Diet and cardiovascular prevention

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DISCLOSURE

Relevant financial relationship(s) with industry

Itamar Medical: advisory board

Off Label Usage

None

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Family Values
Traditional Spirit
Since 1912

Roseto, PA

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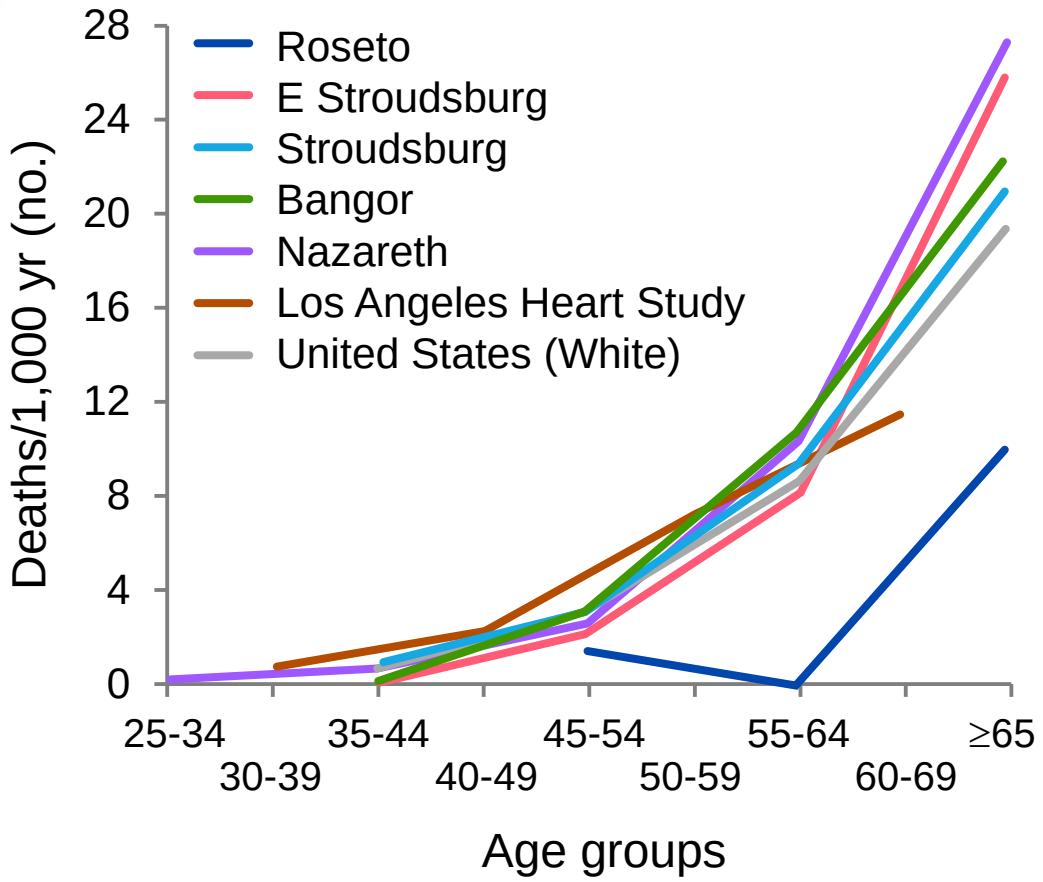
Comparison of Death Rates from Coronary Heart Disease in Males

Predictors of Myocardial Infarction Over a Span of 30 Years in Roseto, Pennsylvania

STEWART WOLF

Abstract—Predictors of myocardial infarction with or without survival were sought in a 30-year study of Roseto, Pennsylvania, a nearly exclusively Italian community of approximately 1,600, compared to the immediately adjacent town of Bangor with a population of approximately 5,000. At the start of the study the death rate from myocardial infarction among men in Roseto was less than half that in Bangor despite an equal prevalence of the usual risk factors, mainly smoking and diet. The communities were followed prospectively for 30 years during a striking social change in Roseto toward less family and community cohesion and more commitment to individual goals and adherence to materialistic values. During this period the prevalence of and mortality from myocardial infarction increased sharply to equal the situation in Bangor. The predictive values of measurements made of Rosetans during individual examinations in 1962-63 were tested against the outcome in 1990. Those who experienced fatal myocardial infarction and those who had a well documented infarction and survived were matched with and compared to controls. Although subjects with cholesterol concentration above 200 were twice as likely to experience myocardial infarction as those with concentrations below 200, less than 20% of those whose cholesterol concentration was above 200 experienced any evidence of myocardial infarction over the nearly 30-year period. Moreover, there were no significant differences between the coronary patients, with or without survival, and their sex, age, and cholesterol matched controls; nor were smoking, evidence of hypertension, diabetes, or obesity predictive of significant differences between the two groups. These data lead to the inference that while those with the conventional risk factors are more likely to develop myocardial infarction than are those without the risk factors, an even larger proportion of the population may have the risk factors and not succumb to myocardial infarction over a period of nearly three decades.

'grative Physiological and Behavioral Science, July-September, 1992, Vol. 27, No. 3, 246-257



Wolf S: Physiological & Behavioral Science 27(3): 246, 1992

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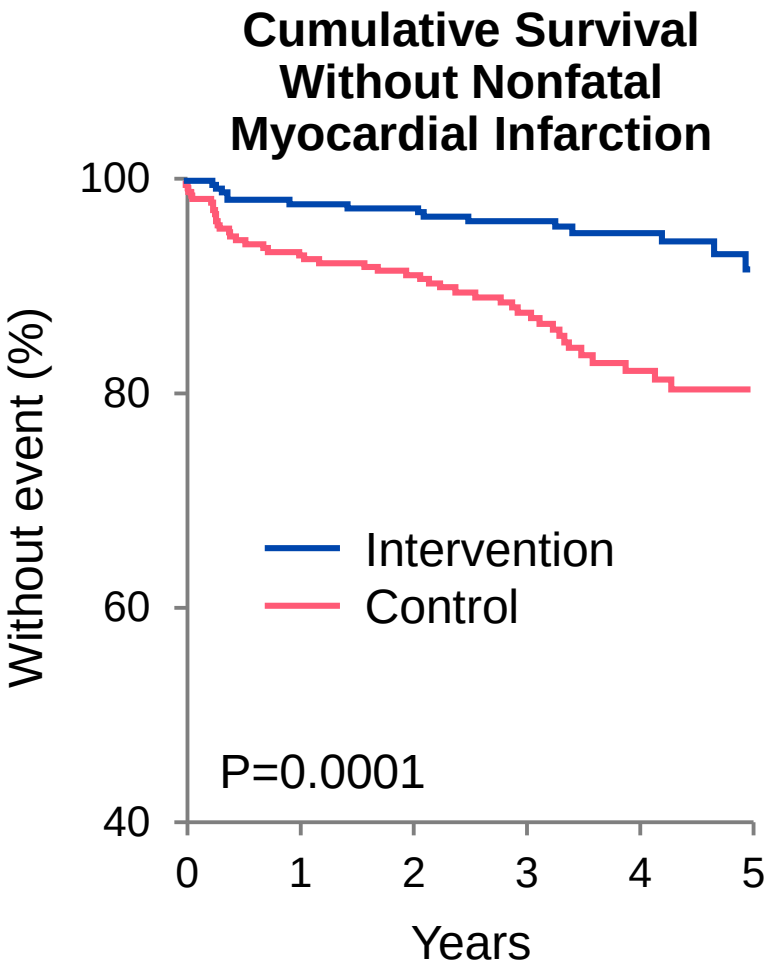
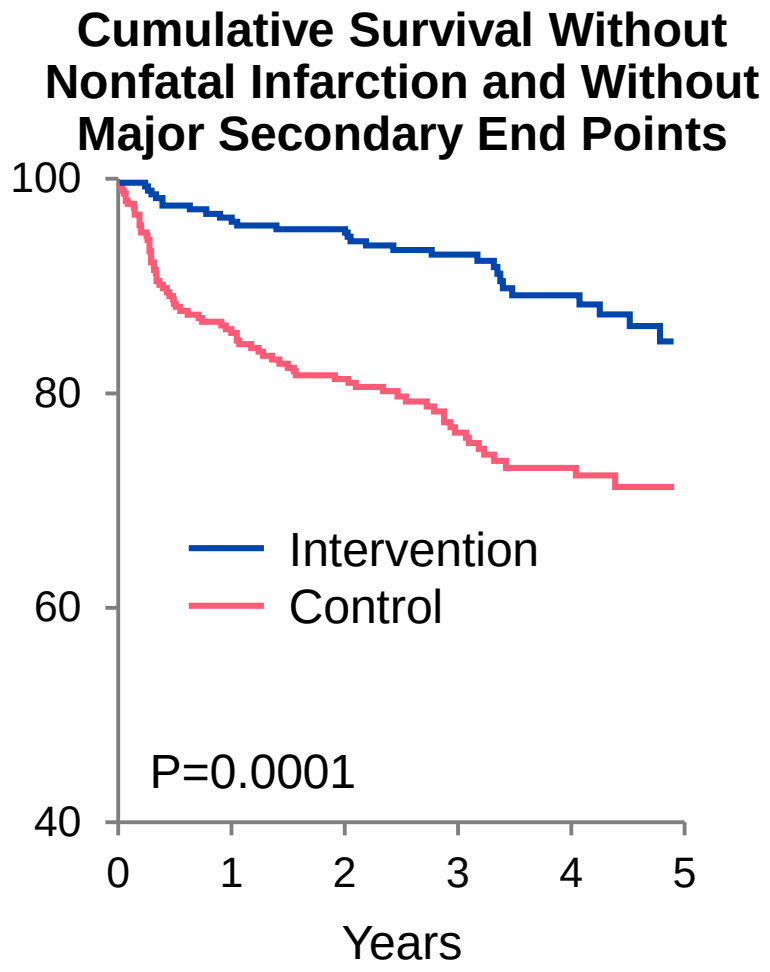
Late Breaking News: New Intervention and CV Events in Patients Following Their First MI





Medit et al NEJM 210: 360-365

What would you be your next step?

1. Introduce this intervention into my practice
2. Depends on the observed side effects
3. Depends on the cost of the intervention
4. Wait for additional confirmation by RCTs

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The average American spends nearly 80 minutes per day eating, and/or deciding what to eat

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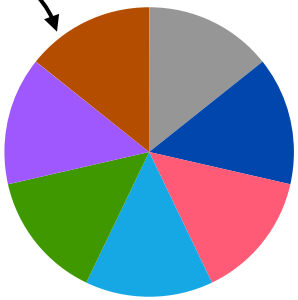
A Brief History of Dietary Guidelines

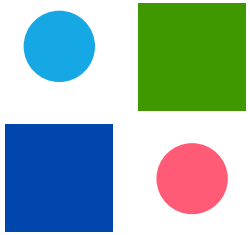
No Wonder We're Hungry for Clarity

Butter and margarine got their own food group



1940s

Good eating focused on choosing among the "basic seven" food groups

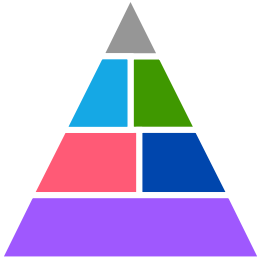


1956-1970s

A new guide touted "food for fitness" and trimmed the seven groups to four

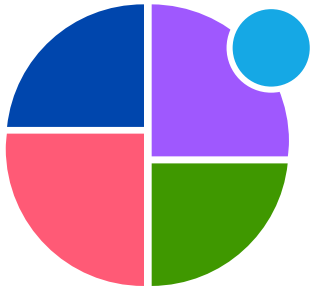
1979

A fifth group was added – along with a caution sign – for fats, sweets and alcohol



1992

The food pyramid emphasized how much of different foods to eat daily



2011

MyPlate uses a plate and cup to show daily portions (and shrinks the amount of grains)

- Fruit
- Vegetables
- Dairy
- Protein
- Grains
- Fat, sweets

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Problem Statement(s)

Discrepancy between epidemiological data and outcomes data

- Most data is retrospective or cohort in nature
- RCT data is difficult to accomplish in large numbers, well-controlled study and blinded

Discrepancy between studies examining "surrogate" CVD markers and studies measuring CVD outcomes

- Few studies have supported one single food as being overtly beneficial
- Difficulty in maintaining calorie neutral studies
- Most positive studies highlight "diets" as being beneficial without being to link mechanism to outcome

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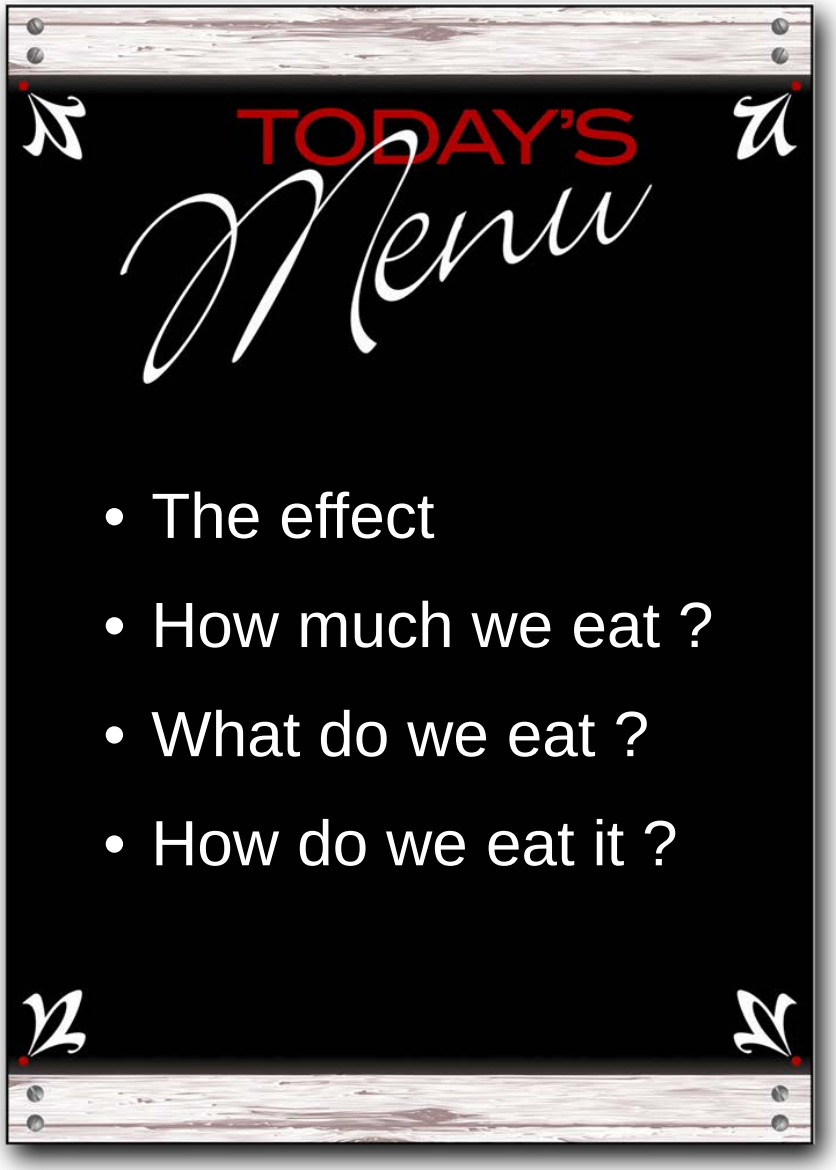
Food for Your Heart



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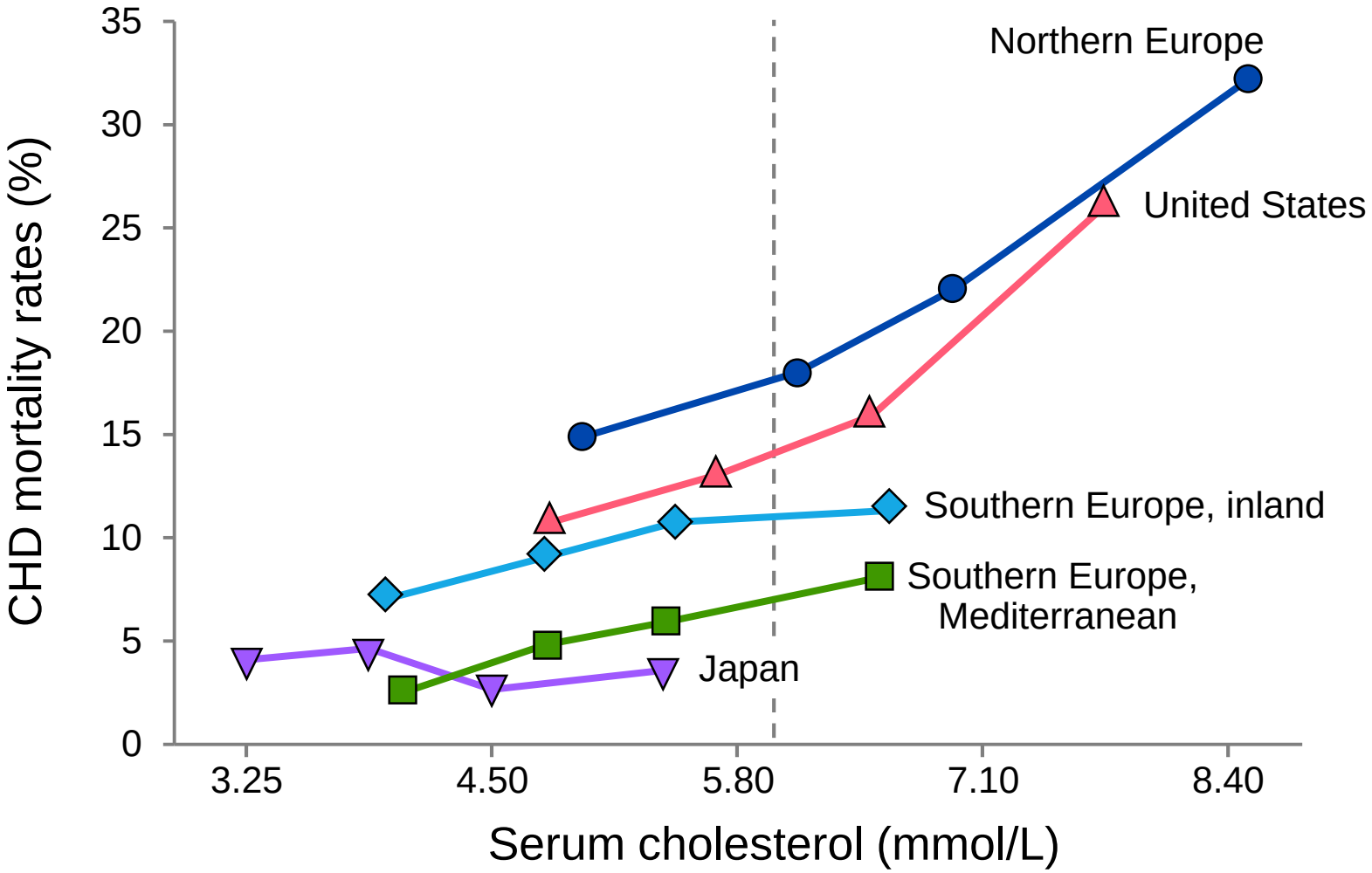
Coronary Heart Disease Mortality in the 7-Countries Study



De Lorgeril M: Current Opinion in Cardiology 15:364, 2000

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PSYCHOLOGICAL SCIENCE

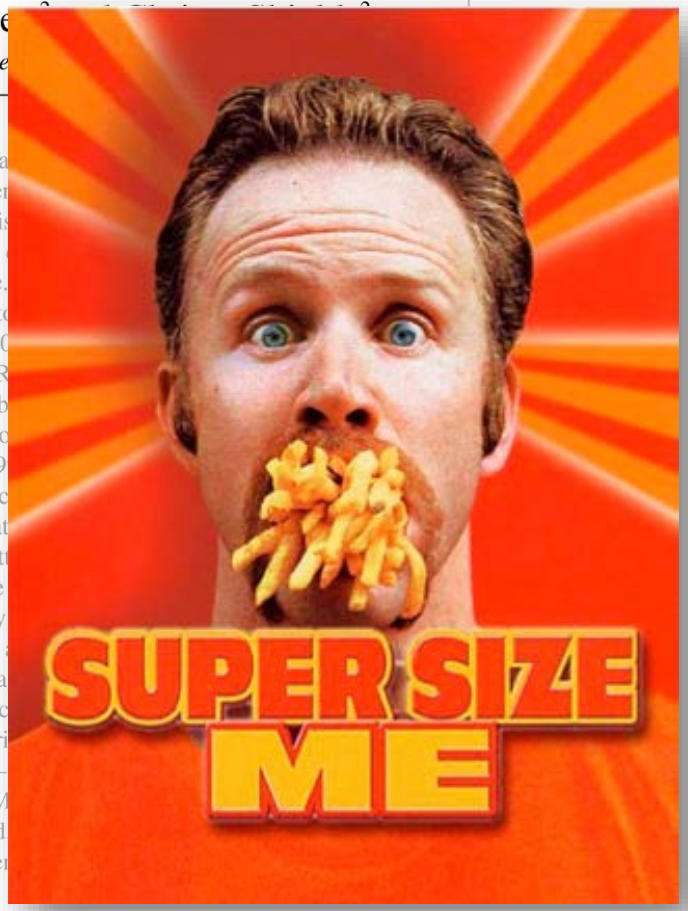
Research Article

THE ECOLOGY OF EATING: Smaller Portion Sizes in France Than in the United States Help Explain the French Paradox

Paul Rozin,[1] Kimberly Kabnick,[1] Erin Pete,[1] Claude Fischle

[1]University of Pennsylvania and [2]CNRS, Paris, France

- Two-thirds overweight (BMI >25)
- > 30% frankly obese (BMI >30)
- 30-40% metabolic syndrome
- 8-10% diabetic
- CHD mortality 2.6-3.0 higher



The ratio of food portion between the US and Europe is 1.5

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JULY 17, 2008 VOL. 359 NO. 3

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 Sarus, Esther Ka

BACKGROUND

Trials comparing t ess a limited by short fol and

METHODS

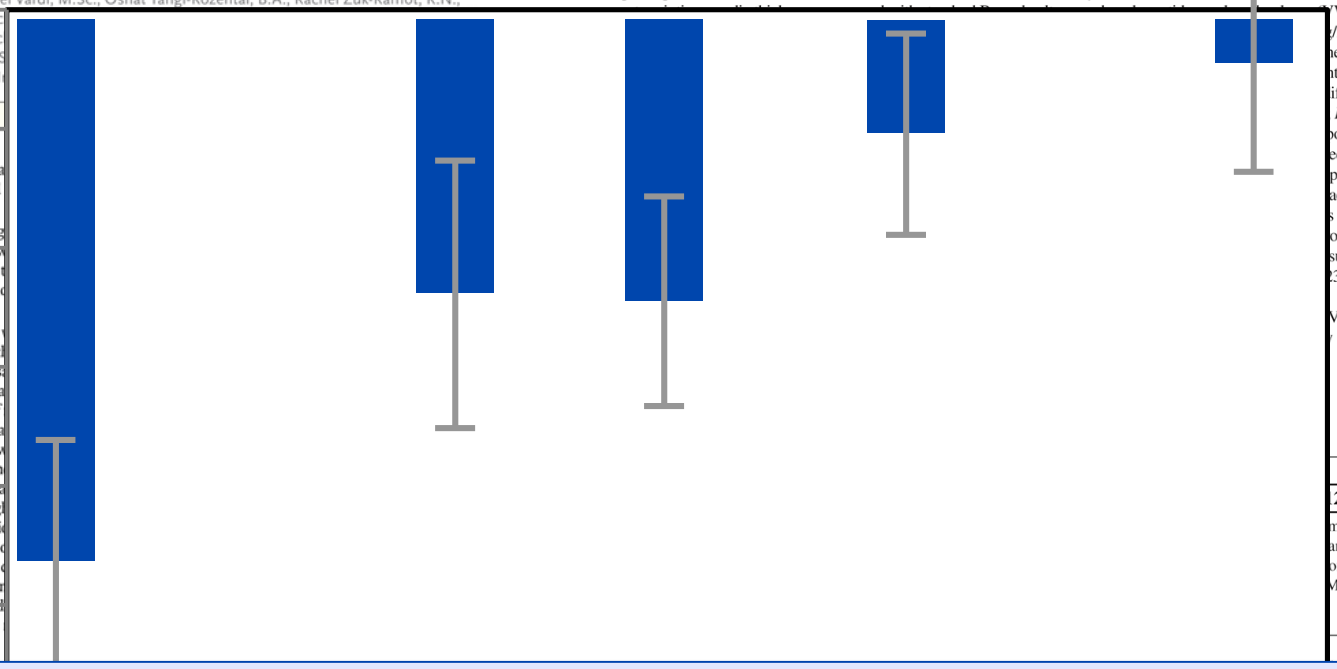
In this 2-year trial, assig 52 years; mean body [the W height in meters], 3 6%) Mediterranean, rest ; or l

RESULTS

The rate of adheren diet Mediterranean-diet ed th highest ratio of mor l to treatment groups). T hydra bohydrates and the l ts of percentage of partici tecta among treatment gr ean w kg for the Mediterranean-diet group, an for the interaction be group pleted the intervention, the mean weig tively. The relative reduction in the rati cholesterol was 20% in the low-carb (P=0.01). Among the 36 subjects with insulin levels were more favorable amor among those assigned to the low-fat and Mediterranean diet and time with

CONCLUSIONS

Medi



Dietary Intervention to Reverse Carotid Atherosclerosis

Iris Shai, RD, PhD*; J. David Spence, MD*; Dan Schwarzfuchs, MD; Yaakov Henkin, MD; Grace Parraga, PhD; Assaf Rudich, MD, PhD; Aaron Fenster, PhD; Christiane Mallett, MSc; Noah Liel-Cohen, MD; Amir Tirosh, MD, PhD; Arkady Bolotin, PhD; Joachim Thiery, MD; Georg Martin Fiedler, MD; Matthias Blüher, MD; Michael Stumvoll, MD; Meir J. Stampfer, MD, DrPH; for the DIRECT Group

Background—It is currently unknown whether dietary weight loss interventions can induce regression of carotid atherosclerosis.

Methods and Results—In a 2-year Dietary Intervention Randomized Controlled Trial–Caroti (DIRECT-Carotid) study, participants were randomized to low-fat, Mediterranean, or low-carbohydrate diets and were fol owed for changes in carotid WV), measured /m^2; 88% men), e weight, blood t 5% regression ifferences in the P=0.28). Mean olipoprotein A1 ed carotid VWV participants who achieved greater s −1.1 mm Hg; otein A1 (+0.05 sure remained a 3; P=0.01) and

V. The effect is by the weight

monly used and and is generally of vascular out- MT in untreated

Conclusions – Two-year weight loss diets can induce a significant regression of measurable carotid VWV. The effect is similar in low-fat, Mediterranean, or low-carbohydrate strategies and appears to be mediated mainly by the weight loss-induced decline in blood pressure

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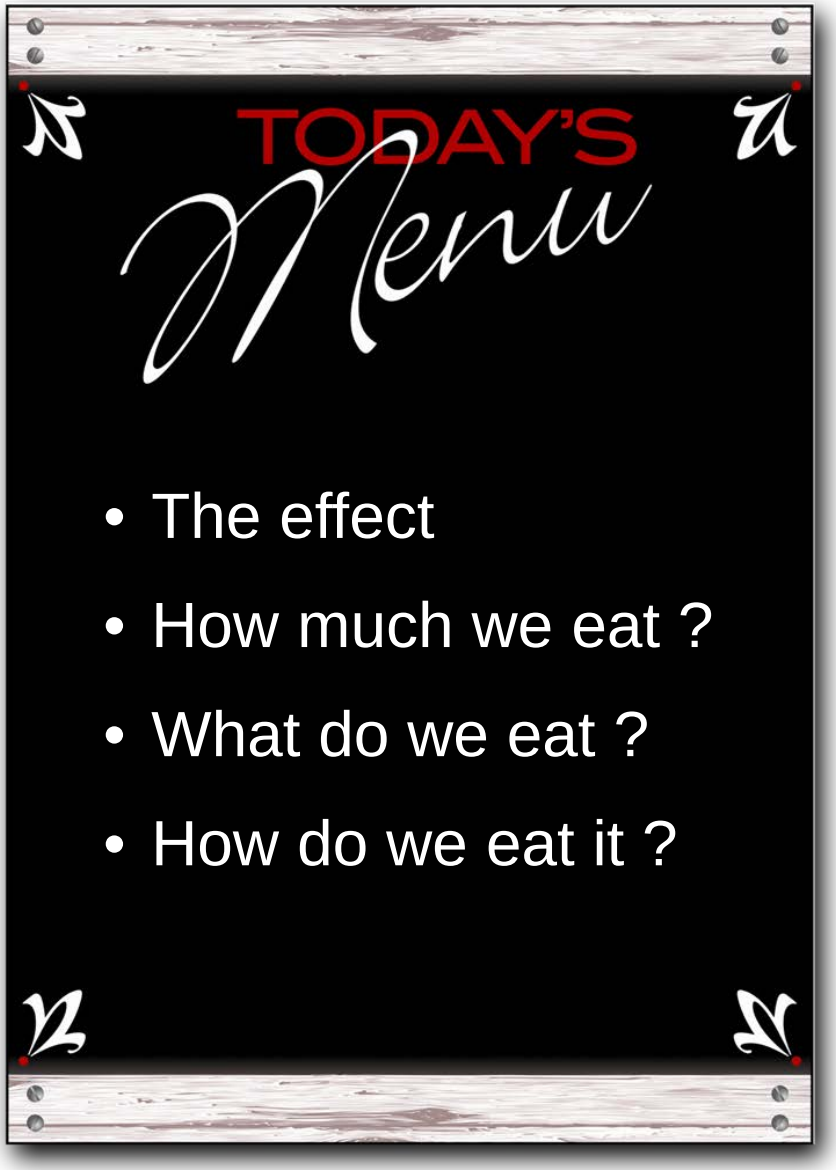
Food for Your Heart



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Not All Calories Are Created Equal

Nuts
vs
French Fries

Nuts	French Fries
Take longer to chew	Cooked starch is quickly broken down
Contain fat and fiber that need more time to digest	Causes spike in sugar, or glucose in the bloodstream
Your stomach stays fuller, and you feel satisfied longer…	The body secretes insulin, leading to hunger signals…
…so you eat less at your next meal	…so you eat more at your next meal
You lose	**You gain**
.057 lbs	**3.35 lbs**

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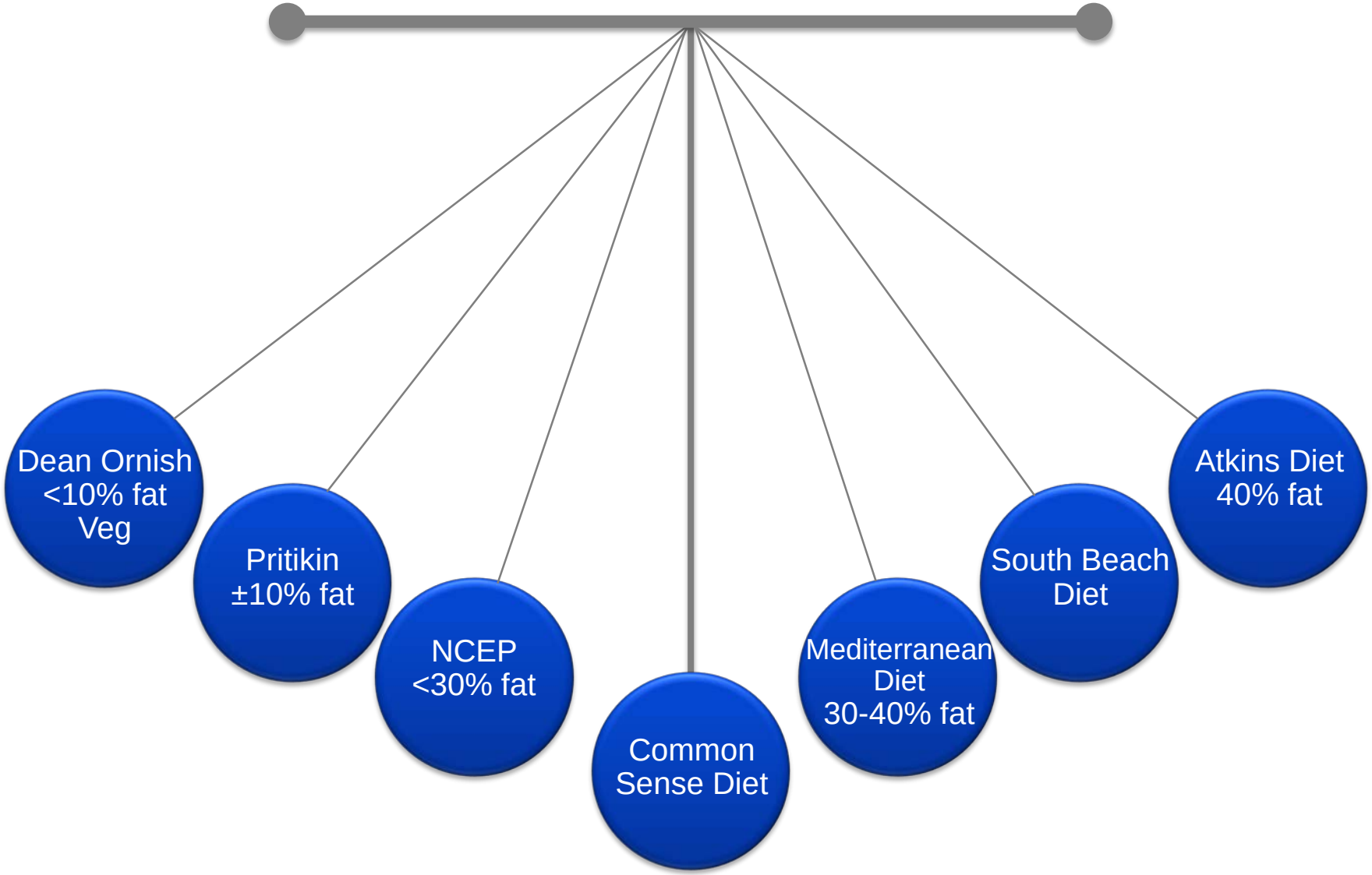
The Diet Pendulum



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The Diet Pendulum

Dean Ornish
<10% fat
Veg

Pritikin
±10% fat

NCEP
<30% fat

Common
Sense Diet

Mediterranean
Diet
30-40% fat

South Beach
Diet

Atkins Diet
40% fat

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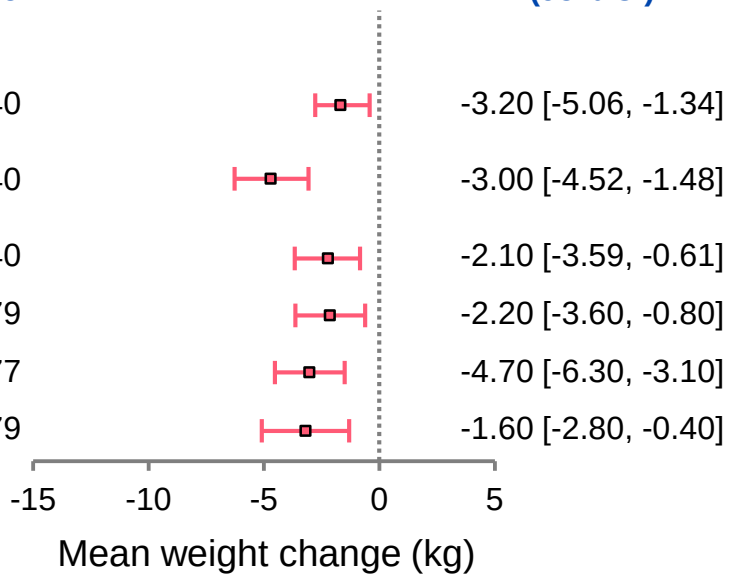
Long-Term Effects of 4 Popular Diets on Weight Loss and Cardiovascular Risk Factors

A Systematic Review of Randomized Controlled Trials

12 RCTs (n=2559) with follow-up ≥12 months: 0 versus usual care (5 Atkins, 4 WW, and 1 South Beach) and 2 head-to-head (1 of Atkins, WW, and Zone, and 1 of Atkins, Zone, and control

Study	Group	No.	Mean weight change (Kg) (95% CI)
Head-to-head			
Dansinger 2005 (21)	Zone	40	-3.20 [-5.06, -1.34]
Dansinger 2005 (21)	Weight Watchers	40	-3.00 [-4.52, -1.48]
Dansinger 2005 (21)	Atkins	40	-2.10 [-3.59, -0.61]
Gardner 2007 (22)	Control	79	-2.20 [-3.60, -0.80]
Gardner 2007 (22)	Atkins	77	-4.70 [-6.30, -3.10]
Gardner 2007 (22)	Zone	79	-1.60 [-2.80, -0.40]



Conclusions – Head-to-head RCTs, providing the most robust evidence available, demonstrated that Atkins, WW, and Zone achieved modest and similar long-term weight loss. Despite millions of dollars spent on popular commercial diets, data are conflicting and insufficient to identify one popular diet as being more beneficial than the others.

Atallah et al: Circ Cardiovasc Qual Outcomes 7, 2014

MAYO CLINIC

Meta-analysis

openheart

Evidence from randomised controlled trials did not support the introduction of dietary fat guidelines in 1977 and 1983: a systematic review and meta-analysis

Zoë Harcombe,[1] Julien S Baker,[1] Stephen Mark Cooper,[2] Bruce Davies,[3] Nicholas Sculthorpe,[1] James J DiNicolantonio,[4] Fergal Grace[1]

To cite: Harcombe Z, Baker JS, Cooper SM, *et al.* Evide... contro... suppo... dietar... and 1... review... *Open* doi:10... 00019...

Received 18 September 2014
Revised 26 November 2014
Accepted 2 December 2014

ABSTRACT

Objectives: National dietary guidelines were...

Methods: A systematic review and meta-analysis were undertaken of RCTs, published prior to 1983, which examined the relationship between dietary fat, serum cholesterol and the development of CHD.

Results: 2467 males participated in six dietary trials: five secondary prevention studies and one including healthy participants. There were 370 deaths from all-cause mortality in the intervention and control groups. The risk ratio (RR) from meta-analysis was 0.996 (95% CI 0.865 to 1.147). There were 207 and 216 deaths from CHD in the intervention and control...

Conclusions: Dietary recommendations were introduced for 220 million US and 56 million UK citizens by 1983, in the absence of supporting evidence from RCTs.

KEY MESSAGES

How might this impact on clinical practice

- Clinicians may be more questioning of die... guidelines, less accepting of low-fat advice (... comitantly high carbohydrate) and r... about...

government dietary fat recommendations be... their introduction. Recommendations were n... for 276 million people following secon... studies of 2467 males, which reported iden... all-cause mortality. RCT evidence did not sup... the introduction of dietary fat guidelines.

[1]Insti... and H... Unive... Scotla... Lanar...
[2]Cardiff School of Sport, Cardiff Metropolitan University, Cardiff, UK
[3]University of South Wales, Pontypridd, UK
[4]Saint Luke's Mid America Heart Institute, Kansas City, Missouri, USA

Correspondence to
Zoë Harcombe;
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INTRODUCTION

US public health dietary advice was announced by the Select Committee on Nutrition and Human needs in 1977[1] and was followed by UK public health dietary

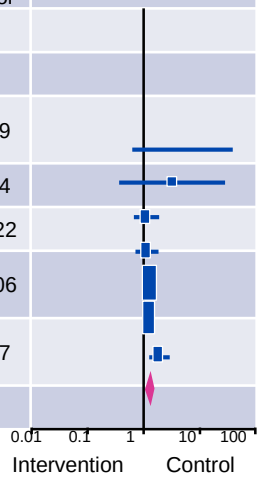
...of total energy intake.

The recommendations were an attem... address the incidence of coronary heart disease (CHD). Both documents acknowl-edged that the evidence was not conclusive. Hegsted's introduction to the Dietary Goals for the US noted "there will undoubtedly be many people who will say we have not proven our point."[1] The UK publication referred to "a strong consensus of opinion."[2]

Methods: A systematic review and meta-analysis were undertaken of RCTs, published prior to 1963, which examined the relationship between dietary fat, serum cholesterol and the development of CHD.

Conclusions: Dietary recommendations were introduced for 220 million US and 56 million UK citizens by 1983, in the absence of supporting evidence from RCTs.

Study name				All Deaths/Total		RR and 95% CI
	Risk ratio	Lower limit	Upper limit	Intervention	Control	
Rose Corn Oil (1965)	4.643	0.580	37.149	5/28	1/26	
Rose Olive Oil (1965)	3.000	0.333	26.992	3/26	1/26	
Research Committee Low-Fat (1965)	0.874	0.510	1.499	20/123	24/129	
MRC Soybean Oil (1968)	0.881	0.550	1.411	28/199	34/194	
LA Veterans Dayton (1969)	0.978	0.834	1.148	174/424	177/422	
Leren, Oslo heart study (1970)	0.935	0.773	1.131	101/206	108/206	
Woodhill, Sydney heart study (1978)	1.494	0.953	2.342	39/221	28/237	
	0.996	0.865	1.174			



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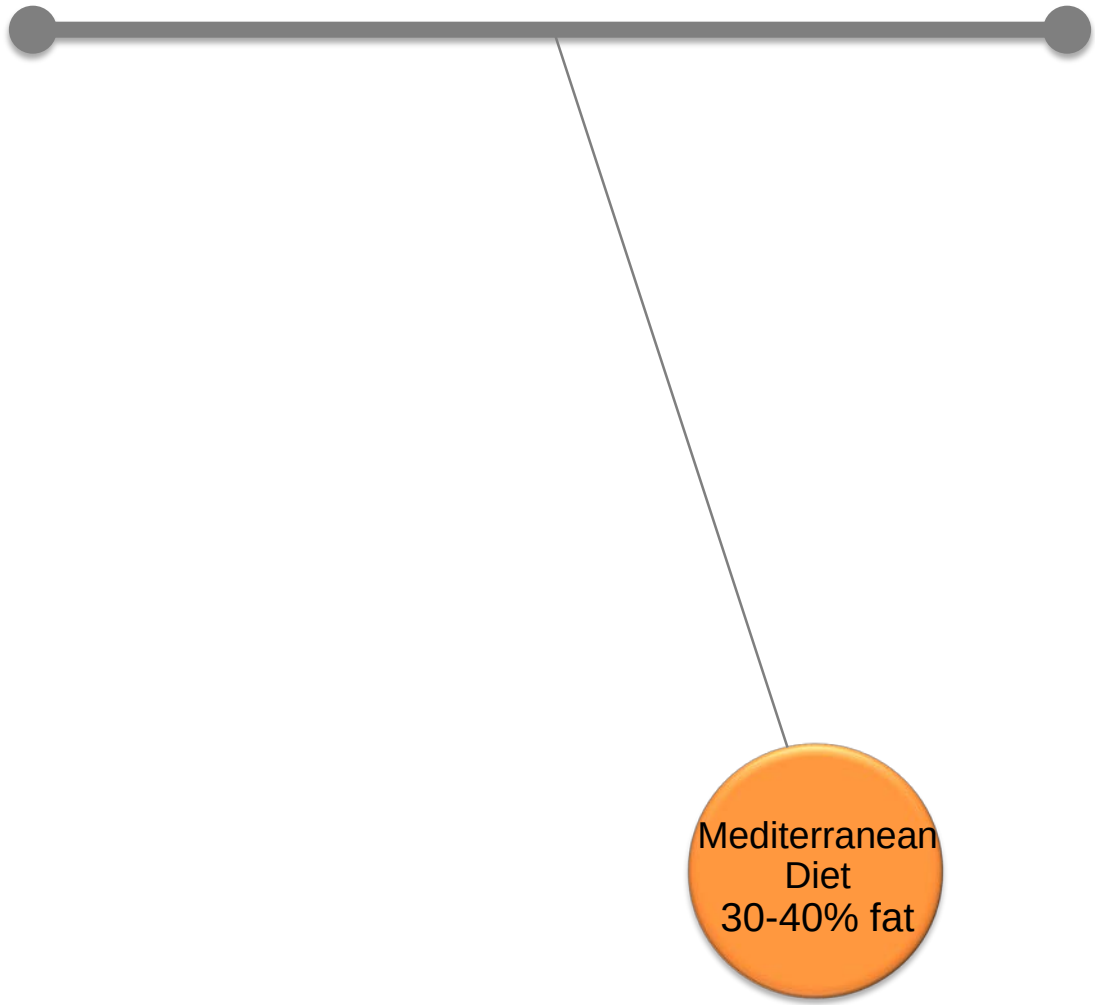
Harcombe et al: Open Heart 2:e000196, 2015

The Diet Pendulum



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Lyon Diet Heart Study

605 men/women (302 treatment, 303 control)

- Diet – Mediterranean vs usual care
- Treatment – margarine, omega-3 FA (α linolenic acid)
  - ↓ total cardiac mortality 65%
  - ↓ sudden death 64% (0% sudden death first 2 yrs)
- Lipids did not change
- Major benefit – omega-3 FA (α linolenic acid)
  - (+) better diet – ? wine

Ref: Lyon Heart Study, Circulation 1999;99:779-85

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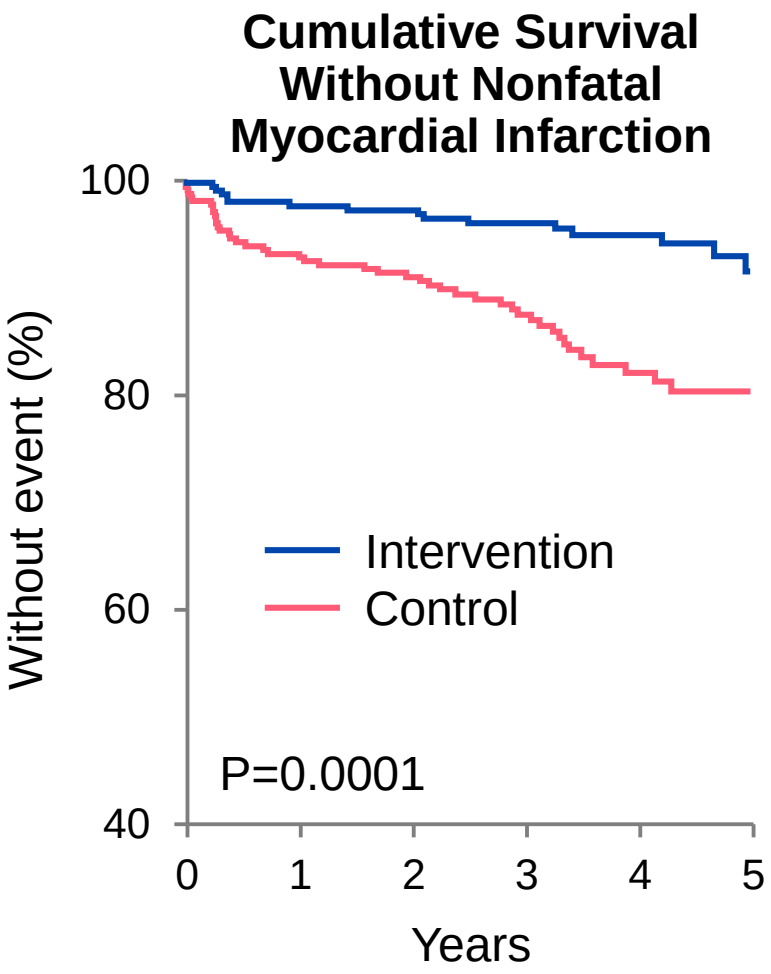
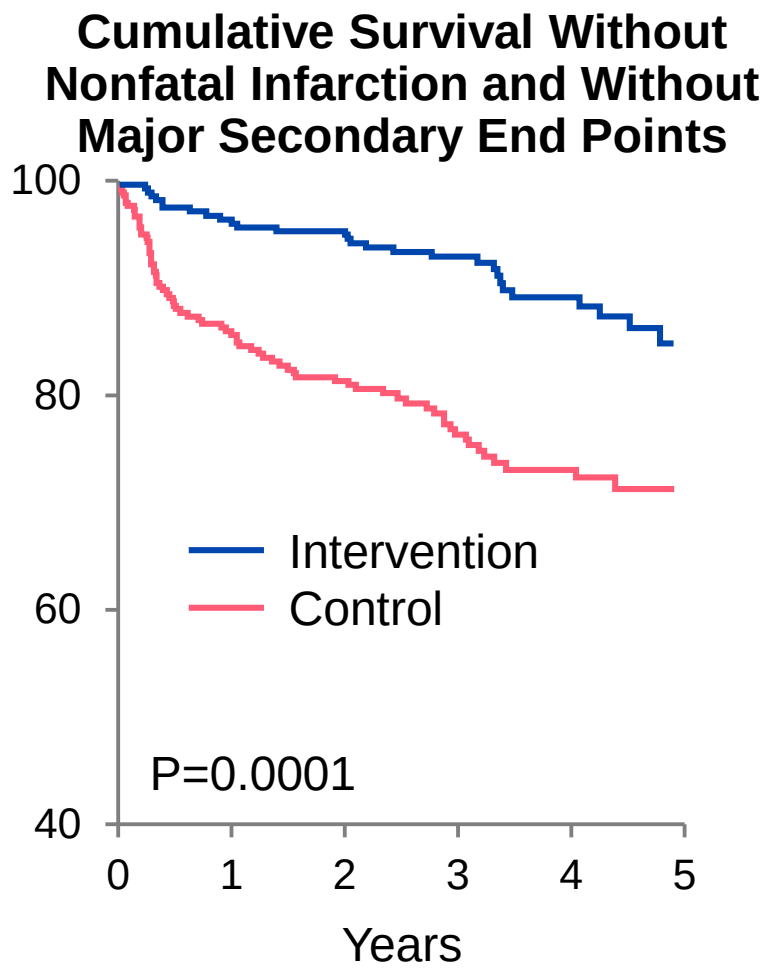
Mediterranean Diet and CV Events





de Lorgeril M et al: Circulation 99:779, 1999

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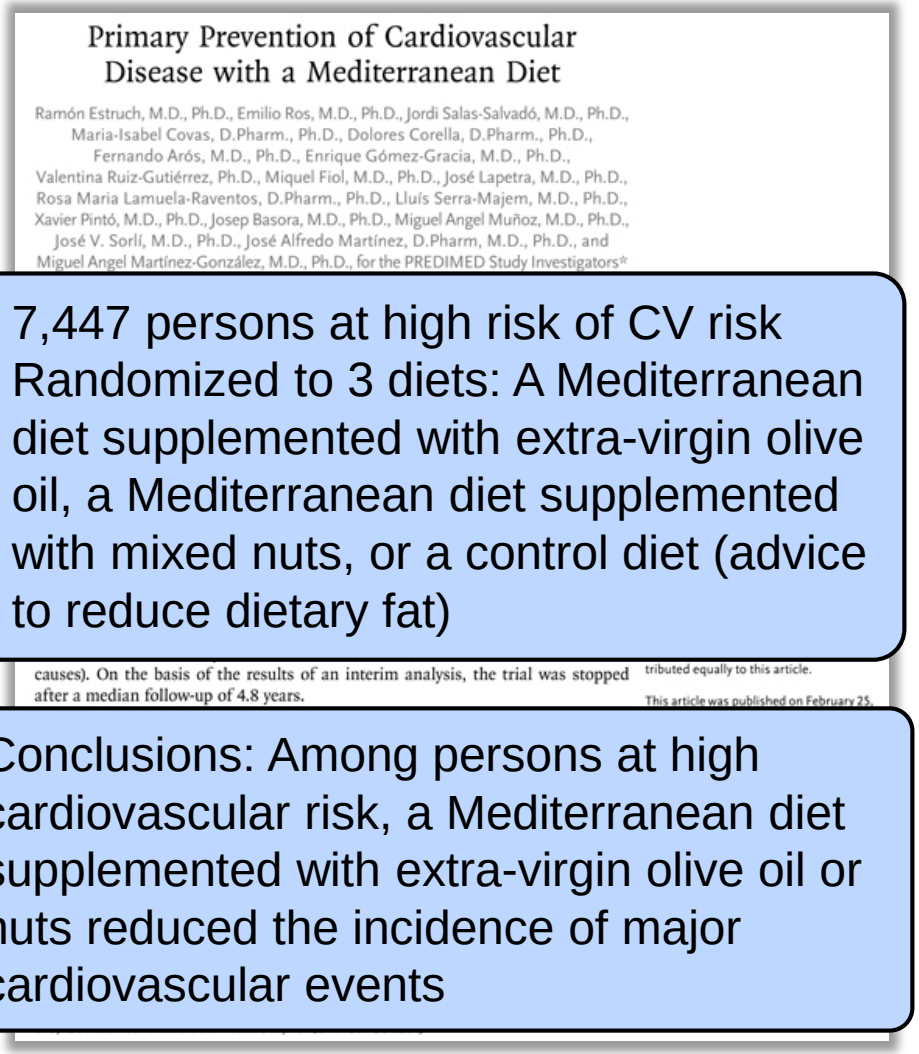
Primary Prevention of Cardiovascular Disease with a Mediterranean Diet



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*

causes). On the basis of the results of an interim analysis, the trial was stopped after a median follow-up of 4.8 years.

tributed equally to this article.

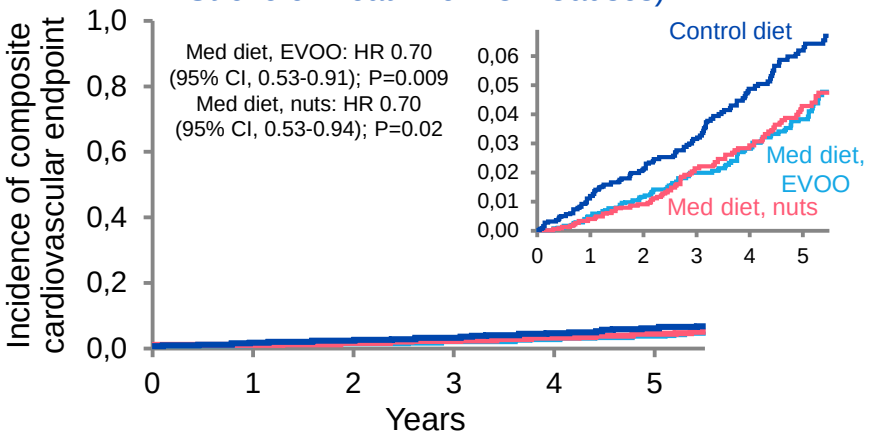
This article was published on February 25,

- 7,447 persons at high risk of CV risk
- Randomized to 3 diets: A Mediterranean diet supplemented with extra-virgin olive oil, a Mediterranean diet supplemented with mixed nuts, or a control diet (advice to reduce dietary fat)

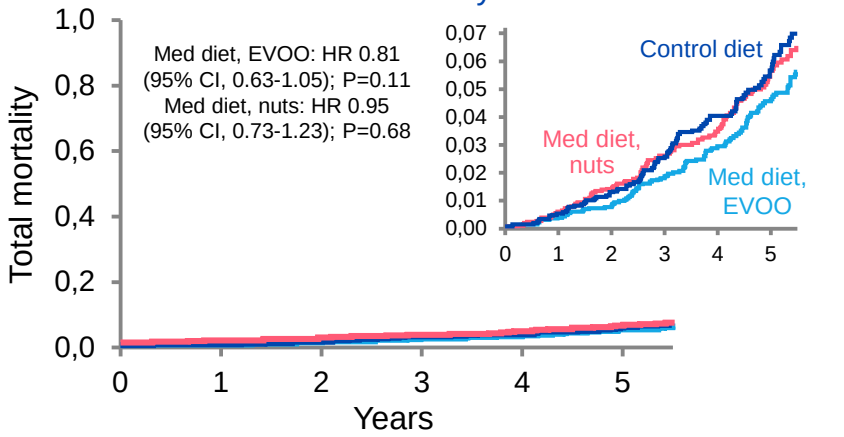
Conclusions: Among persons at high cardiovascular risk, a Mediterranean diet supplemented with extra-virgin olive oil or nuts reduced the incidence of major cardiovascular events

Kaplan-Meier Estimates of the Incidence of Outcome Events in Total Study Population

Primary Endpoint (Acute MI, Stroke or Death from CV Causes)



Total Mortality



Estruch et al: NEJM, 2013

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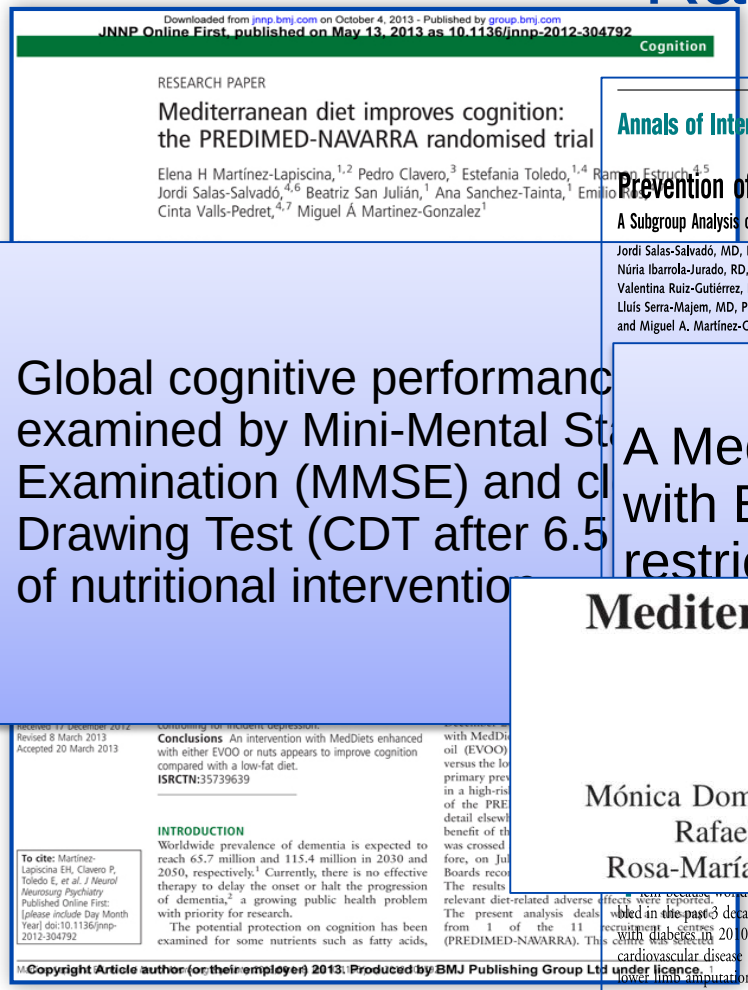
Mediterranean Diet PREDIMET-NAVARRA Randomized Trial



Global cognitive performanc
examined by Mini-Mental St
Examination (MMSE) and cl
Drawing Test (CDT after 6.5
of nutritional intervention

A Mediterranean diet enriched with EVOO but without energy restrictions reduced diabetes

- MedDiets supplemented with extra-virgin olive oil or nuts reduced 24-hour ambulatory BP, total cholesterol, and fasting glucose

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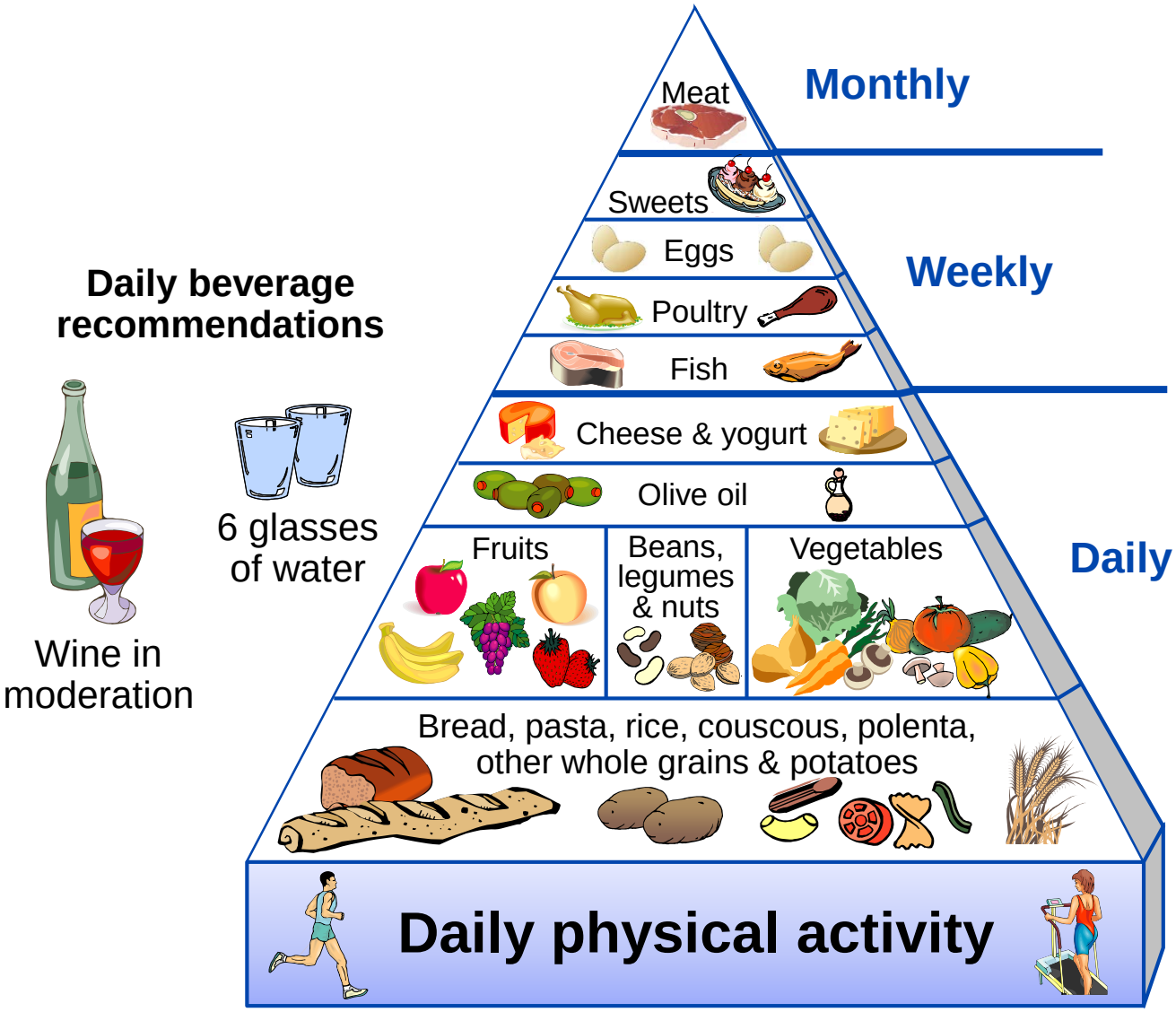
Martínez et al: J Neurol Neurosurg Psychiatry 00:1, 2013

The Traditional Healthy Mediterranean Diet Pyramid



2000 Oldways Preservation & Exchange Trust

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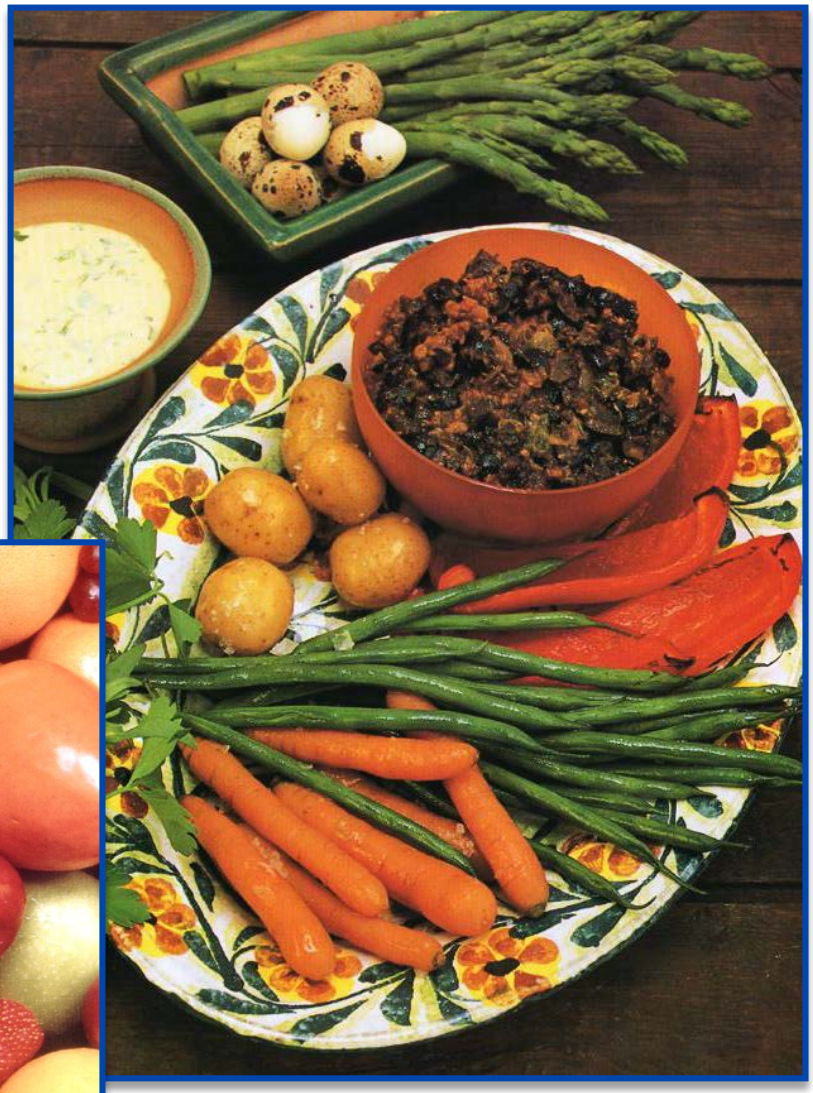
Mediterranean Diet – Health Effects

Vegetables and fruits

- High in phytochemicals
- Low in calories
- Associated with low risk of CHD*



*Ann Intern Med 134:1106, 2001

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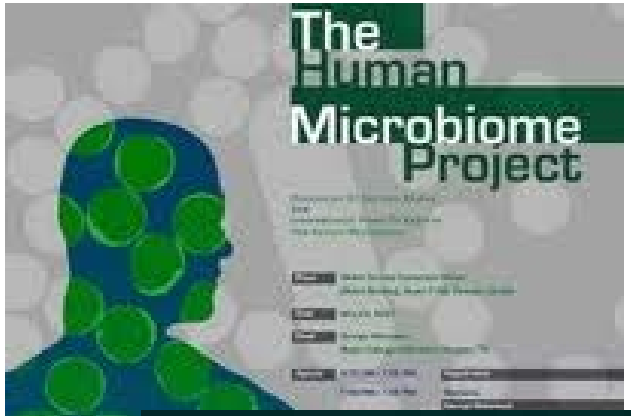
The Human Microbiome Projects



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HEALTH

You Are Your Bacteria: How the Gut Microbiome Influences Health

The bacteria in our gut already plays an important role in digestion. But new studies indicate that our bacteria could play a major role in whether or not we become obese

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"AN AMAZING RESULT WITH POSSIBLY ENORMOUS IMPLICATIONS FOR THE TREATMENT AND EVEN PREVENTION OF THE GREATEST PUBLIC HEALTH ISSUE OF OUR TIME"

Microbiome breakthrough: Gut flora implicated in metabolic disorders

By Nathan Gray+
29-Aug-2013

Post a comment

The diversity and richness of bacteria in our gut may have a direct impact our risks of developing metabolic conditions including heart disease and type 2 diabetes, according to the new MetaHIT data.

Related tags: Microbiota, Gut health, Obesity

Related topics: Probiotics, Phood, Research, Probiotics and prebiotics, Cardiovascular health, Diabetes, Gut health, Immune system

There is a distinct link between the composition of our gut bacteria and incidence of obesity related conditions including heart disease and diabetes, according to new data from the MetaHIT project.

The new findings, published in *Nature* , find a link between the 'richness' of bacterial species in our gut and susceptibility to metabolic

RELATED NEWS:

Scientists think that gut microbiome could be linked to obesity and other disorders.

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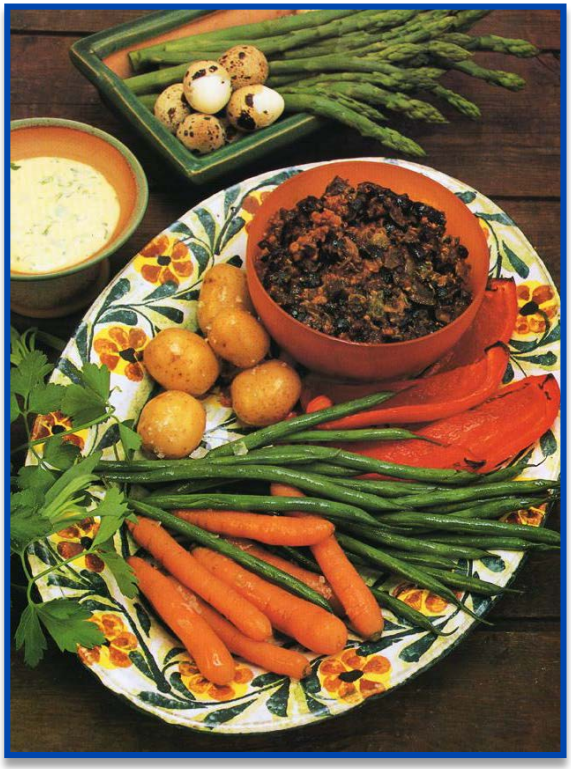
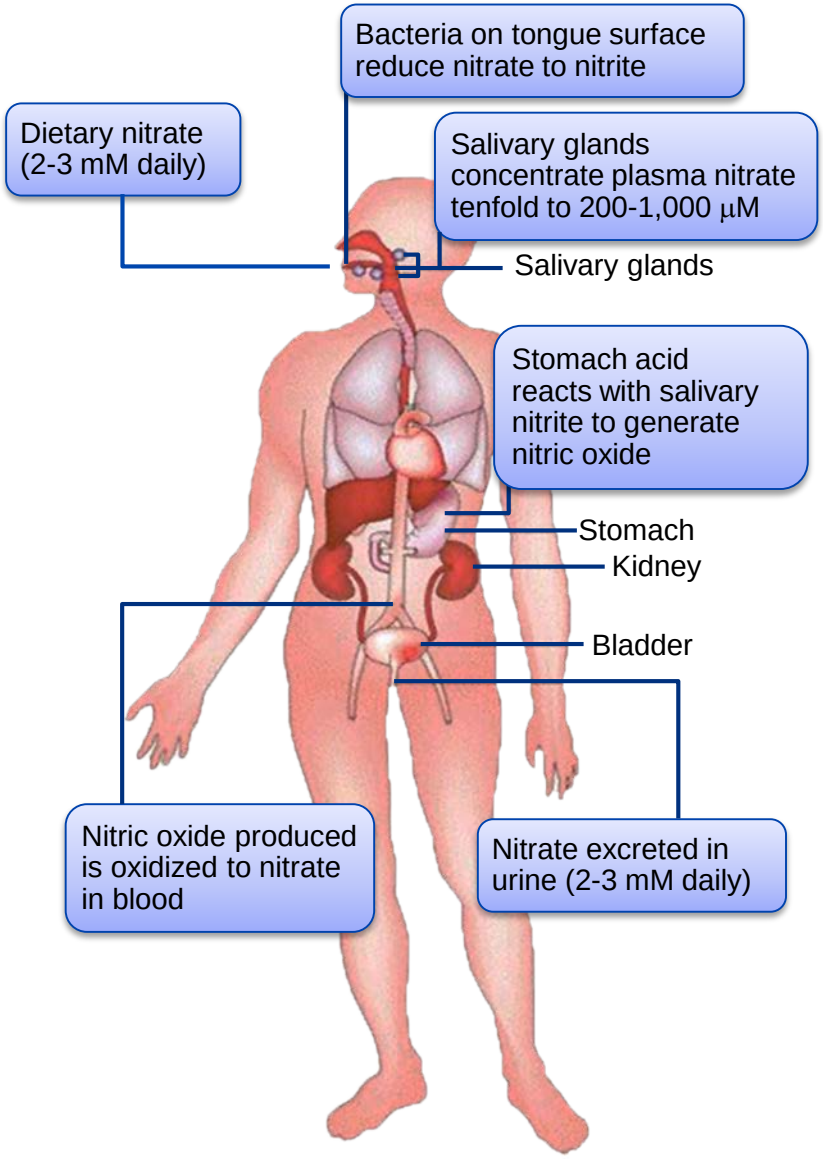
MAYO CLINIC

Mediterranean Diet – Health Effects

Vegetables, the main dietary source of nitrate, account for 60–80% of the daily nitrate intake





*Ann Intern Med 134:1106, 2001

MAYO CLINIC

Intestinal Microbial Metabolism of Phosphatidylcholine and Cardiovascular Risk

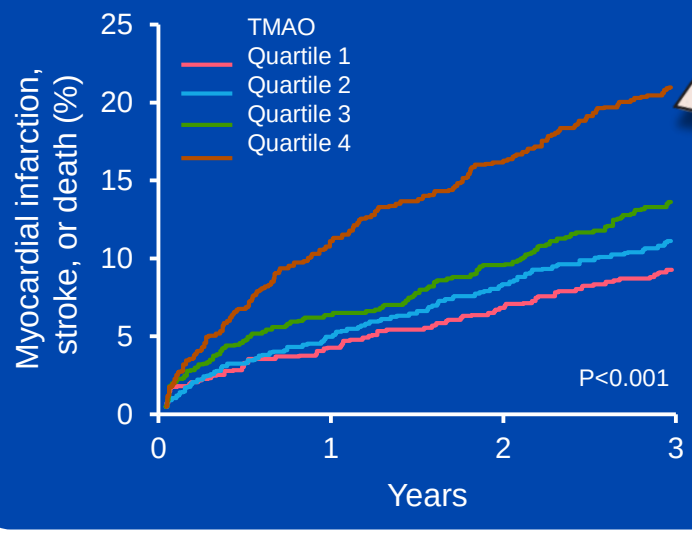
The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 APRIL 25, 2013 VOL. 368 NO. 17

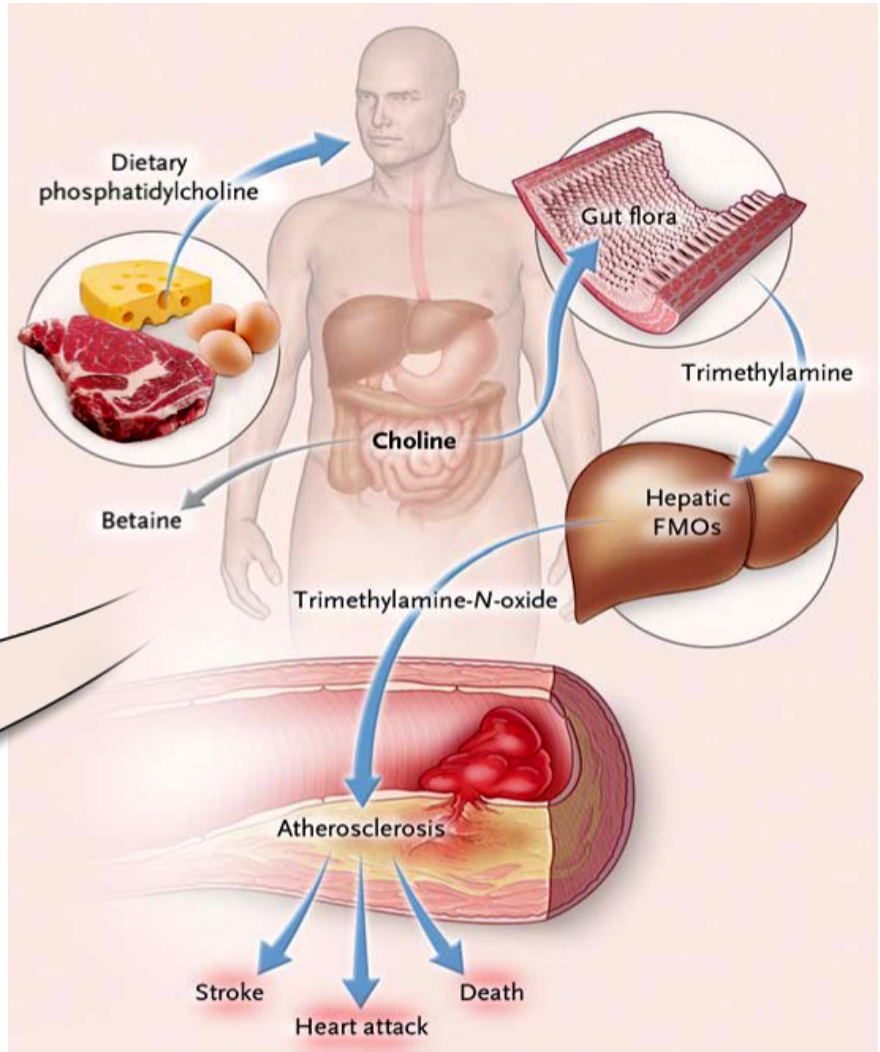
Intestinal Microbial Metabolism of Phosphatidylcholine and Cardiovascular Risk

W.H. Wilson Tang, M.D., Zeneng Wang, Ph.D., Bruce S. Levison, Ph.D., Robert A. Koeth, B.S., Earl B. Britt, M.D., Xiaoming Fu, M.S., Yuping Wu, Ph.D., and Stanley L. Hazen, M.D., Ph.D.

Kaplan-Meier Estimates of Major Adverse Cardiovascular Events, According to the Quartile of TMAO Level – 4,007 Participants



Pathways Linking Dietary Phosphatidylcholine and carnitine, Intestinal Microbiota, and Incident Adverse



The microbiota metabolizes dietary L-carnitine and choline to form TMA and TMAO. TMAO affects cholesterol and sterol metabolism in macrophages, liver and intestine

MAYO CLINIC

Chem. Senses 31: 747–752, 2006
doi:10.1093/chemse/bjl017
Advance Access publication August 4, 2006

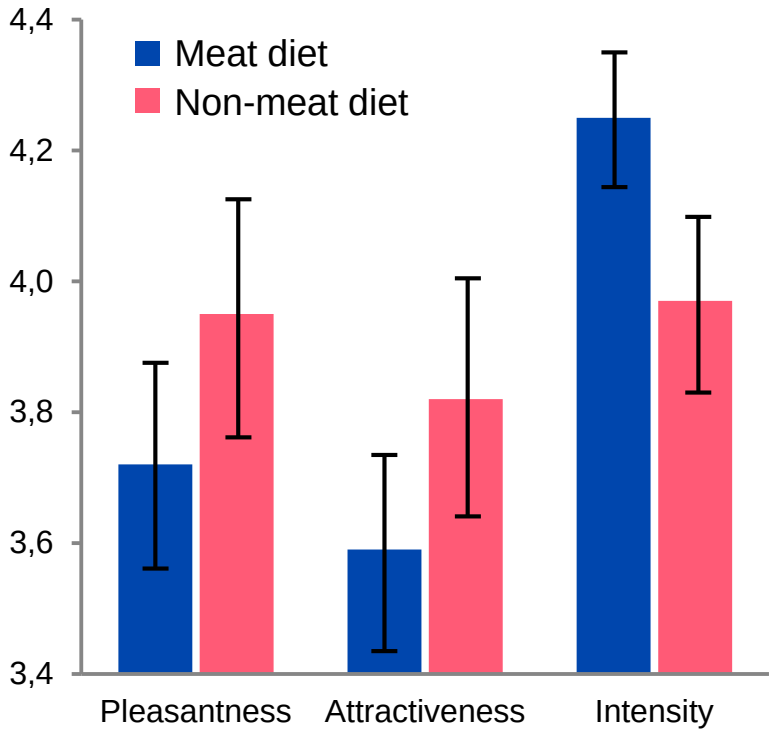
The Effect of Meat Consumption on Body Odor Attractiveness

Jan Havlicek[1] and Pavlina Lenochova[2]

[1]Department of Anthropology, Faculty of Humanities and [2]Department of Anthropology and Human Genetics, Faculty of Science, Charles University, Prague, Czech Republic

- Male odor donors were on "meat" or "nonmeat" diet for 2 weeks wearing axillary pads to collect body odor during the final 24 h of the diet. Fresh odor samples were assessed for their pleasantness, attractiveness, masculinity, and intensity by 30 women not using hormonal contraceptives.
- This suggests that red meat consumption has a negative impact on perceived body odor.

Axillary Odor Pleasantness, Attractiveness, and Intensity When Body Odor Donors Were on Meat Diet



Havlicek and Lenochova: Chem. Senses 31:747, 2006

MAYO CLINIC

ORIGINAL INVESTIGATION

ONLINE FIRST

Vegetarian Dietary Patterns and Mortality in Adventist Health Study 2

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

Importance: Some evidence suggests vegetarian dietary patterns may be associated with reduced mortality, but the relationship is not well established.

Objective: To evaluate the association between vegetarian dietary patterns and mortality.

Results: There were 2570 deaths among 73 308 participants during a mean follow-up time of 5.79 years. The mortality rate was 6.05 (95% CI, 5.82-6.29) deaths per 1000 person-years. The adjusted hazard ratio (HR) for all-cause mortality in all vegetarians combined vs nonvegetarians was 0.88 (95% CI, 0.80-0.97). The adjusted

5 dietary patterns: nonvegetarian, semi-vegetarian, pesco-vegetarian, lacto-ovo–vegetarian, and vegan.

Main Outcome and Measure: The relationship be-

to be more robust in males. These favorable associations should be considered carefully by those offering dietary guidance.

and Ms Fan) and Medicine (Drs Sabaté, Jaceldo-Siegl, Knutsen, and Fraser), Loma Linda University, Loma Linda, California.

"prudent" dietary patterns,[6,12,13] plant-based diet scores,[14] plant-based low-carbohydrate diets,[15] and vegetarian diets.[4,16,17] Associations with increased mortality have been found for a high glyce-

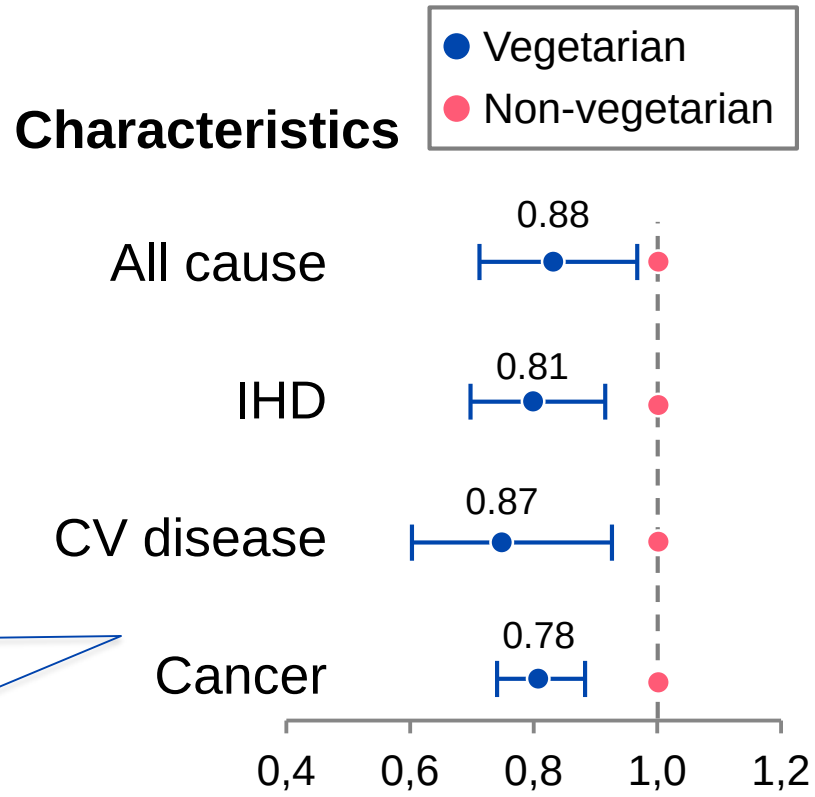
trients associated with reduced mortality while having reduced intakes of some foods associated with increased mortality. Vegetarian dietary patterns have been associated with reductions in risk for sev-

Design: Prospective cohort study; mortality analysis by Cox proportional hazards regression, controlling for important demographic and lifestyle confounders.

Participants: A total of 96 469 men and women recruited between 2002 and 2007, from which an analytic sample of 73 308 participants remained after exclusions.

Conclusions and Relevance: Vegetarian diets are associated with lower all-cause mortality and with some reductions in cause-specific mortality.

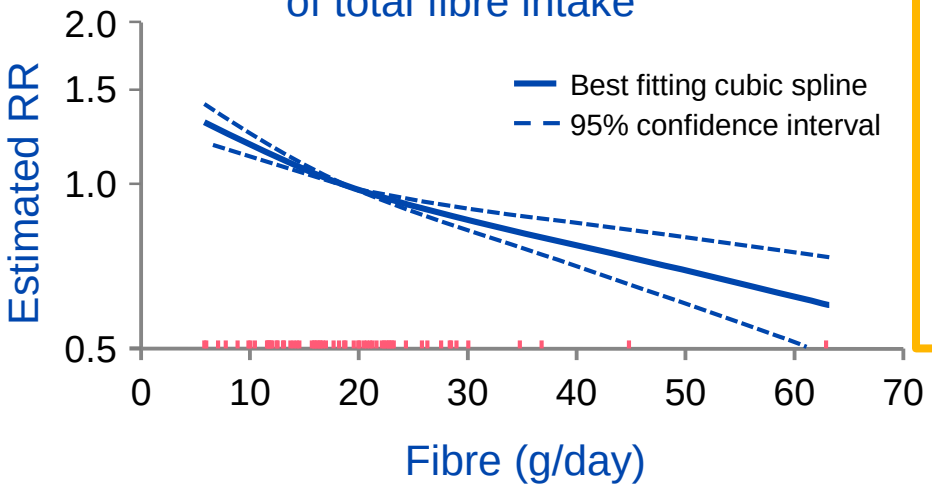
Comparison of Vegetarian With Nonvegetarian Dietary Patterns With Respect to All-Cause and Cause-Specific Mortality From a Cox Proportional Hazards Regression Model Among Participants in Adventist Health Study 2, 2002-2009



Dietary fibre intake and risk of cardiovascular disease: systemic review and meta-analysis

Eligibility criteria for studies reporting associations between fibre intake and coronary heart disease or cardiovascular disease, with a minimum follow-up of three years and published in English between 1 January 1990 and 6 August 2013

Risk of CHD across increasing levels of total fibre intake



Threapleton et al: BMJ 347:1136, 2013

Original Contribution

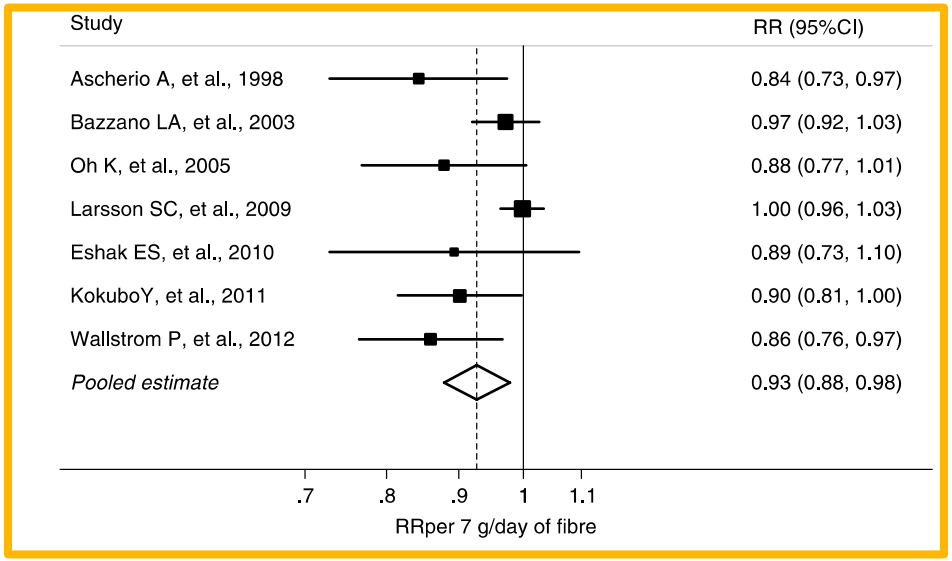
Dietary Fiber Intake and Risk of First Stroke
A Systematic Review and Meta-Analysis

Diane E. Threapleton, MSc; Darren C. Greenwood, PhD; Charlotte E.L. Evans, PhD; Cristine L. Cleghorn, MSc; Camilla Nykjaer, MSc; Charlotte Woodhead, MSc; Janet E. Cade, PhD; Chris P. Gale, MBBS; Victoria J. Burley, PhD

Background and Purpose—Fiber intake is associated with reduced stroke risk in prospective studies, but no meta-analysis has been published to date.

Methods—Multiple electronic databases were searched for healthy participant studies reporting fiber intake and incidence of first hemorrhagic or ischemic stroke, published between January 1990 and May 2012.

Results—Eight cohort studies from the United States, northern Europe, Australia, and Japan met inclusion criteria. Total dietary fiber intake was inversely associated with risk of hemorrhagic plus ischemic stroke, with some evidence of heterogeneity between studies (I^2; relative risk per 7 g/day, 0.93; 95% confidence interval, 0.88–0.98; I^2=59%). Soluble fiber intake, per 4 g/day, was not associated with stroke risk reduction with evidence of low heterogeneity between studies, relative risk 0.94 (95% confidence interval, 0.88–1.01; I^2=21%). There were few studies reporting stroke risk in



MAYO CLINIC

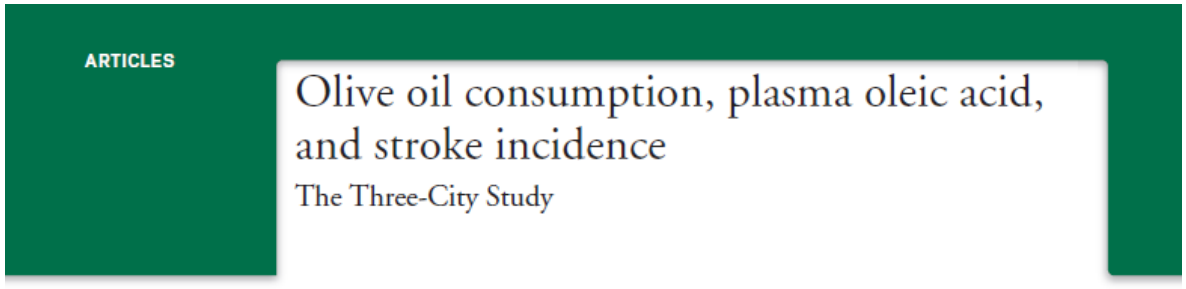
Mediterranean Diet – Health Effects

Olive oil

- Monounsaturated fat
- Lowers total and LDL cholesterol
- Doesn't lower HDL cholesterol
- Resistant to oxidation
- Associated with reduced risk of CHD

*Ann Intern Med 134:1106, 2001

MAYO CLINIC



Objective – To determine whether high olive oil consumption, and high plasma oleic acid as an indirect biological marker of olive oil intake, are associated with lower incidence of stroke in older subjects

Samieri, Equipe Epidémiologie de la Nutrition et des Comportements Alimentaires, INSERM, U897, Université Bordeaux 2, ISPED case 11, 146 rue Léo-Saignat, F-33076

6%–63%, $p = 0.03$) lower risk of stroke. In the secondary sample, 27 incident strokes occurred. After full adjustment, higher plasma oleic acid was associated with lower stroke incidence (p for trend = 0.03). Compared to those in the first tertile, participants in the third tertile of plasma oleic acid had a 73% (95% confidence interval 10%–92%, $p = 0.03$) reduction of stroke risk.

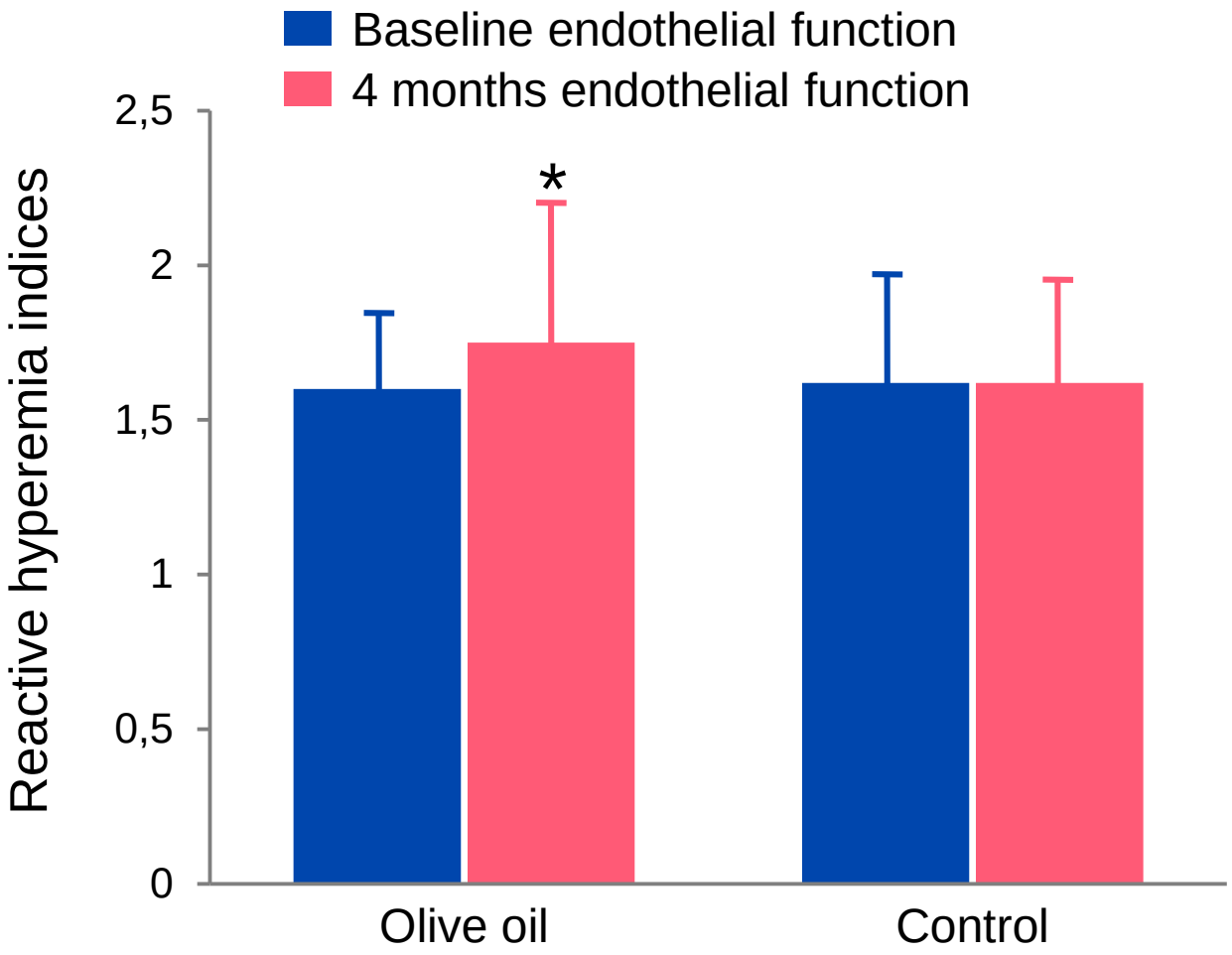
Baseline olive oil use	HR (95% CI)	P
No use	Ref	–
Moderate use (cooking or dressing)	0.80 (0.53-1.20)	0.28
Intensive use (both cooking and dressing)	**0.59** (0.37-0.94)	0.03

Conclusions – These results suggest a protective role for high olive oil consumption on the risk of stroke in older subjects. Neurology®2011;77:1-1

Samieri C et al: Neurology 77:1-1, 2011

MAYO CLINIC

Olive Oil Improves Endothelial Function



WBC
ICAM
VCAM
Ox stress

Widmer & Lerman E J Nut 2012

MAYO CLINIC

Mediterranean Diet – Health Effects

- Fish and shellfish – omega-3 fatty acids
  - Anti-arrhythmic effect
  - Antithrombotic effect
  - Lowers triglycerides
  - Lowers blood pressure
  - Anti-inflammatory effect
- Associated with reduced risk of CHD and sudden death (DART* and GISSI-Prevenzione** trials)

*Lancet 16:1450,1989; **Lancet 354:447, 1999

MAYO CLINIC

Fish and Omega-3 Fatty Acid Intake
Secondary Prevention Trial

GISSI – Prevenzione Trial

- 11,324 pts (mainly men) post-MI
- 1 g fish oil omega-3/day - 2 yrs
  - ↓ 20% all-cause mortality
  - ↓ 45% sudden death

Ref JAMA 2002;287(14):1815-21

MAYO CLINIC

Can you eat fish in a capsule ?

Original Article

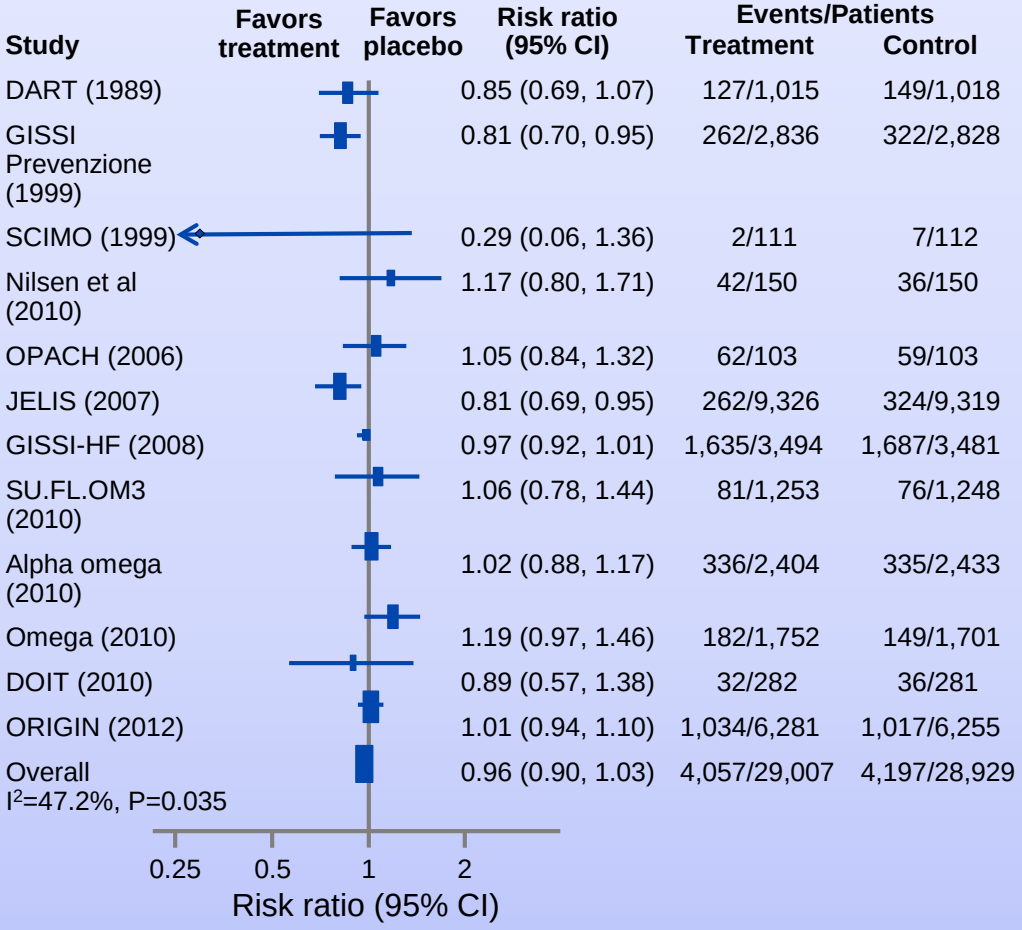
Omega 3 Fatty Acids and Cardiovascular Ou

Systematic Review and Meta-Analysis

Sradha Kotwal, BHB, MBChB, FRACP; Min Jun, BSc (Hons), MSc; David Sullivan, MBE
Vlado Perkovic, MBBS, PhD, FRACP; Bruce Neal, MBChB, PhD, FRA

- We assessed the effects of ω-3 FA on cardiovascular and other important clinical outcomes
- 20 studies including 63,030 participants were included
- Adverse events were more common in the treatment group than the placebo group (RR=1.18; 95% CI; 1.02-1.37; P=0.03), predominantly because of an excess of gastrointestinal side effects

Effect of ω-3 Fatty Acids on Composite Cardiovascular Outcomes



Weights are from random effects analysis

Kotwal et al: Circ Cardiovasc Qual Outcomes, 2012

MAYO CLINIC

RESEARCH

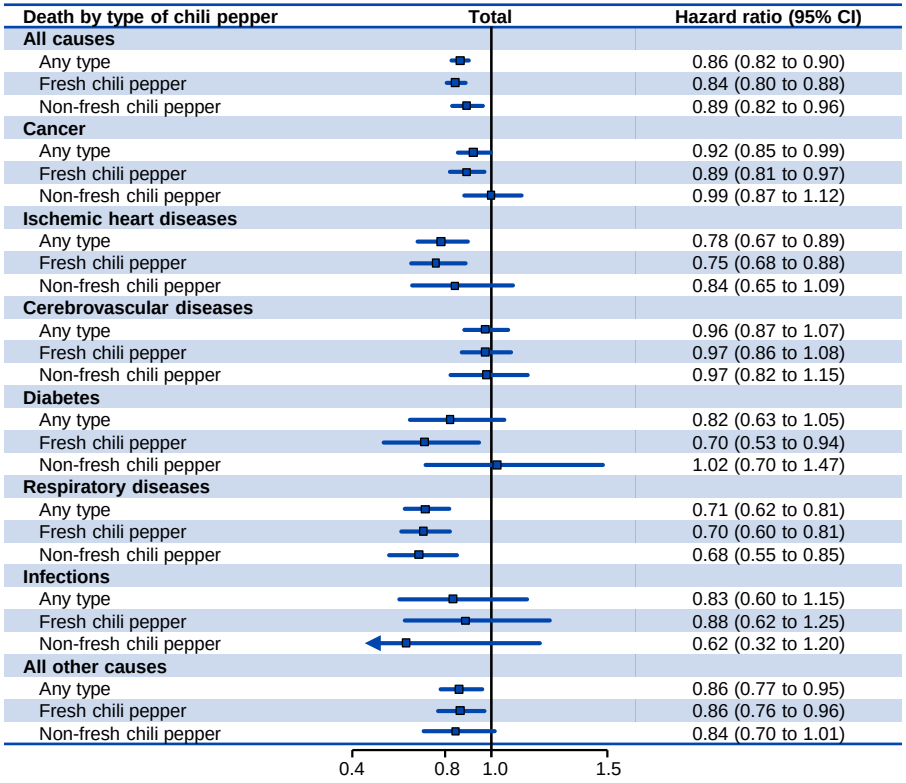
Consumption of spicy foods and total and cause specific mortality: population based cohort study

Jun Lv,[1] Lu Qi,[2,3] Canqing Yu,[1] Ling Yang,[4] Yu Guo,[5] Yiping Chen,[4] Zheng Bian,[5] Dianjianyi Sun,[1] Jianwei Du,[6] Pengfei Ge,[7] Zhenzhu Tang,[8] Wei Hou,[9] Yanjie Li,[10] Junshi Chen,[11] Zhengming Chen,[4] Liming Li[1 5] on behalf of the China Kadoorie Biobank collaborative group

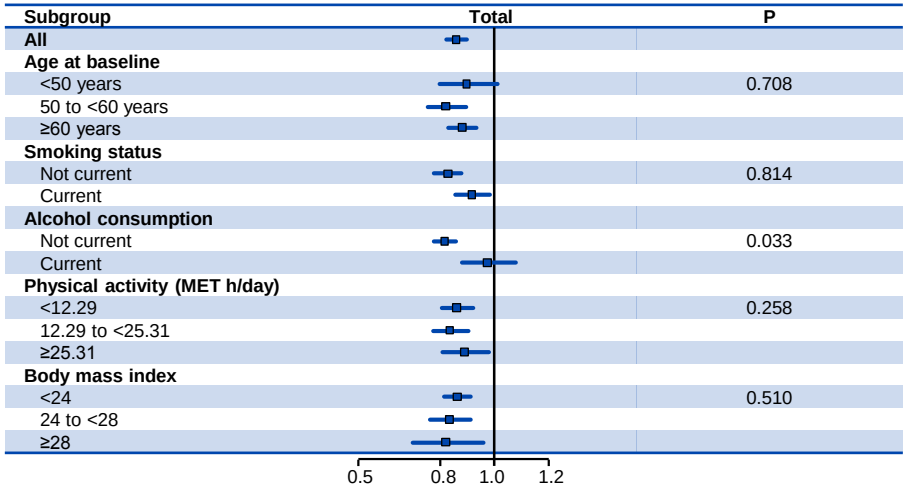
- Population based prospective cohort study
- Participants 199,293 men and 288,082 women aged 30 to 79 years. Consumption frequency of spicy foods, self reported once at baseline.

Lv et al: BMJ 351:h3942, 2015

Analysis of Associations Between Consumption of Spicy Foods ≥6 Days a Week & Total & Cause Specific Mortality According to Consumption of Fresh Chili Pepper



Analysis of Associations Between Consumption of Spicy Foods ≥6 Days a Week and Total Mortality According to Potential Baseline Risk Factors

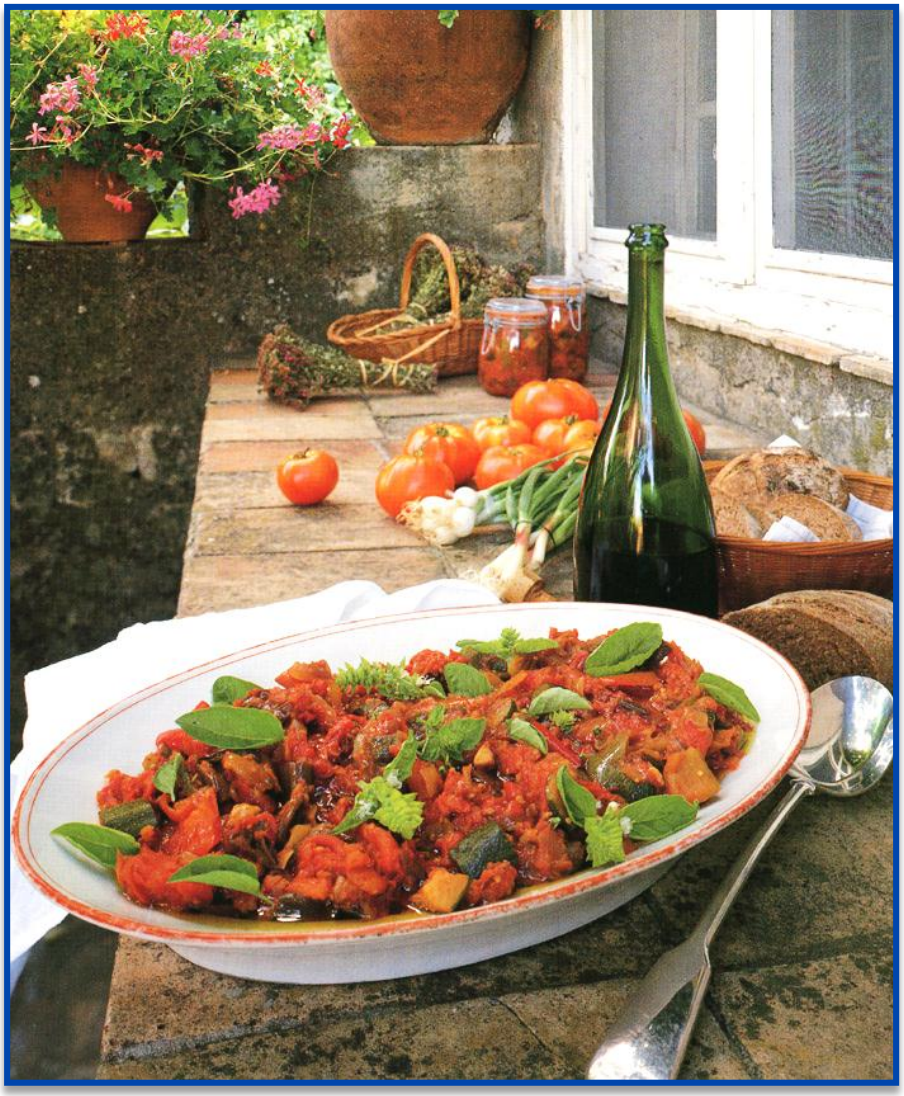


MAYO CLINIC

Mediterranean Diet – Health Effects

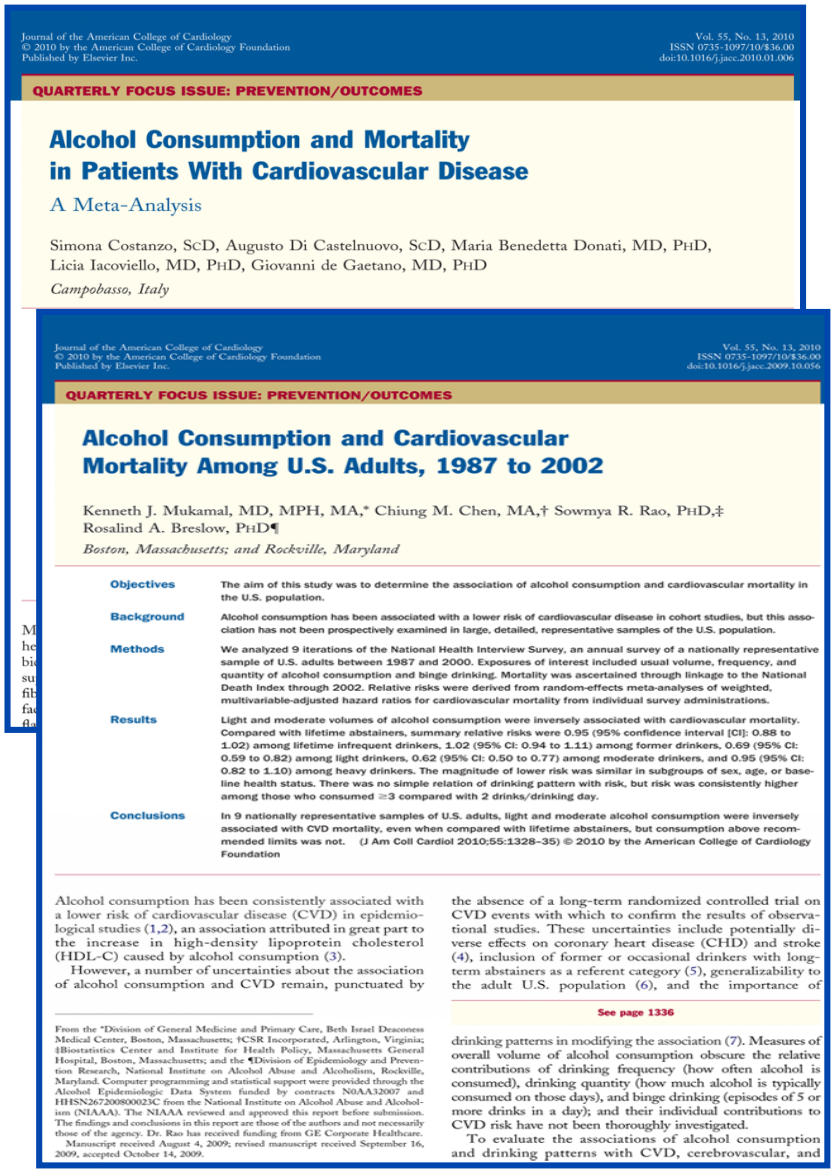
Wine

- Raises HDLc
- Inhibits platelet aggregation
- High in phenolic antioxidants
- Alcohol associated with reduced risk of CHD



*Ann Intern Med 134:1106, 2001

MAYO CLINIC



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doi:10.1016/j.jacc.2010.01.006

QUARTERLY FOCUS ISSUE: PREVENTION/OUTCOMES

Alcohol Consumption and Mortality in Patients With Cardiovascular Disease

A Meta-Analysis

Simona Costanzo, ScD, Augusto Di Castelnuovo, ScD, Maria Benedetta Donati, MD, PhD, Licia Iacoviello, MD, PhD, Giovanni de Gaetano, MD, PhD

Campobasso, Italy

Journal of the American College of Cardiology
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ISSN 0735-1097/10/$36.00
doi:10.1016/j.jacc.2009.10.056

QUARTERLY FOCUS ISSUE: PREVENTION/OUTCOMES

Alcohol Consumption and Cardiovascular Mortality Among U.S. Adults, 1987 to 2002

Kenneth J. Mukamal, MD, MPH, MA,* Chiung M. Chen, MA,† Sowmya R. Rao, PhD,‡ Rosalind A. Breslow, PhD¶

Boston, Massachusetts; and Rockville, Maryland

Objectives The aim of this study was to determine the association of alcohol consumption and cardiovascular mortality in the U.S. population.

Background Alcohol consumption has been associated with a lower risk of cardiovascular disease in cohort studies, but this association has not been prospectively examined in large, detailed, representative samples of the U.S. population.

Methods We analyzed 9 iterations of the National Health Interview Survey, an annual survey of a nationally representative sample of U.S. adults between 1987 and 2000. Exposures of interest included usual volume, frequency, and quantity of alcohol consumption and binge drinking. Mortality was ascertained through linkage to the National Death Index through 2002. Relative risks were derived from random-effects meta-analyses of weighted, multivariable-adjusted hazard ratios for cardiovascular mortality from individual survey administrations.

Results Light and moderate volumes of alcohol consumption were inversely associated with cardiovascular mortality. Compared with lifetime abstainers, summary relative risks were 0.95 (95% confidence interval [CI]: 0.88 to 1.02) among lifetime infrequent drinkers, 1.02 (95% CI: 0.94 to 1.11) among former drinkers, 0.69 (95% CI: 0.59 to 0.82) among light drinkers, 0.62 (95% CI: 0.50 to 0.77) among moderate drinkers, and 0.95 (95% CI: 0.82 to 1.10) among heavy drinkers. The magnitude of lower risk was similar in subgroups of sex, age, or baseline health status. There was no simple relation of drinking pattern with risk, but risk was consistently higher among those who consumed ≥3 compared with 2 drinks/drinking day.

Conclusions In 9 nationally representative samples of U.S. adults, light and moderate alcohol consumption were inversely associated with CVD mortality, even when compared with lifetime abstainers, but consumption above recommended limits was not. (J Am Coll Cardiol 2010;55:1328–35) © 2010 by the American College of Cardiology Foundation

Alcohol consumption has been consistently associated with a lower risk of cardiovascular disease (CVD) in epidemiological studies (1,2), an association attributed in great part to the increase in high-density lipoprotein cholesterol (HDL-C) caused by alcohol consumption (3).

However, a number of uncertainties about the association of alcohol consumption and CVD remain, punctuated by the absence of a long-term randomized controlled trial on CVD events with which to confirm the results of observational studies. These uncertainties include potentially diverse effects on coronary heart disease (CHD) and stroke (4), inclusion of former or occasional drinkers with long-term abstainers as a referent category (5), generalizability to the adult U.S. population (6), and the importance of

See page 1336

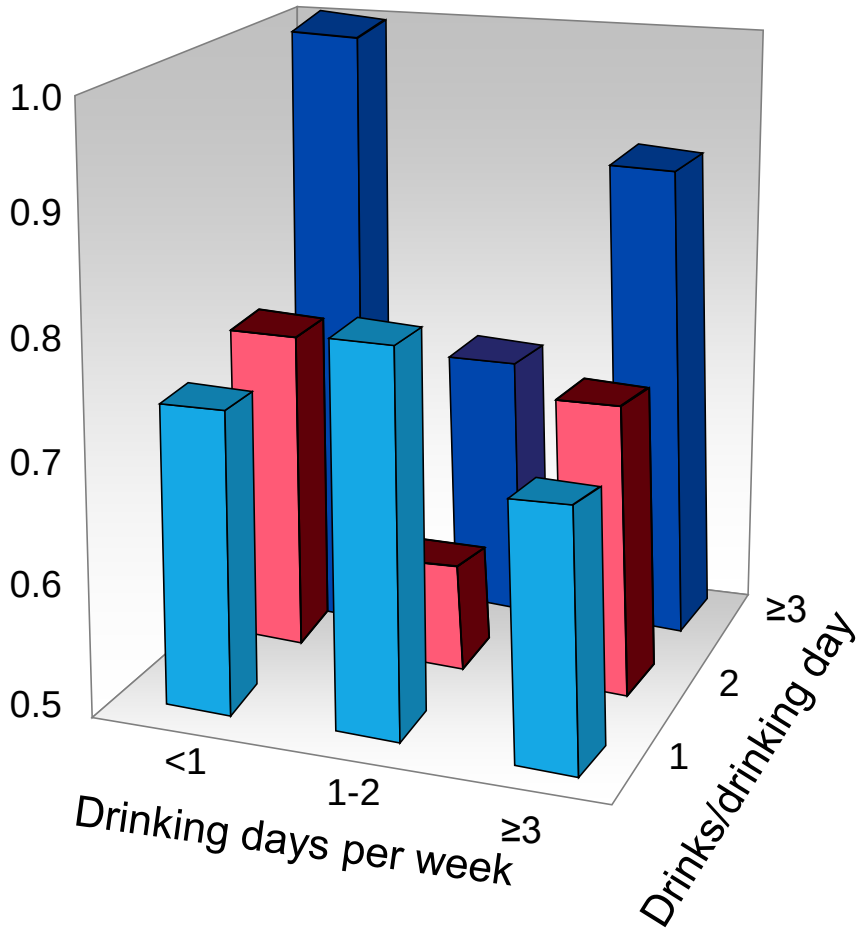
drinking patterns in modifying the association (7). Measures of overall volume of alcohol consumption obscure the relative contributions of drinking frequency (how often alcohol is consumed), drinking quantity (how much alcohol is typically consumed on those days), and binge drinking (episodes of 5 or more drinks in a day); and their individual contributions to CVD risk have not been thoroughly investigated.

To evaluate the associations of alcohol consumption and drinking patterns with CVD, cerebrovascular, and

From the *Division of General Medicine and Primary Care, Beth Israel Deaconess Medical Center, Boston, Massachusetts; †CSR Incorporated, Arlington, Virginia; ‡Biostatistics Center and Institute for Health Policy, Massachusetts General Hospital, Boston, Massachusetts; and the ¶Division of Epidemiology and Prevention Research, National Institute on Alcohol Abuse and Alcoholism, Rockville, Maryland. Computer programming and statistical support were provided through the Alcohol Epidemiologic Data System funded by contracts N0AA32007 and HHSN267200800023C from the National Institute on Alcohol Abuse and Alcoholism (NIAAA). The NIAAA reviewed and approved this report before submission. The findings and conclusions in this report are those of the authors and not necessarily those of the agency. Dr. Rao has received funding from GE Corporate Healthcare.

Manuscript received August 4, 2009; revised manuscript received September 16, 2009, accepted October 14, 2009.

HR for CVD Mortality



BMJ

BMJ 2013;347:f7255 doi: 10.1136/bmj.f7255 (Published 12 December 2013) Page 1 of 7

RESEARCH

CHRISTMAS 2013: RESEARCH

Were James Bond's drinks shaken because of alcohol induced tremor?

OPEN ACCESS

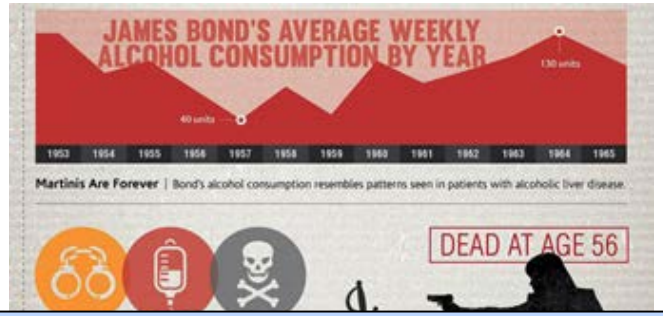
Graham Johnson *ST5 emergency medicine*[1], Indra Neil Guha *clinical associate professor of hepatology*[2], Patrick Davies *consultant paediatric intensive care*[3]

[1]Emergency Department, Royal Derby Hospital, Derby; [2]NIHR Nottingham Digestive Diseases Biomedical Research Unit, University of Nottingham; [3]Paediatric Intensive Care Department, Nottingham University Hospitals NHS Trust, Nottingham

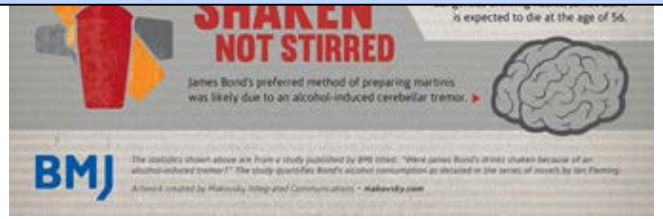
	Days described (no.)	Days unable to work	Weekly consumption: Alcohol consumed (units)	Weekly consumption: Including days unable to drink	Weekly consumption: Excluding days unable to drink
Casino Royale (1953)	25	21	73.8	20.7	129.1
Live and Let Die (1954)	14	7	84.45	42.3	84.5
Moonraker (1955)	5.5	0	73.6	93.6	93.6
Diamonds are Forever (1956)	5	0	50	70	70
From Russia with Love (1957)	8	0	106.8	93.45	93.45
Dr No (1958)	13	8	51.1	27.5	71.5
Goldfinger (1959)	13	0	97.4	52.4	52.4
For Your Eyes Only (1960)	8	0	113.35	99.2	99.2
Thunderball (1961)	5	0	52.55	73.6	73.6
On Her Majesty's Secret Service (1963)	12	0	179.8	104.9	104.9
You Only Live Twice (1964)	12	0	225.8	132	132
Man with the Golden Gun (1965)	3	0	41.5	96.8	96.5
Total	123.5	36	1150.15	Mean 62.5	Mean 92.0

Methods

All 14 James Bond books were read by two of the authors. Contemporaneous notes were taken detailing every alcoholic drink taken. Predefined alcohol unit leve were used to calculate consumption. Days when Bond was unable to consume alcohol (such as through incarceration) were noted.



James Bond's level of alcohol intake puts him at high risk of multiple alcohol related diseases and an early death



MAYO CLINIC

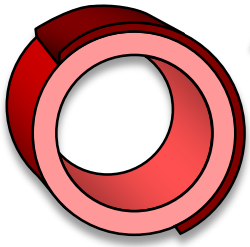
Dessert – Health-Relevant Effect of Chocolate

Blood pressure reduction and stroke

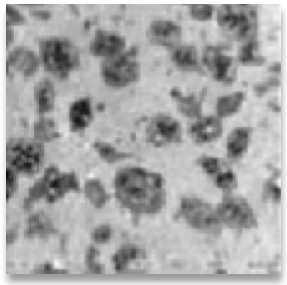
Anti depressant

Other – anti-inflammatory

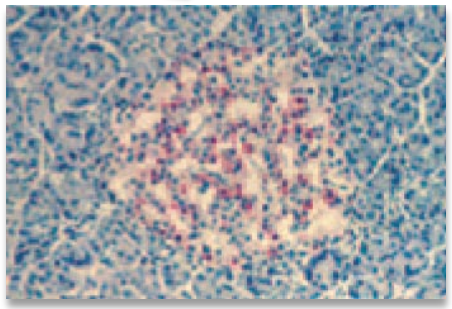
Mobilization of functional EPCs



Improved vascular function



Reduced platelet reactivity



Improved insulin sensitivity

Modified from Corti et al: Circ, 2009

MAYO CLINIC

The NEW ENGLAND JOURNAL of MEDICINE

OCCASIONAL NOTES

Chocolate Consumption, Cognitive Function, and Nobel Laureates

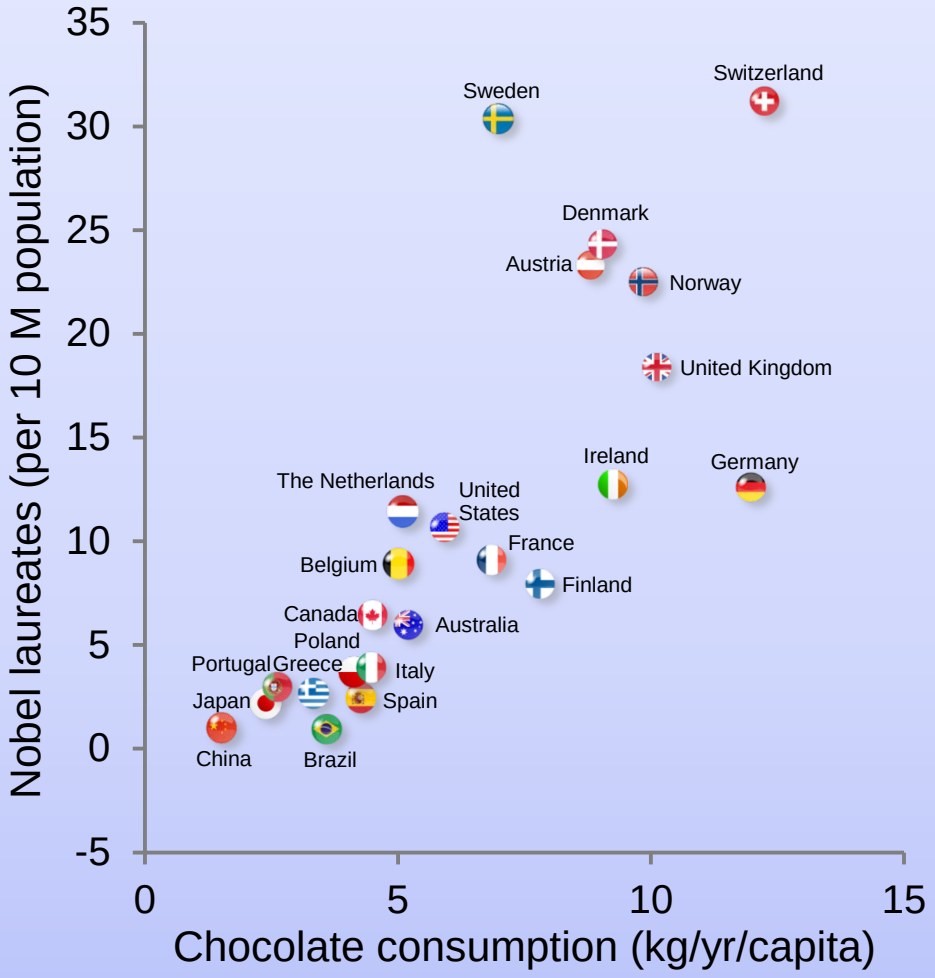
Franz H. Messerli, M.D.

Dietary flavonoids, abundant in plant-based foods, have been shown to improve cognitive function. Specifically, a reduction in the risk of dementia, enhanced performance on some cognitive tests, and improved cognitive function in elderly patients with mild impairment have been associated with a regular intake of flavonoids.[1,2] A subclass of flavonoids called flavanols, which are widely present in cocoa, green tea, red wine, and some fruits, seems to be effective in slowing down or even reversing the reductions in cognitive performance that occur with aging. Dietary flavanols have also been shown to improve endothelial function and to lower blood pressure by causing vasodilation in the peripheral vasculature and in the brain.[3,4] Improved cognitive performance with the administration of a cocoa polyphenolic

cause the population of a country is substantially higher than its number of Nobel laureates, the numbers had to be multiplied by 10 million. Thus, the numbers must be read as the number of Nobel laureates for every 10 million persons in a given country.

All Nobel Prizes that were awarded through October 10, 2011, were included. Data on per capita yearly chocolate consumption in 22 countries was obtained from Chocosuisse (www.chocosuisse.ch/web/chocosuisse/en/home), Theobroma-cacao (www.theobroma-cacao.de/wissen/wirtschaft/international/konsum), and Caobisco (www.caobisco.com/page.asp?p=213). Data were available from 2011 for 1 country (Switzerland), from 2010 for 15 countries, from 2004 for 5 countries, and from 2002 for 1 coun-

Conclusion – Chocolate consumption enhances cognitive function, which is a sine qua non for winning the Nobel Prize, and it closely correlates with the number of Nobel laureates in each country



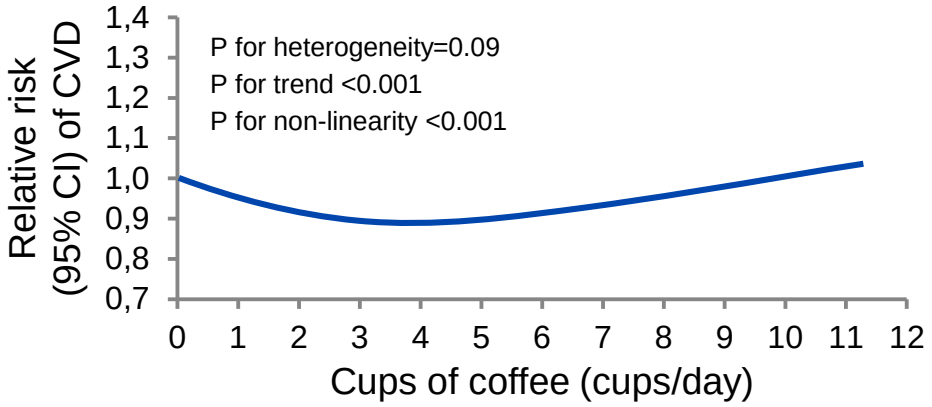
Messerli: NEJM October 11, 2012

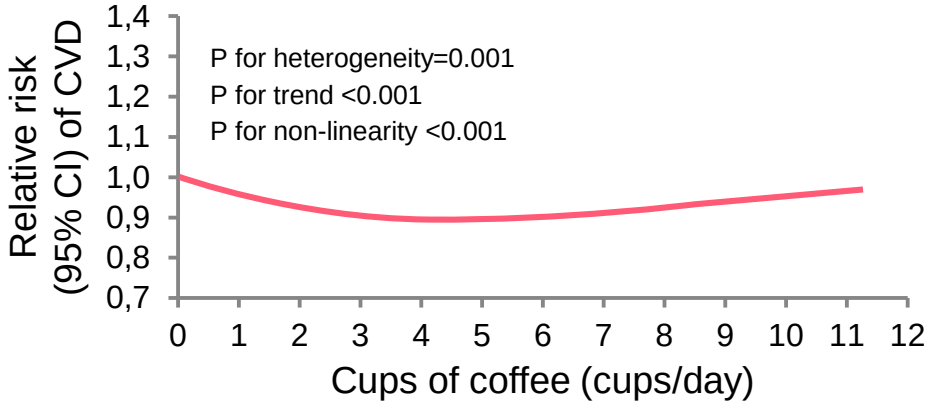
MAYO CLINIC

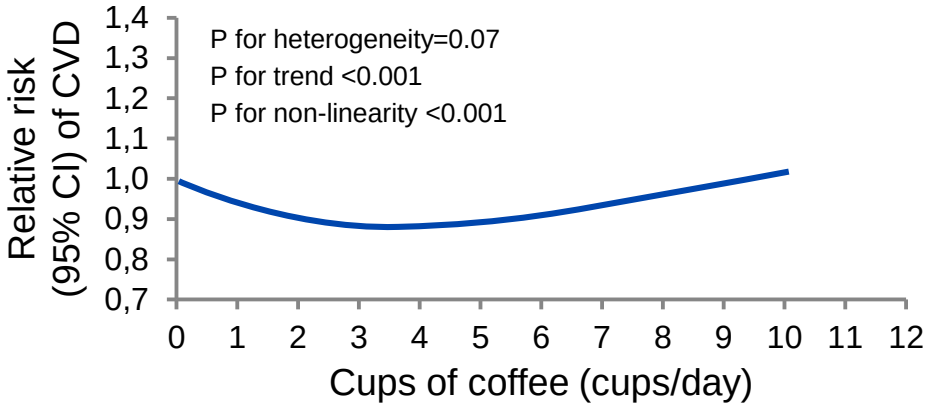
Long-Term Coffee Consumption and Risk of Cardiovascular Disease: A Systemic Review and a Dose-Response Meta-Analysis of Prospective Cohort Studies

A meta-analysis was performed to assess the dose-response relationship of long-term coffee consumption with CVD risk

Thirty-six studies were included with 1,279,804 participants and 36,352 CVD cases







Ding et al: Circulation, 2013

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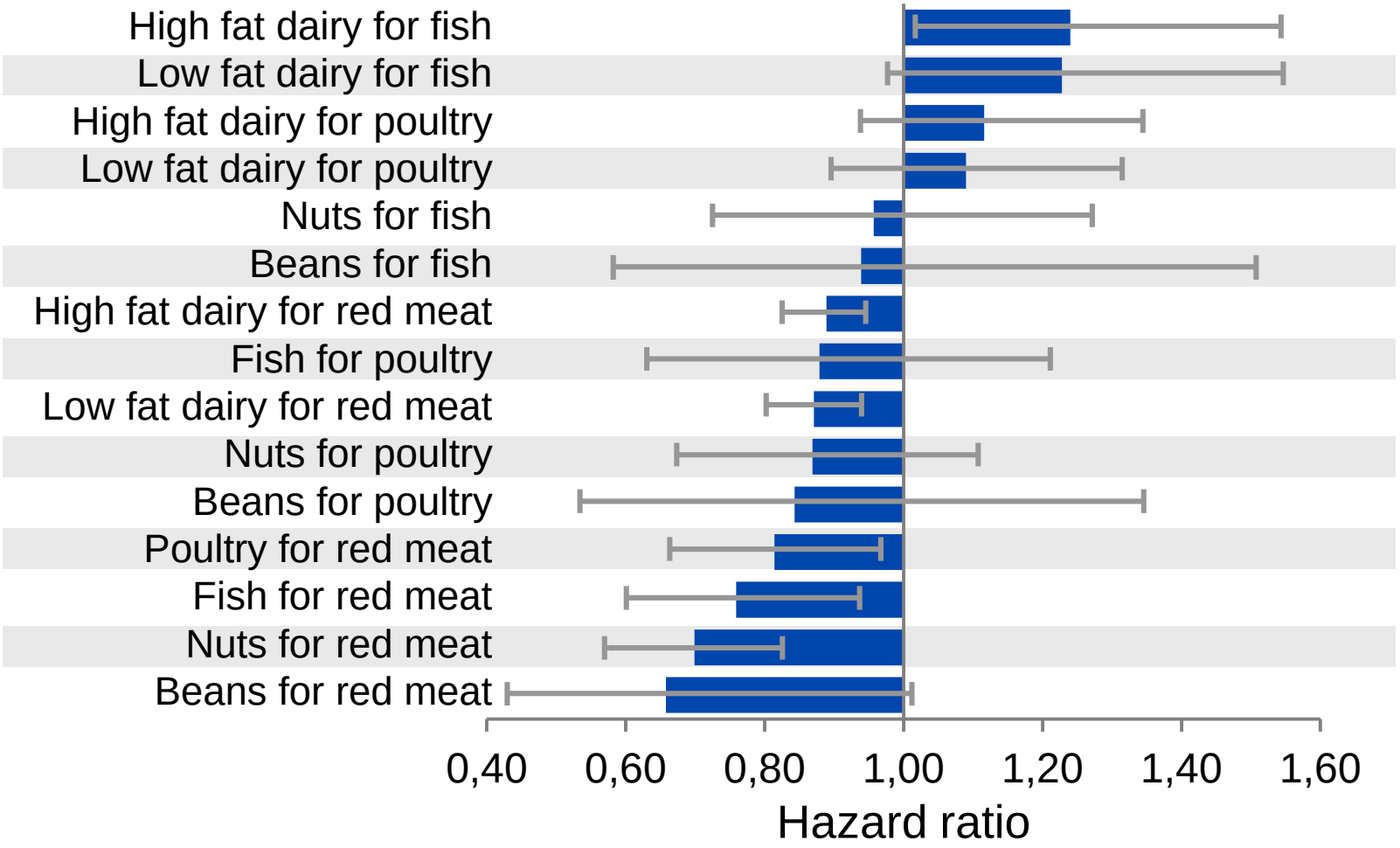
RRs and 95% CIs for CHD Associated With Replacement of a Major Dietary Protein Source With Another



Bernstein et al, Circ

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Effect of Ingredients of Polymeal in Reducing Risk of CVD

Ingredients	Reduction in risk of CVD (%) (95% CI)	Source
Wine (150 mL/day)	32 (23-41)	DiCastelnuovo, 2002 (MA)
Fish (114 g x 4w)	14 (8-19)	Whelton, 2004 (MA)
Dark chocolate (100 g/d)	21 (14-27)	Taubert, 2003 (RCT)
Fruit/vegetables (400 g/d)	21 (14-27)	John, 2002 (RCT)
Garlic (2.7 g/d)	25 (21-27)	Ackerman, 2001 (MA)
Almonds (68 g/d) (RCT)	12.5 (10.5-13.5)	Jenkins, Sabate 2002, 2003
Combined effect	**76 (63-84)**	

MA = meta-analysis; RCT = randomized controlled trial

OH Franco et al., BMJ 2004; 329:1447

Polypill - NJ Wald et al., BMJ 2003; 326:1419

Statin, ASA, Folic Acid, BP (ACE-I, β-blocker, Thiazide) **- % Reduction 85%**

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Food for Your Heart

Menu

- The effect
- How much we eat?
- What do we eat?
- Types of diets
  - Epidemiology data
  - Prospective studies
  - Myths

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Science

Food and N

anc

Current Sta

Subc

Nutrient Intakes and Nutrients of Concern

- Based on intake data, together with nutritional biomarker and health outcomes data, identified nutrients that may pose a public health concern:
  - Vitamin D, calcium, potassium, and fiber are underconsumed across the entire US population.
  - Iron is underconsumed for adol
    females.
  - Sodium is overconsumed acros
  - Saturated fat is overconsumed
    those > 50 years old.

- Cholesterol is not considered
  overconsumption.

Health

New diet guidelines may ease daily cholesterol limits

Madelyn Fernstrom
TODAY

Feb. 10, 2015 at 10:20 PM ET

Dietary cholesterol, one of the most closely monitored and regulated ingredients on American plates because of its believed link to heart disease, is making a comeback. When the federal government updates the guidelines of what we should be eating every day for good health — if it takes the advice of the Dietary Guidelines Advisory Committee — cholesterol will no longer be listed as a "nutrient of concern."

HEART HEALTH | MIND & MOOD | PAIN

Home }{} » Harvard Health Blog }http://www.health.harvard.edu/b
Harvard Health Blog

**Panel suggests that diet
about cholesterol in foo
{http://www.health.har
stop-warning-about-ch
20150212771 3}**

POSTED FEBRUARY 12, 2015, 3:54 PM
Patrick J. Skerrett }http://www.health.harvard.edu/blog/author/pjs

Warnings against eating foods high in cholesterol, like eggs or shr
recommendations for decades. That could change if the scientific
Dietary Guidelines for Americans }http://www.health.gov/dietaryg

A summary of the committee's December 2014 meeting }http://w
BINDER/meeting7/docs/DGAC-Meeting-7-SC-1.pdf } says "Cholest
overconsumption." Translation: You don't need to worry about cholesterol in your food.

Why not? There's a growing consensus among nutrition scientists that cholesterol in food has little effect on the

MAYO CLINIC

REVIEW | Annals of Internal Medicine

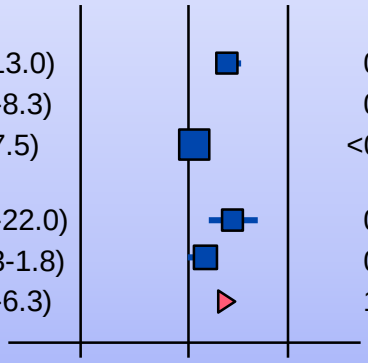
Are Organic Foods Safer or Healthier Than Conventional Alternatives?

A Systematic Review

Crystal Smith-Spangler, MD, MS; Margaret L. Brandeau, PhD; Grace E. Hunter, BA; J. Clay Bavinger, BA; Maren Pearson, BS; Paul J. Eschbach; Vandana Sundaram, MPH; Hau Liu, MD, MS, MBA, MPH; Patricia Schirmer, MD; Christopher Stave, MLS; Ingram Olkin, PhD; and Dena M. Bravata, MD, MS

RD of detecting *Escherichia coli* in organic and conventional fruits, vegetables, and grains

Author (reference)	RD (95% CI)	P
Multiple-food studies		
Bohaychuk et al (90)	7.5 (1.3-13.0)	0.89
Mukherjee et al (205)	3.3 (-1.8-8.3)	0.21
Mukherjee et al (205)	4.9 (2.3-7.5)	<0.001
Single-food studies		
Oliveira et al (214)	9.7 (-2.5-22.0)	0.120
Phillips and Harrison (226)	-4.8 (-11.3-1.8)	0.154
Summary RD, all studies	2.4 (-1.5-6.3)	1.00
Heterogeneity: I^2=58%		



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Stanford Scientists Cast Doubt on Advantages of Organic Meat and Produce

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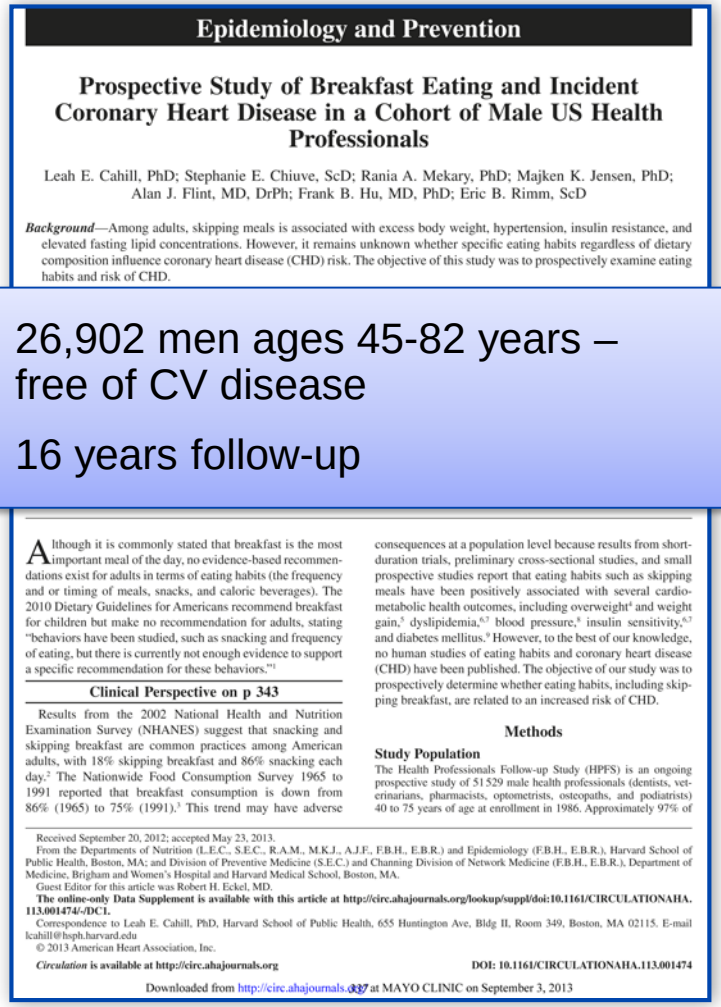
Prospective Study of Breakfast Eating and Incident Coronary Heart Disease in a Cohort of Male US Health Professionals



Epidemiology and Prevention

Prospective Study of Breakfast Eating and Incident Coronary Heart Disease in a Cohort of Male US Health Professionals

Leah E. Cahill, PhD; Stephanie E. Chiuve, ScD; Rania A. Mekary, PhD; Majken K. Jensen, PhD; Alan J. Flint, MD, DrPh; Frank B. Hu, MD, PhD; Eric B. Rimm, ScD

Background—Among adults, skipping meals is associated with excess body weight, hypertension, insulin resistance, and elevated fasting lipid concentrations. However, it remains unknown whether specific eating habits regardless of dietary composition influence coronary heart disease (CHD) risk. The objective of this study was to prospectively examine eating habits and risk of CHD.

- 26,902 men ages 45-82 years – free of CV disease
- 16 years follow-up

Although it is commonly stated that breakfast is the most important meal of the day, no evidence-based recommendations exist for adults in terms of eating habits (the frequency and or timing of meals, snacks, and caloric beverages). The 2010 Dietary Guidelines for Americans recommend breakfast for children but make no recommendation for adults, stating "behaviors have been studied, such as snacking and frequency of eating, but there is currently not enough evidence to support a specific recommendation for these behaviors."[1]

Clinical Perspective on p 343

Results from the 2002 National Health and Nutrition Examination Survey (NHANES) suggest that snacking and skipping breakfast are common practices among American adults, with 18% skipping breakfast and 86% snacking each day.[2] The Nationwide Food Consumption Survey 1965 to 1991 reported that breakfast consumption is down from 86% (1965) to 75% (1991).[3] This trend may have adverse consequences at a population level because results from short-duration trials, preliminary cross-sectional studies, and small prospective studies report that eating habits such as skipping meals have been positively associated with several cardiometabolic health outcomes, including overweight[4] and weight gain,[5] dyslipidemia,[6,7] blood pressure,[8] insulin sensitivity,[6,7] and diabetes mellitus.[9] However, to the best of our knowledge, no human studies of eating habits and coronary heart disease (CHD) have been published. The objective of our study was to prospectively determine whether eating habits, including skipping breakfast, are related to an increased risk of CHD.

Methods

Study Population

The Health Professionals Follow-up Study (HPFS) is an ongoing prospective study of 51 529 male health professionals (dentists, veterinarians, pharmacists, optometrists, osteopaths, and podiatrists) 40 to 75 years of age at enrollment in 1986. Approximately 97% of

Received September 20, 2012; accepted May 23, 2013.

From the Departments of Nutrition (L.E.C., S.E.C., R.A.M., M.K.J., A.J.F., F.B.H., E.B.R.) and Epidemiology (F.B.H., E.B.R.), Harvard School of Public Health, Boston, MA; and Division of Preventive Medicine (S.E.C.) and Channing Division of Network Medicine (F.B.H., E.B.R.), Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA.

Guest Editor for this article was Robert H. Eckel, MD.

The online-only Data Supplement is available with this article at http://circ.ahajournals.org/lookup/suppl/doi:10.1161/CIRCULATIONAHA.113.001474/-/DC1.

Correspondence to Leah E. Cahill, PhD, Harvard School of Public Health, 655 Huntington Ave, Bldg II, Room 349, Boston, MA 02115. E-mail lcahill@hsph.harvard.edu

Circulation is available at http://circ.ahajournals.org

DOI: 10.1161/CIRCULATIONAHA.113.001474

Eating Breakfast and Multivariate RR of CHD With 95% CIs

	Breakfast		
	Yes	No	P
Cases (n)	1,356	171	
Person-years	338,074	49,880	
Age-adjusted model: RR (95% CI)	1.00 (Referent)	1.33 (1.13-1.57)	0.0008
Diet factors	1.00 (Referent)	1.38 (1.15-1.66)	0.0006
Demographic factors	1.00 (Referent)	1.29 (1.07-1.55	0.007
Activity factors	1.00 (Referent)	1.27 (1.06-1.53)	0.01

Conclusions – Eating breakfast was associated with significantly lower CHD risk in this cohort of male health professionals (Circulation. 2013;128:337-343.)

Cahill et al: Circ 128:337, 2013

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Dr. John Harvey Kellogg, in the late 19th century, imposed a strict vegetarian diet upon his patients, disallowing the consumption of alcohol, tobacco and caffeine as well. Kellogg was a firm believer in sexual abstinence.

Amongst the various measures that Kellogg resorted to in order to curb passions he relied most heavily upon the vegetarian diet, and feeding his patients a new flaked cereal he and his brother, Will Keith Kellogg, had accidentally created.

Kellogg believed that this product, acted as an anaphrodisiac, greatly decreasing the sex drives of those who consumed it.

MAYO CLINIC

The Role of Dietary Supplements

$28 Billion

Estimated amount that Americans spent on dietary supplements last year, according to

0

Number of times since 1994 that the

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FDA warns one brand of vitamin B supplement contains dangerous steroids

By **David Simpson**, for CNN

July 31, 2013 -- Updated 1659 GMT (0059 HKT)

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Multivitamins in the Prevention of Cardiovascular Disease in Men

The Physicians' Health Study II Randomized Controlled Trial

Howard D. Sesso, ScD, MPH
William G. Christen, ScD
Vadim Bubes, PhD
Joanne P. Smith, BA
Jean MacFadyen, BA
Miriam Schvartz, MD
JoAnn E. Manson, MD, DrPH
Robert J. Glynn, ScD
Julie E. Buring, ScD

Context Although multivitamins are used to prevent vitamin and mineral deficiency, there is a perception that multivitamins may prevent cardiovascular disease (CVD). Observational studies have shown inconsistent associations between regular multivitamin use and CVD, with no long-term clinical trials of multivitamin use.

Objective To determine whether long-term multivitamin supplementation decreases the risk of major cardiovascular events among men.

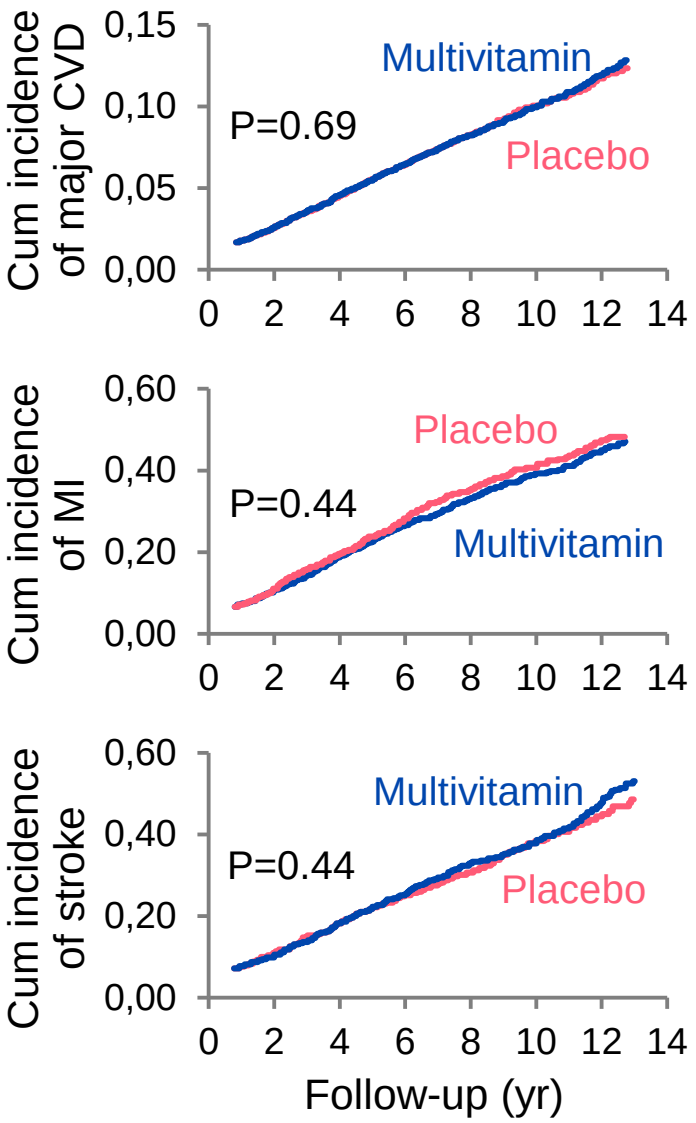
Design, Setting, and Participants The Physicians' Health Study II, a randomized, double-blind, placebo-controlled trial of a common daily multivitamin, began in 1997 with continued treatment and follow-up through June 1, 2011. A total of 14 641 male US physicians initially aged 50 years or older (mean, 64.3 [SD, 9.2] years), including 754 men with a history of CVD at randomization, were enrolled.

Objective

To determine whether long-term multivitamin supplements decreases the risk of major cardiovascular events among men

Design, Setting, and Participants

The Physicians' Health Study II, randomized, double-blind, placebo-controlled trial of a common daily multivitamin, began in 1997 with continued treatment and follow-up through June 1, 2011. A total of 14,641 male U.S. physicians initially aged 50 years or older (mean 64.3 [SD, 9.2] years), including 754 men with a history of CVD at randomization were enrolled.



Sesso HD el al: JAMA 308(17): 1751, 2012

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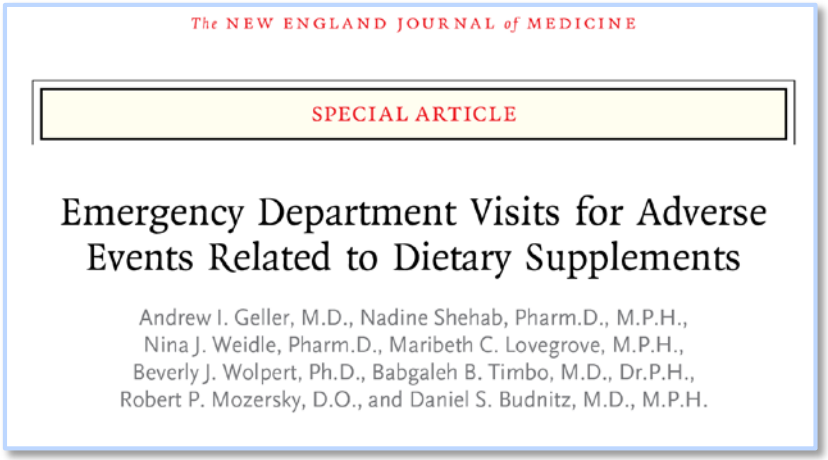
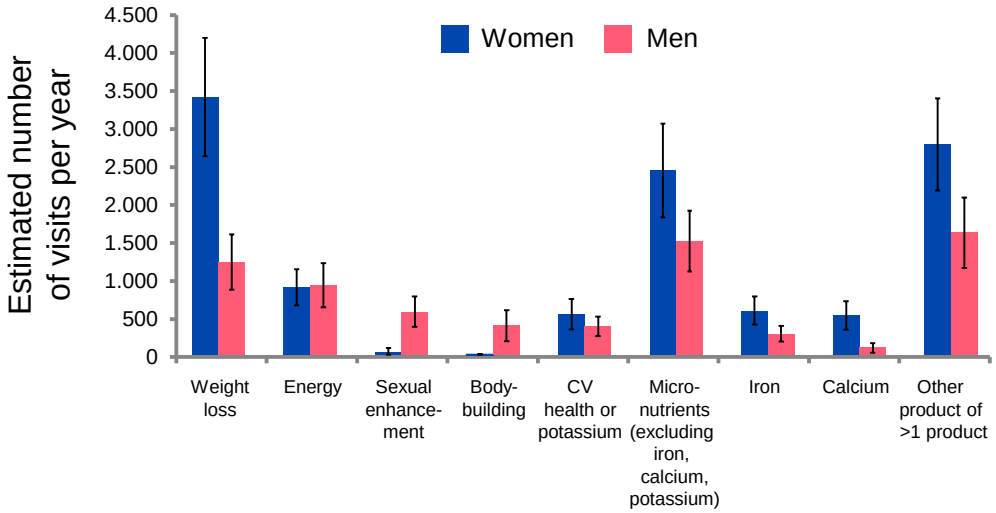
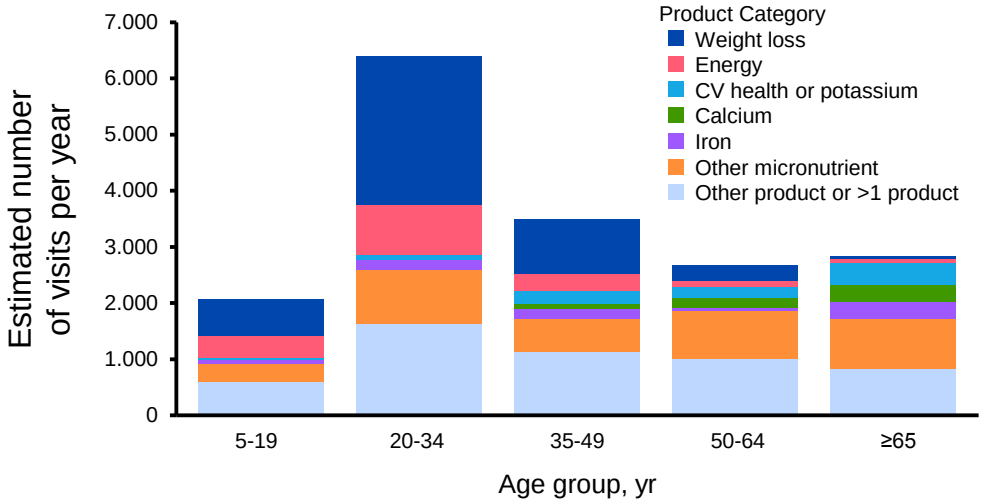


- Dietary supplements, such as herbal or complementary nutritional products and micronutrients (vitamins and minerals), are commonly used in the United States, yet national data on adverse effects are limited
- The estimated number of supplement products increased from 4,000 in 1994 to more than 55,000 in 2012
- In 2007, out-of-pocket expenditures for herbal or complementary, nutritional products reached $14.8 billion, one third of the out-of-pocket expenditures for prescription drugs
- An estimated 23,000 emergency department visits in the United States every year are attributed to adverse events related to dietary supplements

National Estimates of Emergency Department Visits for Adverse Events Associated with Dietary Supplements



National Estimates of Emergency Department Visits for Adverse Events Associated with Dietary Supplements, According to Age Group



Geller et al: NEJM 373:1531, 2015

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Fish oil and omega 3 are NOT fish

Resveratrol is NOT red wine

Vit. C and E are NOT fruit

Ketchup and mustard are NOT vegetables

Family Values
Traditional Spirit
Since 1912

Roseto, PA

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Bon Appetite

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