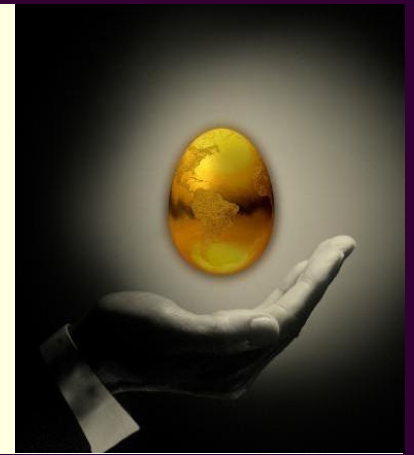

THE CASE AGAINST SATURATED FAT – The Whole Truth

*Donald J. McNamara, PhD
Eggs for Health Consulting
Washington, DC*



1954

A Guide TO GOOD EATING

MILK
2 OR MORE GLASSES DAILY . . . FOR ADULTS
3 - 4 OR MORE GLASSES DAILY . . . FOR CHILDREN
To drink, combined with other foods, in ice cream and in cheese

VEGETABLES
2 OR MORE SERVINGS DAILY OTHER THAN POTATO . . . 1 green or yellow; "greens" often

FRUITS
2 OR MORE SERVINGS DAILY
At least 1 raw; citrus fruit or tomato daily

EGGS
3 TO 5 A WEEK; 1 DAILY PREFERRED

MEAT, CHEESE, FISH, POULTRY
1 OR MORE SERVINGS DAILY
Dried beans, peas, peanuts occasionally

CEREAL AND BREAD
2 OR MORE SERVINGS DAILY
*Whole-grain value or enriched
Added milk improves nutritional values*

BUTTER
2 OR MORE TABLESPOONS DAILY

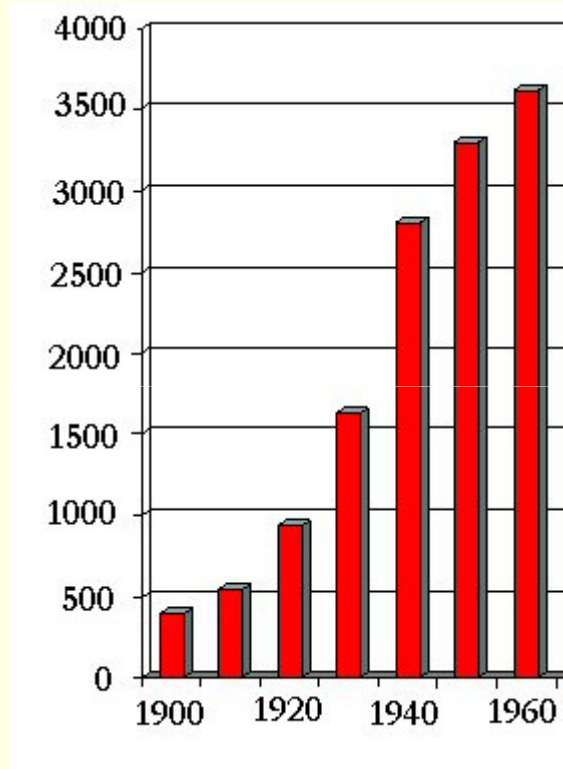
OTHER FOODS TO SATISFY APPETITE AND COMPLETE GROWTH AND ACTIVITY NEEDS

The nutritional statements made on this chart have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

Recommended saturated fat:
whole milk
cheese
meat
butter



US Heart Attack Death Rates





THE BASIC HYPOTHESES

Lipid hypothesis: *High cholesterol in the blood causes heart disease.*

Diet-heart hypothesis: *High saturated fat and cholesterol consumption causes high cholesterol in the blood which causes heart disease.*



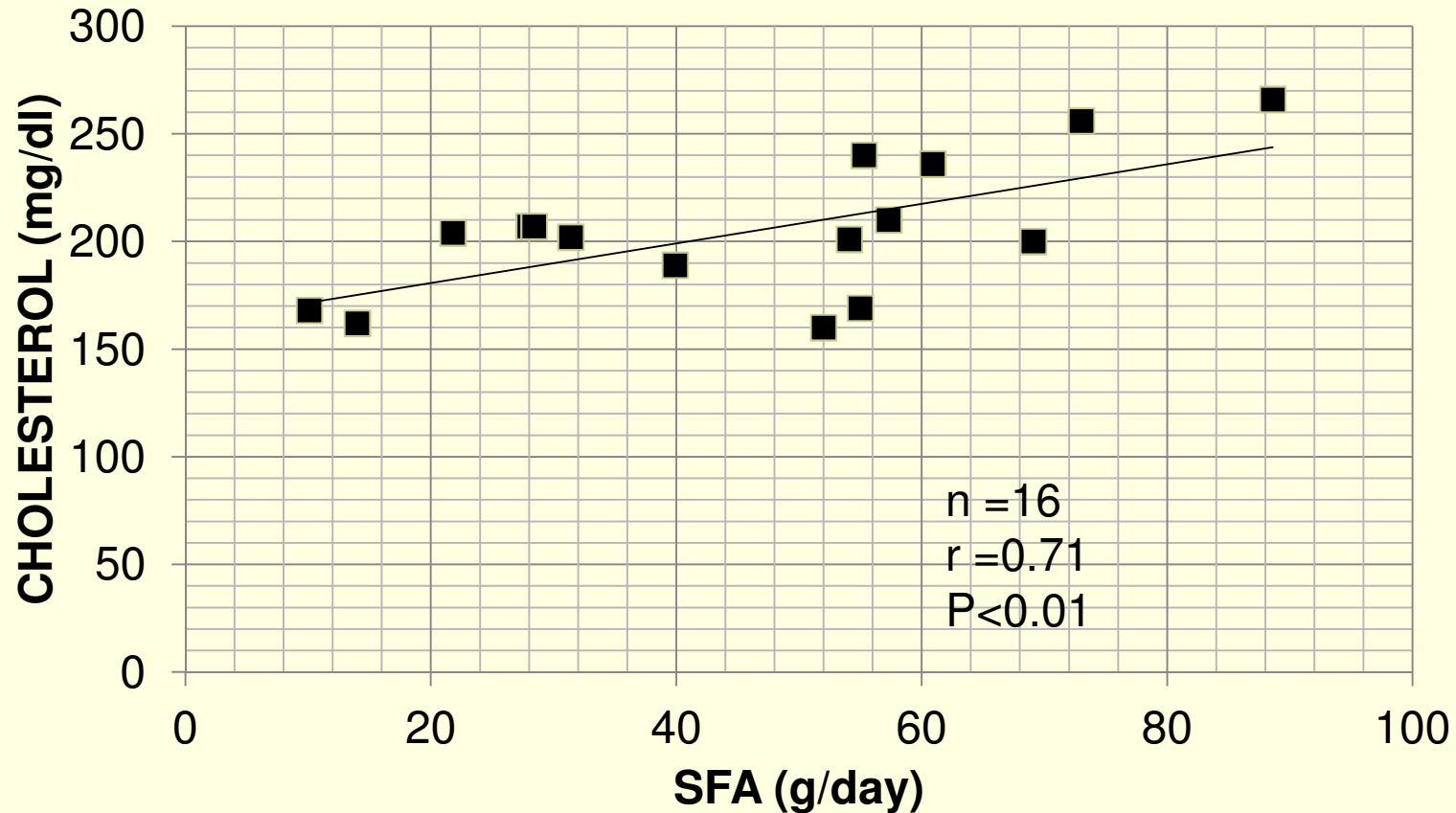
ANCEL KEYS & BAD, BAD FAT

The most often cited work of Ancel Keys was the Seven Countries Study – a 20-year study of about 12,000 men between the ages of 40 and 59 from 16 communities in Italy, the Greek islands, Yugoslavia, the Netherlands, Finland, Japan and the United States. The Seven Countries Study was said to “*prove*” that countries with the highest saturated fat consumption had the highest rates of heart disease.





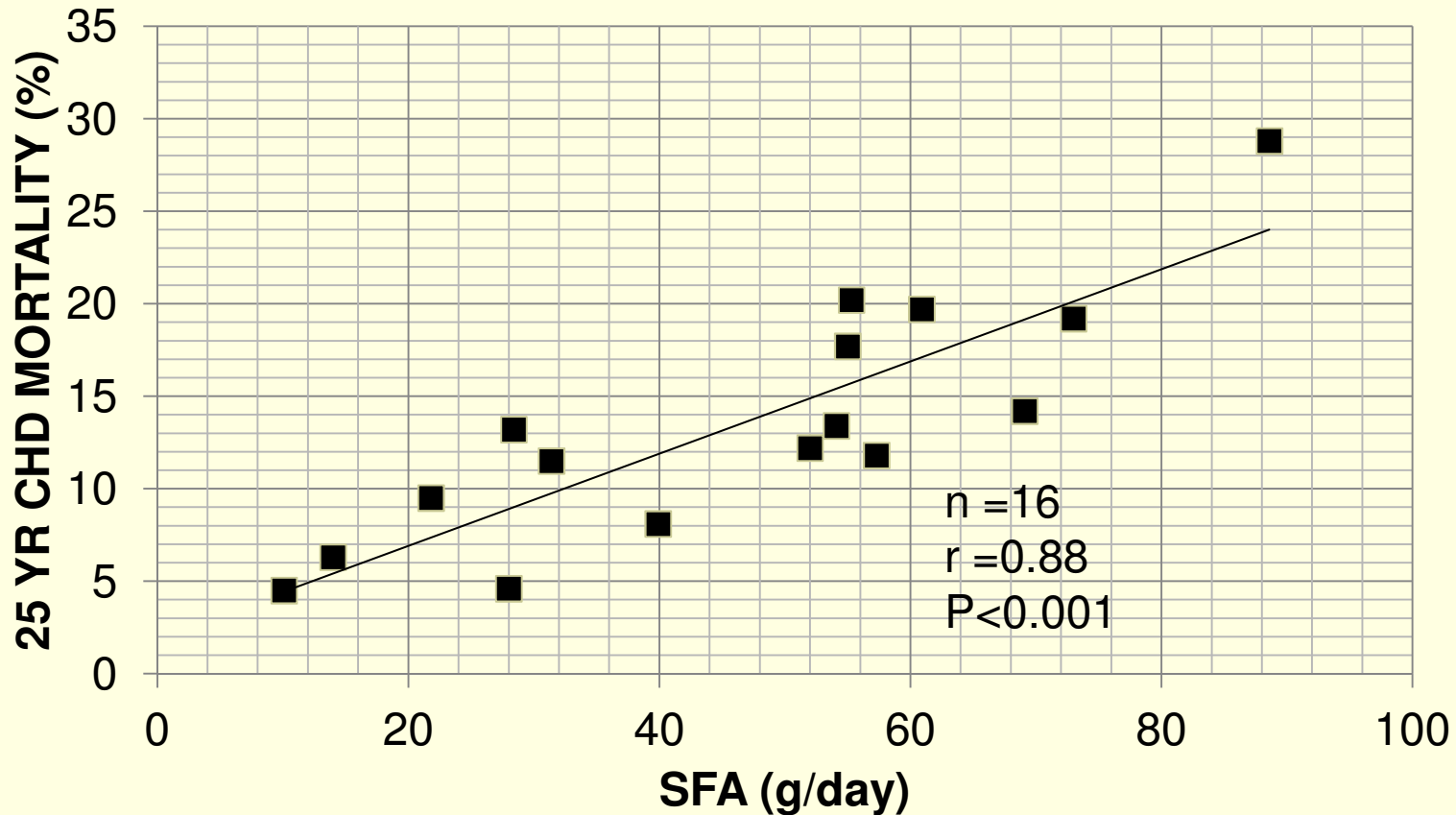
SEVEN COUNTRIES STUDY: SFA & SERUM CHOLESTEROL



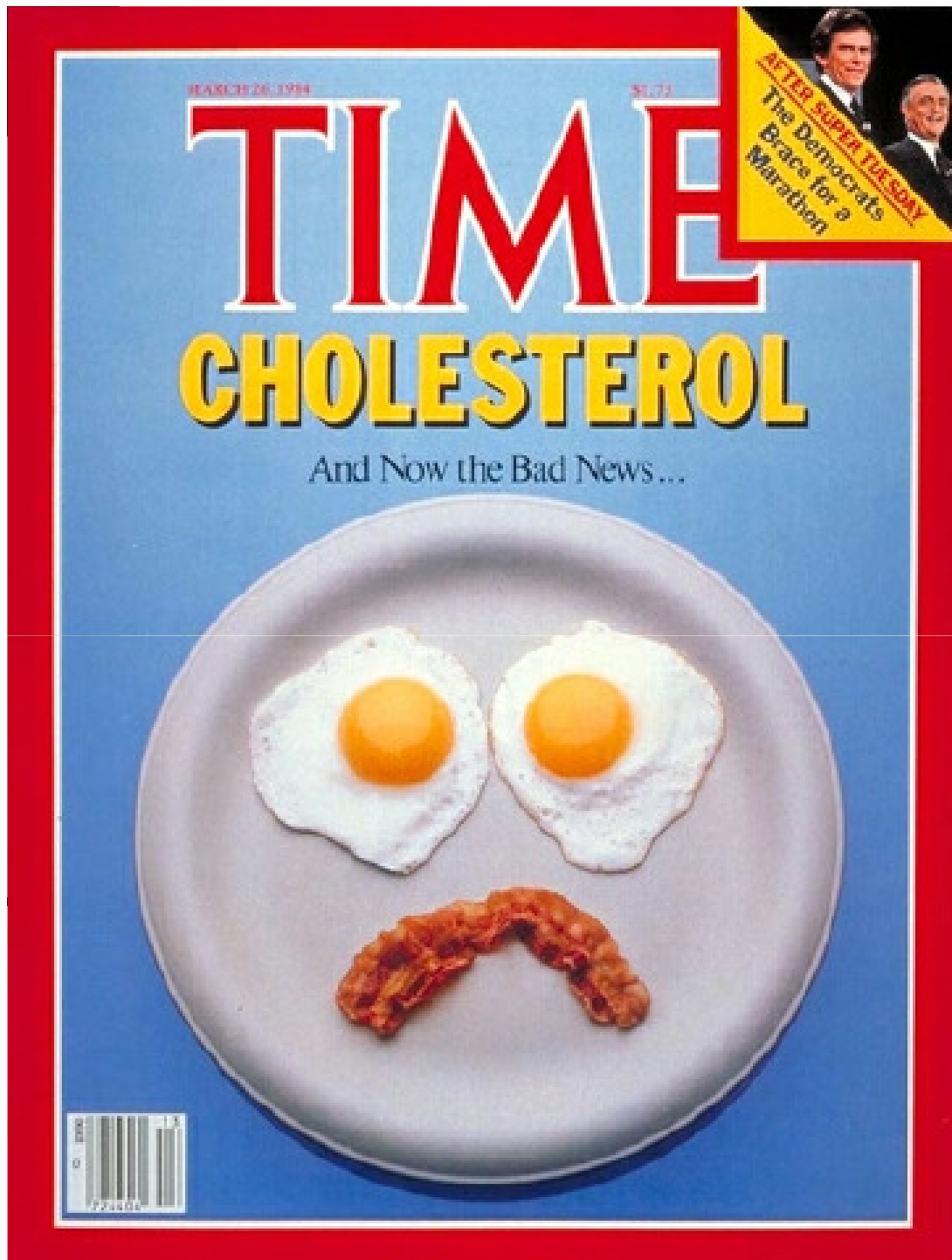
Kromhout et al. (1995) Prev Med 24: 308-315.



SEVEN COUNTRIES STUDY: SFA & 25 YR CHD MORTALITY



Kromhout et al. (1995) Prev Med 24: 308-315.



1984

Media coverage expanded public awareness of the cholesterol – heart disease relationship, and the potential role of dietary fats, especially saturated fat and cholesterol.



HYPOTHESIS PROVEN?

Diet-heart hypothesis: *High saturated fat and cholesterol consumption causes high cholesterol in the blood which increases heart disease risk.*



AMERICAN HEART ASSOCIATION DIETARY RECOMMENDATIONS

- ❑ 30% or less of cal from fat
- ❑ **8 - 10% of cal from *saturated fat***
- ❑ Up to 10% of cal from polyunsaturated fat
- ❑ Up to 15% of cal from monounsaturated fat
- ❑ Less than 300 mg/day of cholesterol
- ❑ No more than 2.4 g/day sodium
- ❑ 55 - 65% of cal as complex carbohydrates
- ❑ If you drink, no more than 2 drinks per day



McGovern Commission

United States Senate Select Committee on Nutrition and Human Needs (1977)

The McGovern committee sparked the change in public thinking about the American diet. Although it set out to investigate the causes of hunger in the United States, the committee decided that malnutrition covers not diseases of deficiency, but also diseases of excess.



DIETARY GUIDELINES

The "**McGovern Report**" suggested that Americans eat less fat, less cholesterol, less refined and processed sugars, and more complex carbohydrates and fiber. The recommended way of accomplishing this was to eat more fruits, vegetables, and whole grains, and less high-fat meat, egg, and dairy products.



DIETARY RECOMMENDATIONS

"One of the problems is that strong recommendations have often been made on very weak data. It may have been the best guess at the moment, but often the recommendations are repeated so many times that people forget they were rough guesses in the first place and come to think they are hard facts."

*Dr. Walter Willett, 2000
Harvard School of Public Health*

Nutrition Facts	
Serving Size 1 cup (200g)	
Amount Per Serving	
Calories 280	
	% Daily Value
Fat 13g	20%
Saturated Fat 3g + Trans Fat 2g	25%
Cholesterol 30mg	10%
Sodium 660 mg	28%
Carbohydrate 31g	10%
Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A 4%	Vitamin C 2%



THE SEVEN COUNTRIES STUDY

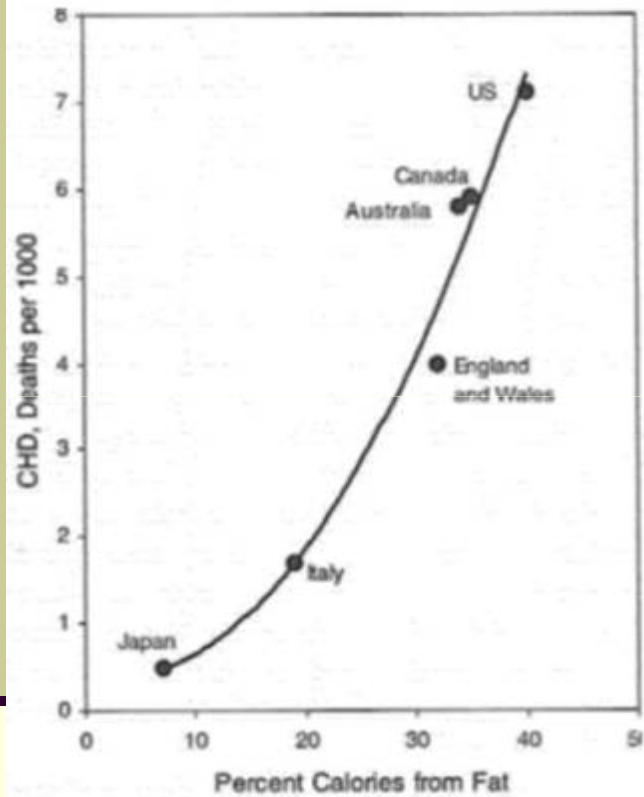
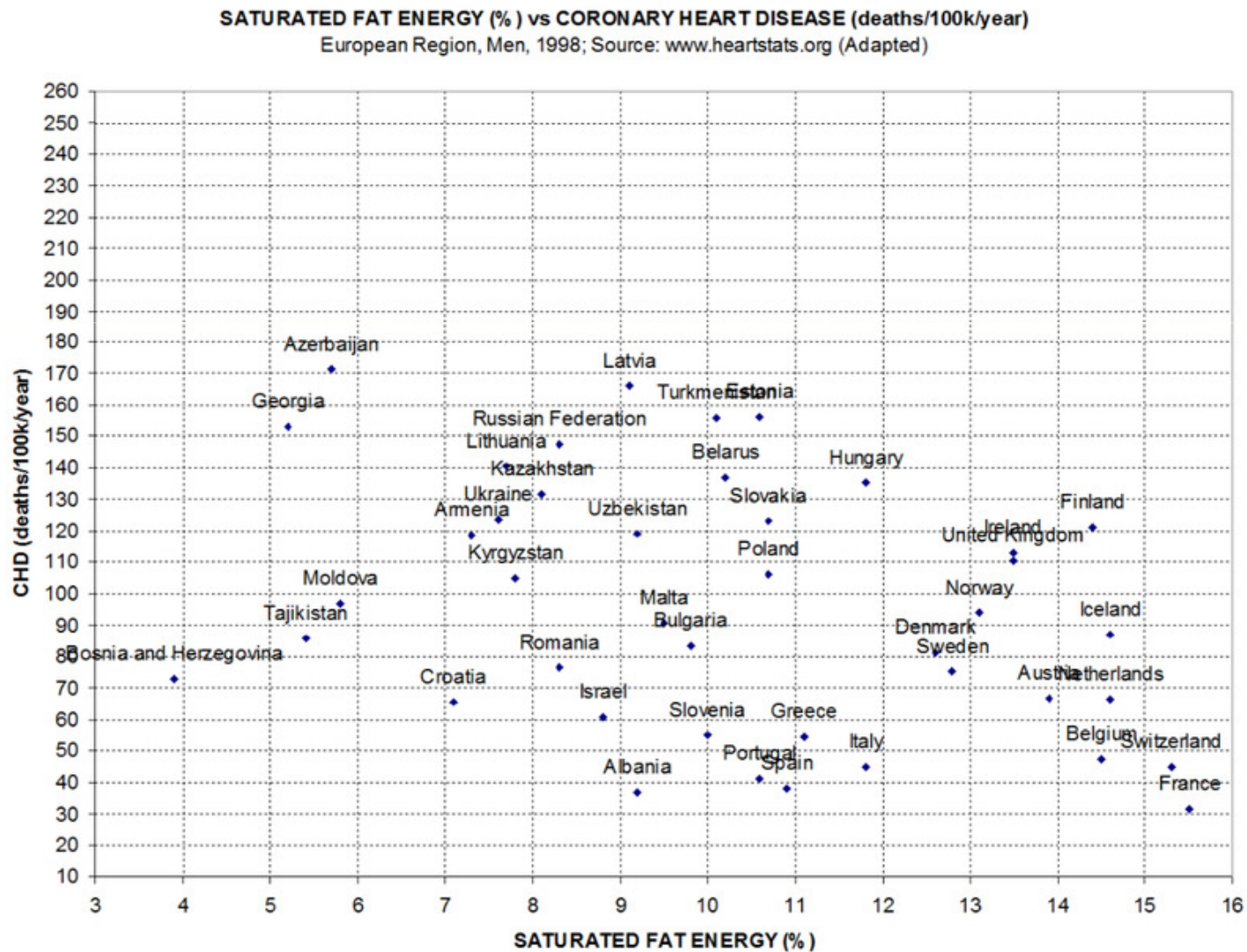


Figure 1A. Correlation between the total fat consumption as a percent of total calorie consumption, and mortality from coronary heart disease in six countries. Data from Keys.²

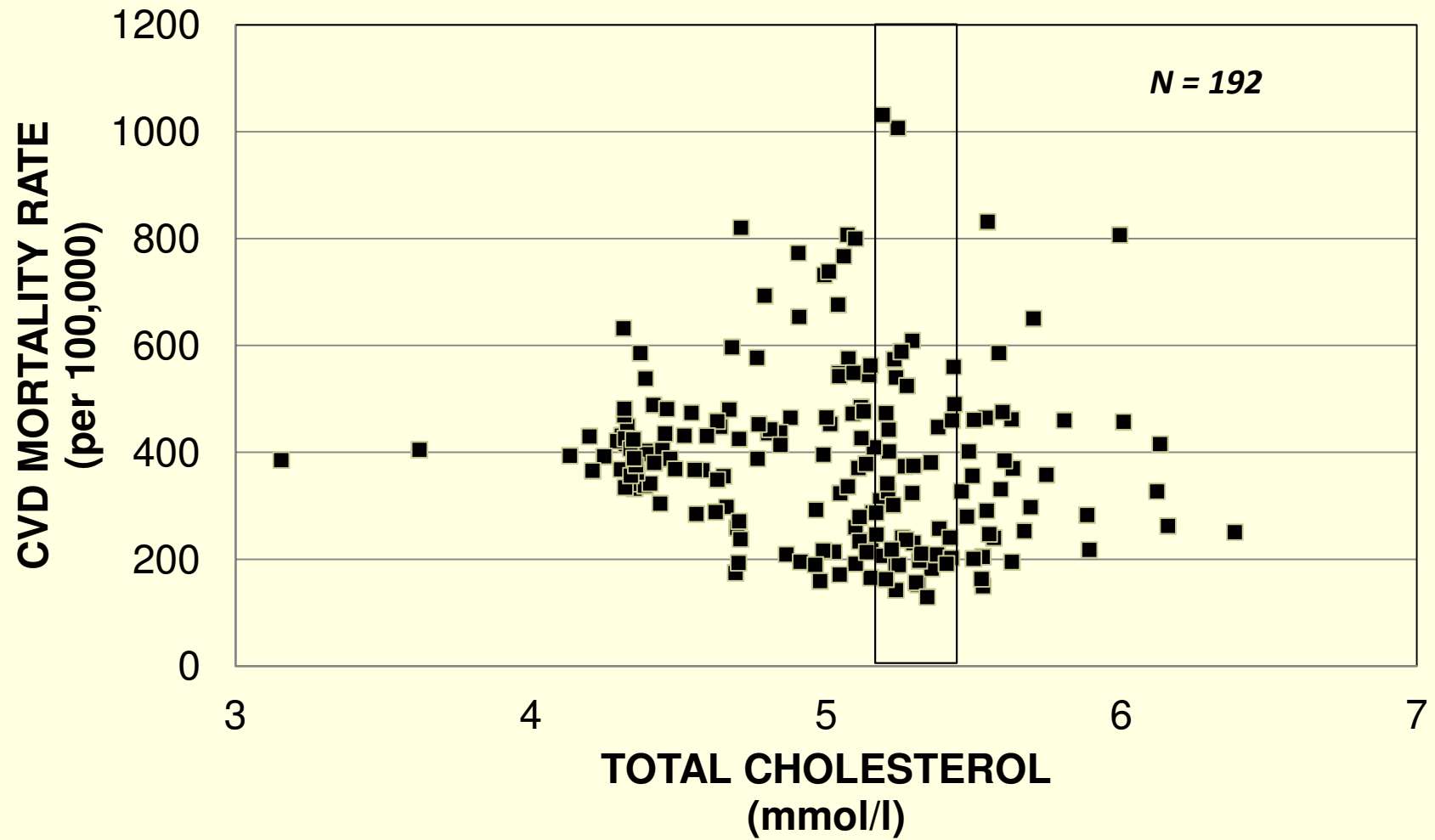


IT'S NEVER AS SIMPLE AS THEY TELL YOU





WHO DATA SET 2004





CHD MORTALITY

Absolute CHD mortality rates with a cholesterol level of 5.45 mmol/l (210 mg/dl)

REGION	25 Yr Mortality Rate
Northern Europe	15%
United States	12%
Inland Southern Europe	10%
Japan & Mediterranean	4-5%

A 0.50 mmol/l (20 mg/dl) increase in cholesterol levels increased **relative risk** in all regions by 17%.



WHAT'S SFA GOT TO DO WITH IT?

Absolute CHD mortality rates with a cholesterol level of 5.45 mmol/l (210 mg/dl)

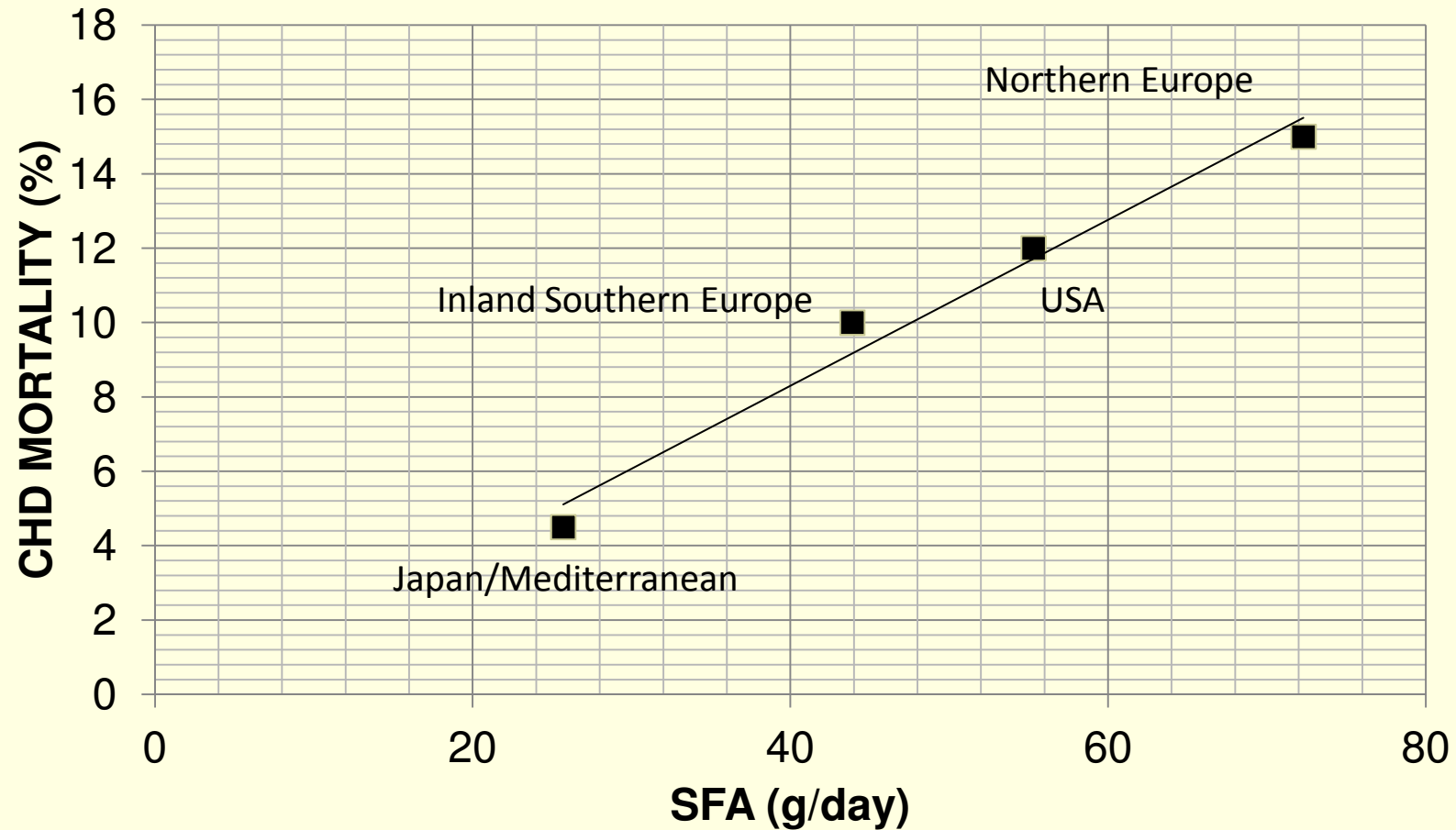
REGION	SFA (g/day)	25 Yr Mortality Rate
Northern Europe	72.3	15%
United States	55.3	12%
Inland Southern Europe	43.8	10%
Japan & Mediterranean	25.7	4-5%

Verschuren et al. (1995) JAMA 274: 131-136.

Kromhout et al. (1995) Prev Med 24: 308-315.



SFA vs CHD at 210 mg/dl

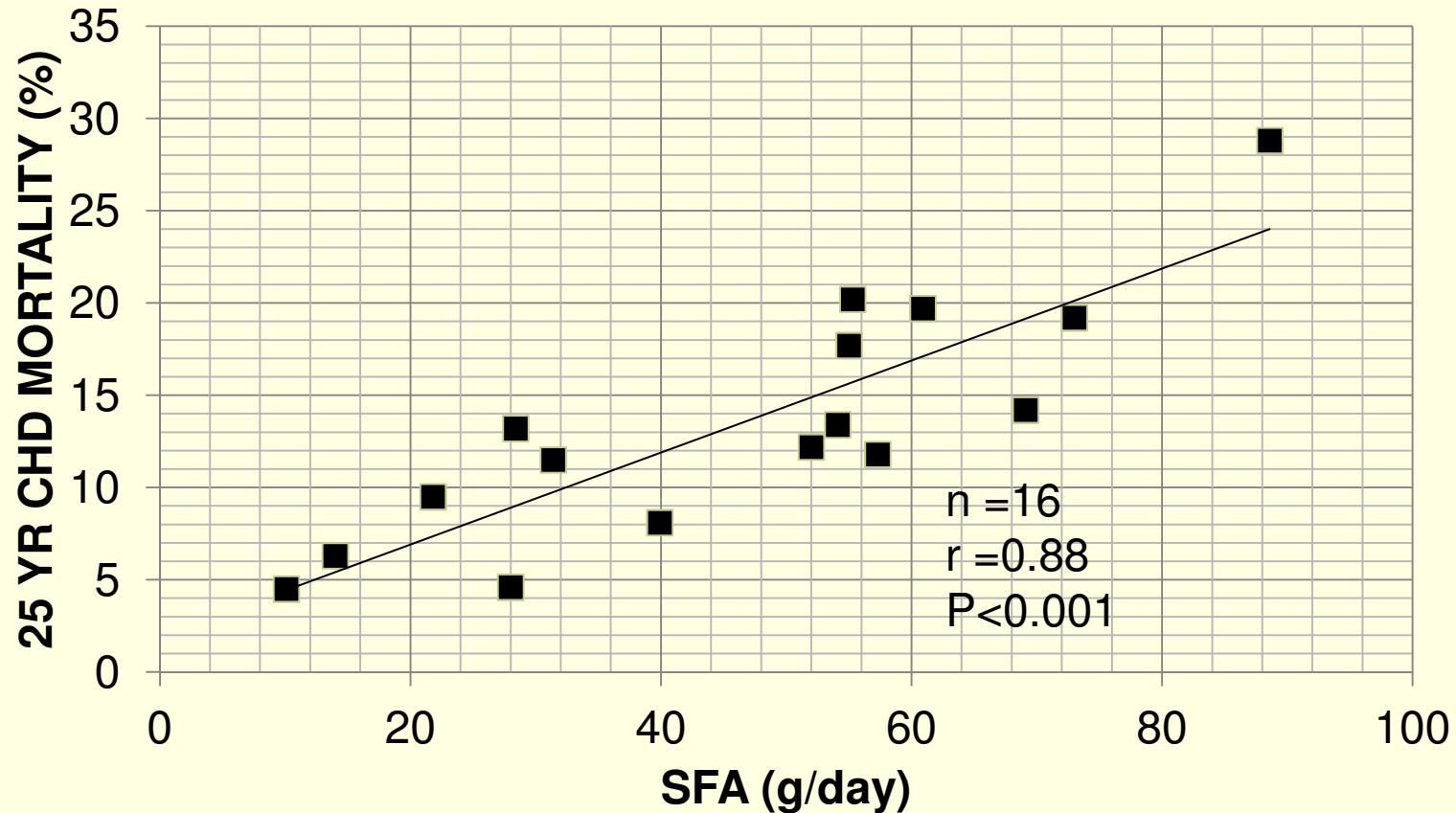


Verschuren et al. (1995) JAMA 274: 131-136.

Kromhout et al. (1995) Prev Med 24: 308-315.



SFA & 25 YR CHD MORTALITY



Kromhout et al. (1995) Prev Med 24: 308-315.



WHAT TO MAKE OF IT ALL

- At the same plasma cholesterol level CHD incidence can vary over 3-fold between populations.
- SFA intake can vary 3-fold between populations and is related to CHD risk even at the same plasma cholesterol level.
- If SFA intake increases CHD risk by increasing plasma cholesterol levels, how does risk increase at the same plasma cholesterol level?



A NEW HYPOTHESIS IS NEEDED

- Diets high in SFA are also often low in fruits & vegetables (fiber, antioxidants, vitamins) and low in omega-6/omega-3 fatty acids (anti-inflammatory) components.
- Is CHD risk associated with too much saturated fat or too little intake of protective nutrients?
- Is there evidence that CHD risk is associated more with dietary inadequacies than with dietary excesses?



Mente et al. *Arch Intern Med.* *2009; 169:659-669*

Strong evidence supports valid associations of protective factors, including intake of vegetables, nuts, and “Mediterranean” and high-quality dietary patterns with CHD, and associations of harmful factors, including intake of *trans–fatty acids and foods with a high glycemic index* or load. ... Moderate evidence of associations exists for intake of fish, marine-3 fatty acids, folate, whole grains, dietary vitamins E and C, beta carotene, alcohol, fruit, and fiber.



TIMES ARE CHANGING



▶ Meet the Brothers

Male, 45 years old

MY NAME IS SHORT FOR
'Saturated'

OCCUPATION
Heartbreaker

STATUS
Single, so I have plenty of
time for all my friends

HOMETOWN
A refrigerator near you



THANK YOU

