Obesity Prevention: Environment, Research, Policy

Debra Haire-Joshu, PhD
Professor of Behavioral Science
Director of the Obesity Prevention Center
St. Louis University School of Public Health
(joshud@slu.edu)
Overview

- Summarize the impact of obesity
- Identify determinants of obesity
- Review evidence for obesity prevention
- Discuss policy implications
Facts about obesity

Among adults in the U.S.
- 127 million overweight
- 60 million obese
- 9 million severely obese

Among children
- 9 million children OR
- 1 in 5 children

Figure 2. Age-adjusted* prevalence of overweight and obesity among U.S. adults, age 20-74 years

*Age-adjusted by the direct method to the year 2000 U.S. Bureau of the Census estimates using the age groups 20-39, 40-59, and 60-74 years.
**Disparities and obesity**

Highest prevalence of overweight and/or obesity

- The American Indian population in Arizona
  - 80% women; 67% men

- African American women
  - 78% overweight (50.8% obese)

- Mexican American men
  - 74.4% overweight (29.4% obese)

*(National Center for Health Statistics, National Health and Nutrition Examination Survey 2002)*
What is the economic impact of obesity?

2001

- 400,000 deaths per yr
- Obesity related health conditions = $13,000,000,000 costs to employers (DHHS)
- 27% increase spending obese vrs. normal weight
- Obesity-related costs 6-17 yr olds = $127 million/yr

(DHHS 2004; Thorpe et al October 2004)
The current obesity pandemic reflects the profound changes to society over the past 20 - 30 years that have created an environment that promotes a sedentary lifestyle and the consumption of a high fat, energy dense diet.
**Obesogenic food environment**

- Trends in working Mothers with children under 18
  - 47% to 72% (1975 to 2000)
- Decrease in meal preparation time
  - 44 to 32 min/day (1965 to 1999)
- Meals eaten outside home
  - 50% of food $$
  - 35% to 100% daily caloric requirements in 1 meal
- Total calories increased by 20% (1983 to 2000)
- 2% children meet recommended dietary guidelines

*(IOM 2004; Nestle et al 2002)*
Portion size change from 1984 to 2004

- Hamburgers increase from 333 to 590 cals
- French fries from 240 to 610 cals OR 2.4 to 6.9 oz.
- Soft drinks from 85 to 250 cals OR 6.5 to 20 oz.
<table>
<thead>
<tr>
<th>Age</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-8 Years</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>9-13 Years</td>
<td>21%</td>
<td>21%</td>
</tr>
<tr>
<td>14-18 Years</td>
<td>32%</td>
<td>52%</td>
</tr>
</tbody>
</table>

*One serving equals one eight ounce cup.*

Physical activity

- 60% of adults do not engage in the recommended amount of activity
- 25% of adults are not active at all
- 14% of youth report no recent physical activity
Obesogenic physical activity environment

- 81 billion have at least one car
- 7% of trips by walking; 25% without sidewalks
- Bike lanes for ~5% trips

(IOM 2004; French et al, 2001)
Obesogenic school environment

- Youth should participate in physical activity of at least moderate intensity for 30 to 60 min/day

Physical education classes

- High school-enrollment dropped from 42% (1991) to 25% (1995)
- Kindergarteners avg 57 min/wk in PE
- Third graders average 25 min/wk in moderate to vigorous activity
- Decline in % of trips walking to school from 20% (1977) to 12% (2001)

(CDC 2004; IOM 2004)
The prevention and management of obesity is not just the responsibility of individuals, their families or health professionals but requires a commitment from all sectors of society.
What is the evidence for obesity prevention?

- Individual and family based studies
  - African American women and parents
  - School aged children-parents
  - Preschool children-parents
- Promote national diet and activity guidelines
- Address underserved populations
  - African American
  - Urban and Rural
Community Partner
Parents As Teachers

- 2300 programs
- For parents of kids prenatal to age 3
- Parents are child’s most influential teacher/role model
- Personal visits, group meetings, newsletters
- Educator certification
Study 1-‘High 5, Low Fat Study’

- Develop a nutrition program to improve parental modeling of dietary patterns
- Train parent educators to deliver H5LF
- Evaluate program impact on fat, fruit and vegetable intake of 1000 African Americans
### 6 Month Pre-Post Results

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Intervention</th>
<th>P&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in FV intake</td>
<td>41%</td>
<td>53%</td>
<td>.002*</td>
</tr>
<tr>
<td>Less than 30% fat intake</td>
<td>14%</td>
<td>20%</td>
<td>.03*</td>
</tr>
<tr>
<td>Improved eating behaviors</td>
<td>25%</td>
<td>32%</td>
<td>.02*</td>
</tr>
</tbody>
</table>
Study 2- H5LF National Dissemination

- Translate H5LF to website CD-ROM
- Use PAT National Center communication channels to increase adoption of program
- Evaluate CD-ROM reach to parents
- Compare characteristics of parent educators (nonadopters, adopters, implementers)
Post survey of 5000 parent educators (600 to date)

Parent educator knowledge and adoption

# of parents reached (out of ~ 100,000)

(Jackie Joyner Kersee taping)
Study 3-‘High 5 for Kids’

- Build on findings of H5LF Program
- Does improved parental modeling of FV translate to improved FV intake of preschool children?
**H5K Intervention**

- Tailored newsletter
- Computer-community targeted audio storybooks
- Calendars
- Preliminary results-
  - FV intake (.08 svg)
What have we learned?

- Prevention studies + effects
  - ? Maintenance/maximize impact
- Obesity cannot be cured by targeting individuals—multilevel approaches needed
- Changes in the environment *prior* to intervention may enhance effects

*(Wadden et al 2002; Kumanyika, 2001)*
Modified from Fitenbaugh C, Kumanyika S, Morabia A, Jefferey R, Antipatis V. IOTF website 1999:
Environmental and policy initiatives

- Food labeling and advertising
- School based policies
- Financial incentives
- Transportation and urban development

(IOM 2004)
Food labeling

Labels influence knowledge, attitudes, food patterns
- 43% shoppers recognized labels
- 22% influenced to buy products by label
- 34% did not buy a product because of label
- Requests to make labels easier to read

(Weimer, 1999)
Policy recommendations for food labeling

- FDA should revise label based on consumer research to maximize use
- Require labeling at point of purchase (restaurants, movie theatres, quick marts)
The school environment

- Easy access to ala carte foods
- 75% vending drinks, 85% snacks--poor nutrition
- Pouring rights contracts-180 "pouring rights" contracts in 33 states (2000)

(IOM report, 2004)
Policy recommendations for schools

- School foods must meet USDA portion standards
- Ban vending machines
- Make schools ad free zones
- Require and fund PE in schools
Media and food-activity

- More than $12,000,000,000 a year is spent on advertising and marketing
- Children view 40,000 ads per yr; (2004)
- 50% ads for candy, fast food, snacks, soda
- Children cannot distinguish info from advertising (APA; AAP)
Policy recommendations for media/advertising

- Reduce or regulate food ads targeting kids
- Empower the FTC to address advertising
- Expand public education campaigns to promote healthy eating and exercise
- Evaluate food guide pyramid
Financial incentives

Food pricing impacts consumption

- Reductions in price of low fat vending machine snacks by 10%, 25%, 50% =
- Increased % sales by 9%, 39%, 93%

(French et al, 2000)
Financial incentives

Alter cost depending on quality of foods
- Subsidies for FV
- Tax soft drinks, candy to fund + media campaigns
- Manufacturer incentives to decrease portion sizes
- Remove sales tax on exercise equipment
Transportation/urban development

Design of physical surroundings affects activity level

- Inexpensive prompts can encourage activity
- Signs prompt stair use (from 6-14%) \(^1\)
- Transit oriented neighborhoods (yield 120% more pedestrian trips) \(^2\)

\(^1\) Russell et al 1999; \(^2\) Cervero et al, 1995
Transportation/urban development

- Funding for pedestrian walkways, parks, etc.
- Provide incentives for
  - active transportation to work
  - companies with activity friendly environment
Is there political will for change?

Number of Media Stories

3 Month Periods
Overview of legislative activities

- S. 1172 IMPACT Act (Frist, Dodd)
- S. 2399 Healthy Lifestyles Act (Fitzgerald, Kennedy)
- S. 2421 Health Care Modernization, Cost Reduction, Quality Improvement Act (Kennedy)
- S. 2551 Childhood Obesity Reduction Act (Frist)
- S. 2558 Healthy Lifestyles Prevent. America (Harkin)
- S. 2894 Prevention of Childhood Obesity (Kennedy)
S. 2399 Healthy Lifestyles Act of 2004

- IOM to develop and publish Dietary Guidelines for Americans and revise the food guide pyramid
- PE in schools and training for school personnel
- Employee participation in physical activity
- Design pedestrian zones, cycling paths, and parks in residential communities
- Supports State comprehensive obesity prevention and control programs
S. 2894 Prevention of Childhood Obesity Act

- Federal commission to evaluate obesity prevention
- National summit and FTC authority to implement advertising guidelines
- Fund VERB campaign and state obesity prevention programs
- Community grants for built environment
- Healthy preschool, high school, afterschool
  - Bans soda machines, competitive foods
  - Fund PE, report cards, training grants
Summary and conclusions

- Obesity is a complex, societal problem which is significantly influenced by multiple factors.
- Prevention of obesity in adults AND children needs to be a national public health priority.
- Coordinated efforts are needed to promote positive change from the individual to society at large.