Obesity Prevention: Environment, Research, Policy

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Overview

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

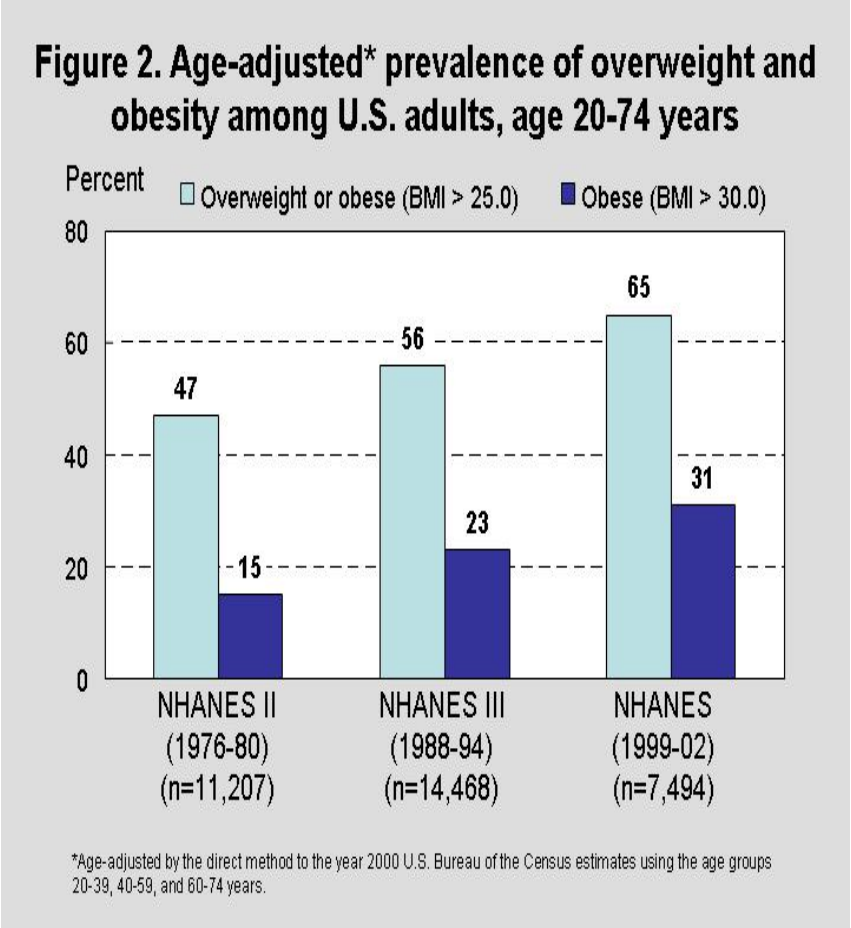
Facts about obesity

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



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.**

Children Consuming Three or More Servings* of Soft Drinks Per Day

Age	Females	Males
6-8 Years	3%	7%
9-13 Years	21%	21%
14-18 Years	32%	52%

*One serving equals one eight ounce cup.

Source: US Department of Agriculture. Food and Nutrition Service. Children's diet in the mid-1990s: dietary intake and its relationship with school meal participation. 2001.

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

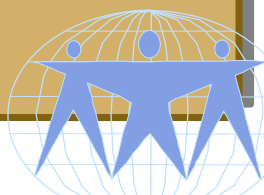
- Youth should participate in physical activity of at least moderate intensity for 30 to 60 min/day

<u>Physical education classes</u>

- 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

H5LF

6 Month Pre-Post Results

	Control	Intervention	P<
Increase in FV intake	41%	53%	.002*
Less than 30% fat intake	14%	20%	.03*
Improved eating behaviors	25%	32%	.02*

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)**

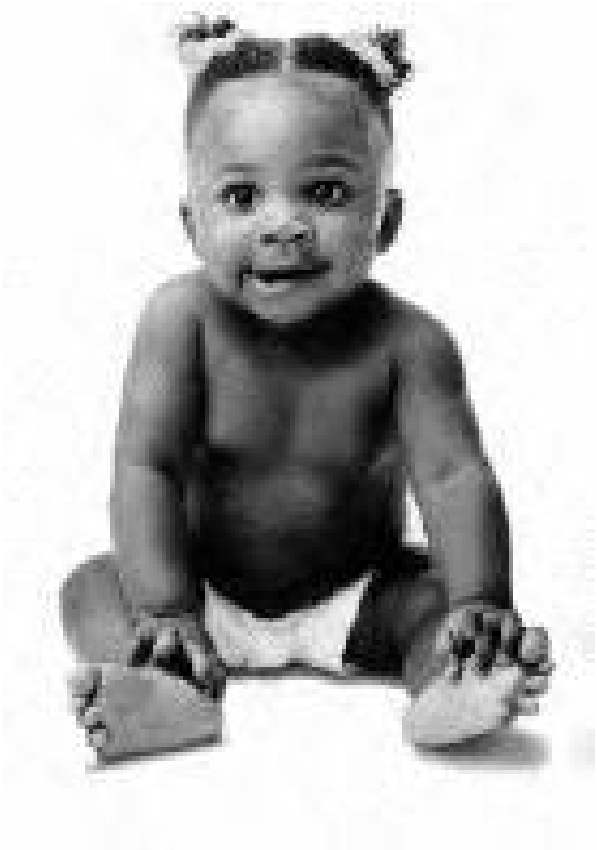
H5LF *National Dissemination*

- 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)

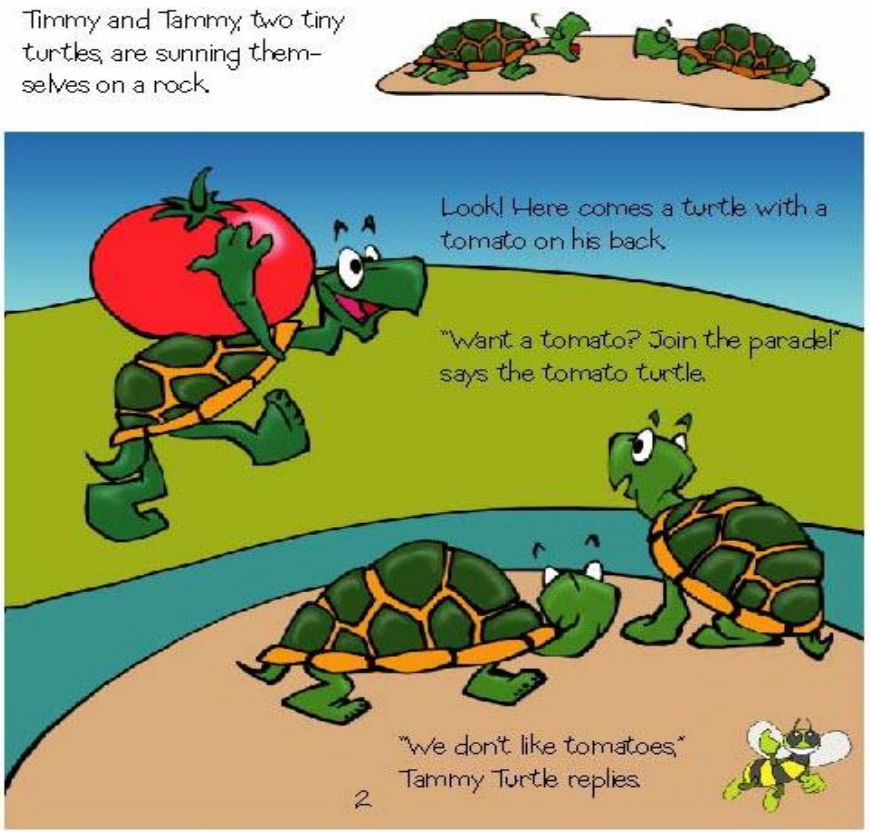
Study 3- 'High 5 for Kids'

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



H5K Intervention

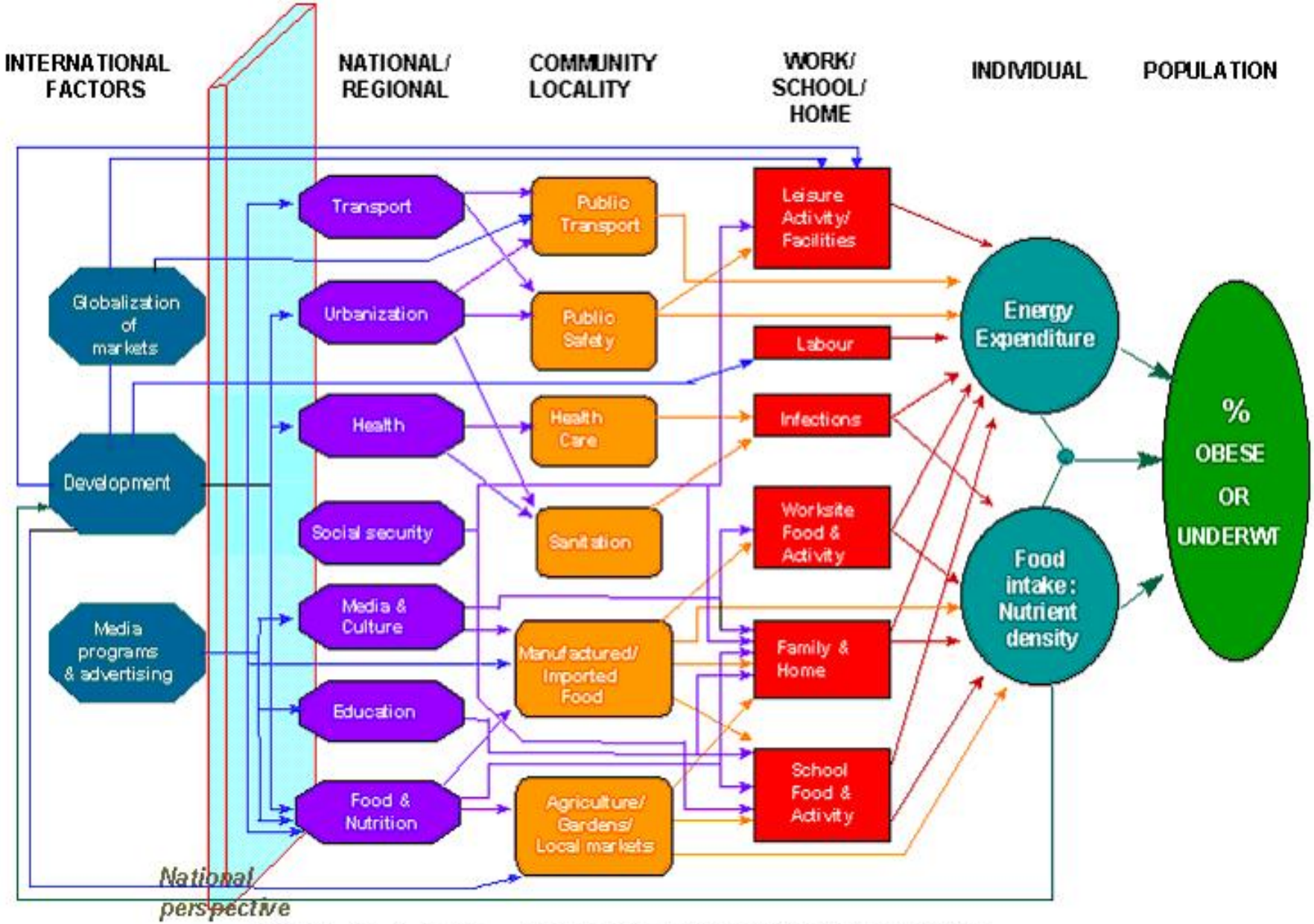
- **Tailored newsletter**
- **Computer-community targeted audio storybooks**
- **Calendars**
- **Preliminary results-**
  - **FV intake (.08 svg)**



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 Ritenbaugh 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)

Nutrition Facts

Serving Size ½ cup (114g)
Servings Per Container 4

Amount Per Serving

Calories 90	Calories from Fat 30
	% Daily Value*
Total Fat 3g	**5%**
Saturated Fat 0g	**0%**
Cholesterol 0mg	**0%**
Sodium 300mg	**13%**
Total Carbohydrate 13g	**4%**
Dietary Fiber 3g	**12%**
Sugars 3g	
Protein 3g	

Vitamin A 80% • Vitamin C 60%
Calcium 4% • Iron 4%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

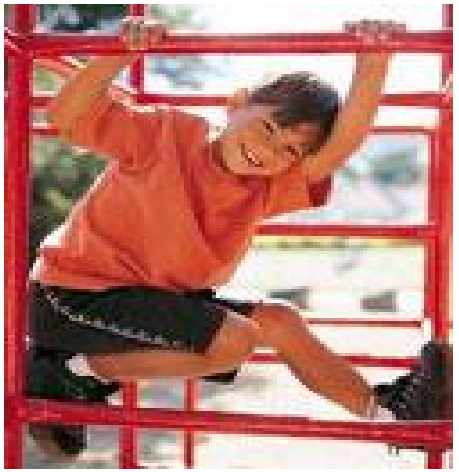
The school environment

- 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 to 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

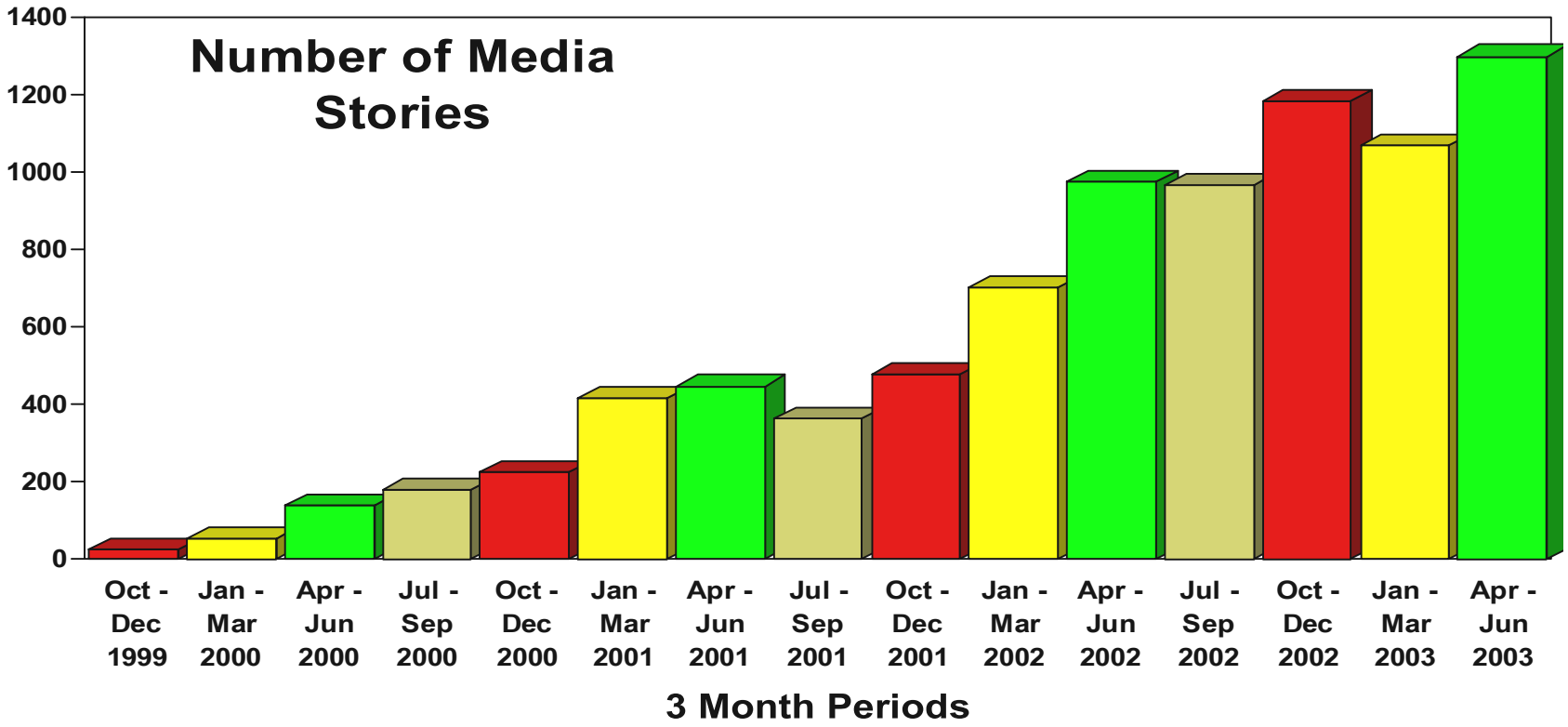
- **Inexpensive prompts can encourage activity**
- **Signs prompt stair use (from 6-14%) [1]**
- **Transit oriented neighborhoods (yield 120% more pedestrian trips)[2]**

([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?



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.**