The background of the slide is a photograph of the Golden Gate Bridge in San Francisco. The bridge's red-orange towers and suspension cables are visible against a clear blue sky. The water of the bay is a deep blue, and some greenery is visible in the foreground at the bottom.

The sugar pandemic: policy vs. politics

Robert H. Lustig, M.D., M.S.L.

**Division of Endocrinology, Department of Pediatrics
Institute for Health Policy Studies
University of California, San Francisco**

**Adjunct Faculty
UC Hastings College of the Law**

President, Institute for Responsible Nutrition

Healthy Kids Forum, Santa Clara, May 11, 2015

- **no disclosures**

**If a researcher isn't willing to follow
his data into the policy arena, who
will?**

— Dr. Jeremiah Stamler,
“Father” of Cardiovascular Epidemiology

U.N. General Assembly

Sept 20, 2011

- Non-communicable disease is now a bigger problem than acute infectious diseases worldwide
- Plan to target, tobacco, alcohol, and diet
- But exactly what about diet?
 - Total calories?
 - Fat?
 - Red meat?
 - Dairy?
 - Carbohydrate?

U.N. General Assembly

Sept 20, 2011

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- **But exactly what about diet?**
 - Total calories?
 - Fat?
 - Red meat?
 - Dairy?
 - Carbohydrate?

The Fiction

“Beating obesity will take action by all of us, based on one simple **common sense** fact: **All calories count**, no matter where they come from, including Coca-Cola and everything else with calories...”

-The Coca Cola Company, “Coming Together”, 2013



The Science

- **Some Calories Cause Disease More than Others**
- **Different Calories are Metabolized Differently**
- **A Calorie is Not A Calorie**

Addictive and hazardous to your health



Addictive and hazardous to your health



Sugar is 'addictive and the most dangerous drug of the times'

Soft drinks should carry tobacco-style warnings that sugar is highly addictive and dangerous, a senior Dutch health official has warned.



Photo: ALAMY

By Bruno Waterfield

11:13AM BST 17 Sep 2013 The Telegraph, London, UK

Paul van der Velpen, the head of Amsterdam's health service, the Dutch capital city where the sale of cannabis is legalised, wants to see sugar tightly regulated.

"Just like alcohol and tobacco, sugar is actually a drug. There is an important role for government. The use of sugar should be discouraged. And users should be made aware of the dangers," he wrote on an official public health website.

BACON 'WANTED TO BE LIKE SCARFACE'

Surrey Six witness says Red Scorpions leader sought power and control **NEWS A6**

CANUCKS
SUCCUMB IN
WILD ONE
TO ISLES

SPORTS
A28-30

TUESDAY,
MARCH 11, 2014
VANCOUVER,
BRITISH COLUMBIA
A DIVISION OF
POSTMEDIA NETWORK INC.

The Province

FINAL
EDITION

\$2.14 minimum
in outlying areas
\$1.52 PLUS
GST

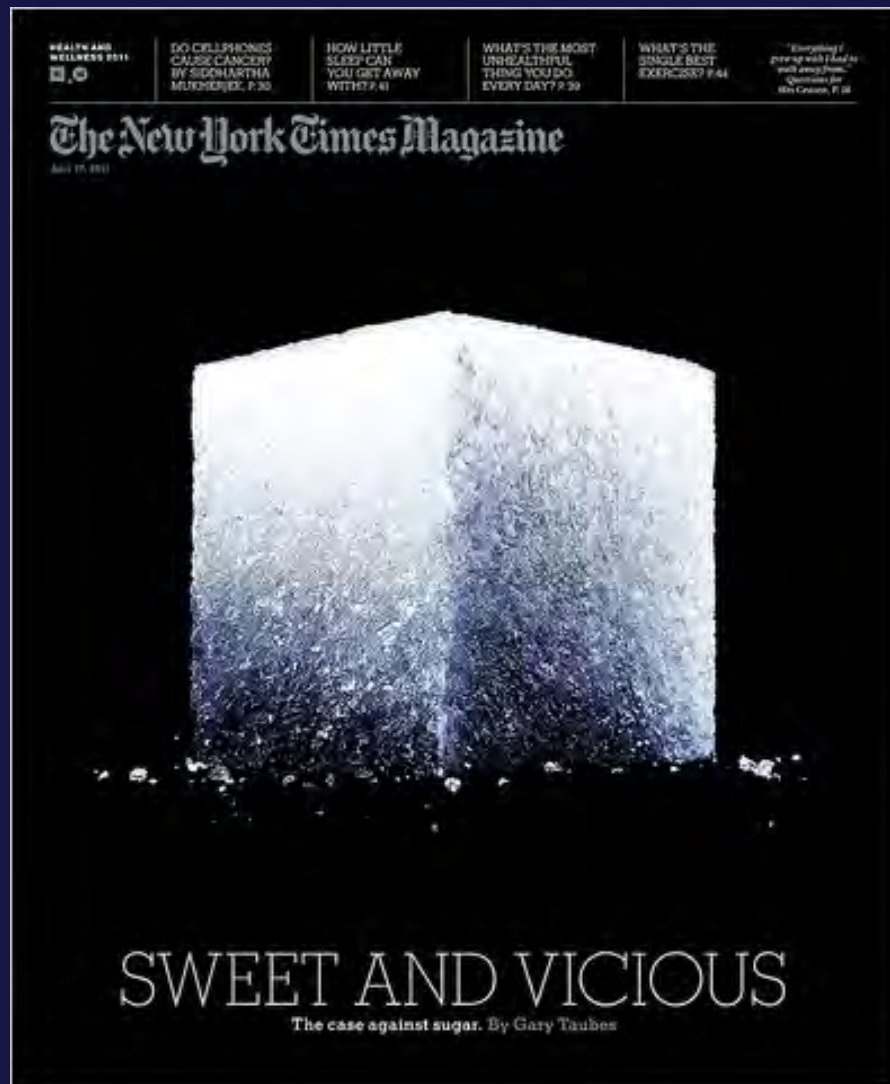
A cartoon illustration featuring a bee, a red M&M character, a boy, and a tiger. They are positioned in front of a height chart with markings at 2'0", 2'6", 3'0", and 3'6". The bee is at the top, near 3'6". The red M&M is at approximately 2'6". The boy is at approximately 3'0". The tiger is at approximately 3'6". The red M&M is pointing up at the boy. The boy is holding a bowl of cereal. The tiger is holding a banana. The text "Dietitians recommend 12-step program to help manage your sugar consumption" is written above the boy. The text "SUGAR: PUBLIC ENEMY #1" is written in large, bold letters at the bottom. The text "NEWS A3" is written in the bottom right corner.

Dietitians recommend
12-step program to
help manage your sugar
consumption

3'6"
3'0"
2'6"
2'0"

**SUGAR:
PUBLIC ENEMY #1**

NEWS A3



New York Times,
April 17, 2011

Nature 487:27-29,
Feb 1, 2012

COMMENT

ECOLOGY Komodo dragons and elephants could reduce fire risk in Australia p.30

NEUROSCIENCE The source of the self is in the brain's wiring, not individual neurons p.31

LITERATURE How Charles Dickens drew on science, but left room for wonder p.32

OBITUARY Philip Lawley and the discovery that DNA damage can cause cancer p.36



The toxic truth about sugar

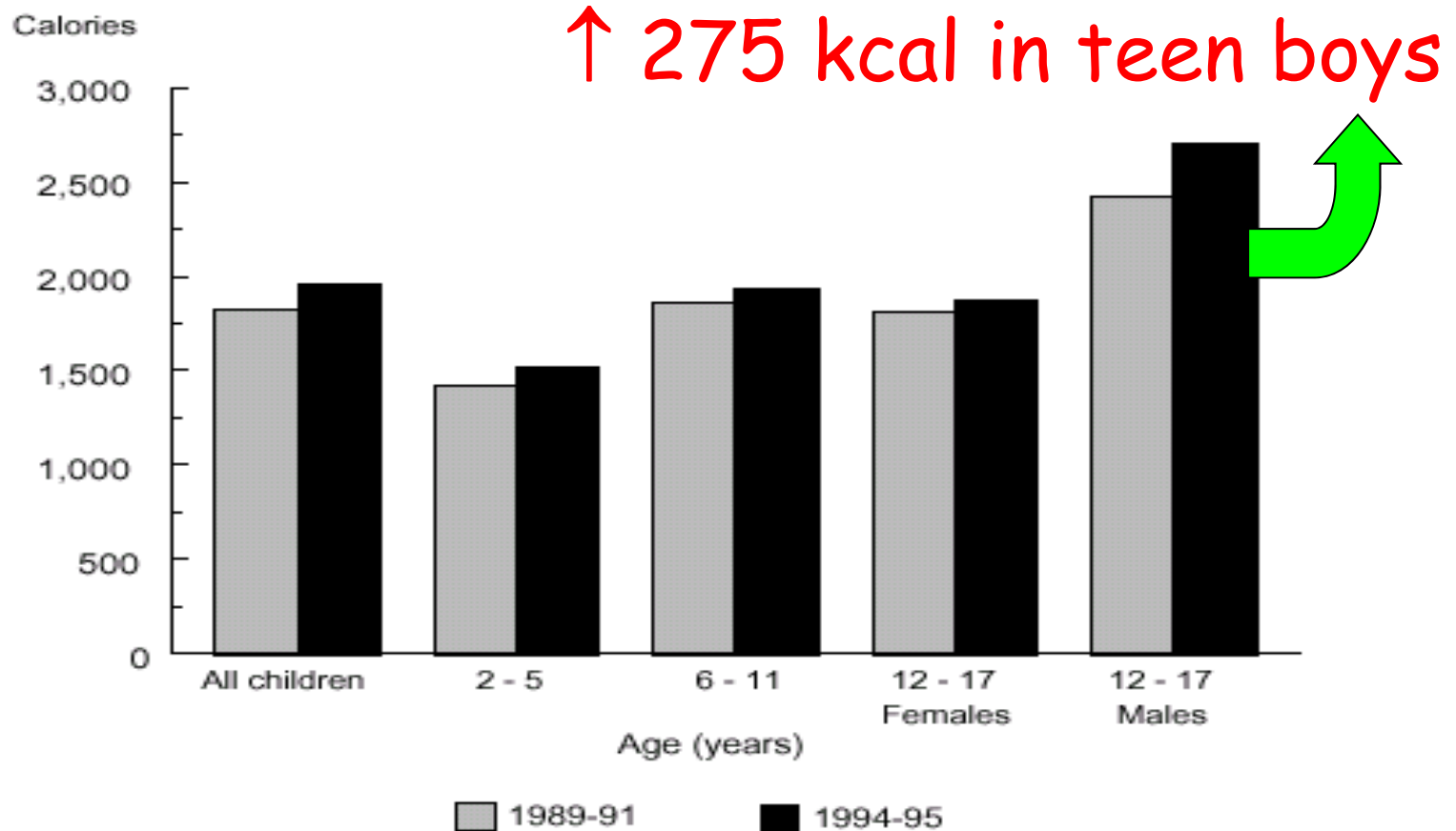
Added sweeteners pose dangers to health that justify controlling them like alcohol, argue Robert H. Lustig, Laura A. Schmidt and Claire D. Brindis.

Criteria for societal intervention for substance control

- Unavoidability
- Toxicity
- Abuse
- Externalities-negative impact on society

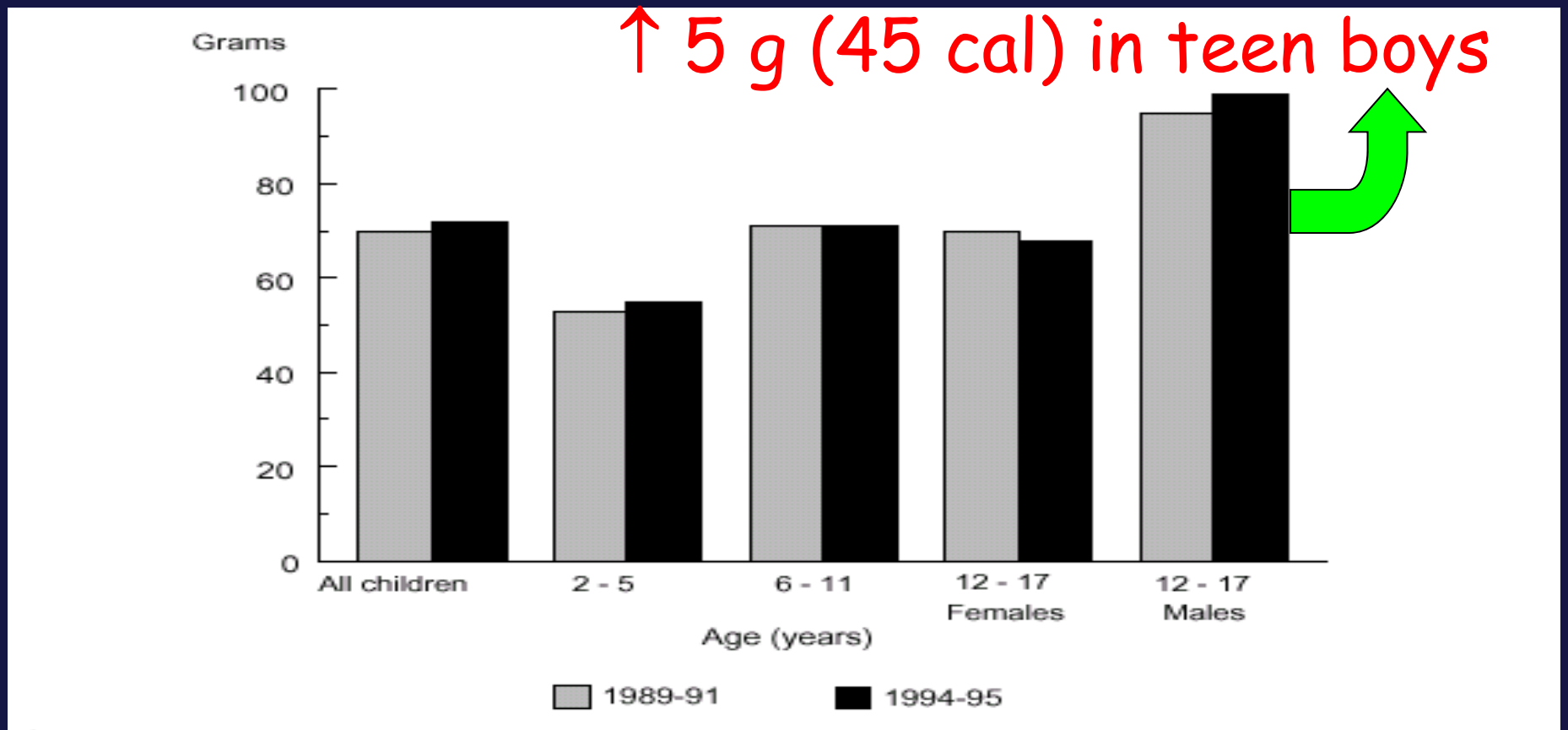
Unavoidability

Total Caloric Intake



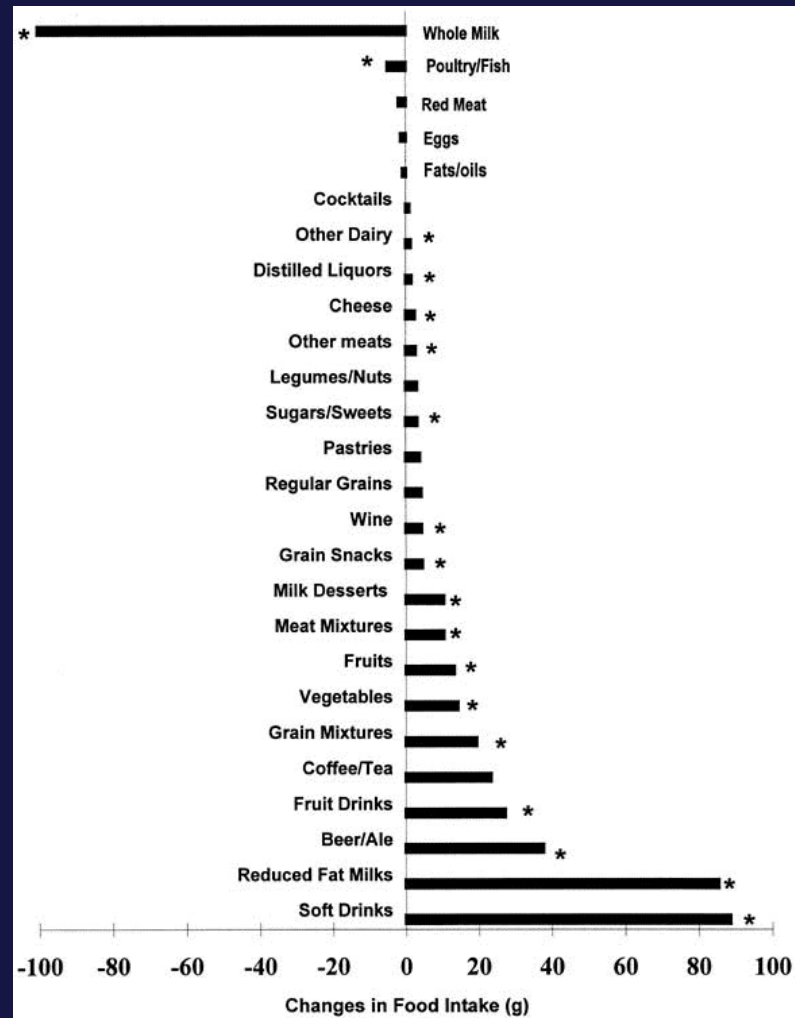
Children 2-17 yrs, CSFII (USDA) 1989-91 vs. 1994-95
<http://www.usda.gov/cnpp/FENR%20V11N3/fenrv11n3p44.PDF>

Fat Intake: Grams

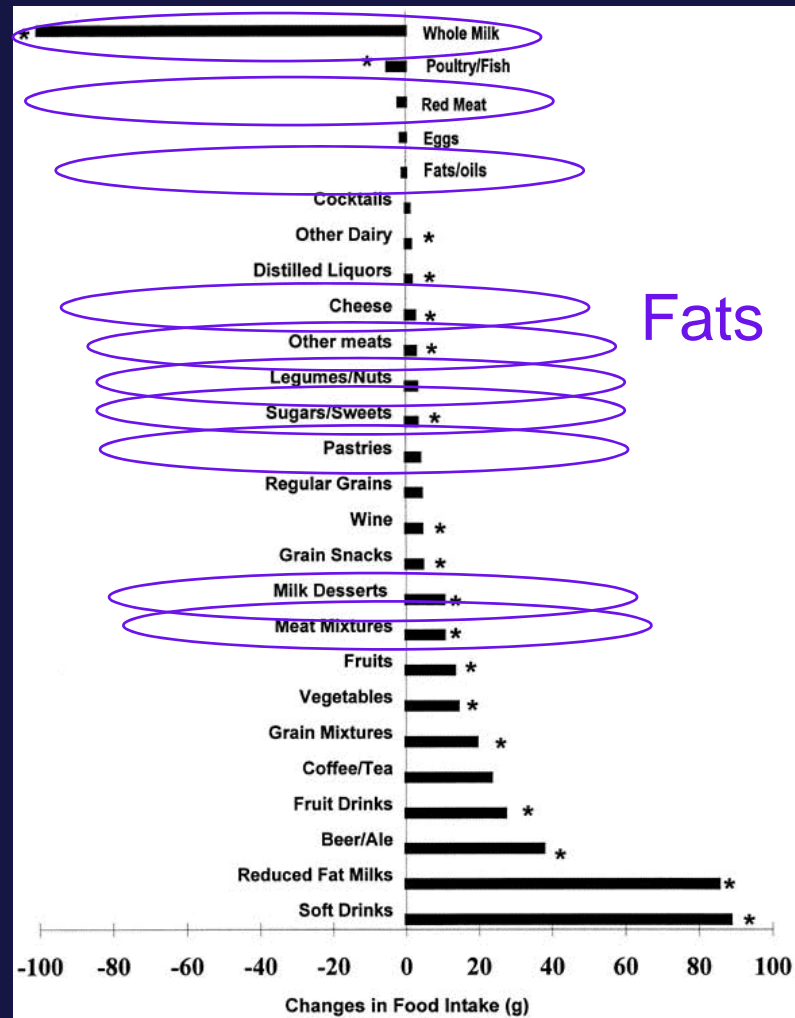


Children 2-17 yrs, CSFII (USDA) 1989-91 vs. 1994-95

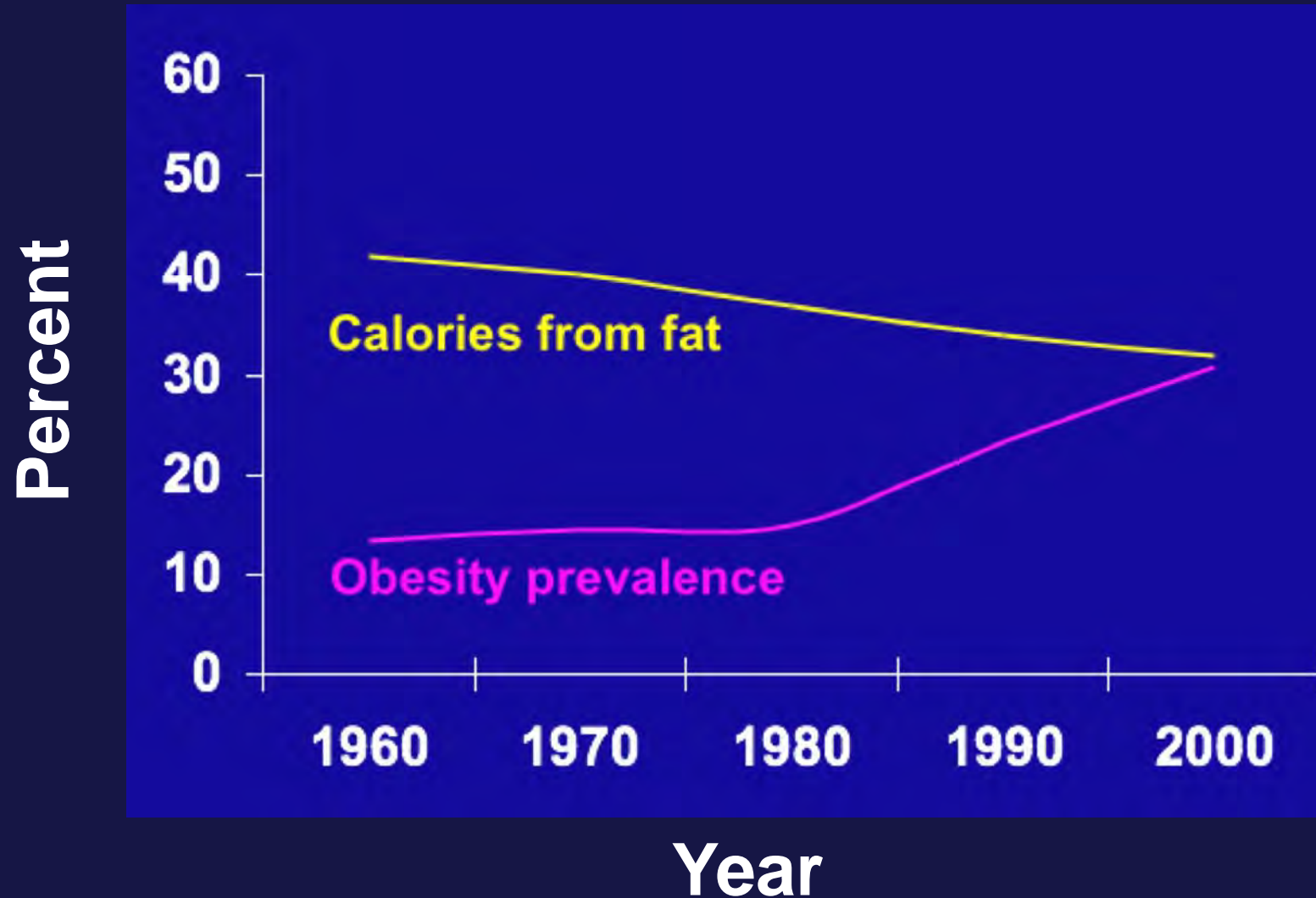
Secular trends in specific food intake 1989-1996



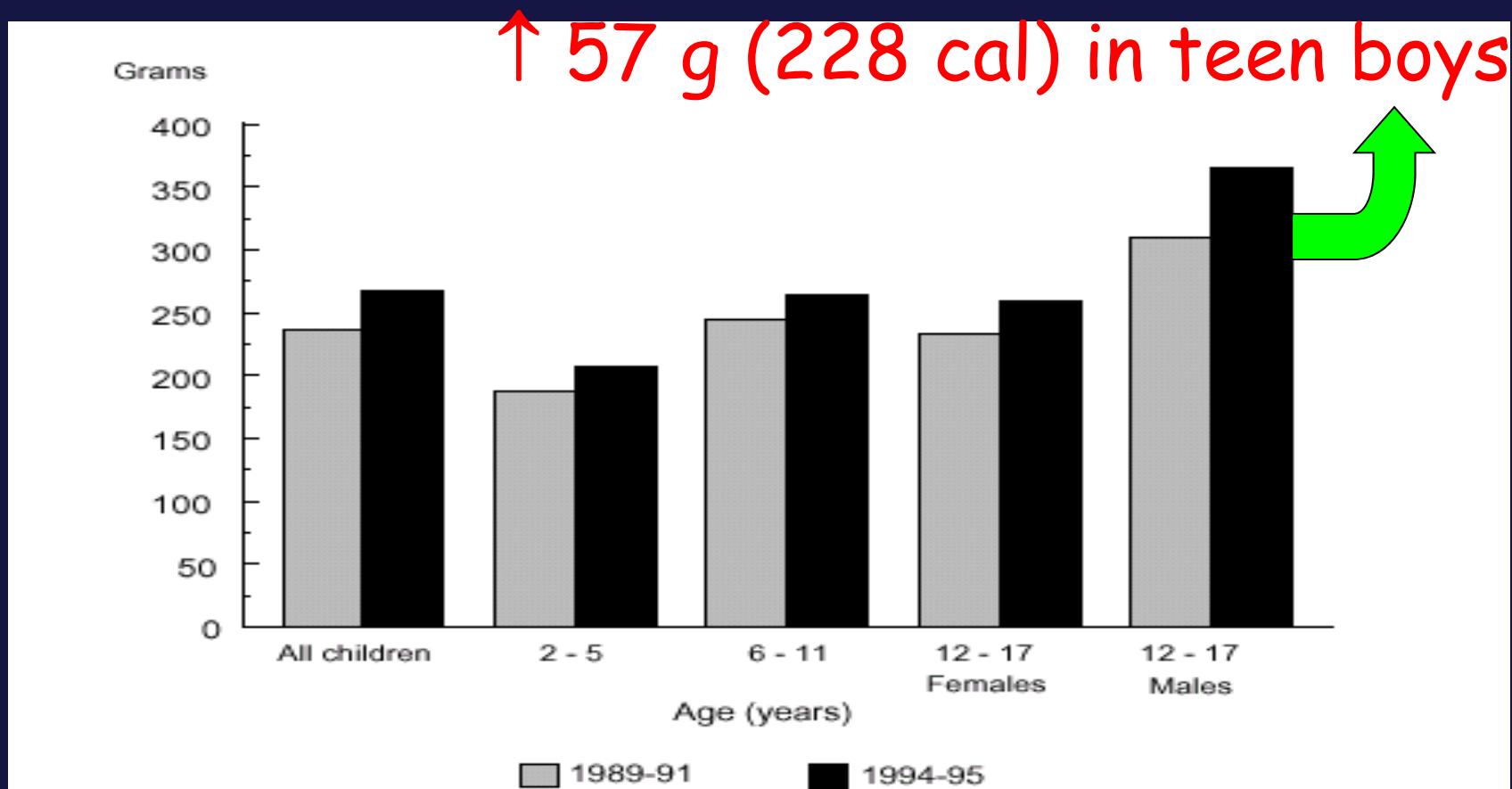
Secular trends in specific food intake 1989-1996



Prevalence of Obesity Compared to Percent Calories from Fat Among US Adults

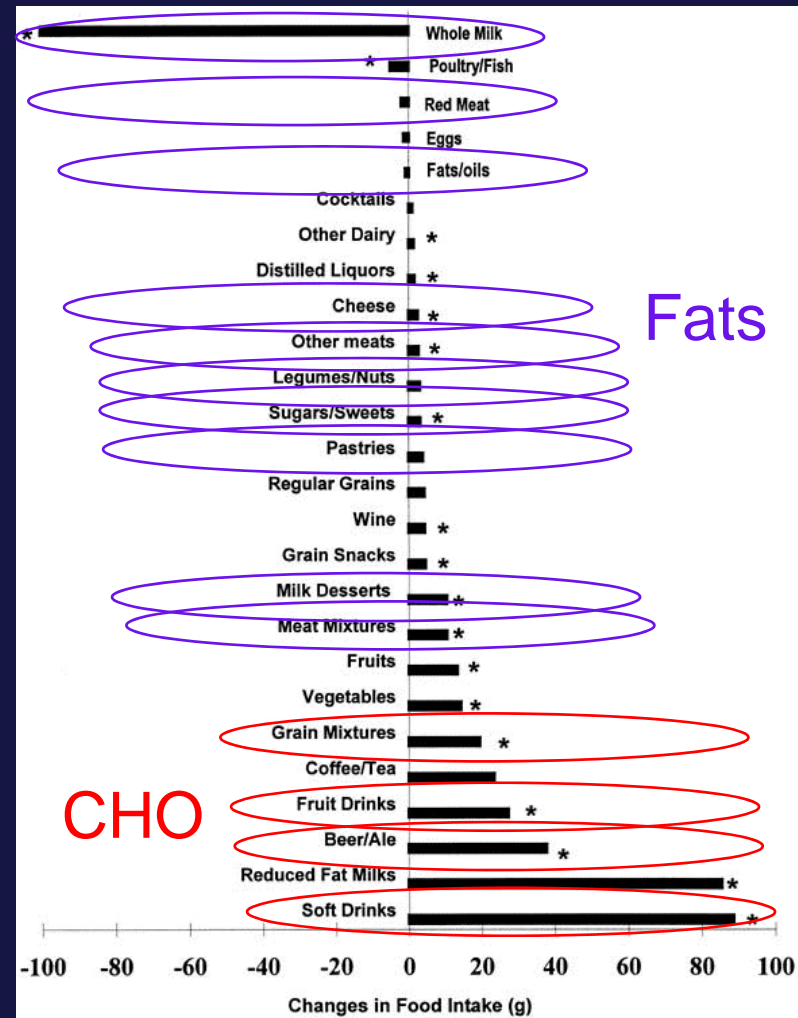


Carbohydrate Intake: Grams

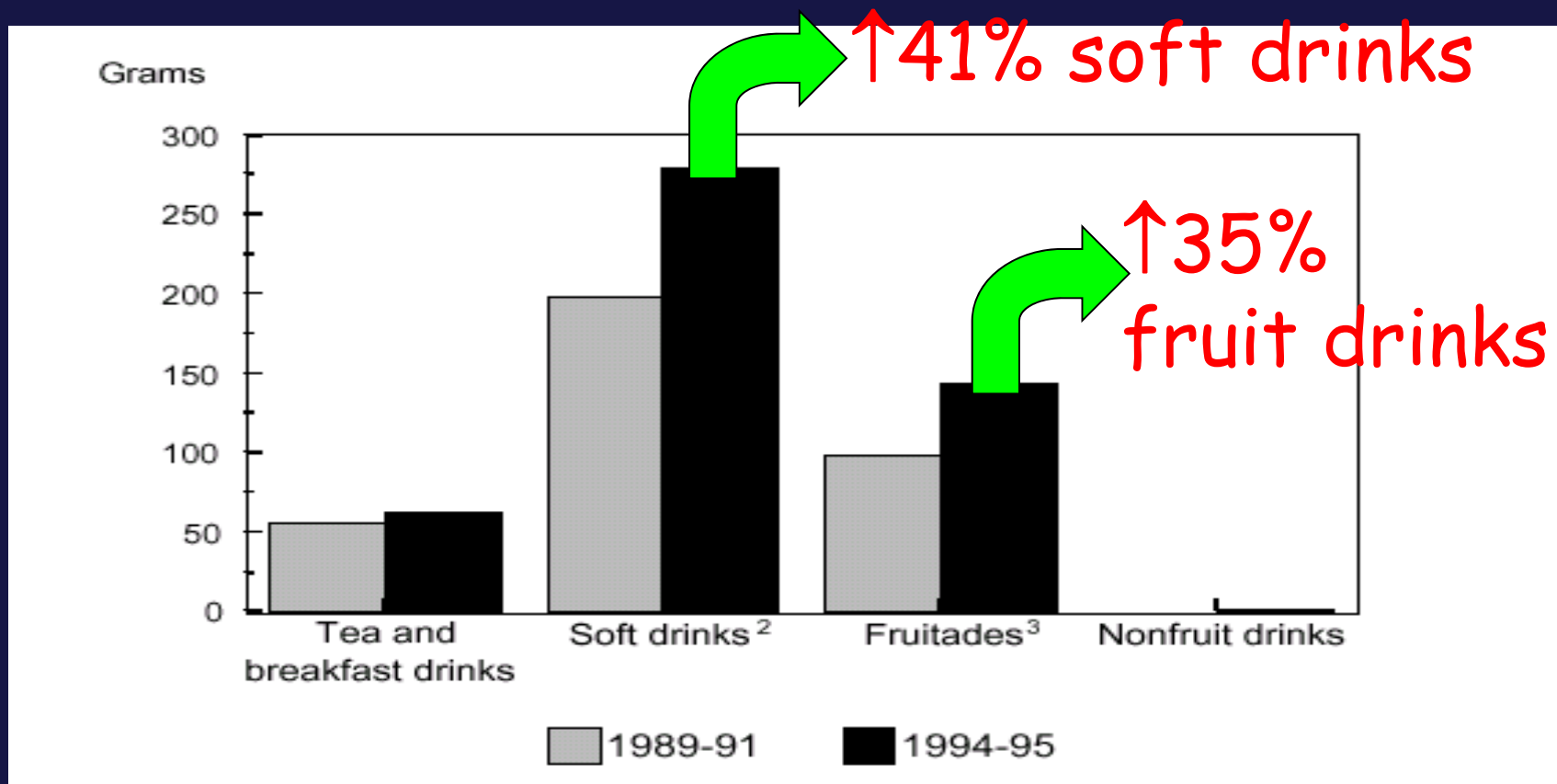


Children 2-17 yrs, CSFII (USDA) 1989-91 vs. 1994-95

Secular trends in specific food intake 1989-1996



Beverage Intake



Children 2-17 yrs, CSFII (USDA) 1989-91 vs. 1994-95

The Coca-Cola Conspiracy



High Fructose Corn Syrup

Current US annual consumption:

- 63 pounds per person

Current users:

U.S.

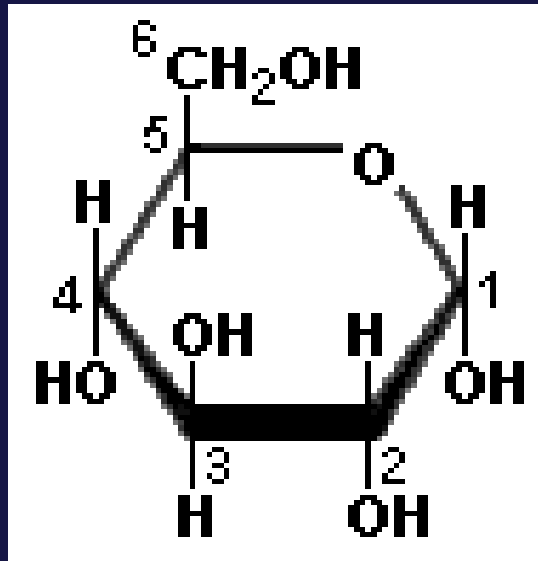
Canada

Japan

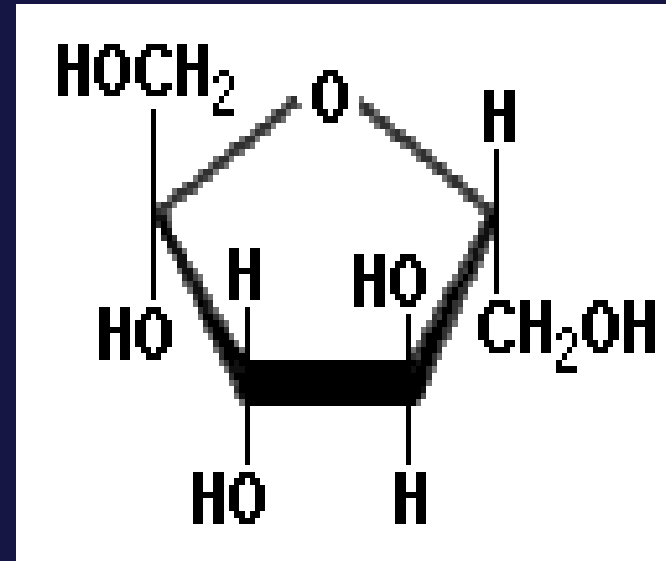
Parts of Europe (limited use)



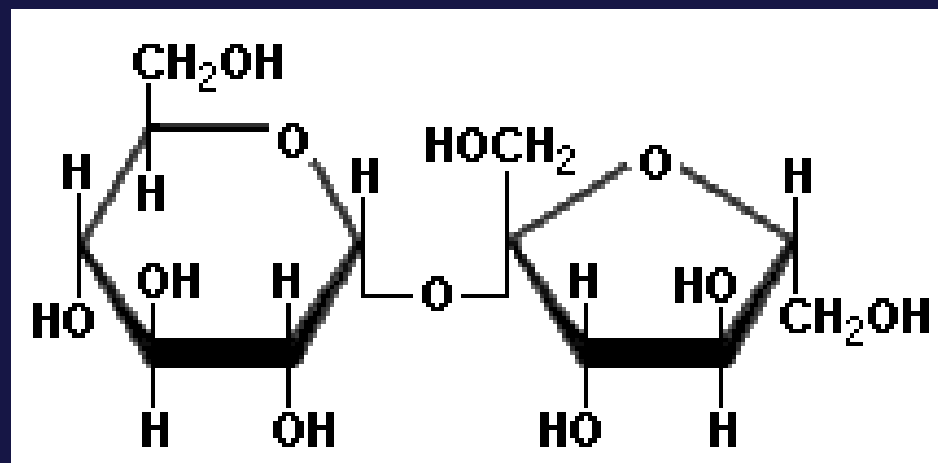
High Fructose Corn Syrup is 42-55% Fructose; Sucrose is 50% Fructose



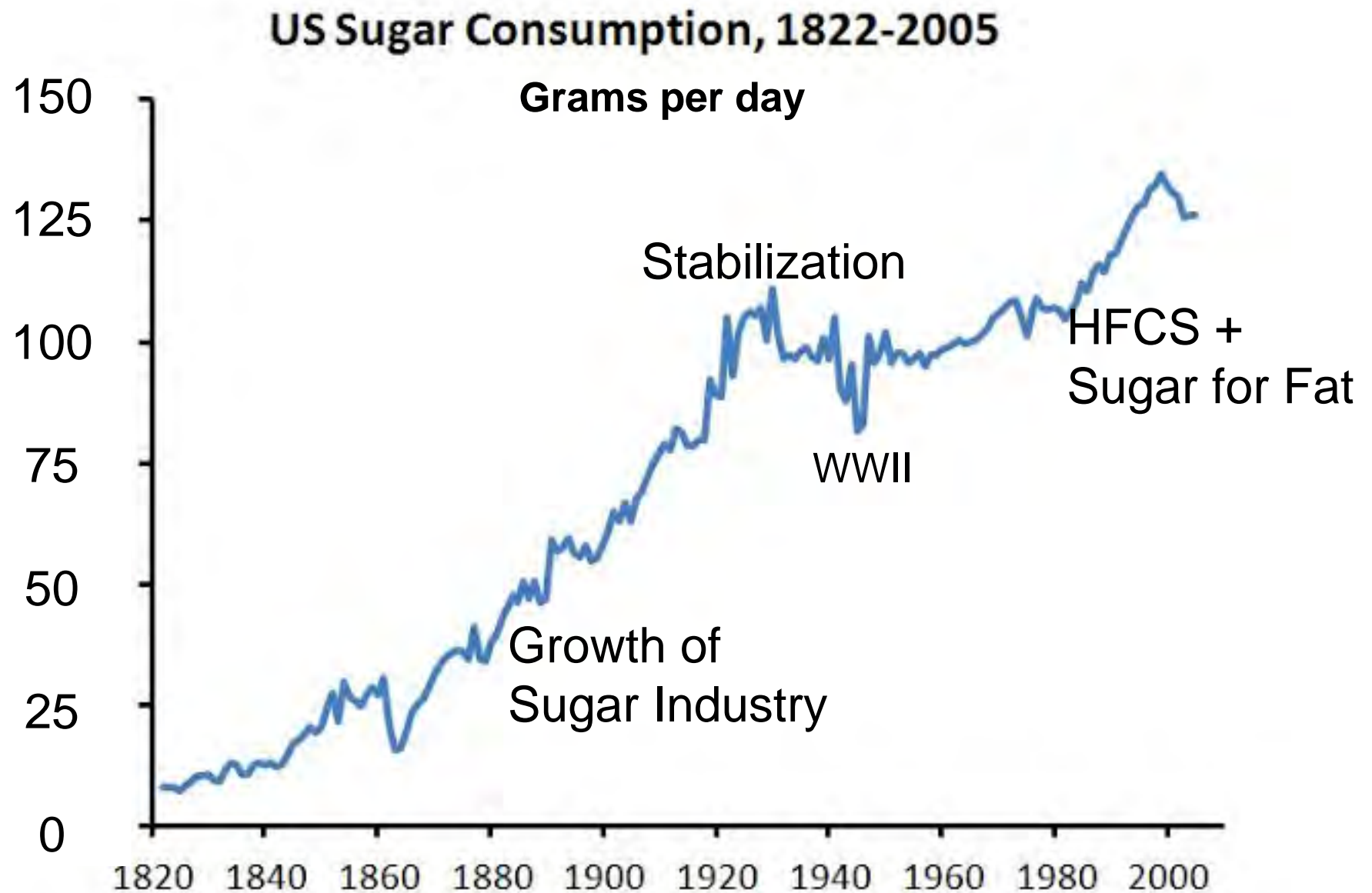
Glucose



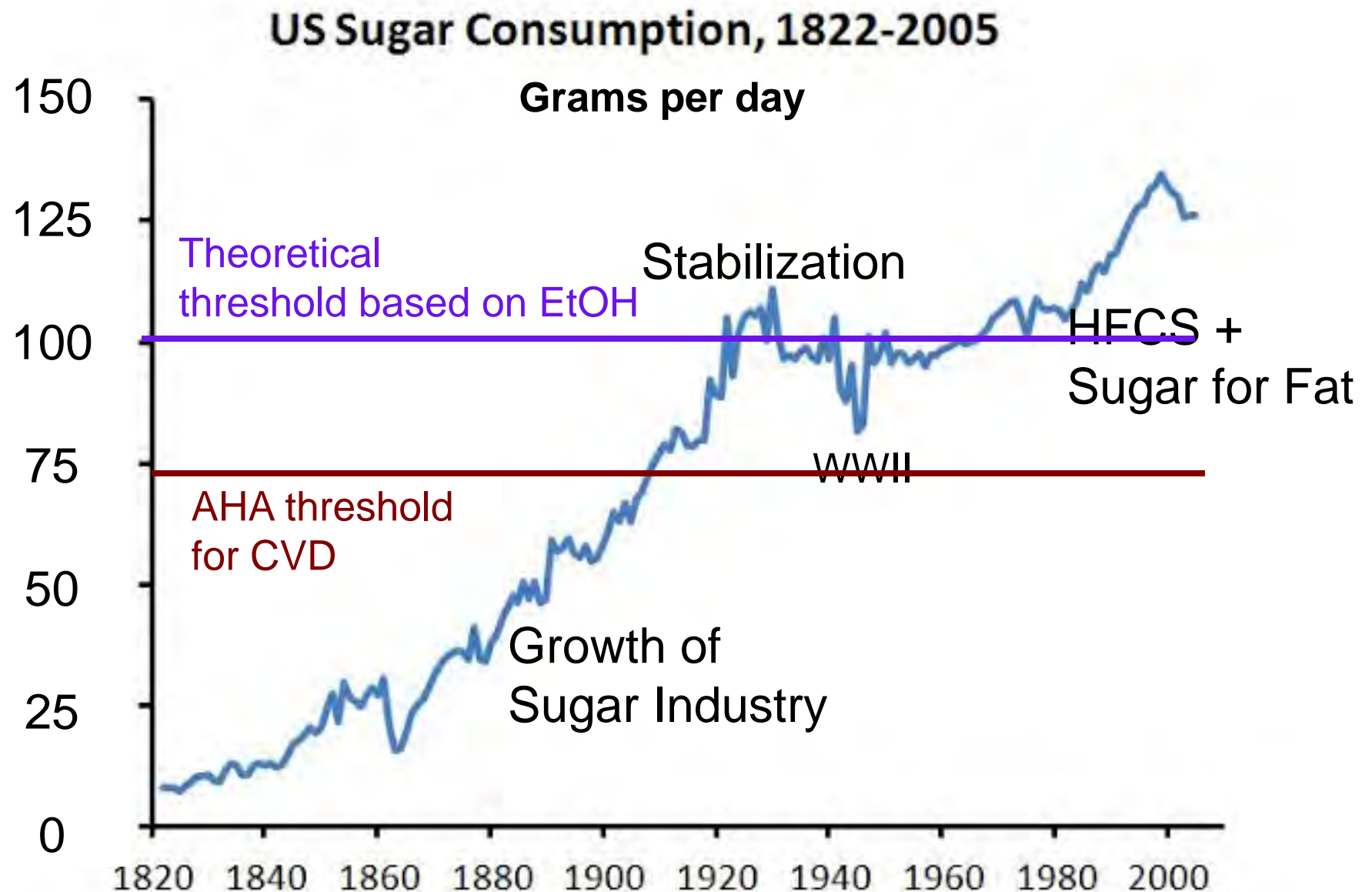
Fructose



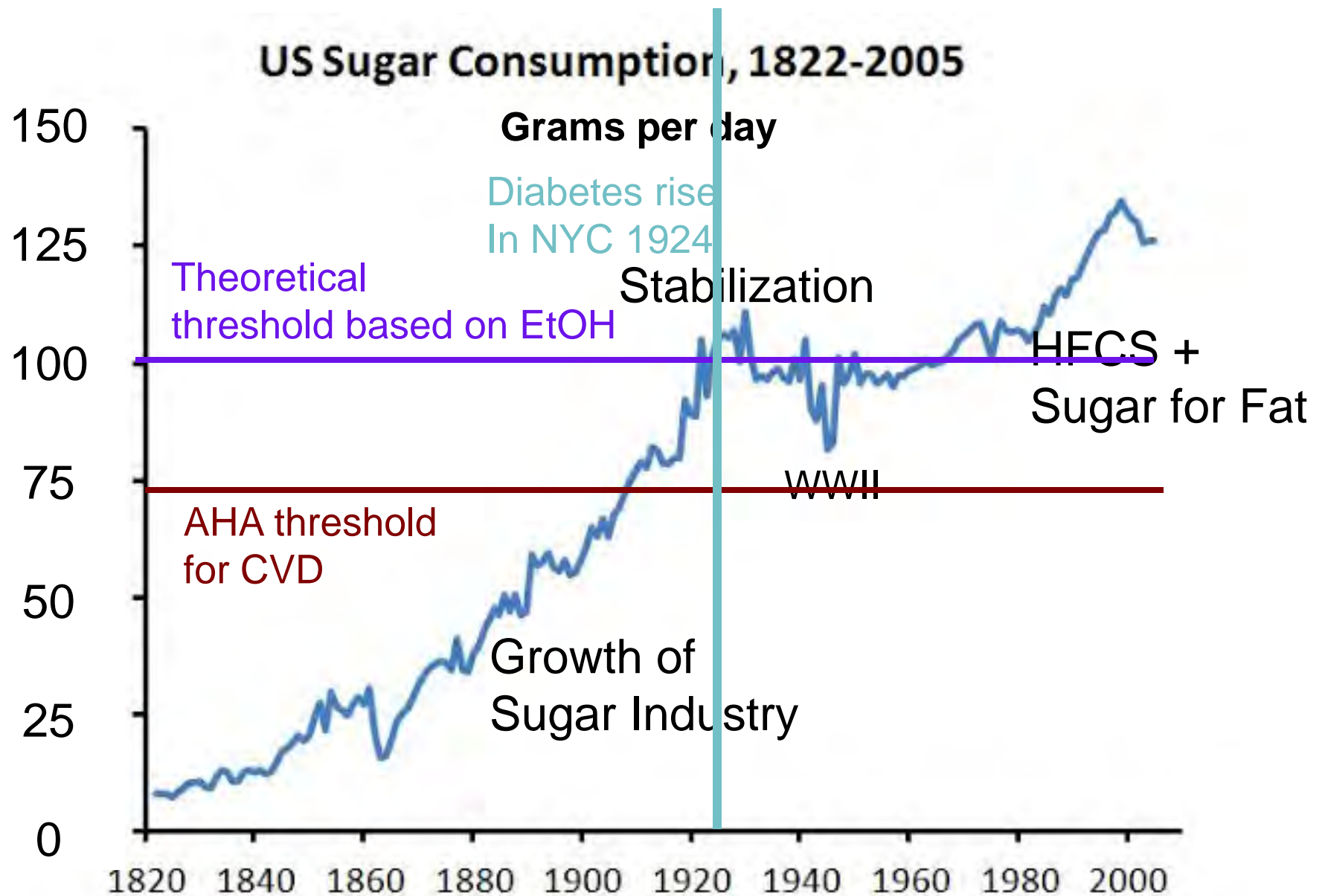
Sucrose



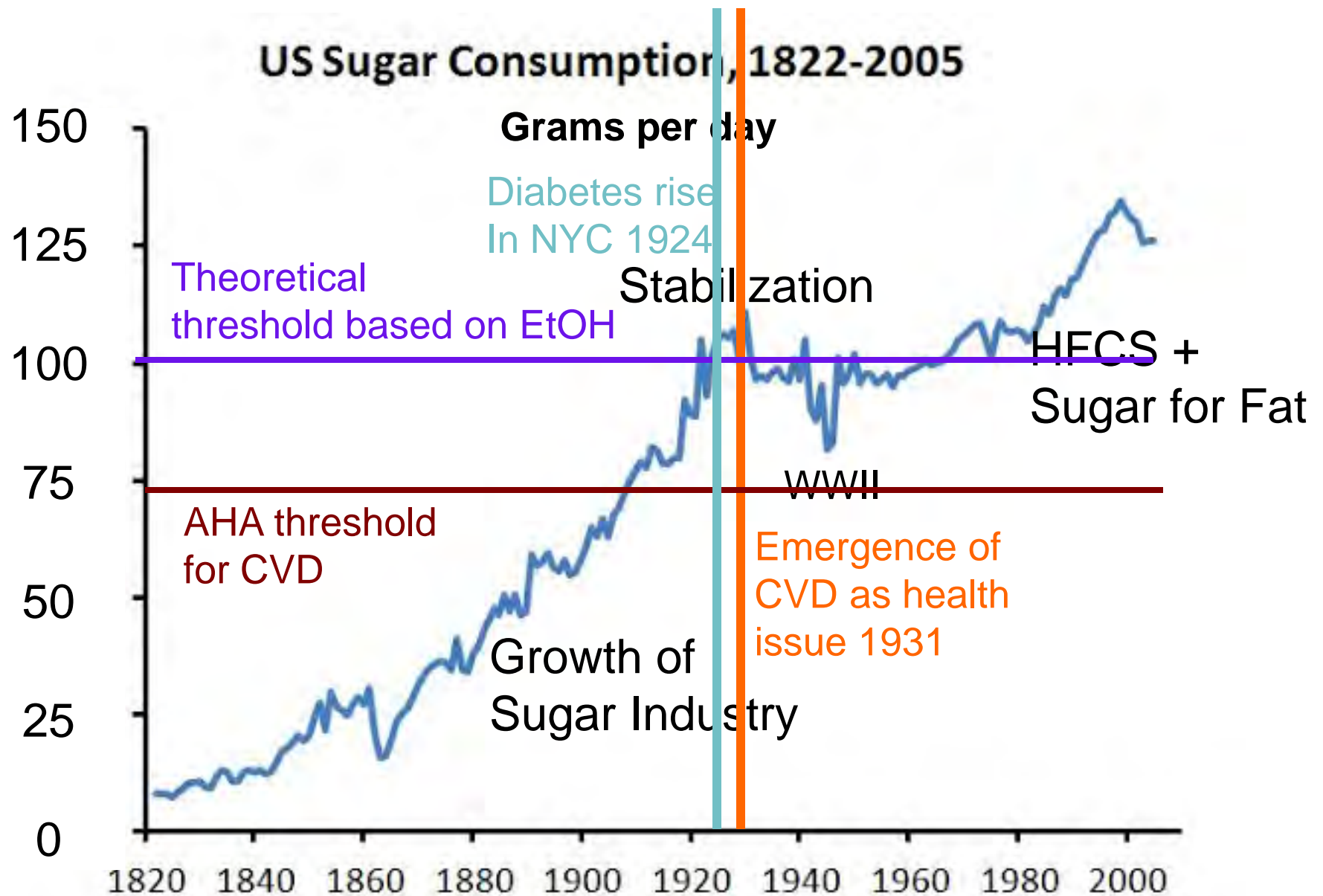
U.S. Commerce Service 1822-1910, combined with Economic Research Service, USDA 1910-2010



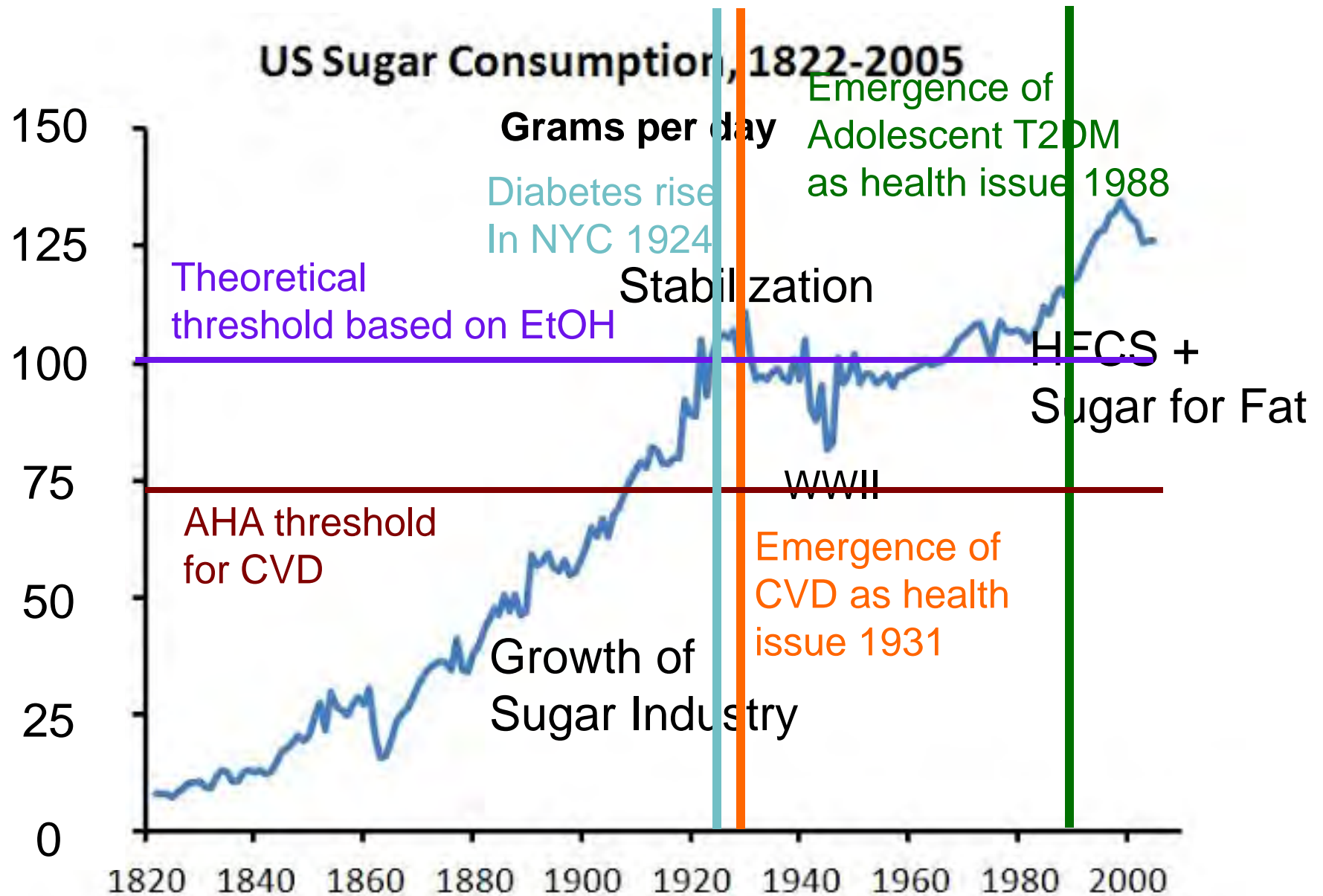
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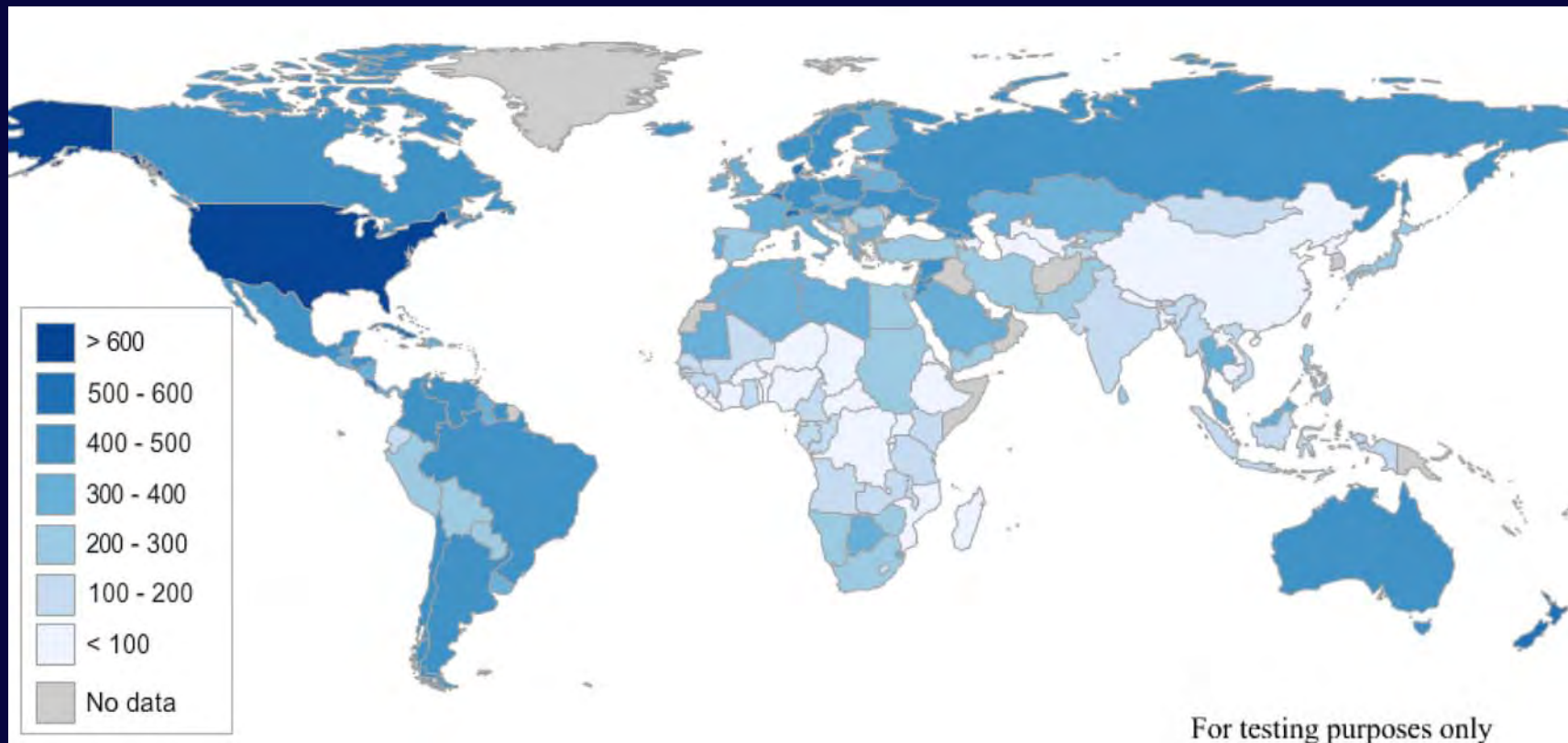


U.S. Commerce Service 1822-1910, combined with Economic Research Service, USDA 1910-2010

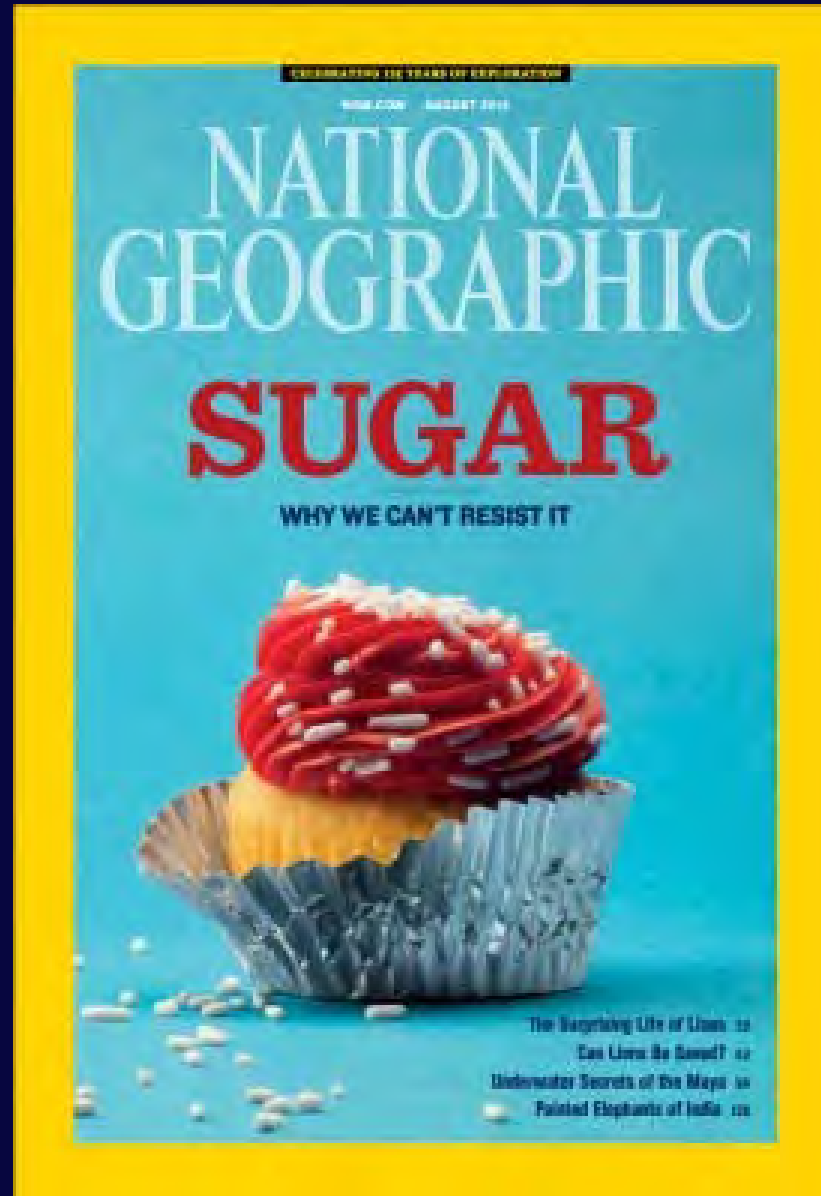


U.S. Commerce Service 1822-1910, combined with Economic Research Service, USDA 1910-2010

Worldwide per capita sugar supply, 2007



The early history of the sugar pandemic



Aug 2013

The perfect storm from five political winds

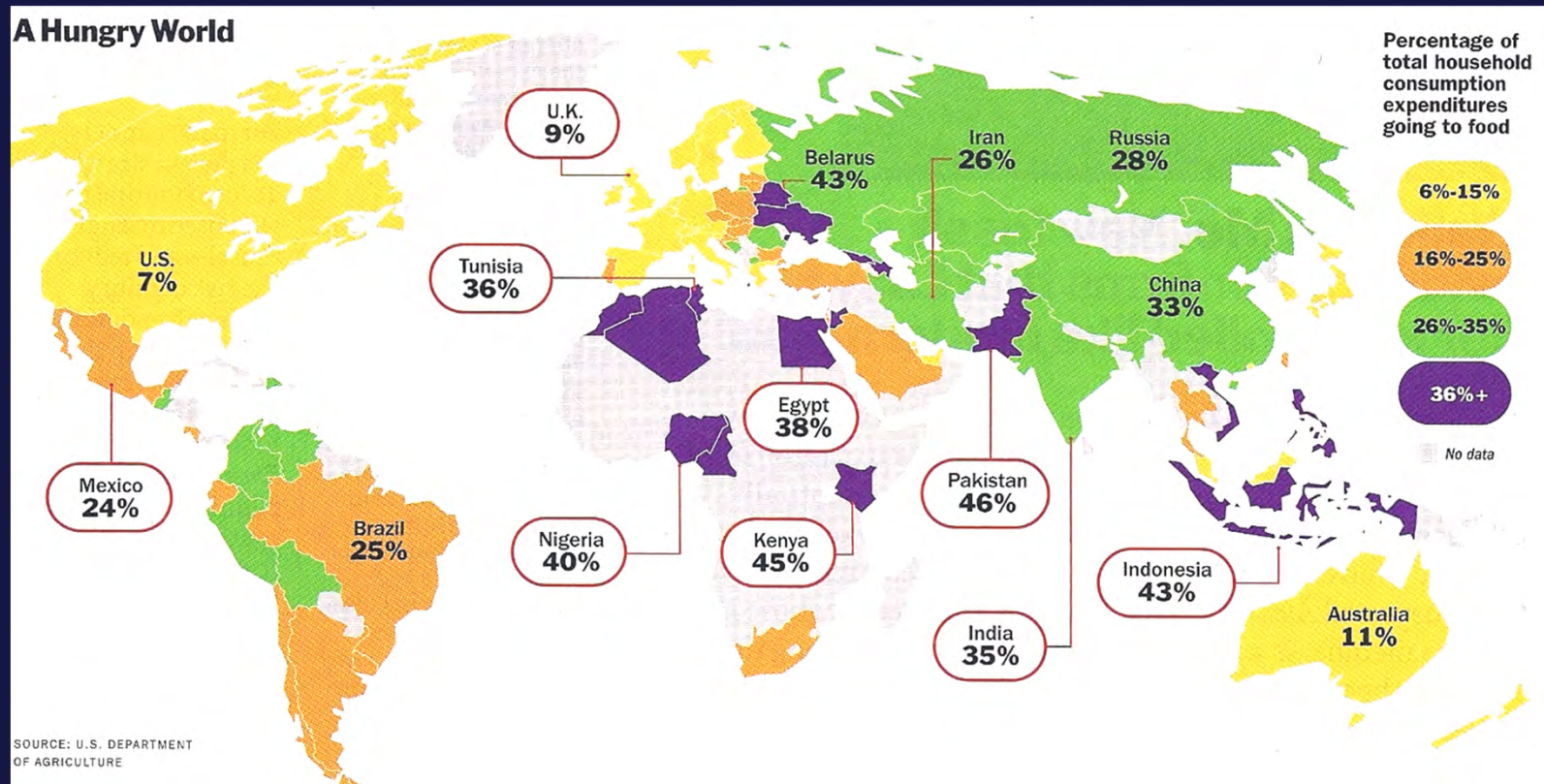
The perfect storm from five political winds

1. Fall of Bautista and rise of Castro in Cuba (1959) altered sugar imports

The perfect storm from five political winds

1. Fall of Bautista and rise of Castro in Cuba (1959) altered sugar imports
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 - food should never be an issue in a presidential election

Percent of Gross National Product spent on food, by country

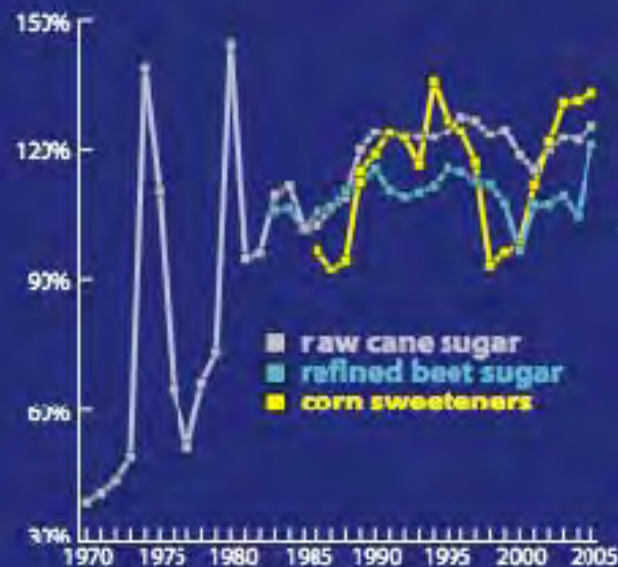


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Influence of corn sweeteners on the price of sugar

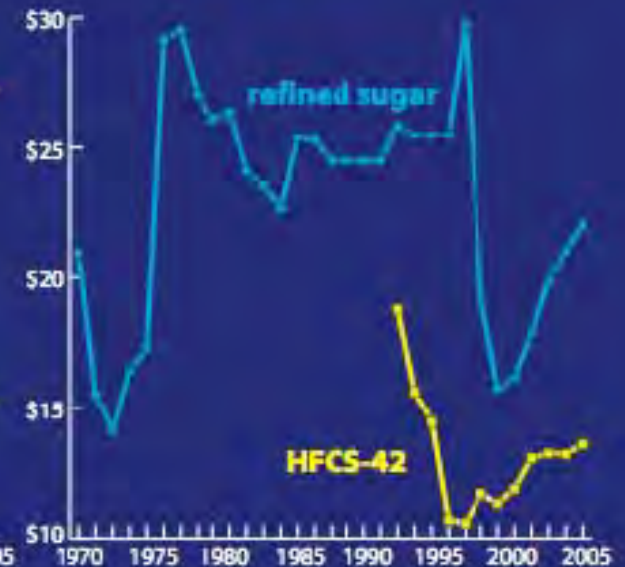
U.S. Producer Price Index



International price of refined sugar

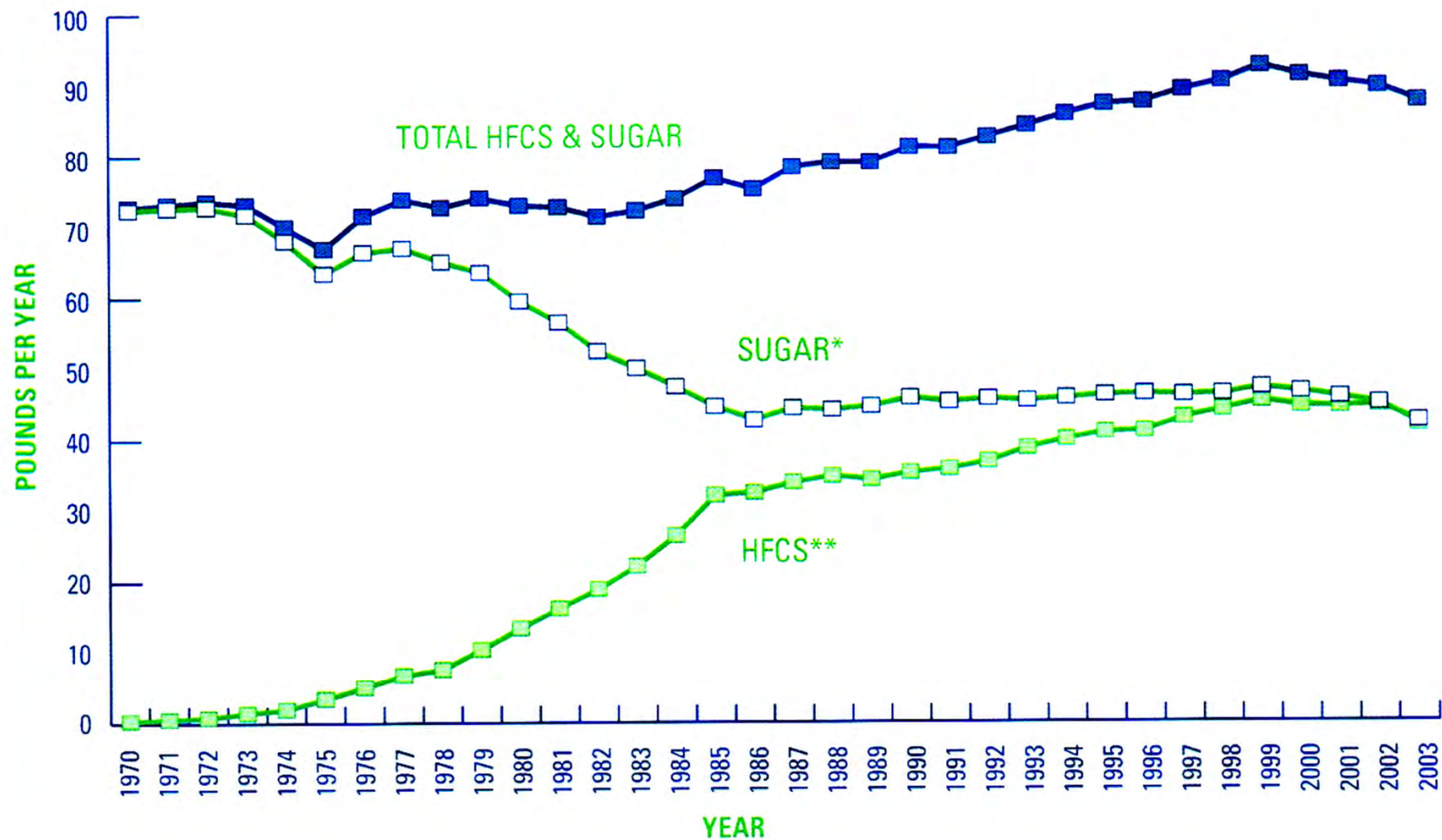


U.S. Retail Price



ANNUAL PER CAPITA AVAILABILITY OF SUGAR AND HFCS ADJUSTED FOR LOSS

USDA FOOD DISAPPEARANCE DATA



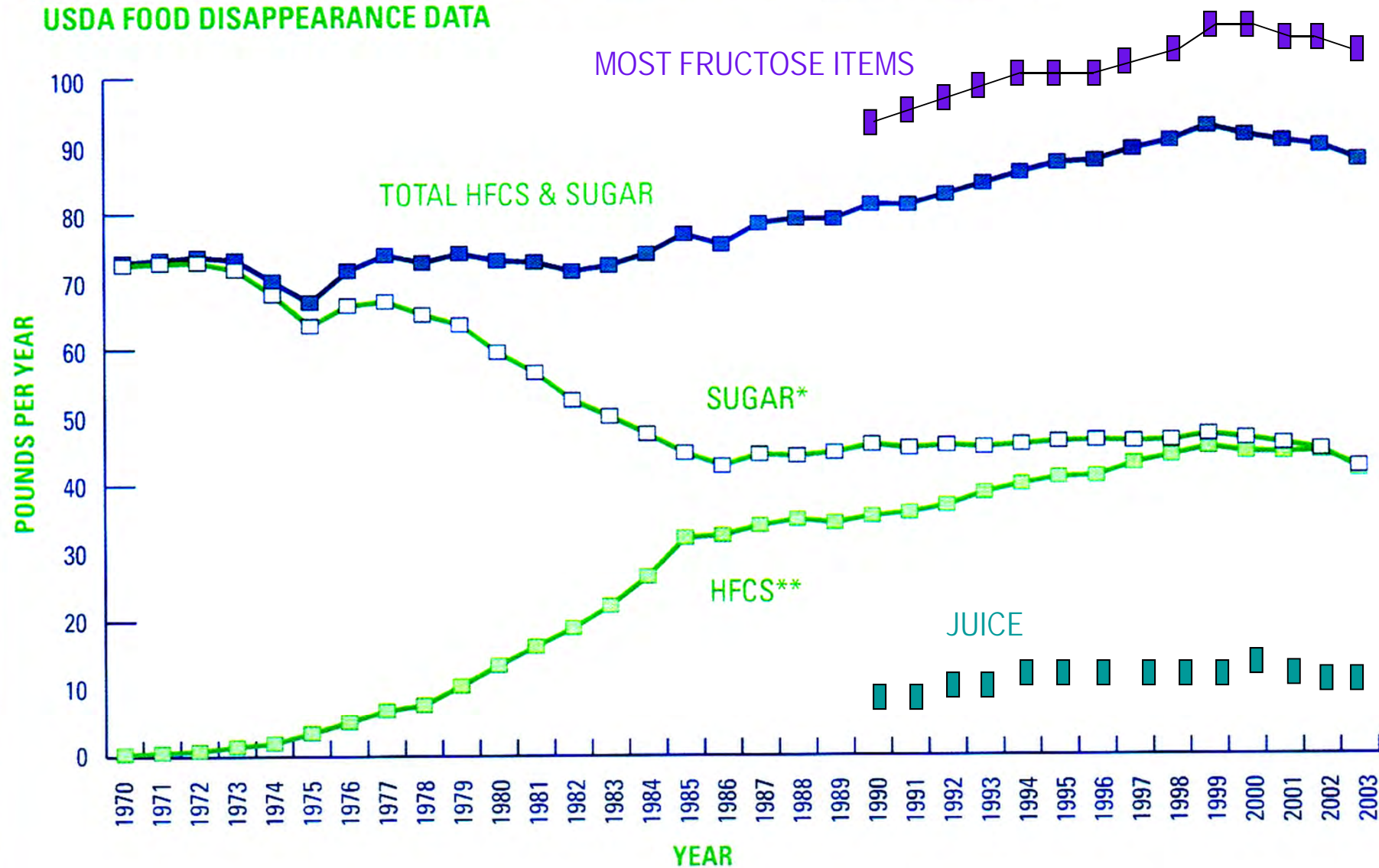
Source: USDA, Economic Research Service, Sweetener Yearbook, Tables 51 and 52

*Estimated annual per capita sugar consumption calculated by adjusting sugar deliveries for domestic food and beverage use for food losses.

**Estimated annual per capita HFCS consumption calculated by adjusting HFCS deliveries for domestic food and beverage use for food losses.

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therefore no A, no C

The macronutrient wars 1970-1980

SEVEN COUNTRIES

Ancel Keys

with

Christ Aravanis
Henry Blackburn
Ratko Buzina
B. S. Djordjević
A. S. Dontas
Flaminio Fidanza
Matti J. Karvonen
Noboru Kimura
Alessandro Menotti
Ivan Mihaljević
S. Nedeljković
Vittorio Puddu
Sven Punsar
Henry L. Taylor
F. S. P. van Buchem

⊕ A Commonwealth Fund Book

Harvard University Press
Cambridge, Massachusetts
and London, England
1980

*A Multivariate
Analysis of Death
and Coronary
Heart Disease*

John Yudkin

Pure, White and Deadly

Viking
1972, 1986

The Original Case Against Fat

Ancel Keys “7-Country Study” in fact listed 6, studied 22
Started in 1958, continued for 15 yr

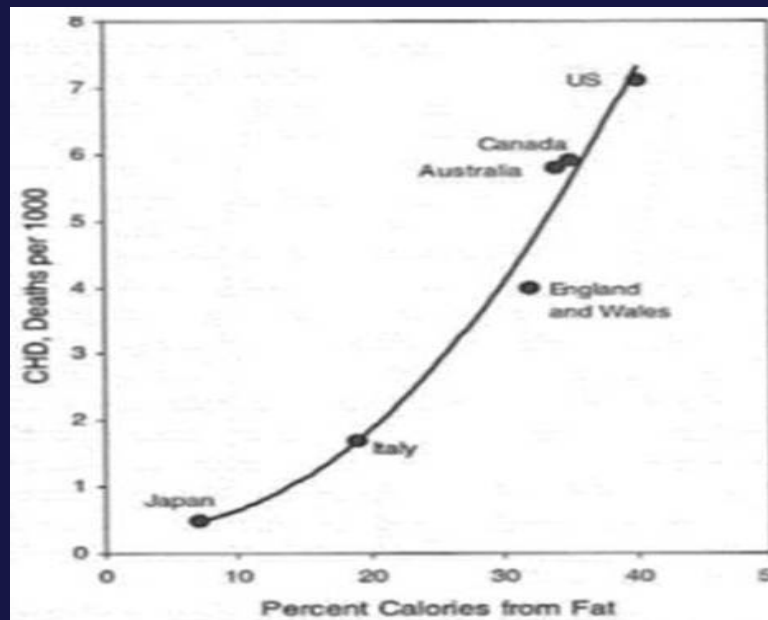


Figure 1A. Correlation between the total fat consumption as a percent of total calorie consumption, and mortality from coronary heart disease in six countries. Data from Keys.¹

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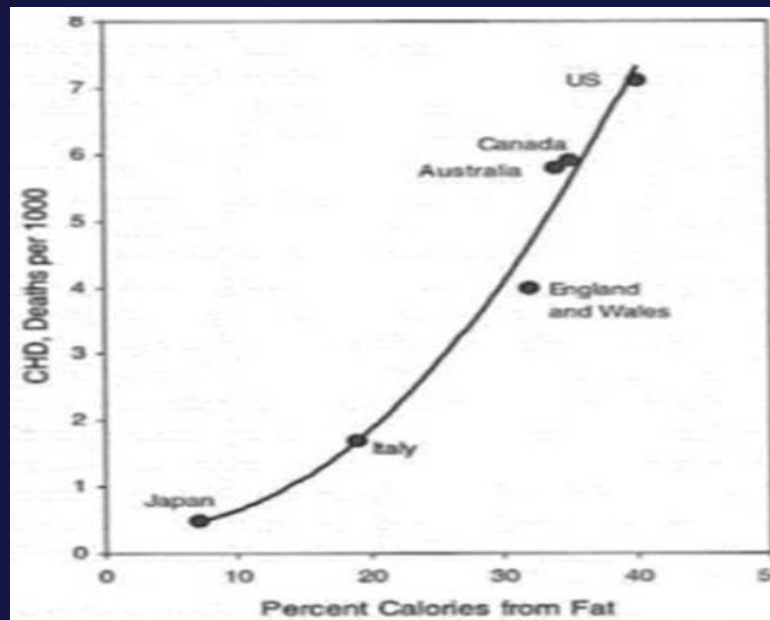


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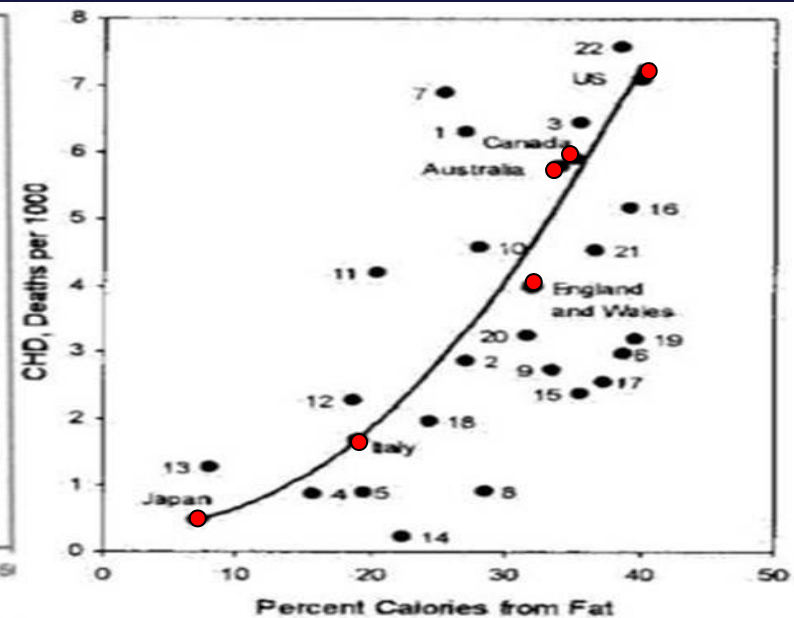
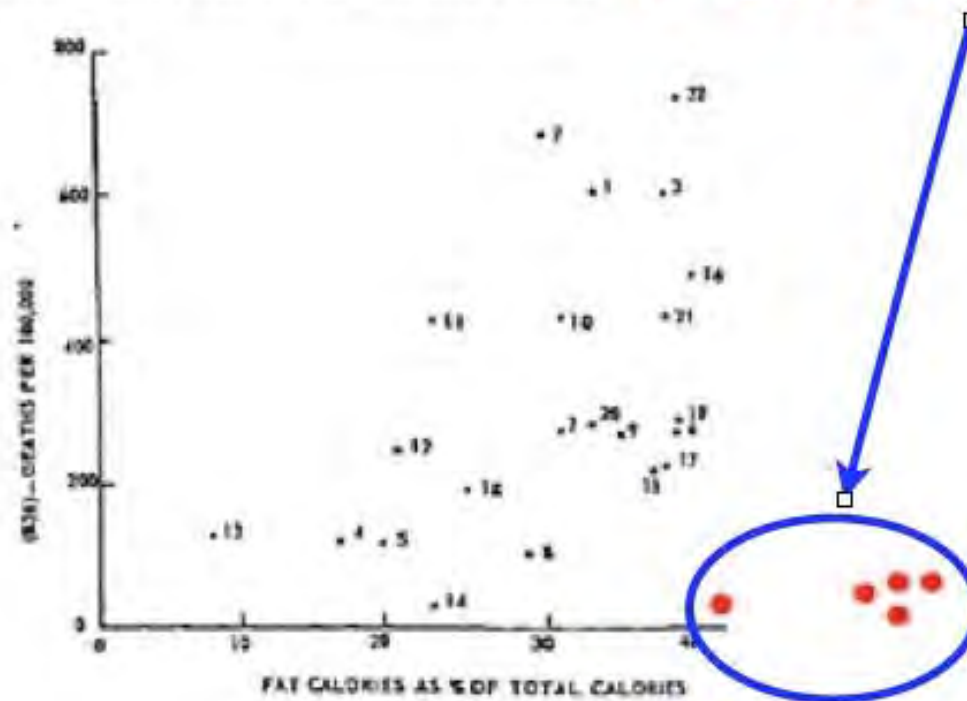


Figure 1B - as 1A but with all countries where data were available when Keys published. 1 Australia 2 Italy 3 Canada 4 Ceylon 5 Chile 6 Denmark 7 Finland 8 France 9 W. Germany 10 Ireland 11 Israel 12 Italy 13 Japan 14 Mexico 15 Holland 16 New Zealand 17 Norway 18 Portugal 19 Sweden 20 Switzerland 21 Great Britain 22 USA. Data from Yerushalamy and Hilleboe.

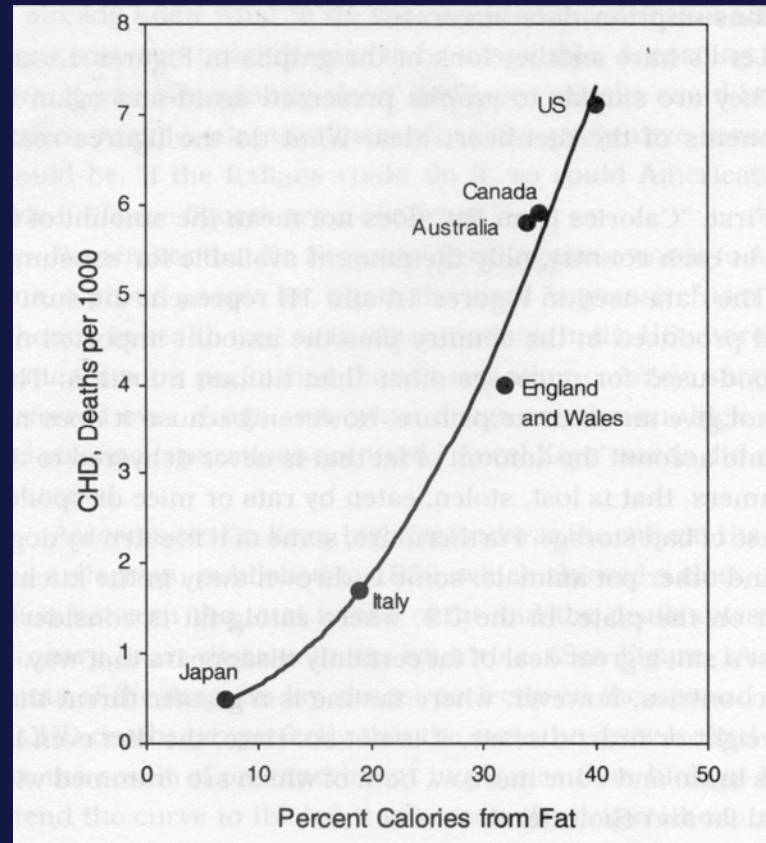
Add in the Maasai, Inuit, Rendille, and Tokelau indigenous tribes

The original evidence.... + outliers

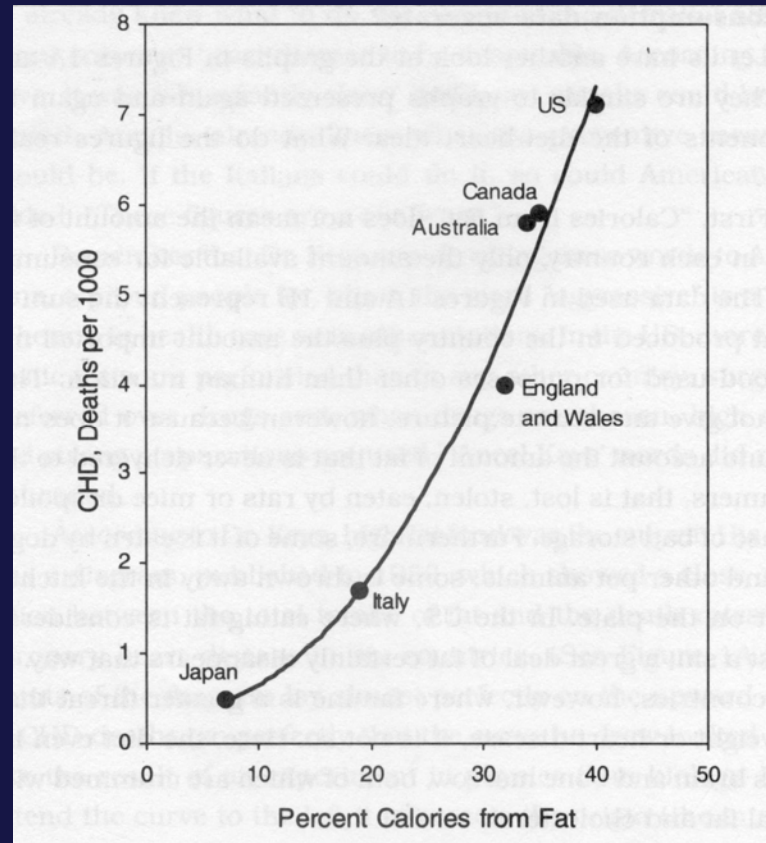


Seven Countries

Correlation of CHD with dietary fat



Seven Countries Correlation of CHD with dietary fat



Page 262:
Diet

The fact that the incidence rate of coronary heart disease was significantly correlated with the average percentage of calories from sucrose in the diets is explained by the intercorrelation of sucrose with saturated fat. Partial correlation analysis shows that with saturated fat constant there was no significant correlation between dietary sucrose and the incidence of coronary heart

Comparisons of coronary death rates with estimates of national diets in international statistics indicate a strong link between dietary fat and CHD.

The low-fat craze

The content of low-fat home-cooked food can be controlled

But low-fat processed food means substitution with carbohydrate

Which carbohydrate?

Either

- High fructose corn syrup (55% fructose)
- Sucrose (50% fructose)

e.g. Nabisco Snackwells® Oreos
—2g fat, +13g CHO (+4g sugars)



The SFUSD School Milk Program



Courtesy of
M. Lustig

The SFUSD School Milk Program

<p>Berkeley Farms</p> <p>FROM COWS NOT TREATED WITH THE GROWTH HORMONE rBST</p> <p>HIGH CALCIUM, RICH IN PROTEIN</p> <p>LOW FAT MILK</p> <p>1% MILKFAT • VITAMIN A&D</p> <p>PASTEURIZED • HOMOGENIZED</p> <p>KEEP REFRIGERATED</p> <p>GRADE A • PASTEURIZED • HOMOGENIZED</p> <p>Nutrition Facts</p> <p>Serving Size 1 Carton (236mL)</p> <p>Amount Per Serving</p> <p>Calories 130 Calories from Fat 20</p> <p>% Daily Value*</p> <p>Total Fat 2.5g 4%</p> <p>Saturated Fat 1.5g 8%</p> <p>Trans Fat 0g</p> <p>Cholesterol 15mg 4%</p> <p>Sodium 160mg 7%</p> <p>Potassium 510mg 15%</p> <p>Total Carbohydrate 16g 5%</p> <p>Dietary Fiber 0g 0%</p> <p>Sugars 15g</p> <p>Protein 11g 21%</p> <p>Vitamin A 10% • Vitamin C 4%</p> <p>Calcium 40% • Iron 0% • Vitamin D 25%</p> <p>*Percent Daily Values are based on a 2,000 calorie diet.</p>	<p>Berkeley Farms</p> <p>FROM COWS NOT TREATED WITH THE GROWTH HORMONE rBST</p> <p>HIGH CALCIUM, RICH IN PROTEIN</p> <p>CHOCOLATE LOW FAT MILK</p> <p>1% MILKFAT • VITAMIN A&D</p> <p>PASTEURIZED • HOMOGENIZED</p> <p>GRADE A • PASTEURIZED • HOMOGENIZED</p> <p>Nutrition Facts</p> <p>Serving Size 1 Carton (236mL)</p> <p>Amount Per Serving</p> <p>Calories 190 Calories from Fat 25</p> <p>% Daily Value*</p> <p>Total Fat 2.5g 4%</p> <p>Saturated Fat 1.5g 8%</p> <p>Trans Fat 0g</p> <p>Cholesterol 15mg 4%</p> <p>Sodium 290mg 12%</p> <p>Potassium 620mg 18%</p> <p>Total Carbohydrate 31g 10%</p> <p>Dietary Fiber less than 1g 3%</p> <p>Sugars 29g</p> <p>Protein 11g 22%</p> <p>INGREDIENTS: LOW FAT MILK, CONDENSED SKIM MILK, HIGH FRUCTOSE CORN SYRUP, COCOA (PROCESSED WITH ALKALI), COCOA, SALT, CORN STARCH, CARRAGEENAN, VITAMIN A PALMITATE, VITAMIN D₃.</p>
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Courtesy of
M. Lustig

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therefore no A, no C
5. Hurricane Allen (1980) destroyed the Caribbean sugar crop

New Coke (1985)



Adulteration of our food supply

Addition of fructose

- palatability (esp. with decreased fat)
- browning agent (Maillard Reaction)

Removal of fiber

- shelf life
- freezing

Substitution of trans-fats

- hardening agent, shelf life
- now being removed due to CVD risk

Toxicity

Obesity is not the problem

People don't die of obesity

Obesity is not the problem

People don't die of obesity

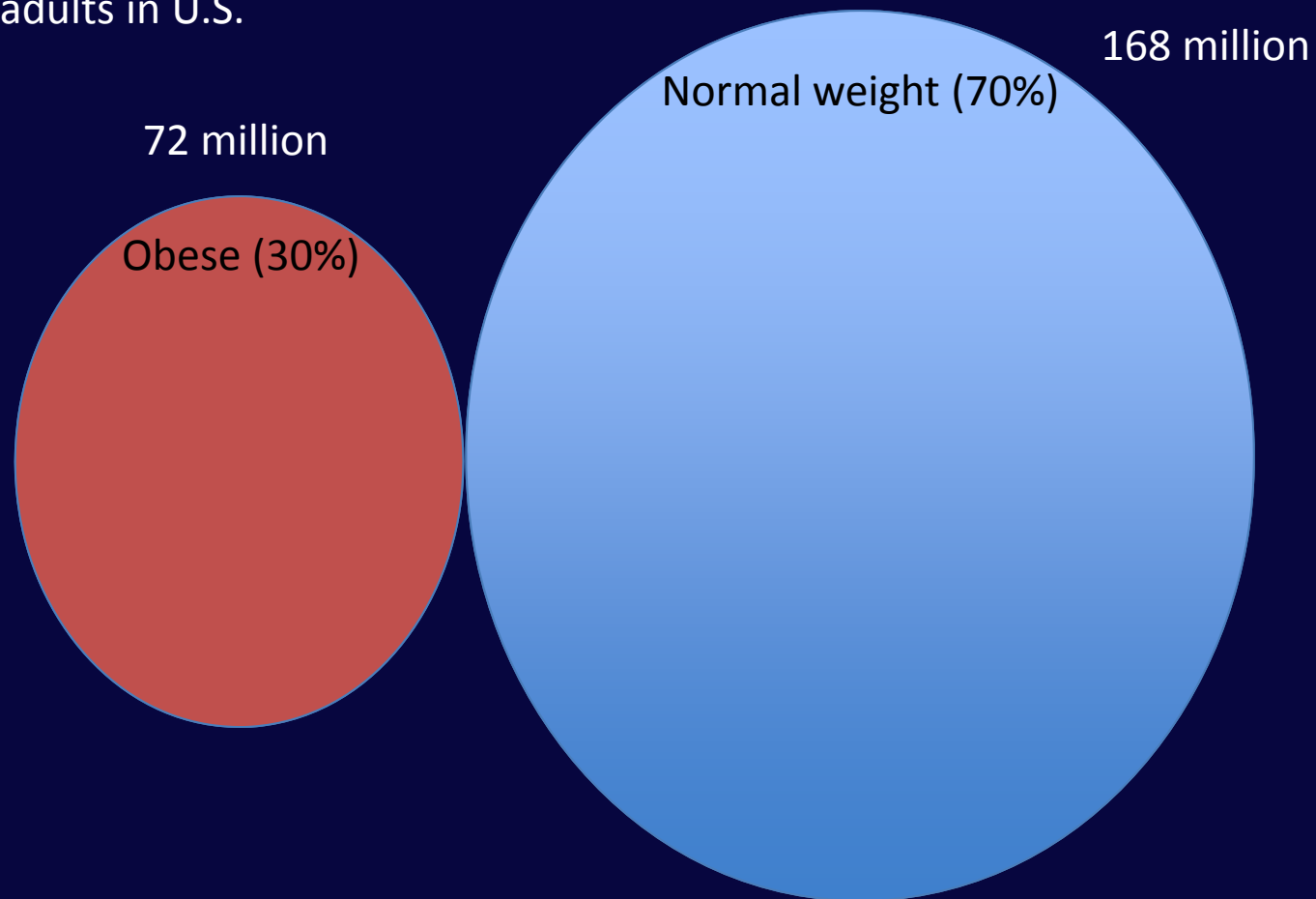
Metabolic syndrome is the problem

In particular, diabetes:

because that's where the money goes

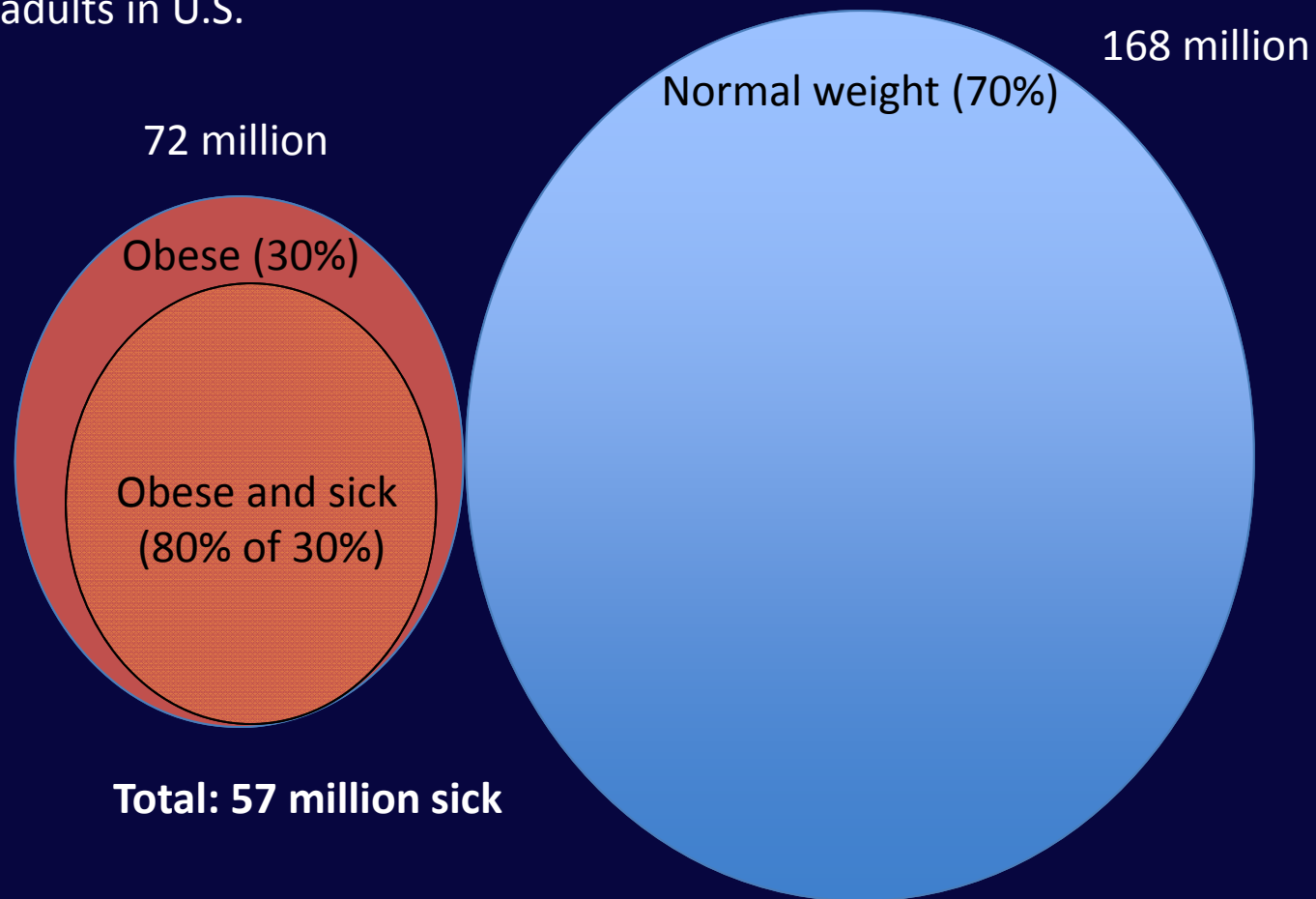
“Exclusive” view of obesity and metabolic dysfunction

240 million adults in U.S.



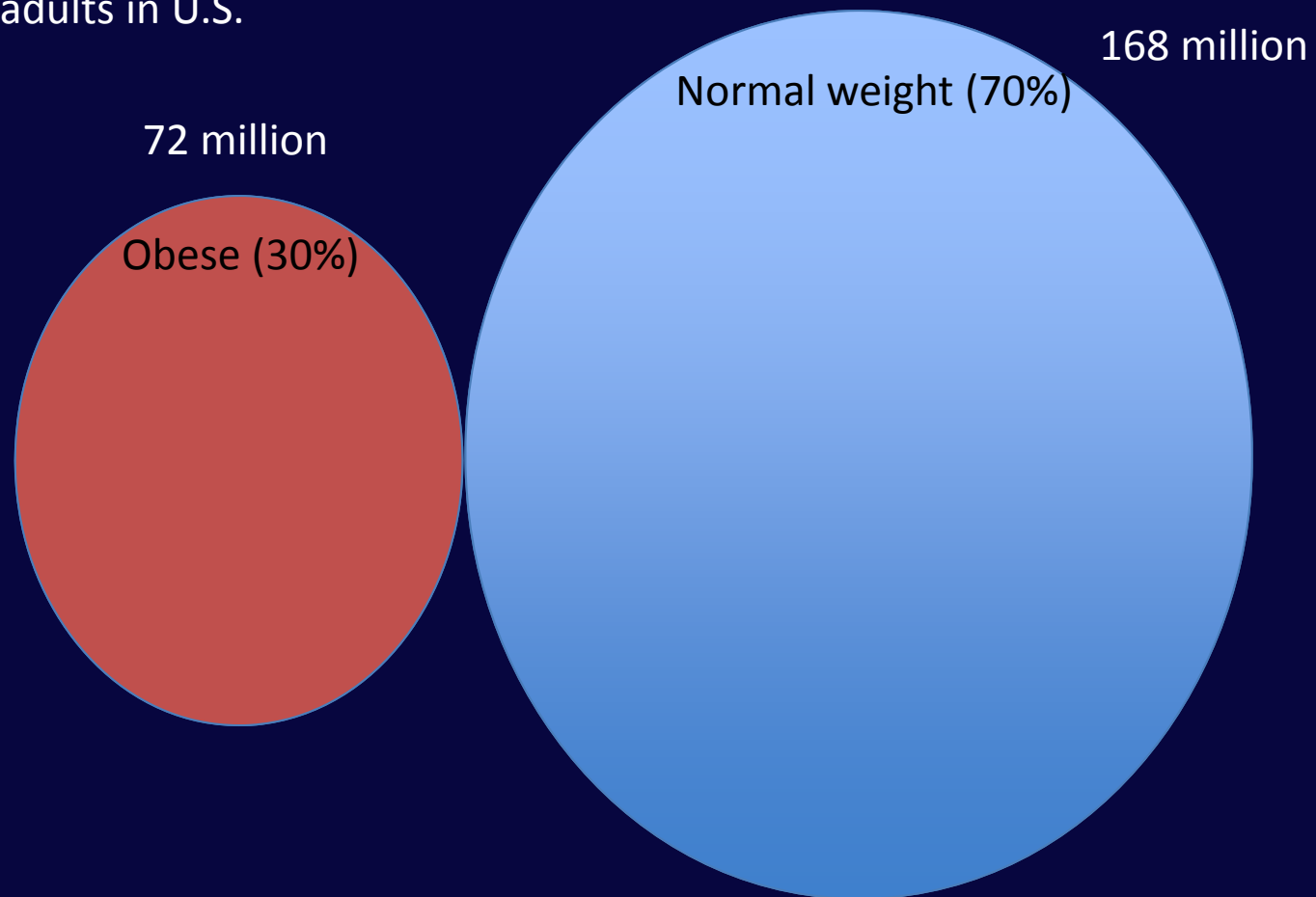
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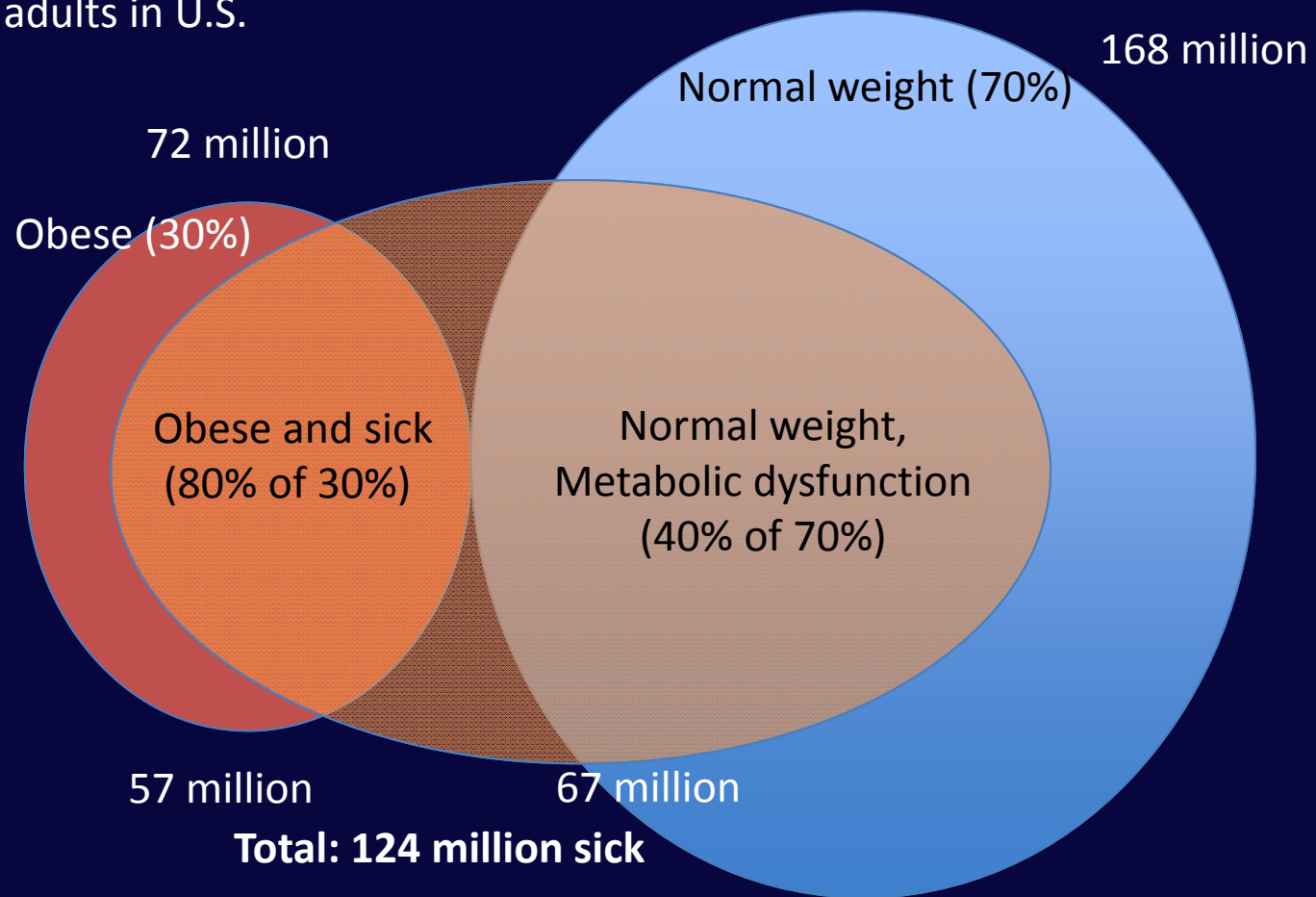
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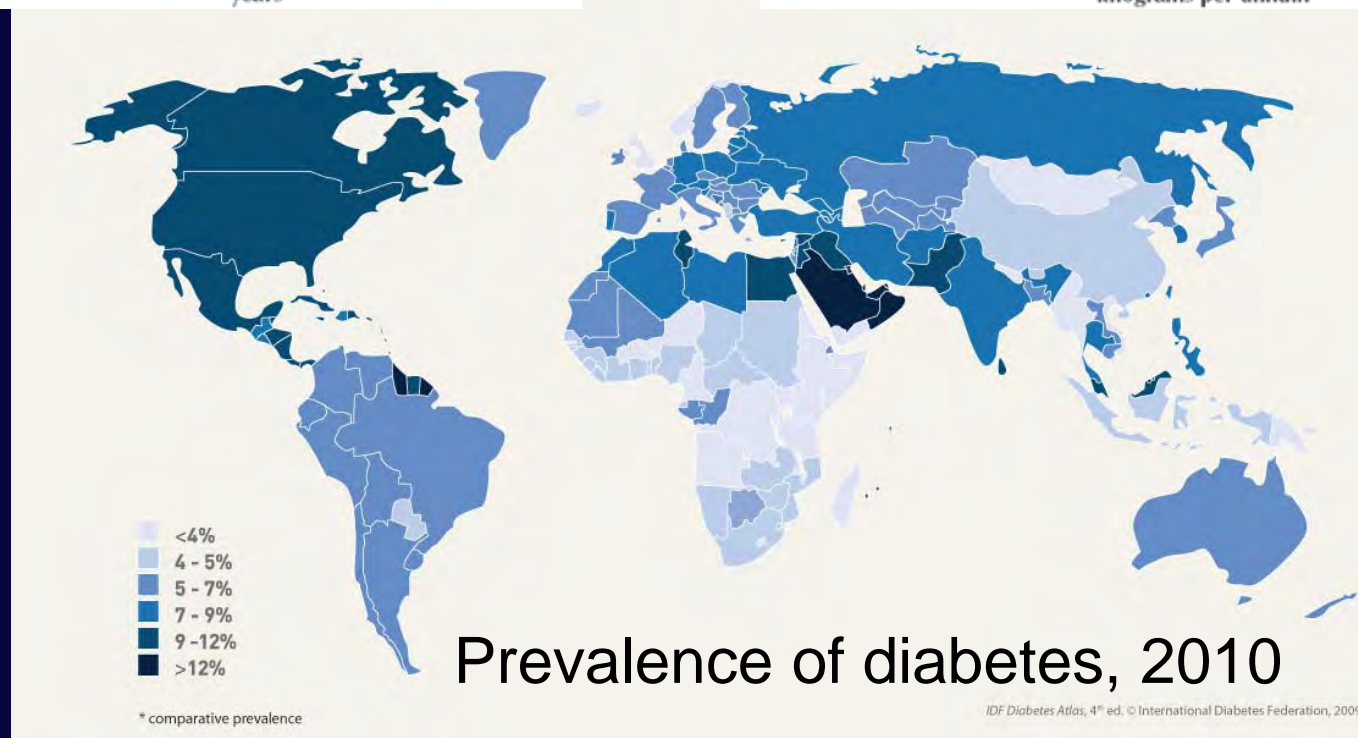
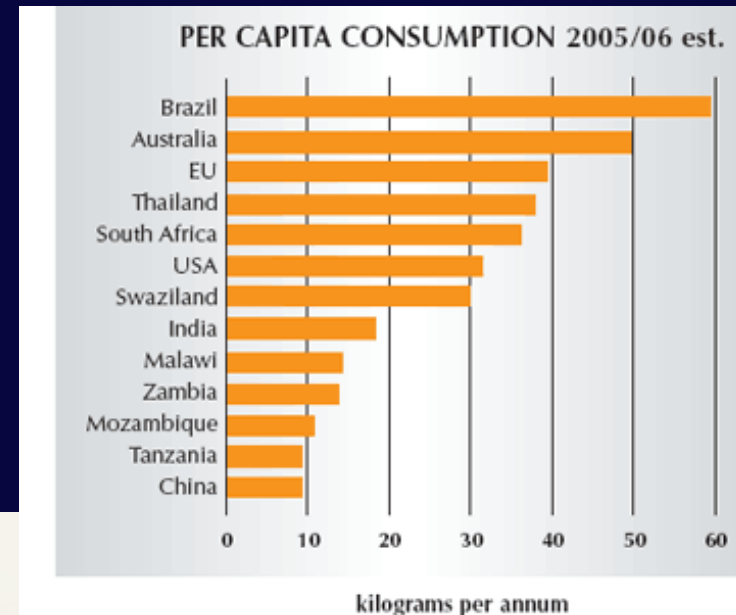
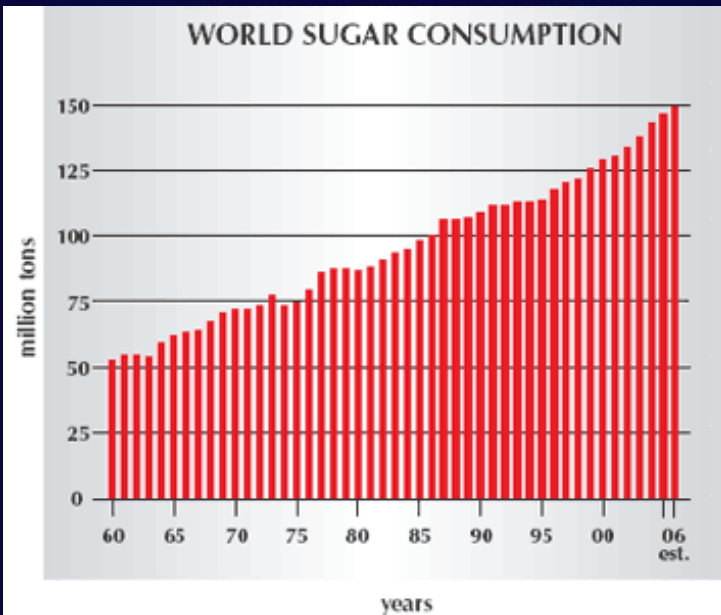
Toxicity:

The degree to which a substance can damage an organism

- Does not distinguish acute vs. chronic toxicity

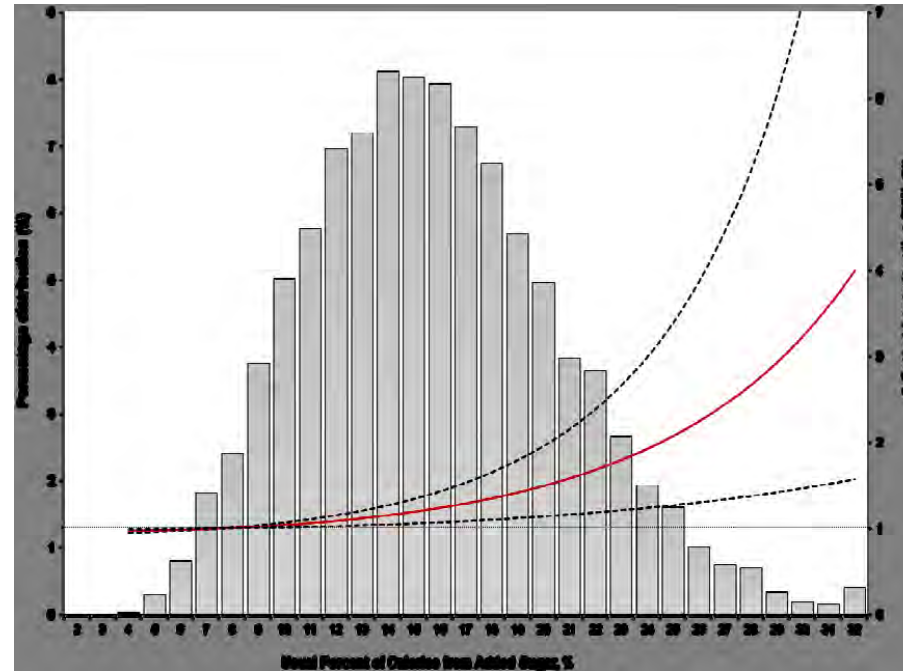
Caveats:

- Exclusive of calories
- Exclusive of obesity
- Human data only
- In doses routinely consumed



Hazard ratio for CV disease based on percent calories as sugar for US adult population, 1988-2006

Figure 1. Adjusted Hazard Ratio of the Usual Percent of Calories from Added Sugar for CVD Mortality Among US Adults Aged ≥ 20 Years – NHANES Linked Mortality Files, 1988-2006



Histogram is the distribution of usual percent of calories from added sugar in population. Lines show the adjusted HRs from Cox models. Mid-value of quintile 1 (7.5%) was the reference standard. Model was adjusted for age, sex, race/ethnicity, educational attainment, smoking status, alcohol consumption, physical activity level, family history of CVD, antihypertensive medication use, health eating index score, body mass index, systolic blood pressure, total serum cholesterol and total calories. Solid line indicates point estimates; dashed lines indicate 95% CIs. CVD indicates cardiovascular disease; HR, hazard ratio; NHANES, National Health and Nutrition Examination Survey.

SSB's and BMI-adjusted risk of diabetes in EPIC-Interact (Europe)

Table 2 HRs (and 95% CIs) for type 2 diabetes according to type and amount of sweet beverage consumption in the EPIC-InterAct study

Variable and model	<1 glass ^a / month HR	1–4 glasses ^a / month HR ^b (95% CI)	>1–6 glasses ^a / week HR ^b (95% CI)	≥1 glass ^a / day HR ^b (95% CI)	<i>p</i> for trend
Juices and nectars (median intake, g/day)					
No. cases	(0.0)	(17.1)	(100.0)	(338.3)	
No. cases	5,837	1,702	3,425	720	
Crude model	1.00 (ref)	0.88 (0.80, 0.98)	0.89 (0.83, 0.94)	0.97 (0.85, 1.11)	0.64
Adjusted model	1.00 (ref)	0.91 (0.80, 1.02)	0.96 (0.88, 1.04)	1.00 (0.87, 1.15)	0.63
Adjusted model+EI	1.00 (ref)	0.91 (0.81, 1.02)	0.96 (0.88, 1.04)	0.99 (0.86, 1.14)	0.84
Adjusted model+EI+BMI	1.00 (ref)	0.97 (0.86, 1.10)	1.04 (0.96, 1.13)	1.06 (0.90, 1.25)	0.21
Total soft drinks^c (median intake, g/day)					
No. cases	(0.0)	(20.0)	(95.1)	(413.1)	
No. cases	5,794	1,604	2,987	1,299	
Crude model	1.00 (ref)	1.21 (1.07, 1.36)	1.30 (1.18, 1.43)	1.78 (1.55, 2.04)	<0.0001
Adjusted model	1.00 (ref)	1.21 (1.07, 1.37)	1.26 (1.13, 1.42)	1.58 (1.35, 1.84)	<0.0001
Adjusted model+EI	1.00 (ref)	1.21 (1.07, 1.37)	1.27 (1.12, 1.43)	1.59 (1.35, 1.88)	<0.0001
Adjusted model+EI+BMI	1.00 (ref)	1.17 (0.97, 1.42)	1.11 (0.98, 1.26)	1.21 (1.05, 1.41)	0.0005
Sugar-sweetened soft drinks^d (median intake, g/day)					
No. cases	(0.0)	(19.3)	(94.3)	(425.7)	
No. cases	3,948	964	1,599	605	
Crude model	1.00 (ref)	1.14 (0.97, 1.35)	1.16 (1.05, 1.28)	1.68 (1.40, 2.02)	<0.0001
Adjusted model	1.00 (ref)	1.13 (0.97, 1.31)	1.04 (0.94, 1.15)	1.39 (1.16, 1.67)	<0.0001
Adjusted model+EI	1.00 (ref)	1.12 (0.96, 1.31)	1.04 (0.94, 1.15)	1.39 (1.15, 1.69)	0.001
Adjusted model+EI+BMI	1.00 (ref)	1.19 (0.91, 1.56)	1.07 (0.94, 1.21)	1.29 (1.02, 1.63)	0.013
Artificially sweetened soft drinks^e (median intake, g/day)					
No. cases	(0.0)	(18.3)	(89.0)	(500.0)	
No. cases	5,242	689	894	291	
Crude model	1.00 (ref)	1.09 (0.97, 1.23)	1.52 (1.36, 1.69)	1.84 (1.52, 2.23)	<0.0001
Adjusted model	1.00 (ref)	1.10 (0.93, 1.29)	1.46 (1.29, 1.65)	1.93 (1.47, 2.54)	<0.0001
Adjusted model+EI	1.00 (ref)	1.08 (0.93, 1.26)	1.46 (1.29, 1.65)	1.88 (1.44, 2.45)	<0.0001
Adjusted model+EI+BMI	1.00 (ref)	1.05 (0.81, 1.35)	1.18 (1.03, 1.35)	1.13 (0.85, 1.52)	0.24

An international econometric analysis of diet and diabetes

Food and Agriculture Organization (FAO); FAOSTAT

Food Supply data in kcal/capita/day calculation:

Food Supply = \sum Supply Elements - \sum Utilization Elements =
(Production + Import Quantity + Stock Variation – Export Quantity)
- (Feed + Seed + Processing + Waste).

Only industrial waste factored in.

Extracted Food Supply data for 2000 and 2007:

Total Calories	Roots & Tubers, Pulses, Nuts, Vegetables
Fruits-Excluding Wine	Meat
Oils	Cereals
Sugar, Sugarcrops & Sweeteners	

International Diabetes Federation (IDF)

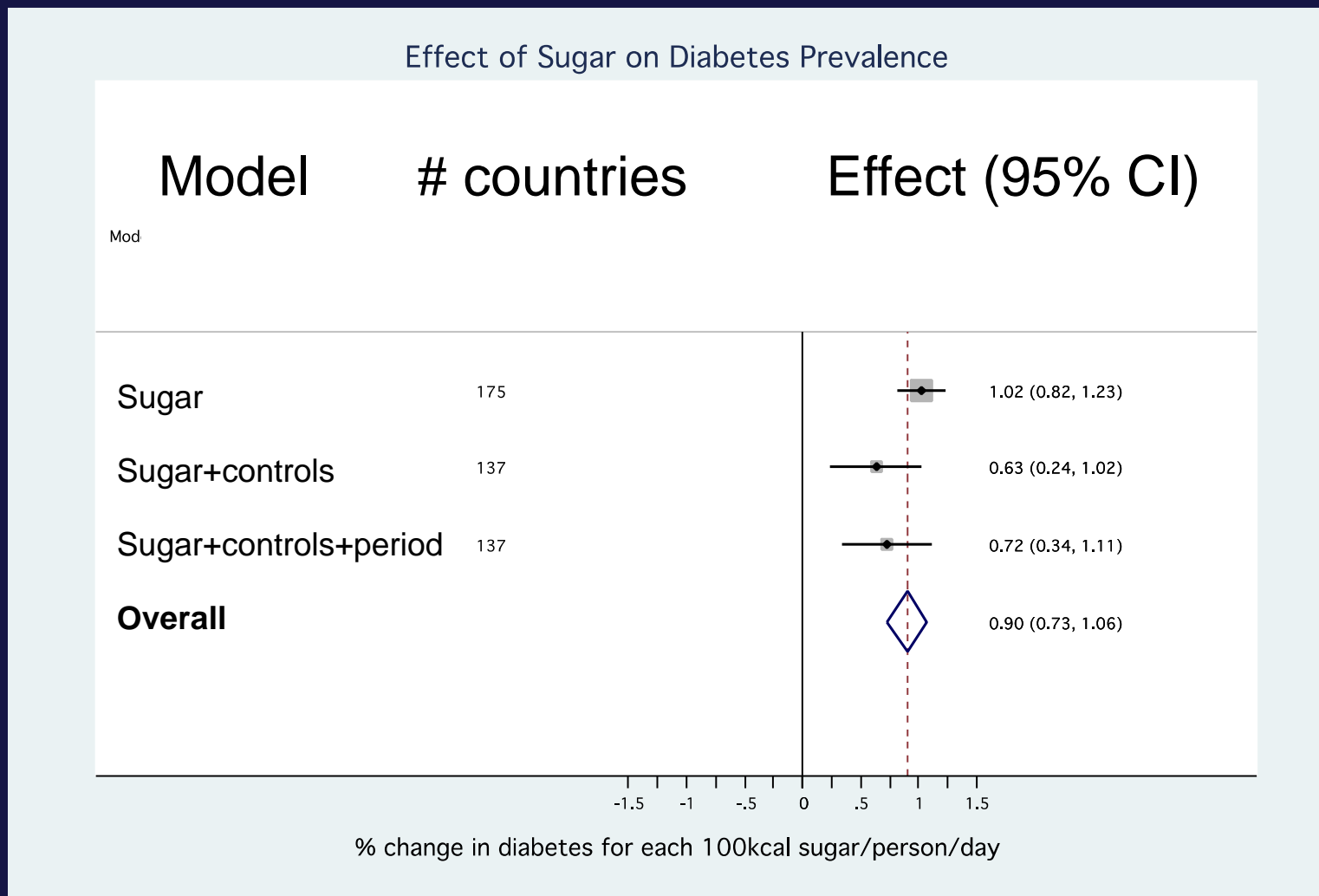
2000 (1st ed) and 2010 (3rd ed)

The World Bank World Development Indicators Database

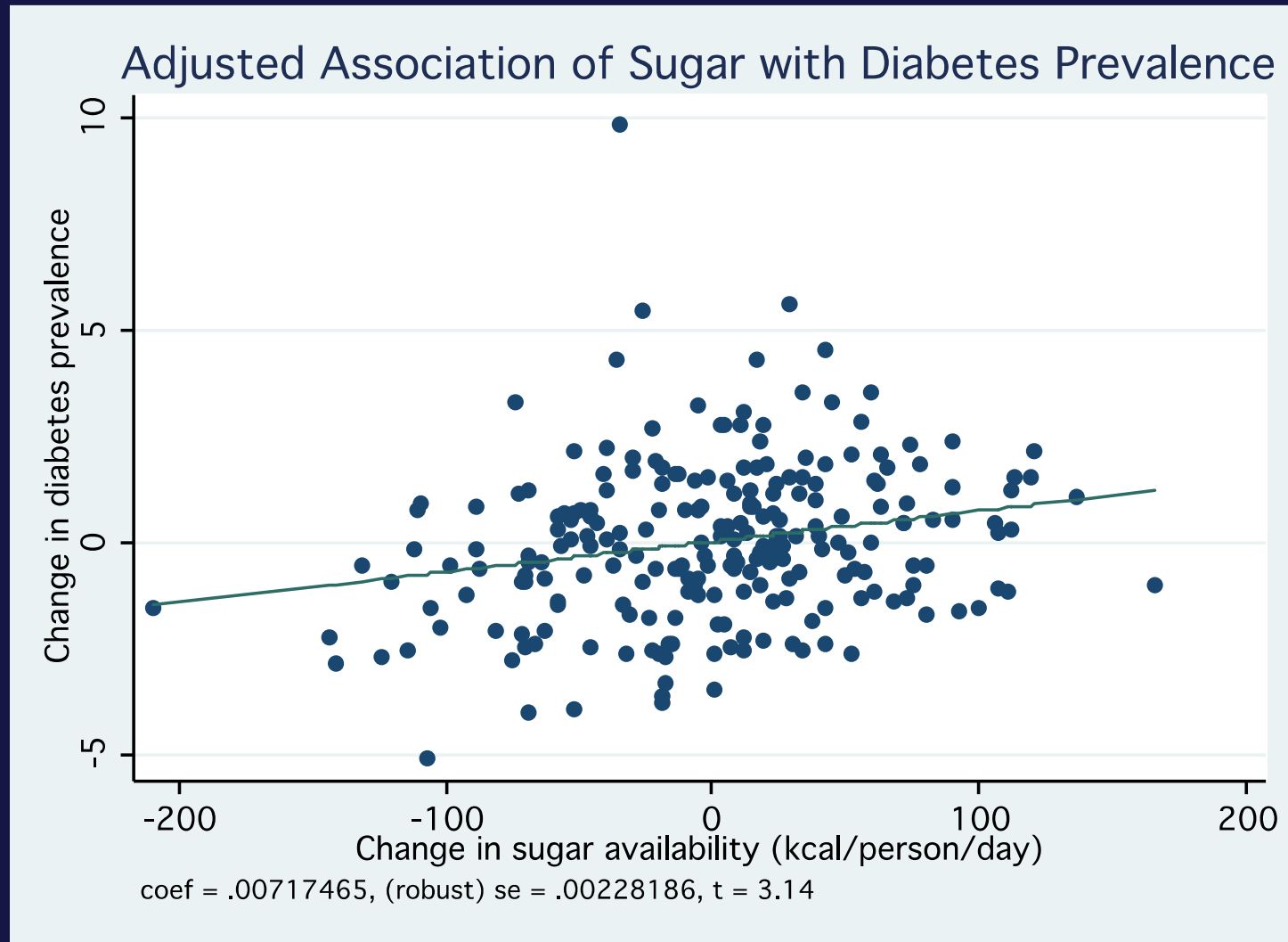
GDP expressed in purchasing power parity in 2005 US dollars for comparability among countries

An international econometric analysis of diet and diabetes

Diabetes prevalence rose from 5.5% to 7.0% for 175 countries 2000-2010



An international econometric analysis of diet and diabetes



An international econometric analysis of diet and diabetes

Only changes in sugar availability predicted changes in diabetes prevalence

Every extra 150 calories increased diabetes prevalence by 0.1%

But if those 150 calories were a can of soda, diabetes prevalence increased 11-fold, by 1.1% (95% CI 0.03 — 1.71%, $p < 0.001$)

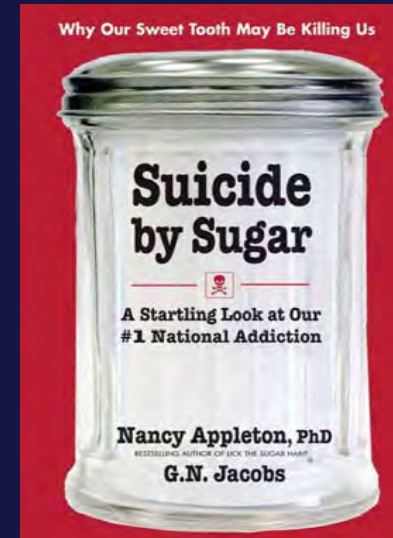
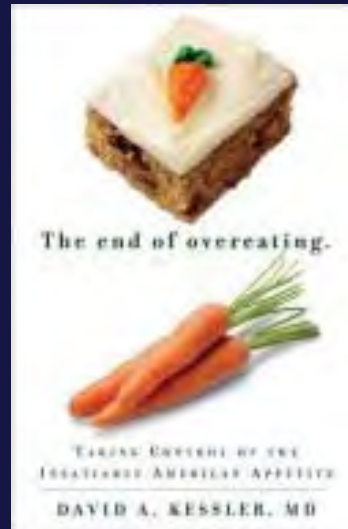
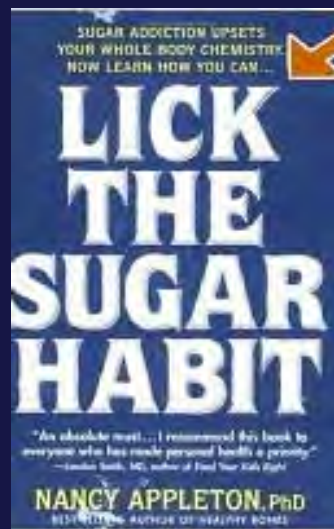
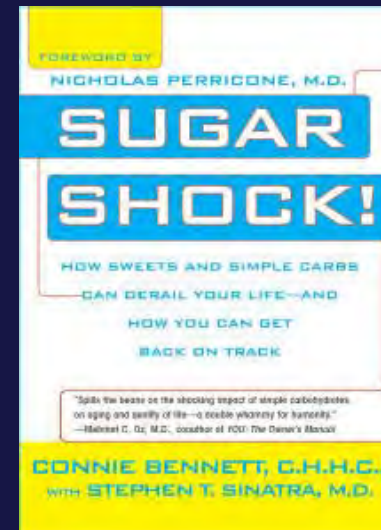
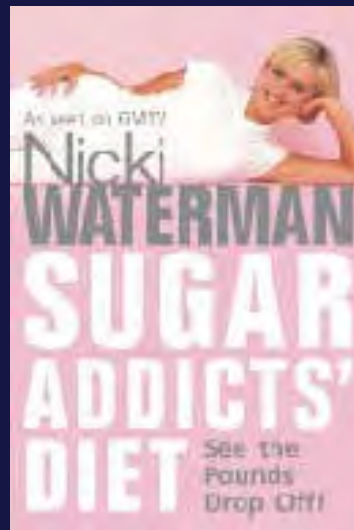
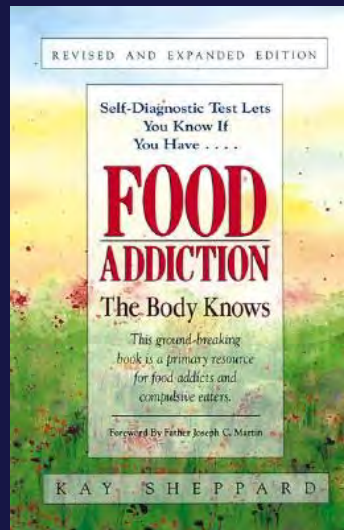
This study meets the Bradford Hill criteria for Causal Medical Inference:

—dose —duration —directionality —precedence

We estimate that 25% of diabetes worldwide is explained by sugar

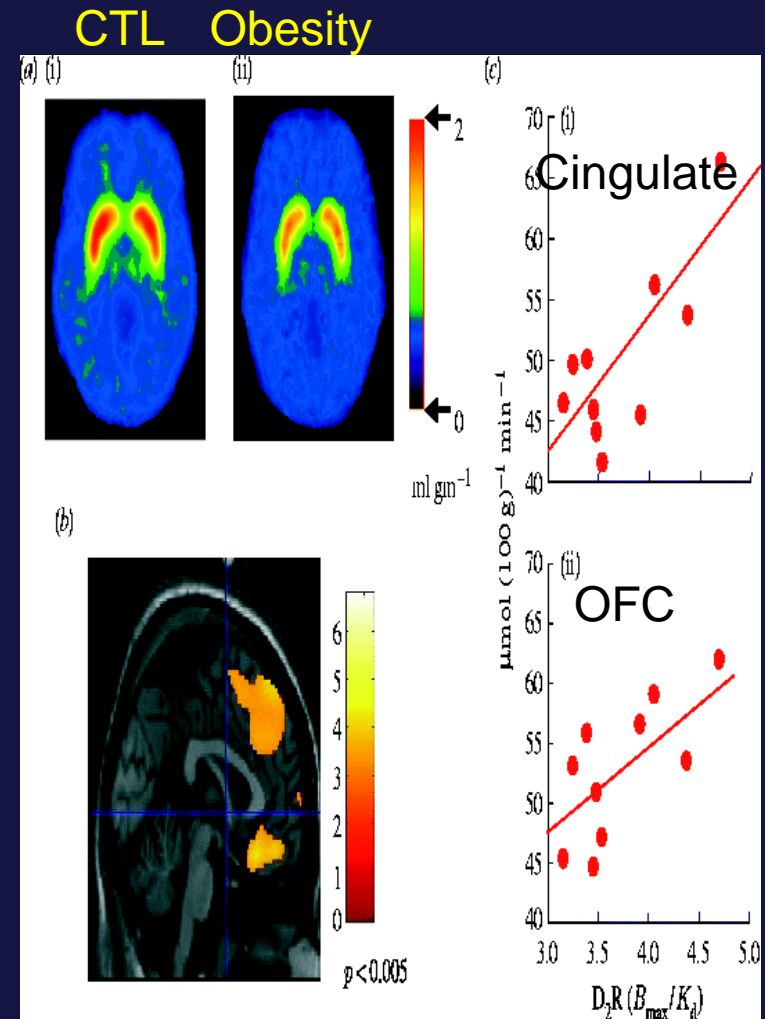
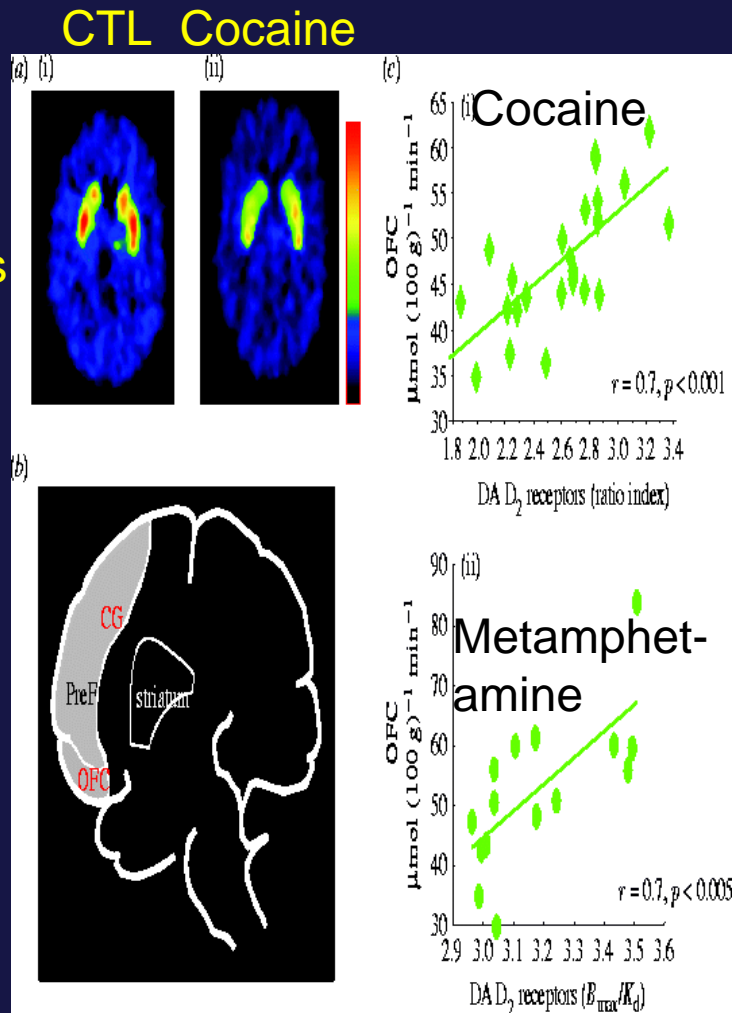
Abuse

Obesity and reward



Dopamine binding correlates with glucose metabolism both in drug addiction and obesity

D2 receptors

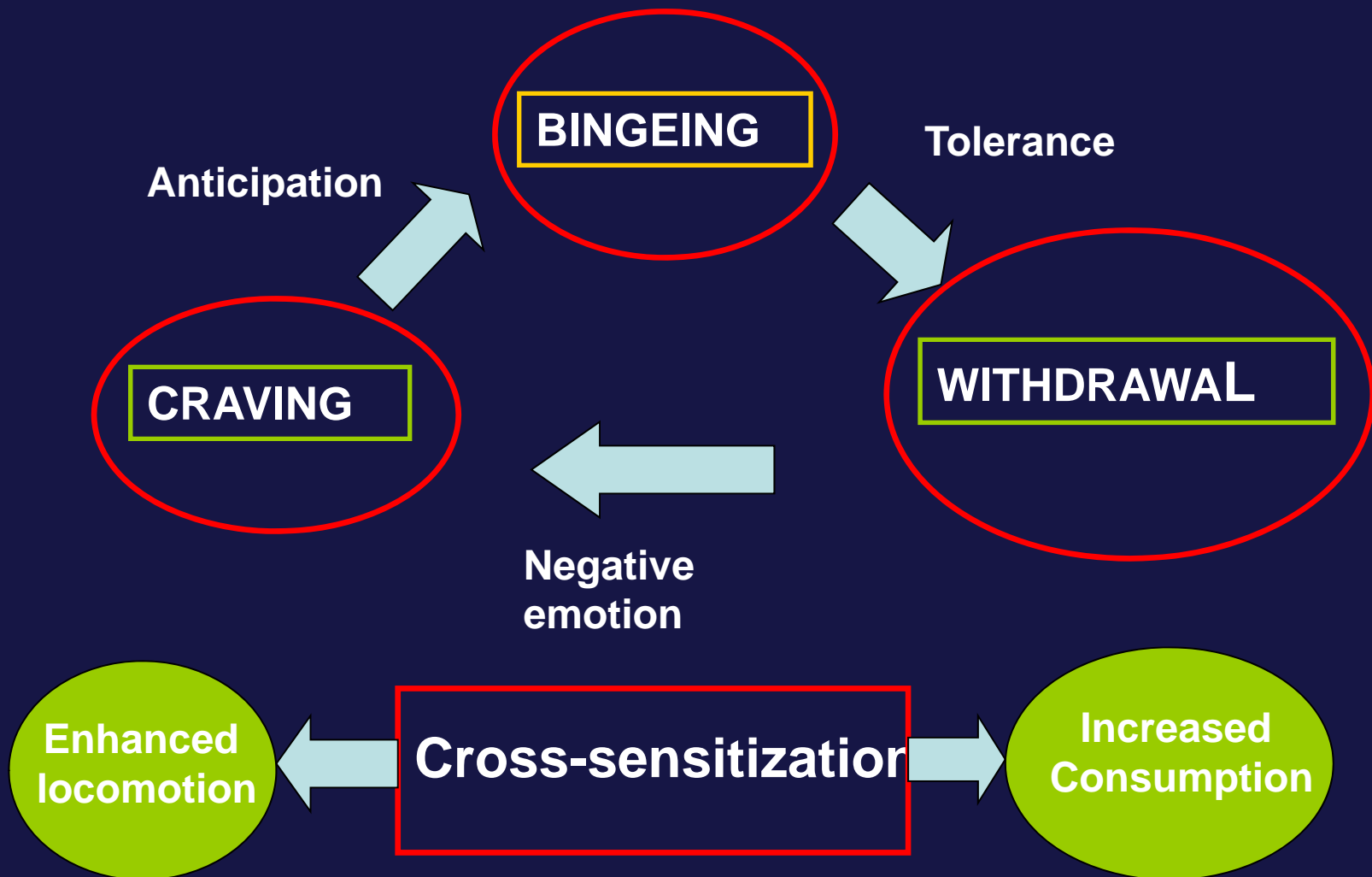


Is there really such a thing as sugar addiction?

Need to look for similarities to drugs of dependence

- nicotine
- morphine
- amphetamine
- cocaine
- alcohol

Criteria for addiction



How about humans?

The DSM-V criteria for addiction

2 of the 11 following criteria within a 12-month period:

1. Tolerance

2. Withdrawal

3. Craving or a strong desire to use

4. Use resulting in a failure to fulfill major role obligations (work, school, home);

5. Recurrent use in physically hazardous situations (e.g. driving);

6. Use despite social or interpersonal problems caused or exacerbated by use;

7. Taking the substance in larger amounts or over a longer period than intended;

8. Attempt to quit or cut down;

9. Time spent seeking or recovering from use;

10. Interference with life activities;

11. Use despite negative consequences.

Physiologic

Psychologic
(Dependence)

Externalities-

Negative impact on society

Societal intervention requires “externalities”

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If you smoke, drink, or take drugs, it's bad for me

- second hand smoke
- car accidents
- declining housing prices
- altered work productivity and absenteeism

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How does your obesity/diabetes affect me?

- \$274 million extra for jet fuel (?)
- discomfort on the subway (?)
- sinking of boats due to the weight (?)

Societal intervention requires “externalities”

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- second hand smoke
- car accidents
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How does your obesity/diabetes affect me?

- \$274 million extra for jet fuel (?)
- discomfort on the subway (?)
- sinking of boats due to the weight (?)
- \$65B reduction in work productivity
- 50% increase in absenteeism
- 50% increase in health insurance premiums
- \$245B for diabetes, \$200B for dementia
- \$192B waste of health care resources
- Obesity is a “threat to national security”
- The Government pays “twice”

Toxic substances that are not abused

(The dose determines the poison)

- Iron
- Vitamin D
- Oxygen
- Pseudoephedrine (not turned into meth)
- Water

Toxic substances that are not abused (The dose determines the poison)

- Iron
- Vitamin D
- Oxygen
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- Water

Abused substances that are not toxic

- caffeine
- nicotine (but the tars in the cigarettes are)

A vicious cycle: Addiction medicine- Toxic substances that are abused

- morphine
- heroin
- amphetamine
- cocaine
- ethanol
- **sugar**

Recognition at the American Heart Association

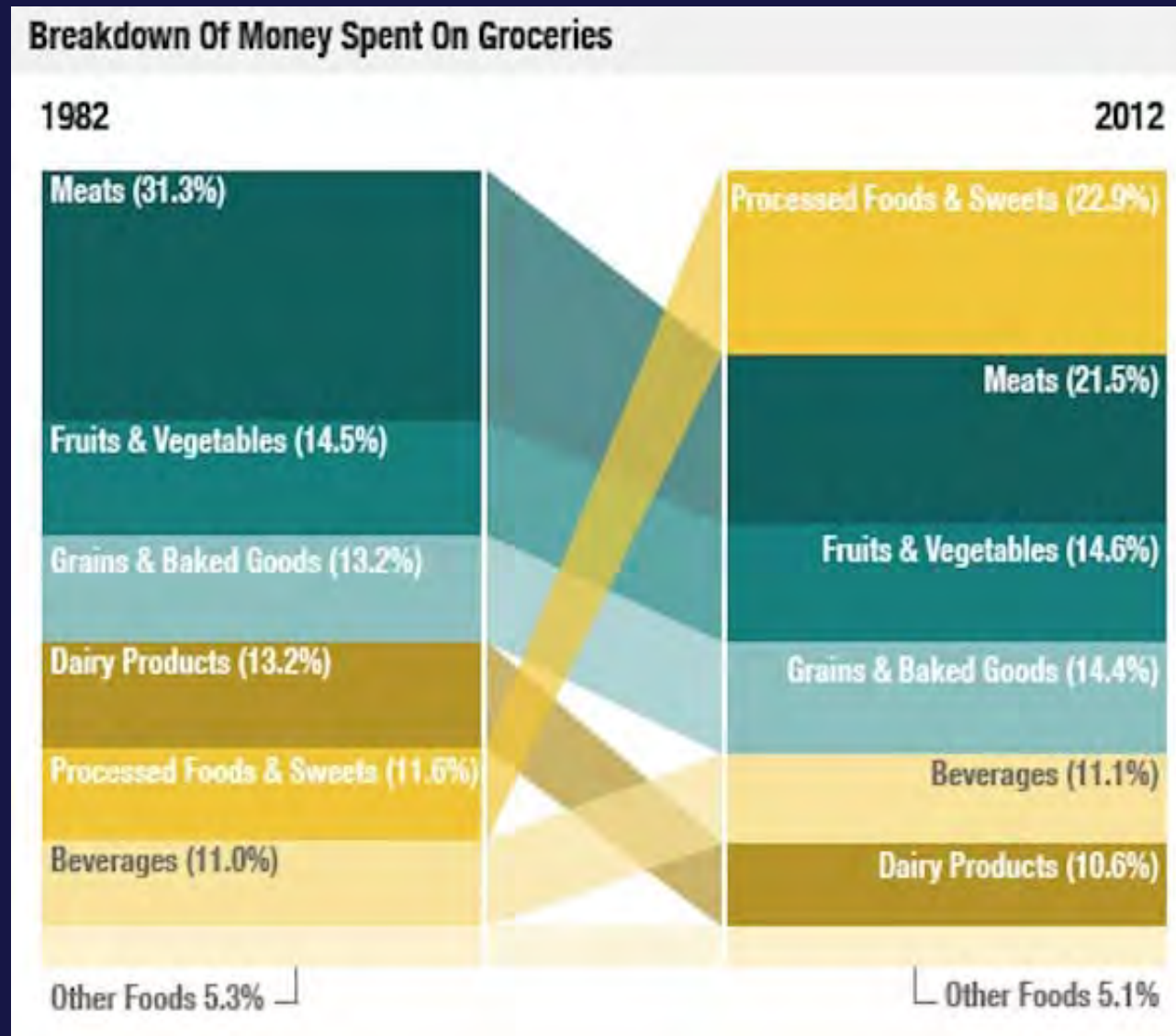
AHA Scientific Statement

Dietary Sugars Intake and Cardiovascular Health A Scientific Statement From the American Heart Association

Rachel K. Johnson, PhD, MPH, RD, Chair; Lawrence J. Appel, MD, MPH, FAHA;
Michael Brands, PhD, FAHA; Barbara V. Howard, PhD, FAHA;
Michael Lefevre, PhD, FAHA; Robert H. Lustig, MD; Frank Sacks, MD, FAHA;
Lyn M. Steffen, PhD, MPH, RD, FAHA; Judith Wylie-Rosett, EdD, RD;
on behalf of the American Heart Association Nutrition Committee of the Council on Nutrition,
Physical Activity, and Metabolism and the Council on Epidemiology and Prevention

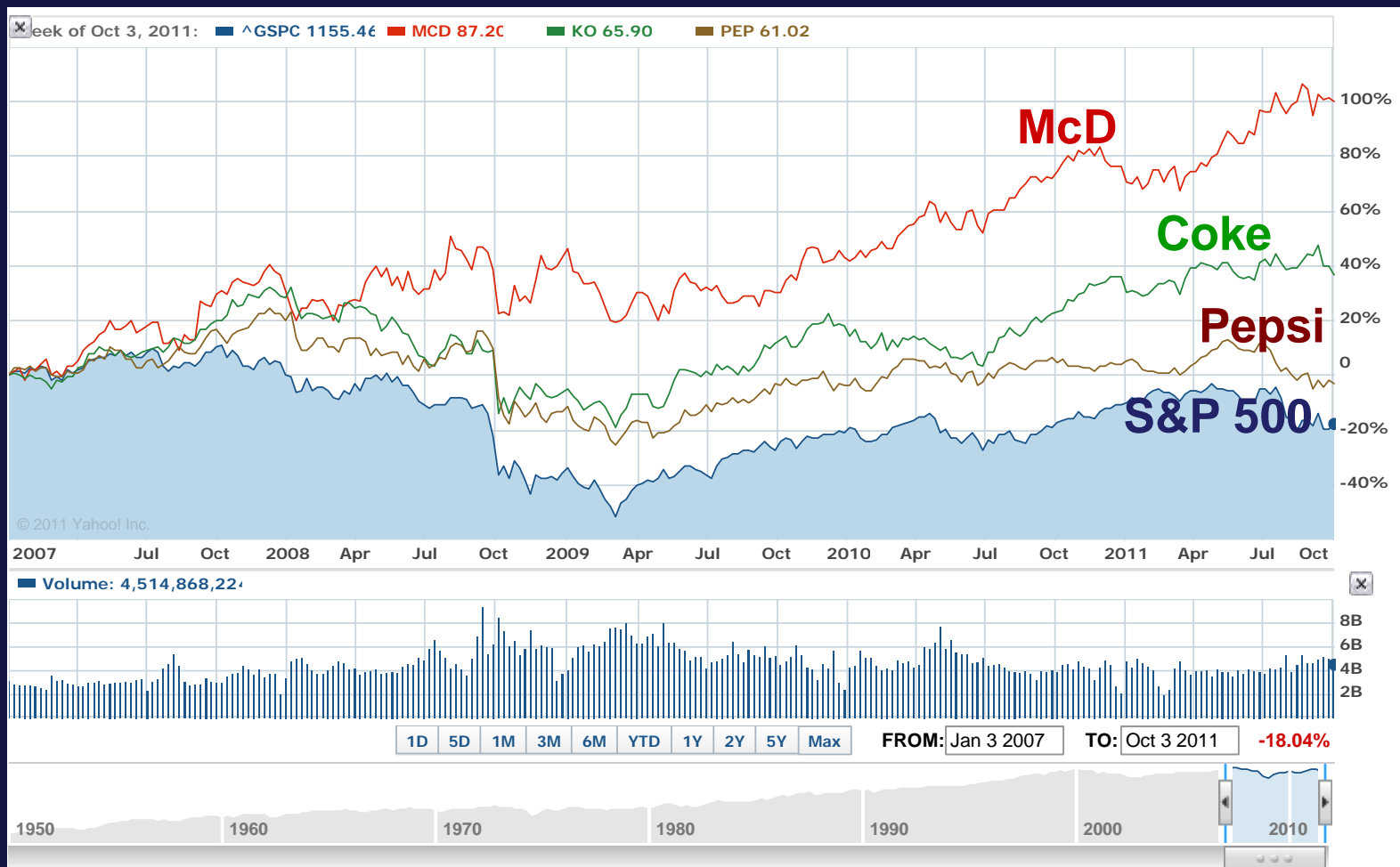
**Recommends reduction in sugar intake from 22 tsp/day
to 9 tsp/day (males) and 6 tsp/day (females)**

How our food dollars have been reallocated



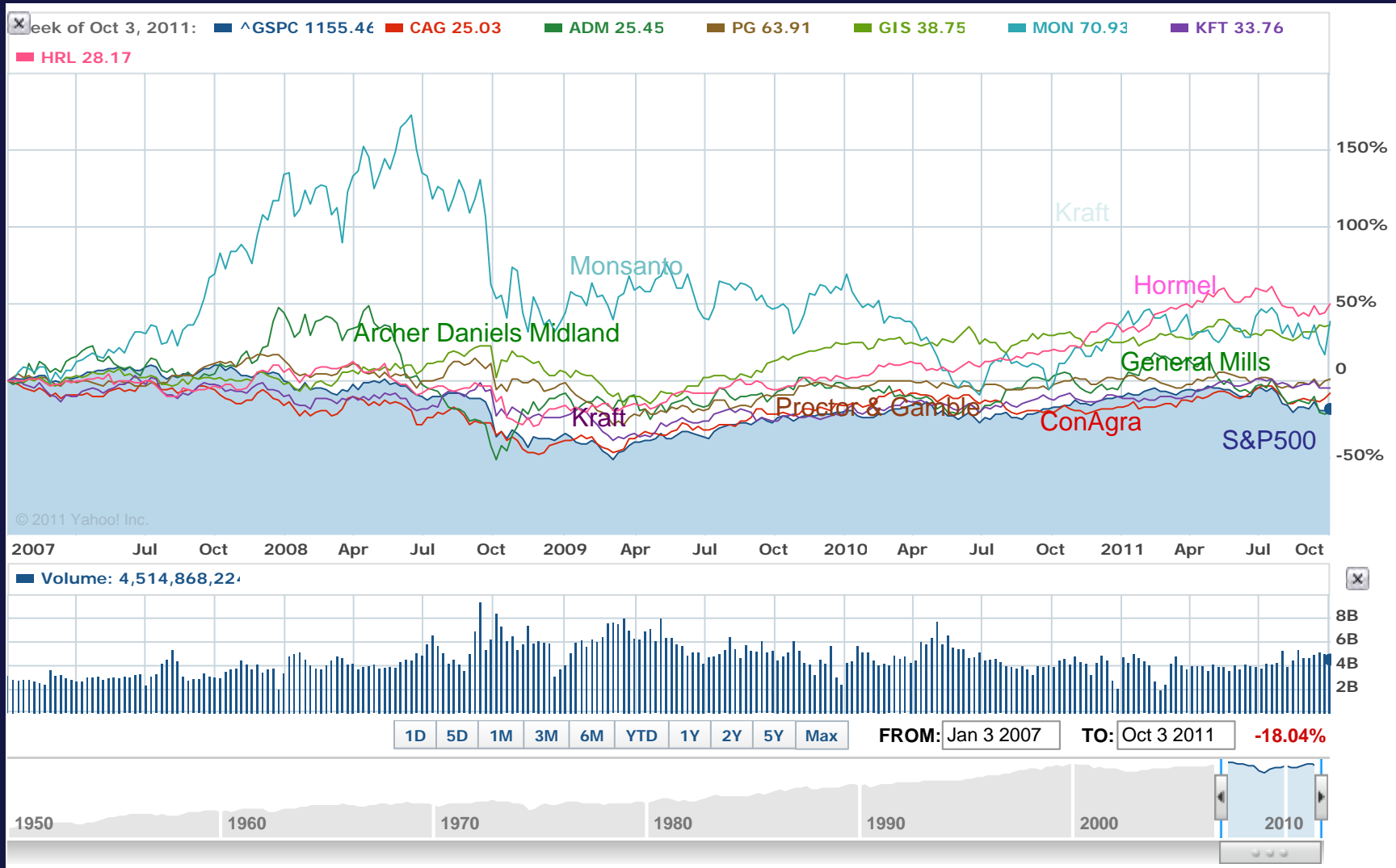
Who's winning the war?

- Despite the economic downturn of 2008, McDonald's revenues and stock price continues to rise; and Coke and Pepsi still fared better than the S&P 500



Who's winning the war?

Stock prices of various food companies compared to the S&P500 2007-2011



Conflicts of Interest

And Now a Word
From Our
Sponsors



Are America's
Nutrition Professionals
in the Pocket of Big Food?

Michele Simon

JANUARY
2013 | EATDRINK
POLITICS

Conflicts of Interest

October 17, 2009

American Academy of Pediatrics (Washington, DC)

Welcome Reception *Sponsored by*

The image shows the classic Coca-Cola logo in its signature script font, rendered in red. It is centered within a white rectangular box, which is itself set against a solid blue background.

Conflicts of Interest



American Academy of Family Physicians Launches Consumer Alliance With First Partner: The Coca-Cola Company

FOR IMMEDIATE RELEASE
Tuesday, October 06, 2009

NBC NEWS
THE WALL STREET JOURNAL.
POLL

50%

40%

30%

20%

10%

WHICH SUBSTANCE
DO YOU THINK IS
**MOST
HARMFUL
TO YOUR
HEALTH?**



marijuana



sugar



alcohol



tobacco

Profits and pandemics: prevention of harmful effects of tobacco, alcohol, and ultra-processed food and drink industries

Rob Moodie, David Stuckler, Carlos Monteiro, Nick Sheron, Bruce Neal, Thaksaphon Thamarangsi, Paul Lincoln, Sally Casswell, on behalf of The Lancet NCD Action Group

Old medicine:

infections

microbes

New medicine:

**chronic
disease**

**multinational
corporations**

Personal responsibility vs. public health

- Syphilis
- Cholera
- Lead poisoning
- TB
- Food-borne illnesses
- Vitamin deficiencies
- AIDS
- Pollution
- Guns?

Personal responsibility vs. public health

- Syphilis
- Cholera
- Lead poisoning
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- Food-borne illnesses
- Vitamin deficiencies
- AIDS
- Pollution
- Guns?
- **Sugar?**

Question 1:

**Can our “toxic food environment” be changed
without government/societal intervention?**

**Especially when there are potentially addictive
substances involved?**

Question 2:

**Can we afford to wait to enact public health measures
when health care will be bankrupt due to
chronic metabolic disease?**

CREDIT SUISSE

September 2013

Research Institute

Thought leadership from Credit Suisse Research
and the world's foremost experts



Sugar
Consumption at
a crossroads

We believe higher taxation on “sugary” food and drinks would be the best option to reduce sugar intake and help fund the fast-growing healthcare costs associated with diabetes type II and obesity.

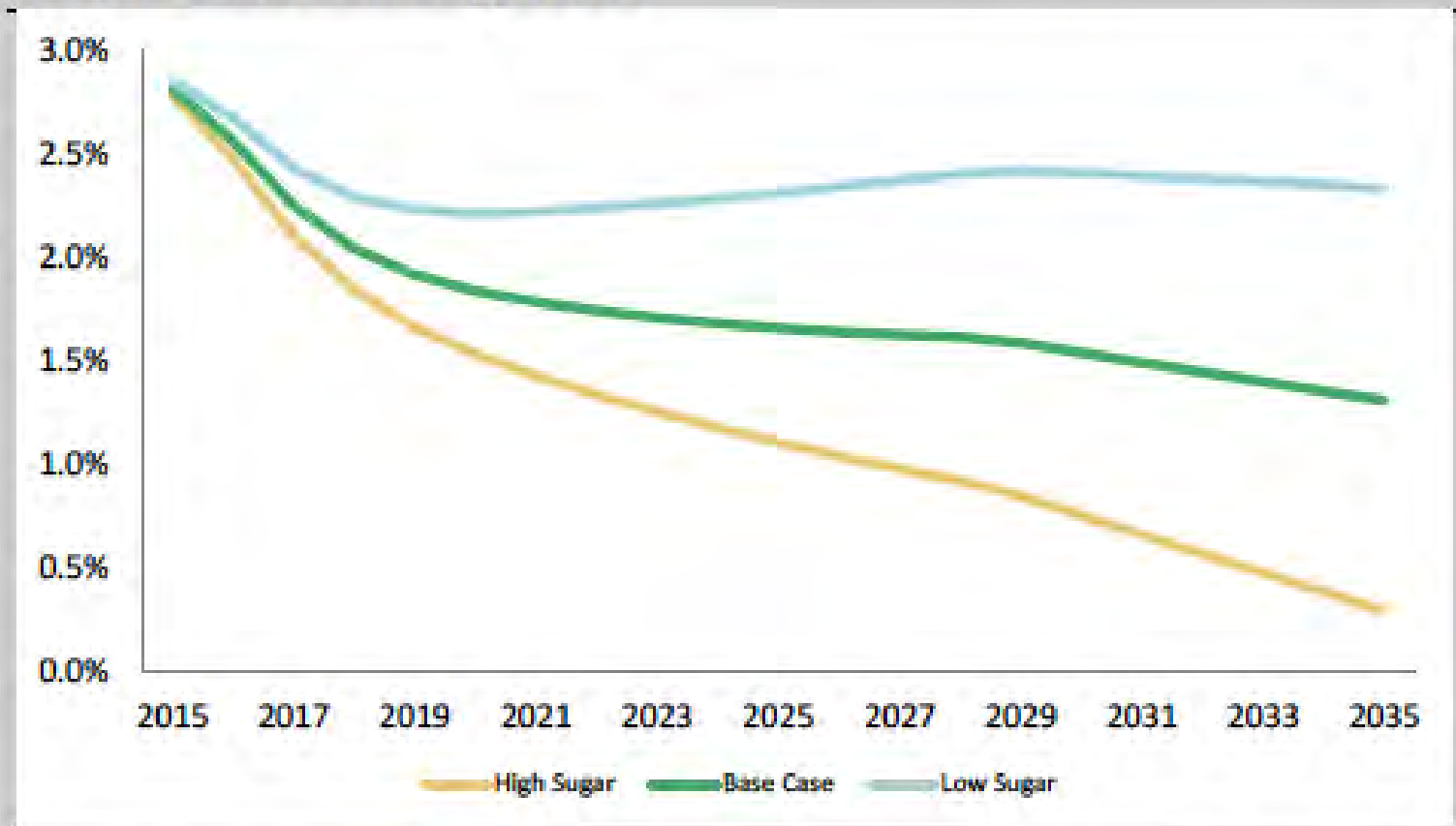
Research Institute

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Sugar
Consumption at
a crossroads

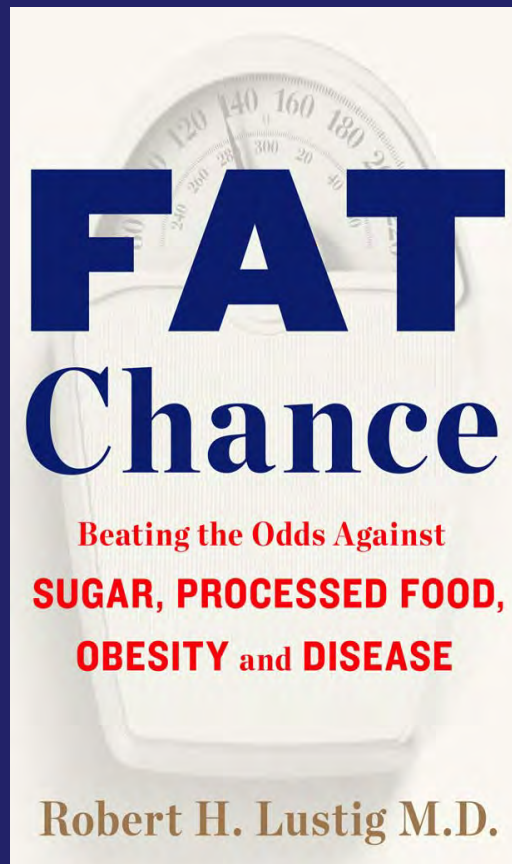
The obesity and diabetes epidemic poses threat to future economic growth



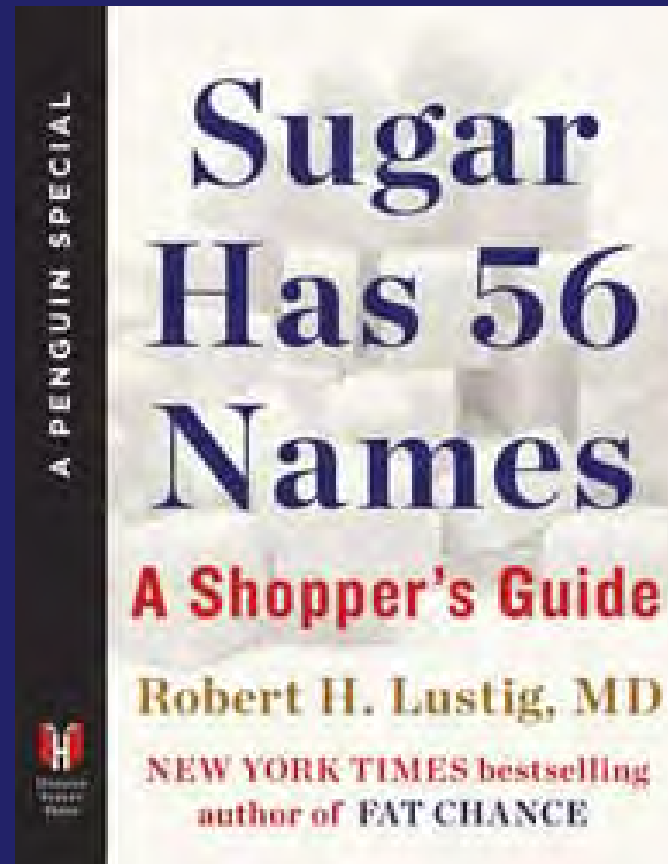
The chart shows real GDP growth in the OECD area under simulations which adjust long-term OECD forecasts for different productivity levels of normal-weight, obese and diabetic individuals, and assume different levels of sugar consumption per capita in the high- and low-sugar scenarios.

Source: Morgan Stanley Research

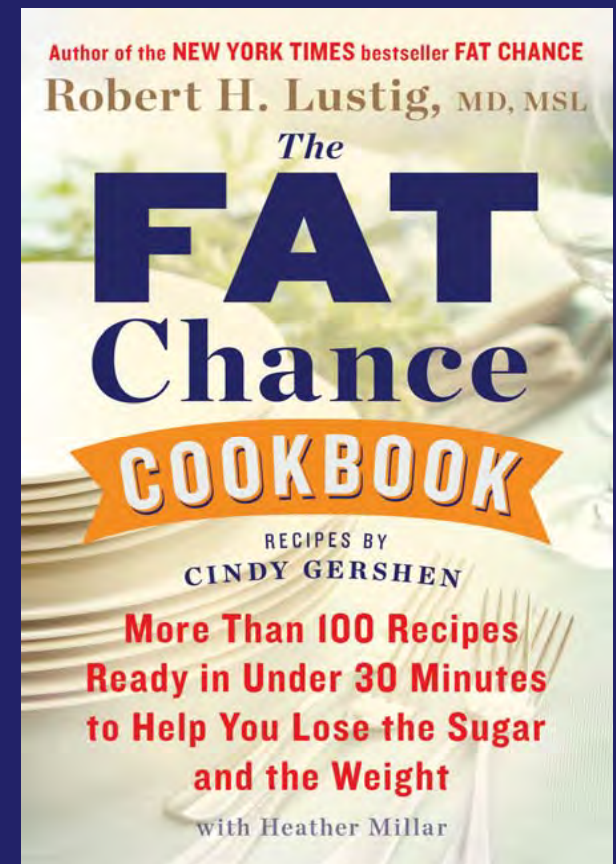
Further reading



Hudson Street Press
(Penguin USA)



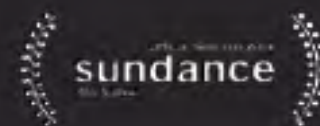
E-book Hudson Street Press
Sept 3, 2013



Hudson Street Press
Jan 1, 2014

FED UP

A FILM BY STEPHANIE SOECHTIG



At the Landmark Embarcadero

[ABOUT](#)

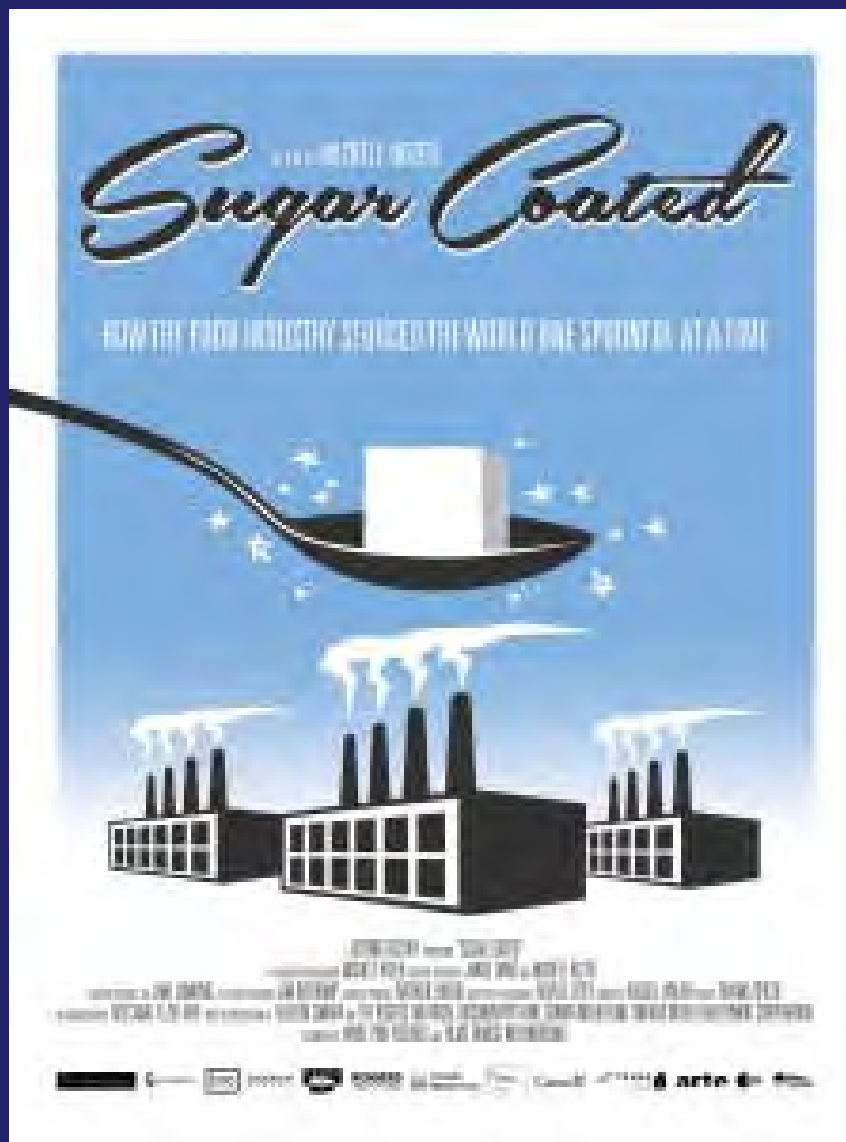
[PRESSKIT](#)

[FILMMAKERS](#)

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Fed Up blows the lid off everything we thought we knew about food and weight loss, revealing a 30-year campaign by the food industry, aided by the U.S. government, to mislead and confuse the American public, resulting in one of the largest health epidemics in history.

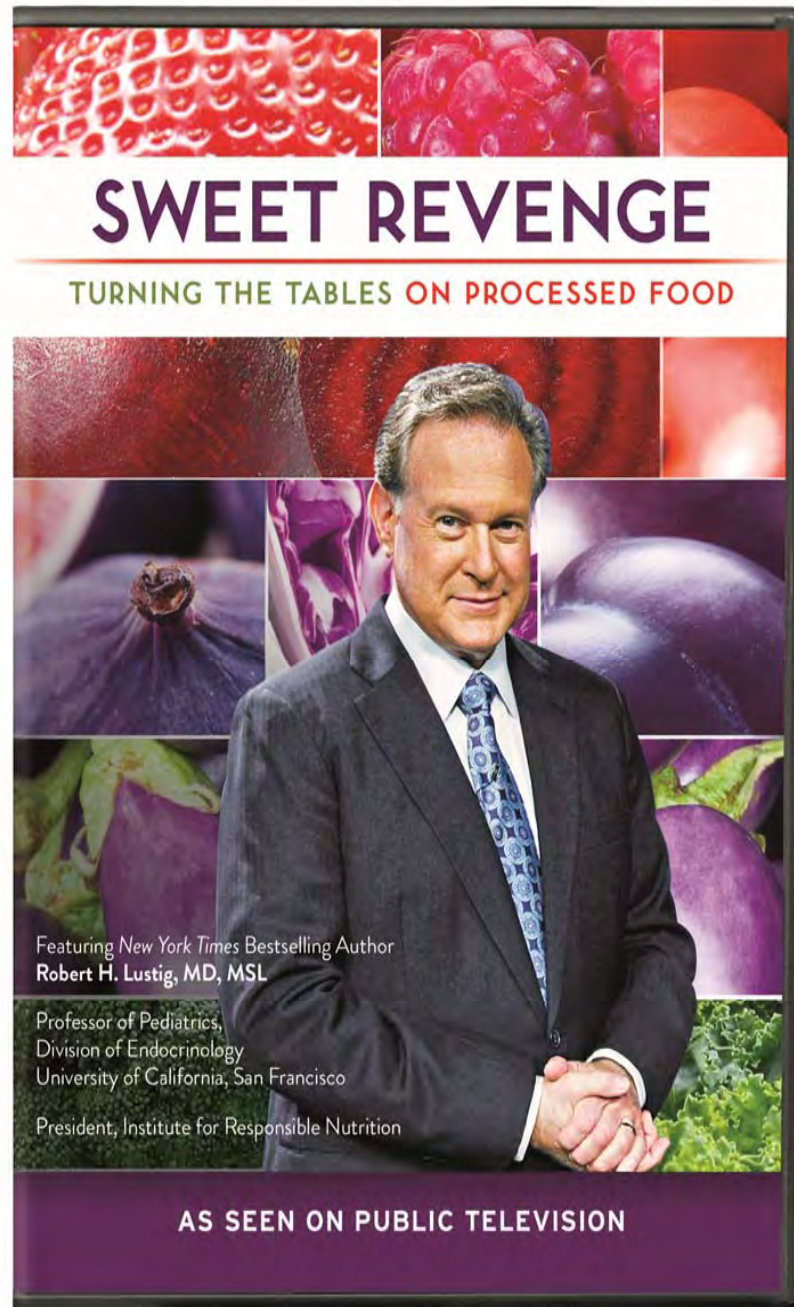


2015 Hot Docs Film Festival, Toronto

SUGARSCIENCE.ORG

Outdoor





Featuring *New York Times* Bestselling Author
Robert H. Lustig, MD, MSL

Professor of Pediatrics,
Division of Endocrinology
University of California, San Francisco

President, Institute for Responsible Nutrition

AS SEEN ON PUBLIC TELEVISION

Public Television
Special, USA

**We have started a non-profit to provide
medical, nutritional and legal analysis and consultation
to promote personal and public health vs. Big Food**



responsiblefoods.org

acalorieisnotacalorie.com