World Health Organization
Geneva, Switzerland
July 6, 2012
Food Issues, 2012
Science → Agriculture → Nutrition → Public Health → Policy

- Food insecurity
- Obesity
- Public confusion
America’s Rising Obesity Rate

1980: 15%
1990: 22%
2000: 31%
2008: 34%

Percent of obese Americans
Obesity trends in selected OECD countries

Source: OECD
U.S. Diet Industry
~$60 billion/year
CALORIES

**Misused**: Instrument of government dominance and control

**Anti-cultural**: reduce food to a number

**Irrelevant**: obesity is caused by carbohydrates via insulin

**Miscounted**: higher in cooked foods than raw
calories

(noun)

Tiny creatures that live in your closet and sew your clothes a little bit tighter every night.
calories

(noun)

Tiny creatures that live in your closet and sew your clothes a little bit tighter every night.

Units of heat measurement equivalent to approximately 1.1480 joules.
Calorie (Cal) = kilocalorie (kcal)

Official definition
Heat energy needed to raise temperature of 1 kg of water by 1° C from 14.5° to 15.5° at 1 unit of atmospheric pressure.

Translation
The ~ amount of heat needed to raise the temperature of a quart of water by 1° C.

100 Calories: amount of heat needed to bring a quart of water to a boil.
Individual variation

Weight maintenance

Weight gain

Food intake

Energy expenditure

Weight loss

~ Individual variation
Wilbur A. Atwater
1844 - 1907
“The Father of Modern Nutritional Science”

Calorimeter: Direct and Respiration (oxygen consumption)
Measured Calories

- Foods
- Alcohol
- Consumed
- Digestive losses
- Excretion losses
- Used at rest
- Used in activities
- Required
The following table summarizes the various factors for nutrients of mixed diet:

**Table 12.**
Factors for heats of combustion, availability and fuel values of nutrients in mixed diet.

<table>
<thead>
<tr>
<th>KIND OF MATERIAL</th>
<th>Heat of combustion per gram.</th>
<th>Availability</th>
<th>FUEL VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Referred to available nutrients.</td>
</tr>
<tr>
<td></td>
<td>Cal.</td>
<td>%</td>
<td>Per gram.</td>
</tr>
<tr>
<td>Protein,</td>
<td>5.65</td>
<td>92</td>
<td>4.4</td>
</tr>
<tr>
<td>Fats,</td>
<td>9.40</td>
<td>95</td>
<td>9.4</td>
</tr>
<tr>
<td>Carbohydrates,</td>
<td>4.10</td>
<td>97</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Of course these figures are not to be regarded as final, and alterations may be called for as data accumulate. Meanwhile we think that they are sufficiently accurate for ordinary use.
Discrepancy Between Reported and Actual Energy Intake and Expenditure

**Kcal/d**

*P<0.05 vs reported.*

How many calories here?
# Average Requirements, Calories/Day

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measured</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doubly labeled water</td>
<td>3,050</td>
<td>2,400</td>
</tr>
<tr>
<td><strong>Estimated</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHANES</td>
<td>2,600</td>
<td>1,900</td>
</tr>
<tr>
<td>Beltsville, 1984</td>
<td>2,760</td>
<td>1,850</td>
</tr>
<tr>
<td>FDA standard</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>NHANES, average</td>
<td>2,070</td>
<td></td>
</tr>
<tr>
<td>Pre-1990 USDA surveys</td>
<td>2,350</td>
<td></td>
</tr>
<tr>
<td>USDA food supply, less waste</td>
<td>2,670</td>
<td></td>
</tr>
<tr>
<td>USDA food supply, uncorrected</td>
<td>3,900</td>
<td></td>
</tr>
</tbody>
</table>
Genetics
Metabolic regulation

Body Weight
BMI

Food Environment
Coping strategies: obesity environment

- Get organized
- Eat less
- Eat better
- Move more
- Get Political
America's Move to Raise a Healthier Generation of Kids

Childhood obesity or excess weight threatens the healthy future of one third of American children. We spend $150 billion every year to treat obesity-related conditions, and that number is growing.

Obesity rates tripled in the past 30 years, a trend that means, for the first time in our history, American children may face a shorter expected lifespan than their parents.

We need to get moving. Join First Lady Michelle Obama, community leaders, teachers, doctors, nurses, moms and dads in a nationwide campaign to tackle the challenge of childhood obesity.

Let’s Move! has an ambitious but important goal: to solve the epidemic of childhood obesity within a generation.

Let’s Move will give parents the support they need to provide healthier food in schools, help our kids to be more physically active, and make healthier, affordable food available in every part of our country.

Learn more and join us.
Larger portions

Overweight

3,200

Ag policy

3,900

Lisa Young, 2011
the portion teller
smartsiz Your way to permanent weight loss

LISA R. YOUNG, PH.D., R.D.
Top Sources of Calories
Among Americans

- Alcohol: 82 average calories per day
- Pizza: 98 average calories per day
- Sweetened drinks: 114 average calories per day
- Chicken: 121 average calories per day
- Yeast breads: 129 average calories per day
- Grain-based desserts: 138 average calories per day

2010 Dietary Guidelines
Ubiquity

Kinney Drugs

Bed Bath & Beyond

Staples
Media advertising, 2011: > $14 Billion

$50.9 Million

$41.8 Million

Ad Age June 2012
The Biasing Health Halos of Fast-Food Restaurant Health Claims: Lower Calorie Estimates and Higher Side-Dish Consumption Intentions

PIERRE CHANDON
BRIAN WANSINK

J Consumer Research, 2007

Judgment and Decision Making, vol. 5, no. 3, June 2010, pp. 144-150

The “organic” path to obesity? Organic claims influence calorie judgments and exercise recommendations

Jonathan P. Schuldt* and Norbert Schwarz
Department of Psychology, University of Michigan

NO GELATIN • VEGAN

Let's Do...Organic

Classic Gummi Bears

Organic Candy

WHEAT FREE

Net 3.5 oz 100g

Reduced Fat

SKIPPY

CREAMY

Now that’s a score to cheer about!

Americans prefer to eat healthy, but not always healthy. You can enjoy classic gummy bears and worms with no worry. These classic candy bars aren’t just a treat; they’re packed with vitamins, minerals, and fiber.

Fruity Pebbles

Excellent Source of Vitamin D

Now helps support your child’s immunity

Cocoa Krispies

25% less sugar than our leading competitors

NOW HELP SUPPORT YOUR CHILD’S IMMUNITY

Little Price... Big Taste!
The Cost of Healthy Eating

The cost of many unhealthful foods, like soda, butter and beer, has fallen in the last three decades, while the cost of fruits and vegetables has risen substantially.

**CHANG IN MONTHLY FOOD PRICES**

<table>
<thead>
<tr>
<th></th>
<th>MARCH 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh fruits</td>
<td>1.46%</td>
</tr>
<tr>
<td>Fresh vegetables</td>
<td>1.41</td>
</tr>
<tr>
<td>Beer</td>
<td>0.85</td>
</tr>
<tr>
<td>Butter</td>
<td>0.71</td>
</tr>
<tr>
<td>Sodas</td>
<td>0.67</td>
</tr>
</tbody>
</table>

Lines show change in price of items since 1978, relative to overall inflation as measured by the Consumer Price Index. The price of vegetables, for example, has risen 40 percent faster than the overall index.

*Source: Bureau of Labor Statistics, via Haver*
I WANT YOU TO EAT MORE
1206
1 printed $1,000,000 for fiscal year 2010 to carry out
2 this subsection.
3 SEC. 4205. NUTRITION LABELING OF STANDARD MENU
4 ITEMS AT CHAIN RESTAURANTS.
5 (a) Technical Amendments.—Section 403(q)(5)(A)
7 343(q)(5)(A)) is amended—
8 (1) in subitem (i), by inserting at the beginning
9 “except as provided in clause (II)(ii)(III),”; and
10 (2) in subitem (ii), by inserting at the beginning
11 “except as provided in clause (II)(ii)(III),”.
12 (b) Labeling Requirements.—Section 403(q)(5) of
14 343(q)(5)) is amended by adding at the end the following:
15 “(II) RESTAURANTS, RETAIL FOOD ESTABLISHMENTS,
16 AND VENDING MACHINES.—
17 “(i) General requirements for re-
18 staurants and similar retail food establish-
19 ments.—Except for food described in subclause (vi),
New York City, 2011

You have to walk the **3 MILES** from Union Square to Brooklyn to burn off the calories from **ONE 20oz. SODA**.

**LUIGI ITALIAN ICE**

*4.50*

*Calories 130*

*YOUR KID JUST ATE 26 PACKS OF SUGAR.*

All those extra calories can bring on obesity, diabetes and heart disease.

*Are your kids pouring on the pounds? Find out at nyc.gov/health/drinkingtat*
LAS PORCIONES HAN AUMENTADO
TAMBIÉN LA OBESIDAD, LA CUAL PUEDE
CAUSAR MUCHOS PROBLEMAS DE SALUD

ANTES

AHORA

REDUZCA SUS PORCIONES. REDUZCA SU RIESGO.

Llame al 311 para obtener el paquete de alimentación saludable

Financiado por el Departamento de Salud y Servicios Humanos.
©2012 New York City Department of Health and Mental Hygiene.
Mayor Michael R. Bloomberg on Wednesday with Linda I. Gibbs, deputy mayor for health, as he discussed a plan to ban large sugary beverages. Next to each soda is the amount of sugar in it.

By Michael M. Grynbaum
Published: May 30, 2012 | 1426 Comments
SUGAR & CALORIES PER FOUNTAIN DRINK

- 7 oz: 82 calories, 22g sugar
- 12 oz: 140 calories, 38g sugar
- 16 oz: 160 calories, 49g sugar
- 32 oz: 374 calories, 102g sugar
- 64 oz: 780 calories, 217g sugar

~ 200 kcal
~ 50 g sugars
~ 1950s

Serves 3

Over ice - Nice!

Enjoy Coca-Cola

Big 16 oz. size
American Beverage Association

- Attack the science

FACT: According to CDC data, sugar-sweetened beverages make up just 7% of the average diet.

FACT: According to CDC data, added sugar from soda has declined 39% since 2000. And sugar-sweetened beverages are not the No. 1 source of added sugars in our diets – food is.

FACT: According to the Beverage Marketing Corporation, there has been a 23% reduction in the average calories per serving from beverages sold between 1998 and 2010.

The facts make it clear – beverage calories and added sugars have decreased for more than a decade, while the CDC reports obesity rates continue to climb. America’s beverage companies have been doing our part to help curb obesity by offering more products in smaller portion sizes and lower or no calories. And while New York City had its own school program, our industry’s efforts in New York State and across the country have led to 86% fewer beverage calories in schools overall. For more information, visit letsclearitup.org
The Nanny
You only thought you lived in the land of the free.

Bye Bye Venti
Nanny Bloomberg has taken his strange obsession with what you eat one step further. He now wants to make it illegal to serve “sugary drinks” bigger than 16 oz. What’s next? Limits on the width of a pizza slice, size of a hamburger or amount of cream cheese on your bagel?

New Yorkers need a Mayor, not a Nanny.
Find out more at ConsumerFreedom.com

Center for Consumer Freedom

- Attack advocates
Attack limits on personal freedom

Soda Makers Begin Their Push Against New York Ban

Jessica Dos Santos, right, from New Jersey, collected petition signatures in Brooklyn for a grassroots-style coalition created by the beverage industry.

By MICHAEL M. GRYNBRAUM
Published: July 1, 2012 | 380 Comments

Lobbyists from Coca-Cola and other big soda companies have met with mayoral candidates and City Council members. Canvassers paid by the beverage industry are stopping New Yorkers on the street to solicit signatures on petitions. Facebook and Twitter pages tell readers to “say no to a #sodaban.”
 Millions Spent Lobbying Coke + Pepsi + ABA

The consumption of sugar-sweetened beverages has been linked to risks for obesity, diabetes, and heart disease, so it's not surprising that a competing market might want to influence the food and drinks we consume. The graph above shows how much PepsiCo spent lobbying in 2011: $29 million.

Los Angeles Times
Feb 7, 2010