The Childhood Overweight Epidemic: What are the Causes and What Can Schools Do?

Wendy Wolfe, Ph.D.
Div. Nutritional Sciences, Cornell

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Rates Higher in NYS and Increasing
Overweight (>95th percentile):
• 24% of NYC K-5th graders in 2003 – vs. 19% in 1990
• Rest of NYS: 22% of 3rd graders
  – 1987: 13% of 2nd & 5th graders
• 16% of low income NYS 2-4 yr olds (2002)
  – vs. 12% in 1989

A Sobering Note – If we don’t act now:
• One in three U.S. children born in 2000 will become diabetic if current trends continue (CDC, 2003)
• If we don’t effectively prevent and treat childhood obesity, this may be the first generation of children who don’t live as long as their parents (K. Browne, Harvard, 8/03)

Approach is Critical
• Focus on lifestyle, not weight
  – Increasing weight is indicator of unhealthy eating and activity patterns of most kids
  – All kids benefit from being more active and eating well
  – Focus on weight can contribute to low self-esteem, eating disorders, unhealthy dieting

Dietary Changes and Childhood Overweight
Diet of U.S. children:
• Percent calories from fat has decreased (from 35-37% in 1987 to 32-33% in 1995)
However:
• Total fat intake has stayed about the same
• Total calorie intakes have increased for all age groups
• Added sugars are key contributor
Beverage Intake Among Adolescents Aged 11-18, 1965-1996


Sugar-sweetened beverages and childhood overweight

• Strong association:
  – For every additional serving of sugar-sweetened drinks consumed by a child, the odds of becoming overweight increased by 60% (Ludwig et al, 2001).
• Suggested mechanism: Liquid sugar less compensated for later than solid sugar (DiMeglio & Mattes 2000)

Portion Sizes: Bigger Meals, Bigger Kids?

• Growing size of single-serving beverages
• Super-sized portions at fast food restaurants
• Increasing portion sizes at home as well
• When offered larger portions, children over age 4 will eat more regardless of their actual hunger. (Rolls 2000) Adults do too.

Food Pyramid
Actual Consumption, U.S. Total

• Too much fat and sugar
• Too few fruits and vegetables
• Too little milk and dairy
• Too few whole grains

Source: Team Nutrition

Meal Patterns and Childhood Overweight

• Increased fast food
  – Children eat more calories on days they eat fast food (Bowman, 2004)
• Less family meals
  – Family meals linked to healthier eating, less overweight (JADA 382)

Breakfast Consumption U.S. Children

Survey Year

(Siega-Riz, 1998)
Breakfast and Childhood Overweight

• Children who skip breakfast are more likely to be overweight. (Wolfe, AJPH 1994; others)

• Teens who skip breakfast have higher daily fat intakes and are heavier. (Nicklas, AJCN, 1998)

• Breakfast also linked to better learning.

Physical Activity in U.S. Children

• Almost two-thirds of 9- to 13-year-olds participate in no organized physical activities outside school

• More than 1 in 5 engage in no physical activity in their free time

CDC Survey

PE and Recess

• Since 1989, many schools have abolished recess – only 26% of states recommend regularly scheduled recess in elementary schools

• In grade 9, 72% of students get regular physical activity, but by grade 12, only 55% of them are physically active at school.

• The majority of high school students take PE for only one year between 9th and 12th grades

www.actionforhealthykids.org/teamtools

What’s Taking the Place of Physical Activity?

Watching TV and playing video games...

Average time spent:

2.5 hours/day for 2-7 year-olds

4.5 hours/day for 8-18 year-olds

Children and Weight Training Kit, 2002

Television and Child Overweight

• 6th graders with TV in bedroom – 1970 – 6%
  – 1999 – 77%

• More than a third of kids under 6 have a TV in their bedroom.

• TV in bedroom linked with child obesity, poorer learning

(Kaiser Family Foundation, 1999)
Summary of Contributors to the Childhood Overweight Epidemic

1. Excessive TV viewing
2. Lack of physical activity
3. Over-consumption of sweetened beverages
4. Excessive portion sizes
5. High consumption of fast foods
6. Skipping breakfast
7. Lack of fruits, vegetables and dairy in diet

The Food and Activity Environment: A Cause of Childhood Overweight?

- Unhealthy food is cheap, heavily promoted, and engineered to taste good
- Healthy food is hard to get, not promoted, and expensive
- Walking, biking and other lifestyle physical activity is no longer easy
- Environment-Based Nutrition Interventions:
  - Instead of only teaching people “how” to lead healthier lifestyles, change things so it’s easier for them to do so

The School Nutrition and Physical Activity Environment

- Physical education
- Recess
- School lunch, lunchroom policies
- School breakfast
- A la carte, vending (during and after school)
- Classroom snack-times and parties
- Food as reward
- Fundraising, advertisements
- Nutrition education
- Role modeling

Promoting Physical Activity at School

- Daily PE and Recess recommended
  - NYS mandates 120 min/wk, K-6, not enforced
- “Quality PE”: Lifetime fitness skills
- Walking clubs, more intramurals
- After-school activities: jump-rope clubs, dancing, non-competitive games
- Why should schools care? Physical activity:
  - Reduces anxiety/stress, enhances self-esteem
  - May be linked to achievement, test scores

Walk Our Children to School (WOCS)

- Most children (85%) travel to school by car or bus—only 13% walk or bike
- Encourage kids to walk to and from school in groups accompanied by adults
- Work with local officials to ensure safe routes to school

School Meals: Timing, Recess

- Trend toward shorter lunch periods, early in day
- For kids to eat well:
  - Enough time to eat as well as socialize
  - Meals at times when children are hungry
- Recess before rather than after lunch:
  - Students eat better, waste less food (Getlinger, JADA)
  - Students behave better in cafeteria, playground, and classroom (case studies)
- School breakfast
**School Food:**
How get kids to eat healthier items?

- Skim or 1% milk only, vending and meals
- More local produce, Farm to School
- Taste tests: Takes around 8-10 tries of a new food before children come to accept it (Sullivan & Birch, Dev Psych 1990)
- Student input, youth empowerment

**Healthy School Fundraisers**
- Instead of candy/cookie dough sales, bake sales, soda contracts
- Healthy fundraisers:
  - Candles
  - Family fun night
  - Sled-a-thon
  - Garden seeds
  - “Trashwalk” - pledges
  - Outdoor pet wash
  - Baking potatoes

**School Snack-Times and Parties**
- Classroom snack-times common in elementary
- If have snack time, include fruits and vegetables
- USDA pilot study: kids will eat fruits and vegetables when offered mid-morning at no cost
- School/classroom parties: include healthy choices

**Use of Food as Reward in School**
- Candy for homework
- Pizza party for good behavior
- Ice cream if finish lunch in time
- Fast food coupon if meet reading goal
- Instead:
  - Extra recess
  - 10 minutes active fun in classroom or hallway
  - Walk with Principal (VA elementary school)

**Skills-Based Nutrition Education**
- Can support school environment changes
- Include diet and physical activity
- Behavior, skills focused
- Classroom, can be integrated into other subjects
- Lunchroom – link to classroom food preparation
- After-School
- Health Fairs

**Role Modeling**
- Role model what is expected of the students
- Worksite wellness for school staff
- Involve family and community
- PTA-sponsored events: healthy options, water and low-fat milk instead of fruit drinks
- Focus on lifestyle, not weight
School Meals: A Short Course
• Food service self-supporting, no district funding
• Costs increasing faster than reimbursement
• Reimbursable meals must meet nutrition guidelines, serve standard portion sizes
• Food service challenge:
  - Low-cost
  - Healthy
  - Liked by students

Competitive Foods: A La Carte/Vending
• Increasingly sold to balance food service budget
• Regs: No “foods of minimal nutritional value” (basically soda and candy) until after lunch
• Otherwise no federal/state regulations on allowable items or portion sizes
• Impact on diet:
  - Kids who eat NSLP lunches eat more vegetables and dairy, and less soda, fruit drinks, added sugars (1998-1999 CSFII, USDA)
  - Students in schools with competitive foods eat less fruits and vegetables (Cullen JADA 2000, Kubik AJPH, in press)

A La Carte/Vending: Need for Local Nutrition Guidelines
• State level: Many bills, including NYS, but few comprehensive policies like TX
• Unfunded mandates hard to pass
• State/federal policies depend on local enforcement
• Schools decide whether closed or open campus

Examples of Nutrition Guidelines
• Nutrient-Based:
  - Philadelphia: Snacks < 7 g fat, < 15 g sugar, Beverages ≥ 25% juice, plus water, milk
  - NYSSFSA “Choose Sensibly” based on these
  - Chicago: Snacks < 30% kcal from fat, < 40% sugar by weight
• Allowable/non-allowable items
  - LA: Beverages “≥ 50% fruit juice with no added sweeteners”
  - NYC DOE – list of allowable items

Environmental Interventions
• TACOS:
  - Increased availability + promotion of lower fat a-la-carte choices increased sales of these in intervention vs control high schools (French 2004)
• MSPAN
  - Similar intervention in CA middle schools, but no effect on diet (Sallis 2003)
• TEENS
  - Added same-price low-fat options and fruits and vegetables, marginally improved sales (Lytle, in press)

Pricing Strategies Can Change Student Purchasing Behavior
• Reducing price of low-fat snacks in HS vending machines increased sales without affecting average profit per machine
• Reducing price by 50% (plus promotion) increased sales of fruit by 400% and baby carrots by 200%, with no change in overall a la carte revenue
• Schools applying these now

French, AJPH, 2001; French, JADA, 1997
Keys to Successful Changes

- Broad coalition for effective team:
  - Food service, administration, school nurses, teachers, parents, nutrition and health professionals
- Student input important
- School Health Index
  - CDC tool to bring people together to assess school nutrition and activity environment and develop action plan to improve policies and programs

What is SPIN?

- A statewide partnership
- Goal: Create a pool of nutrition professionals to be resources to facilitate the process of improving the school nutrition and physical activity environment

SPIN’s Vision

- Year 1
  - Train nutrition professionals across NY on SHI, provide resources for action
  - Market to schools and statewide organizations
- Year 2:
  - Link trained nutrition professionals with interested schools
  - Assess SPIN program and materials
  - Make training available online through Cornell Nutrition Works

SPIN Partners

- NYS Department of Health (SPIN leadership)
- NYS Action For Healthy Kids
- Statewide Center for Healthy Schools
- Cornell Cooperative Extension
- NYS Dietetic Association
- Student Support Services Network
- The Sage Colleges
- American Cancer Society - Eastern Division
- NYS Education Department – Child Nutrition Program Administration