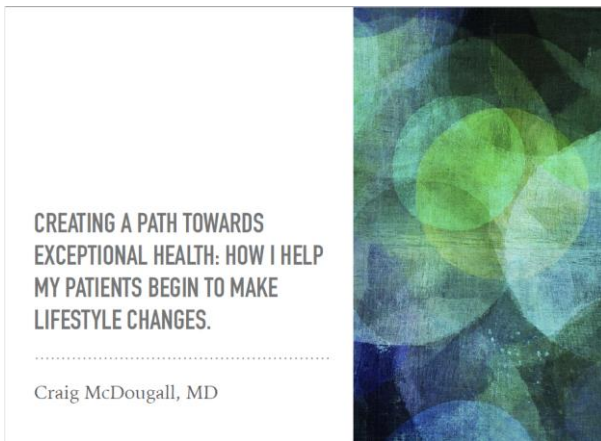


1



Craig McDougall MD reports no relationship with industry to disclose relative to this CME activity

2

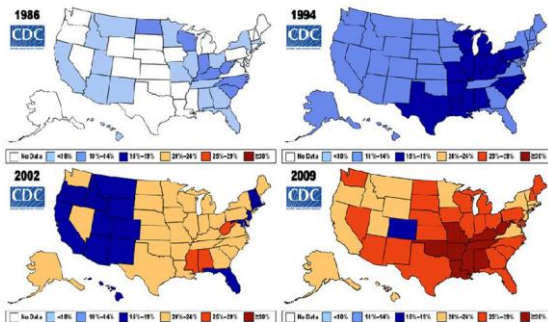
GOALS

- ▶ Recognize the economic impact of poor lifestyle choices
- ▶ Identify the commonalities about different weight loss techniques
- ▶ Understand how someone can eat more and lose weight
- ▶ Discuss long term health benefits of eating more whole plant foods

3



4



9

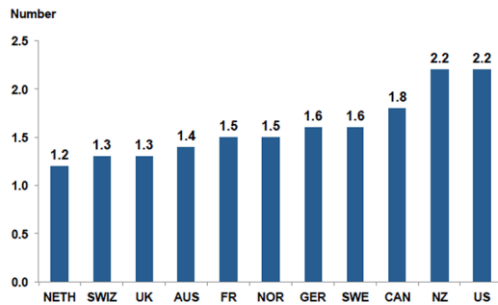
Exhibit 7. Prices for Hospital and Physician Services, Pharmaceuticals, and Diagnostic Imaging

	Total hospital and physician costs, 2013*		Diagnostic imaging prices, 2013*		Price comparison for in-patient pharmaceuticals, 2010 (U.S. set to 100) [†]
	Bypass surgery	Appendectomy	MRI	CT scan (abdomen)	
Australia	\$42,130	\$5,177	\$350	\$500	49
Canada	—	—	—	\$97	50
France	—	—	—	—	61
Germany	—	—	—	—	95
Netherlands	\$15,742	\$4,995	\$461	\$279	—
New Zealand	\$40,368	\$6,645	\$1,005	\$731	—
Switzerland	\$36,509	\$9,845	\$138	\$432	88
United Kingdom	—	—	—	—	46
United States	\$75,345	\$13,910	\$1,145	\$896	100

* Source: International Federation of Health Plans, 2013 Comparative Price Report.
[†] Numbers show price indices for a basket of in-patient pharmaceuticals in each country; lower numbers indicate lower prices.
 Source: P. Kanavos, A. Ferraro, S. Vandroos et al., "Higher U.S. Branded Drug Prices and Spending Compared to Other Countries May Stem Partly from Quick Uptake of New Drugs," Health Affairs, April 2013 32(4):753-61.

10

Exhibit 6. Average Number of Prescription Drugs Taken Regularly, Age 18 or Older, 2013



Source: 2013 Commonwealth Fund International Health Policy Survey.

11

NIH Public Access
Author Manuscript
 Obes Rev. Author manuscript; available in PMC 2012 January 1.

Published in final edited form as:
 Obes Rev. 2011 January ; 12(1): 50-61. doi:10.1111/j.1467-789X.2009.00708.x.

Direct medical cost of overweight and obesity in the United States: a quantitative systematic review

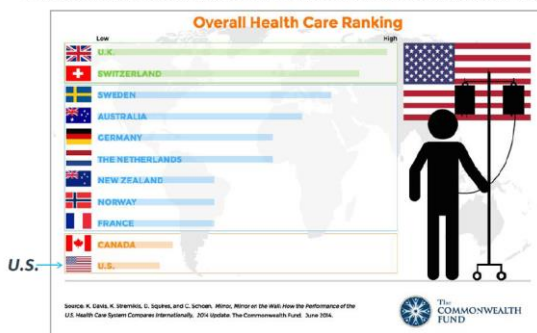
Adam Gilden Tsai, MD, MSCE,
 Division of General Internal Medicine and Center for Human Nutrition, University of Colorado Denver, Denver, CO

David F. Williamson, PhD, and
 Hubert Department of Global Health, The Rollins School of Public Health, Emory University, Atlanta, GA

Henry A. Glick, PhD
 Division of General Internal Medicine and the Leonard Davis Institute of Health Economics, University of Pennsylvania, Philadelphia, PA

12

STATE OF US HEALTHCARE



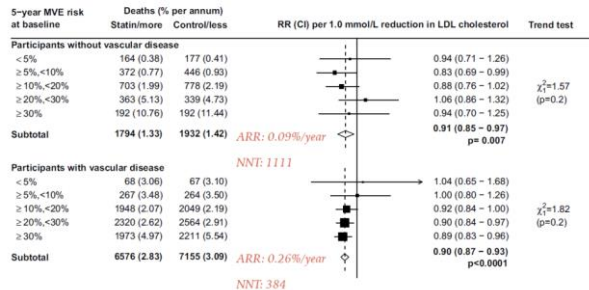
13



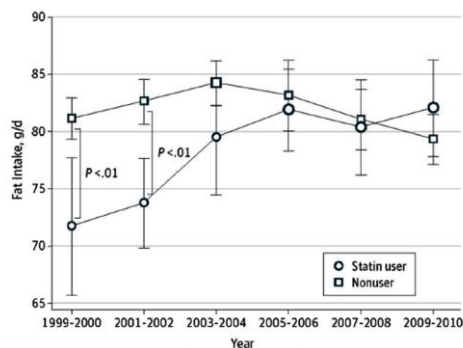
14 ABSOLUTE RISK REDUCTION FOR PRIMARY PREVENTION



15 Webfigure 9: Effects on any deaths per 1.0 mmol/L reduction in LDL cholesterol at different levels of risk, by history of vascular disease and overall

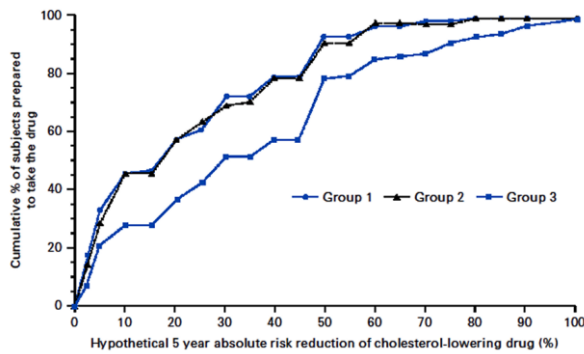


16 STATIN USERS DIET



JAMA Intern Med. 2014 July ; 174(7): 1038-1045. doi:10.1001/jamainternmed.2014.1927.

17 PERCEPTION OF EFFICACY



Clin Med. 2002 Nov-Dec;2(6):527-33.

18 JUST LOSE WEIGHT!



19 "METABOLIC ADVANTAGE"

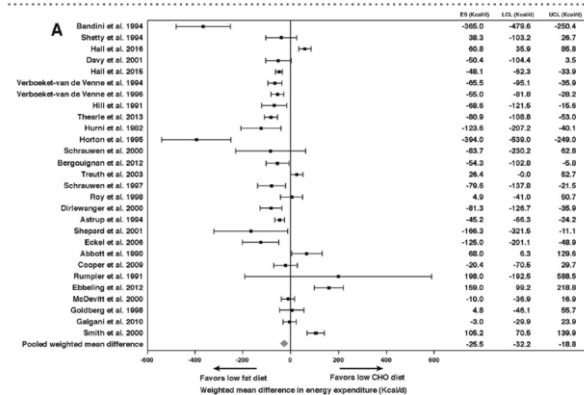
Gastroenterology 2017;152:1718-1727

Obesity Energetics: Body Weight Regulation and the Effects of Diet Composition

Kevin D. Hall Juhan Guo

National Institute of Diabetes & Digestive & Kidney Diseases, Bethesda, Maryland

20 A CALORIE IS A CALORIE



21 WEIGHT LOSS COMPARISON

Original Investigation

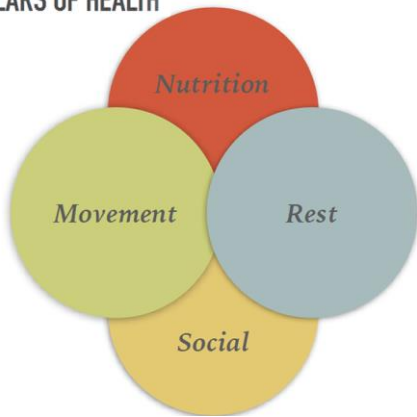
Comparison of Weight Loss Among Named Diet Programs in Overweight and Obese Adults
A Meta-analysis

Bradley C. Johnston, PhD, Steve Kanters, MSc, Kristofer Bandyret, MPH, Ping Wu, MBBS, MSc, Faysal Naji, BHSc, Reed A. Semieniuk, MD, Geoff D. C. Ball, RD, PhD, Jason W. Busse, DC, PhD, Kristian Thorlund, PhD, Gordon Guyatt, MD, MSc, Jeroen P. Jansen, PhD, Edward J. Mills, PhD, MSc

22 HEALTH PROMOTION



23 FOUR PILLARS OF HEALTH



24 5 HEALTHY HABITS

- ▶ >5 servings of fruits and veggies per day
- ▶ >12 times per month regular exercise
- ▶ Maintaining a healthy weight (BMI 18.5 to 29.9)
- ▶ Moderate alcohol consumption (up to 1 per day women and 2 per day men)
- ▶ Not smoking

25 HOW MANY PEOPLE MEET ALL 5?

CLINICAL RESEARCH STUDY



Adherence to Healthy Lifestyle Habits in US Adults, 1988-2006

Dana E. King, MD, MS, Arch G. Mainous III, PhD, Mark Carnemolla, BS, Charles J. Everett, PhD
 Department of Family Medicine, Medical University of South Carolina, Charleston.

26

Table 1 Characteristics of Adult Men and Women Ages 40-74 Years

	NHANES III			χ^2 P-Value*	NHANES 2001-2006			χ^2 P-Value*
	Men	Women	Totals		Men	Women	Totals	
BMI (kg/m ²) (%)								
<30	74.8	70.2	72.4	<.01	66.2	61.8	64.0	.02
≥30	25.2	29.8	27.6		33.8	38.2	36.0	
Physical activity (%)								
None	10.5	19.5	15.2	<.01	34.0	38.1	36.1	.02
1-12 times/month	32.5	31.5	31.9		22.7	18.6	20.6	
>12 times/month	57.0	49.0	52.8		43.3	43.2	43.3	
Smoking (%)								
Yes	32.3	22.0	26.9	<.01	31.0	21.1	26.0	<.01
No	67.7	78.0	73.1		69.0	78.9	74.0	
Fruit/Veg (%)								
<5 servings/day	54.8	61.0	58.0	<.01	73.5	75.2	74.4	.44
≥5 servings/day	45.2	39.0	42.0		26.4	24.8	25.6	
Alcohol (%)								
None	40.0	61.9	51.5	<.01	32.6	47.4	40.1	<.01
Moderate	49.8	31.5	40.2		57.2	45.9	51.5	
Exceeds moderate	10.2	6.6	8.3		10.1	6.7	8.4	
Healthy habits (%)								
None	0.4	0.2	0.3	.16	0.9	0.3	0.6	.09
One	4.0	4.1	4.0		8.2	6.0	7.1	
Two	19.2	19.7	19.4		26.9	27.4	27.1	
Three	29.2	32.4	30.9		31.4	32.6	32.0	
Four	31.4	28.9	30.1		24.5	24.8	24.6	
Five	15.8	14.6	15.2		8.2	8.8	8.5	

NHANES = National Health and Nutrition Examination Survey; BMI = body mass index.
 *Males vs females.

27

AMERICAN HEART ASSOCIATION 7 HEALTHY HABITS

- 1) Smoking status
- 2) BMI
- 3) Physical activity
- 4) Diet (Fruits & Veggies)
- 5) Total serum cholesterol
- 6) BP
- 7) Fasting blood glucose

28

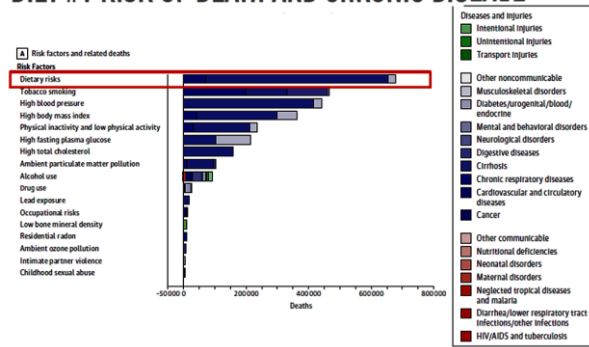
ONLINE FIRST

Trends in Cardiovascular Health Metrics and Associations With All-Cause and CVD Mortality Among US Adults

Quanhe Yang, PhD
 Mary E. Cogswell, DrPH
 W. Dana Flanders, MD, ScD
 Yuling Hong, MD, PhD
 Zefeng Zhang, MD, PhD
 Fletwood Loustalot, FNP, PhD
 Cathleen Gillespie, MS
 Robert Merritt, BA, MA
 Frank B. Hu, MD, PhD

Context Recent recommendations from the American Heart Association aim to improve cardiovascular health by encouraging the general population to meet 7 cardiovascular health metrics: not smoking; being physically active; having normal blood pressure, blood glucose and total cholesterol levels, and weight; and eating a healthy diet.
Objective To examine time trends in cardiovascular health metrics and to estimate joint associations and population-attributable fractions of these metrics in relation to all-cause and cardiovascular disease (CVD) mortality risk.
Design, Setting, and Participants Study of a nationally representative sample of 44 959 US adults (≥20 years), using data from the National Health and Nutrition Examination Survey (NHANES) 1988-1994, 1999-2004, and 2005-2010 and the NHANES III Linked Mortality File (through 2006).

29 DIET #1 RISK OF DEATH AND CHRONIC DISEASE



JAMA. 2013 Aug 14;310(6):591-608

30 LIFESTYLE MEDICINE IN PRACTICE

- Minimal education in most medical schools today regarding human nutrition
 - Less than 25 hours on average
- 34% of obese patients have never been told by their doctor they are obese
 - Medical Provider support improves weight loss

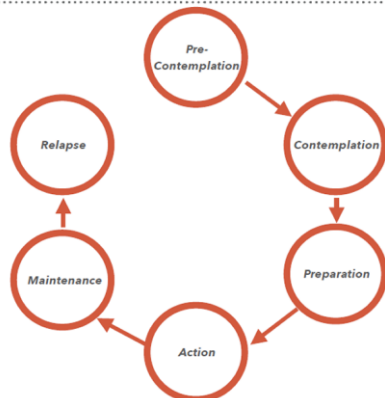
31 "DOC, I EAT HEALTHY"

WHYY news arts & life music programs shop

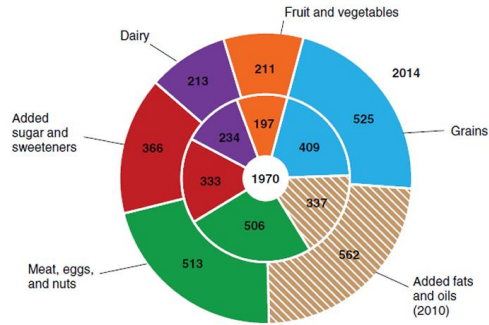
the salt WHAT'S ON YOUR PLATE

EATING AND HEALTH
75 Percent of Americans Say They Eat Healthy — Despite Evidence To The Contrary
August 3, 2016 - 12:03 PM ET
ALLISON ALBREY MARIA GOODOY

32 STAGES OF CHANGE

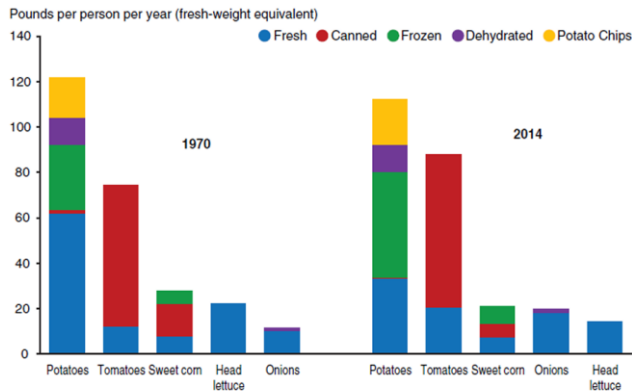


33 Calories by food group, 1970 (inner ring) and 2014 (outer ring)



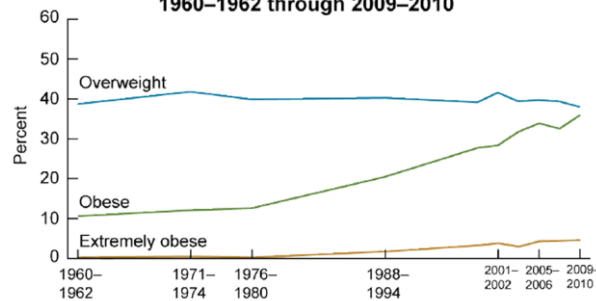
-Total calories increased 2016 to 2360
 -~10% of calories from fruits and vegetables

34 Top vegetables available for consumption in the United States



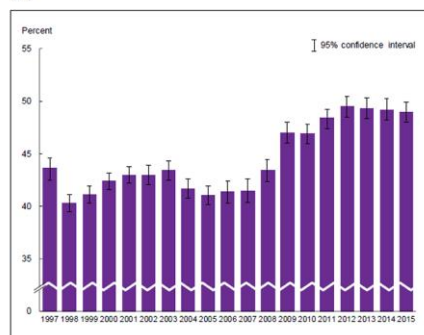
Source: USDA, Economic Research Service, Food Availability Data.
 U.S. Trends in Food Availability and a Dietary Assessment of Loss-Adjusted Food Availability, 1970-2014, Published January 2017

35 Figure 1. Trends in overweight, obesity, and extreme obesity among men aged 20-74 years: United States, 1960-1962 through 2009-2010

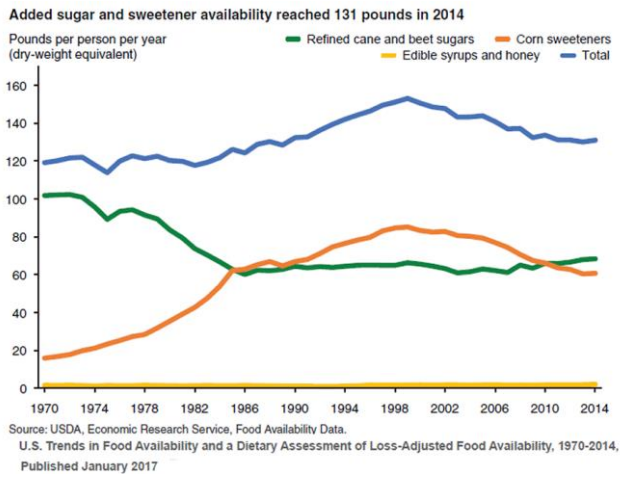


36 EXERCISE

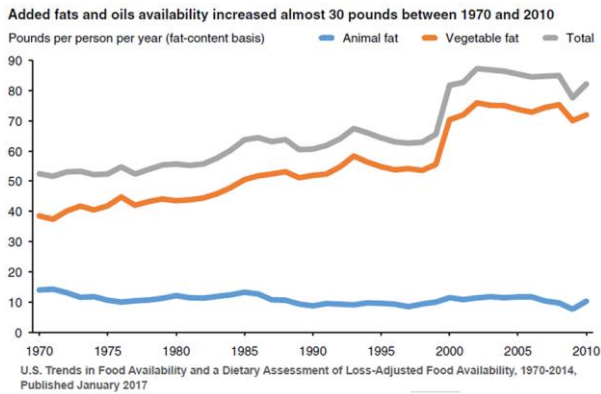
Figure 7.1. Percentage of adults aged 18 and over who met 2008 federal physical activity guidelines for aerobic activity through leisure-time aerobic activity: United States, 1997-2015



37



38



39

DISEASES ASSOCIATED WITH WESTERN LIFESTYLE

- Allergies
- Arthritis
- Atherosclerosis
- Diabetes
- Gout
- Hypertension
- Kidney Failure
- Kidney Stones
- Multiple Sclerosis
- Obesity
- Osteoporosis
- Strokes
- Appendicitis
- Colitis
- Constipation
- Diarrhea
- Irritable Bowel Syndrome
- Gallstones
- Diverticulosis
- Hemorrhoids
- GERD
- Polyps
- Breast Cancer
- Colon Cancer
- Pancreatic Cancer
- Prostate Cancer

40

AM I GETTING ENOUGH?

- Protein
- Calcium
- Omega-3
- Vitamins A, B, C, D, E, K
- Fiber
- Iron
- etc.

41 THE SALAD TRAP



42 PORTION CONTROL



43 MORE



44 DISPLACEMENT

Effects of a high fiber bread diet on weight loss in college-age males

Olaf Mickelsen,¹ Ph.D., D. D. Makkani,¹ Ph.D., Robert H. Cotton,² Ph.D., Stanley T. Ticombe,² John C. Colmey,² Ph.D., and Ronald Gatty,² Ph.D.

ABSTRACT Individuals embarking on a weight reducing program often experience fatigue, headaches, and feelings of hunger. The first symptoms accompany the ketotic state and can be overcome by increasing the carbohydrate intake. This can be achieved by ingesting bread. The addition of cellulose to the bread appears to provide added satiety and to diminish hunger reactions. While bread does not cause weight loss it does assist one who tries to lose weight and permits the dieter to exercise freedom in selecting foods. The feeling of fullness created by eating bread and intensified with bread containing cellulose helps a dieter control food intake. At the same time, only by restricting high calorie food intake can there be any substantial weight loss. A bread diet can readily be used by members of families as it requires no exotic or strange food inclusions and it assists the dieter in the transition from the weight loss program to a weight maintenance pattern once the desired weight has been achieved. Overweight college-age men who followed this program lost an average of 8.77 kg in 8 weeks while eating reduced calorie high fiber bread whereas those consuming ordinary enriched white bread lost 4.26 kg in the same period. All the subjects were fed a nutritious variety of foods in addition to either 12 slices of reduced calorie high fiber bread which provided 25.5 g crude fiber per day or 12 slices of enriched white bread which contained 1.02 g crude fiber per day. The precise role of bread consumed can only be surmised. Bread itself is not high in calories. It can be reasoned that it cuts hunger pangs enabling the dieter to resist foods that otherwise would cause excessive caloric intake. *Am. J. Clin. Nutr.* 32: 1703-1709, 1979.

The American Journal of Clinical Nutrition 32: AUGUST 1979, pp. 1703-1709. Printed in U.S.A.

45

SATIETY IS KEY

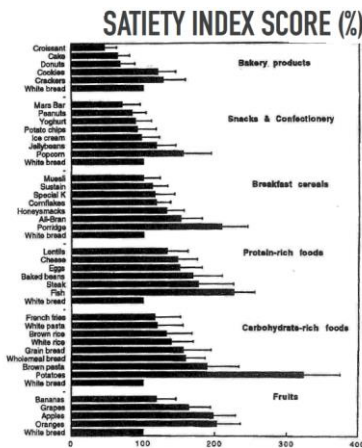
European Journal of Clinical Nutrition (1995) 49, 675-690
 © 1995 Stockton Press. All rights reserved 0954-3007/95 \$12.00

A satiety index of common foods

SHA Holt¹, JC Brand Miller¹, P Petocz² and E Farmakalidis³

¹Human Nutrition Unit, Department of Biochemistry, The University of Sydney, ²School of Mathematical Sciences, The University of Technology, Sydney; and ³Kellogg's Pty Ltd, Australia

46



47

BEANS THE MAGICAL FOOD

food & nutrition research

ORIGINAL ARTICLE

Meals based on vegetable protein sources (beans and peas) are more satiating than meals based on animal protein sources (veal and pork) – a randomized cross-over meal test study

Marlene D. Kristensen^{1,2}, Nathalie T. Bendsen^{1,3}, Sheena M. Christensen¹, Arne Astrup¹ and Anne Raben^{1*}

¹Department of Nutrition, Exercise and Sports, Faculty of Science, University of Copenhagen, Copenhagen, Denmark
²Novo Nordisk A/S, Bagsvaerd, Denmark; ³Ferring Pharmaceuticals A/S, Copenhagen, Denmark

"Vegetable based meals (beans/peas) influenced appetite sensations favorably compared to animal based meals (pork/veal) with similar energy and protein content, but lower fiber content."

48

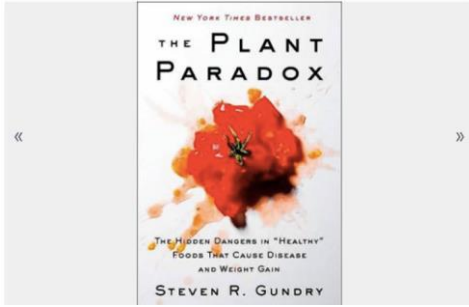


If Everyone Ate Beans Instead of Beef

With one dietary change, the U.S. could almost meet greenhouse-gas emission goals.

JAMES HAMLIN | AUG 2, 2017 | HEALTH

49 Doctor turns tables on what' good food vs. what's not so good



50 What About Lectins?

LEGUMES AND CARDIOVASCULAR DISEASE



ORIGINAL INVESTIGATION

Legume Consumption and Risk of Coronary Heart Disease in US Men and Women

NHANES I Epidemiologic Follow-up Study

Lydia A. Bazzano, PhD; Jiang He, MD, PhD; Lorraine G. Ogden, MS; Catherine Loria, PhD, MS; Suma Vupputuri, PhD, MPH; Leann Myers, PhD; Paul K. Whelton, MD, MSc

Asia Pacific J Clin Nutr 2004;13 (2):217-220 217

51

Original Article

Legumes: the most important dietary predictor of survival in older people of different ethnicities

Irene Darmadi-Blackberry MB, PhD¹, Mark L Wahlqvist AO, MD², Antigone Kouris-Blazos PhD³, Bertil Steen MD, PhD³, Widjaja Lukito MD, PhD⁴, Yoshimitsu Horie PhD⁵ and Kazuyo Horie BSc⁶

¹Public Health Division, National Ageing Research Institute, Melbourne, Australia
²Asia Pacific Health & Nutrition Centre, Monash Asia Institute, Monash University, Australia
³Department of Geriatric Medicine, Goteborg University, Goteborg, Sweden
⁴SEAMEO TROPMED, University of Indonesia, Jakarta, Indonesia
⁵School of Humanities and Social Sciences, Nagoya City University, Nagoya, Japan
⁶Faculty of Home Economics, Aichi Gakuen, Okazaki, Japan

“...a higher legume intake is the most protective dietary predictor of survival amongst the elderly, regardless of ethnicity.”

52 **WHOLE GRAINS AND MORTALITY**

RESEARCH

Whole grain consumption and risk of cardiovascular disease, cancer, and all cause and cause specific mortality: systematic review and dose-response meta-analysis of prospective studies

Dagfinn Aune,^{1,2} NaNa Keum,³ Edward Giovannucci,^{3,4,5} Lars T Fadnes,⁶ Paolo Boffetta,⁷ Darren C Greenwood,⁸ Serena Tonstad,⁹ Lars J Vatten,¹ Elio Riboli,² Teresa Norat²

53

GLUTEN-FREE CRAZE

RESEARCH

Long term gluten consumption in adults without celiac disease and risk of coronary heart disease: prospective cohort study

Benjamin Lebwohl,^{1,2} Yin Cao,^{3,4,5} Geng Zong,⁵ Frank B Hu,^{5,6} Peter H R Green,¹ Alfred I Neugut,^{1,2} Eric B Rimm,^{5,6,7} Laura Sampson,⁵ Lauren W Dougherty,⁵ Edward Giovannucci,^{5,6,7} Walter C Willett,^{5,6,7} Qi Sun,^{5,6} Andrew T Chan^{3,4,6}

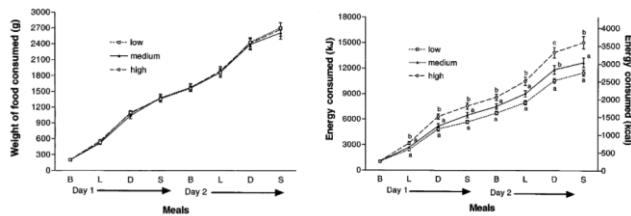
BMJ 2017;357:j1892

54 Eat More Weigh Less:

CALORIE DENSITY



55 WEIGHT OF FOOD VS CALORIE DENSITY

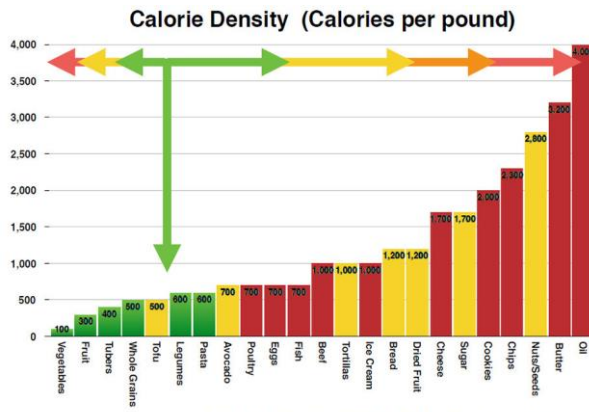


Bell, E. Am J Clin Nutr 1998;67:412-20

56 WE EAT 2.5-5 LBS OF FOOD PER DAY



57



Adapted from: A Common Sense Approach to Sound Nutrition by Jeff Novick MS, RD

58

Eat foods with HIGH micronutrient content and a LOW calorie density for weight loss and better health.

Adapted from: Eat to Beat Disease: How to Stop Aging, Weight Loss & Live Longer, Jeff Novick, MS, RD

TIP: Choose foods from the green and yellow categories for their lower calorie density and higher micronutrient content.

UC DAVIS
UNIVERSITY OF CALIFORNIA

	Eat Freely – Foods that are 300 cal/lb or less NO weight gain Vegetables 40–195 cal/lb Fruits 140–420 cal/lb
	Moderate to High Consumption – Foods between 300–800 cal/lb Moderate weight loss or weight maintenance Potatoes, Pasta, Rice, Barley, Beans, Grains, Hot Cereals 320–630 cal/lb Beans, Peas, Lentils (cooked) 310–780 cal/lb
	Limited Consumption – Foods between 800–1,800 cal/lb Contribute to weight gain, interfere with weight loss Breads, Bagels, Dried Fruit, Fat-free margarine 920–1360 cal/lb Sugars (sugar, honey, molasses, agave, maple syrup) 1,200–1,800 cal/lb Dry Cereals, Baked Chips, Pretzels, Fat-free Crackers, Popcorn 1,480–1,760 cal/lb
	Extremely Limited Consumption – Foods over 1,800 cal/lb Easily contribute to weight gain, greatly interfere with weight loss Chocolate Chip Cookies (S.A.D.) 2,140 cal/lb Nuts/Seeds 2,400–3,200 cal/lb Butter/Margarine 3,200 cal/lb Oils 4,000 cal/lb

59

EAT MORE TO LOSE WEIGHT



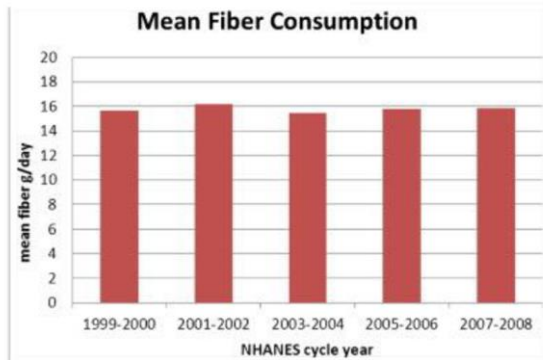
60



1 cup of jelly beans
877 Calories
0.5 g of fiber

1 cup of cooked pinto beans
244 Calories
15 g of fiber

61 **97% OF AMERICANS HAVE INADEQUATE INTAKE OF DIETARY FIBER, <30G**



62 **Dietary fibre intake and mortality from cardiovascular disease and all cancers: A meta-analysis of prospective cohort studies**



Consommation de fibres diététiques et mortalité cardiovasculaire et par cancer : méta-analyse des études de cohortes prospectives

Youngyo Kim, Youjin Je*

Department of food and nutrition, Kyung Hee university, 26, Kyunghee-daero, Dongdaemoon-gu, 130-701 Seoul, South Korea

Received 27 May 2015; received in revised form 31 August 2015; accepted 1st September 2015
Available online 18 December 2015

...high fiber intake, especially fibre from cereals, is significantly associated with lower mortality from CVD, CHD, and all cancers."

62

1 cup of cooked pinto beans
244 Calories
15 g of fiber

+

2 tablespoons of olive oil
239 Calories
0 g of fiber

=

1 cup of beans with olive oil
483 Calories
15 g of fiber

64

British Journal of Nutrition (2016), 115, 1875–1884
© The Authors 2016

doi:10.1017/S0007114516000775

Differing effects of high-fat or high-carbohydrate meals on food hedonics in overweight and obese individuals

Mark Hopkins^{1,2*}, Catherine Gibbons², Phillipa Caudwell^{3,3}, John E. Blundell¹ and Graham Finlayson²
¹Academy of Sport and Physical Activity, Faculty of Health and Wellbeing, Sheffield Hallam University, Sheffield S10 2BP, UK
²Institute of Psychological Sciences, Faculty of Medicine and Health, University of Leeds, Leeds LS2 9JT, UK
³Medical and Healthcare Affairs, AstraZeneca, Horizon Place, 600 Capability Green, Luton LU3 3JL, UK

(Submitted 19 October 2015 – Final revision received 21 December 2015 – Accepted 10 February 2016 – First published online 22 March 2016)

"When consumed under ad libitum and isoenergetic feeding conditions, high fat, low carbohydrate foods have a weaker action on satiety and promote greater energy intake compared with low fat, high carbohydrate foods."

65

Article
Link between Food Energy Density and Body Weight Changes in Obese Adults

Marta Stelmach-Mardas ^{1,2,*}, Tomasz Rodacki ³, Justyna Dobrowolska-Iwanek ³, Anna Brzozowska ⁴, Jarosław Walkowiak ², Agnieszka Wojtanowska-Krosniak ³, Paweł Zagrodzki ³, Angela Bechthold ⁵, Marcin Mardas ⁶ and Heiner Boeing ¹

- ¹ Department of Epidemiology, German Institute of Human Nutrition Potsdam-Rehbrücke, Nuthetal 14558, Germany; boeing@dfife.de
 - ² Department of Pediatric Gastroenterology and Metabolic Diseases, Poznan University of Medical Sciences, Poznań 60-572, Poland; jarwalk@ump.edu.pl
 - ³ Department of Food Chemistry and Nutrition, Medical Collage Jagiellonian University, Kraków 30-688, Poland; rodak13@wp.pl (T.R.); justyna.dobrowolska-iwanek@uj.edu.pl (J.D.-I.); mfkrosni@cyf-kr.edu.pl (A.W.-K.); Pawel.Zagrodzki@ifj.edu.pl (P.Z.)
 - ⁴ Department of Human Nutrition, Warsaw University of Life Sciences-SCGW, Warszawa 02-776, Poland; anna_brzozowska@sggw.pl
 - ⁵ German Nutrition Society, Bonn 53175, Germany; bechthold@dge.de
 - ⁶ Department of Human Nutrition and Hygiene, Poznan University of Life Sciences, Poznań 60-624, Poland; mmardas@up.poznan.pl
 - * Correspondence: stelmach@dfife.de; Tel: +49-33200-882723; Fax: +49-33200-882444
- Received: 13 March 2016; Accepted: 13 April 2016; Published: 20 April 2016

“...consumption of foods with low energy density is associated with a beneficial decrease of body weight in obese subjects.”

66

RESEARCH
 Original Research: Brief

Association between Dietary Energy Density and Incident Type 2 Diabetes in the Women’s Health Initiative

Melanie D. Hingle, PhD, MPH, RD; Betsy C. Wertheim, MS; Marian L. Neuhouser, PhD, RD; Lesley F. Tinker, PhD, RD; Barbara V. Howard, PhD; Karen Johnson, MD, MPH; Smin Liu, MD, MPH, ScD; Lawrence S. Phillips, MD; Lihong Qi, PhD; Gloria Sarto, MD, PhD; Tami Turner, PhD; Molly E. Waring, PhD; Cynthia A. Thomson, PhD, RD

...higher baseline dietary energy density was prospectively associated with incident diabetes risk in post menopausal women.”

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RESEARCH
 Original Research

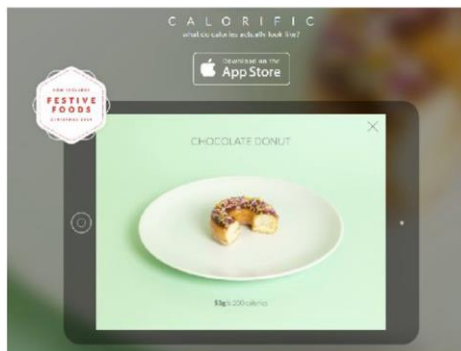
Association between Dietary Energy Density and Obesity-Associated Cancer: Results from the Women’s Health Initiative

Cynthia A. Thomson, PhD, RD; Tracy E. Crane, PhD, RD; David O. Garcia, PhD; Betsy C. Wertheim, MS; Melanie Hingle, PhD, MPH, RD; Linda Snetelsky, PhD; Mridul Datta, PhD, RD; Thomas Rohan, MBBS, PhD, DHSc; Erin LeBlanc, MD, MPH; Rowan T. Chlebowski, PhD; Lihong Qi, PhD, MS

“Among normal weight women, higher dietary energy density may be a contributing factor for obesity related cancers.”

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WHAT DOES 200 CALORIES LOOK LIKE?



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PEANUT BUTTER
31g is 200 calories



BACON
37g is 200 calories



MARS BAR
45g is 200 calories



CHEDDAR
50g is 200 calories



CHOCOLATE DONUT
53g is 200 calories



POTATO
286g is 200 calories



RASPBERRIES
377g is 200 calories



CHERRY TOMATO
1.11kg is 200 calories



SPINACH
869g is 200 calories

78

WHAT DOES 2000 CALORIES LOOK LIKE?

New York Times

- ▶ December 22, 2014
- ▶ BY JOSH BARRO, TROY GRIGGS, DAVID LEONHARDT AND CLAIRE CAIN MILLER
- ▶ PHOTOGRAPHS BY TONY CENICOLA
- ▶ <http://www.nytimes.com/interactive/2014/12/22/upshot/what-2000-calories-looks-like.html? r=0&abt=0002&abg=1>

96 BIG CHANGES LEAD TO RESULTS FAST

McDougall et al. *Nutrition Journal* 2014, 13:99
<http://www.nutritionjournal.com/content/13/1/99>

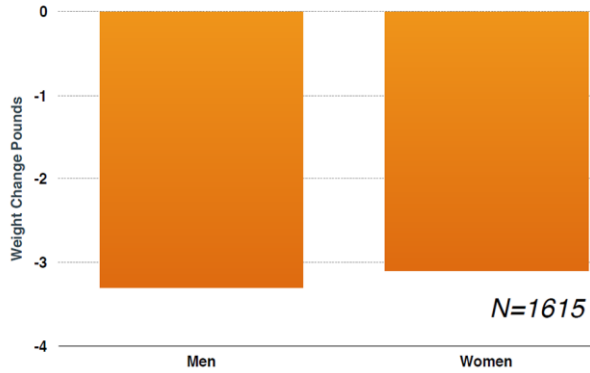
NUTRITION JOURNAL

RESEARCH Open Access

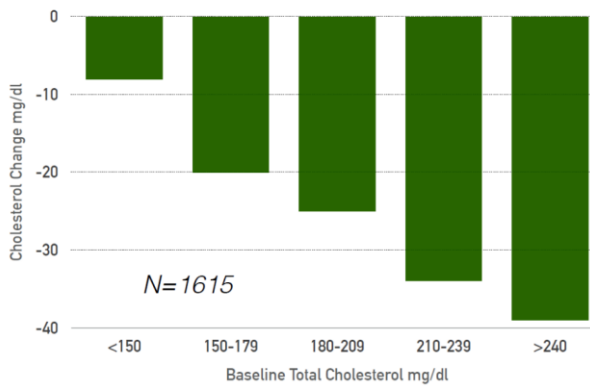
Effects of 7 days on an ad libitum low-fat vegan diet: the McDougall Program cohort

John McDougall^{1*}, Laurie E Thomas², Craig McDougall³, Gavin Moloney³, Bradley Saul⁴, John S Finnell⁵, Kelly Richardson⁶ and Katelyn Mae Petersen¹

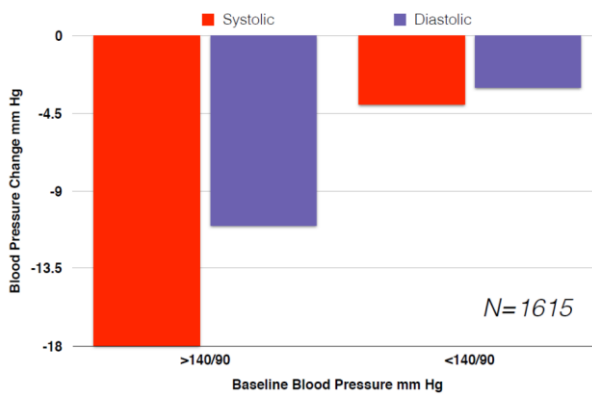
97 WEIGHT LOSS 7 DAYS



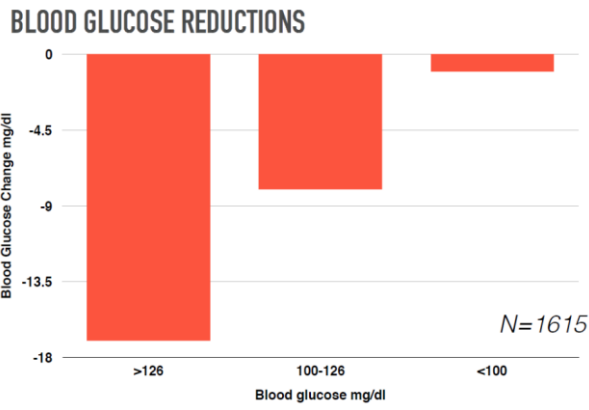
98 TOTAL CHOLESTEROL REDUCTION



99 BLOOD PRESSURE REDUCTION



100



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WHAT HAPPENS OVER ONE YEAR?

Multiple Sclerosis and Related Disorders 9 (2016) 80-90

Contents lists available at ScienceDirect

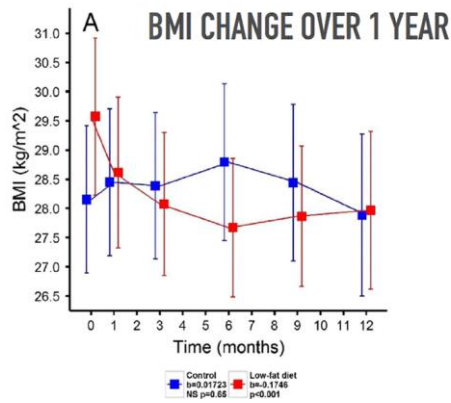
Multiple Sclerosis and Related Disorders

ELSEVIER journal homepage: www.elsevier.com/locate/msard

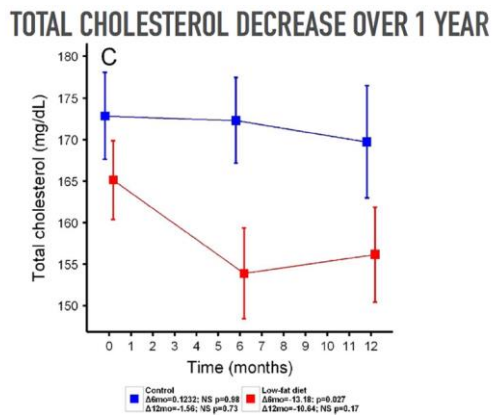
Low-fat, plant-based diet in multiple sclerosis: A randomized controlled trial

Vijayshree Yadav ^{a,b,w}, Gail Marracchi ^{a,b}, Edward Kim ^{a,b}, Rebecca Spain ^{a,b}, Michelle Cameron ^{a,b}, Shannon Overs ^c, Andrew Riddehough ^d, David K.B. Li ^d, John McDougall ^e, Jesus Lovera ^f, Charles Murchison ^g, Dennis Bourdette ^{a,b}

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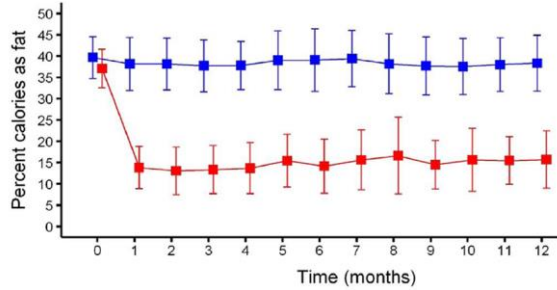


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SUSTAINABILITY



Group sample size	0	1	2	3	4	5	6	7	8	9	10	11	12
Control	29	29	27	29	27	28	29	29	29	29	28	27	27
Low-fat diet	32	31	29	30	28	29	28	28	28	26	26	25	26

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WEIGHT LOSS

OPEN Citation: *Nutrition & Diabetes* (2017) 7, e254; doi:10.1038/nutd.2017.3
www.nature.com/nutd

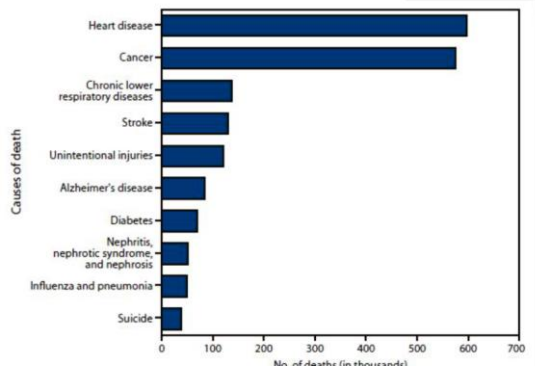
ORIGINAL ARTICLE
The BROAD study: A randomised controlled trial using a whole food plant-based diet in the community for obesity, ischaemic heart disease or diabetes

N Wright¹, L Wilson², M Smith³, B Duncan⁴ and P Mckhugh⁵

_redo
slide _____

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LEADING CAUSES OF DEATH IN US



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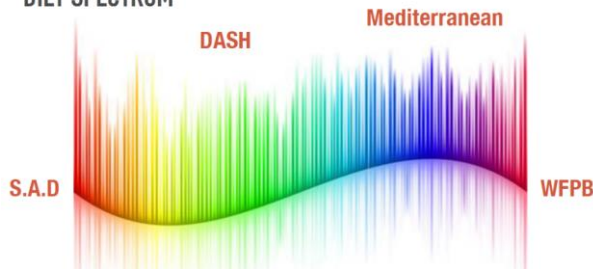
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Pursing an additional training or graduate

108 NOT READY TO GO ALL IN?



109 DIET SPECTRUM



110 nature publishing group ARTICLES

See REVIEWER COMMENTARY page 350

Association Between a DASH-Like Diet and Mortality in Adults With Hypertension: Findings From a Population-Based Follow-Up Study

Ankit Parikh¹, Stuart R. Lipsitz² and Sundar Natarajan^{1,3}

111 Mediterranean Diet, Lifestyle Factors, and 10-Year Mortality in Elderly European Men and Women
The HALE Project

Kim T. B. Knopps, MSc
Lisette C. P. G. M. de Groot, PhD
Daan Kromhout, PhD
Anne-Elisabeth Perrin, MD, MSc
Olga Morillas-Varela, PhD
Alessandro Menotti, MD, PhD
Wija A. van Staveren, PhD

Context Dietary patterns and lifestyle factors are associated with mortality from all causes, coronary heart disease, cardiovascular diseases, and cancer, but few studies have investigated these factors in combination.
Objective To investigate the single and combined effect of Mediterranean diet, being physically active, moderate alcohol use, and nonsmoking on all-cause and cause-specific mortality in European elderly individuals.
Design, Setting, and Participants The Healthy Ageing: a Longitudinal study in Europe (HALE) population, comprising individuals enrolled in the Survey in Europe on Nutrition and the Elderly: a Concerned Action (SENeca) and the Finland, Italy, the

112 LONG TERM BENEFITS

A provegetarian food pattern and reduction in total mortality in the Prevención con Dieta Mediterránea (PREDIMED) study¹⁻⁴

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

“Among omnivorous subjects at high cardiovascular risk, better conformity with a food pattern that emphasized plant derived foods was associated with a reduced risk of all cause mortality.”

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ORIGINAL INVESTIGATIONS

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

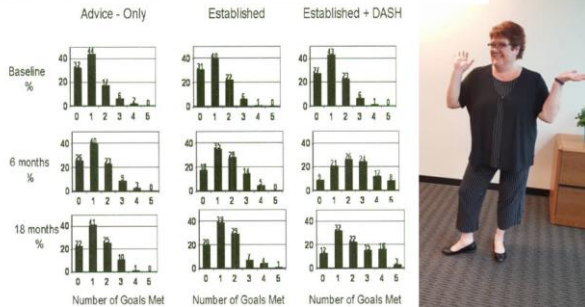


Ambika Sattija, ScD,¹ Shilpa N. Bhupathiraju, PhD,^{1,2} Donna Spiegelman, ScD,^{3,4,5,6,7}
 Stephanie E. Chiuve, ScD,^{8,9} JoAnn E. Manson, MD, DrPH,^{10,11} Walter Willett, MD, DrPH,^{12,13}
 Kathryn M. Rexrode, MD, MPH,¹ Eric B. Rimm, ScD,^{14,15} Frank B. Hu, MD, PhD^{16,17}

“Higher intake of a plant based diet index rich in healthier plant foods is associated with substantially lower coronary heart disease risk, whereas a plant based diet that emphasizes less healthy plant foods is associated with higher coronary heart disease risk.”

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ASK TO CHANGE MORE, MAKE MORE CHANGES



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SUMMARY

- Most of health care expenditure is spent on chronic conditions which are largely preventable with a healthy lifestyle
- Weight loss can be achieved through multiple different strategies, which produce similar results over 1 year
- Lowering dietary caloric density allows someone to eat more food and still lower caloric intake
- Eating more whole plant foods over long periods of time may lower risk of cardiovascular disease, diabetes, obesity, cancer and overall mortality

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QUESTIONS?
