



Professor Grant Schofield

Public Health

Auckland University of Technology

Auckland

Saturday, June 10, 2017

8:30 - 8:45 The Role of Diets

The role of diets

Grant Schofield

Professor of Public Health

AUT University, Auckland NZ



@grantsnz

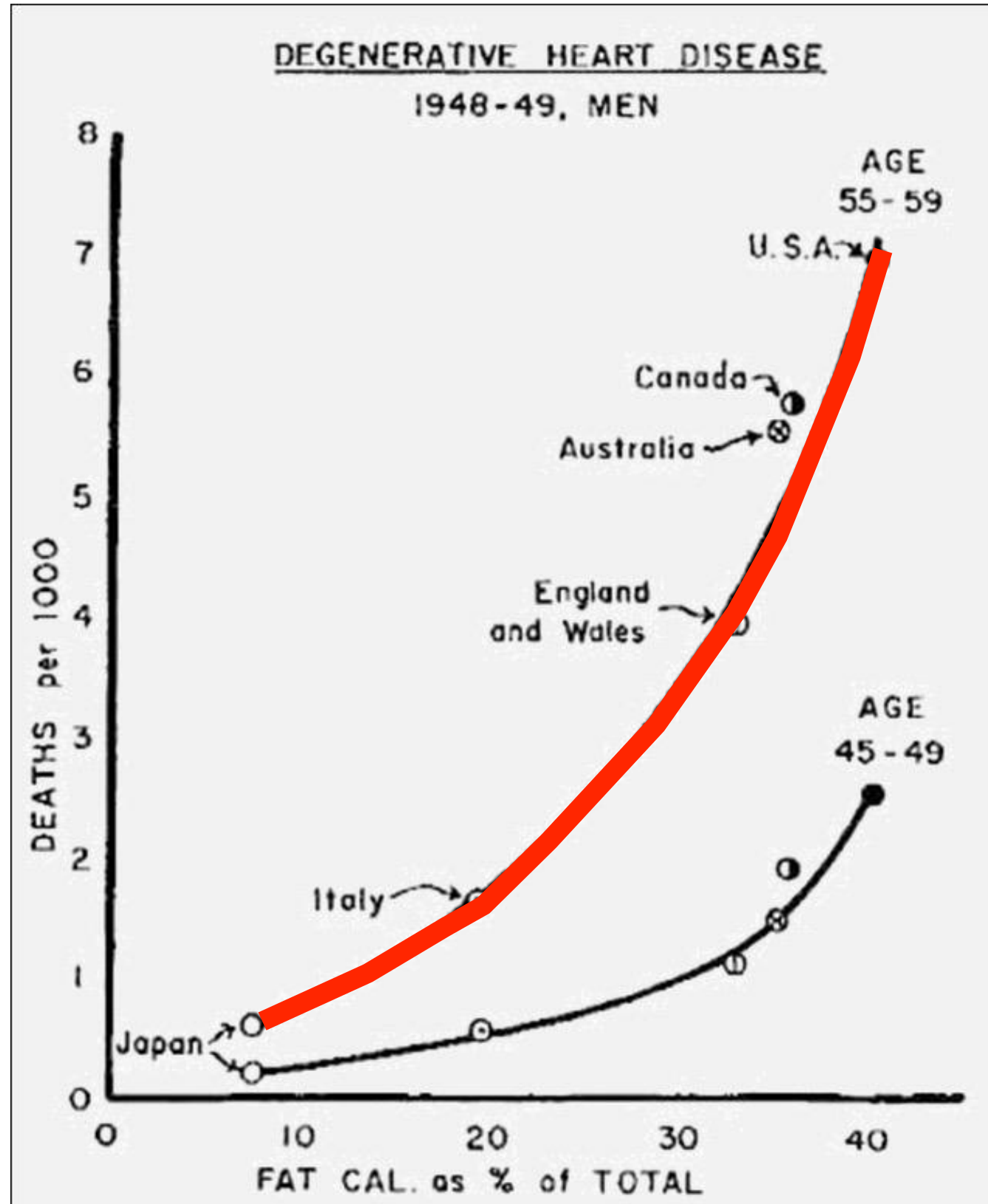


www.facebook.com/profgrant

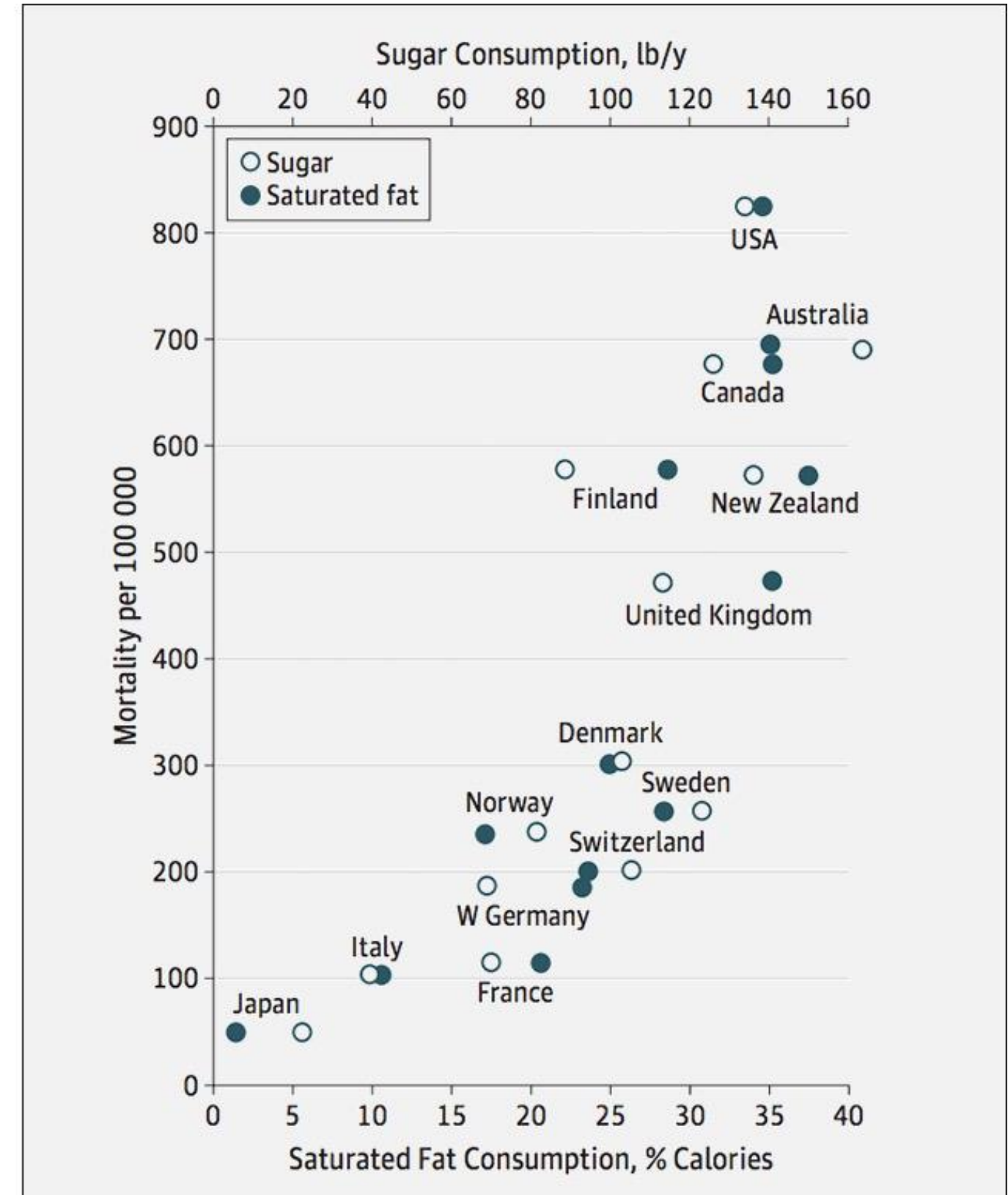
www.profgrant.com







What Ancel Keys said.



What Ancel Keys didn't say.

Saturated fat does not clog the arteries: coronary heart disease is a chronic inflammatory condition, the risk of which can be effectively reduced from healthy lifestyle interventions

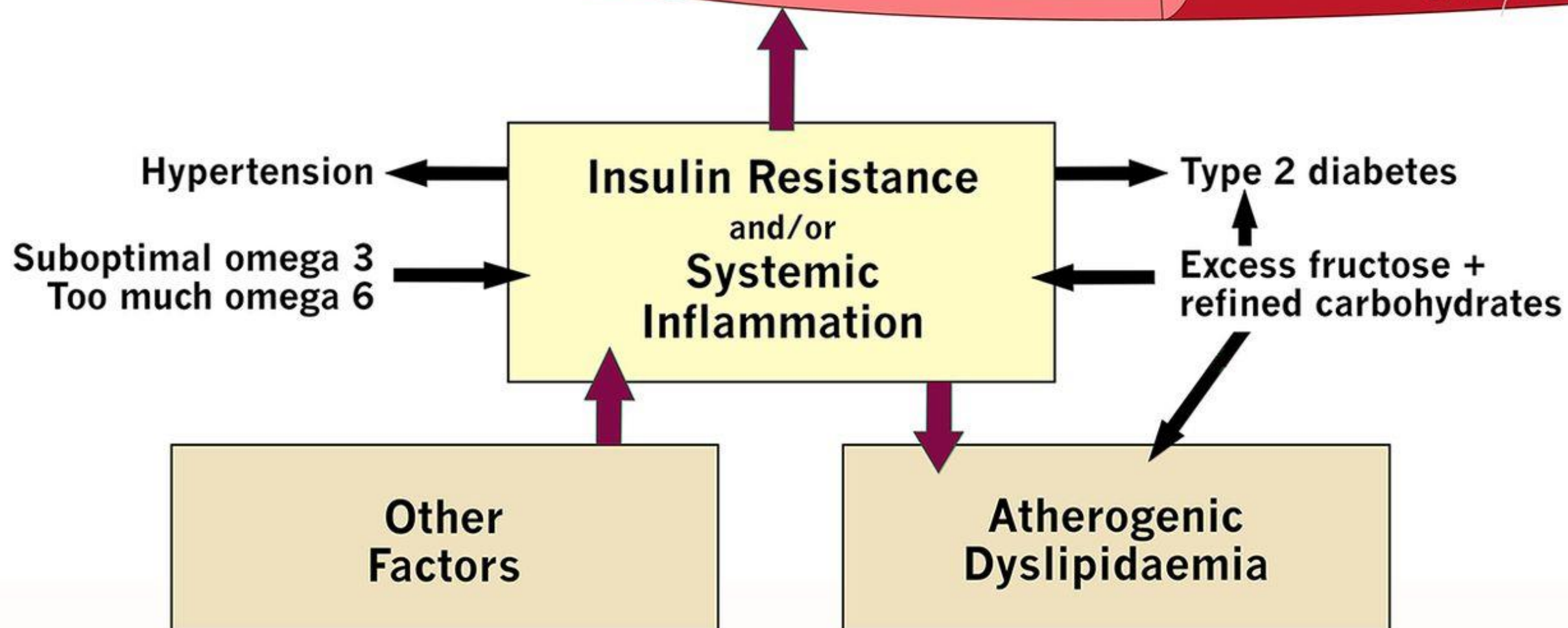
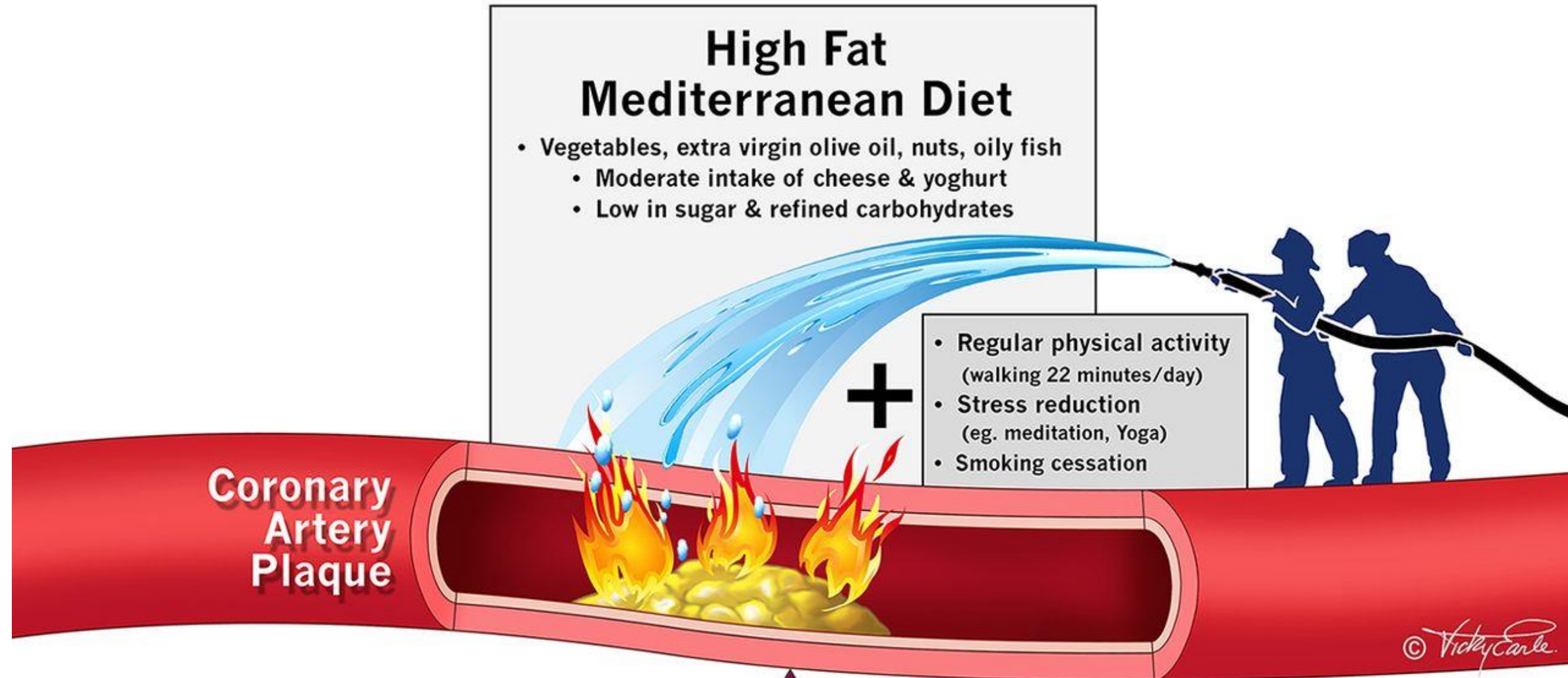
Aseem Malhotra,¹ Rita F Redberg,^{2,3} Pascal Meier^{4,5}

Coronary artery disease pathogenesis and treatment urgently requires a paradigm shift. Despite popular belief among doctors and the public, the conceptual model of dietary saturated fat clogging a pipe is just plain wrong. A landmark systematic review and meta-analysis of observational studies showed no association between saturated fat consumption

testing.⁴ When plaques rupture (analogous to a pimple bursting), coronary thrombosis and myocardial infarction can occur within minutes. The limitation of the current plumbing approach ('unclogging a pipe') to the management of coronary disease is revealed by a series of randomised controlled trials (RCTs) which prove that

7500 high-risk patients. Furthermore, the Lyon Heart study showed that adopting a Mediterranean diet in secondary prevention improved hard outcomes for both recurrent myocardial infarction (NNT=18) and all-cause mortality (NNT=30), despite there being no significant difference in plasma low-density lipoprotein (LDL) cholesterol between the two groups. It is the alpha linoleic acid, polyphenols and omega-3 fatty acids present in nuts, extra virgin olive oil, vegetables and oily fish that rapidly attenuate inflammation and coronary thrombosis.⁶ Both control diets in these studies were relatively healthy, which make it highly likely that even larger benefits would be observed if the Mediterranean diets discussed above were compared with a typical western diet.

LDL CHOLESTEROL RISK HAS BEEN



JAMA Internal Medicine | Special Communication

Sugar Industry and Coronary Heart Disease Research

A Historical Analysis of Internal Industry Documents

Cristin E. Kearns, DDS, MBA; Laura A. Schmidt, PhD, MSW, MPH; Stanton A. Glantz, PhD

Early warning signals of the coronary heart disease (CHD) risk of sugar (sucrose) emerged in the 1950s. We examined Sugar Research Foundation (SRF) internal documents, historical reports, and statements relevant to early debates about the dietary causes of CHD and assembled findings chronologically into a narrative case study. The SRF sponsored its first CHD research project in 1965, a literature review published in the *New England Journal of Medicine*, which singled out fat and cholesterol as the dietary causes of CHD and downplayed

 [Invited Commentary](#)

 [Author Audio Interview](#)

 [Supplemental content](#)

Together with other recent analyses of sugar industry documents about the hazards of sucrose while promoting fat as the dietary

Metabolic disease

**Its about the glycemc
environment**

glucose, insulin, and
insulin resistance

Atherogenic dyslipidemia
is [primarily] **driven by the**
glycemic environment,
especially sugar and refined
carbohydrate in the context
of insulin resistance

**A balanced diet [in the
context of whole food] is
one which normalises
blood glucose and
prevents the hyper-
secretion of insulin**



[Online First >](#)

Viewpoint | September 28, 2016

Lowering the Bar on the Low-Fat Diet **FREE**

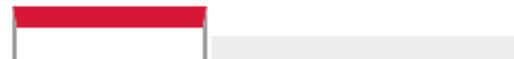
ONLINE FIRST

David S. Ludwig, MD, PhD¹

[\[+\] Author Affiliations](#)

JAMA. Published online September 28, 2016. doi:10.1001/jama.2016.15473

Text Size: [A](#) [A](#) [A](#)



Fats, Oils & Sweets
USE SPARINGLY

KEY

● Fat (naturally occurring and added)

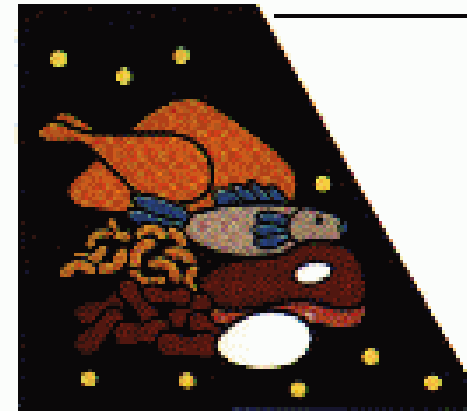
▼ Sugars (added)

These symbols show fats and added sugars in foods.

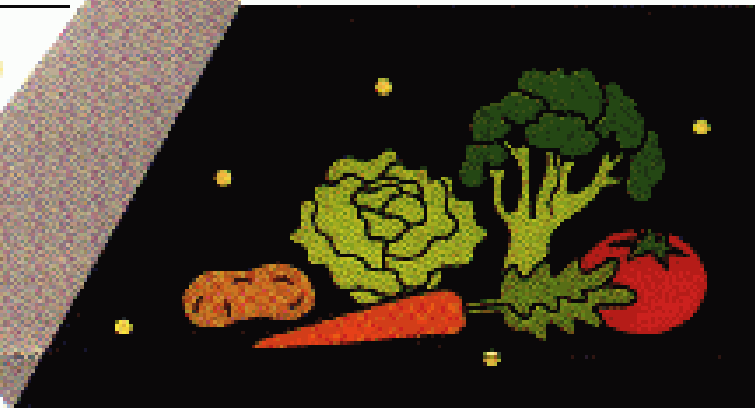
**Milk, Yogurt &
Cheese Group**
2-3 SERVINGS



**Meat, Poultry, Fish, Dry Beans,
Eggs & Nuts Group**
2-3 SERVINGS



Vegetable Group
3-5 SERVINGS



Fruit Group
2-4 SERVINGS



**Bread, Cereal,
Rice & Pasta
Group**
**6-11
SERVINGS**



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 Grace¹

To cite: Harcombe Z, Baker JS, Cooper SM, *et al.* Evidence from randomised controlled trials did not support the introduction of

ABSTRACT

Objectives: National dietary guidelines were introduced in 1977 and 1983, by the US and UK governments, respectively, with the ambition of

KEY MESSAGES

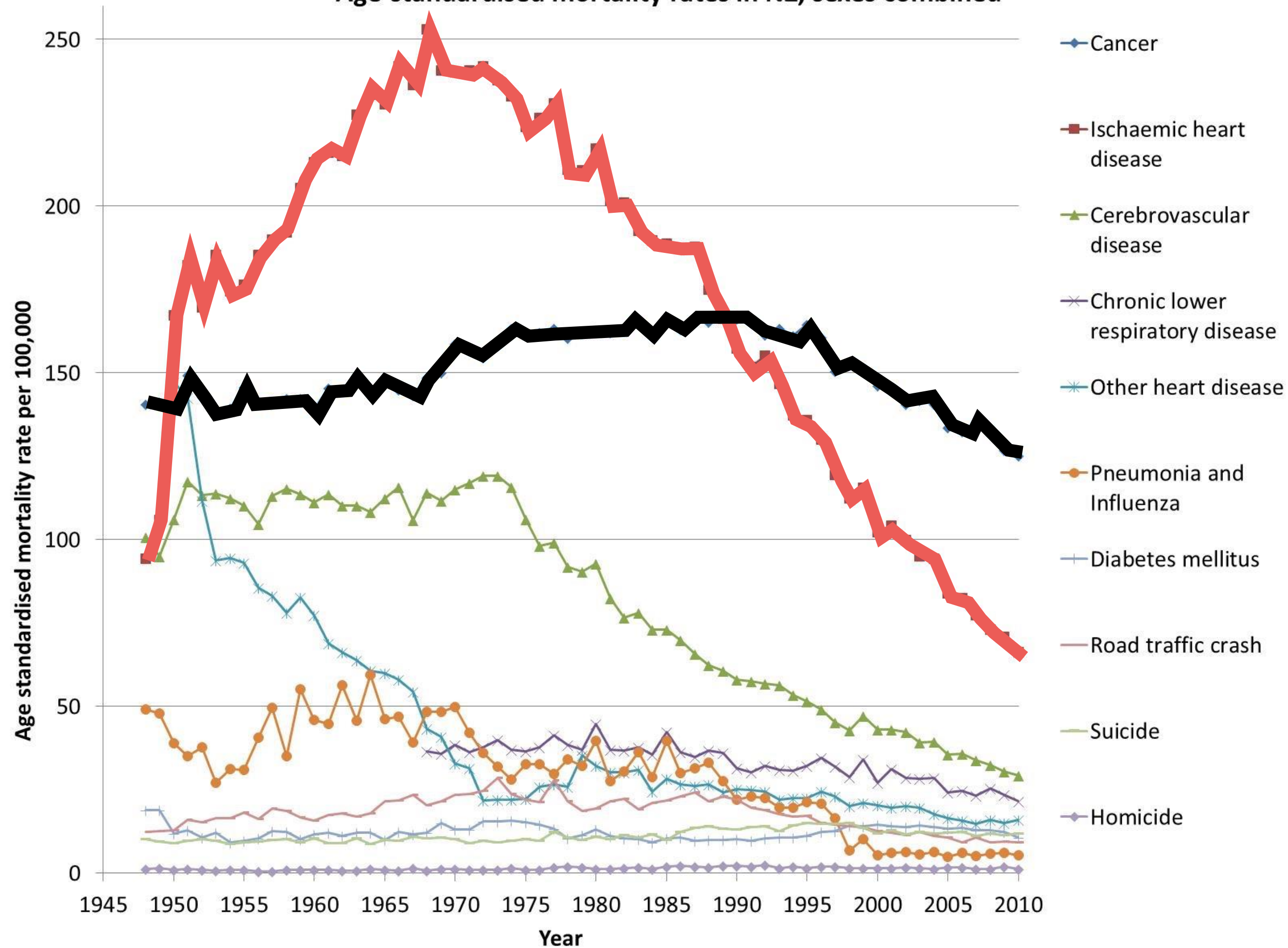
What is already known about this subject?

► Dietary recommendations were introduced in the

PASCAL'S WAGER

	YOU'RE RIGHT!	YOU'RE WRONG!
BELIEF		
ATHEISM		

Age-standardised mortality rates in NZ, sexes combined



VALUE PACK

UNCLE
TOBYS



HONEY
Cheerios
4 WHOLEGRAINS
CORN • WHEAT • OATS • RICE

69% WHOLEGRAIN
NO ARTIFICIAL COLOURS OR FLAVOURS

Energy 490kJ or 6%	Fat 1.2g or 2%	Sat Fat 0.2g or +1%	Sugars 6.0g or 7%	Sodium 90mg or 4%	Fibre 2.0g or 7%
-----------------------------	-------------------------	------------------------------	----------------------------	----------------------------	---------------------------

Per 30g serve

570g e

MADE WITH
NATURAL
HONEY



Here's the more sophisticated
understanding of glucose,
insulin, and metabolic disease



Hemoglobin A_{1c} in Nondiabetic Patients: An Independent Predictor of Coronary Artery Disease and Its Severity

Naveen Garg, DM; Nagaraja Moorthy, DM; Aditya Kapoor, DM;
Satyendra Tewari, DM; Sudeep Kumar, DM; Archana Sinha, MSc;
Anshika Shrivastava, MSc; and Pravin K. Goel, DM

1141 angiography Non-diabetic

HbA1C

CVD presence
adjusted odds

5
4
3
2
1
0

<5.5%

<5.7%

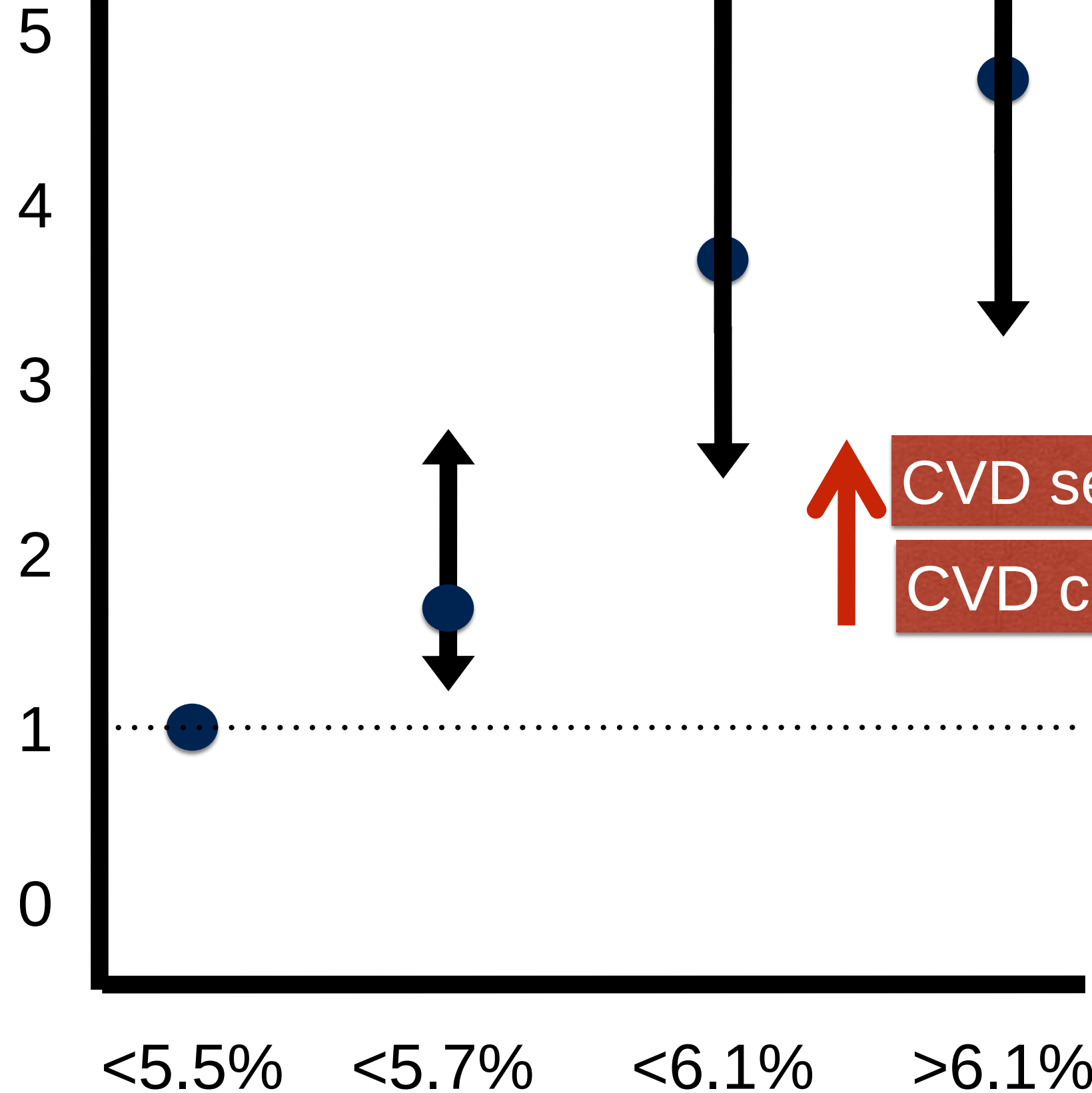
<6.1%

>6.1%

HbA1C quartile

CVD severity

CVD complexity



C-peptide as a risk factor of coronary artery disease in the general population

Antonio Cabrera de León^{1,2,3}, José Gregorio Oliva García⁴, Itahisa Marcelino Rodríguez^{1,3}, Delia Almeida González^{3,5}, José Juan Alemán Sánchez^{1,3}, Buenaventura Brito Díaz^{1,3}, Santiago Domínguez Coello^{1,3}, Vicente Bertomeu Martínez^{3,6}, Armando Aguirre Jaime¹ and María del Cristo Rodríguez Pérez^{1,3}

Abstract

Diabetes & Vascular Disease Research
1–9

© The Author(s) 2015

Reprints and permissions:

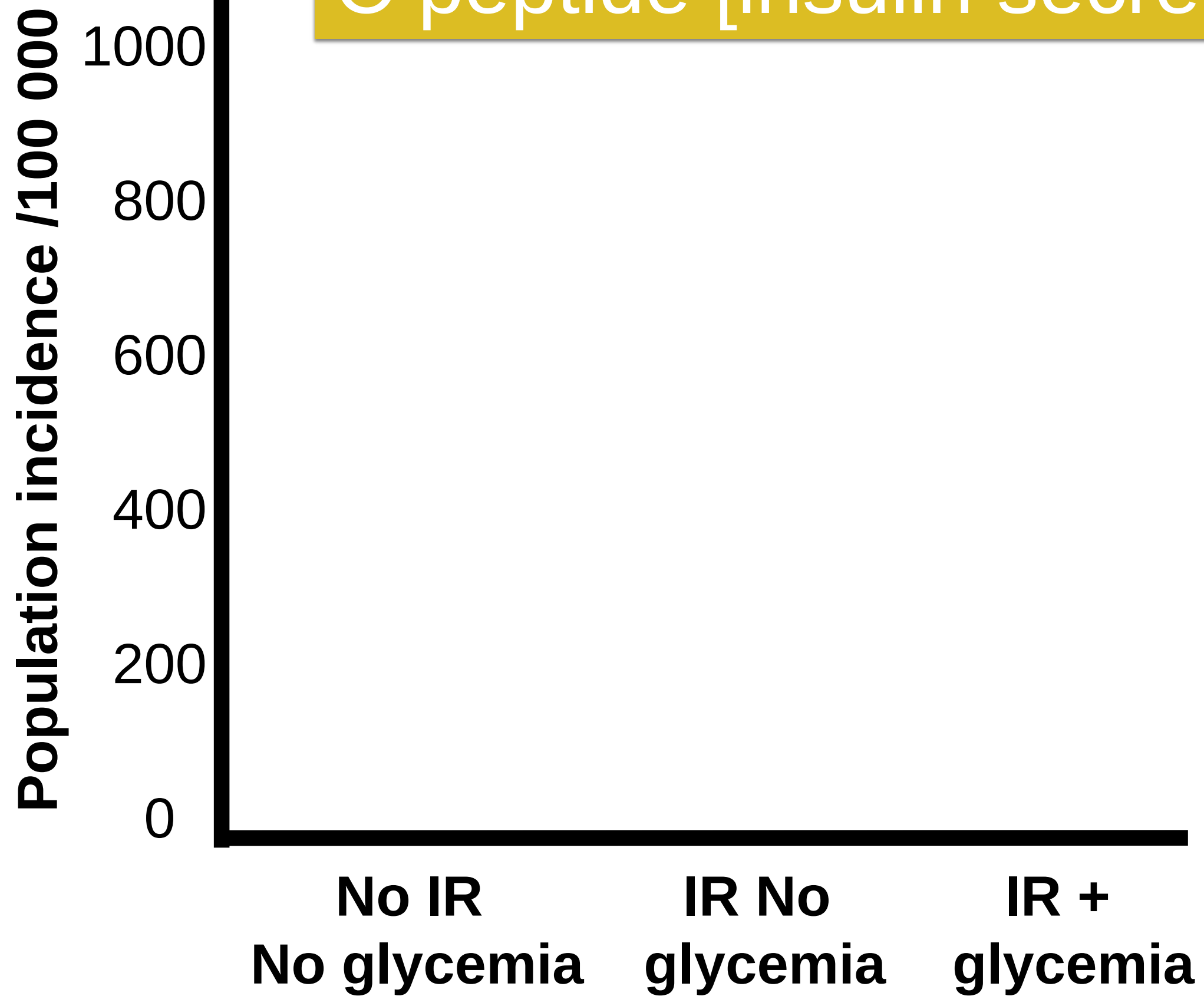
sagepub.co.uk/journalsPermissions.nav

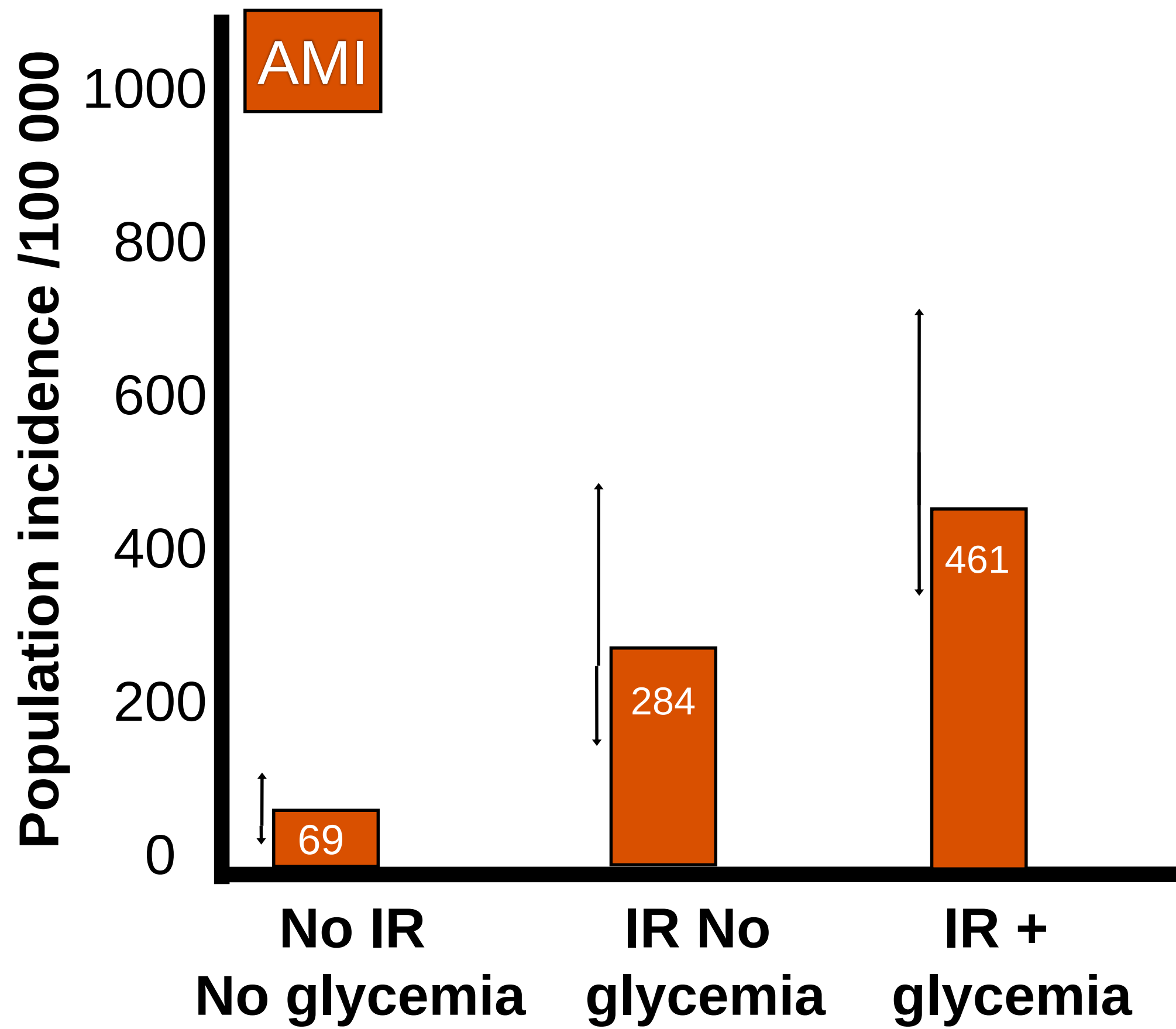
DOI: 10.1177/1479164114564900

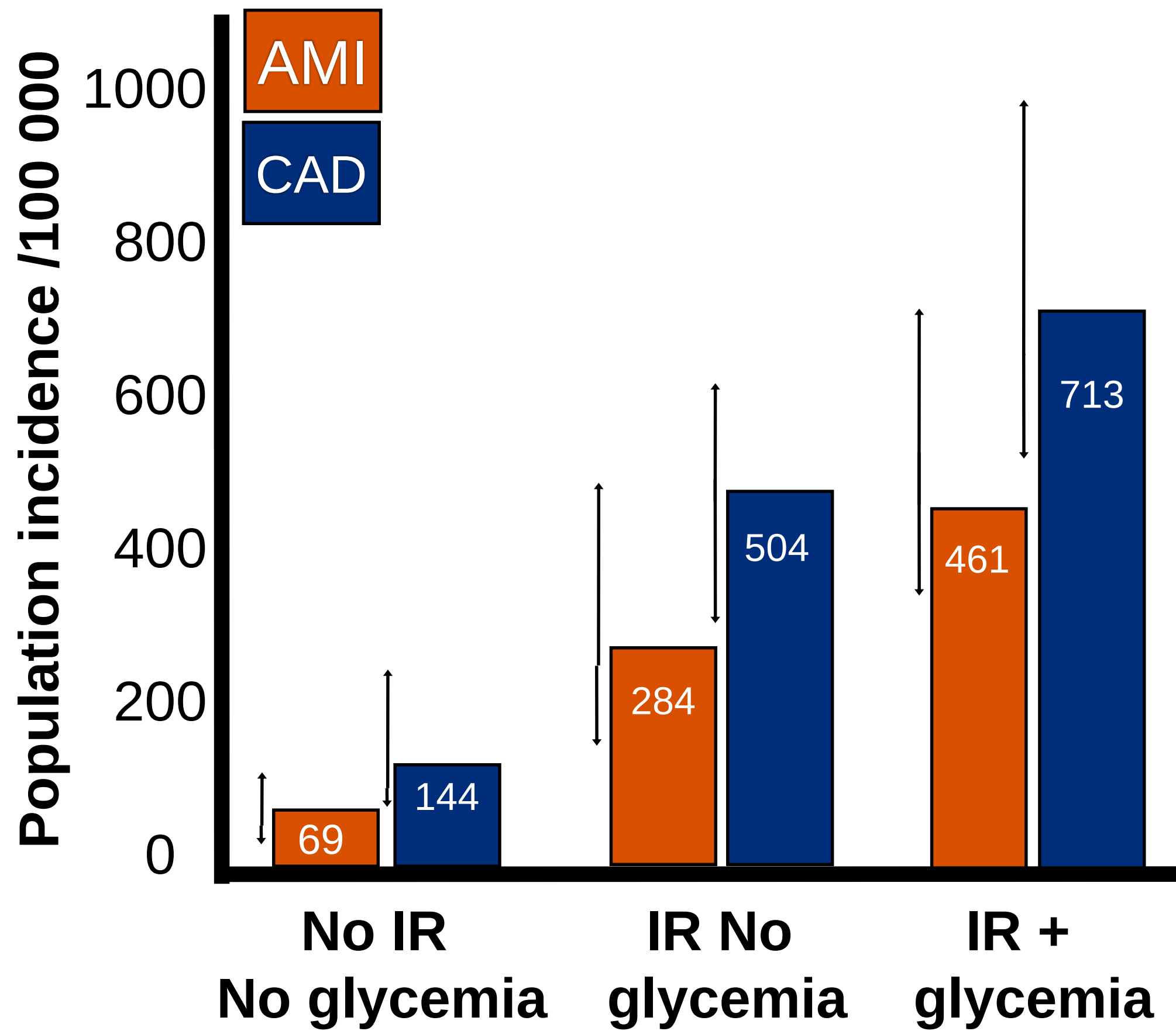
dvr.sagepub.com



C peptide [insulin secretion]









4 grams glucose
Total amount of blood sugar
in a normal adult
(83 mg/dL)

240 grams = 57 teaspoons sugar
ADA daily recommendations
for diabetics.

Inflammation
Insulin
resistance

Stress

Poor sleep

Too much exercise

Low physical activity

Genes/ethnicity
Age?

Obesity

High insulin

High trans fat

Smoking

High sugar diet
High alcohol
diet

Pollution

environmental toxins

Too much/too little sun

High iron

Poor gut
microbes

High insulin

NEUROPSYCHIATRIC

Alzheimers / other dementias
Peripheral neuropathy
Retinopathy
Neuro-psychiatric disorders
Parkinson's disease
Autism

GASTROINTESTINAL

Diabetes: Type 2 / Gestational
Hypertriglyceridaemia
Non-alcoholic fatty liver disease
Ulcerative colitis

ENDOCRINE

Chronic inflammation
Fatty liver
Obesity
PCOS

CANCER

Breast, ovarian colon bladder,
pancreas, liver, prostate

UROLOGY Nephropathy, erectile dysfunction

Tinnitus
Vertigo
Meniere's disease

Periodontal disease

CIRCULATORY

Atherosclerosis
Cardiomyopathy
Endothelial dysfunction
(microvascular disease and
peripheral vascular disease)
Stroke
Thrombosis (DVT)
Hypertension

SKELETAL

Osteoporosis

INFLAMMATION

Osteoarthritis
Rheumatoid arthritis



Lipids (2008) 43:65–77

DOI 10.1007/s11745-007-3132-7

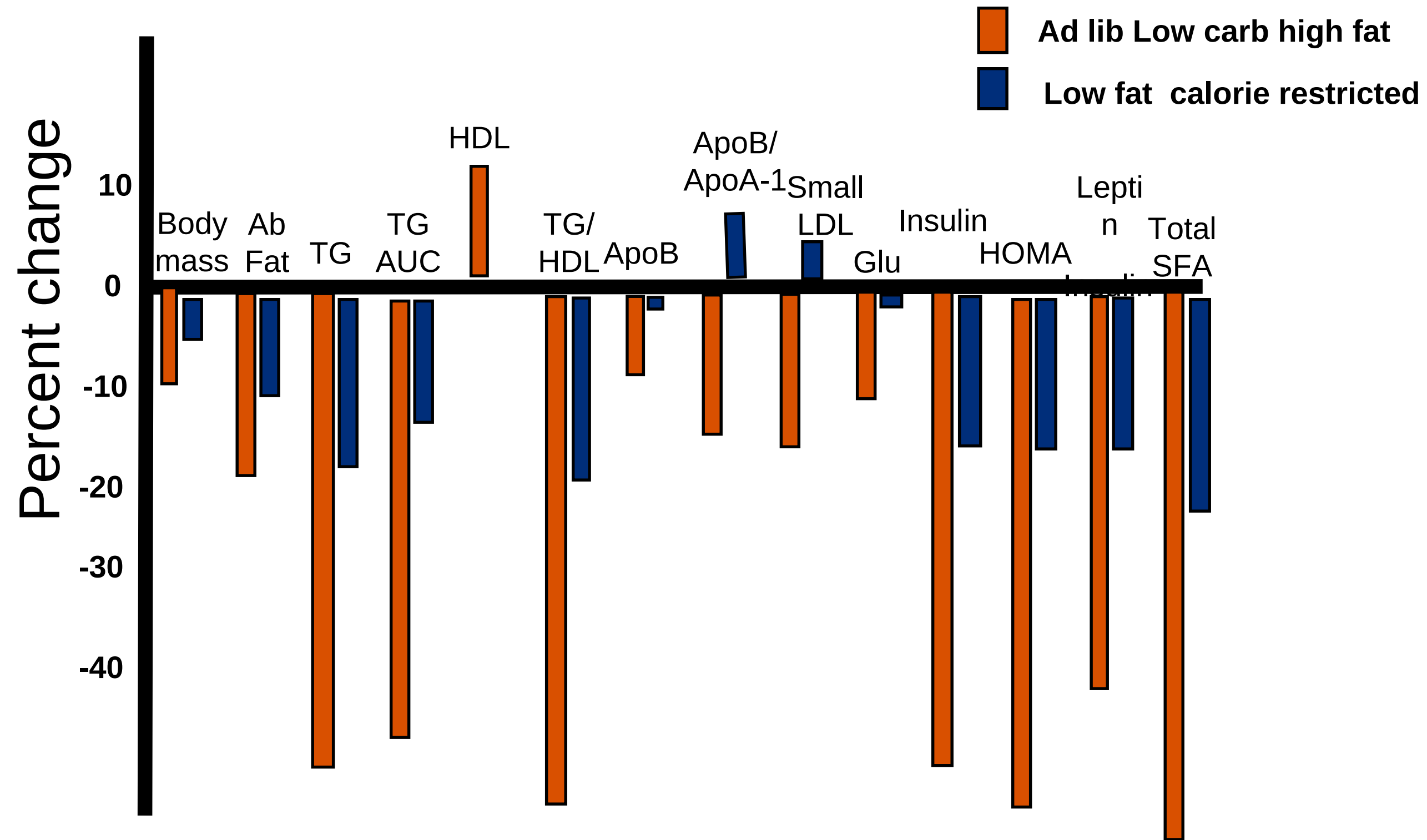
ARTICLE

Comparison of Low Fat and Low Carbohydrate Diets on Circulating Fatty Acid Composition and Markers of Inflammation

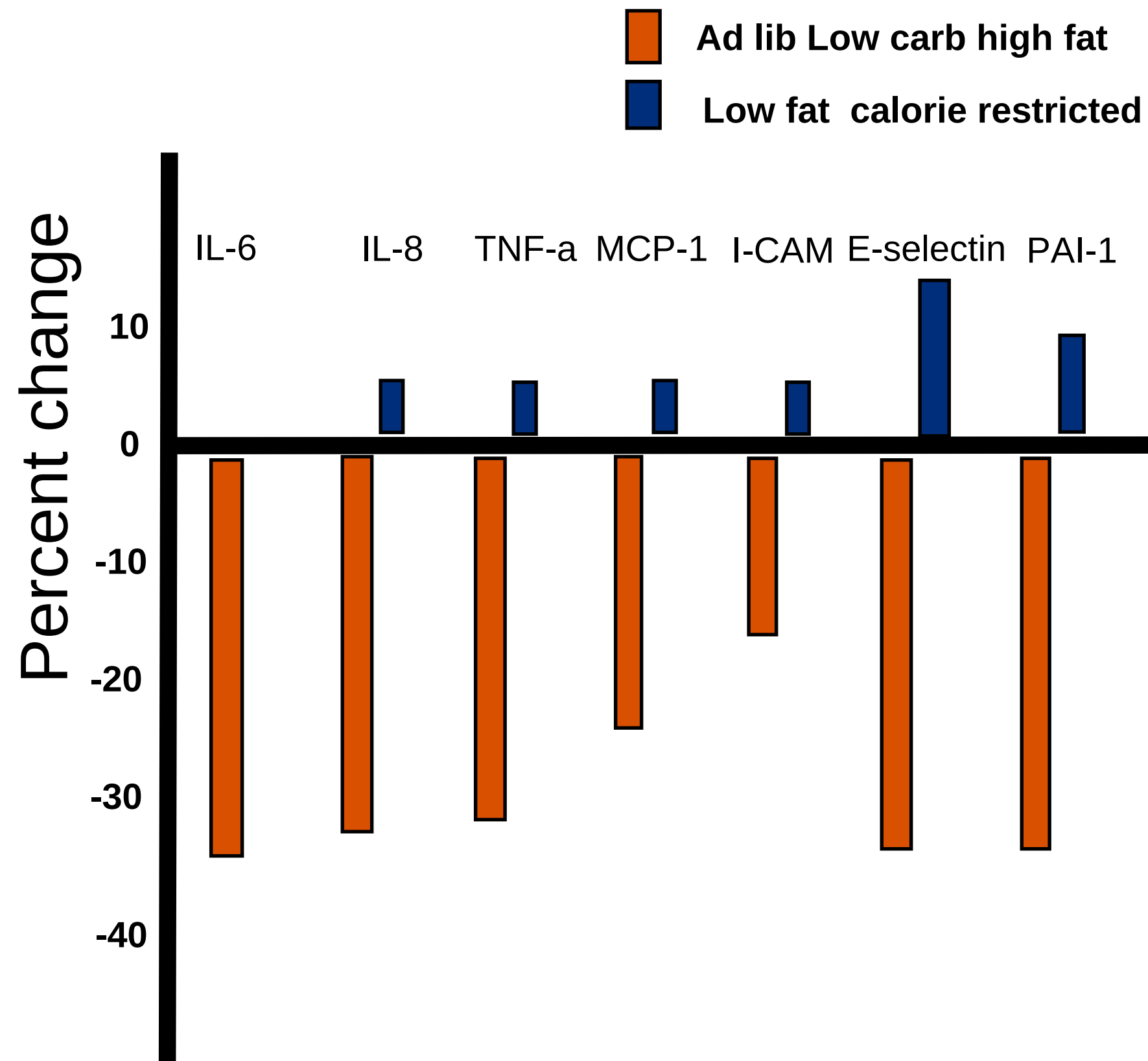
**Cassandra E. Forsythe · Stephen D. Phinney · Maria Luz Fernandez ·
Erin E. Quann · Richard J. Wood · Doug M. Bibus · William J. Kraemer ·
Richard D. Feinman · Jeff S. Volek**

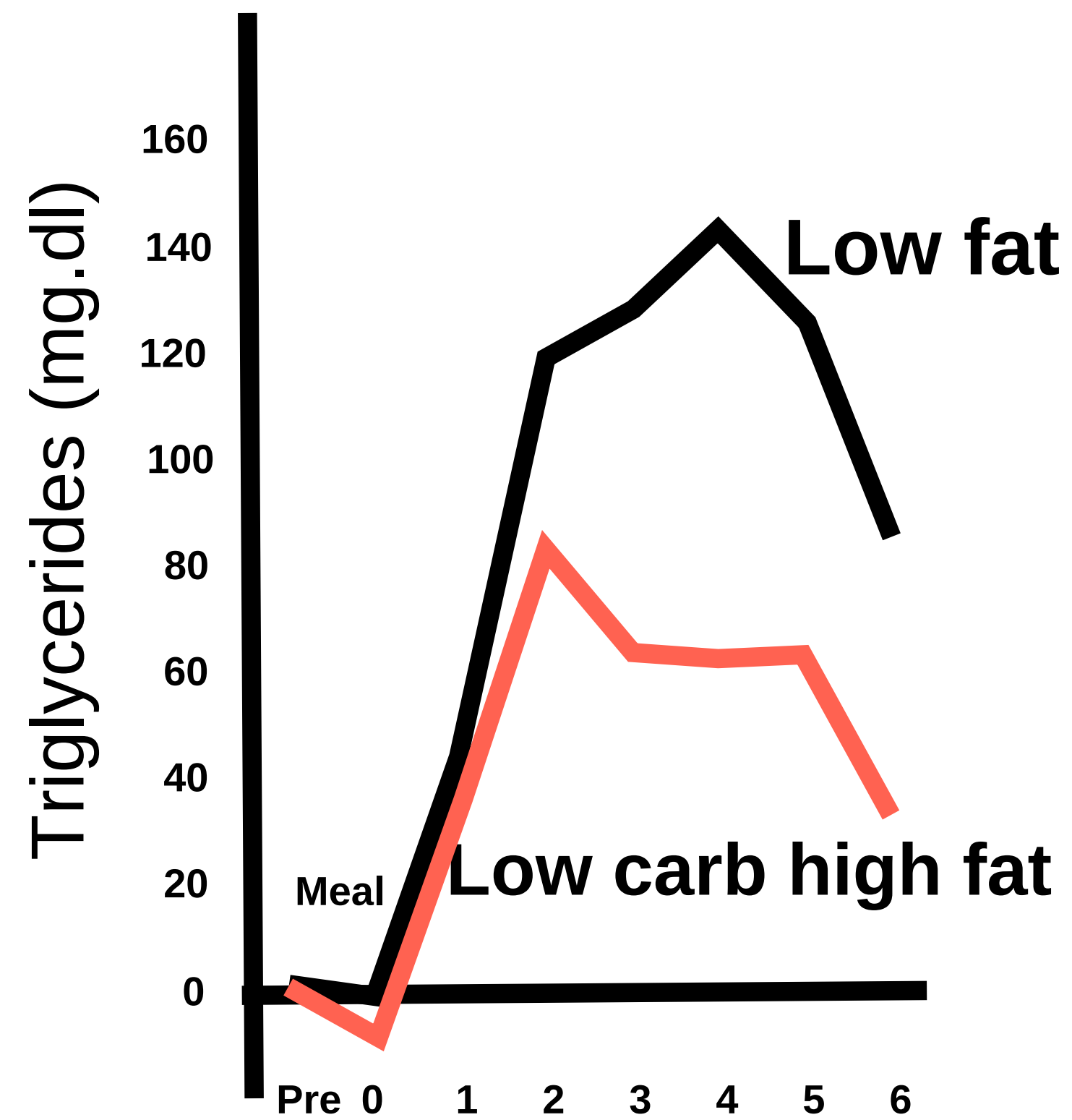
Received: 5 July 2007 / Revised: 24 October 2007 / Accepted: 25 October 2007 / Published online: 29 November 2007
© AOCS 2007

Eat more fat?

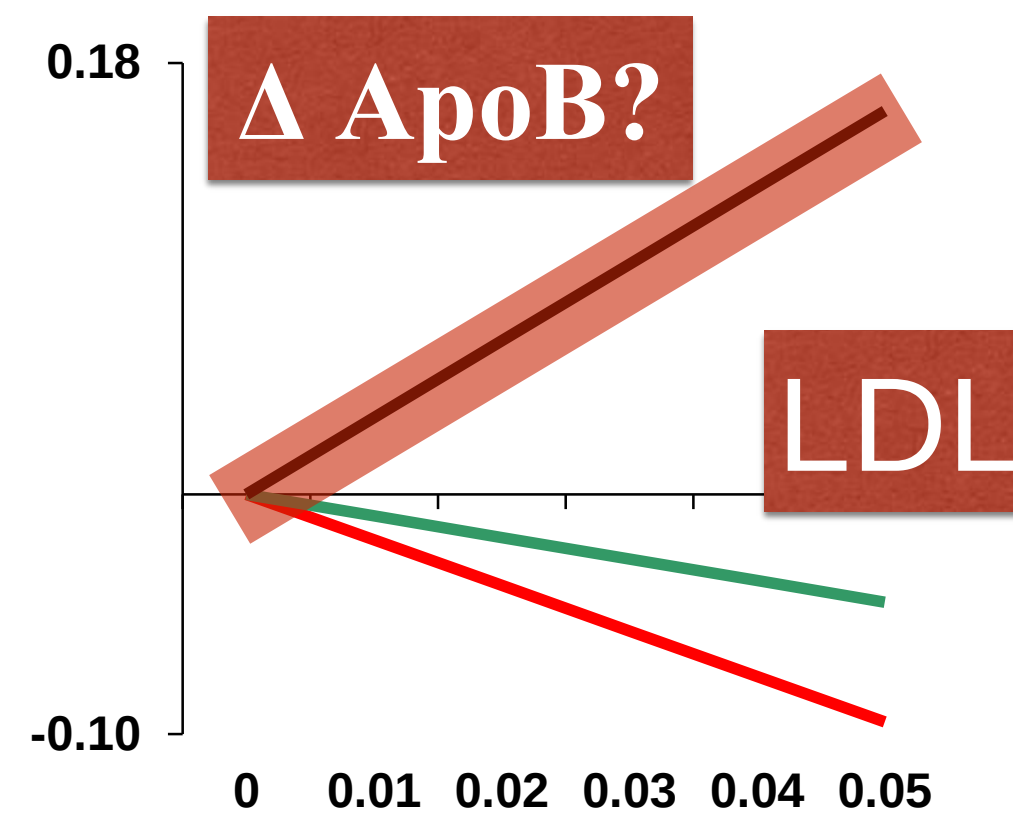
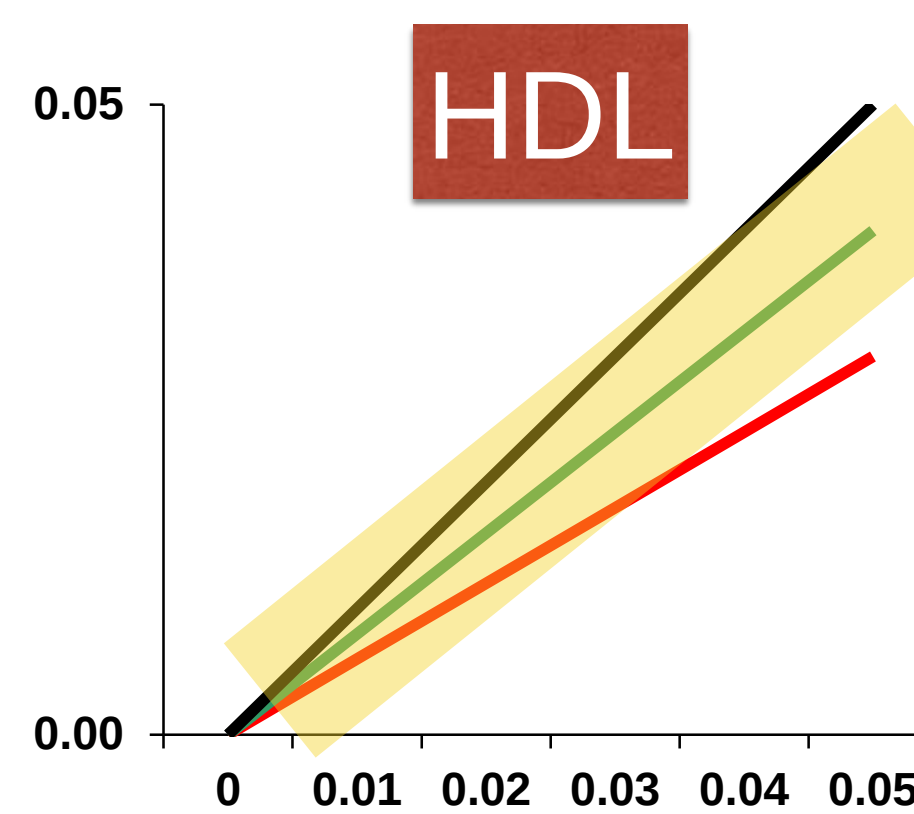
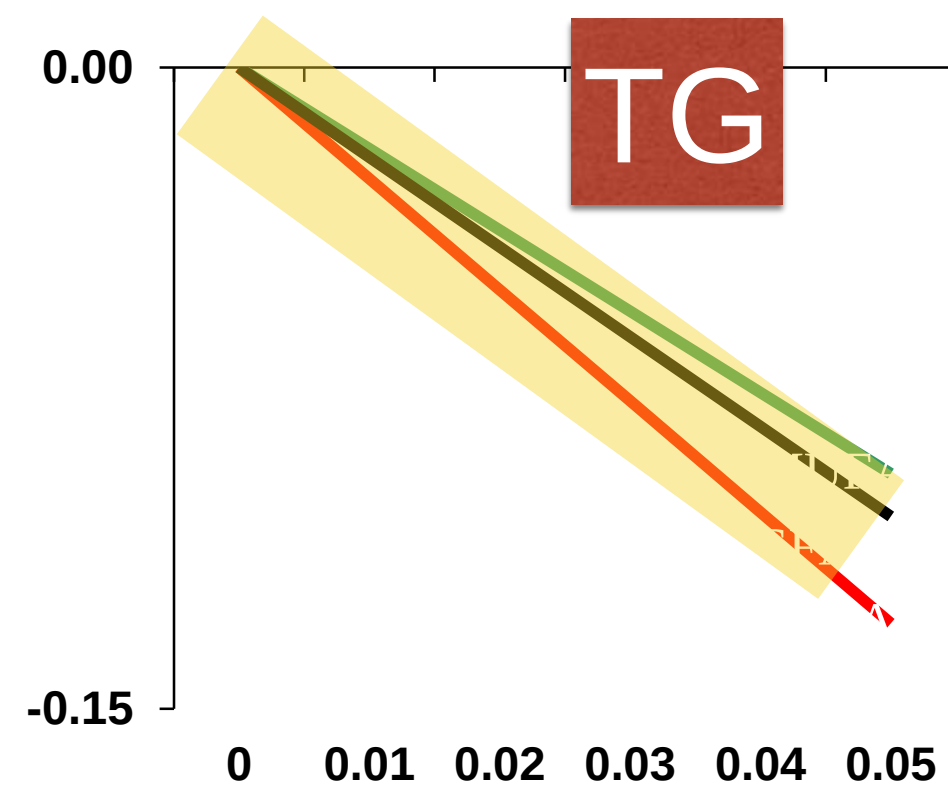


Eat more fat?





ApoB



Meta-analysis

Hooper Cocrane
review RCTs

All cause
mortality

CVD
mortality

CV events
combined

Fat intake



RR 0.86
(0.77-0.96)
Mod evid



Modified fat
intake



Reduced fat
intake



Jackobsen
Prospective

Saturated fat
intake



Substitutions



Cochrane review meta analysis: Combined CV events

Intervention

N=21791

Cases=1774

81.4/1000

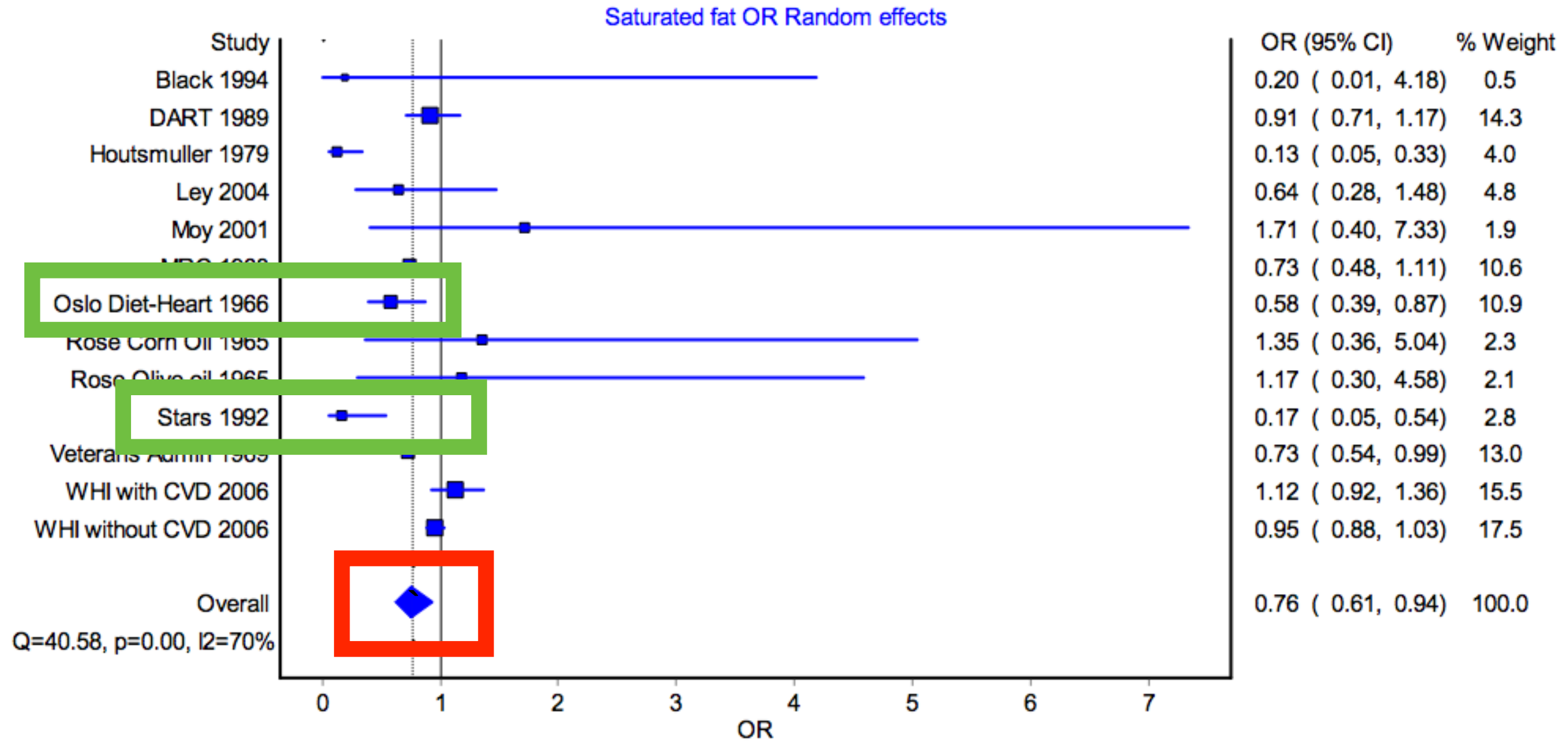
Control

N=31509

Cases=2603

82.6/1000

Meta-analysis



A Re-Analysis of the Cochrane Library Data: The Dangers of Unobserved Heterogeneity in Meta-Analyses

[Evangelos Kontopantelis](#)^{1,2,3,*} [David A. Springate](#)^{1,2} and [David Reeves](#)^{1,2}

Tim Friede, Editor

[Author information](#) ► [Article notes](#) ► [Copyright and License information](#) ►

This article has been [cited by](#) other articles in PMC.

Abstract

Go to: 

Background

Heterogeneity has a key role in meta-analysis methods and can greatly affect conclusions. However, true levels of heterogeneity are unknown and often researchers assume homogeneity. We aim to: a) investigate the prevalence of unobserved heterogeneity and the validity of the assumption of homogeneity; b) assess the performance of various meta-analysis methods; c) apply the findings to published meta-analyses.

Methods and Findings

We accessed 57,397 meta-analyses, available in the Cochrane Library in August 2012. Using simulated data we assessed the performance of various meta-analysis methods in different scenarios

Save items

Add to Favorites

Similar articles in

[Meta-analysis of the pollution].

A simplification and in analyses based on the

An empirical comparison in 12 894 meta-analyses

Heterogeneity in meta-analyses of postoperative pain: a

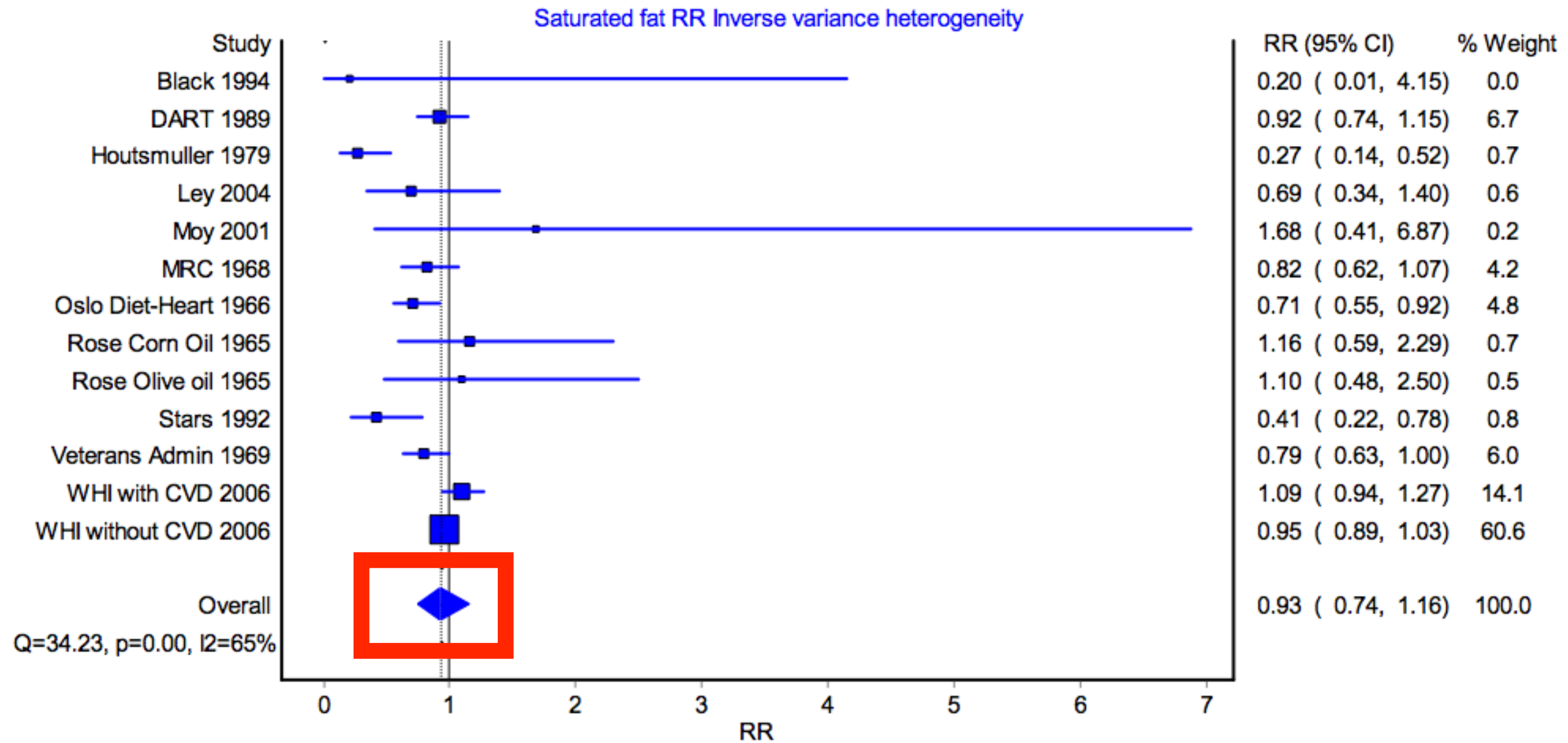
The effects of clinical predictors on predictive values of meta-analyses

Cited by other articles

Influence of the Infrapatellar Knee Arthroplasty: A

Prognostic Value of

Meta-analysis



Substitutions asked

Meta-analysis



Carbs for **saturated fat**



Monounsaturated fat for **saturated fat**



Polyunsaturated fat for **saturated fat**



Polyunsaturated fat for **carbs**



The NEW ENGLAND JOURNAL of MEDICINE

[HOME](#)[ARTICLES & MULTIMEDIA ▾](#)[ISSUES ▾](#)[SPECIALTIES & TOPICS ▾](#)[FOR AUTHORS ▾](#)[CME >](#)

ORIGINAL ARTICLE

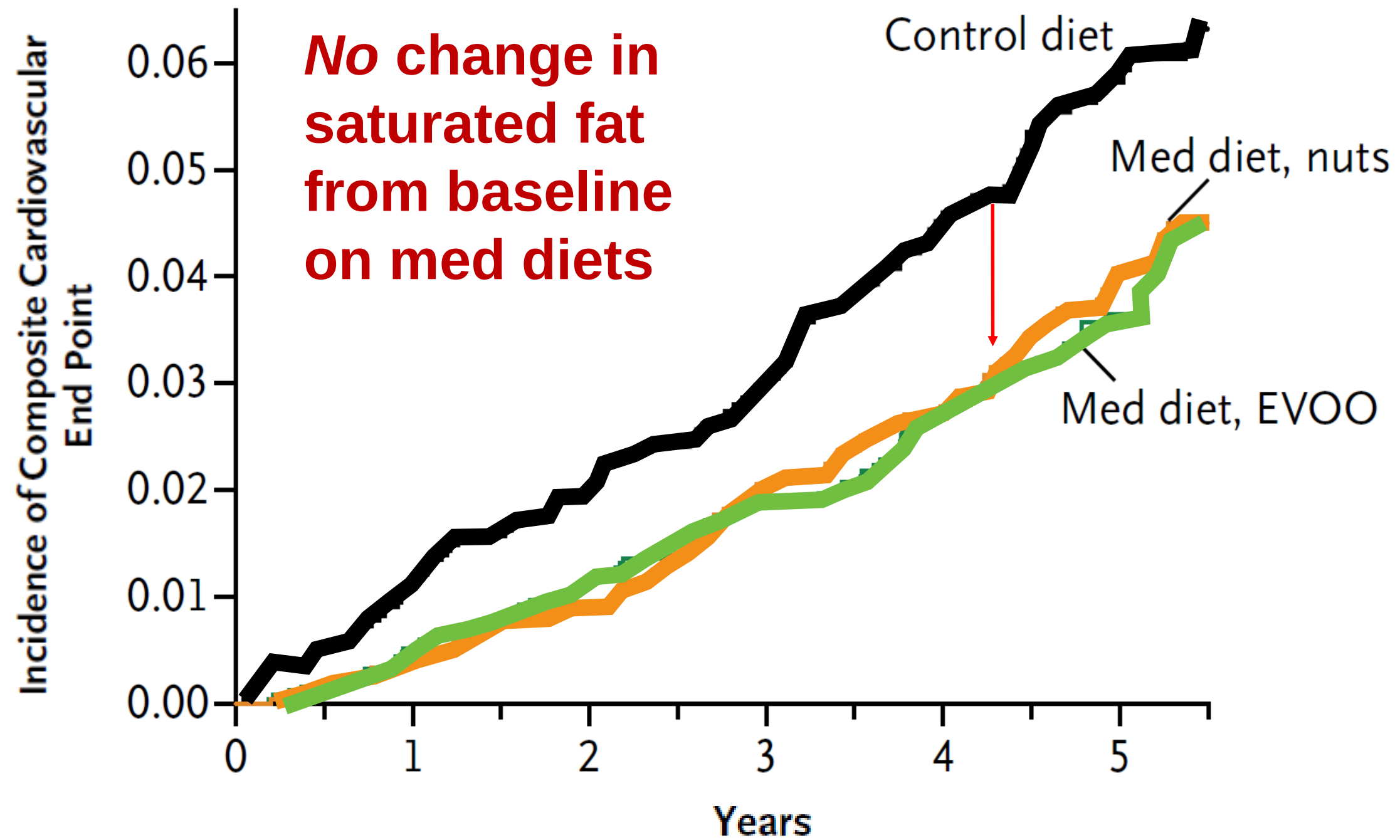
[A Correction Has Been Published >](#)

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

N Engl J Med 2013; 368:1279-1290 | [April 4, 2013](#) | DOI: 10.1056/NEJMoa1200303

 [Comments](#) open through April 10, 2013





**Plant based
flexi-tarianism**

**Carbohydrate
restricted whole food**

Mediterranean

6 things in Common

1. They Are Low in Added Sugar



2. They Eliminate Refined Carbohydrates



3. They Eliminate Industrial Vegetable Oils

4. They Eliminate Artificial Trans Fats

5. They Are High in Vegetables and Fibre



6. They Focus on Foods Instead of Calories



The REAL food guidelines

Real food for real people, based on real evidence

The REAL food guidelines

Real food for real people, based on real evidence

1. Enjoy nutritious foods everyday including plenty of fresh vegetables and seasonal fruit.
2. Buy and prepare food from whole unprocessed sources of dairy, nuts, seeds, eggs, meat, fish and poultry.
3. Keep sugar, added sugars, and processed foods to a minimum in all foods and drinks.
4. If you drink alcohol, keep your intake low.
- 5. Prepare, cook, and eat minimally processed traditional foods with family, friends, and your**

The REAL food guidelines

Real food for real people, based on real evidence

**1. Enjoy nutritious foods everyday
including plenty of fresh
vegetables and seasonal fruit.**

The REAL food guidelines

Real food for real people, based on real evidence

1. Enjoy nutritious foods everyday including plenty of fresh vegetables and seasonal fruit.

2. Buy and prepare food from whole unprocessed sources of dairy, nuts, seeds, eggs, meat, fish and poultry.

The REAL food guidelines

Real food for real people, based on real evidence

1. Enjoy nutritious foods everyday including plenty of fresh vegetables and seasonal fruit.
2. Buy and prepare food from whole unprocessed sources of dairy, nuts, seeds, eggs, meat, fish and poultry.
- 3. Keep sugar, added sugars, and processed foods to a minimum in all foods and drinks.**

The REAL food guidelines

Real food for real people, based on real evidence

1. Enjoy nutritious foods everyday including plenty of fresh vegetables and seasonal fruit.
2. Buy and prepare food from whole unprocessed sources of dairy, nuts, seeds, eggs, meat, fish and poultry.
3. Keep sugar, added sugars, and processed foods to a minimum in all foods and drinks.
- 4. If you drink alcohol, keep your intake low.**

A note to physicians: Advise to restrict refined grains and carbohydrates to the degree necessary to maintain stable BGL and to prevent hyper-secreting insulin even with stable BGL

