

**Seminars on Adolescent Health:  
Nutrition and Physical Activity, Part I  
July 30, 2003**

Health Resources and Services Administration  
Maternal and Child Health Bureau

**Moderator: Trina Menden Anglin, M.D., Ph.D.,  
Chief, Office of Adolescent Health**

**The Obesity Epidemic Among  
Youth in the United States:  
Causes and Prevention**

**Steven Gortmaker, Ph.D.**

Harvard School of Public Health

## **Overview**

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- **A brief overview of the magnitude and rapid growth of the obesity epidemic among youth**
- **The fundamental causes of the epidemic**
- **Why industries generating the obesity epidemic find it in their interest to continue their work**

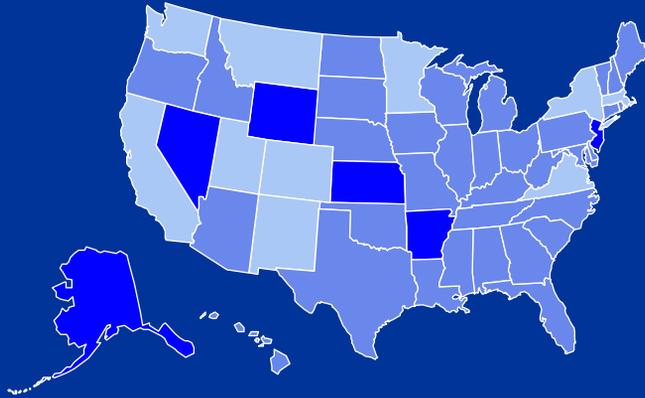
## **The Problem:**

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- **Obesity is increasing rapidly among children, youth and adults in the US**
  - **Increases are found in all regions of the country, urban/rural, both sexes, all ethnic groups, rich and poor**
-

## Obesity Trends\* Among U.S. Adults BRFSS, 1990

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5'4" woman)

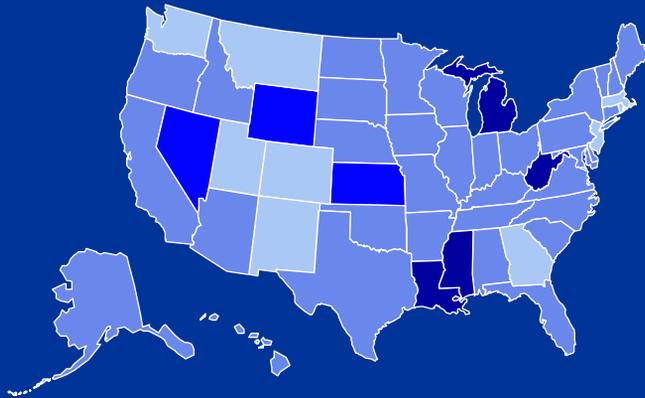


Source: Mokdad AH.



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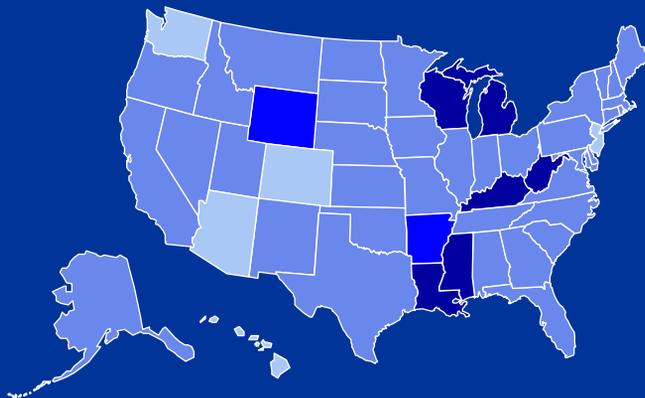


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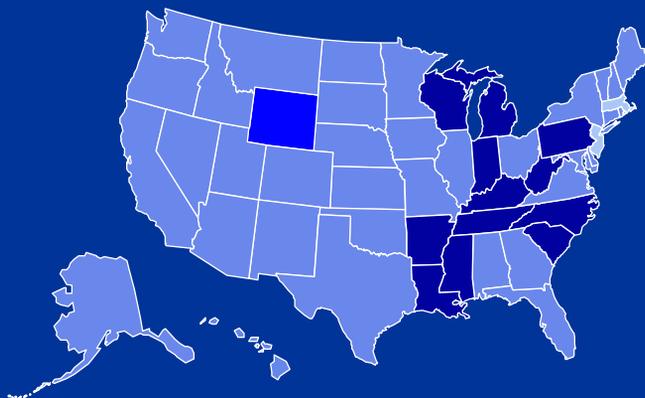


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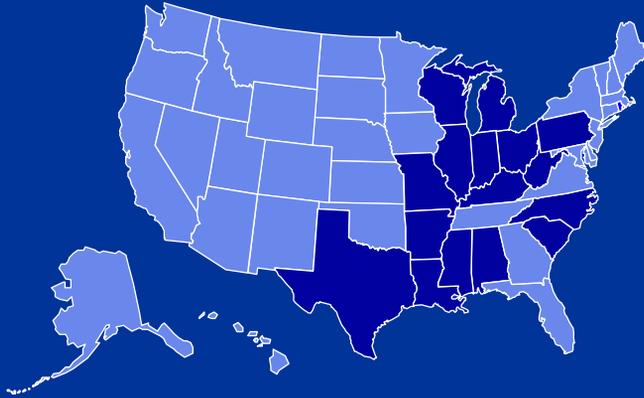


Source: Mokdad AH.



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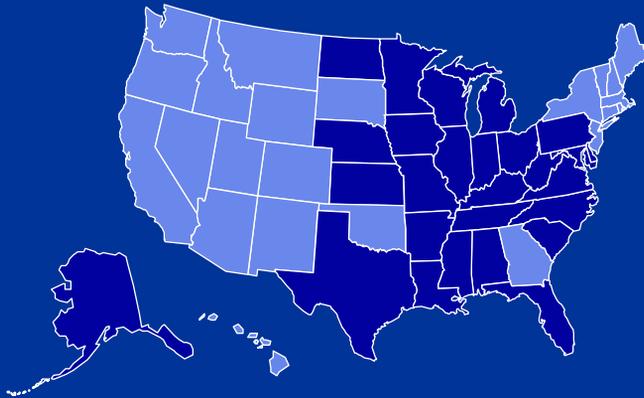
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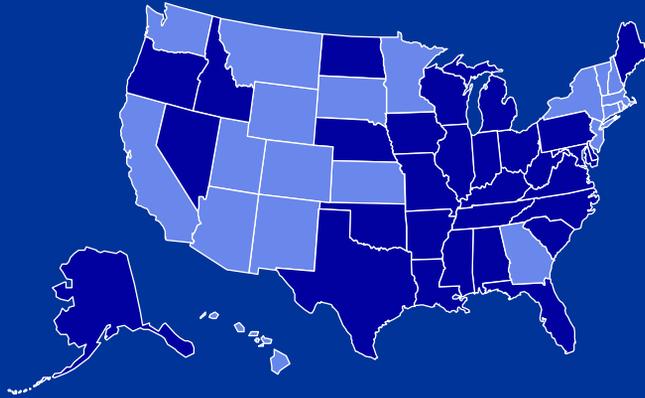
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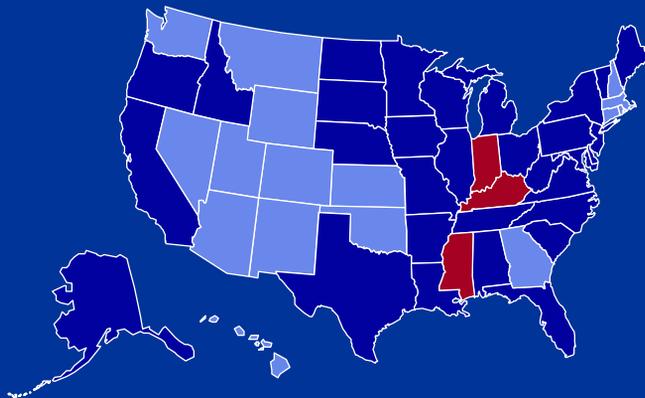


Source: Mokdad AH.



## Obesity Trends\* Among U.S. Adults BRFSS, 1997

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5'4" woman)

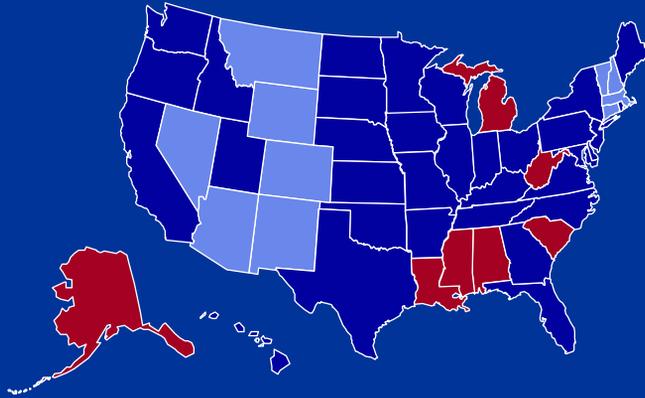


Source: Mokdad AH.



## Obesity Trends\* Among U.S. Adults BRFSS, 1998

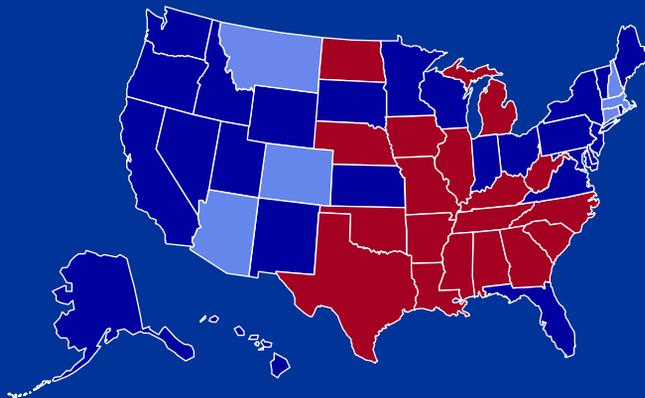
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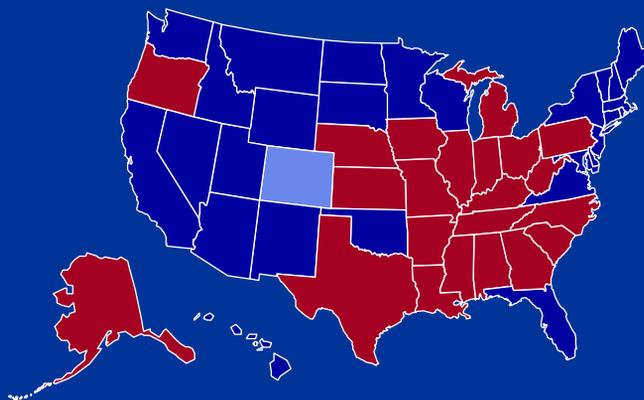


Source: Mokdad A H, et al. *J Am Med Assoc* 2000;284:13

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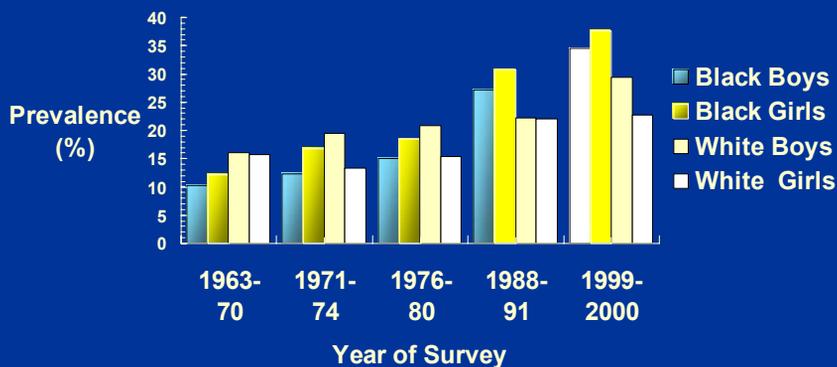
**BRFSS, 2000**

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5'4" woman)



Source: Mokdad A H, et al. *J Am Med Assoc* 2001;286:10

## Prevalence of Overweight Among U.S. Boys and Girls by Race/Ethnicity, Ages 6-11, 1963-2000



Overweight defined as a BMI at the 85th percentile or higher (for age and sex)  
 Troiano RP et al. *Arch Pediatr Adolesc Med* 1995;149:1085-1091. Ogden et al. *JAMA* 2002;288:1728-32.

# Causes of the Obesity Epidemic

## Obesity Fundamentals

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- **Obesity is caused by excess Energy Intake over Energy Expenditure**
- **Daily imbalance is on average small: lots of small seemingly inconsequential acts add up to a difficult problem over time - the “fat ratchet”**
- **Individual behaviors are strongly influenced by their context**

## The Important Forces:

- **F**ood producers and the "Fast Food" industry - if they're successful, we all eat more
- **A**dvertisers for food and video/film industries - if they're successful, we all buy more
- **T**elevision and video/film production and distribution industry - if they're successful we all watch more

**The growth of the fast food industry and increasing portion sizes make it easy for children to overeat**



“A large fast food meal (double cheeseburger, french fries, soft drink, desert) could contain 2200 kcal, which... would require a full marathon to burn off”

Ebbeling CB, Pawlak DB, Ludwig DS  
 Childhood obesity: public health crisis, common sense cure. Lancet 2002;360:473-82.

## Sugar-sweetened beverages contribute to childhood obesity incidence

### Soft Drink Consumption & Obesity

#### *A Longitudinal Observational Study: Results*

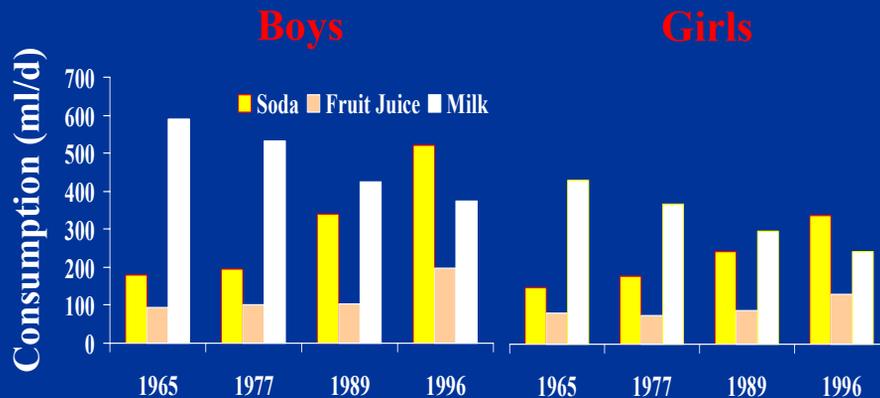
	Change in BMI (kg/m <sup>2</sup> )			Odds Ratio of Obesity		
	<i>Mean</i>	<i>C.I.</i>	<i>P</i>	<i>OR</i>	<i>C.I.</i>	<i>P</i>
<b>Baseline Consumption</b> (per 1 serving/d)	.18	.09 – .27	.02	1.5	.6 – 3.5	ns
<b>Change in Consumption</b> (per 1 serving/d increase)	.24	.1 - .39	.03	1.6	1.1 – 2.2	.02

Adjusted for baseline measures of obesity, demographics, school, physical activity, TV viewing, dietary fat, and fruit juice and total energy intake

Ludwig DS, Peterson KE, Gortmaker SL. Lancet 2001, 357:505-8

## Trends in Beverage Consumption Among US Adolescents, USDA 1965-96

*Cavadini et al. Arch Dis Child 2000*



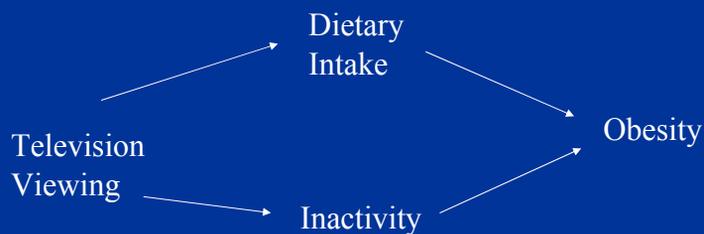
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## Television Viewing and Energy Balance: The Science

- A relatively new construct and focus of research
- How can television viewing cause obesity?
- Evidence in support of hypothesis

## Hypothesized Impact of Television Viewing on Obesity



# Evidence for the Impact of Television Viewing on Obesity

Population-Based Epidemiological  
Data

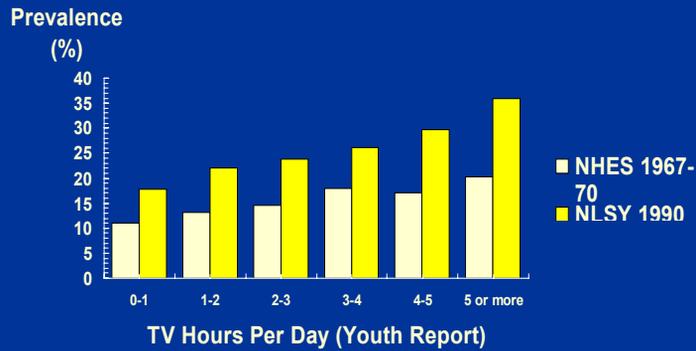
# Evidence for the Impact of Television Viewing on Obesity

Population-Based  
Epidemiological Data

13 studies in United States

9 studies in other countries

## Prevalence of Obesity by Hours of TV per Day; NHES Youth Aged 12-17 in 1967-70 and NLSY Youth Aged 10-15 in 1990



Dietz WH, Gortmaker SL. Do we fatten our children at the tv set? Obesity and television viewing in children and adolescents. *Pediatrics*, 1985; 75:807-812.

Gortmaker SL, Must A, Sobol AM, Peterson K, Colditz GA, Dietz WH. Television viewing as a cause of increasing obesity among children in the United States, 1986-1990. *Archives of Pediatrics and Adolescent Medicine*. 1996;150:356-362.

## Evidence for the Impact of Television Viewing on Obesity

Randomized Controlled Trials

## Randomized Controlled Trials: Television and Obesity

- **School-based intervention: primary grades;** impact on mean BMI (Robinson. JAMA.1999. )
- **Clinical Intervention:** Obese children and youth; impact of reducing inactivity on overweight (Epstein et al. Health Psychol. 1995; Arch Pediatr Adolesc Med.2000;154:220-226.)
- **School-based intervention; middle school;** reduced television predicts reduced obesity among girls (Gortmaker et al. Arch Pediatr Adolesc Med. 1999)

## Planet Health



- **Steven Gortmaker, PhD PI**
- **Karen Peterson, RD, ScD Co-PI**
- **Jean Wiecha, PhD Project Director**
- **Nan Laird, PhD Co-Investigator**

Carter J, Wiecha J, Peterson KE, Gortmaker SL. Planet Health. Champaign, Illinois: Human Kinetics Press, 2001.

## Behavioral Targets

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- Reduce TV viewing to less than two hours per day
- Decrease consumption of high fat/saturated fat foods
- Increase moderate and vigorous activity
- Increase consumption of fruits and vegetables to five-a-day or more

## Effects of Planet Health



- Obesity among females in intervention schools was reduced compared to controls (OR 0.48; P=0.03)
- Reductions in TV; both boys & girls
- Among girls, each hour of TV => reduced obesity (OR 0.86/hour; P=0.02)
- Increases in fruit and vegetable intake and less increment in total energy intake among girls (P=0.003 and P=0.05)
  
- Gortmaker SL, Peterson K, Wiecha J, Sobol AM, Dixit S, Fox MK, Laird N. Reducing obesity via a school-based interdisciplinary intervention among youth: *Planet Health*. *Archives of Pediatrics and Adolescent Medicine*. 1999;153:409-18.

## Intervention Impact by School

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- **Females:** evidence for intervention impact in 4 of 5 schools. If the one ineffective site is dropped, intervention effect on obesity is: OR 0.31; P=0.0002
- **Males:** if the same school is dropped, intervention effect on obesity is OR 0.70; P=0.05

## Change in Obesity by Ethnic Group

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- **Females: evidence for intervention impact by ethnic group**
  - Afro-American (OR 0.14; 95% CI 0.04-0.51)
  - White (OR 0.48; 95% CI 0.20-1.13)
  - Hispanic (OR 0.38; 95% CI 0.03-5.3)

## Safety: Females

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- Evidence for lower incidence of disordered eating behaviors among girls in intervention schools
- Among nondieting girls, onset of these behaviors was 11 times more likely in control versus intervention schools (odds ratio: 10.9; 95% confidence interval: 1.1, 112)

Austin SB, Field AE, Gortmaker SL, 1992. Abstract; Academy for Eating Disorders

## The Important Forces:

- **F**ood producers and the "Fast Food" industry - if they're successful, we all eat more
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## The Consequences?

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- **Clear evidence for increasing risk of cardiovascular disease, diabetes, adult obesity and other morbidities**
- **But we don't really know the magnitude: never before have our children and youth been so overweight (and we don't understand all consequences for adults either)**

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Freedman DS, Dietz WH, Srinivasan SR, Berenson GS. The relation of overweight to cardiovascular risk factors among children and adolescents: the Bogalusa Heart Study. *Pediatrics* 1999 Jun;103(6 Pt 1):1175-82

Must A, Spadano J, Coakley EH, Field AE, Colditz G, Dietz WH. The disease burden associated with overweight and obesity. *JAMA*. 1999 Oct 27;282(16):1523-9.

## Growth in Physical Size (Weight) of the Population

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- **The growing relative weight of the US population has other consequences beyond health (excess morbidity, mortality and quality of life)**
  - **need for larger: clothes, cars, seats on public transportation, home furnishings etc**
  - **need for more food intake to sustain weight (given a constant level of physical activity), thus**
  - **a growing demand for food (growing your market)**

# Can the Epidemic be Halted?

- **Limited evidence for efficacy of treatment of obesity**
- **The causes of the epidemic are rooted in the success of the food, television/video/movie/game and advertising industries. These industries are unlikely to change. Why should they when they can make money and continue to increase the size of their market?**
- **Some first steps?**

## **A common sense approach to prevention and treatment of childhood obesity**

Home	Set aside time for Healthy meals Physical activity Limit television viewing
School	Fund mandatory physical education Establish stricter standards for school lunch programmes Eliminate unhealthy foods—eg, soft drinks and candy from vending machines Provide healthy snacks through concession stands and vending machines
Urban design	Protect open spaces Build pavements (sidewalks), bike paths, parks, playgrounds, and pedestrian zones
Health care	Improve insurance coverage for effective obesity treatment
Marketing and media	Consider a tax on fast food and soft drinks Subsidise nutritious foods—eg, fruits and vegetables Require nutrition labels on fast-food packaging Prohibit food advertisement and marketing directed at children Increase funding for public-health campaigns for obesity prevention
Politics	Regulate political contributions from the food industry

Source: Ebbeling CB, Pawlak DB, Ludwig DS. Childhood obesity: public health crisis, common sense cure. *Lancet* 2002;360:473-82.

# Programs, Interventions and Resources

Bonnie A. Spear, PhD, RD  
Associate Professor Pediatrics  
University of Alabama at Birmingham

## Schools

- School nutrition/PE environment
- Food venues
- Physical activity opportunities

## **School Health Programs and Policies Study (SHPSS 2000)**

**J. School Health, vol 71, 7,2001**

- 76% of high schools, 64% of middle schools and about 50% of elementary schools offer hamburgers, pizza, other ala carte items at lunch
- 13% of schools offer name brand fast foods

## **School Health Programs and Policies Study (SHPSS 2000)**

### **Vending Machines:**

- ✓ Accessible by students in 26% elementary, 62% middle and 95% high schools
- ✓ Most foods high in added fats, sugar and sodium
- ✓ 54% of the schools contracting with soft drink companies
  - 79% received % of proceeds
  - 63% received cash and/or school supplies

## School Health Programs and Policies Study (SHPSS 2000)

% of School Districts:

Requiring fruit/veggies on ala carte line 20%

But...

90% of the schools offered fruits and vegetables

48% offered low-fat yogurt, low-fat cookies or low-fat pastries

## Do prices make a difference?

Food	Baseline	Low price	Post intervention
Fruit (pieces)	14.4	63.3	26.1
Carrots (packets)	35.6	77.6	42.0
Salads	14.6	16.0	16.0

JADA 97,1997

## What about vending machines?

- Low fat foods identified by orange dot
- After 4 weeks, prices were reduced by 50%
- During the price intervention purchases of low fat food increased by 80% from 25.7% to 45.8% of total sales
- Purchases returned to baseline when prices were returned to normal

AJPH 87, 1997

## Problems with Pricing

- Sustainability
- Potential loss of revenue
- Alternate pricing of popular foods
- Finding other revenue sources

## **Physical Activity in Youth**

- Nearly half of American youth 12-21 years of age are not vigorously active on a regular basis
- Physical activity declines with age from childhood into adulthood

## **School Health Programs and Policies Study (SHPSS 2000)**

- 16% of high schools required students to take PE classes
- Requirements fall steadily as grade increases
  - 54% require 1<sup>st</sup> graders to enroll in PE
  - 26% require 7<sup>th</sup> graders to enroll in PE
  - 5% require 12<sup>th</sup> graders to enroll in PE

## Percentage of Students Enrolled in Physical Education Class, by Grade



NCYFS = National Child and Youth Fitness Study  
YRBS = National Youth Risk Behavior Survey

## Key Components of School & Community Interventions

- Culturally and linguistically sensitive
  - Incorporate cultural values: eating, physical activity, health, family, community
- Comprehensive curriculum
  - Address at least two of the following:
    - ▶ Nutrition
    - ▶ School Meals
    - ▶ Health Education
    - ▶ Physical Activity
    - ▶ Sedentary Activity
    - ▶ Behavior Modification

## Key Components of School & Community Interventions

- Convenient
- Low Cost
- Easily Accessible
  - Available to all youth
  - Overweight children are not stigmatized

## School-Based Programs

- Results of school-based interventions include:
  - Reductions in hours of TV watched per week
  - Increased frequency and duration of physical activity
  - Decreased intakes of total and saturated fats
  - Increased consumption of fruits and vegetables
  - Reductions in rate of increase in BMI percentile
  - Improved blood lipid levels

## Community-Based Programs

- ↑ awareness of health risks of overweight & importance of a healthy lifestyle
  - Policy changes related to school meals
- Environmental changes that support good eating and physical activity behaviors
  - More walking paths, bicycle lanes, sidewalks
  - Increased availability of low fat, nutritious snack foods in cafeteria, vending machines, stores

<b>Program</b>	<b>Grade level</b>	<b>Physical and/or Sedentary activity</b>	<b>Food Service and/or Nutrition</b>	<b>Behavior Modification</b>
<b>Healthy Start</b>	Preschool	Both	Nutrition	X
<b>TAKE 10!</b>	K - 5	Both	Nutrition	X
<b>CATCH</b>	K - 5	Both	Both	X
<b>SPARK</b>	K - 5	Both	Nutrition	X
<b>Pathways</b>	3 - 5	Both	Both	X
<b>Planet Health</b>	6 - 8	Both	Nutrition	X

# Healthy Start

- **Grade/Age - Pre-K 3 & 4 yrs**
  - ✓ Significant decreases in blood lipids
  - ✓ Increased nutrition and health knowledge
  - ✓ Decreased fat and saturated fat content of preschool meals and snacks

[www.healthy-start.com](http://www.healthy-start.com)

# TAKE 10!®

- **Grade/Age: K-5<sup>th</sup> grade**
  - ✓ Reduced sedentary behavior during school day-increase in moderate to vigorous activity
  - ✓ Integrated short periods of PA into classroom time
  - ✓ 75% of teachers felt this was an excellent addition to classroom time
  - ✓ Sustained one year later in 60-80%

[www.take10.net](http://www.take10.net)

## Pathways

- **Program:**
  - **Grade/Age:** Grades 3-5, American Indian children
  - school-based intervention to prevent obesity
- **Outcomes**
  - Introduced American Indian children to variety of PA
  - Introduce and reinforced healthful eating through increasing variety of foods
  - All curriculums available on-line at [Http://hsc.umn.edu/pathways](http://hsc.umn.edu/pathways)

## Harvard University Obesity Reduction Programs

**Eat Well & Keep Moving**  
4<sup>th</sup>-5<sup>th</sup> grades

**Planet Health**  
6<sup>th</sup> & 7<sup>th</sup> grades

- Increased fruit & veg intake
  - Decreased total & sat. fat
  - Increased mod.-to-vig. physical activity
  - Decrease television viewing
  - Reduction in the prevalence of obesity- felt secondary to decrease TV time
- [orders@hkusa.com](mailto:orders@hkusa.com)

# GEMS

Girls Health Enrichment Multi-Site Program

**Target: 8-10 year old AA females**

**Outcome:**

**increased overall levels of PA**

**increased consumption of fruits and vegetables**

**Decreased consumption of high-fat foods**

[sss.bsc.gwu.edu/gems](http://sss.bsc.gwu.edu/gems)

## Studies of Weight Loss in Children

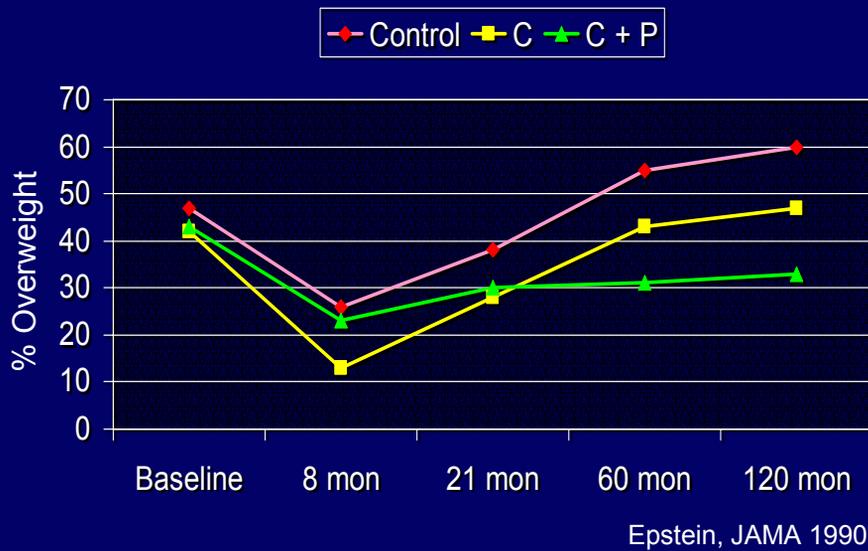
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**6 to 12 years old**

**20 – 100% above ideal body weight**

- Implement 6 month program of behavior modification to improve diet and activity
- 10 year follow-up
  - **34%** had at least a 20% weight decrease
  - **30%** were not obese (<120% ideal weight)

## Ten Year Follow-up



## Key Components of Group Programs

- Healthy eating
- Increased activity
- Behavior modification
- Family-based change
- Interdisciplinary teams
  - Physicians, dietitians/nutritionist, exercise personnel, and behavioral counselors. Some provide cooking demonstrations.

## **Shapedown™**

Program:

- Enhance self-esteem, adopt healthy habits, normalize weight

Outcome

- Weight loss gradual
- Effective at 10 year follow-up

[www.shapedown@aol.com](mailto:www.shapedown@aol.com)

## **KidShape® / KinderShape®**

Program:

- Two 4-week modules for 6-14 years
- 6-week program for parents of 3-5 year olds

Outcome

- 87% of families lost weight, 80% kept if off for 2 years

[info@kidshape.com](mailto:info@kidshape.com)

## Committed to Kids<sup>®</sup>

### Program

- 4 10-weeks sessions (severe, moderate, mild, and maintenance)
- 6-18 years of age

### Outcome

- significant decrease in body weight, body fat and BMI found in 62.5% who complete
- 1 year success rate of 70-75%

[www.committed-to-kids.com/home.html](http://www.committed-to-kids.com/home.html)

## LESTER<sup>®</sup>

(Let's Eat Smart Then Exercise Right)

### Program

- Dietitian-led, 8-week program
- 6-11 years of age
- Combination of individual and group sessions

### Outcome

- Sign. Decrease in anthropometric
- Decrease in caloric and % fat intakes

[Susan.teske@chsys.org](mailto:Susan.teske@chsys.org)

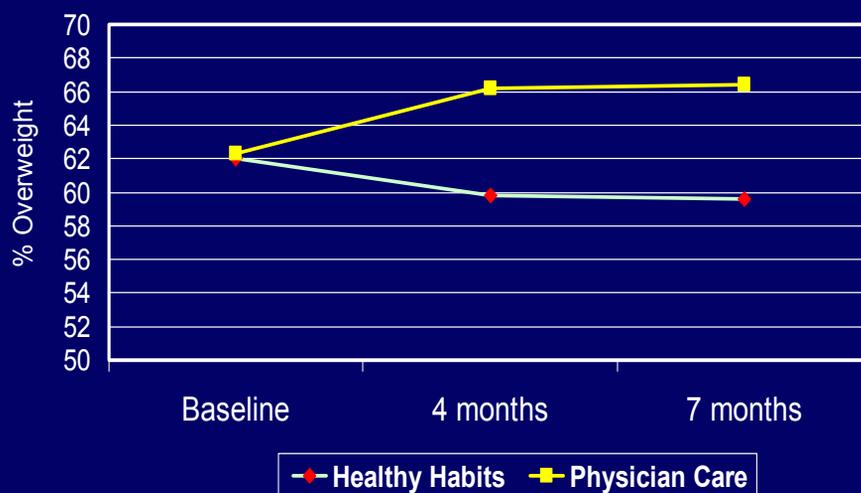
## Programs Based in Primary Care Offices

- Evaluated Programs
- Programs Under Development

## **“Healthy Habits”**

- Office-initiated weight control for adolescents
- Computer assessment of behaviors and guidance of behavior change
- One meeting with physician to finalize plans
- Weekly calls with counselors, then biweekly

## "Healthy Habits" Outcomes



Saelens BE. Obes Res 2002;10:22

## PACE +

- Computer based counseling in MDs offices, targeting
  - Moderate PA\*
  - Vigorous PA\*
  - Dietary fats\*
  - Fruit and Vegetable intake\*

\*subject chooses area to work on

- **Results**

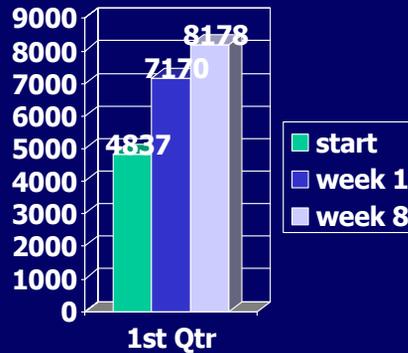
- Individuals who use the PACE+ system significantly improved “targeted” behaviors more than non-targeted behaviors
- Highly rated by all participants as useful information

## **Health Partners: 10,000 steps**

- Targeted to adults 35-50 who are interested in becoming more physically active.
  - Components
    - Pedometer
- **Average Steps**
  - Average inactive person 2,000-4,000 steps/day
  - Average moderately active- 5,000-7,000 steps/day
  - 10,000 steps the equivalent to 5 miles/day

## Results

- 69% increase in the number of steps during the first 8 weeks
- 31% reached the goal of 10,000 steps
- 50% did not reach goal, but felt level of activity had improved



## Other studies

- Study of overweight, diabetic patients showed that:
  - Patients increased to >10,000 steps/d and approached 19,000 steps/day
  - With activity there was significant weight loss and improved insulin sensitivity  
Diabetes Care: 18:775-778,1995.
- No studies in kids

## Programs Under Development

- PROS: Pediatric Research in Office Settings
- Kaiser Permanente: A.I.M. for a Healthy Weight

### PROS Pilot: Randomized controlled trial of office practices

- Target population: 3 to 7 year olds at risk for obesity
- Intervention: guidance about healthy activity and eating
- Outcome at two years:
  1. BMI percentile
  2. Eating and activity behavior

## Kaiser Permanente Message... A.I.M. for Healthy Weight

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- ⇒ **A**DVISE All Children/families about healthy behaviors and weight
- ⇒ **I**DENTIFY Children at Risk (BMI 85-95%) or OW (BMI >95%)
- ⇒ **M**OTIVATE Families to make behavior changes

## Future Goals: Health Care Programs

- Evaluation and dissemination of program outcomes
  - Short term and long term BMI changes
  - Health behaviors
  - Emotional/psychological/functional change
- Matching programs to patients
- Help for the primary care provider



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION



# How Are the Nation's Schools Doing in Promoting Physical Activity and Healthy Eating?

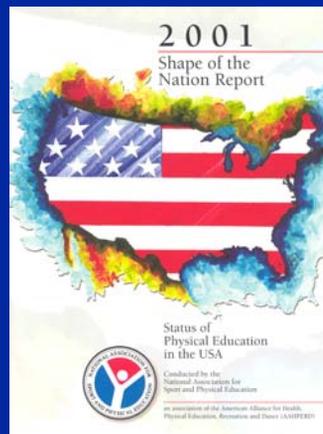
Howell Wechsler, Ed.D, MPH

Division of Adolescent and School Health

July 2003

## State Mandates for Physical Education

- 48 states have some kind of mandate for PE
- # states requiring daily PE, K-12: 1
- # states requiring daily PE, K-8: 1
- High school: majority of states require 1 year or less of PE



## Physical Education Requirements by Grade



Source: CDC, School Health Policies and Programs Study 2000



## Daily Physical Education for All Students

- Daily PE or its equivalent\* is provided for entire school year for students in all grades in:
  - ✓ 8% of elementary schools (excluding kindergarten)
  - ✓ 6% of middle/junior high schools
  - ✓ 6% of senior high schools

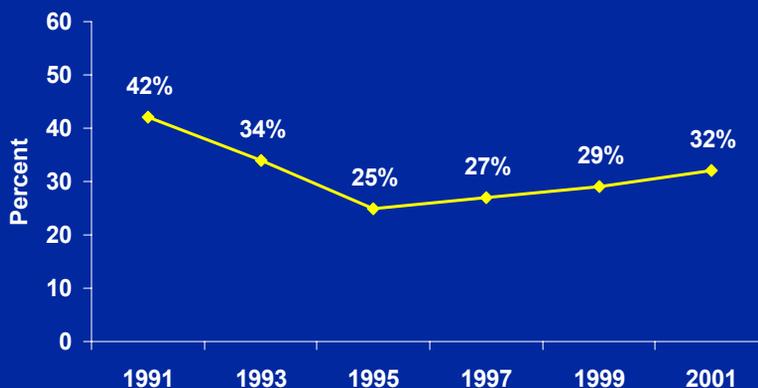
\*Elementary schools: 150 minutes / week;  
secondary schools: 225 minutes / week



Source: CDC, School Health Policies and Programs Study 2000



## Percentage of U.S. High School Students Who Attended Physical Education Classes Daily, 1991 - 2001



Source: CDC, National Youth Risk Behavior Survey



## Percentage of Schools\* in Which Required Physical Education is Taught Only by Physical Education Teachers

- Elementary schools: 70%
- Middle/junior high schools: 64%
- Senior high schools: 61%

\*Among the 96% of schools that require physical education

Source: CDC, School Health Policies and Programs Study 2000



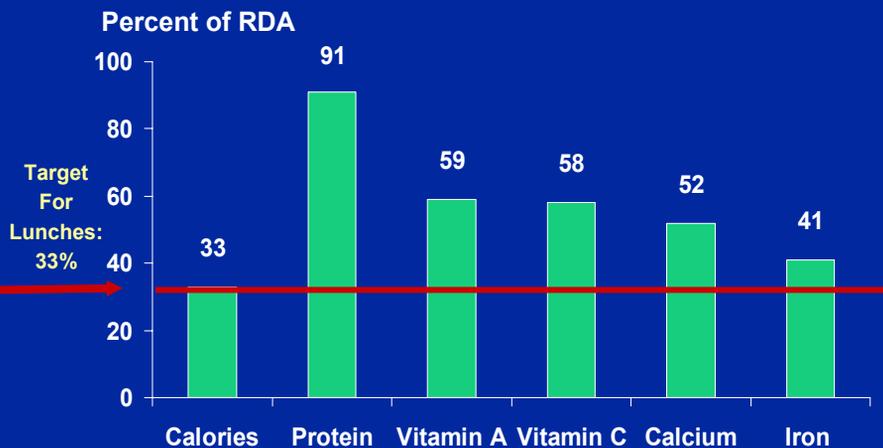
## After School Physical Activity Programs

- 49.0% of schools offer intramural activities or physical activity clubs for students.
  - ✓ Among these schools, 14.7% provide transportation home for students who participate.
- 99.2% of co-ed middle/junior and senior high schools offer interscholastic sports.

Source: CDC, School Health Policies and Programs Study 2000



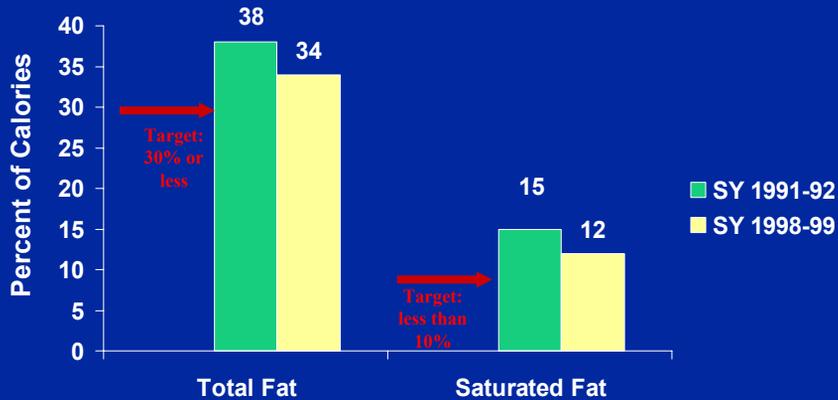
## NSLP Lunches Provide One-Third or More of the Daily RDA



Source: School Nutrition Dietary Assessment Study-II (School Year 1998-99)



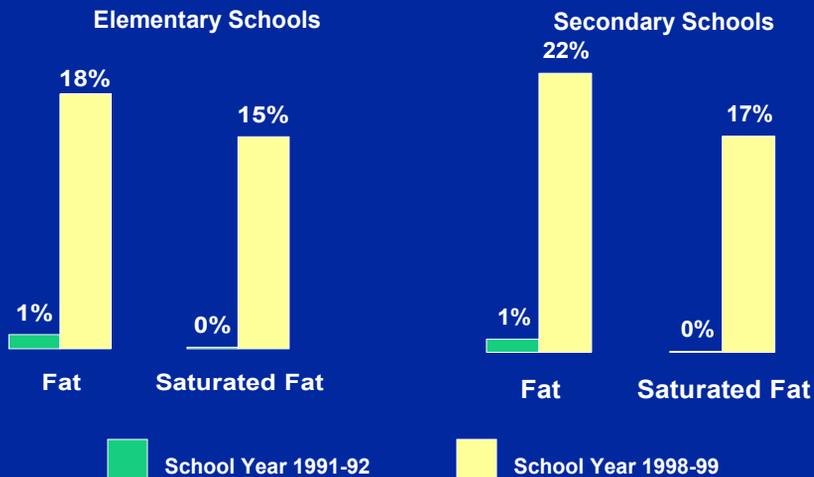
## School Lunches Are Now Significantly Lower in Fat



Source: School Nutrition Dietary Assessment Study-II (School Year 1998-99)



## Percent of Schools Meeting the Fat and Saturated Fat Standards for Lunches Offered



Source: School Nutrition Dietary Assessment Study-II (School Year 1998-99)



## Average Distribution of School\* Milk Orders, by Type of Milk

- Whole milk: 22%
- 2% reduced-fat milk: 41%
- 1% low-fat milk: 28%
- Skim milk: 8%

52% of all milk ordered is chocolate or flavored

\*Among the 63% of schools in which milk is ordered at the school level

Source: CDC, School Health Policies and Programs Study 2000



## Certification and Training of Food Service Coordinators

- Certification for district-level food service directors: 18% of states offer and 6% require
- 60% of districts and 52% of schools have certified food service coordinators
- 40% of district food service directors and 14% of school food service managers have undergraduate degrees

Source: CDC, School Health Policies and Programs Study 2000



## USDA's Competitive Foods Regulations

- Prohibits sale of “foods of minimal nutritional value” (i.e., soda, water ices, chewing gum, and certain candies) in food service area during meal periods.
- “Foods of minimal nutritional value” does not include many popular snacks high in fat, added sugar, or sodium (e.g., potato chips, chocolate candy bars, donuts, juice drinks).
- States, districts and schools are authorized to impose additional restrictions on the sale of all foods at any time throughout the school.



## State Competitive Foods Policies

- 32 states have no regulations beyond USDA regulations
- 2 states have established nutrition standards
- 4 states prohibit or limit food and beverage sales in elementary schools
- Other states limit times when students can buy competitive foods or foods of minimal nutritional value

[http://www.fns.usda.gov/cnd/Lunch/CompetitiveFoods/state\\_policies\\_2002.htm](http://www.fns.usda.gov/cnd/Lunch/CompetitiveFoods/state_policies_2002.htm)



## Foods and Beverages Commonly Offered a la Carte

- Fruits or vegetables: 74% of schools
- 100% fruit or vegetable juice: 63%
- High-fat baked goods: 59%
- Pizza, hamburgers, or sandwiches: 56%
- Soda pop, sports drinks, or fruit drinks: 32%

Source: CDC, School Health Policies and Programs Study 2000



## Student Access to Competitive Foods and Beverages in Schools

Schools with vending machines or a school store

- ✓ Elementary Schools: 43%
- ✓ Middle Schools: 74%
- ✓ Senior High Schools: 98%



Source: CDC, School Health Policies and Programs Study 2000



## Types of Foods Available in School Vending Machines or Stores\*

- High-fat salty snacks: 64% of schools
- High-fat baked goods: 63%
- Low-fat salty snacks: 53%
- Non-chocolate candy: 52%
- Chocolate candy: 47%
- Fruits or vegetables: 18%

\*Among the 61% of schools with a vending machine or store

Source: CDC, School Health Policies and Programs Study 2000



## Types of Beverages Available in School Vending Machines or Stores\*

- Soft drinks, sports drinks, fruit drinks: 76% of schools
- 100% fruit juice: 55%
- Bottled water: 49%
- Vegetable juice: 13%

\*Among the 61% of schools with a vending machine or store

Source: CDC, School Health Policies and Programs Study 2000



## School-Level Requirements for Instruction

	Elementary schools	Middle schools	Senior high schools
Nutrition and dietary behavior	85	81	87
Physical activity	77	75	79

Source: CDC, School Health Policies and Programs Study 2000



## Median Number of Hours of Instruction

	Elementary schools	Middle schools	Senior high schools
Nutrition and dietary behavior	5	4	5
Physical activity	3	4	5

Source: CDC, School Health Policies and Programs Study 2000



# SHPPS 2000 Reports

**Journal of School Health**  
Volume 11, Number 7 Published Online 10/2007 by the American School Health Association October 2007

**SHPPS 2000**  
SCHOOL HEALTH POLICIES AND PROGRAMS STUDY

Health Education  
 Physical Education & Activity  
 Food Service  
 Health Services  
 Mental Health & Social Services  
 School Policy & Environment  
 Faculty & Staff Health Promotion  
 Family & Community Involvement

School Health Policies and Programs Study:  
 A Summary Report

## State-Level School Health Policies and Practices

A State-by-State Summary from the School Health Policies and Programs Study 2000

**SHPPS 2000**  
SCHOOL HEALTH POLICIES AND PROGRAMS STUDY

**CDC**  
Department of Health and Human Services  
 Centers for Disease Control and Prevention

<http://www.cdc.gov/shpps>

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**“Together** we really can  
 make a **difference** in the  
 health of our nation's children.”

— David Satcher, MD, PhD  
 Chairman, Action for Healthy Kids

**Our Collaborators**

American Academy of Family Physicians

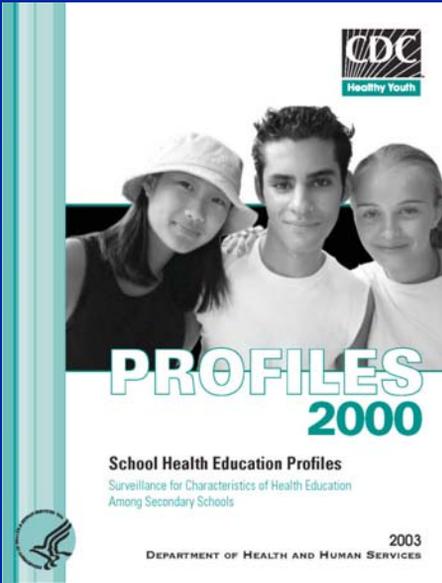
About Action for Healthy Kids

Action for Healthy Kids is about creating health-promoting schools that support sound nutrition and physical activity as part of a total learning environment.

**What's Happening**

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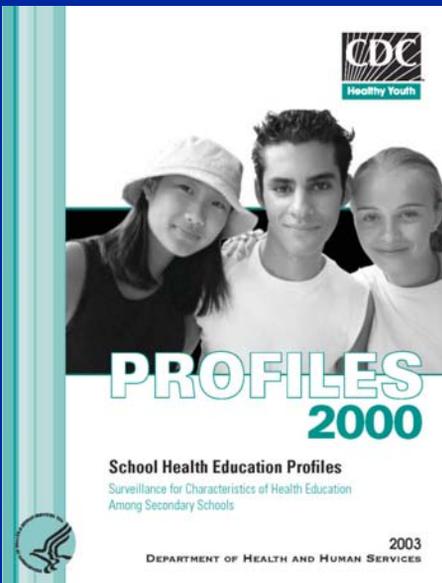
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The image shows the cover of the 'School Health Education Profiles 2000' report. It features a photograph of three diverse teenagers (two girls and one boy) smiling. The CDC logo and 'Healthy Youth' tagline are in the top right. The title 'PROFILES 2000' is prominently displayed in large, bold letters. Below the title, it reads 'School Health Education Profiles: Surveillance for Characteristics of Health Education Among Secondary Schools'. At the bottom, it says '2003 DEPARTMENT OF HEALTH AND HUMAN SERVICES' and includes the Department of Health and Human Services logo.

### Methods

- Representative **state-wide** samples of middle and senior high schools
- Conducted during even-numbered spring semester
- Separate questionnaires for principals and lead health education teachers
- Questionnaires are self-administered and mailed to participants

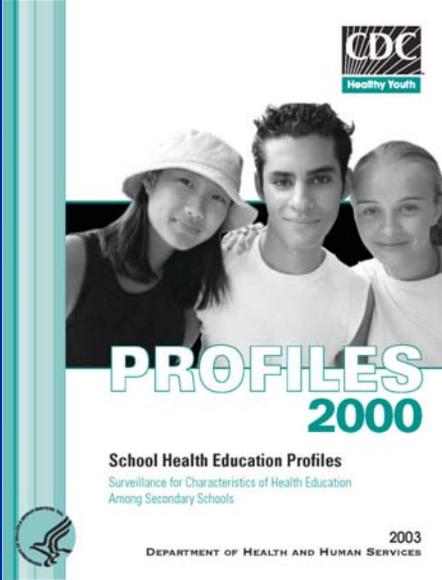


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### Nutrition Topics

- Amount of time for lunch
- Policies on requiring availability of fruits and vegetables
- Student access to 9 different types of foods and beverages in vending machines or school stores
- Nutrition education topics taught





**Physical Activity Topics**

- PE requirements and exemptions
- Use of physical activity as punishment
- PE teacher certification requirements
- Intramural opportunities
- Use of facilities for community programs
- Topics taught in health education



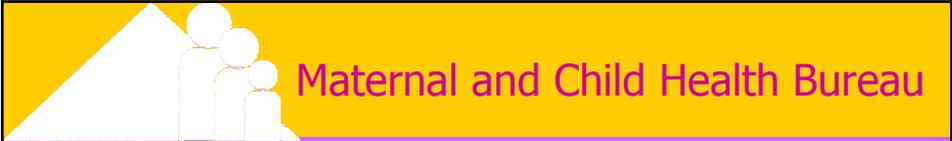
DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION



SAFER • HEALTHIER • PEOPLE

# How Are the Nation's Schools Doing in Promoting Physical Activity and Healthy Eating?

Howell Wechsler, Ed.D, MPH  
Division of Adolescent and School Health  
July 2003



Maternal and Child Health Bureau

# **Question and Answer Session**