US Food & Nutrition Policies:
Ideal vs. Reality:
US Food Industry, Agricultural Policy, Food Availability, Consumer Demand & Impact on Dietary Choices

Case Study-Obesity

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Outline: Obesity as a case study

Evidence-Obesity (5 W’s)

Context- agricultural, food industry, economic, societal, biologic

Process

Policy Response

Impact

Need for a New Framework for Action
Food and Nutrition Policy Diamond

- Evidence
- Context
- Policy Content
- Process
- Impact
**Policy Content depends on…**

- **Evidence**: Nutritional status, food availability, dietary patterns, health outcomes; size, location & conditions of risk groups

- **Context**: Type of food system, dietary culture, strength of economy, government stability and competence, private sector capabilities and influence, transport structure, level of food aid

- **Process**: Political action, legislation, regulation, level of enforcement, private sector cooperation, costs, cost recovery mechanisms, competition, non-nutritional priorities and concerns, perceptions, surveillance capabilities, media

- **Impact**: Nutritional status, diet intake & health outcomes; economic impact (profit) across sectors, agricultural and food industry effects, political gains & losses
Evidence

Obesity
Obesity defined by BMI

BMI = Body Mass Index

\[
\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (meters)}^2}
\]

<table>
<thead>
<tr>
<th>Condition</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight</td>
<td>25-29.9</td>
</tr>
<tr>
<td>Moderately Obese</td>
<td>30.0-34.9</td>
</tr>
<tr>
<td>Severely Obese</td>
<td>35.0-39.9</td>
</tr>
<tr>
<td>Very Severely Obese</td>
<td>≥40.0</td>
</tr>
</tbody>
</table>
Relationship Between BMI and Percent Body Fat in Women

Source: Adapted by CTLT from Gallagher et al, AJCN, 2000
Relationship between BMI and Cardiovascular Disease Mortality

Source: Adapted by CTLT from Calle et al., NEJM, 1999
Fully two-thirds of Americans are officially overweight, and about ½ of those (>61 million) have graduated to full-blown obesity. Prevalence of severe obesity (BMI ≥ 40) quadrupled from 1/200 to 1/50 from 1986 to 2000. Prevalence of “super” obese (BMI ≥ 50) increased 5x’s from 1/2000 to 1/400.
All groups becoming more obese. Lowest income and least educated most overweight and obese

Adapted by CTLT. Obesity (BMI>30), based on BRFSS, 1990-2001 data, Strum, Rand Corp, 2003
In the past 30 years, the prevalence of overweight in the pediatric group has tripled---~9 million children over 6 yrs of age are considered obese.
Obesity’s toll on human health

Significantly increases risk of:
- Heart disease
- High blood pressure
- Stroke
- Diabetes
- Infertility
- Gall-bladder disease
- Osteoarthritis
- Many forms of cancer
Medical cost of obesity-$75 billion/yr

- $75 billion in 1998
- Public pays ~$39 billion, or about $175/person thru Medicare and Medicaid
- Cover sicknesses associated with obesity including type 2 diabetes, cardiovascular disease, several types of cancer and gallbladder disease
- This does not include indirect costs related to lost productivity, absenteeism

Finkelstein, et al. Obesity Research, 2004
So....what has caused the obesity epidemic?

Energy In ≠ Energy out
Choose your favorite……..

- Food Pyramid
- Fat
- Fast Food
- Remote Control
- No time
- Stress
- No sidewalks
- Elevators
- Video Games
- Sodas
- Food too expensive
- Food too cheap
- No Parks
- TV
- School lunch
- Parents
- Cars
- Large portions
- Thrifty Ancestors
- Carbs
- “junk” food
- Cars
- Fat Parents
- Sodas
- Video Games
- Food too cheap
- School lunch
- TV
The US public does not follow the Food Guide Pyramid

Added sugars & fats

Grains

The Dietary Guidelines recommend limiting consumption of added sugars to no more than 12 teaspoons a day for a 2,200-calorie diet. The Dietary Guidelines recommend that fats account for no more than 30 percent of daily energy intake—about 73 grams of added and naturally occurring fat for a 2,200-calorie diet.
Context

Agriculture
Americans are eating more calories.

**Calories:** Total Food Supply and Food Supply Adjusted for Losses

![Graph showing calorie intake from 1910 to 2000.](image)

- **Total food supply available for consumption:**
  - 1910: 3,500 cal/d
  - 1920: 3,800 cal/d
  - 1930: 3,500 cal/d
  - 1940: 3,800 cal/d
  - 1950: 3,500 cal/d
  - 1960: 3,800 cal/d
  - 1970: 3,500 cal/d
  - 1980: 3,800 cal/d
  - 1990: 3,800 cal/d
  - 2000: 4,300 cal/d

- **Food supply adjusted for spoilage, cooking losses, plate waste, and other losses:**
  - 1910: 2,000 cal/d
  - 1920: 2,000 cal/d
  - 1930: 2,000 cal/d
  - 1940: 2,000 cal/d
  - 1950: 2,000 cal/d
  - 1960: 2,000 cal/d
  - 1970: 2,000 cal/d
  - 1980: 2,000 cal/d
  - 1990: 2,000 cal/d
  - 2000: 2,000 cal/d

- **Losses:**
  - 1,100 cal/d

- **Increase:**
  - 530 cal/d
90% of the caloric increase has come from grains, added fats & oils and added sugars.
Where did all the extra calories come from?

Agricultural Sector
Big Food, Big Money, Big People?

Agricultural policies → ↑ productivity & efficiency → ↑ food supply, ↓ food cost, ↑ dependability

- Subsidies, education, research, marketing assistance, farm credit, commodity programs, trade policies, rural infrastructure
- Mechanization, increased size of farms, increased specialization, fewer farmers, less farm labor, technological innovations, globalization
- Fierce competition, low profits (3.5¢ per dollar), heavy subsidies as price supports, vertical integration, large companies, focus on “added value”, work hard to create sales-friendly regulatory environment,
Farm Subsidies

Shift from price supports backed by grain reserves—which discouraged overproduction-- to farm subsidies (direct payments to farmers) which promotes overproduction

Gov’t spends ~$20 billion/yr
  Big farmers get biggest subsidies
  8 crops get subsidies: corn, soybeans, wheat, cotton, rice; majority of farms such as fruit & vegetable growers do not get a subsidy
Fewer farms, Larger Farms, Higher Productivity

ERS, USDA from Census of Agriculture
The Corn Connection

286 m tons/year

57% becomes inexpensive animal feed—keeps meat prices down, but also makes meat fattier

5% refined to high-fructose corn syrup (HFCS)—cheaper & sweeter than sugar; easier transport & mix into beverages, spaghetti sauce, peanut butter, etc.
Schizophrenic role of the USDA

- Promote Agribusiness
- Advise the Public about Diet and Health
Context

Food Industry
Who is the Food Industry?

- Refers to companies that produce, process, manufacture, & serve foods, beverages & dietary supplements (Girl scouts selling cookies to multi-billion dollar corporations such as McDonalds & Monsanto)

- Have enormous economic clout: generates ~$1 trillion in annual sales; Accounts from 13% of GNP; Employs 17% of US labor force

- Expend resources to develop & market products that will sell, regardless of effect on nutritional status

- Rapid consolidation has resulted in fewer but larger companies with great ability to influence Americans food purchases through their consolidated marketing power
Food Industry

Abundant & Cheap Food Supply, Affluent Society

- Fierce Competition
- Primary mission: Sell Products—Eat More
- Advertise
- Nutrition is a factor when it affects “bottom line”
- Convince gov’t officials, Nutrition Professionals, Media of Nutritional Value of Products
- Are NOT Health or Social Service Organizations
# Advertise, Advertise, Advertise

## Direct Media Advertising Expenditures, 1999

<table>
<thead>
<tr>
<th>Company</th>
<th>Advertising Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Food &amp; food service companies</td>
<td><strong>$11 BILLION</strong></td>
</tr>
<tr>
<td>McDonald’s</td>
<td><strong>$627 million</strong></td>
</tr>
<tr>
<td>Burger King</td>
<td><strong>$403 million</strong></td>
</tr>
<tr>
<td>Taco Bell</td>
<td><strong>$206 million</strong></td>
</tr>
<tr>
<td>Coke &amp; Diet Coke</td>
<td><strong>$174 million</strong></td>
</tr>
<tr>
<td>Wrigley’s</td>
<td><strong>$117 million</strong></td>
</tr>
<tr>
<td>M&amp;M candies</td>
<td><strong>$80 million</strong></td>
</tr>
<tr>
<td>USDA 5-A-day</td>
<td><strong>$3 million</strong></td>
</tr>
</tbody>
</table>

Source: Nestle M, Food Politics, 2002
Supersizing—”better value”

<table>
<thead>
<tr>
<th>McDonalds</th>
<th>Price</th>
<th>Relative Size</th>
<th>Relative Extra cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 oz “Child size”</td>
<td>$0.89</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>42 oz “Super size”</td>
<td>$1.59</td>
<td>250%</td>
<td>79%</td>
</tr>
</tbody>
</table>
Munchies Kid’s Mix—
“Junk” food masquerading as health food?

Full page Ad from Wall Street Journal
“Mom and Dad, you’ll feel great about offering it to your kids because Munchies Kids Mix is a good source of 8 essential vitamins and minerals, has 0 grams trans fat and meets nutritional guidelines established by [Texas fitness expert] Dr. Kenneth Cooper for sugar, fat and sodium”

Munchies Kid’s Mix contains:
Cheetos, Doritos, Rold Gold pretzels, SmartFood popcorn, Cap’n Crunch cereal and M&M-like candy
FRENCH FRIES

20 Years Ago

210 Calories
2.4 ounces

Today

610 Calories
6.9 ounces

Calorie Difference: 400 Calories
Maintaining a Healthy Weight is a Balancing Act

Calories In = Calories Out

If you walk leisurely for 1 hour and 10 minutes you will burn approximately 400 calories.*

*Based on 160-pound person
Mortal Mistakes?
Is Pleasantly Plump OK?
Is Extra Heft Helpful?

Weight-Related Annual Mortality in U.S.

Source: Adapted by CTLT from Scientific American, June 2005
Context

Economic
High energy foods cost less; Low energy foods cost more.

Grains, added sugars, and added fats
- Among the lowest cost sources of dietary energy
- Inexpensive, good tasting, & convenient
- Highly promoted

More nutrient dense meats, fish, fresh vegetables, and fruits
- Generally cost more
- Less convenient
- Less promoted
Context

Societal
Societal Influences on Energy Intake

Poor Foods Available

Availability, low cost, sugars, fat, good taste

Food Industry

Packaging, advertising, size
“Pouring Rights” in schools
Channel One
## Food Balance Sheet

<table>
<thead>
<tr>
<th>Poor Foods</th>
<th>Healthy Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly accessible</td>
<td>Low accessibility</td>
</tr>
<tr>
<td>Convenience</td>
<td>Less convenient</td>
</tr>
<tr>
<td>Good-tasting</td>
<td>Worse tasting</td>
</tr>
<tr>
<td>Promoted heavily</td>
<td>Not promoted</td>
</tr>
<tr>
<td>Inexpensive</td>
<td>Expensive</td>
</tr>
</tbody>
</table>

*Brownell, K, JHU Symposium, 2004*
Eating Out

- On a typical day, 40% of adults will eat out at a restaurant.
- Restaurant sales exceeded $440 billion in 2004.
- Americans spend $920 per person on food consumed away from home.

Tillotson J, Ann Rev Nutr, 2004
Societal Influences on Energy Expenditure

- Labor-saving devices
- Dangerous neighborhoods
- Design of suburban neighborhoods
- Decreased physical education in schools
Moving Too Little?

Percent of Schools that Require Physical Education by Grade, 2000

Source: Adapted by CTLT from Burgeson et al, 2001
Moving Too Little?

Moderate Physical Activity for Adults by Sex and Age

National Health Interview Survey, NCHS, CDC.
Prevalence of Obesity by Hours of TV/Day

NHES* Youth Aged 12–17 in 1967–1970
NLSY** Youth Aged 10–15 in 1990

*NHES = National Household Education Surveys
**NLSY = National Longitudinal Survey of Youth
From http://www.cdc.gov/nccdphp/burden_pres/bcd_30.htm
Why the Increase?

Multiple causes

Lifestyle, environment, and genes

Bottom line = ENERGY BALANCE (calories and physical activity)

More calories consumed

• Larger food portions and sizes
• Eating out more often
• Increases in soda, pizza, and candy consumption

Fewer calories being used up

• Declines in physically activity
• Increases in sedentary lifestyle and screen time
  – Computers and television time
Process
Obesity Policies: “Stakeholders”

Food & Nutrition Policies & Programs

Consumers

High SES Middle Income Poor

Food Manufacturer & Processors

Food Wholesalers and Retailers

Academia and Research

National Food Companies Multinationals Supermarkets

NGOs (consumer groups) INGOs

Government Agencies

FDA MOF MOH MOF MOFW MOE

Politicians Political parties

Donor Governments

Fishing Industry

Food Producers

Schools & Institutions

Farming Seeds & Fertilizer Transport Storage
Food industries: stock holder vs. public health’s interests?

- Lobby Congress to eliminate regulations perceived as unfavorable
- Press federal regulatory agencies not to enforce such regulations
- File lawsuits when they don’t like regulations
- Co-opt food and nutrition experts by supporting professional organizations and research
- Market directly to children, minorities, and people in dev’g countries—whether or not the products are likely to improve people’s diets

Brownell, K, JHU Symposium, 2004
Industry Leverage

- Massive resources
- Some leading scientists-consultants, funding
- Willingness to use scientific findings selectively
- Political influence
- Playbook?
Food Industry Playbook

- Focus on personal responsibility
- Freedom of choice
- No good or bad foods
- Physical activity
Now and again: the food and beverage industry demonstrates its commitment to a healthy America\textsuperscript{1–4}  

Susan Finn

**INDUSTRY-WIDE ACTION**

Food and beverage companies are accustomed to meeting a constant demand for new and improved products that combine taste, convenience, and nutrition. Historically, the industry has been quick to respond when called on to support public health goals. For example, in tandem with Healthy People 2000 (7), in 1991, the industry was called on to introduce 5000 new reduced-fat food products by the year 2000. In fact, food and beverage manufacturers met this goal by 1995.
Leverage for Public Health

- Science
- Credibility with media
- Grass roots movements
- Very important cause
Policy Response
Concern over obesity is NOT new.

- 1952 Am Heart Assoc. identified obesity as a cardiac risk factor modifiable by diet & exercise
- Subsequently...numerous guidelines by federal and private organizations
Uniform label
Lists per serving quantity of 14 mandatory items
Standard serving sizes
Launched by Sec Mike Leavitt, June 2005

We Can! provides resources and community-based programs for parents, caregivers, and youth that focus on behaviors to encourage healthy eating, increase physical activity, and reduce sedentary time.

A National Obesity-Prevention Program
Developed by the National Institutes of Health

Eat a sufficient amount of a variety of fruits and vegetables per day
Choose small portions at home and at restaurants
Eat fewer high-fat foods and energy-dense foods that are low in nutrient value such as French fries, bacon, and doughnuts
Substitute water or fat-free or low-fat milk for sweetened beverages such as sodas
Engage in at least 60 minutes of moderate physical activity on most, preferably all, days of the week
Reduce recreational screen time to no more than two hours per day
Implications

- “Eat less, exercise more”
- Personal responsibility
- Consumer choice
- No good or bad food
- Focus on physical activity
Policy Impact

Note: Data are for ages 20 years and over, age adjusted to the 2000 standard population. Obesity is defined as BMI >= 30.0. Black and white exclude persons of Hispanic origin. Persons of Mexican-American origin may be any race.

National Health and Nutrition Examination Survey, NCHS, CDC

Note: Overweight is defined for ages 6-19 years as BMI >= gender- and weight-specific 95th percentile from the 2000 CDC Growth Charts for the United States Black and white exclude persons of Hispanic origin. Persons of Mexican-American origin may be any race.

National Health and Nutrition Examination Survey, NCHS, CDC.
Current maze of gov’t agencies hinders effective leadership

CDC should serve as command & control center

Contradictory roles—schizophrenic role of USDA

School Lunch program: calories from fat exceed 30% target

Presence of “competitive foods” (doughnuts, sodas, etc) on school grounds compete with gov’t-regulated foods and drinks

Only 17 states limit access to competitive foods in schools

Need for proactive & creative policies
Tobacco
Salt
Calories/energy balance

Public Health Impact

No. of behaviors
Need for a new framework
Intervention Settings

Home
“A child’s health and well-being is fostered by a home environment with engaged and skillful parenting that models, values, and encourages sensible eating habits and a physically active lifestyle.”

Community
“Local governments, public health agencies, schools, and community organizations should collaboratively develop and promote programs that encourage healthful eating behaviors and regular physical activity, particularly for populations at high risk of childhood obesity.”

Institute of Medicine, 2004
Examples

Norway and Sweden have banned advertising aimed at children.

Australia, Italy and New Zealand have statutory guidelines that limit advertising to children.

What about federally mandated campaign of public-service ads to promote healthy eating & counteract effects of “junk-food” adds?
First they ignore you,
Then they laugh at you,
Then they fight you,
Then you win.

Mahatma Ghandi