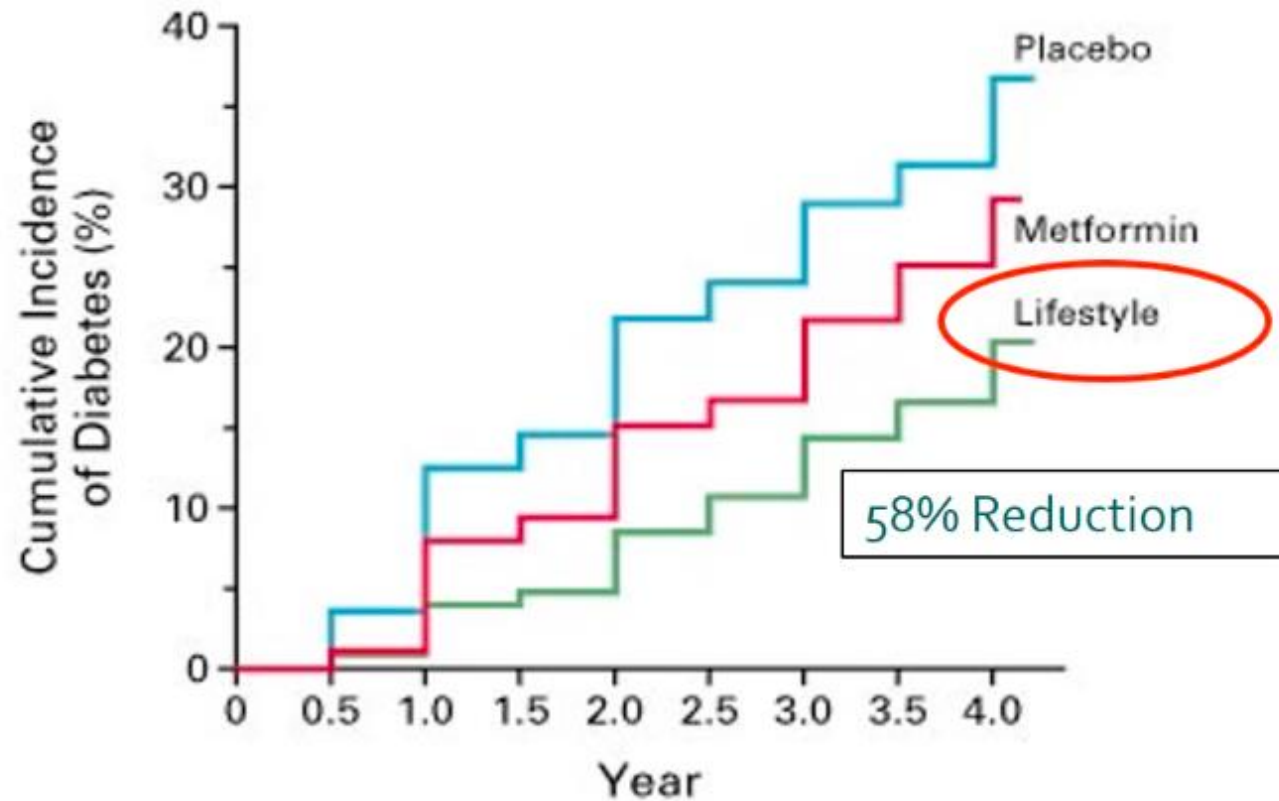
Caldwell B. Esselstyn Jr,
MD; Gina Gendy, MD;
Jonathan Doyle, MCS;
Mladen Golubic, MD,
PhD; Michael F. Roizen,
MD

The Wellness Institute
of the Cleveland Clinic,
Lyndhurst, Ohio

➦ aesselstyn@aol.com

*The authors reported no
potential conflict of interest
relevant to this article.*

ORIGINAL RESEARCH

A way to reverse CAD?

Though current medical and surgical treatments manage coronary artery disease, they do little to prevent or stop it. Nutritional intervention, as shown in our study and others, has halted and even reversed CAD.

198 patients, 3.7 years follow up

FIGURE 1

Restoration of myocardial perfusion[2]

Before Rx

After Rx
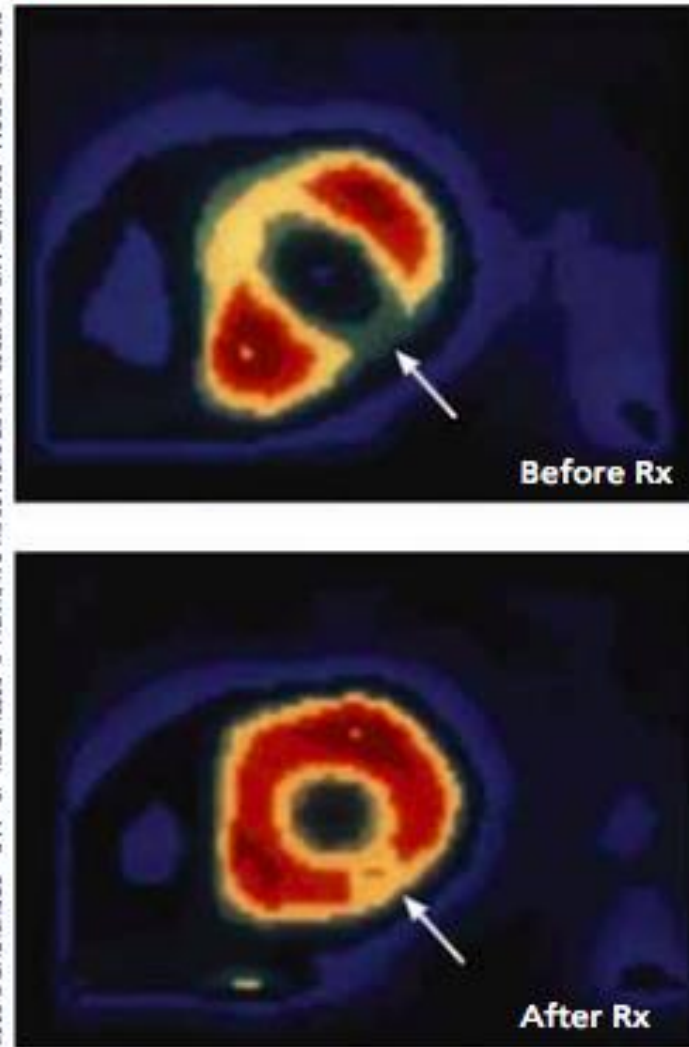
Positron emission tomography performed on a patient with coronary artery disease shows an area of myocardium with insufficient blood flow (top). Following only 3 weeks of plant-based nutritional intervention, normal blood flow was restored (bottom).

FIGURE 2

Reversal of coronary artery disease[4]

A

B
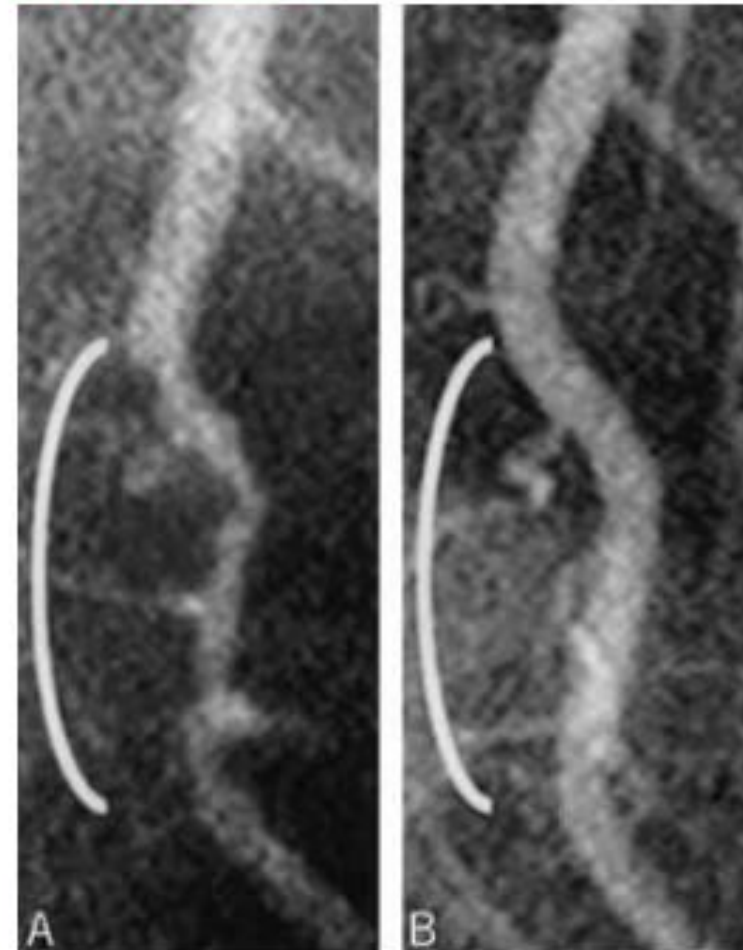
Coronary angiography reveals a diseased distal left anterior descending artery (A). Following 32 months of a plant-based nutritional intervention without cholesterol-lowering medication, the artery regained its normal configuration (B).

THE
BASICS

Micronutrients and Macronutrients

- Antioxidants
- Phytonutrients
- Vitamins
- Minerals
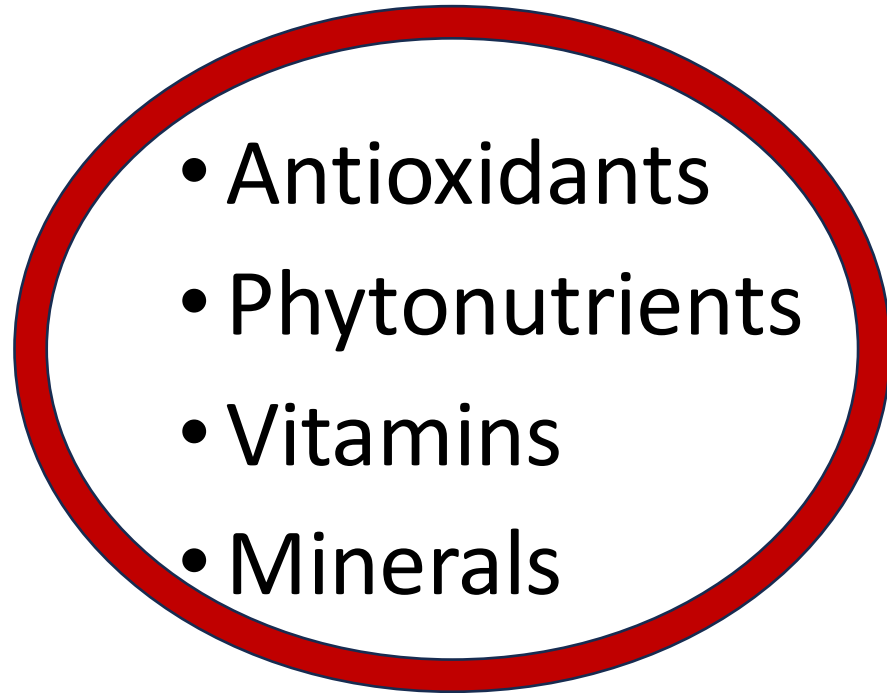
- Carbohydrates
- Fats
- Proteins
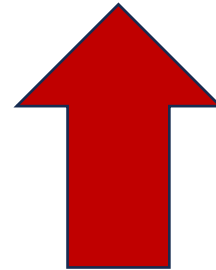
What everyone always focuses on

MACROS!

Myth: A calorie is a calorie

Turmeric — Curcumin

Grapes — Resveratrol

Chilli peppers — Capsaicin

Honey — Caffeic acid phenethyl ester

Ginger — [6]-Gingerol

Garlic — Diallyl sulphide

Green tea — Epigallocatechin-3-gallate

Cabbage — Indole-3-carbinol

Soybeans — Genistein

Broccoli — Sulphoraphane

Tomatoes — Lycopene
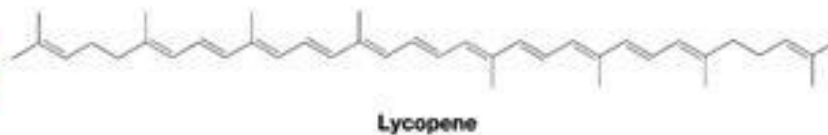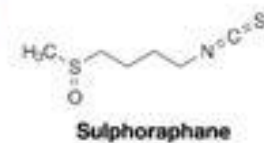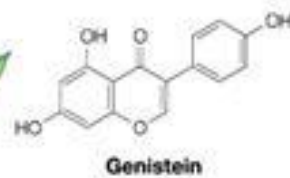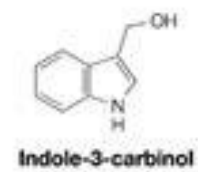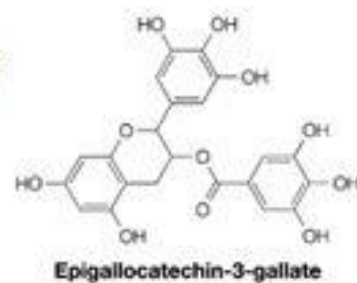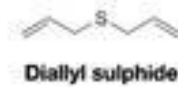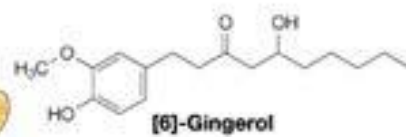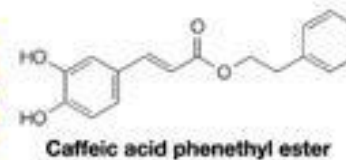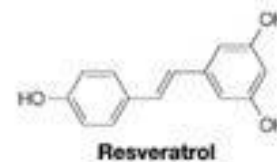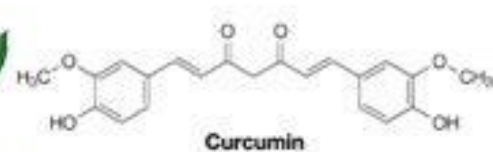
… Oh My!

- Polyphenols
- Phytonutrients
- Antioxidants
- Phytosterols
- Carotenoids
- Glucosinolates

- Organosulfurs
- Flavonoids
- Curcuminoids
- Lignans
- Xanthophylls
- Tannins

Etc., etc.

American Institute for Cancer Research

"The important take-home message from today's research is that we need a wide variety of plant foods in our diet to get the full spectrum of phytochemicals available to protect our health. Loading up on any one phytochemical or antioxidant just isn't the same."

Rainbows are good for you

Not These Rainbows

Macronutrients

CARBS!

PROTEIN!

FATS!
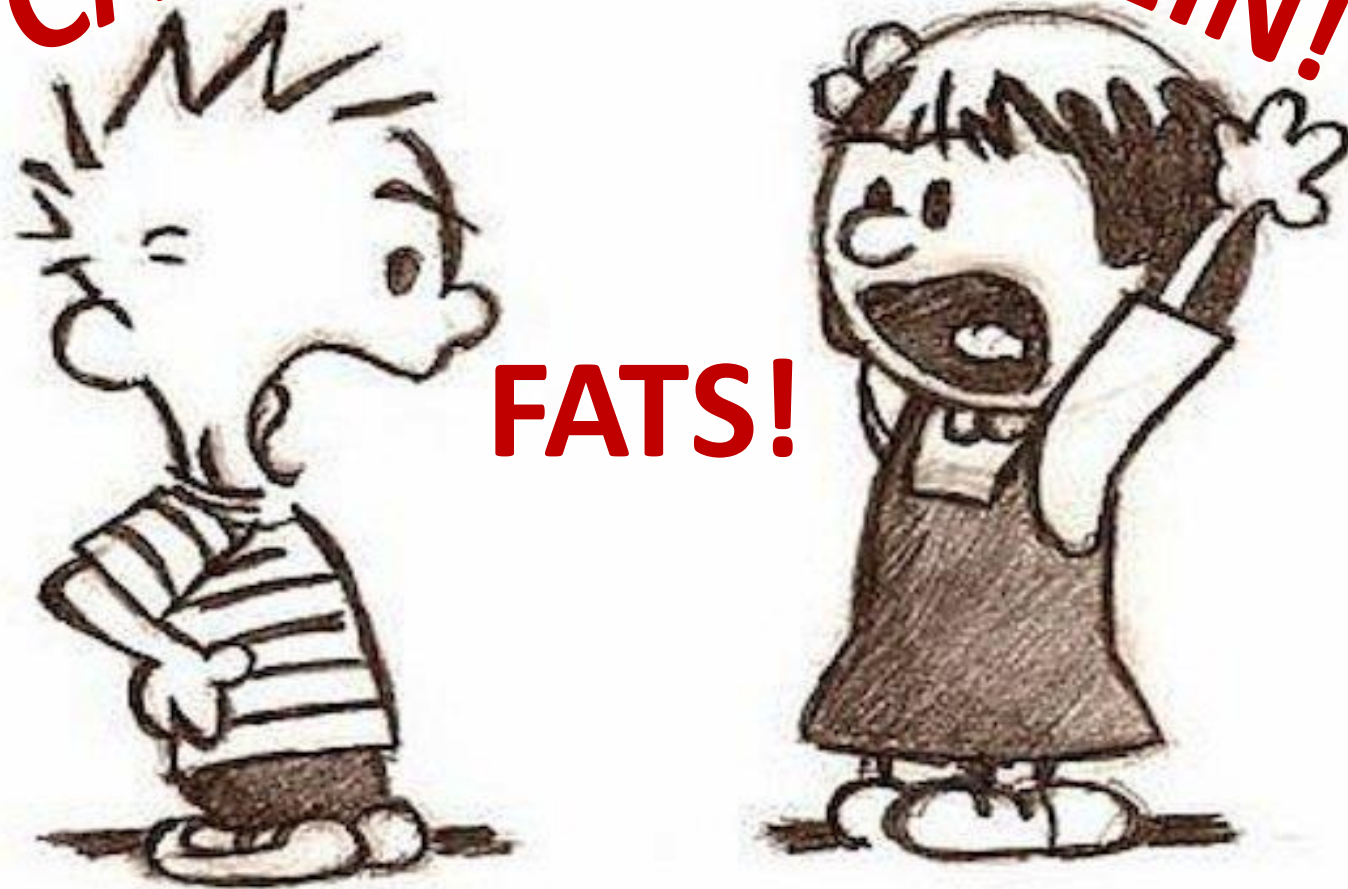
Fats

- Body's energy stores
- Vital component to every cell membrane
- Thermoregulation
- Transport and absorb Vitamins A, D, E, and K
- Precursors of hormones and enzymes
- Essential for brain development
- Important components of cell membranes
- Essential Omega-3 fatty acids

I SAID YOU'RE THE GOOD KIND OF FAT!

Types of Fats

Monounsaturated
- Most vegetable oils

Polyunsaturated
- Fatty fish, seeds, nuts, legumes, olive oil, avocado oil

Saturated
- Animal fats (beef, chicken, pork), dairy, and palm and coconut oil

Trans Fats
- Partially hydrogenated vegetable oil (processed foods)
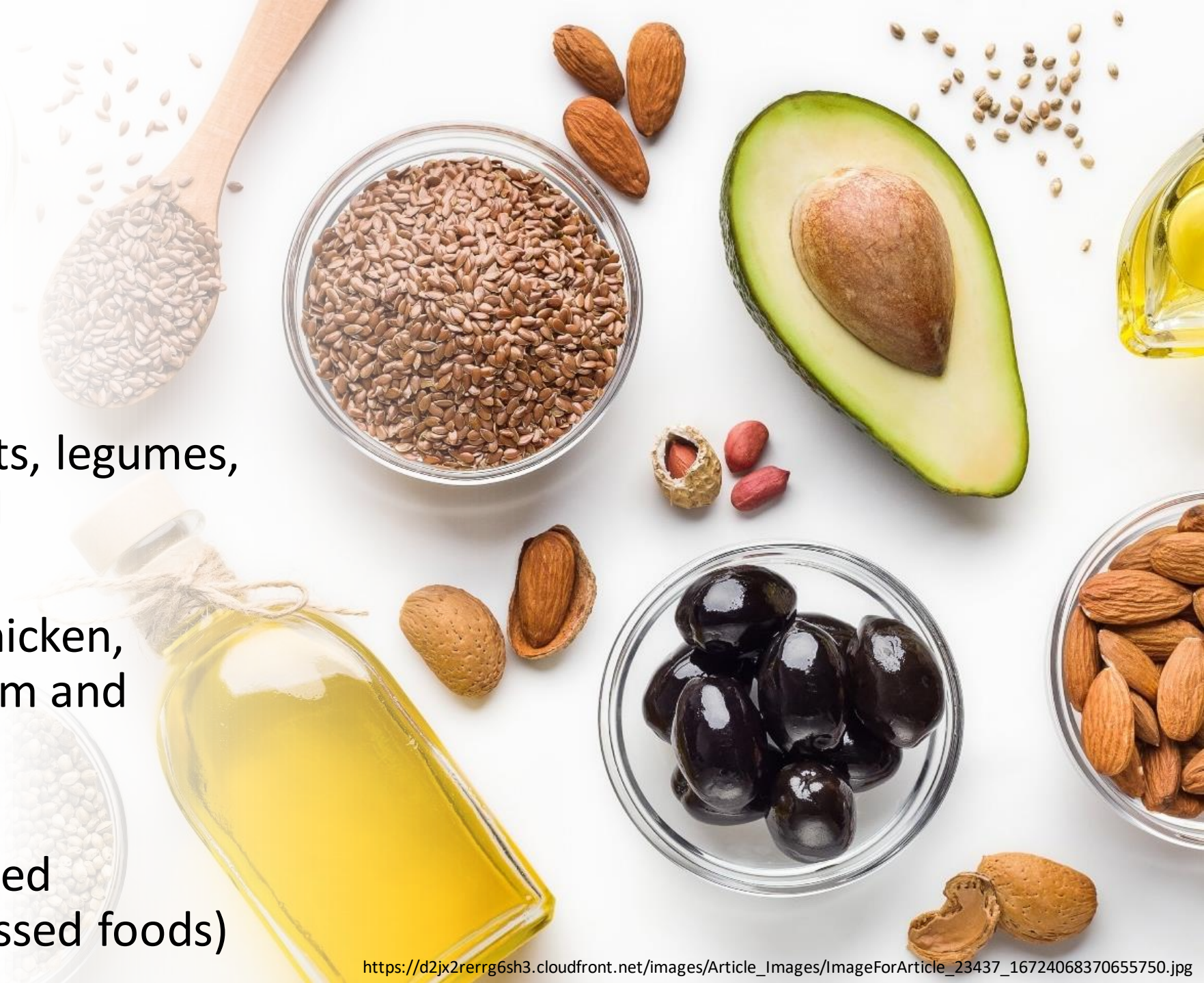
Omega 3 fatty acids

- Essential amino acids
- Anti-inflammatory
- Cell membrane fluidity
- ALA (walnuts, flax seeds, soybeans)
- EPA/DHA (marine sources like algae and fish)
- Genetic SNPs determine ALA -> EPA/DHA

Omega-6 pathway

Linoleic acid (LA)
C18:2

Gamma-Linolenic acid
C18:3

Dihomo-γ-Linolenic acid
(DGLA)
C20:3

Arachidonic acid (AA)
C20:4

Adrenic acid
C22:4

Δ-6 desaturase

elongase

Δ-5 desaturase

elongase

elongase, β-oxidation

Omega-3 pathway

Alpha-Linolenic acid (ALA)
C18:3

Stearidonic acid
C18:4

Eicosatetraenoic acid
C20:4

Eicosapentaenoic acid (EPA)
C20:5

Docosapentaenoic acid
C22:5

Docosahexaenoic acid (DHA)
C22:6

Effects of red meat, white meat, and nonmeat protein sources on atherogenic lipoprotein measures in the context of low compared with high saturated fat intake: a randomized controlled trial

Nathalie Bergeron,[1,2] Sally Chiu,[1] Paul T Williams,[3] Sarah M King,[1] and Ronald M Krauss[1]

[1]Children's Hospital Oakland Research Institute, Oakland, CA; [2]Department of Biological and Pharmaceutical Sciences, College of Pharmacy, Touro University California, Vallejo, CA; and [3]Department of Genome Sciences, Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA

Diet protein source and atherogenic lipoproteins

TABLE 3 Plasma lipid concentrations after 4 wk of diets varying in dietary protein source and saturated fat content[1]

	High-SFA			Low-SFA			P value		
	Red meat	White meat	Nonmeat	Red meat	White meat	Nonmeat	Protein	SFA	Interaction
Total cholesterol, mmol/L	4.42 ± 0.93	4.39 ± 0.83	4.22 ± 0.83	4.11 ± 0.78	4.14 ± 0.80	3.98 ± 0.80	<0.0001	0.0002	0.69
LDL cholesterol, mmol/L	2.64 ± 0.80	2.61 ± 0.72	2.46 ± 0.70	2.35 ± 0.59	2.38 ± 0.65	2.22 ± 0.65	<0.0001	0.0003	0.63
HDL cholesterol, mmol/L	1.34 ± 0.31	1.34 ± 0.31	1.29 ± 0.31	1.40 ± 0.36	1.42 ± 0.39	1.40 ± 0.41	0.004	0.07	0.24
Non-HDL cholesterol, mmol/L	3.08 ± 0.93	3.05 ± 0.85	2.92 ± 0.85	2.72 ± 0.70	2.74 ± 0.72	2.59 ± 0.75	<0.0001	0.0003	0.83
Triglycerides, mmol/L	0.95 ± 0.47	0.96 ± 0.49	0.99 ± 0.49	0.80 ± 0.33	0.78 ± 0.34	0.80 ± 0.33	0.32	0.39	0.40
apoA-I, g/L	1.31 ± 0.18	1.30 ± 0.18	1.28 ± 0.18	1.33 ± 0.21	1.33 ± 0.23	1.31 ± 0.23	0.01	0.32	0.62
apoB, g/L	0.73 ± 0.23	0.74 ± 0.22	0.70 ± 0.21	0.67 ± 0.18	0.67 ± 0.19	0.63 ± 0.18	<0.0001	0.0002	0.99
apoB/apoA-I	0.57 ± 0.20	0.58 ± 0.21	0.57 ± 0.21	0.51 ± 0.15	0.52 ± 0.17	0.49 ± 0.16	0.02	0.01	0.72
Total/HDL cholesterol	3.41 ± 0.97	3.41 ± 0.96	3.41 ± 1.0	3.07 ± 0.72	3.08 ± 0.78	3.01 ± 0.79	0.51	0.15	0.60
LDL cholesterol/apoB	3.61 ± 0.39	3.57 ± 0.41	3.51 ± 0.38	3.57 ± 0.32	3.60 ± 0.37	3.52 ± 0.38	0.09	0.44	0.52

[1] Values are means ± SD, n = 113. Data were analyzed by ANOVA for a 3-treatment crossover design, adjusted for dietary period. apoA-I, apolipoprotein A-I; apoB, apolipoprotein B.

"Pairwise comparisons across dietary protein sources showed that concentrations of total cholesterol (P<0.0001), LDL cholesterol (P<0.0001), and non-HDL cholesterol (P <0.001) were significantly higher after either the red meat or white meat diet than after the nonmeat diet."

"Independent of dietary protein source, diets high in SFA resulted in higher plasma total cholesterol, LDL cholesterol and non-HDL cholesterol concentrations than diets low in SFA (all P<0.001)"

Specific Dietary Fats in Relation to Total and Cause-Specific Mortality

Dong D. Wang, MD, MSc, Yanping Li, PhD, Stephanie E. Chiuve, ScD, Meir J. Stampfer, MD, DrPH, JoAnn E. Manson, MD, DrPH, Eric B. Rimm, ScD, Walter C. Willett, MD, DrPH, and **Frank B. Hu, MD, PhD**

Departments of Nutrition (DDW, YL, SEC, MJS, EBR, WCW and FBH), and Epidemiology (MJS, JEM, EBR, WCW and FBH), Harvard T. H. Chan School of Public Health, Boston, MA; The Channing Division for Network Medicine (MJS, JEM, EBR, WCW and FBH), and the Division of Preventive Medicine (MJS, SEC and JEM), Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA

126,233 patients followed 26 years

Total Fat Intake (vs Carbohydrate) and Total Mortality in Men and Women
(n = 126,233; 33,304 deaths)

P,trend = <.001

(Wang D et al. JAMA Intern Med, 2016)
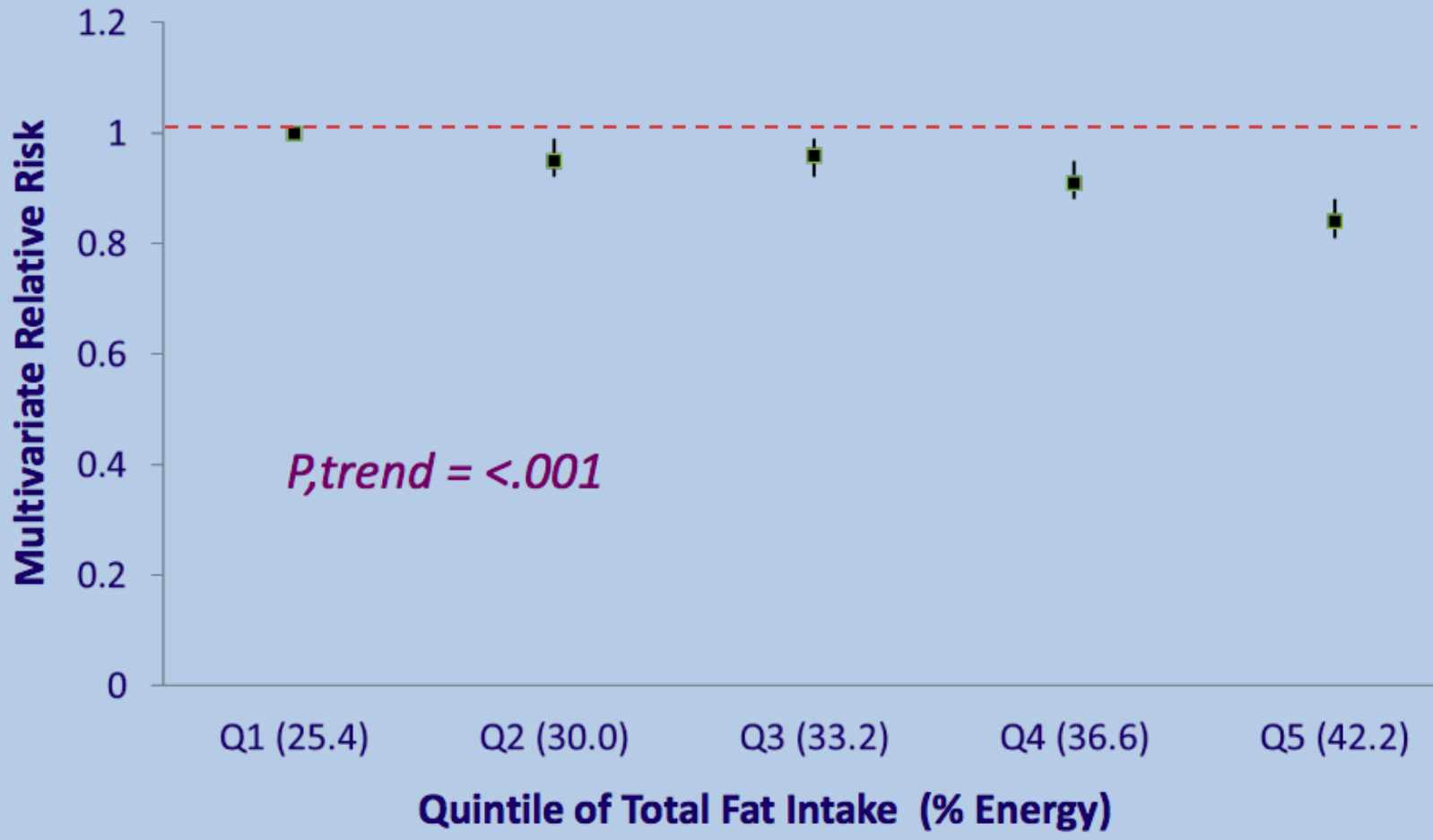
Types of Fat and Total Mortality

▶ MV-adjusted results, isocaloric comparison is CHO

(Wang D et al. JAMA Intern Med 2016)
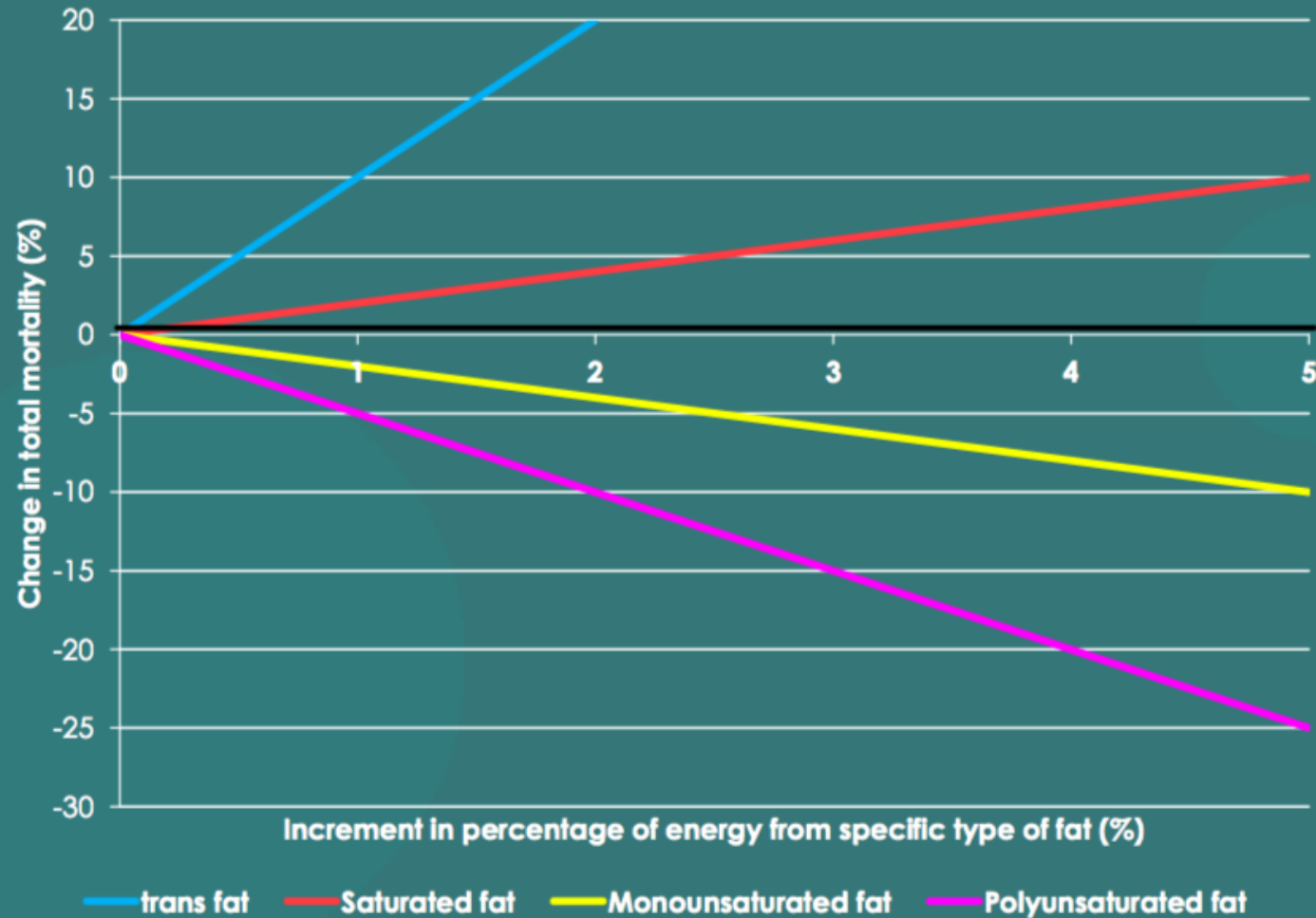
Fats: Take-Home Points

CHOOSE heart healthy fats (Monounsaturated, Polyunsaturated)

- Olive oil, nuts, seeds, avocados, fatty fish

AVOID Saturated and Trans fats

- Margarines, ultra-processed foods, fatty meat

CARBOHYDRATES

SUGAR AND CARBS

ARE THE DEBIL

memegenerator.net

Why Are Carbs Important?

- Main source of fuel for your brain and your muscles

- Fiber (found in complex carbs) feeds your gut microbes

All carbs are not created equal

COMPLEX CARBS

- Whole grains, fruits and vegetables
  - Low glycemic index
  - Low insulin release
  - High fiber
  - Slow-acting
- Examples: quinoa, whole wheat pasta, whole wheat bread, whole wheat tortilla

SIMPLE CARBS

- Refined, simple sugars
  - High glycemic index
  - High insulin release
  - Low fiber
  - Quick-acting
- Examples: white bread, white pasta, white rice, sugar, honey, agave, white potatoes, maple syrup

Whole Grain   vs.   "White" Grain
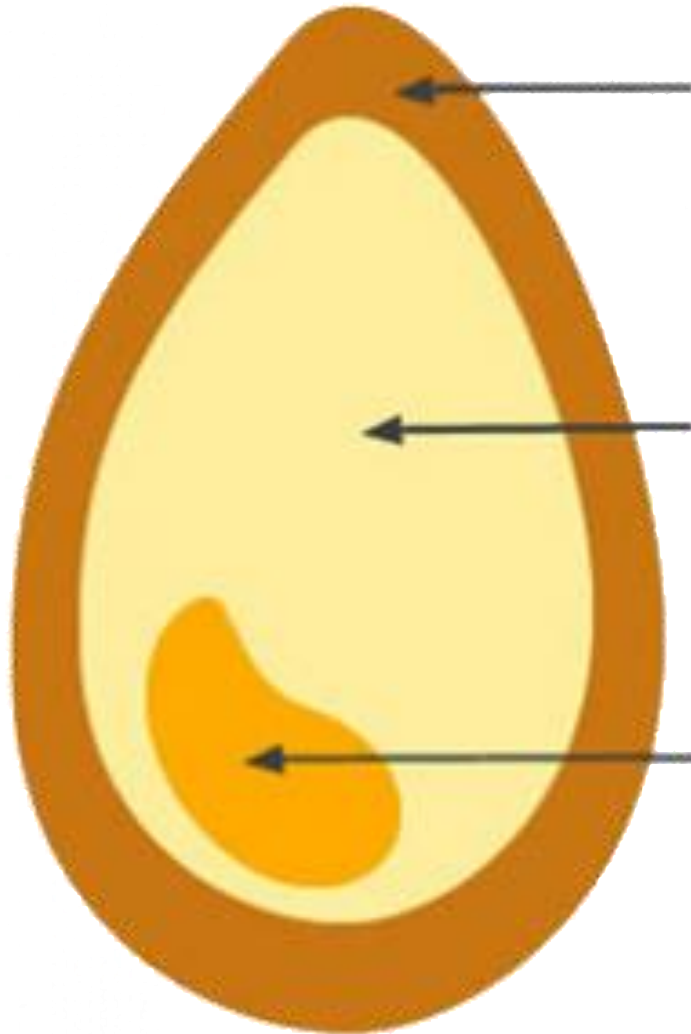
Bran
The fiber-rich outer layer that protects the seed and contains B vitamins and trace minerals.

Endosperm
The middle layer that contains carbohydrates along with proteins.

Germ
The small nutrient-rich core that contains antioxidants, including vitamin E, B vitamins and healthy fats.
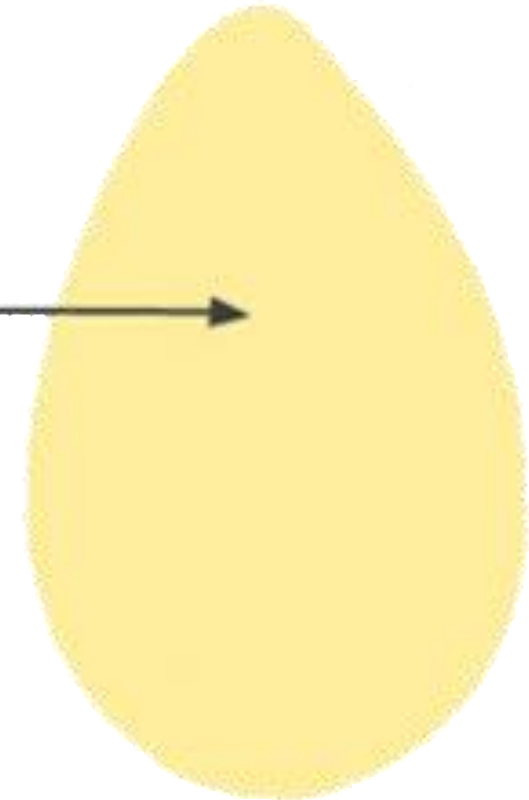
Dietary Fiber, Glycemic Load, and Risk of Non–insulin-dependent Diabetes Mellitus in Women

Jorge Salmerón, MD; JoAnn E. Manson, MD; Meir J. Stampfer, MD; et al

65,173 women, 6 years of follow up

Relative Risk of Type 2 Diabetes by Different Levels of Cereal Fiber and Glycemic Load

(Salmeron et al,1997)
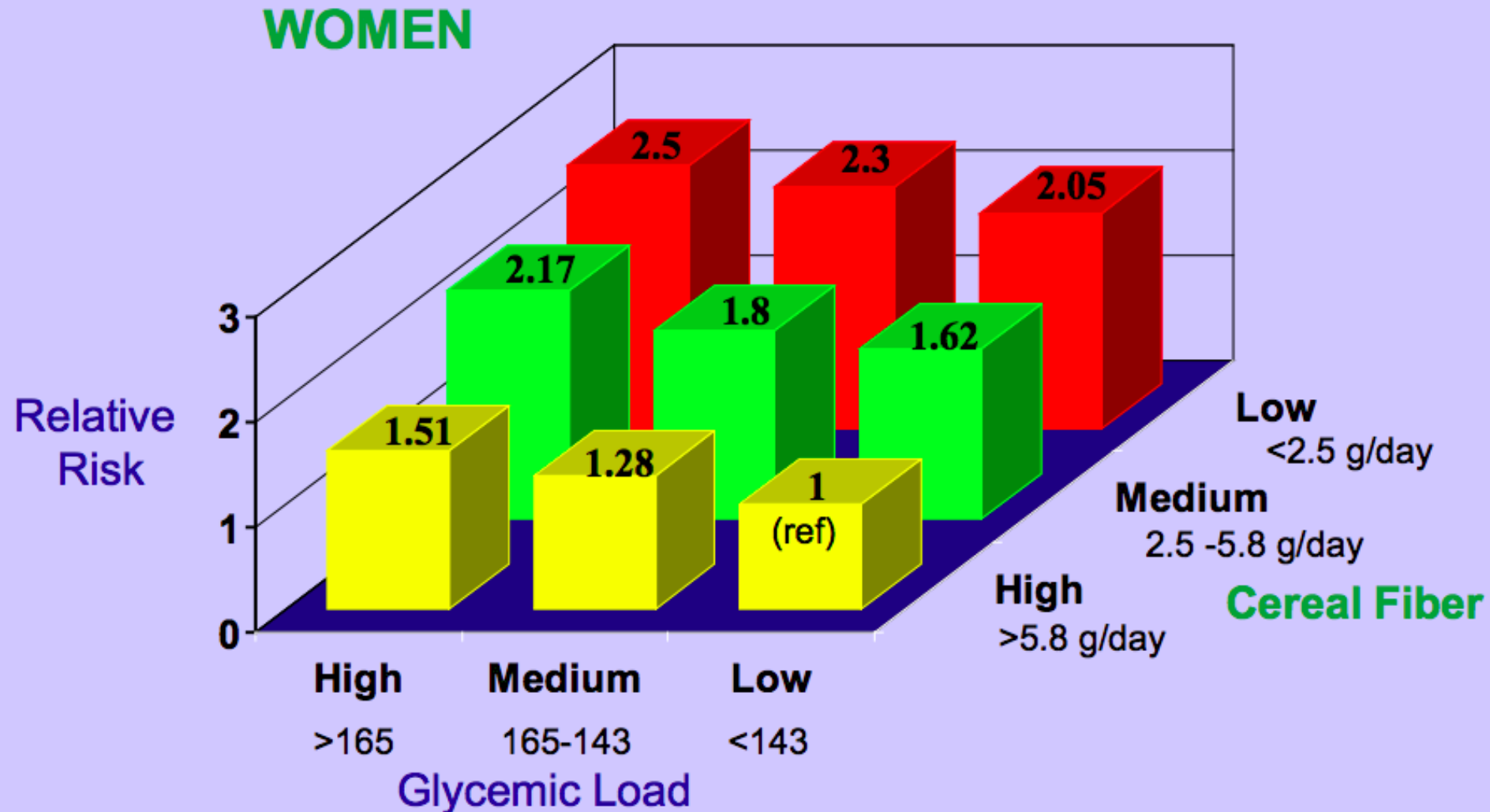
Speaking of Fiber…

You are 1/10th of what you eat…

- We are made up of only 10% of our own DNA (90% bacterial)

- We live in a symbiotic relationship as hosts

- Gut bacterial diversity plays a powerful role. We are only starting to realize its importance.
  - Inflammation
  - Mood
  - Weight gain/loss
  - Food cravings
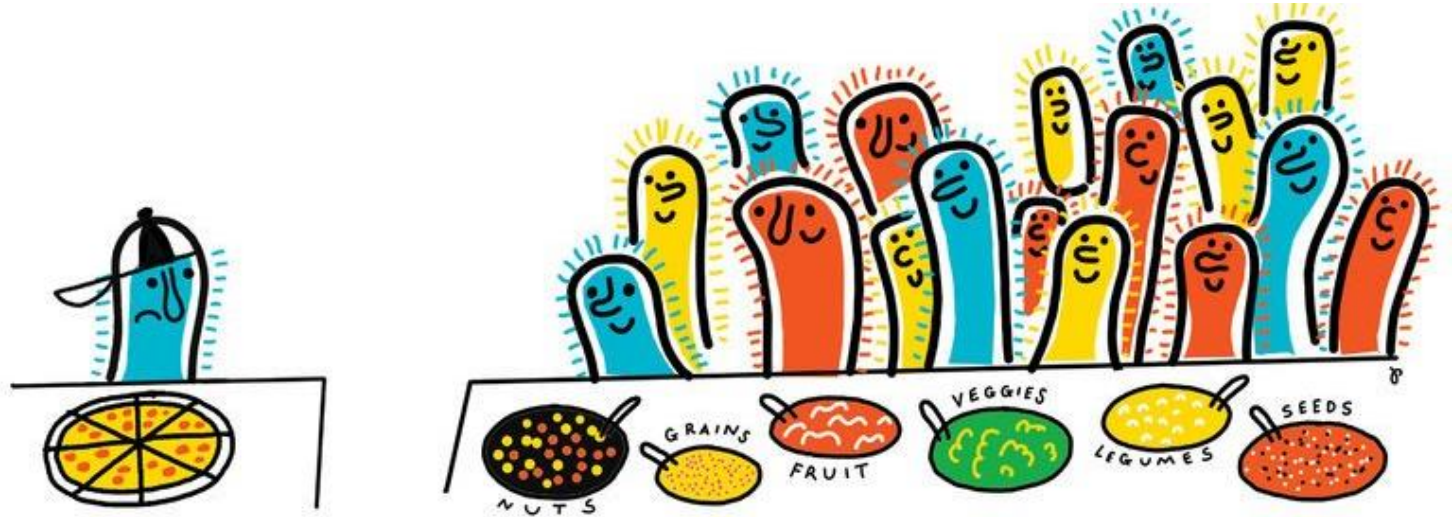
Simple Carbs Starve Your Microbiota

Sonnenburg, HKHL 2018
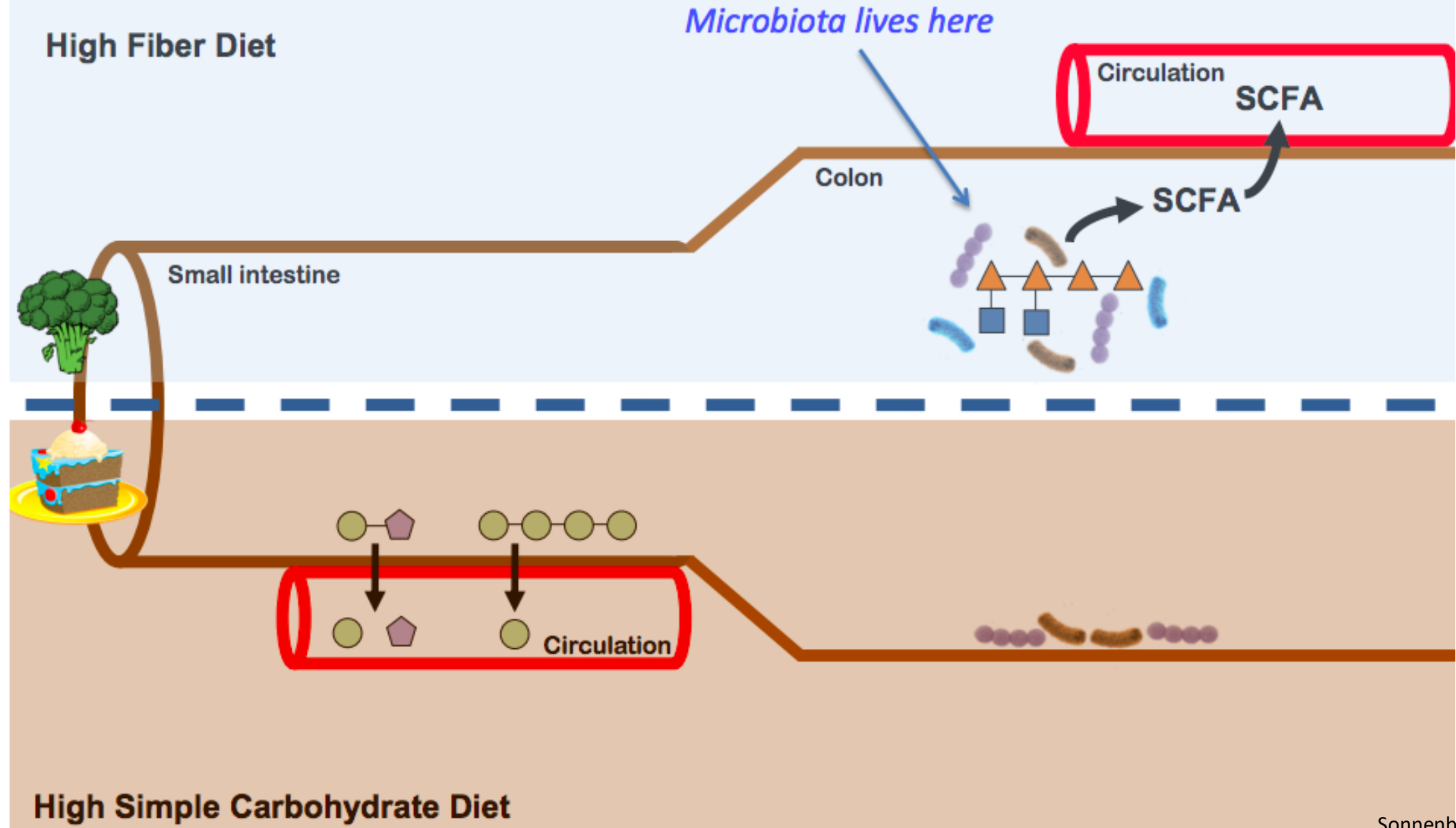
A starving microbiota eats you
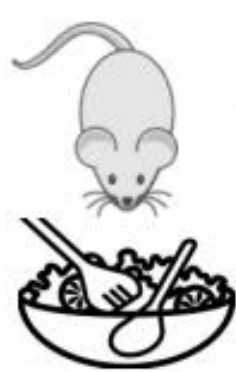
MAC-rich
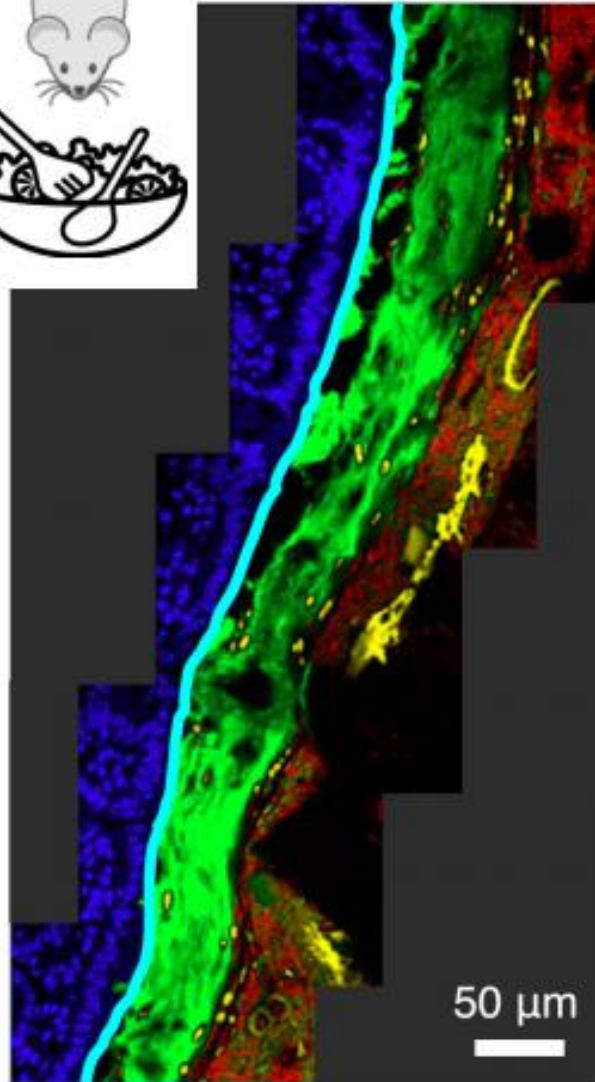
MAC-deficient
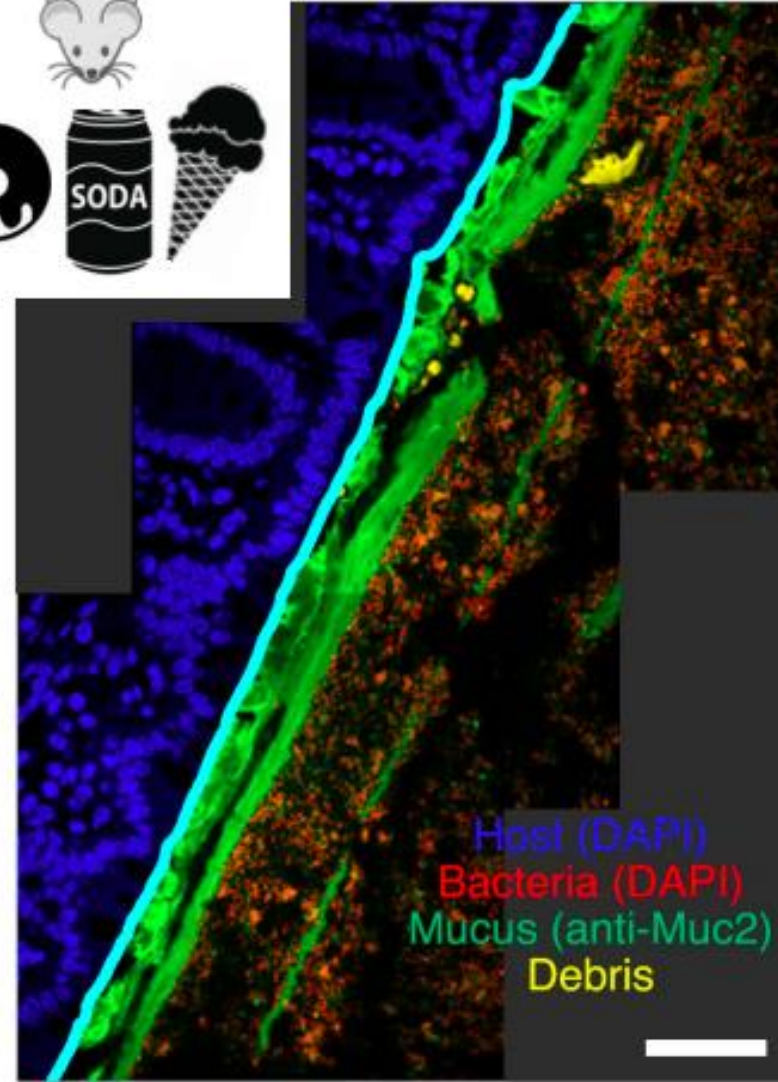
MAC=
Microbiota
Accessible
Carbohydrate

Host (DAPI)
Bacteria (DAPI)
Mucus (anti-Muc2)
Debris

50 µm

Carbohydrate Take-Home Points

- Eat "GOOD" carbs– Note to patients: MORE FIBER!
  - **Whole** grains
  - **Whole** fruits (EAT your fruit, don't drink it, unless in a smoothie)
  - **Whole** vegetables
- Minimize "BAD" carbs: refined carbohydrates and simple sugars- LESS SUGAR!

http://assets.vixendaily.com/wp-content/uploads/2017/10
/best-high-protein-foods-for-weight-loss-1.jpg
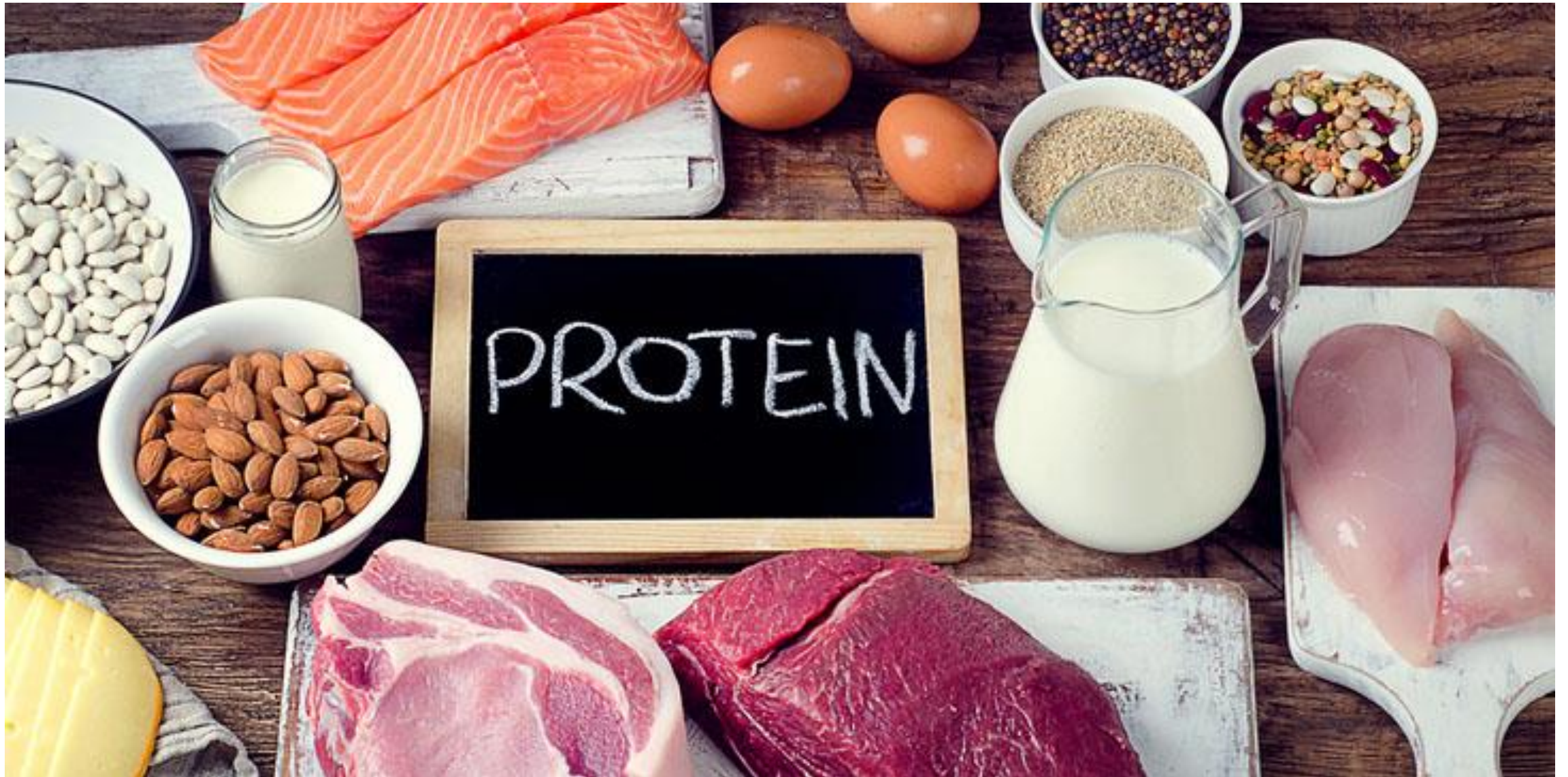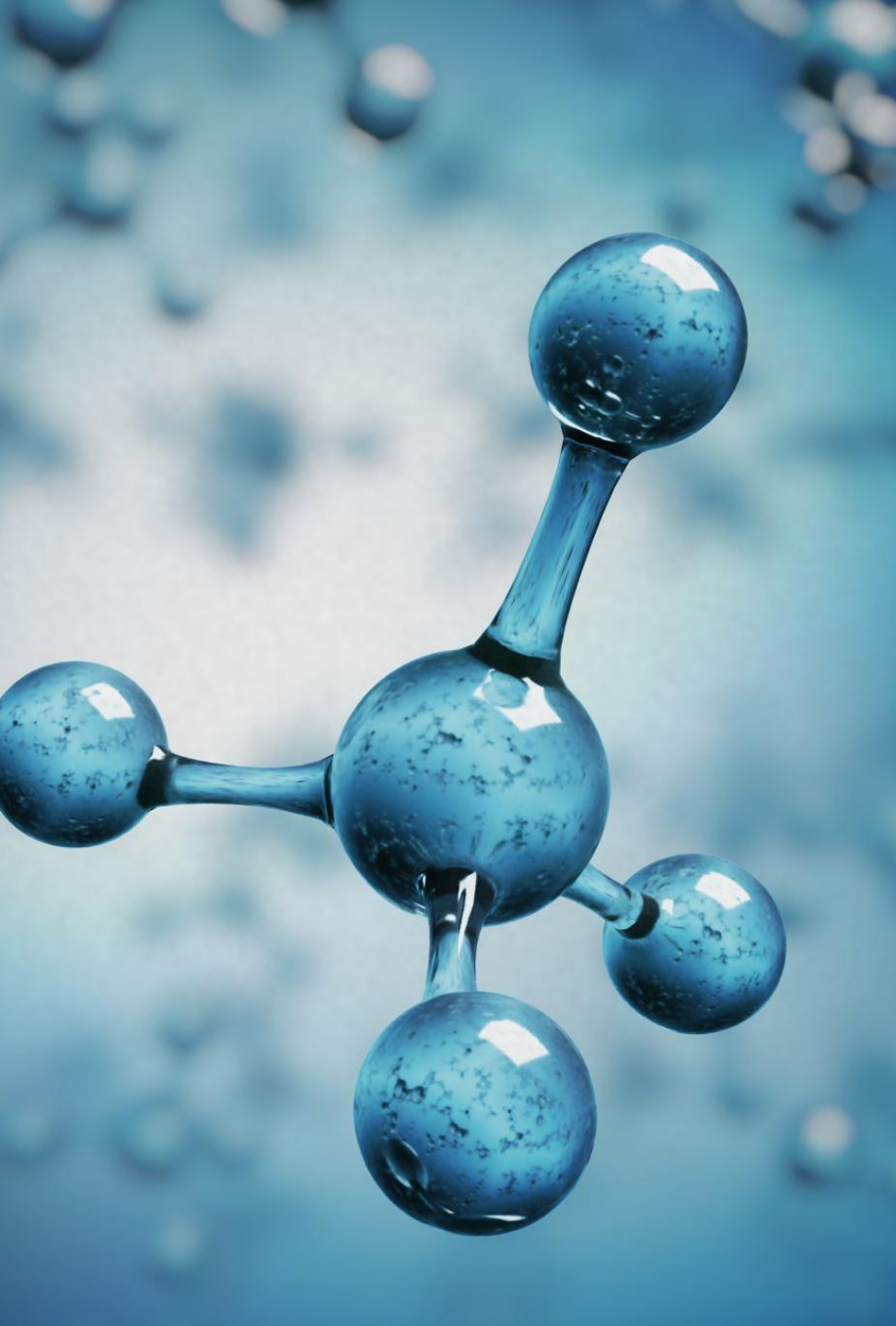
Protein

- Building block of all organs, muscles, enzymes. Important for healthy and healthy aging.

- Composed of 20 amino acids
  - 9 **essential amino acids** (**must** be consumed in diet, cannot be made in body)
    - histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine

Branched Chain Amino Acids

- Why are they important?
  - Unique in that they are principally metabolized in the skeletal muscle (Not in the liver)
  - Trigger **Muscle Protein Synthesis**

Leucine Trigger for Muscle Protein Synthesis

- ? Evolutionary adaptation?
  - Liver protein synthesis (all the time) versus muscle protein synthesis (periodic)
- 2.5 grams of leucine stimulates mTOR which triggers MPS
- There are about 2.5 grams of leucine in 20-30 gm of protein
- Leucine triggers synthesis, but if there aren't enough amino acids around you get increased muscle protein BREAKDOWN
  - **NOT helpful to supplement only with BCAA**

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4848650/

How Much Protein Do We Need (RDA)?

- RDA is 0.8 gm/kg of body weight; to avoid deficiency

- 1.2-1.6 gm/kg of body weight (higher end for athletes and >65 yo)

- 100 kg = 220 lbs (between 120-160 grams per day) 40 gm 3-4 x/day

- 50 kg = 110 lbs (between 60-80 grams per day) 20-30 grams 3 x/day

How Much Protein Do We Get?

2005-2006 National Health and Nutrition Examination Survey (NHANES) data for US:

Average woman: 70.1 grams

Average man: 101.9 grams

MORE THAN THE RDA

True or False:

You have to eat animal products to get protein

True or False:

You have to eat animal products to get protein

FALSE!

If it has DNA, it has protein

Which has the most protein?

- 100 calories of beef
- 100 calories of broccoli
- 100 calories of spinach
- 100 calories of beans

Which has the most protein?

- 100 calories of beef= 10 grams of protein
- 100 calories of broccoli= 8 grams of protein
- 100 calories of spinach= 12 grams of protein
- 100 calories of beans= 7 grams of protein

https://i.pinimg.com/originals/6a/d2/2f/6ad22fbe580772ce46d033c37f77859c.jpg
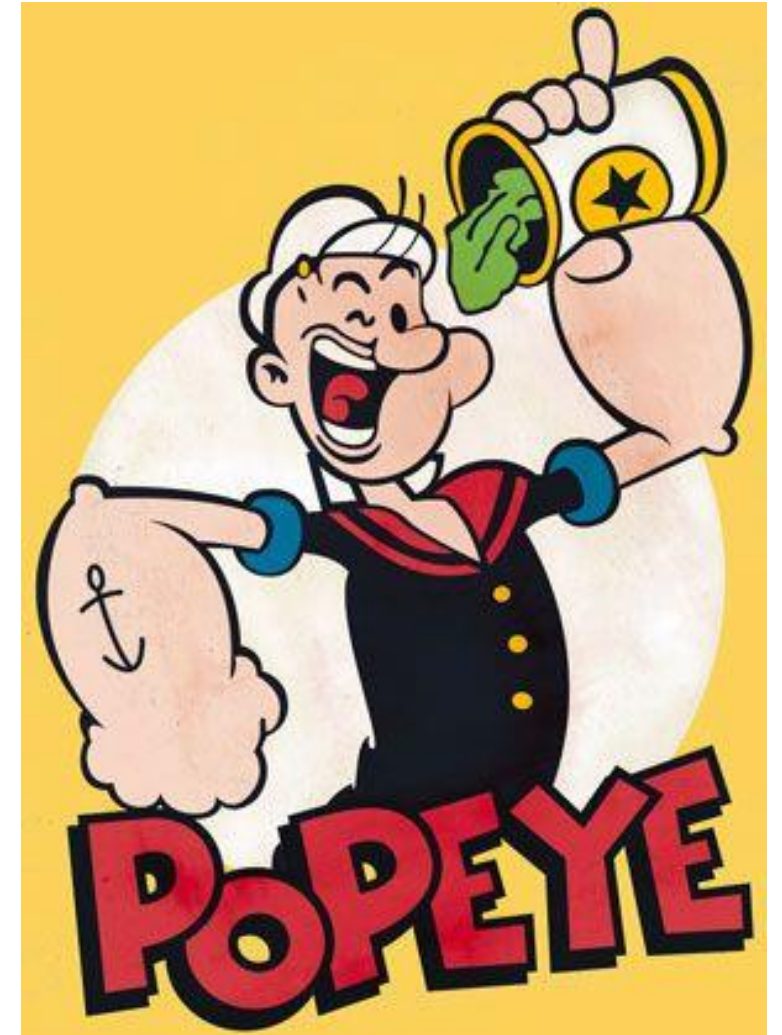
True or False:

- Some plant sources of protein do not contain all essential amino acids

True or False:

- Some plant sources of protein do not contain all essential amino acids

FALSE!

Everything has everything

Proportions of amino acids in selected foods across food groups
(Source: Nutrition Database System for Research, University of Minnesota)

20 amino acids

Legend: Glu/n, Asp/n, Lys, Leu, Arg, Pro, Val, Ala, Iso, Ser, Gly, Thr, Phe, Tyr, His, Met, Cys, Trp

Animal foods: Egg, Milk, whole, Salmon, Chicken, Beef, Pork

Legumes, beans, lentils, peas: Split peas, Black beans, Lentils, Pinto beans, Soybeans

Grains, rice, pasta: Wheat, whole, Rice, brown, Oats, steel cut, Quinoa, Macaroni

Nuts: Almonds, Peanuts, Pecans, Walnuts

Vegetables: Broccoli, Green pepper, Green beans, Carrots, Squash, butternut, Potatoes, Sweet potatoes, Romaine, Kale

Fruits: Banana, Mango, Apple, Raspberries, Blueberries

Mushrooms: Mushrooms

X-axis: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%

Christopher Gardner, PhD, CIAHKHL 2018

HOWEVER: Protein can NOT be stored

I repeat: Protein can NOT be stored

What Happens to Excess Protein?

- Converted to carbohydrate and stored as fat
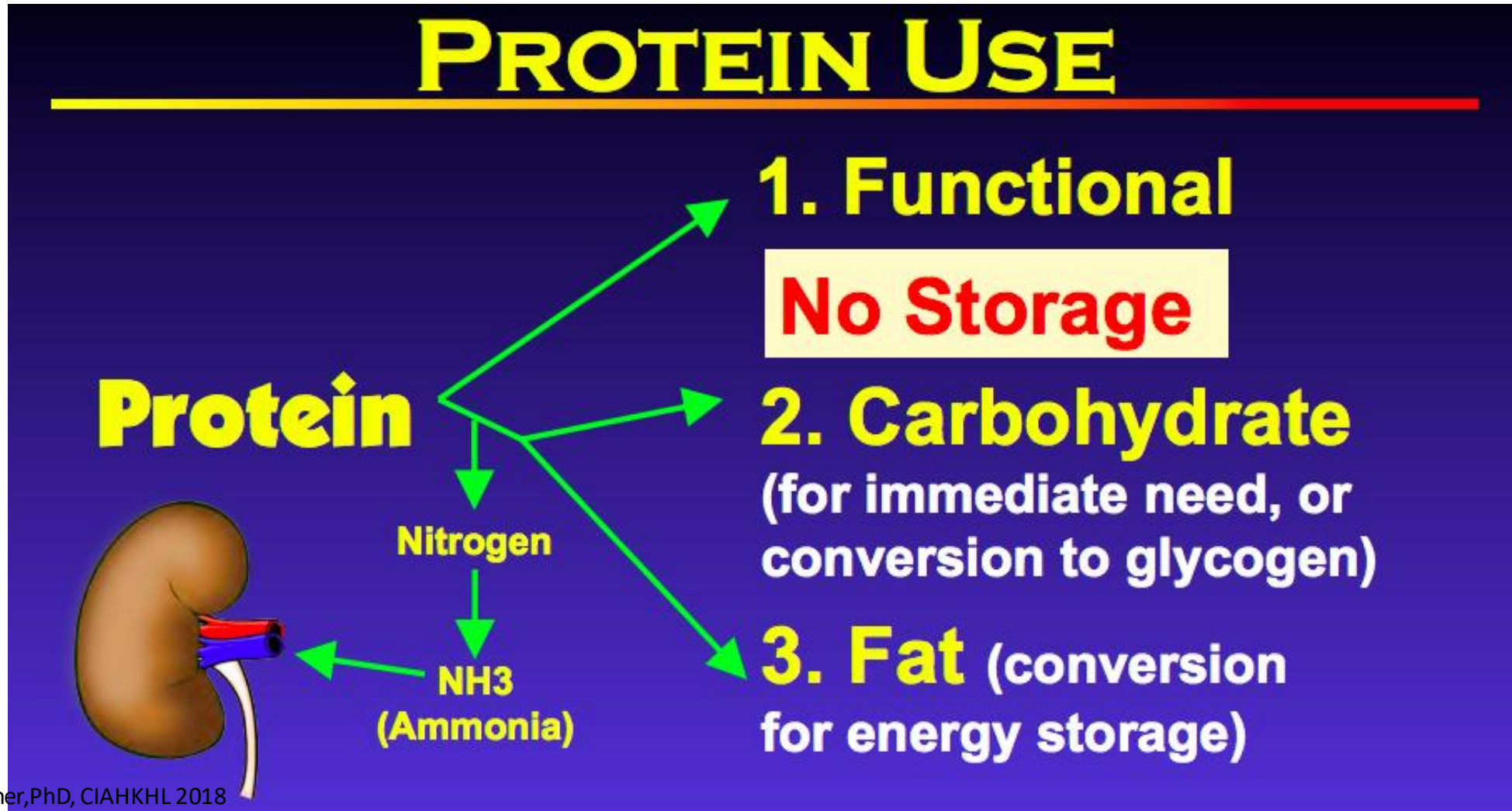
https://www.athleat.co.uk/grass-fed-man-v-food-steak.html

For Protein…

TIMING IS EVERYTHING

Hansen's

https://cdn.shopify.com/s/files/1/0783/3649/articles/Timing_is_Everything.png?v=1449180252
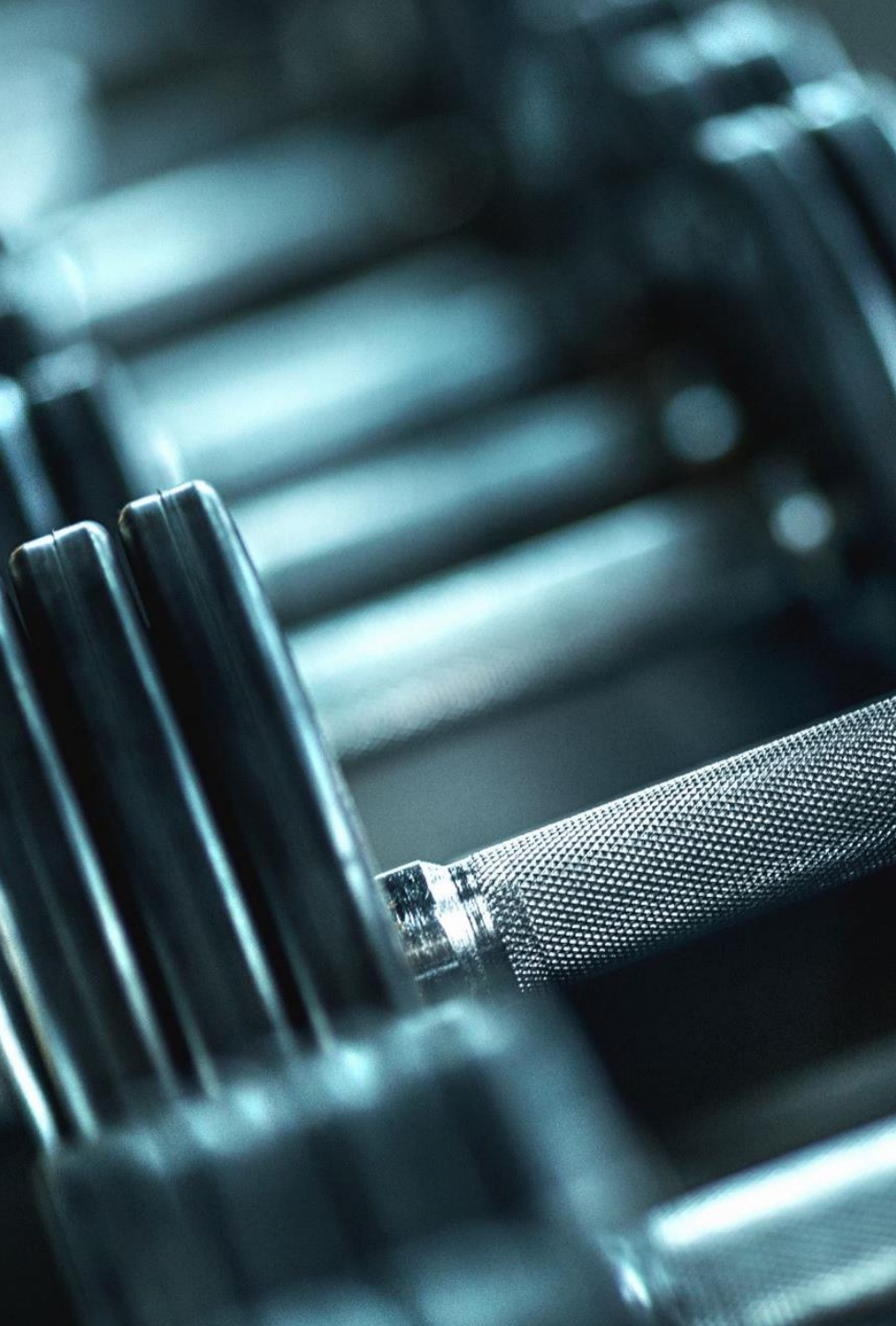
Space Out Protein Intake

- 3-4 x a day based on size

- Maintains an anabolic phase (muscle buildup)

- There is a cap to maximal effectiveness
  - Eating more doesn't give you more benefits (**maxes out around 30-40 gm/meal**)
  - Circulates for up to 6 hours, then you get catabolism (muscle breakdown)

20 grams of Protein Looks Like...

Remember, Protein is in EVERYTHING!

Protein Source and Mortality

Association of Animal and Plant Protein Intake With All-Cause and Cause-Specific Mortality

Mingyang Song, MD, ScD; Teresa T. Fung, ScD; Frank B. Hu, MD, PhD; Walter C. Willett, MD, DrPH; Valter D. Longo, PhD; Andrew T. Chan, MD, MPH; Edward L. Giovannucci, MD, ScD

131,342 patients followed 32 years

Risk for mortality associated with replacement of 3% energy from various animal protein sources with plant protein
(131,342 men and women, 36,115 deaths)

Animal Protein Source by Cause of Death	HR (95% CI)
All cause	
Processed red meat	0.66 (0.59-0.75)
Unprocessed red meat	0.88 (0.84-0.92)
Poultry	0.94 (0.90-0.99)
Fish	0.94 (0.89-0.99)
Egg	0.81 (0.75-0.88)
Dairy	0.92 (0.87-0.96)

(Song M et al., JAMA Intern Med 2016)

Red and Processed Meat and Colorectal Cancer Incidence: Meta-Analysis of Prospective Studies

Doris S. M. Chan[1], Rosa Lau[1], Dagfinn Aune[1], Rui Vieira[1], Darren C. Greenwood[2], Ellen Kampman[3], Teresa Norat[1]*

1 Department of Epidemiology and Biostatistics, School of Public Health, Imperial College London, London, United Kingdom, 2 Biostatistics Unit, Centre for Epidemiology and Biostatistics, University of Leeds, Leeds, United Kingdom, 3 Division of Human Nutrition, Wageningen University, Wageningen, The Netherlands
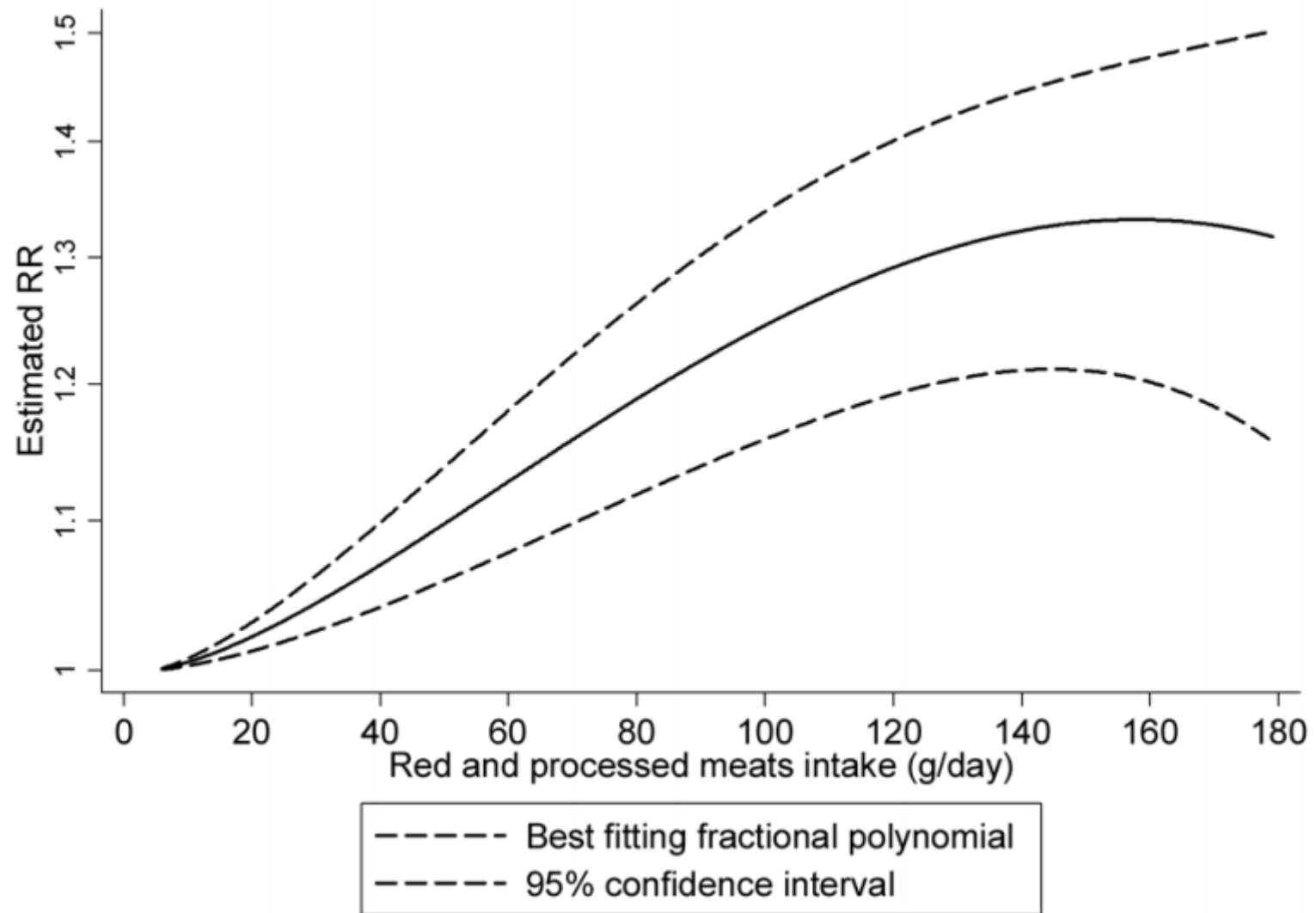
Figure showing Estimated RR versus Red and processed meats intake (g/day), with best fitting fractional polynomial and 95% confidence interval.

Major Dietary Protein Sources and the Risk of Coronary Heart Disease in Women

Adam M. Bernstein, MD ScD, Qi Sun, MD ScD, Frank B. Hu, MD PhD, Meir J. Stampfer, MD DrPH, JoAnn E. Manson, MD DrPH, and Walter C. Willett, MD DrPH
Departments of Nutrition (AB, QS, FH, WW) and Epidemiology (FH, MS, JM, WW), Harvard School of Public Health; Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School (JM); Division of Preventive Medicine (MS, JM), Harvard Medical School

84,136 women followed 26 years

Poultry for red meat
Fish for red meat
Nuts for red meat
Beans for red meat
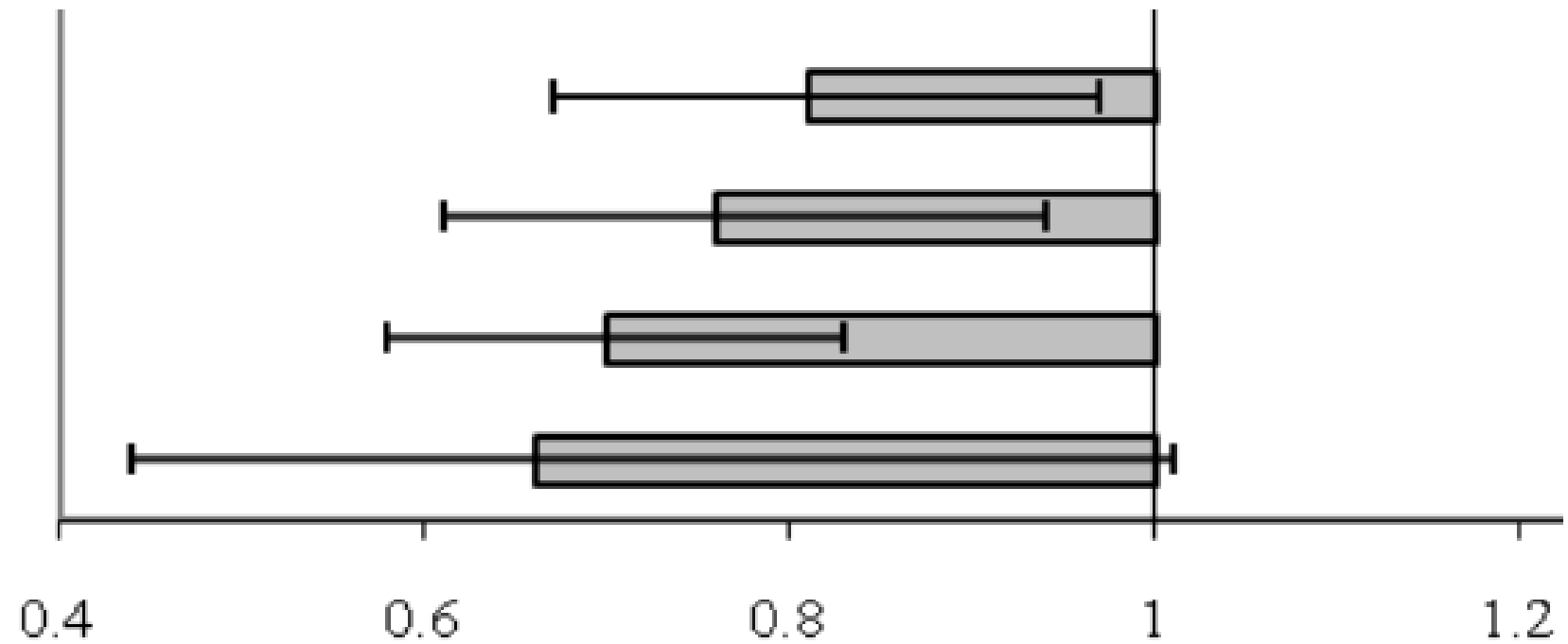
0.4   0.6   0.8   1   1.2

Bernstein A, et al. Circulation. 2010;122(9):876-83

PLOS | ONE

Macronutrient Composition of the Diet and Prospective Weight Change in Participants of the EPIC-PANACEA Study

Anne-Claire Vergnaud[1]*, Teresa Norat[1], Traci Mouw[1], Dora Romaguera[1], Anne M. May[2,3], H. Bas Bueno-de-Mesquita[3,4], Daphne van der A[3], Antonio Agudo[5], Nicholas Wareham[6], Kay-Tee Khaw[7], Isabelle Romieu[8], Heinz Freisling[8], Nadia Slimani[8], Florence Perquier[9,10], Marie-Christine Boutron-Ruault[9,10], Françoise Clavel-Chapelon[9,10], Domenico Palli[11], Franco Berrino[12], Amalia Mattiello[13], Rosario Tumino[14], Fulvio Ricceri[15], Laudina Rodríguez[16], Esther Molina-Montes[17,20], Pilar Amiano[18,20], Aurelio Barricarte[19,20], Maria-Dolores Chirlaque[20,21], Francesca L. Crowe[22], Philippos Orfanos[23,24], Androniki Naska[23,24], Antonia Trichopoulou[23,24], Birgit Teucher[25], Rudolf Kaaks[25], Heiner Boeing[26], Brian Buijsse[26], Ingeged Johansson[27], Göran Hallmans[28], Isabel Drake[29], Emily Sonestedt[29], Marianne Uhre Jakobsen[30], Kim Overvad[30,31], Anne Tjønneland[32], Jytte Halkjær[32], Guri Skeie[33], Tonje Braaten[33], Eiliv Lund[33], Elio Riboli[1], Petra H. M. Peeters[1,2]

373,803 patients followed 5 years

Percentage energy from protein [3]	BMI <25kg/m² at baseline N = 191,748			25≤ BMI <30kg/m² at baseline N = 132,266		
	N (%)	N overweight or obese (%)	RR of the risk of becoming overweight or obese (95% CI)	N (%)	% obese or morbidly obese	RR of the risk of becoming obese or morbidly obese (95% CI)
≤14%	34,487 (18.0)	6,919 (20.1)	1	18,414 (13.9)	2,724 (14.8)	1
14.1–16%	48,529 (25.3)	9,877 (20.4)	0.99 (0.97, 1.01)	30,309 (22.9)	4,426 (14.6)	0.97 (0.93, 1.01)
16.1–18%	51,379 (26.8)	10,789 (21.0)	1.01 (0.98, 1.03)	34,454 (26.1)	5,227 (15.2)	1.01 (0.97, 1.05)
18.1–20%	34,092 (17.8)	7,809 (22.9)	1.05 (1.02, 1.08)	26,134 (19.8)	4,215 (16.1)	1.04 (0.99, 1.08)
20.1–22%	15,390 (8.0)	4,049 (26.3)	1.14 (1.10, 1.17)	14,212 (10.8)	2,680 (18.9)	1.14 (1.08, 1.19)
>22%	7,871 (4.1)	2,299 (30.5)	1.24 (1.19, 1.28)	8,743 (6.6)	1,941 (22.2)	1.23 (1.17, 1.30)
P for trend			<0.0001			<0.0001

Macronutrient Composition of the Diet and Prospective Weight Change in Participants of the EPIC-PANACEA Study

BMI Body Comparison

©2005 HowStuffWorks

HEIGHT
0 6 0 0
FEET INCHES

WEIGHT
2 5 0
POUNDS

BMI
3 3 . 9

https://s.hswstatic.com/gif/bmi-comparison.gif

Protein's Dream
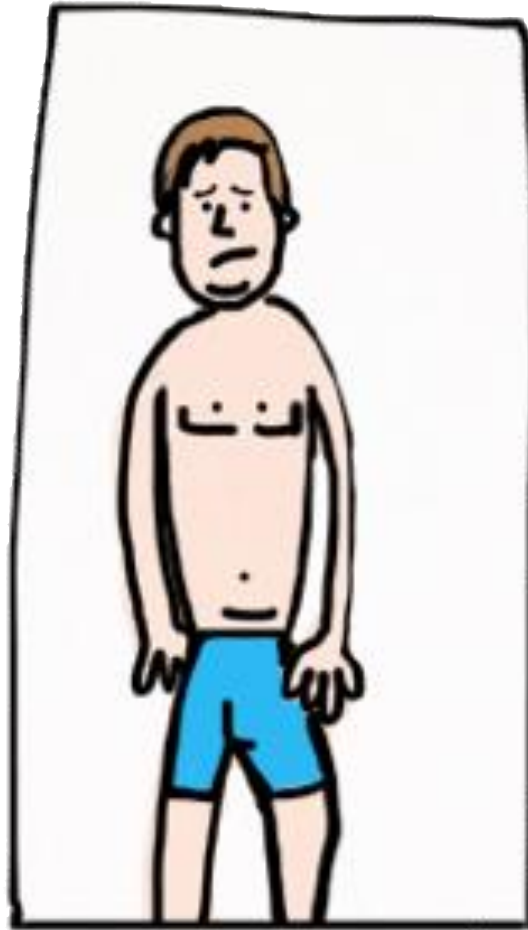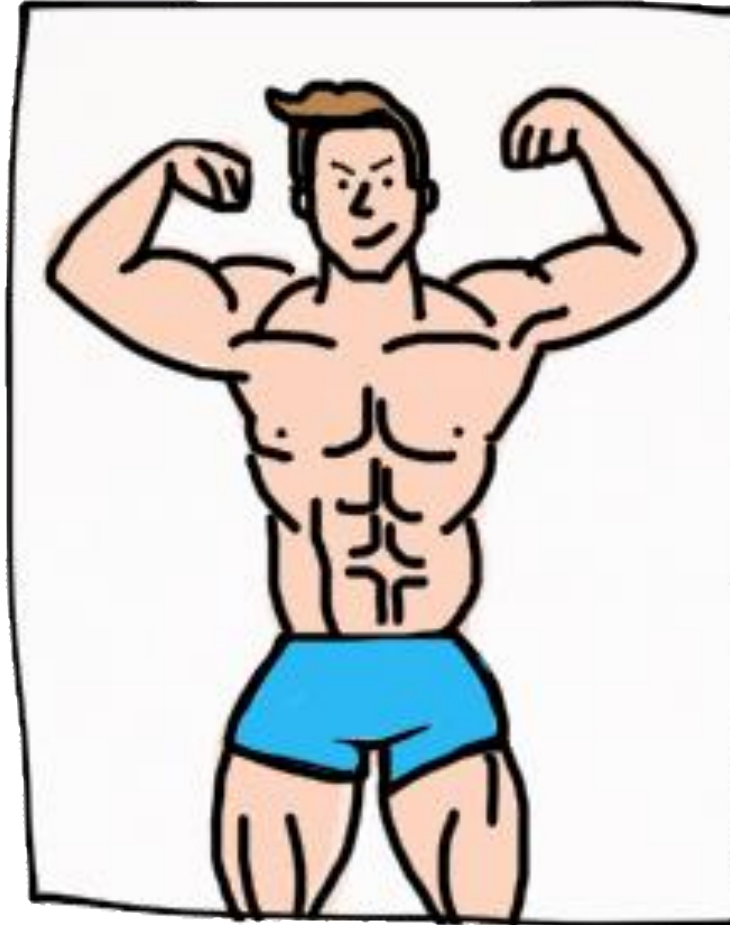
Protein's Reality (if sedentary):

AFTER

BEFORE
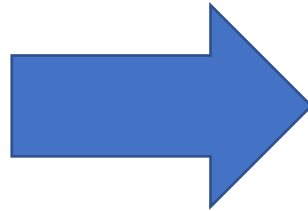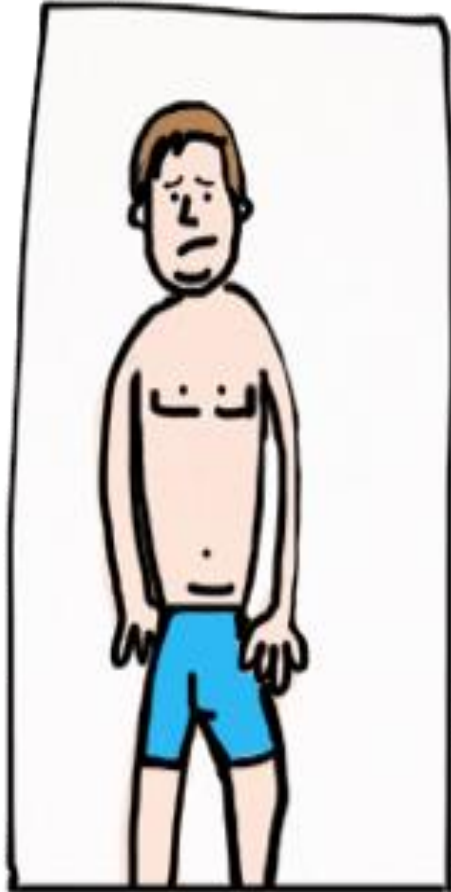
Protein: What to tell your patients

- Eat a moderate amount of protein (.8- 1.6 grams/kg)
- Spread the protein intake in chunks throughout the day
- Minimize meat
- Choose plant and fish sources

Those were the Macro and Micro basics- now for the
Diet Deep Dive

Time and Quantity Restricted Diets

Intermittent Fasting

    Feasting days and Fasting days

    Most popular: 5 off/2 on

    Every other day (alternate day fasting)

    No caloric restriction on "off" days

    0-500 calories on fasting days

Time Restricted Eating

    Short eating window (example: 10:00 AM - 6:00 PM)

Fasting Mimicking Diet

    Several days in a row with low caloric intake (500 calories)

Benefits of Time and Quantity Restricted Diets

- Improve insulin resistance
- Use up liver glycogen -> fat stores (gluconeogenesis)
- Improve sleep quality
- Promote autophagy
- Result in weight loss
- Increase longevity in animal models (mTOR, cAMP cell signaling)

Early Time-Restricted Feeding Improves Insulin Sensitivity, Blood Pressure, and Oxidative Stress Even Without Weight Loss in Men with Prediabetes

Elizabeth F. Sutton, PhD[1], Robbie Beyl, PhD[1], Kate S. Early, PhD[2], William T. Cefalu, MD[1,3], Eric Ravussin, PhD[1], and Courtney M. Peterson, PhD[1,4,5]

[1]Pennington Biomedical Research Center, Baton Rouge, LA, 70808, USA

[2]Health, Physical Education, and Exercise Science, Columbus State University, Columbus, GA, 31907, USA

[3]American Diabetes Association, Arlington, VA 22202, USA

[4]Department of Nutrition Sciences, University of Alabama at Birmingham, Birmingham, AL, 35294, USA

8 participant, five-week, randomized, crossover, isocaloric and eucaloric controlled feeding trial testing eTRF in men with prediabetes
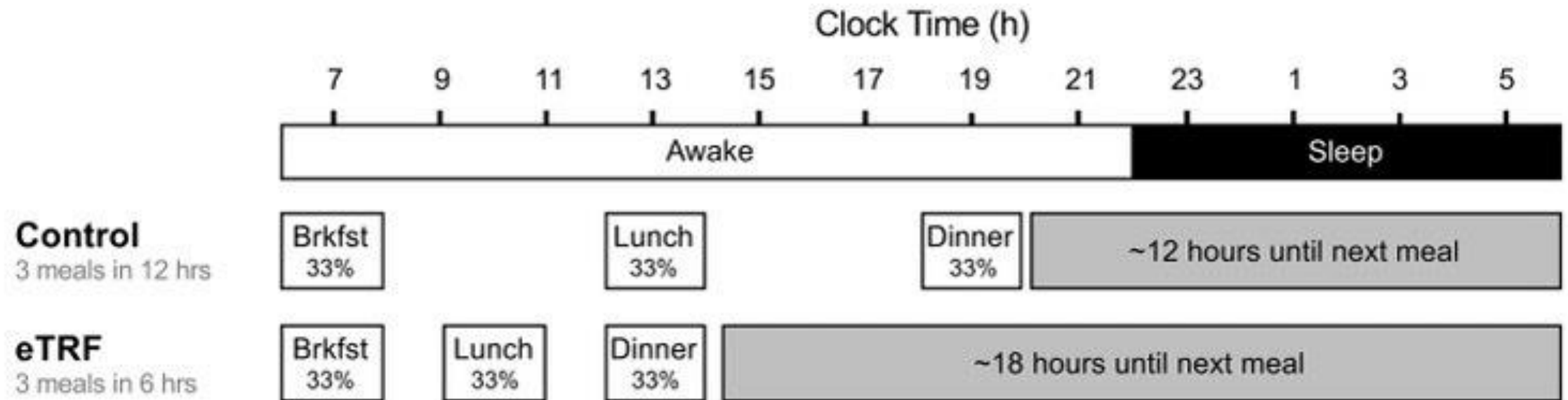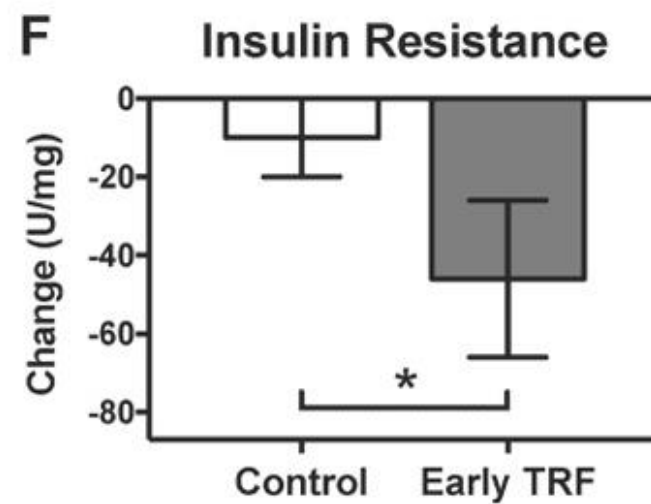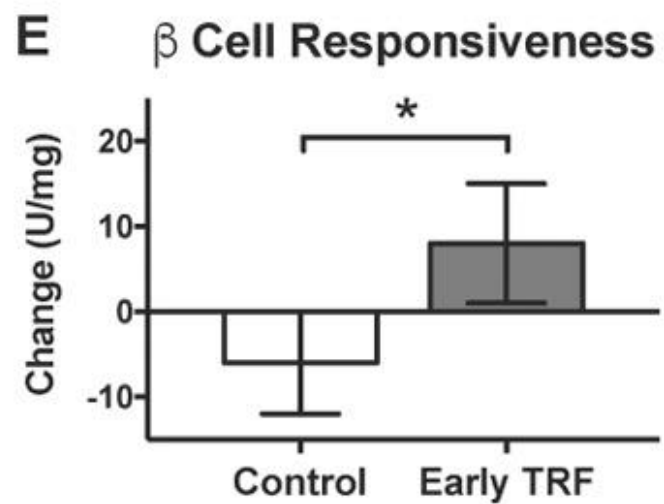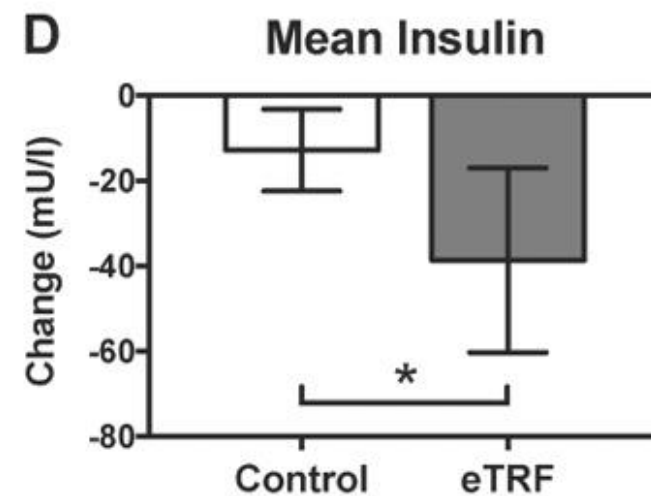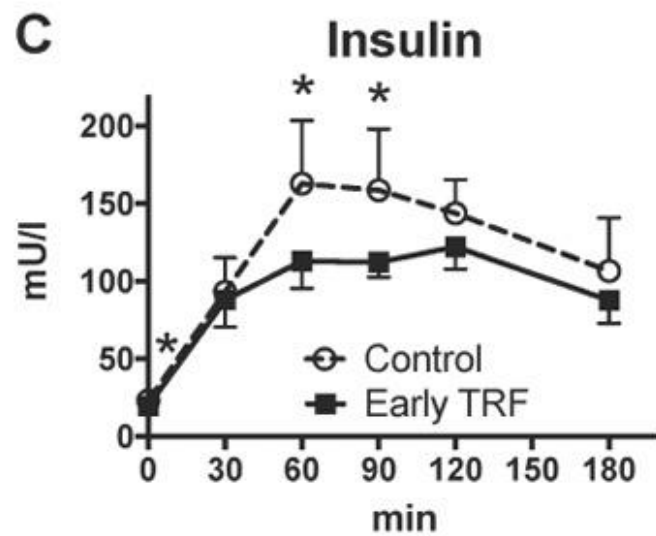
A Systolic Blood Pressure
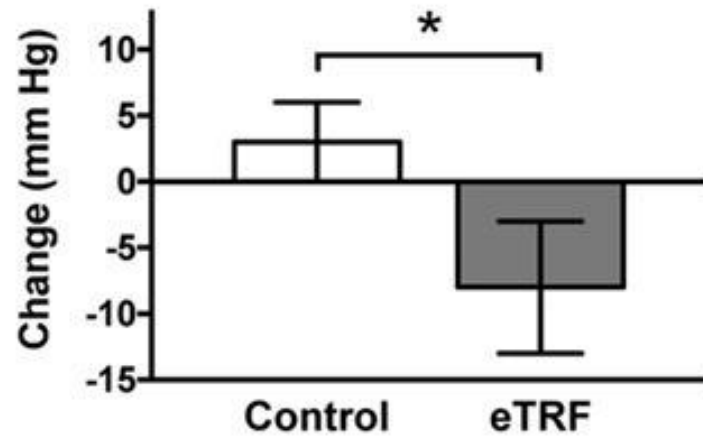
B Diastolic Blood Pressure
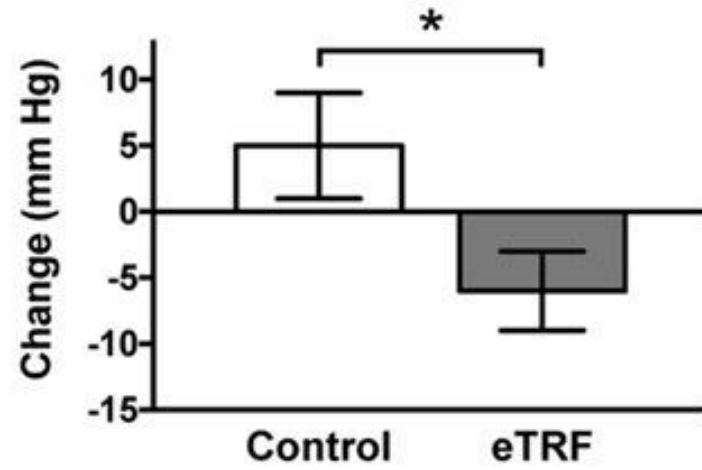
I Triglycerides
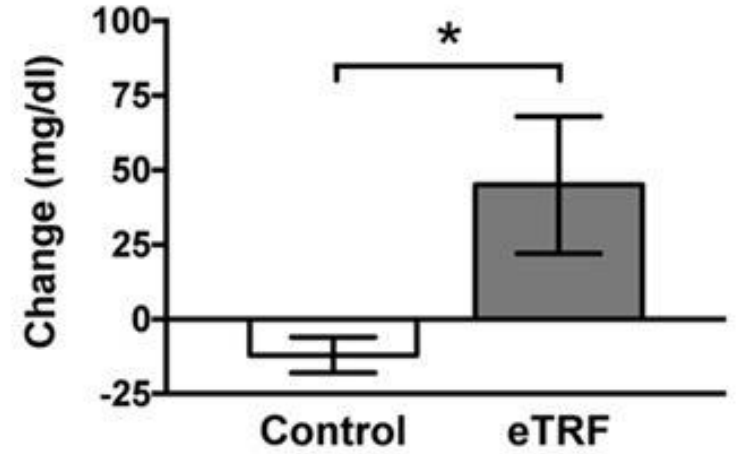
HIGHLIGHTS

- Early time-restricted feeding (eTRF) increases insulin sensitivity

- eTRF also improves β cell function and lowers blood pressure and oxidative stress

- eTRF lowers the desire to eat in the evening, which may facilitate weight loss

- Intermittent fasting can improve health even in the absence of weight loss

99,727 patients followed 24 years

Consumption of Meals Prepared at Home and Risk of Type 2 Diabetes: An Analysis of Two Prospective Cohort Studies

Geng Zong[1], David M. Eisenberg[1], Frank B. Hu[1,2,3], Qi Sun[1,3]*

1 Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, Massachusetts, United States of America, 2 Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, Massachusetts, United States of America, 3 Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts, United States of America

Consumption of Meals Prepared at Home

Hazard Ratio of Obesity

Hazard Ratio of Type 2 Diabetes

Frequencies of consuming meals prepared at home (times/week)

Zong et al. PLoS Med. 2016
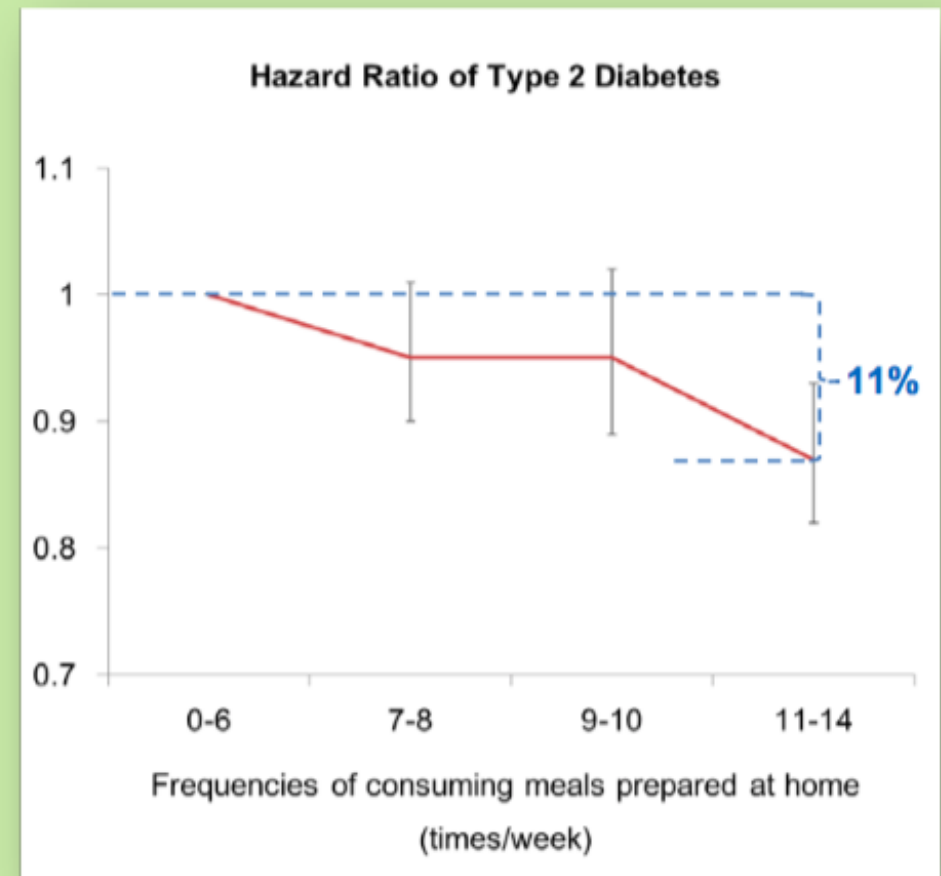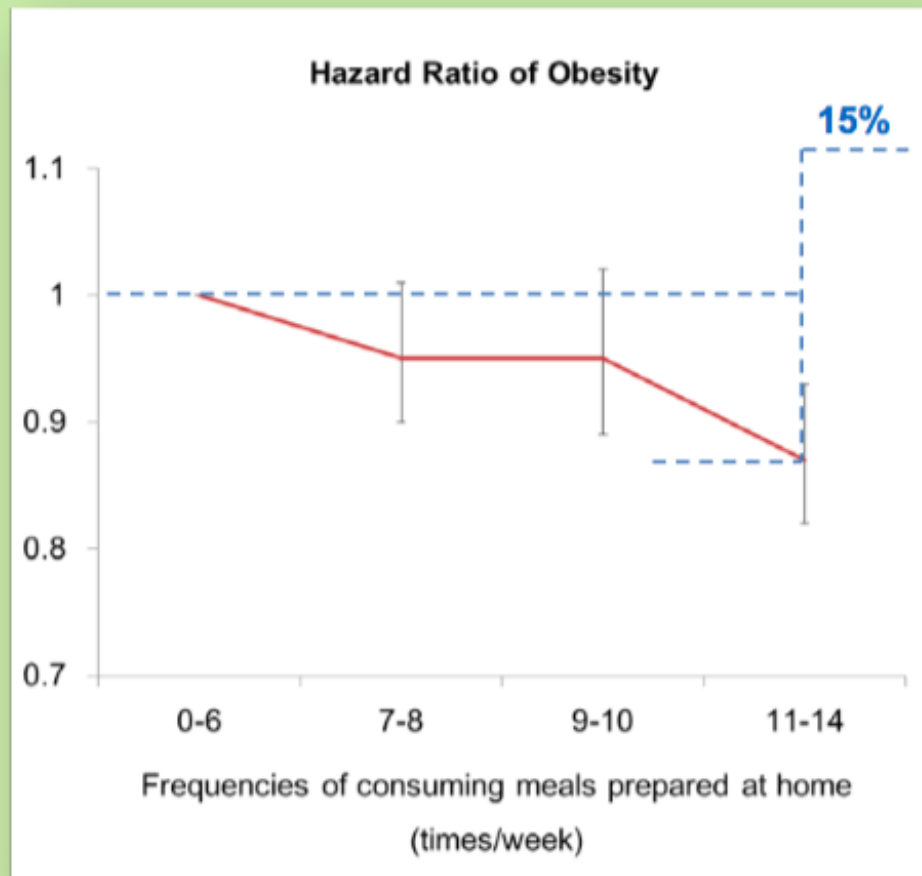
Meals prepared at home
=
Non-processed

Note to patients: more home cooked meals

Overall **food quality** is super important

- Nutrient-dense
- Minimally processed

ORIGINAL ARTICLE

Changes in Diet and Lifestyle and Long-Term Weight Gain in Women and Men

Dariush Mozaffarian, M.D., Dr.P.H., Tao Hao, M.P.H., Eric B. Rimm, Sc.D., Walter C. Willett, M.D., Dr.P.H., and Frank B. Hu, M.D., Ph.D.

120,877 U.S. women and men from the Nurses' Health Study and the Health Professionals Study

Prospective observational study in 3 cohorts 1986-2006
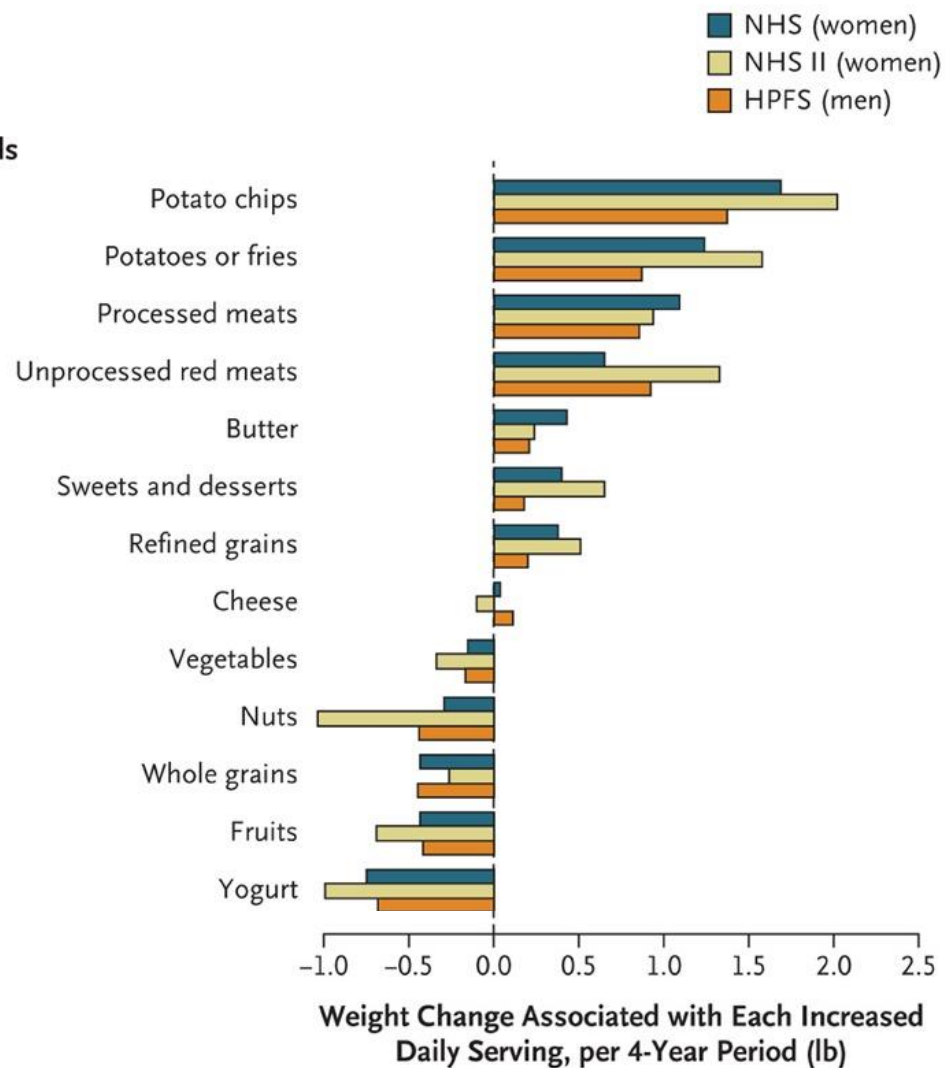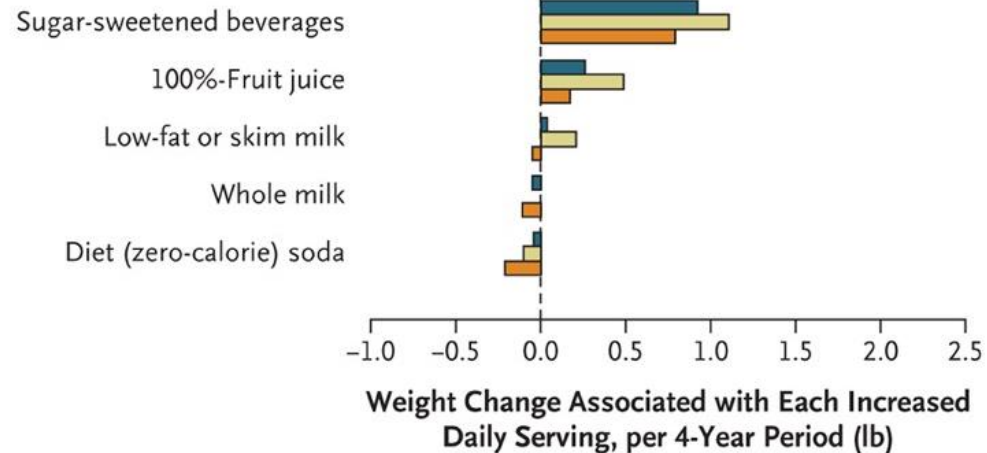
Weight Change Associated with Each Increased Daily Serving, per 4-Year Period (lb)

Healthful and Unhealthful Plant-Based Diets and the Risk of Coronary Heart Disease in U.S. Adults

Ambika Satija, Shilpa N. Bhupathiraju, Donna Spiegelman, Stephanie E. Chiuve, JoAnn E. Manson, Walter Willett, Kathryn M. Rexrode, Eric B. Rimm and Frank B. Hu

73,710 women in NHS (Nurses' Health Study) (1984 to 2012), 92,329 women in NHS2 (1991 to 2013), and 43,259 men in Health Professionals Follow-up Study (1986 to 2012)

Type of Food and Heart Disease Risk
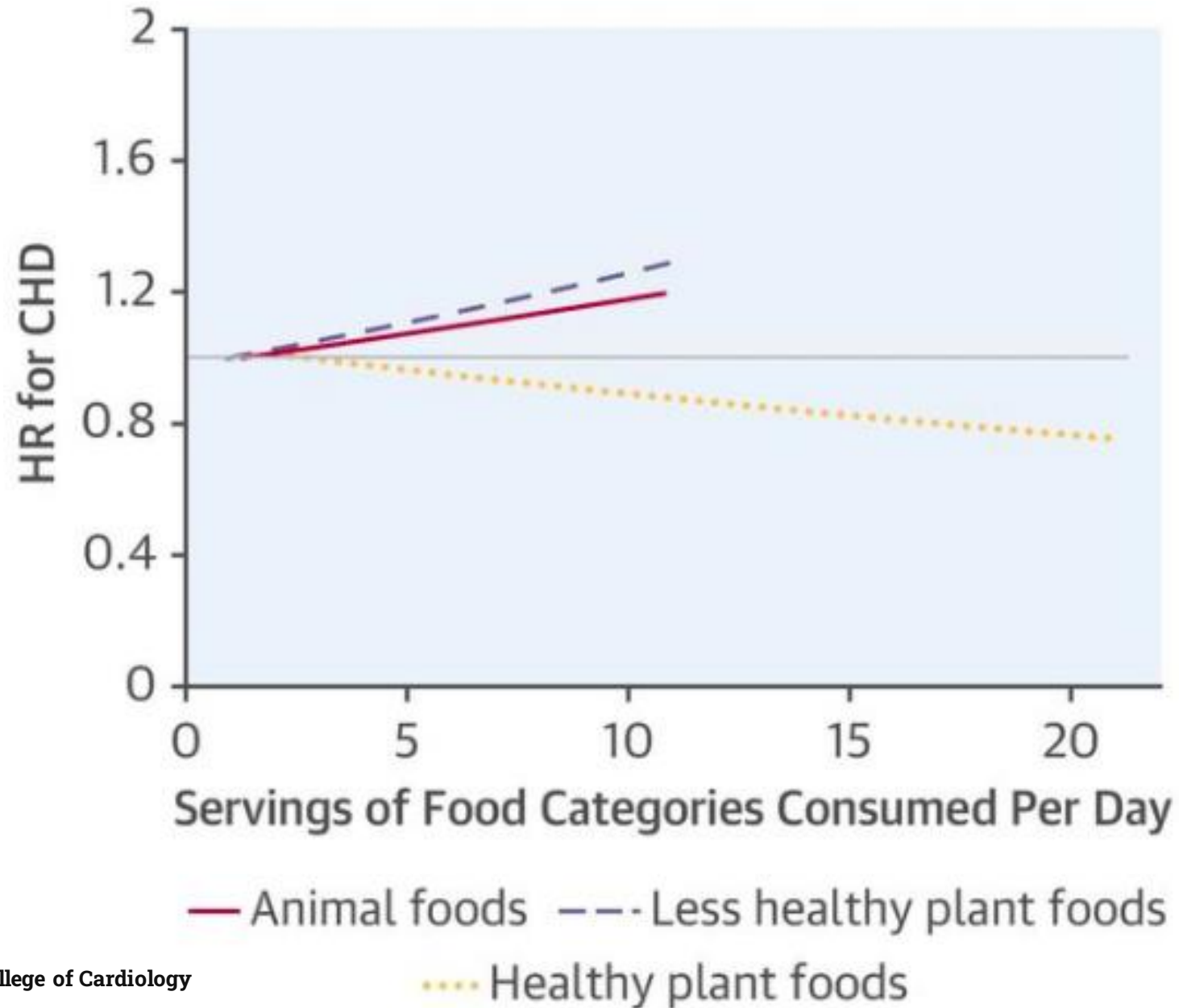
Vegetarian
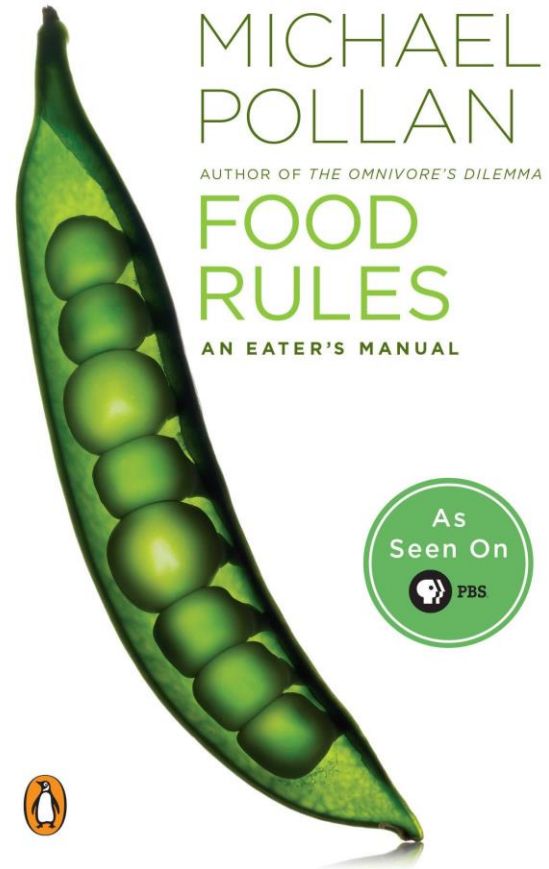
Eat Food.

Not Too Much.

Mostly Plants.

What is Food?*

Food

- Close to the Earth
- Ingredients you recognize
- Ingredients you can pronounce
- **If it's a plant, eat it**

Not Food

- Highly processed
- Ingredients from chemistry lab
- Impossible pronunciation
- **If it was manufactured in a plant, don't**

*According to Michael Pollan

Dietary Food Pattern Considerations

- Sustainable over the long term

- Prevents disease

- Aligned with personal ethics

- Fits with heritage, nationality, or tradition

Dietary Food Patterns

- Keto (low carb)
  - Carnivore/Atkins
  - Eco Keto
- Vegan/vegetarian
- Paleo
- Mediterranean/DASH
- Many more variations

How do your patients define their diets?

Greek

=

Mediterranean

=

Eat more souvlaki & gyro?
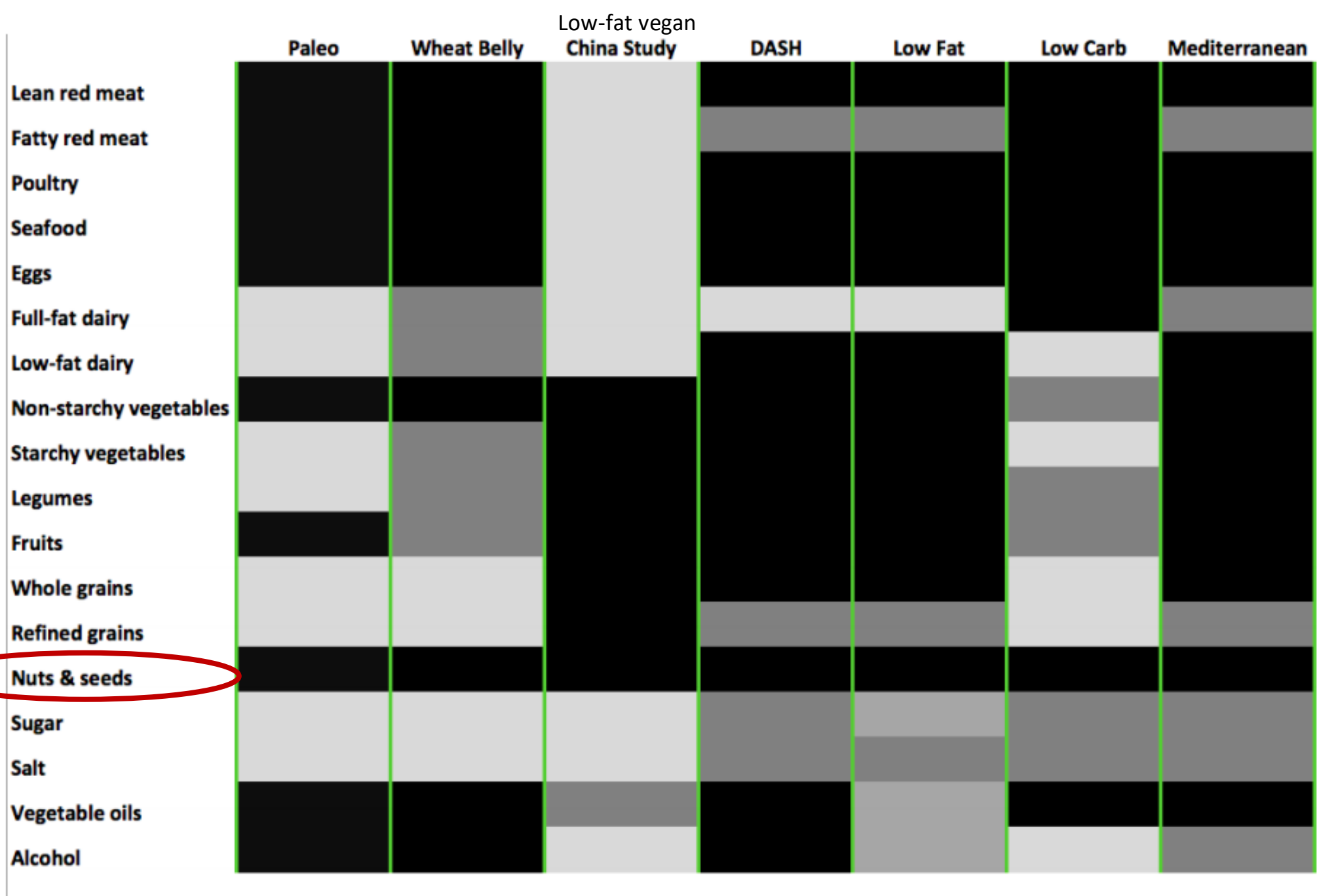
VIA GREEKGATEWAY.COM

GREEK VALENTINE'S DAY

Or eat like this?

Eric B Rimm, ScD, HCHL 2018
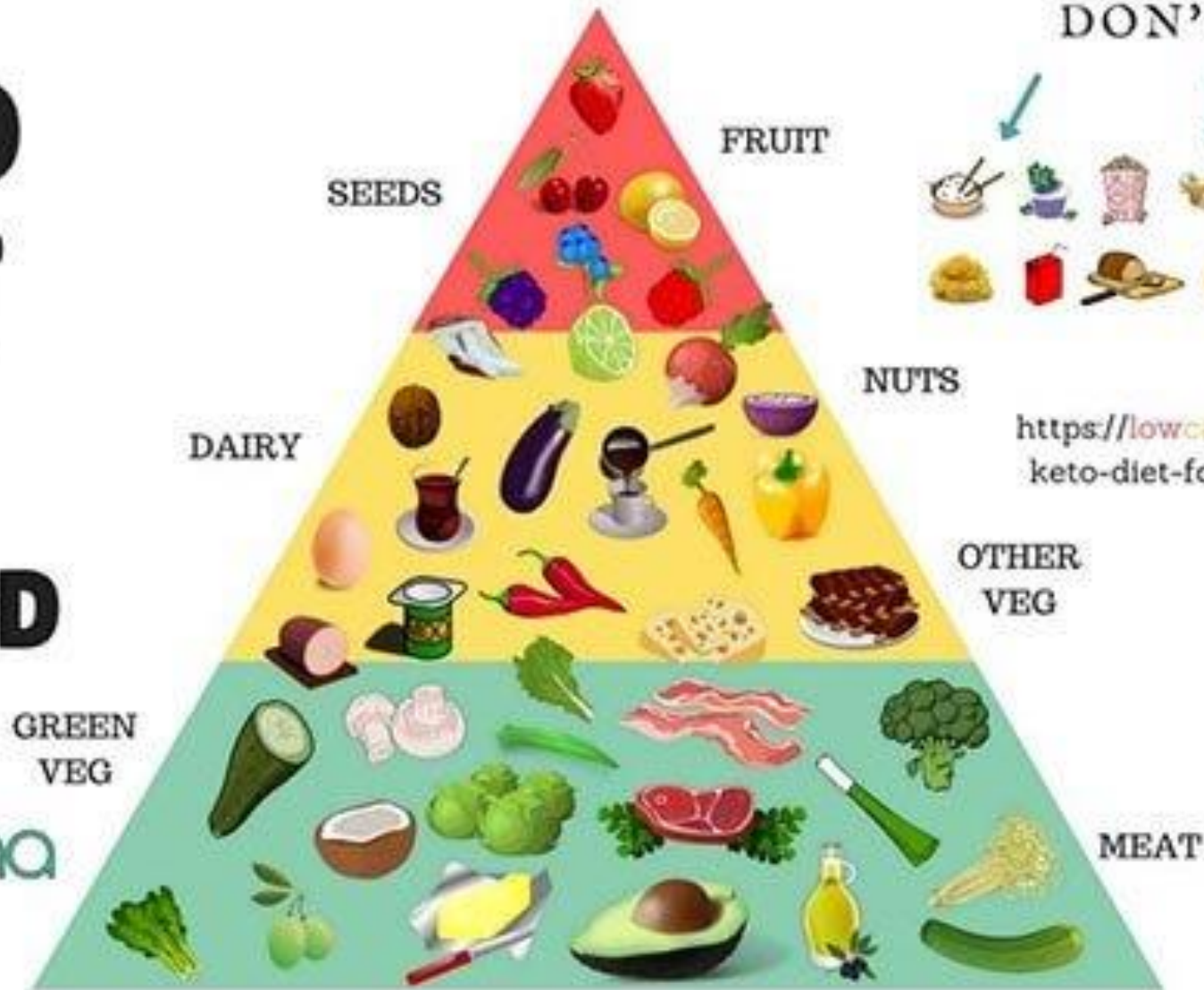
Vegetarian & Vegan Diet Pyramid
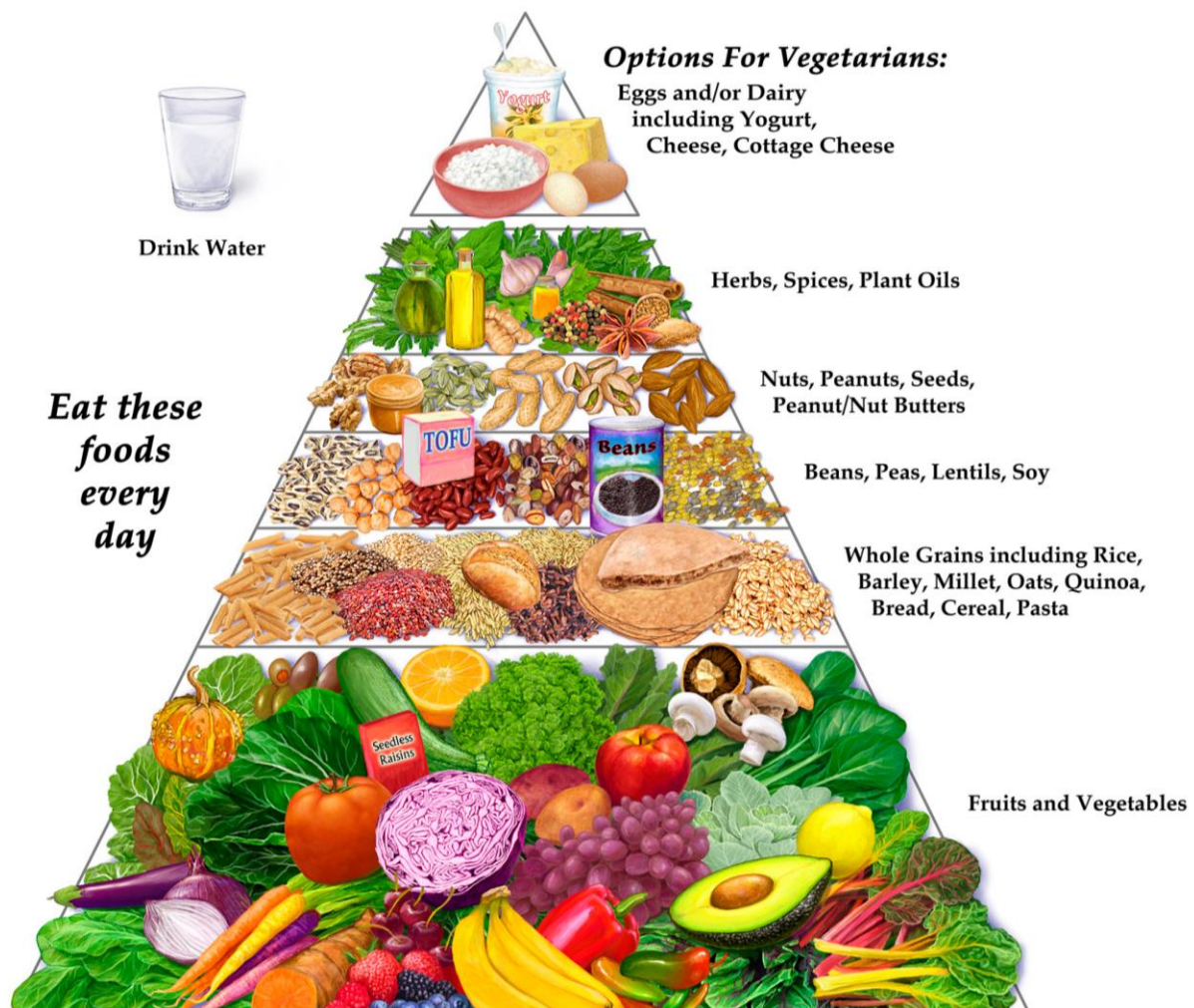
PALEO DIET FOOD LIST
YES, NO & MAYBE OPTIONS

MEDITERRANEAN DIET PYRAMID

RED MEAT AND SWEETS

POULTRY, EGGS CHEESE, YOGURT

FISH AND SEAFOOD

FRUITS&VEGETABLES, GRAINS OLIVE OIL, LEGUMES, NUTS, HERBS, SPICES, ETC.
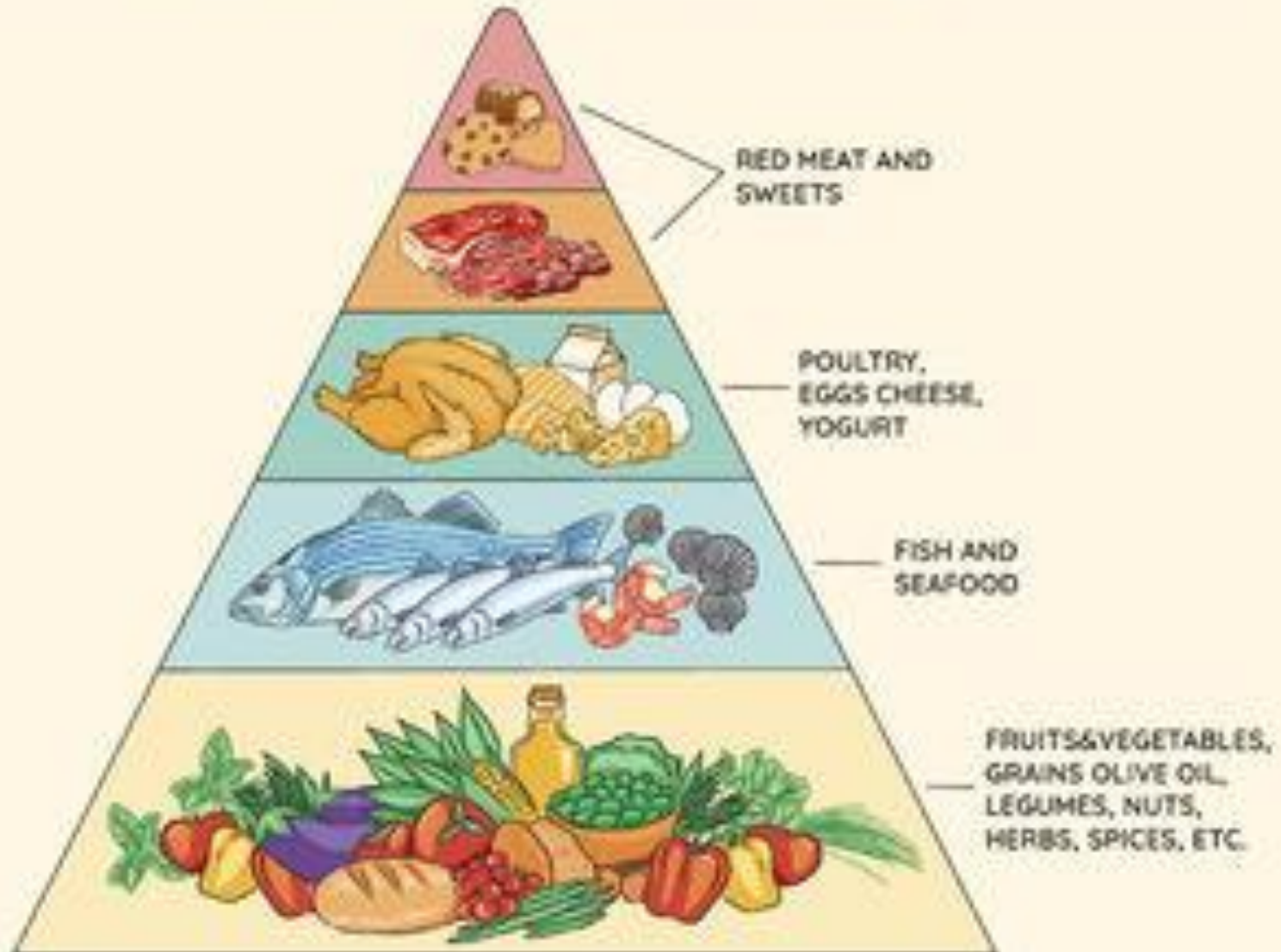
Dietary Restriction = Weight Loss
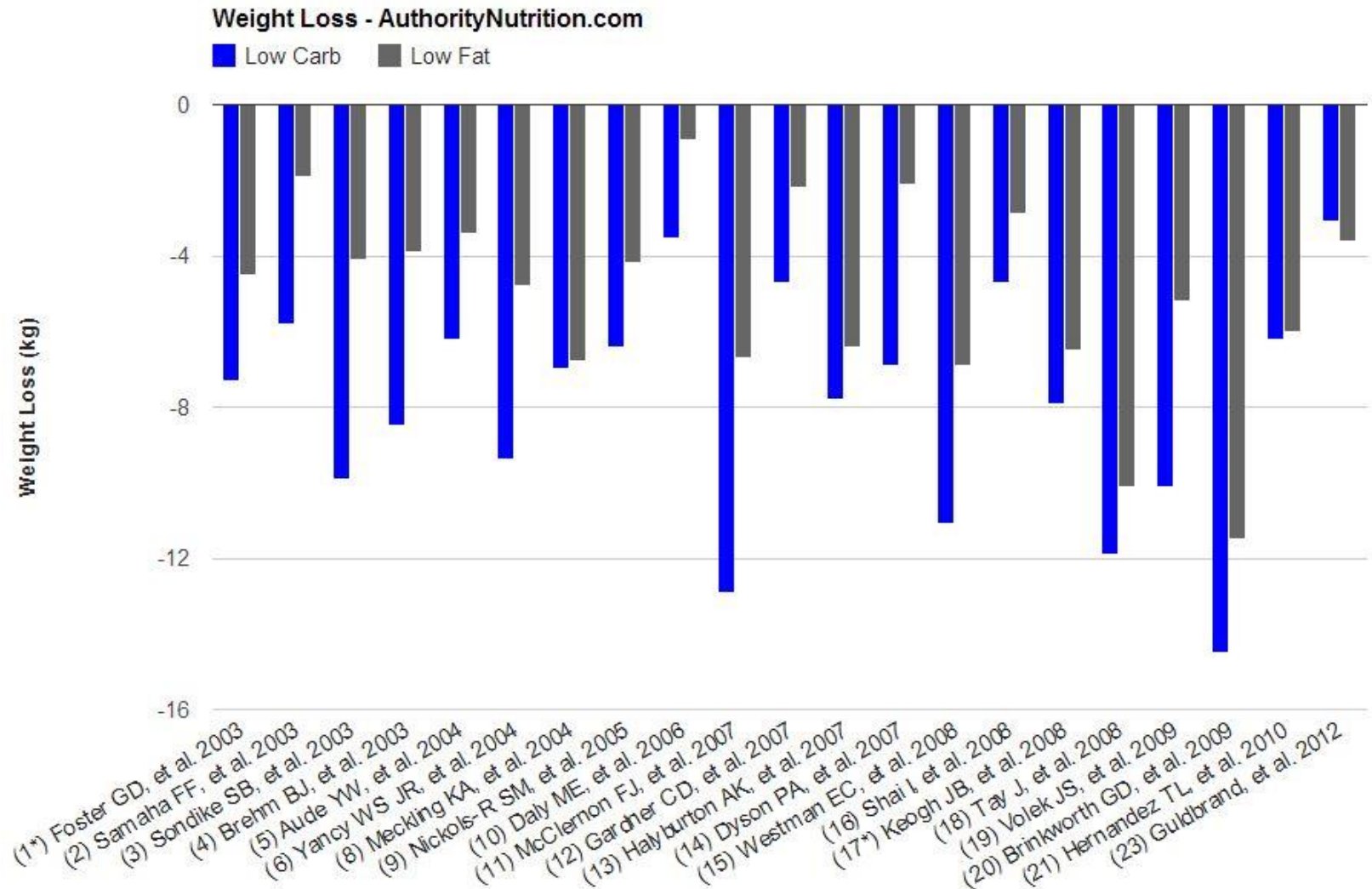
Weight Loss - AuthorityNutrition.com

Low Carb vs. Low Fat

Weight Loss with a Low-Carbohydrate, Mediterranean, or Low-Fat Diet

Iris Shai, R.D., Ph.D., Dan Schwarzfuchs, M.D., Yaakov Henkin, M.D., Danit R. Shahar, R.D., Ph.D.,
Shula Witkow, R.D., M.P.H., Ilana Greenberg, R.D., M.P.H., Rachel Golan, R.D., M.P.H., Drora Fraser, Ph.D.,
Arkady Bolotin, Ph.D., Hilel Vardi, M.Sc., Osnat Tangi-Rozental, B.A., Rachel Zuk-Ramot, R.N.,
Benjamin Sarusi, M.Sc., Dov Brickner, M.D., Ziva Schwartz, M.D., Einat Sheiner, M.D., Rachel Marko, M.Sc.,
Esther Katorza, M.Sc., Joachim Thiery, M.D., Georg Martin Fiedler, M.D., Matthias Blüher, M.D.,
Michael Stumvoll, M.D., and Meir J. Stampfer, M.D., Dr.P.H.,
for the Dietary Intervention Randomized Controlled Trial (DIRECT) Group

322 moderately obese patients, 2 year follow up

P<0.001 for both comparisons with the low-fat diet
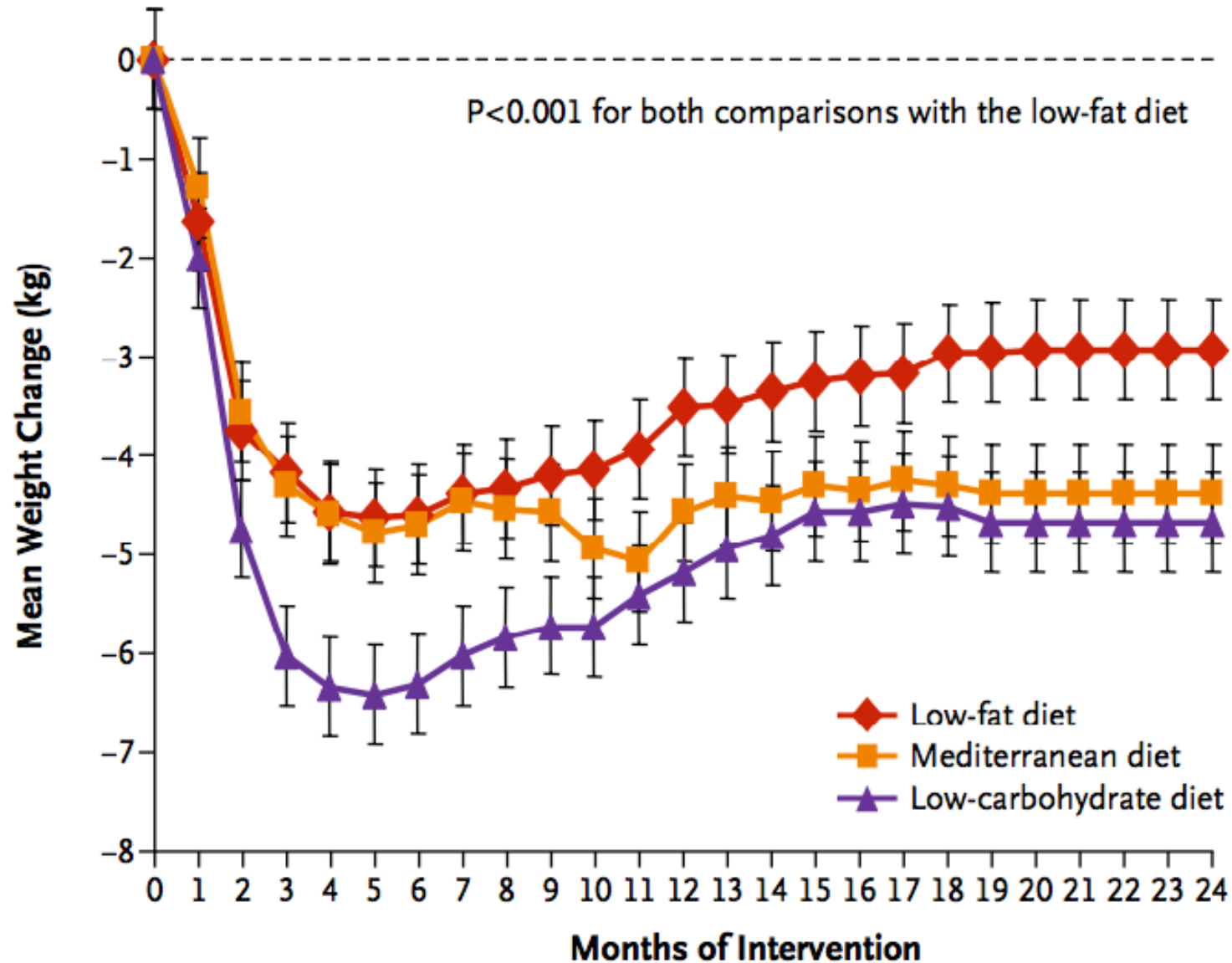
Low fat and Med:
1500 cal for women
1800 cal for men

Low fat: up to 30% fat
Med: up to 35% fat
(olive oil and
nuts/seeds)

Low carb: no caloric
restriction, but
recommended plant-
based protein sources

N Engl J Med 2008; 359:229-241

A HDL Cholesterol; B Triglycerides; C LDL Cholesterol; D Ratio of Total Cholesterol to HDL Cholesterol.
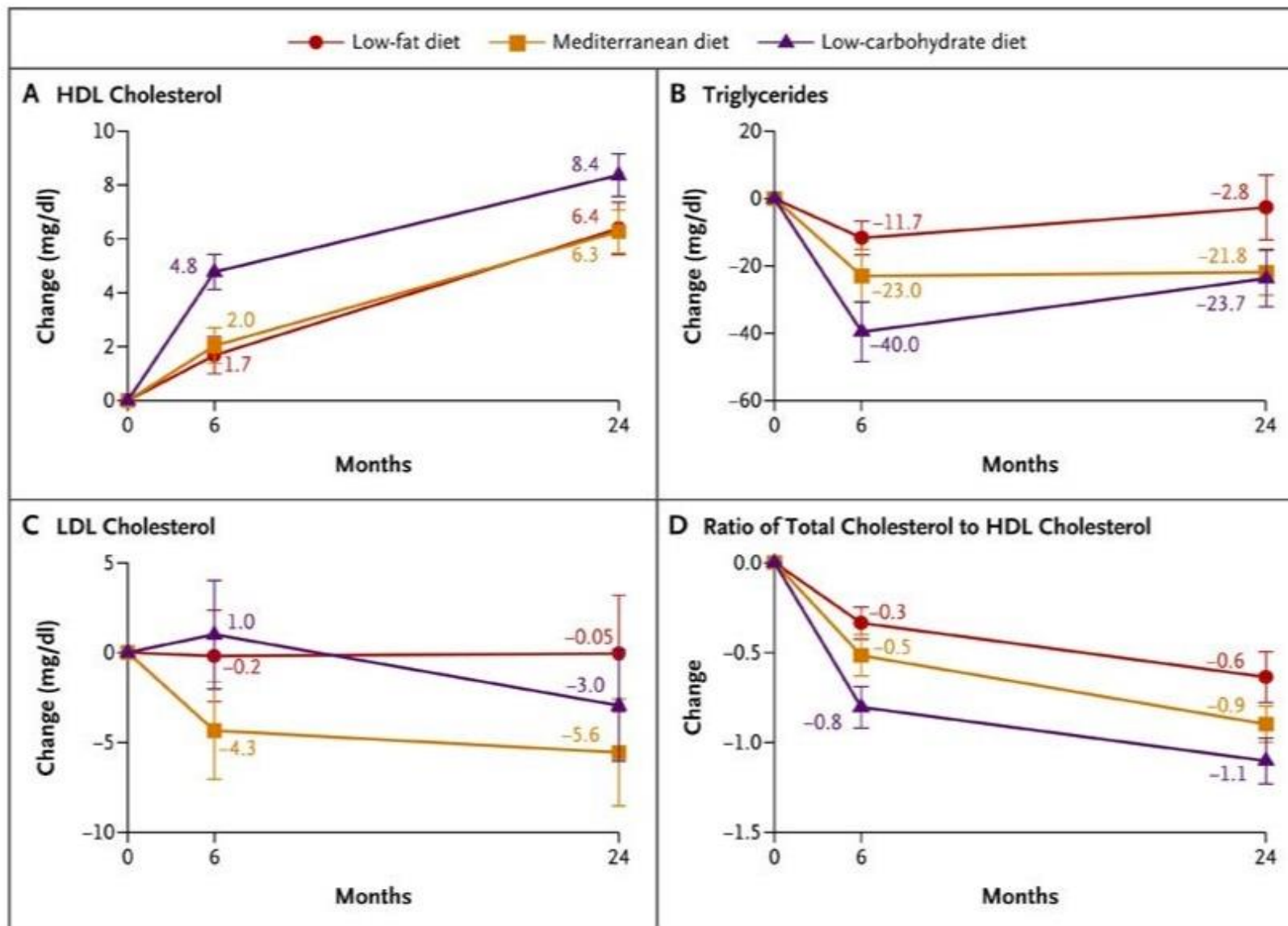
The Three-Month Effects of a Ketogenic Diet on Body Composition, Blood Parameters, and Performance Metrics in CrossFit Trainees: A Pilot Study

Wesley C. Kephart [1,2,†], Coree D. Pledge [3], Paul A. Roberson [1], Petey W. Mumford [1], Matthew A. Romero [1], Christopher B. Mobley [1], Jeffrey S. Martin [1,4], Kaelin C. Young [1,4], Ryan P. Lowery [5], Jacob M. Wilson [5], Kevin W. Huggins [3] and Michael D. Roberts [1,4,*,†]

12 participants, 12 weeks

No plant-based recommendation

Changes in LDL in 12 weeks
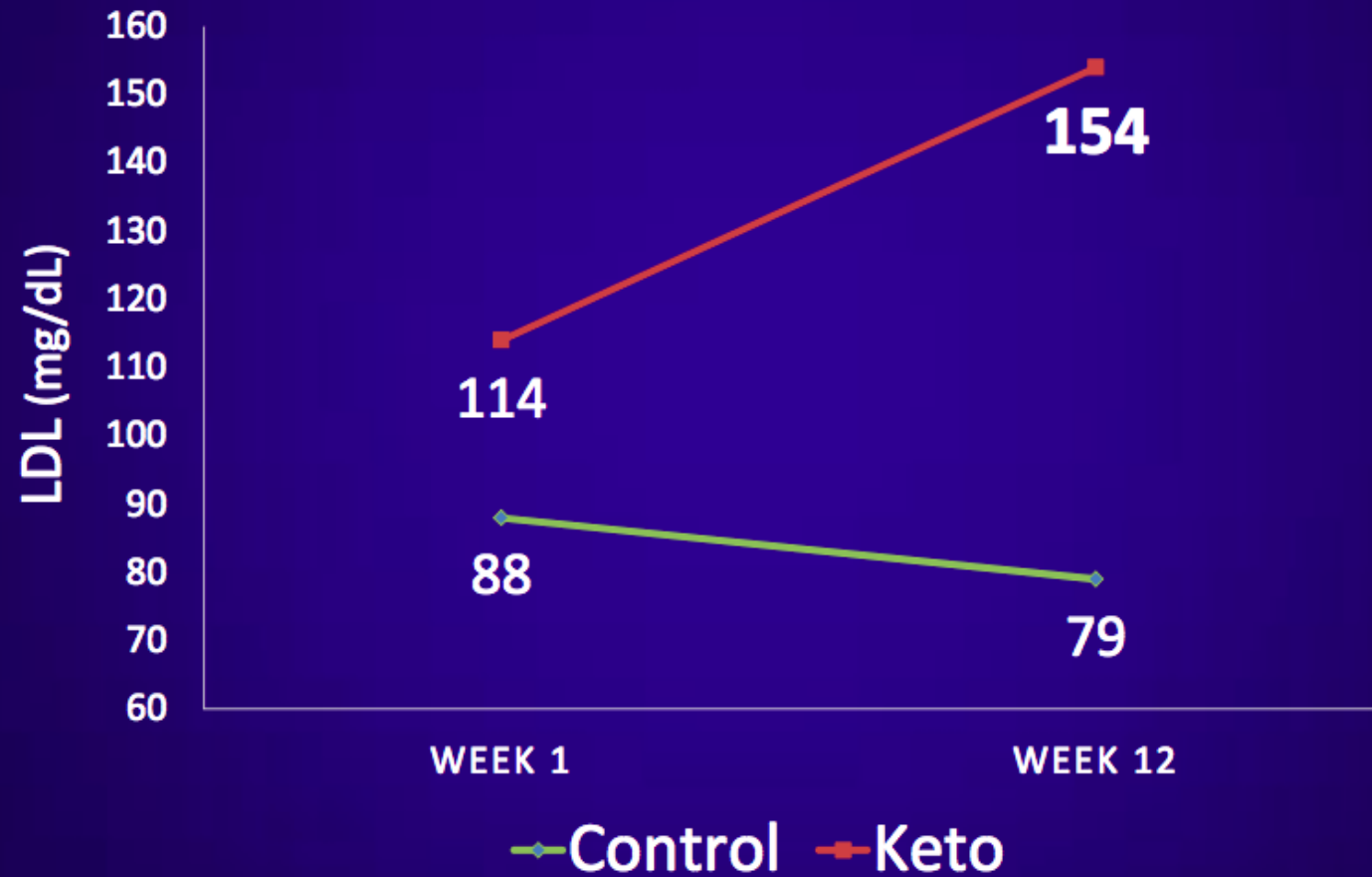
Kephart WC. *Sports*. 2018;6:1.

Vegetarian Dietary Patterns and Mortality in Adventist Health Study 2

Dr. Michael J. Orlich, MD, **Dr. Pramil N Singh, DrPH**, **Dr. Joan Sabaté, MD, DrPH**, **Dr. Karen Jaceldo-Siegl, DrPH**, **Ms. Jing Fan, MS**, **Dr. Synnove Knutsen, MD, PhD**, **Dr. W. Lawrence Beeson, DrPH**, and **Dr. Gary E. Fraser, MBchB, PhD**

Schools of Public Health (Drs Orlich, Singh, Sabaté, Jaceldo-Siegl, Knutsen, Beeson, and Fraser, and Ms Fan) and Medicine (Drs Sabaté, Jaceldo-Siegl, Knutsen, and Fraser), Loma Linda University, Loma Linda, California

73,308 patients followed 4.79 years

Table 4. Associations of Dietary Patterns With All-Cause and Cause-Specific Mortality From a Cox Proportional Hazards Regression Model Among Participants in the Adventist Health Study 2, 2002-2009

Characteristic	Deaths, Hazard Ratio (95% CI)				
	All-Cause	Ischemic Heart Disease	Cardiovascular Disease	Cancer	Other
All (N = 73 308), No. of deaths[a,b]	2560	372	987	706	867
Vegetarian					
Vegan	0.85 (0.73-1.01)	0.90 (0.60-1.33)	0.91 (0.71-1.16)	0.92 (0.68-1.24)	0.74 (0.56-0.99)
Lacto-ovo	0.91 (0.82-1.00)	0.82 (0.62-1.06)	0.90 (0.76-1.06)	0.90 (0.75-1.09)	0.91 (0.77-1.07)
Pesco	0.81 (0.69-0.94)	0.65 (0.43-0.97)	0.80 (0.62-1.03)	0.94 (0.72-1.22)	0.71 (0.54-0.94)
Semi	0.92 (0.75-1.13)	0.92 (0.57-1.51)	0.85 (0.63-1.16)	0.94 (0.66-1.35)	0.99 (0.72-1.36)
Nonvegetarian	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]

Table 4. Associations of Dietary Patterns With All-Cause and Cause-Specific Mortality From a Cox Proportional Hazards Regression Model Among Participants in the Adventist Health Study 2, 2002-2009

Characteristic	Deaths, Hazard Ratio (95% CI)				
	All-Cause	Ischemic Heart Disease	Cardiovascular Disease	Cancer	Other
All (N = 73 308), No. of deaths[a,b]	2560	372	987	706	867
Vegetarian					
Vegan	0.85 (0.73-1.01)	0.90 (0.60-1.33)	0.91 (0.71-1.16)	0.92 (0.68-1.24)	0.74 (0.56-0.99)
Lacto-ovo	0.91 (0.82-1.00)	0.82 (0.62-1.06)	0.90 (0.76-1.06)	0.90 (0.75-1.09)	0.91 (0.77-1.07)
Pesco	0.81 (0.69-0.94)	0.65 (0.43-0.97)	0.80 (0.62-1.03)	0.94 (0.72-1.22)	0.71 (0.54-0.94)
Semi	0.92 (0.75-1.13)	0.92 (0.57-1.51)	0.85 (0.63-1.16)	0.94 (0.66-1.35)	0.99 (0.72-1.36)
Nonvegetarian	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]

Speaking of Fish...

Accumulated Evidence on Fish Consumption and Coronary Heart Disease Mortality
A Meta-Analysis of Cohort Studies

Ka He, MD, ScD; Yiqing Song, MD; Martha L. Daviglus, MD, PhD; Kiang Liu, PhD;
Linda Van Horn, PhD; Alan R. Dyer, PhD; Philip Greenland, MD

222,364 patients over 11.8 years

Fish Intake and Fatal CHD Risk

P for trend=0.03

Relative Risk (y-axis, 0 to 1.4)

Fish Intake (g/day) (x-axis, 0 to 100)
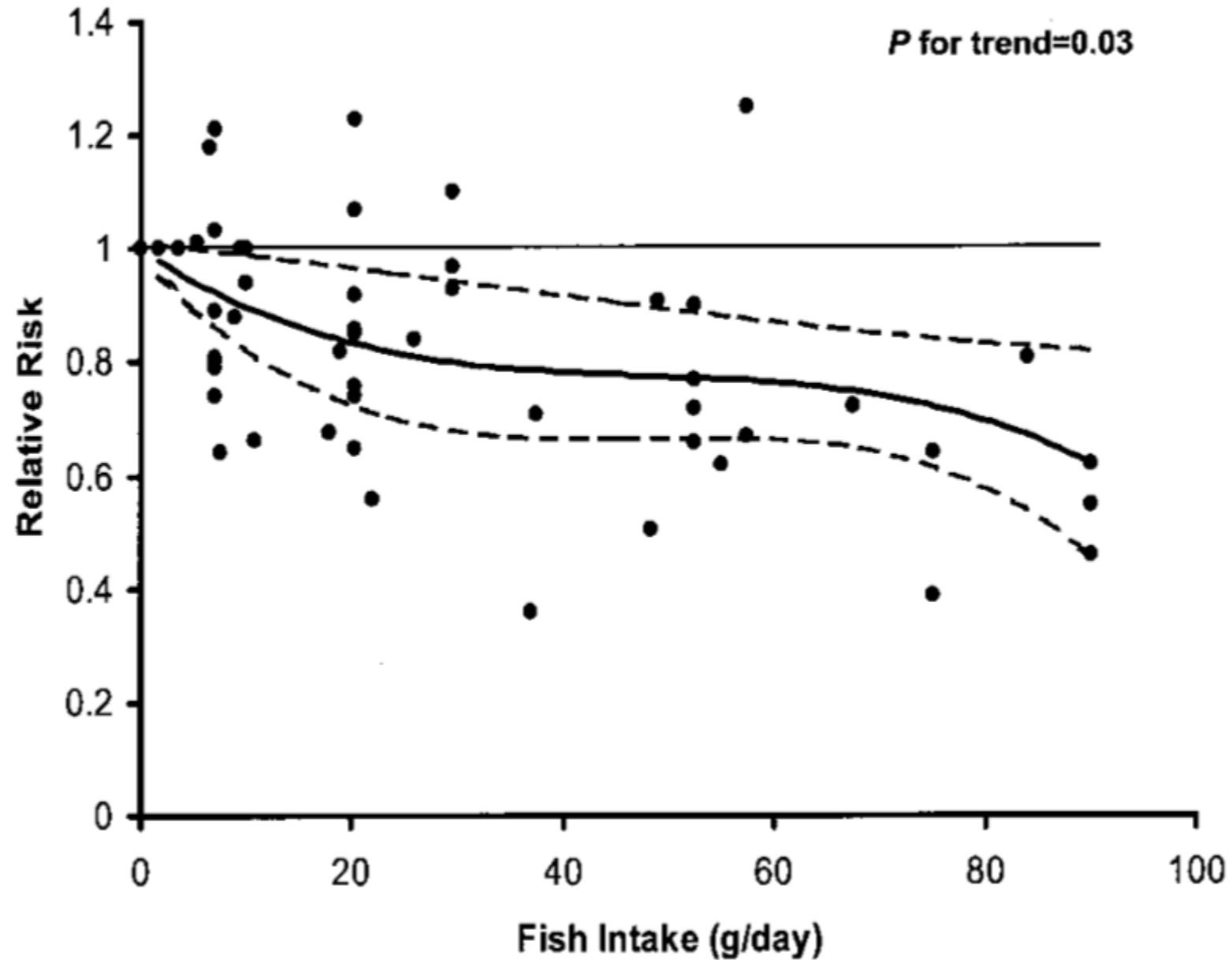
Dietary carbohydrate intake and mortality: a prospective cohort study and meta-analysis

Sara B Seidelmann, Brian Claggett, Susan Cheng, Mir Henglin, Amil Shah, Lyn M Steffen, Aaron R Folsom, Eric B Rimm, Walter C Willett, Scott D Solomon

15,428 patients followed over 25 years

Overall p<0·0001
Non-linearity p=0·0001

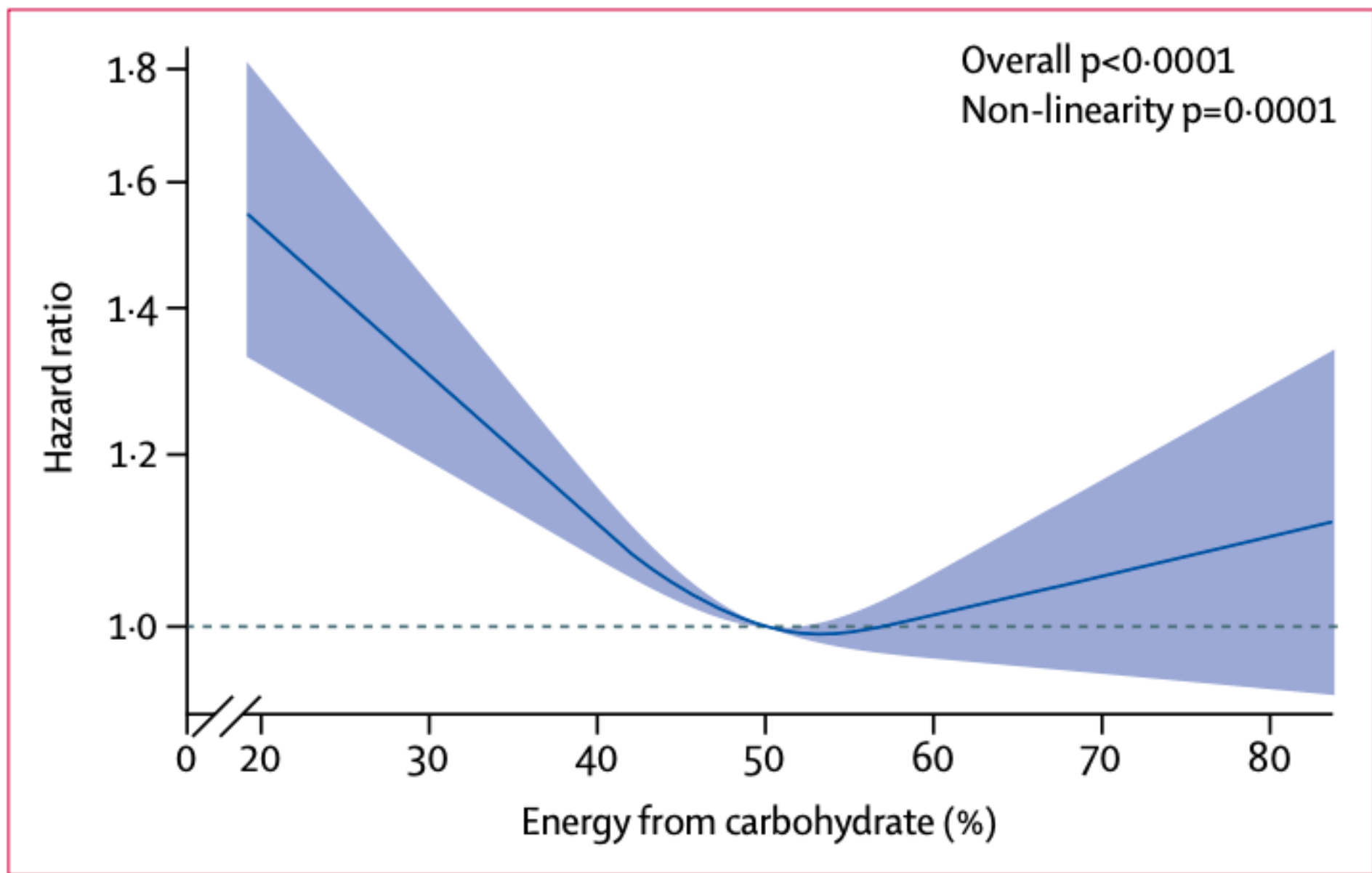| Study	HR (95% CI)
Substitution of carbohydrate for animal protein and fat	
Low-to-moderate carbohydrate consumption Fung et al[9] (HPFS)	1·31 (1·19–1·44)
Low-to-moderate carbohydrate consumption Fung et al[9] (NHS)	1·17 (1·08–1·26)
Low-to-moderate carbohydrate consumption ARIC	1·20 (1·09–1·32)
Low-to-moderate carbohydrate consumption Combined low-to-moderate cohorts	1·22 (1·14–1·31)
Moderate-to-high carbohydrate consumption Nakamura et al[24]	1·00 (0·87–1·19)
Meta-analysis (pooled result) ..	1·18 (1·08–1·29); p<0·0001
Substitution of carbohydrate for plant protein and fat	
Low-to-moderate carbohydrate consumption Fung et al[9] (HPFS)	0·81 (0·74–0·89)
Low-to-moderate carbohydrate consumption Fung et al[9] (NHS)	0·79 (0·73–0·85)
Low-to-moderate carbohydrate consumption ARIC	0·86 (0·75–0·99)
Low-to-moderate carbohydrate consumption Combined low-to-moderate cohorts	0·81 (0·76–0·85)
Moderate-to-high carbohydrate consumption Nakamura et al[24]	0·92 (0·80–1·09)
Meta-analysis (pooled result) ..	0·82 (0·78–0·87); p<0·0001

Exchange ANIMAL protein and fat for carbohydrate, death rate goes UP

Exchange PLANT protein and fat for carbohydrate, death rate goes DOWN

"Both high and low percentages of carbohydrate diets were associated with increased mortality, with minimal risk observed at 50–55% carbohydrate intake. Low carbohydrate dietary patterns favouring animal-derived protein and fat sources, from sources such as lamb, beef, pork, and chicken, were associated with higher mortality, whereas those that favoured plant-derived protein and fat intake, from sources such as vegetables, nuts, peanut butter, and whole-grain breads, were associated with lower mortality, suggesting that **the source of food notably modifies the association between carbohydrate intake and mortality**."

Primary Prevention of Cardiovascular Disease with a Mediterranean Diet

Ramón Estruch, M.D., Ph.D., Emilio Ros, M.D., Ph.D., Jordi Salas-Salvadó, M.D., Ph.D.,
Maria-Isabel Covas, D.Pharm., Ph.D., Dolores Corella, D.Pharm., Ph.D., Fernando Arós, M.D., Ph.D.,
Enrique Gómez-Gracia, M.D., Ph.D., Valentina Ruiz-Gutiérrez, Ph.D., Miquel Fiol, M.D., Ph.D.,
José Lapetra, M.D., Ph.D., Rosa Maria Lamuela-Raventos, D.Pharm., Ph.D., Lluís Serra-Majem, M.D., Ph.D.,
Xavier Pintó, M.D., Ph.D., Josep Basora, M.D., Ph.D., Miguel Angel Muñoz, M.D., Ph.D., José V. Sorlí, M.D., Ph.D.,
José Alfredo Martínez, D.Pharm, M.D., Ph.D., and Miguel Angel Martínez-González, M.D., Ph.D.,
for the PREDIMED Study Investigators*

7,447 patients, trial stopped early at 4.8 years

A Primary End Point (acute myocardial infarction, stroke, or death from cardiovascular causes)

Med diet, EVOO: hazard ratio, 0.70
(95% CI, 0.53–0.91); P=0.009
Med diet, nuts: hazard ratio, 0.70
(95% CI, 0.53–0.94); P=0.02

N Engl J Med 2013; 368:1279-1290
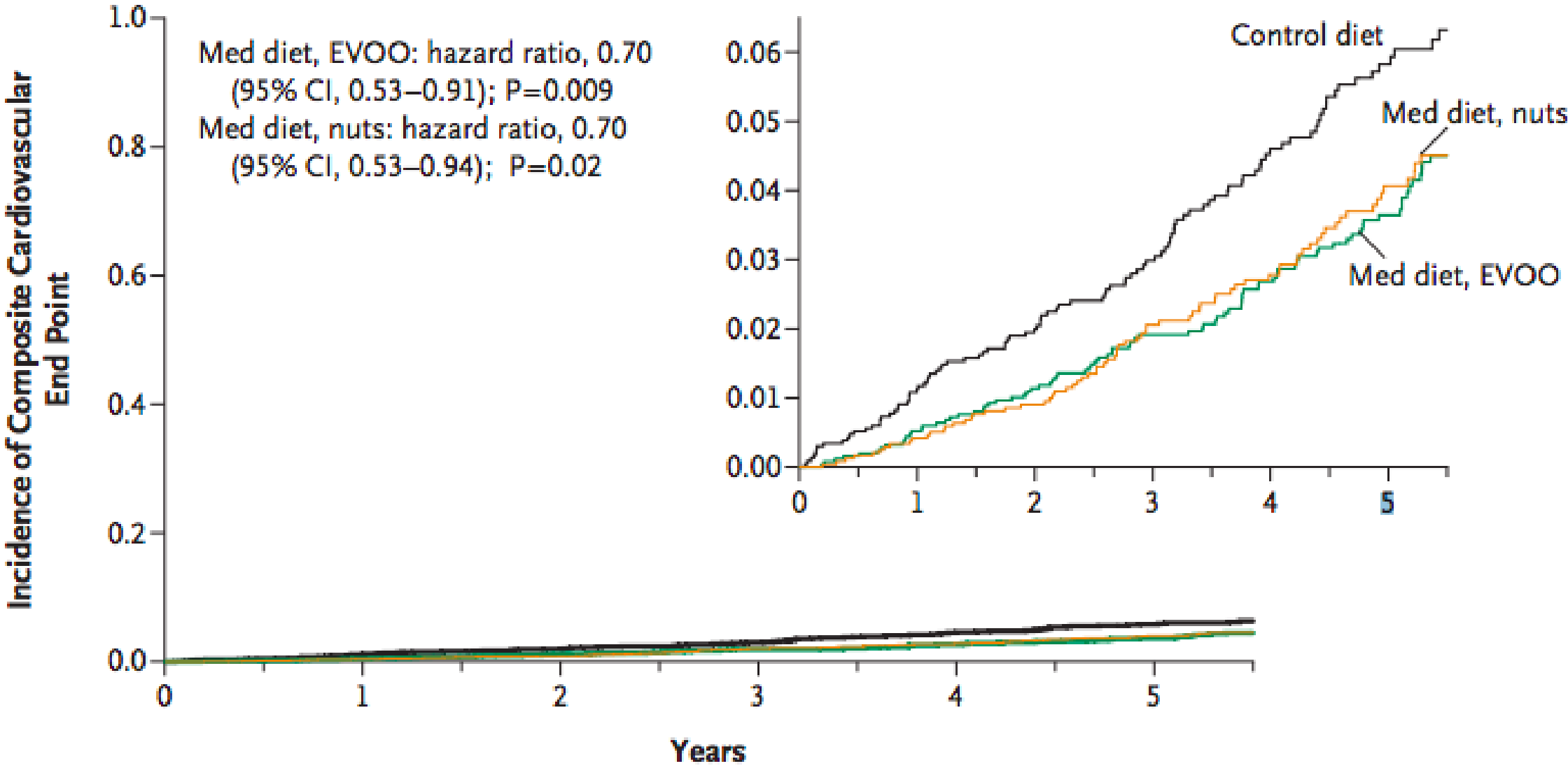
It's Not All Or Nothing!

A provegetarian food pattern and reduction in total mortality in the Prevención con Dieta Mediterránea (PREDIMED) study[1–4]

Miguel A Martínez-González, Ana Sánchez-Tainta, Dolores Corella, Jordi Salas-Salvadó, Emilio Ros, Fernando Arós, Enrique Gómez-Gracia, Miquel Fiol, Rosa M Lamuela-Raventós, Helmut Schröder, Jose Lapetra, Lluis Serra-Majem, Xavier Pinto, Valentina Ruiz-Gutierrez, and Ramon Estruch for the PREDIMED Group
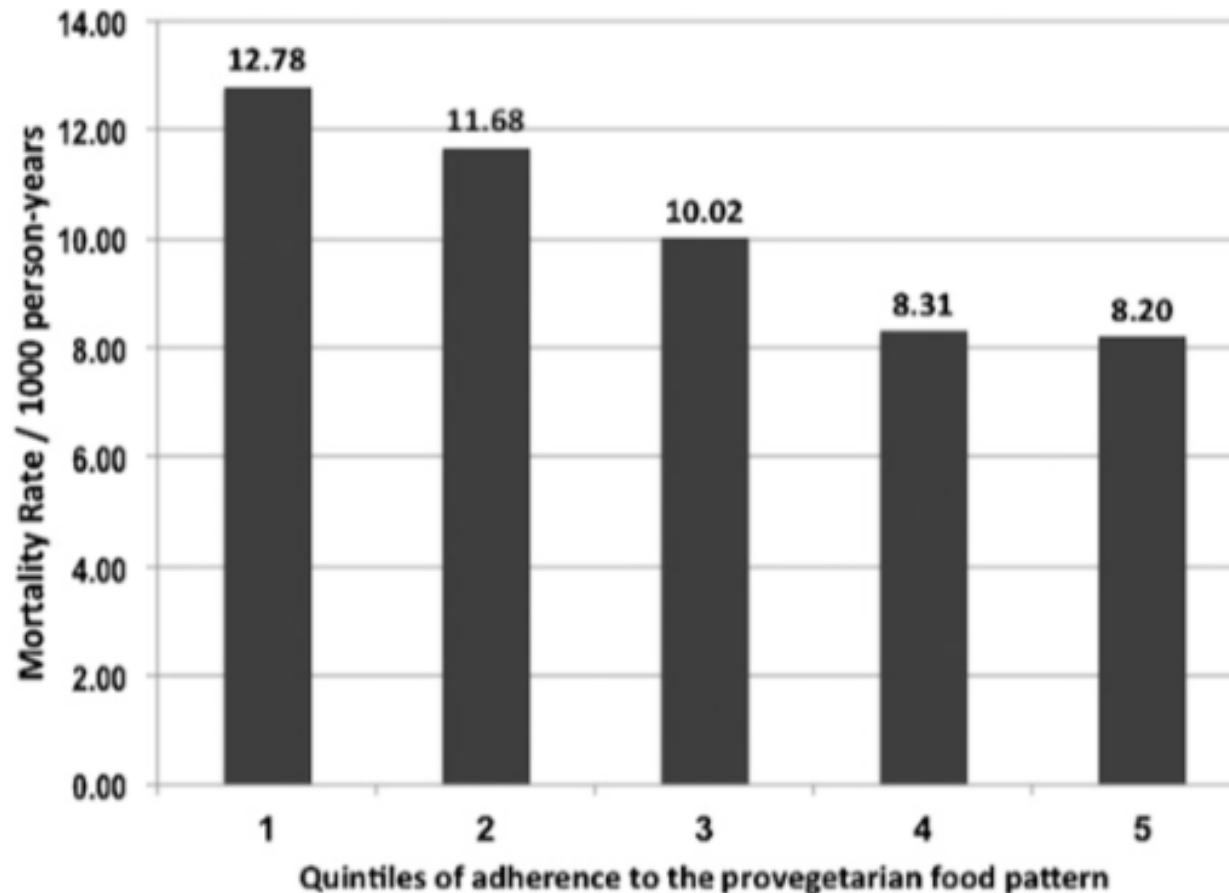
- 373,803 patients followed 5 years

FIGURE 1. Absolute risk of death across baseline quintiles of the provegetarian food pattern: the Prevención con Dieta Mediterránea trial, 2003–2010. Quintile score limits were as follows for quintiles 1–5: <33, 33–35, 36–37, 38–40, >40, respectively.

74,886 patients followed over 20 years

Mediterranean diet and incidence and mortality of coronary heart disease and stroke in women

Teresa T. Fung, ScD, Kathryn M. Rexrode, MD, Christos S. Mantzoros, MD, JoAnn E. Manson, MD, DrPH, Walter C. Willett, MD, DrPH, and Frank B. Hu, MD, PhD

Simmons College, Boston, MA (TTF), Department of Nutrition, Harvard School of Public Health, Boston, MA (TTF, WCW, FBH), Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA (KMR, WCW, FBH, JEM), Department of Epidemiology, Harvard School of Public Health, Boston, MA (JEM, WCW, FBH), Department of Medicine, Harvard Medical School, Boston, MA (CSM), Division of Preventive Medicine, Brigham and Women's Hospital, HMS, Boston, MA (JEM)

Quintiles of aMed score

Death (p trend<0.0001)
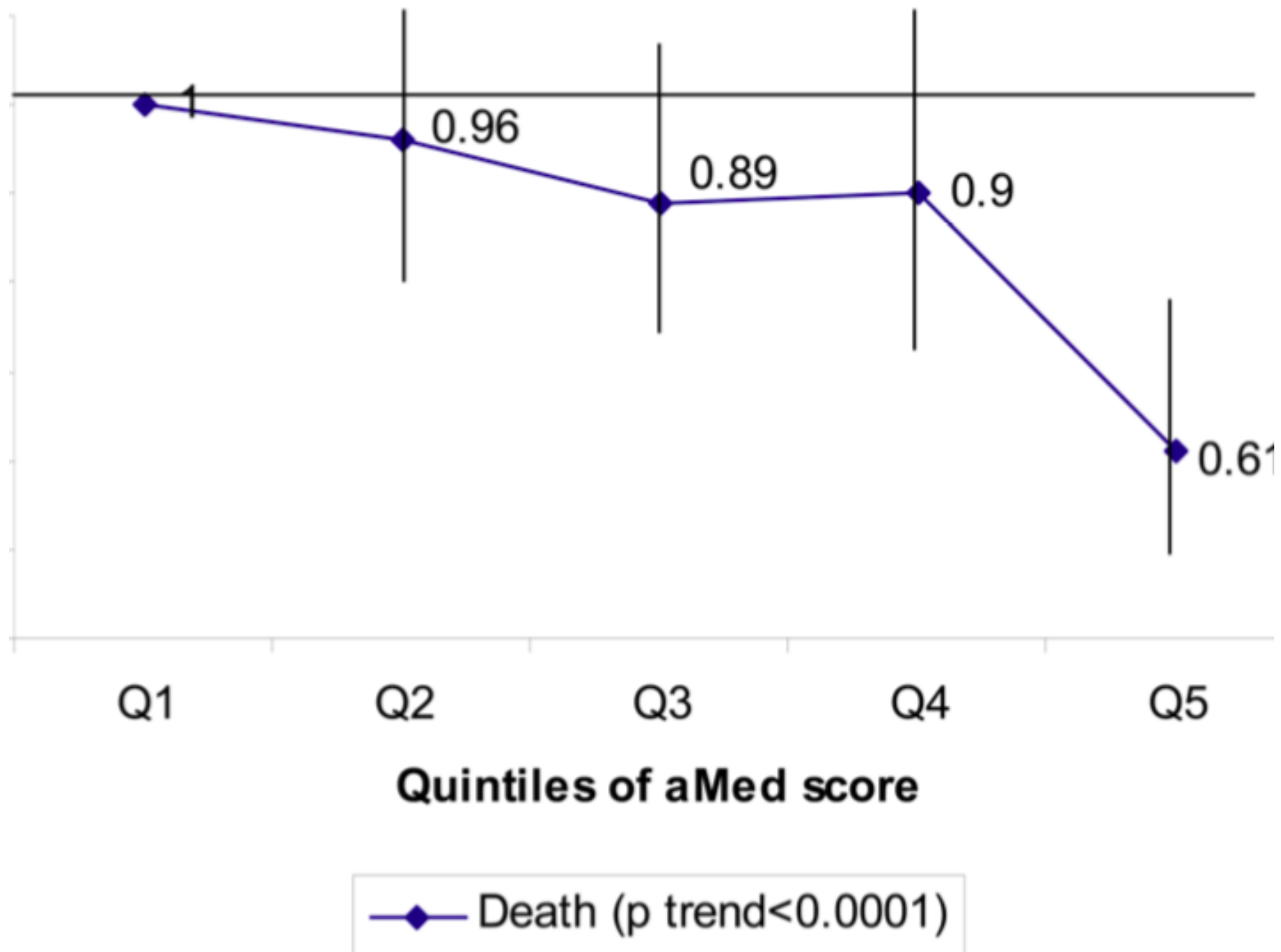
Lyon Heart Study:

605 patients enrolled in a rolling fashion 1988-1992, stopped early in 1993

Circulation

American Heart Association®

Mediterranean Diet, Traditional Risk Factors, and the Rate of Cardiovascular Complications After Myocardial Infarction: Final Report of the Lyon Diet Heart Study
Michel de Lorgeril, Patricia Salen, Jean-Louis Martin, Isabelle Monjaud, Jacques Delaye and Nicole Mamelle

Circulation. 1999;99:779-785

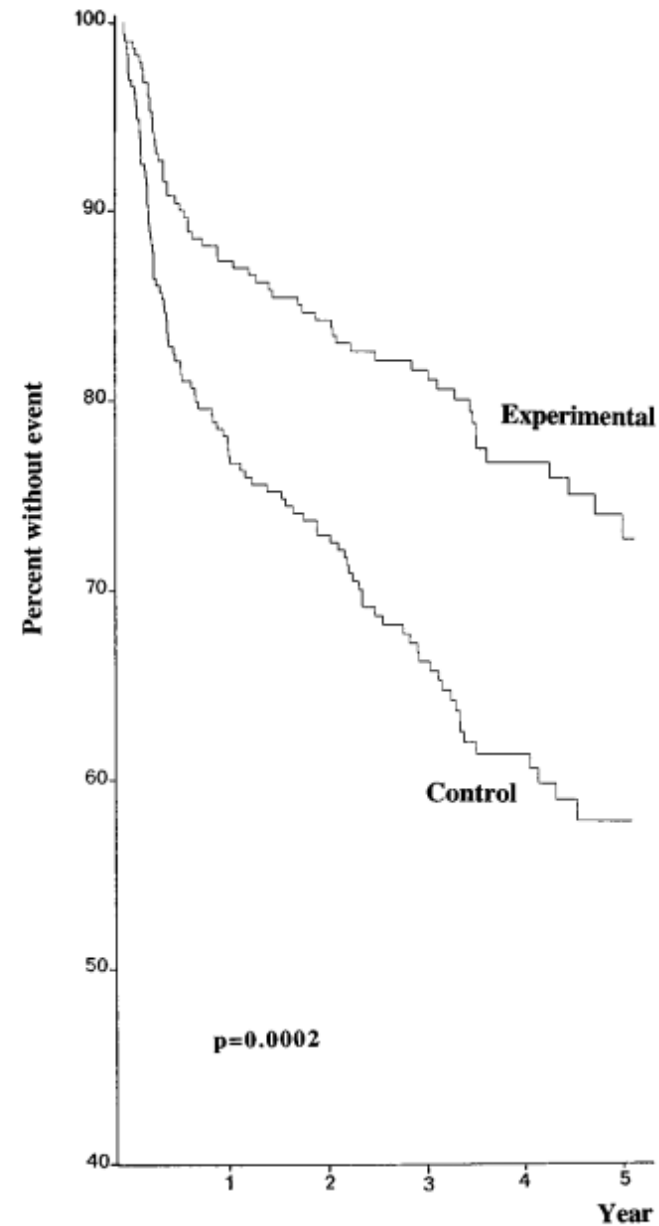# Survival With Mediterranean Diet after MI

Figure 3. Cumulative survival without nonfatal infarction, without major secondary end points, and without minor secondary end points (CO 3).

Effect of an Indo-Mediterranean diet on progression of coronary artery disease in high risk patients (Indo-Mediterranean Diet Heart Study): a randomised single-blind trial

Ram B Singh, Gal Dubnov, Mohammad A Niaz, Saraswati Ghosh, Reema Singh, Shanti S Rastogi, Orly Manor, Daniel Pella, Elliot M Berry

1000 patients followed for 2 years
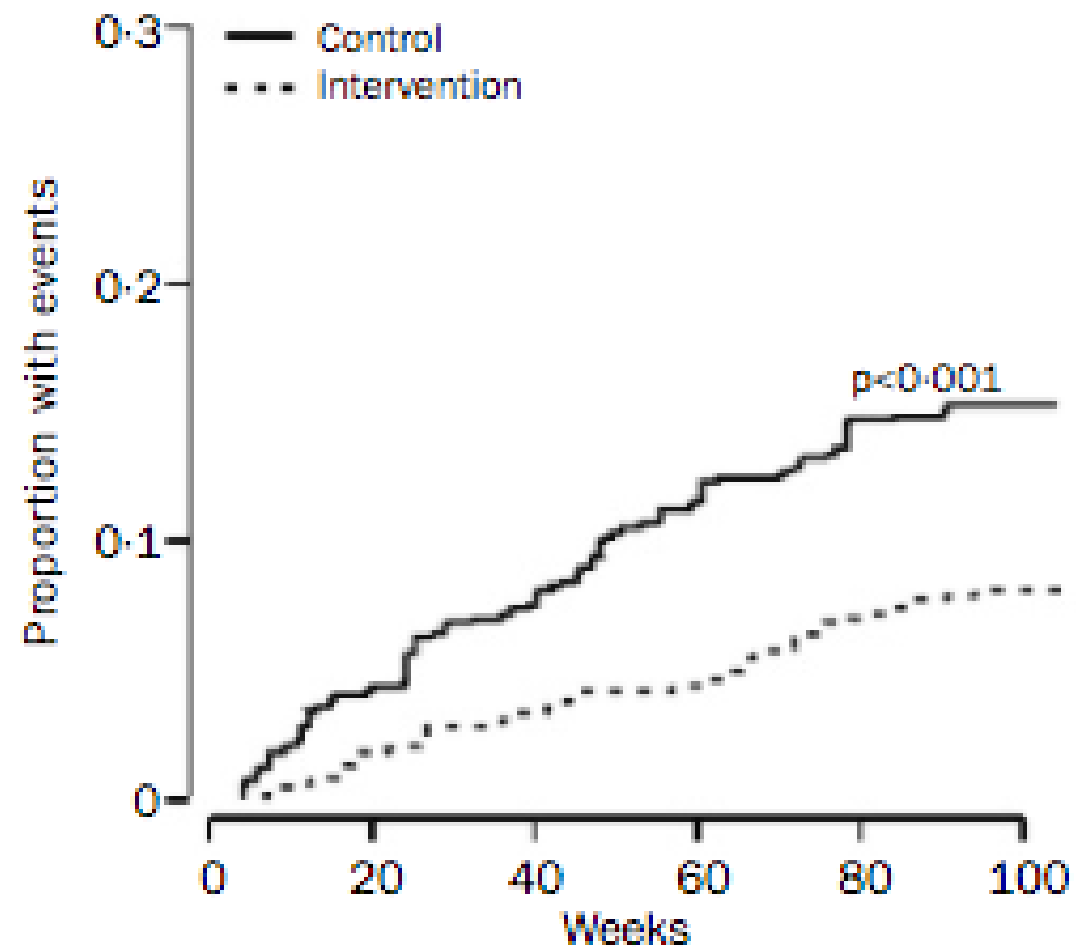
Figure 2: **Kaplan-Meier cumulative event curves**
Proportion of patients with fatal myocardial infarction, non-fatal myocardial infarction, or sudden cardiac death.

Singh RB et al,Indo-Mediterranean DietHeart Study, 2002

- **MAXIMIZE**:
    - Eating "close to the ground"
    - Heart healthy fats (nuts, seeds, olive oil, avocado, fatty fish)
    - Plant-based sources of protein
    - Treating meat as a treat/side-dish
    - Whole grains, legumes
    - Eating "the rainbow"

- **MINIMIZE**:
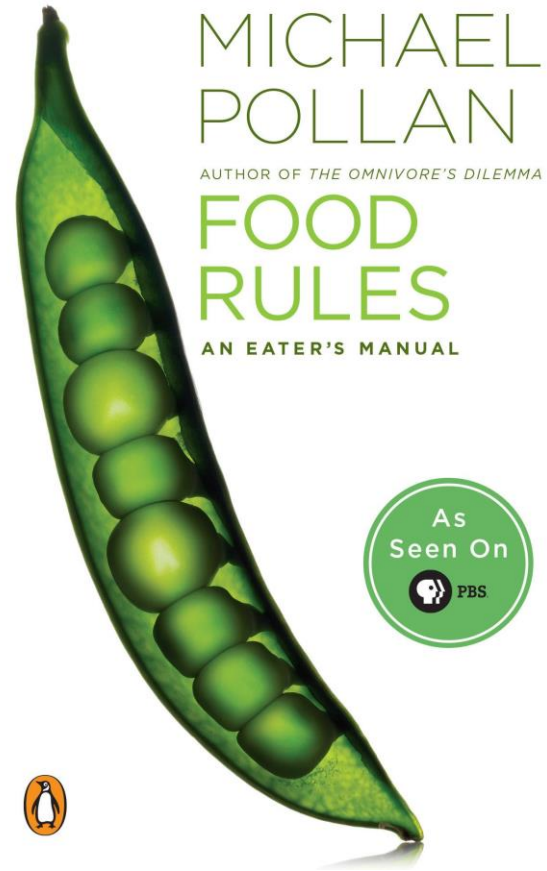   - Processed foods
    - Saturated fats
    - Animal protein (especially red and processed meat)
    - Sugar sweetened beverages
    - Refined carbohydrates
    - Eating "beige food"

WHOLE FOOD, PLANT-STRONG DIET!

Eat Food.

Not Too Much.

Mostly Plants.

Case Study

- N.J., 49 yo AA female
- 5'7", 265 lbs
- Past Medical History
  - Bilateral PEs
  - Anemia (heavy menses)
  - DVTs flight from Florida
  - HTN
  - Diabetes
  - Hypercholesterolemia
  - Meniscus (right)
  - Fibroids
  - Cold sore x 20 years
  - Varicella

Exam: visceral adiposity, acanthosis nigricans, MSQ 69

MEDICATIONS/SUPPLEMENTS

Diltiazem - 120mg ER (once a day)
Losartan 100mg/ HCTZ 25mg (once a day)
Eliquis 2.5 mg (twice day)
MVI
Vitamin D 10,000 ius
Lysine 500 mg qday
Probiotic

Labs 12/21/2021:

Chol 251
LDL 161
HDL 68
Trig 102
Fasting glucose 127
ALT 39
HgbA1C 6.0

*Did not want pharmaceutical intervention

Hunger: Very

Thoughts After Eating: Not the best meal option and I need to eat more veggies.

Category: Meal

– Starbucks Grilled Cheese sandwich. My Mom went to Starbucks so I asked for a grilled cheese as I did not have anything prepared to eat.

Hunger: Very

Thoughts After Eating: felt full but wondered how long I would stay full after the meal.

Category: Meal

Hunger: Very

Thoughts After Eating: felt satisfied but started to crave wanting something sweet.

Category: Meal

two large eggs with cheddar cheese. Slice of seven grain toast with pat of

Hunger: Very

Hunger: Very

Thoughts After Eating: could have made better choices but did not have a meal prepared so resulted to eating out.

Category: Meal

Hunger: Very

Thoughts After Eating: I know that it was a quick option because I did not have anything ready that I really wanted to eat. Felt dissapointed.

Dietary and Exercise Intervention

Whole food, plant-predominant diet

Minimize fast food

Meal prep on Sundays

2 days/week Pilates

1 day a week of 30 minutes aerobic activity

Post daily food pics

Time restricted eating 11:30 AM - 7:00 PM

Thoughts After Eating: Meal was good but think I should add more veggies next time

Category: Meal

— Salmon nuggets, onions and spinach. Felt full after.
Jan 8, 1:00 pm

Katerina – This is outstanding! Yes, feel free to add more veggies!!
Jan 8, 3:48 pm

Thoughts After Eating: Felt full but not overly full. No other immediate thoughts.

Category: Meal

~~██████~~ – Roasted Broccoli and Wild Rice. I added a little low sodium soy sauce yo amp up the taste a bit.
Jan 14, 11:50 am

Katerina – Other ways to amp up the taste: black pepper, turmeric, mustard seed powder, and garlic powder
Jan 14, 3:20 pm

Thoughts After Eating: Waited too long to eat due to several back to back meetings at work. Glad I had everything already in the fridge so I could assemble a quick meal.

Category: Meal

ta – Brown tomato rice, spinach and chickpeas on a chickpea tortilla

Bean chili with tofu crumbs, roasted kale and onions and brown rice
Jan 20, 6:45 pm

Katerina – When something tastes so-so I usually add garlic powder! 😂
Jan 20, 8:41 pm

Great idea! Will try adding
Jan 20, 9:06 pm

Thoughts After Eating: Started to get hungry about an hour after the beans. Im now full. I felt like I had enough variety today with meals.

Category: Meal

— Sardines boneless and skinless in EVOO. Spinach salad with crispy onions and radish roots with lemons tumeric dressing.
Jan 11, 6:34 pm

Katerina – This is incredible! Your food variety and quality has SOARED in the last week!!
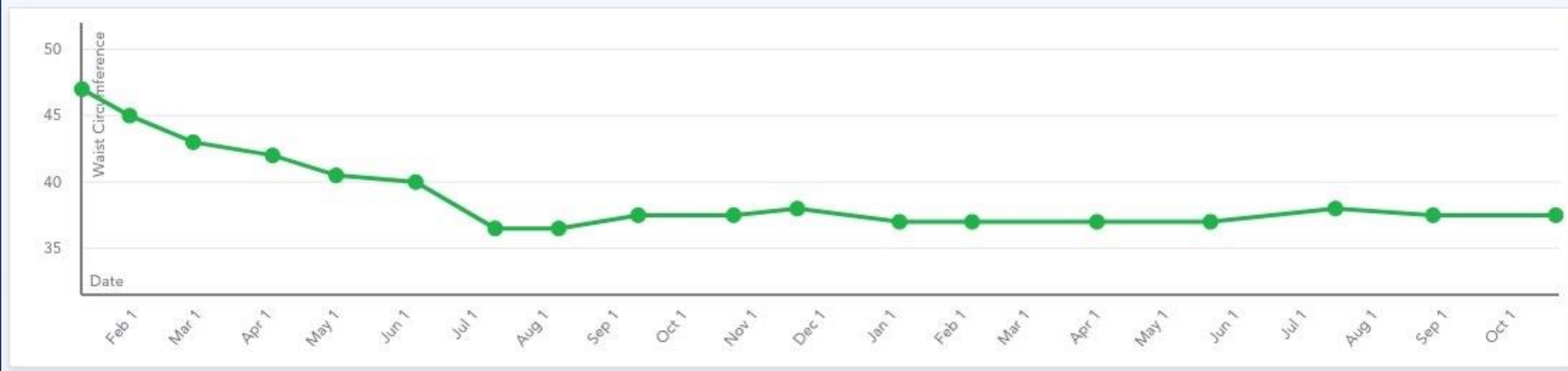Jan 12, 2:10 pm

Thoughts After Eating: Grabbed a palm full of nuts to eat until I can eat later. Due to today being a day full of back to back meetings, I had to delay eating after I ate the oatmeal earlier today
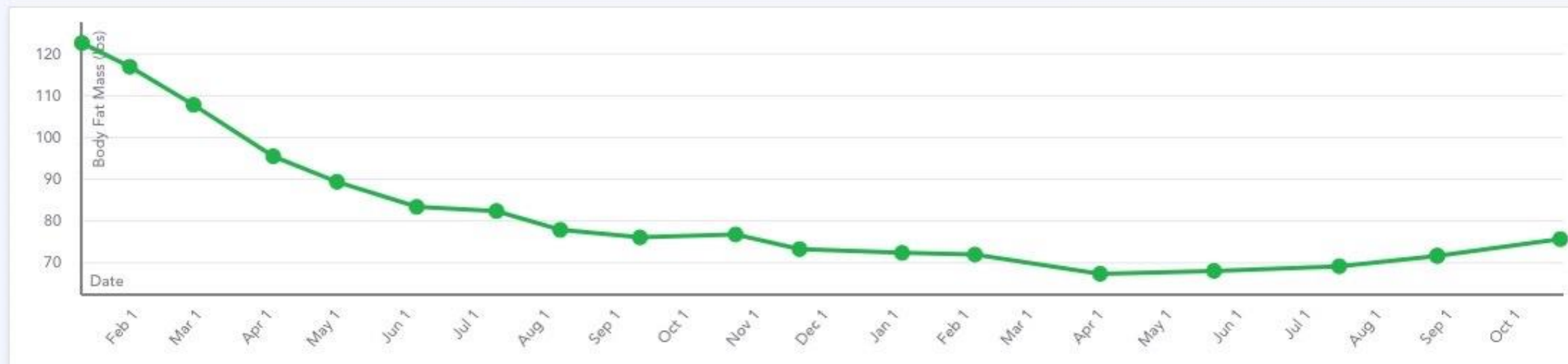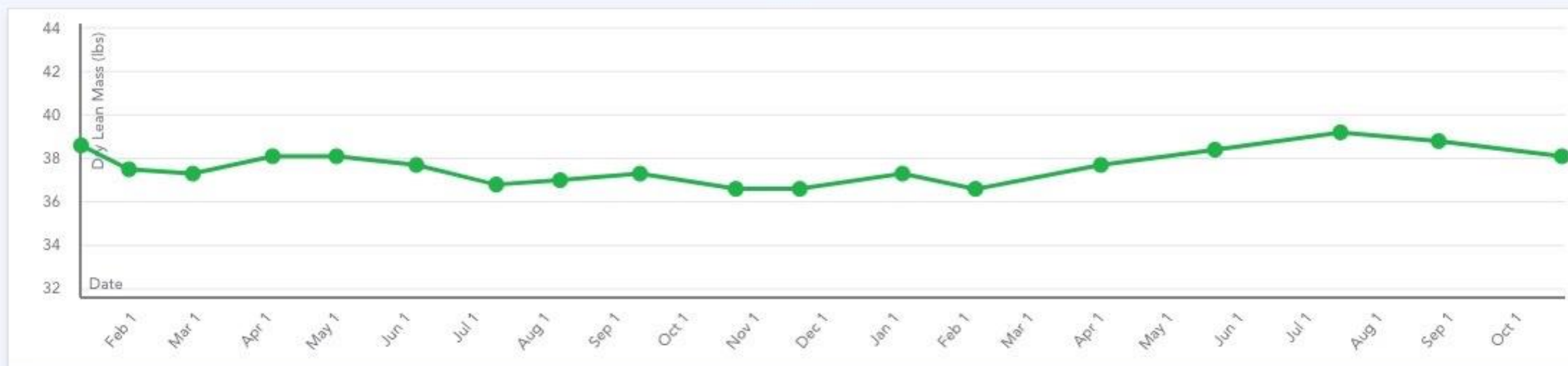
Waist Circumference

Hip circumference

Body Fat Mass (lbs)

Dry Lean Mass (lbs)

Diet and Lifestyle changes only
No statins/metformin

Labs 12/21/2021:

Labs 9/23/23:

Chol 251
LDL 161
HDL 68
Trig 102
Fasting glucose 127
ALT 39
HgbA1C 6.0

Chol 196
LDL 106
HDL 74
Trig 70
Fasting glucose 106
ALT 15
HgbA1C 5.1

EXAM

- Noticeably thinner
- Gained 1 ¾ inches in height!
- Acanthosis nigricans gone
- MSQ 69 -> 5

Personally:
I Practiced
what
I Preached

From this...

To this

"OUR FOOD SHOULD BE OUR MEDICINE AND OUR MEDICINE SHOULD BE OUR FOOD"
~ HIPPOCRATES

https://michigantoday.umich.edu/wp-content/uploads/sites/89/2017/06/hippocrates-health-yourself-6-17.jpg
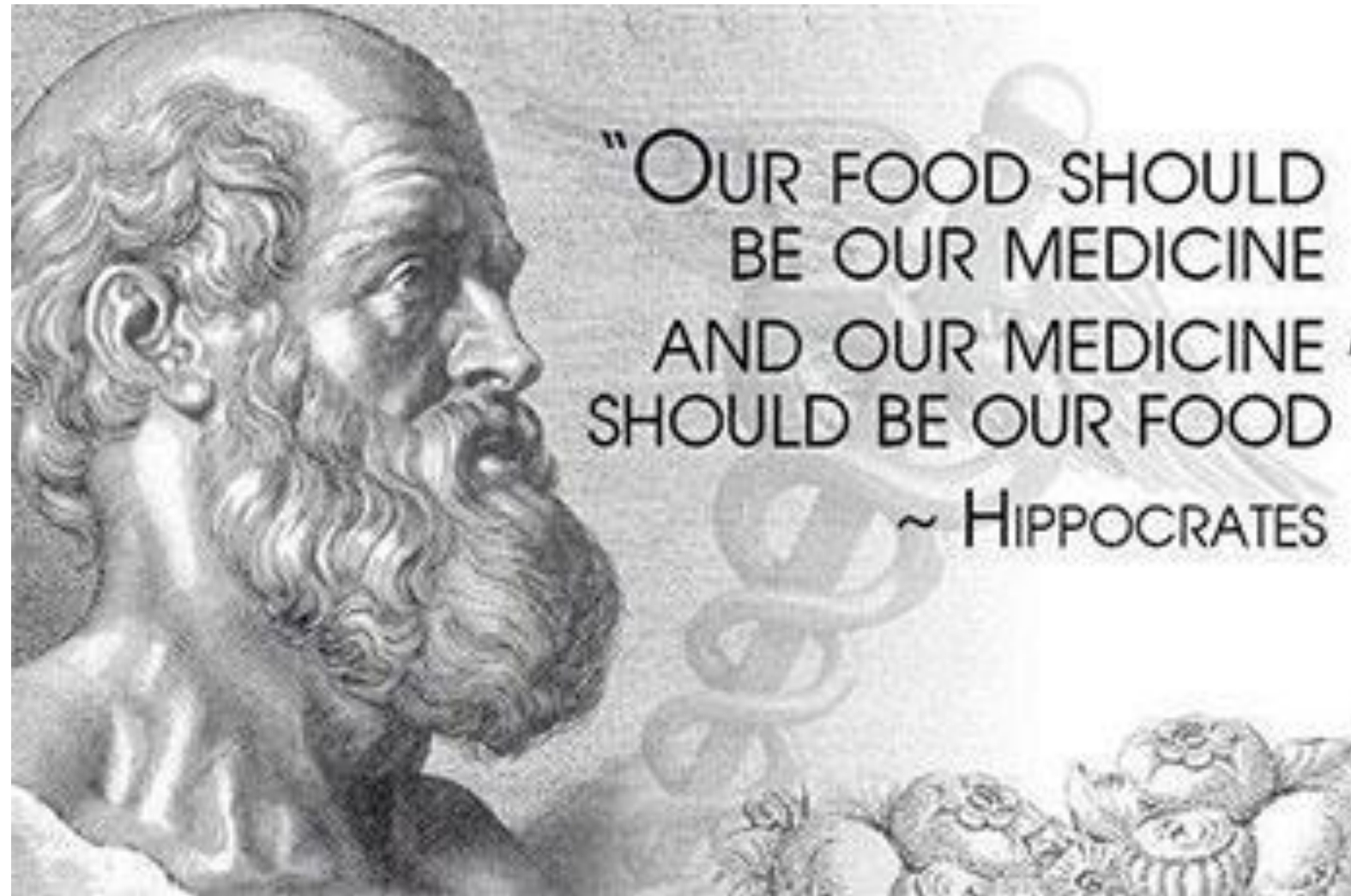
Someone once told me that doctors know only how to cure not prevent. And also they only can make money if you are sick not healthy!!

1w Like Reply   👍 1

My sister is a physician, and she shared with me that doctors receive training on diseases, tests, equipment, treatments, the systems of the body, surgery, etc... but nutrition is a few hours in one class. It is not that doctors are evil; it is just not the current focus of their medical training. It is going against all their training and knowledge of "best practice" to vary from current treatment protocols. She also said, though, who can argue with heathy eating?

1w Like Reply

Thank You!

Kathy Tsapos Parmele, MD, IFMCP, FACEP

kathyparmele@gmail.com

www.CHEFCoachMD.com