The Childhood Obesity Epidemic: Rebalancing the Scales

Kristy Alvarez, BS
Research Study Coordinator

Christopher Sciamanna, MD, MPH
Associate Professor

Department of Health Policy
Jefferson Medical College

Obesity is one of the biggest challenges to the well-being of the people of the United States, and indeed all industrialized nations. The negative health impacts of obesity are numerous and can be quite serious. In 2000, obesity was related to over 100,000 deaths.[1] In adults, overweight and obesity increases the risk of heart disease, diabetes and some types of cancer, while exacerbating musculoskeletal problems and hypertension. In 1999–2002, 65% of adults were overweight, 31% were obese.[2] Between the years of 1999 to 2004 the prevalence of overweight and obesity increased most dramatically among men and children.[3] About 16% of children and adolescents are now overweight.[2]

Childhood obesity is one of the most important pieces of the epidemic. If current obesity trends among children continue, adult rates will rise considerably, as about 50%–70% of obese children become obese adults,[4] and those who are initially overweight have the highest incidence of major weight gain.[5] Furthermore, overweight in adolescence has been shown to predict a wide range of adverse health effects regardless of adult weight.[6]

One question vital to tackling the issue is what exactly is causing the obesity epidemic? The simple answer is that for many, food intake and physical activity are not in balance. The factors that mediate this relationship are considerably more complex and far-reaching, including social, environmental, and policy conditions.

While discussion about how to address obesity in our society in general commonly results in debate about regulation vs. liberty, addressing the problem in children seems to induce more public support.[7,8] Additionally, the most effective policies in the largely successful campaign against tobacco were those focusing on children.[9] For these reasons, obesity in children may

be an ideal forum to tackle these issues, and avoid what looks like a very unhealthy future for America's population.

Some efforts are currently underway at the state level. As of Sept. 30, 2005, 42 states introduced approximately 200 bills that provide some level of nutritional guidance for schools, 44 states introduced legislation that would implement or enhance physical education or activity standards for school children, and 24 states introduced legislation calling for schools to educate children about nutrition and/or the benefits of physical activity. [10] However, it is important to keep in mind a bill introduced is not necessarily a bill passed, and may better yet be a bill overturned. This inconsistent pattern of legislation, marked with strong industry influence, can be seen in the poor state legislative record on soft drinks and snack food taxes.[8]

Researchers at the University of Baltimore have created a childhood obesity report card that compares legislation passed to curb childhood obesity at the state level.[11] Each state receives a grade based on their success at passing five types of legislation. These include: 1) controlling the types of foods and beverages offered during school hours, 2) limiting access to vending machines at designated times, 3) body mass index (BMI) measurement in school, state-mandated additional recess and physical education time, and 4) establishment of obesity and education programs as part of curriculum. The majority of states received a "C", and almost a quarter of them a failing grade, emphasizing the fact that not enough is being done.

One possible reason for the dearth of sufficient action may be the lack of clear evidence about which types of legislation and initiatives result in an actual change in obesity-related outcomes. Without this information, states and schools will likely find it very difficult to dedicate resources to childhood obesity when confronted with a myriad of other competing interests.

Promising progress in the quest for new evidence has taken place in the state of Arkansas. The 84th General Assembly Act 1220 of 2003 required the elimination of all vending machines in public elementary schools statewide, professional education for all cafeteria

workers, public disclosure of beverage contracting, establishment of a local parent advisory committee for all schools, establishment of an Arkansas Child Health Advisory Committee, and a child health report delivered annually to parents with BMI assessments. With the help of the Arkansas Center for Health Improvement and its director, the Surgeon General of Arkansas, Dr. Joseph W. Thompson, the state was able to examine the effect of this legislation, using longitudinal BMI data available by school district, school, grade level, ethnicity and gender. This combination of action and measurement has yielded many encouraging results. Further initiatives by the Arkansas Board of Education have taken place, self-regulation by food corporations in schools has begun, and best of all, a plateau in childhood BMI has been seen in a relatively short time.[12]

The federal government is also participating in the search for effective programs and policies. This fall, HEALTHY, a new 2.5-year National Institutes of Health (NIH) funded study, begins. Forty-two schools will be randomized to the intervention or control group to determine whether increases in physical education, healthier school food service and activities to promote healthy behavior can lower risks for type 2 diabetes. Risk factors for diabetes, including blood levels of glucose, insulin and lipids, as well as fitness level, blood pressure, height, weight, and waist circumference will be measured.[14]

Several local efforts to fight childhood obesity exist. One, a collaboration between the Jefferson School of Nursing and Police Athletic League's (PAL) Positive Images Program, which aims to fostering self-esteem and ambition among girls ages 11-17. While serving on the PAL Education Committee, Dr. Mary Schaal, Dean of the Jefferson School of Nursing, learned about the concerning incidence of obesity in the girls participating in the PAL Positive Images Program. Motivated by concern, a group of nursing students, led by Associate Professor and Assistant Dean of Nursing Programs, Dr. Elizabeth Speakman, joined together with the PAL Positive Images Program teachers and participants to create a comprehensive health curriculum. The 12-week program uses exercise and nutrition information as its basis for the educational sessions. Activities were designed to be highly interactive, such as a live demonstration on food choices and the creation of a dance music video. The curriculum incorporates the Positive Images Program primary emphasis on self-

esteem, while recognizing the importance of diversity in the surrounding community, and strives to work within the bounds of local food availability. Pre- and post-surveys will be administered to the participating children to assess knowledge changes.

These recent federal, state, and local efforts are building the base of knowledge necessary to fight childhood obesity, but more research is needed. It is essential that continued exploration into the roots of the problem is followed by thoroughly evaluated programs and policies to address them. It is with this further knowledge that we can prevent childhood obesity and realize our aspirations for a nation of healthy children and ultimately adults.

References

1. Flegal KM, Graubard BI, Williamson DF, Gail MH. Excess deaths associated with underweight, overweight, and obesity. *JAMA.* 2005;293:1861-1867.

2. National Center for Health Statistics. Health, United States, 2005 with Chartbook on Trends in the health of Americans. 2005. Available at: http://www.cdc.gov/nchs/data/hus/hus05.pdf. Accessed September 13, 2006.

3. Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999-2004. *JAMA.* 2006;295:1549-1555.

4. Reilly JJ, Methven E, McDowell ZC, et al. Health consequences of obesity. *Arch Dis Child.* 2003;88:748-752.

5. Williamson DF, Kahn HS, Remington PL, Anda RF. The 10-year incidence of overweight and major weight gain in US adults. *Arch Intern Med*. 1990;150:665-672.

6. Must A, Jacques PF, Dallal GE, Bajema CJ, Dietz WH. Long-term morbidity and mortality of overweight adolescents - A follow-up of the Harvard growth study of 1922 to 1935. *New Engl J Med*. 1992;327:1350-1355.

7. Weiss RI, Smith JA. Legislative approaches to the obesity epidemic. *J Public Health Policy*. 2004;25:379-390.

8. Caraher M, Cowburn G. Taxing food: Implications for public health nutrition. *Public Health Nutr*. 2005;8:1242-1249.

9. Stanton KR, Acs ZJ. The infrastructure of obesity and the obesity epidemic: Implications for public policy. *Appl Health Econ Health Policy*. 2005;4:139-146.

10. Health Policy Tracking Service, a Thomson West Business. State Actions to Promote Nutrition, Increase Physical Activity and Prevent Obesity: A legislative overview. Thomson West, 2005. Available at: http://www.rwjf.org/files/research/July%202005%20-%20Report.pdf. Accessed September 13, 2006.

11. Cotten A, Stanton KR, Acs ZJ. The UB Obesity Report Card™: An Overview. Available at: http://www.ubalt.edu/experts/obesity/. Accessed September 13, 2006.

12. Thompson JW. Transforming data into information to drive the agenda. *Academy Health Annual Research Meeting.* June 25, 2006. Available at: http://www.academyhealth.org /2006/thompsonj.pdf. Accessed September 13, 2006.

13. National Institutes of Diabetes and Digestive and Kidney Disorders. New study seeks to lower diabetes risk in youth. Available at: http://www.nih.gov/news/pr/aug2006/niddk-28.htm. Accessed September 13, 2006.