

# Addressing Childhood Overweight through Schools

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## ABSTRACT

*Rates of childhood obesity in have reached alarming proportions in many countries. Sixteen percent of school-aged children and adolescents in the US are overweight. Legislation implemented in 2004 in the US requires local education agencies (LEAs) that sponsor school meal programs to establish local wellness policies to address childhood obesity. Project PA, a collaboration between a state agency and a university providing school-based interventions focuses on the school environment and policy changes. Interventions have targeted foodservice personnel, administrators, teachers, parents and students. In two recent projects schools assessed their school nutrition environments, developed nutrition policies, and implemented strategies to encourage healthier food selections. Schools identified weaknesses in the areas of marketing and communication of policies. Media attention on the childhood obesity facilitated policy changes. Time and cost were identified as barriers to policy development and there were concerns about weak enforcement of policies. These themes are discussed.*

**Key words:** childhood obesity, school policies, wellness policies, school nutrition environment, school meals

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### *Children's Diets and Physical Activity Habits*

Significant strides have been made in the United States (US) over the past three decades in addressing infant mortality rates and childhood nutrient deficiencies<sup>1, 2, 3</sup>. Pressing issues concerning childhood health have shifted from issues of under nutrition to issues of over consumption. Overweight is now more prevalent among American children than underweight<sup>4, 5</sup>. More than two-thirds of children exceed the recommended intake for fat and saturated fat<sup>6</sup>. While percentage of calories from fat and saturated fat has decreased in children's diets, actual fat intakes did not decrease because energy intake increased<sup>7</sup>. Food choices of most US children do not meet current dietary recommendations, with children consuming less than the recommended amounts of fruits and vegetables<sup>6, 8, 9</sup>. Compounding concerns about children's dietary habits are concerns about children's phys-

ical activity habits. Fewer than 25% of children get 30 minutes or more of physical activity per day, and more than 75% get no more than 20 minutes of vigorous physical activity per week<sup>10</sup>.

### *Childhood Obesity – Rates and Health Consequences*

Rates of childhood obesity in the US have reached alarming proportions. Sixteen percent of school-aged children and adolescents are overweight<sup>4</sup>. This percentage has risen markedly since the late 1970's. Childhood overweight is associated with significant health problems in childhood including hypertension, hyperlipidemia, psychosocial problems, as well as being a risk factor for adult morbidity and mortality<sup>11</sup>. Type II diabetes, formerly diagnosed primarily in adult populations, is increasingly being diagnosed in children<sup>4</sup>.

### *Schools' Role in Childhood Obesity Issue*

Schools are in a unique position to address the issue of childhood obesity. In the US, 53 million children and adolescents spend approximately six hours/day in school on weekdays<sup>12</sup>. More than 95% of young people are enrolled in schools<sup>12</sup>. Promotion of healthy eating and physical activity habits have traditionally been components of the curriculum, and research has documented that school programs can promote healthy eating and physical activity<sup>12, 13</sup>. In addition, associations have been found between physical activity, proper nutrition, and academic performance<sup>14, 15, 16</sup>. Four major venues through which schools can provide healthy nutrition and physical activity opportunities include the school food environment, classroom health education, the physical education program, and recess time<sup>13</sup>. Dr. David Satcher, former US Surgeon General has been quoted as saying, »I do not blame schools for our obesity epidemic. Instead I look to schools – and to everyone who has an influential hand in education – as a powerful force for change<sup>17</sup>.«

Increasingly, as schools in the US experience pressure to meet performance requirements on standardized tests, emphasis is placed on core curriculum subjects, providing less time for nutrition education and physical education programs. Results of a survey of nutrition education in K-5<sup>th</sup> grade found the mean number of hours in a school year spent on nutrition education is 13, whereas 50 hours was cited as the minimum amount of time believed to be necessary to impact behavior<sup>18</sup>. Daily enrollment in physical education classes dropped from 42% of students in 1991 to 25% in 1995<sup>19</sup>.

USDA, through the Healthy School Nutrition Environments Initiative introduced in 2001, as well as other government, education, and health-related organizations have long recommended that school districts develop and adopt nutrition policies addressing issues such as the sale of competitive foods in schools, nutrition education, and physical education<sup>20–23</sup>. However, research has shown that few nutrition policies exist, especially comprehensive policies and those setting nutritional standards for foods offered outside of the school meals programs<sup>24–27</sup>.

While participation in school meals programs in the US has been shown to have dietary benefits and be associated with lower rates of obesity, over the years an increasing number of foods have been introduced into schools outside of school meals programs<sup>28–30</sup>. These »competitive foods«, offered as *à la carte* items, through vending machines, student stores, and club fundraisers, are often low in nutritional value and are said to compete with the reimbursable school meals<sup>31</sup>. Ninety-five percent of high schools, 62% of middle/junior high schools, and 26% of elementary schools offer competitive foods through vending machines<sup>24</sup>. Soft drinks and salty snacks are among the items most often sold through vending machines<sup>24</sup>. Eighty-three percent of all schools offer food or beverages other than milk as *à la carte* items<sup>24</sup>. While a variety of nutritious options have been shown to be offered as *à la carte* items, items such as French-fried potatoes and ice cream are prevalent in *à la carte* lines, espe-

cially among middle/junior and high schools<sup>24,32</sup>. School stores and club food fundraisers are less widespread sources of competitive foods than vending machines and *à la carte* items. However, candy is the item most often sold through these venues and activities<sup>32</sup>. The presence of competitive foods in schools has been shown to negatively impact students' diet quality<sup>33</sup>.

School meals are required to meet US federal government nutrition standards and foods are served in specified portion sizes. Conversely, competitive foods are only minimally regulated at the federal level with the regulation stating that a certain limited number of food items (soda, water ices, gum, certain candy) may not be sold in the food service areas during meal periods, but even these items may be sold anywhere else in the school at any time<sup>34</sup>. State governments and local-level school districts may enact more stringent regulations concerning competitive foods and several have done so. In the fall of 2003, the New York City Public School District eliminated candy, soda, and other snack items from vending machines, allowing the sale of only water, low-fat snacks, and 100% fruit juices through vending machines. The Los Angeles Board of Education has banned soda from vending machines, and chips, candy, and other snack foods from vending machines and in school stores. In 2005, 42 state governments introduced legislation that provide some level of nutrition guidance for schools, and these measures were enacted in 21 states<sup>35</sup>.

In June of 2004, the Child Nutrition and WIC Reauthorization Act of 2004 (Public Law 108–265) was passed at the federal level. A provision of this legislation requires local education agencies (LEAs) that sponsor school meals programs to establish local wellness policies to address childhood obesity by July of 2006. This provision requires that the local wellness policy (1) includes goals for nutrition education, physical activity, and other school-based activities that are designed to promote student wellness; (2) includes nutrition guidelines for all foods available on each school campus during the school day with the objectives of promoting student health and reducing childhood obesity; (3) provides an assurance that guidelines for reimbursable school meals shall not be less restrictive than USDA regulations; (4) establishes a plan for measuring implementation of the local wellness policy, including designation of 1 or more persons within the LEA or at each school, as appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy; and (5) involves parents, students, representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy. While providing guidelines for the policy components, the wellness policy provision entrusts the details of the wellness policies to LEAs to develop based on their own unique circumstances, needs, and visions for healthy school nutrition environments. This wellness policy requirement represents an important milestone in efforts to address childhood obesity through school environments. However, types of policies developed, extent of im-

plementation and enforcement, and effects, if any, on school nutrition environments and childhood obesity are yet to be determined. The following will describe and provide lessons learned for a campaign to improve school nutrition environments across the state of Pennsylvania.

*Project PA: A Statewide School-based Nutrition Environment Campaign*

Project PA is a collaboration between the Pennsylvania Department of Education, Division of Food and Nutrition and the Pennsylvania State University Department of Nutritional Sciences that began in 1995 in response to the School Meals Initiative for Healthy Children. This initiative required school meals to meet Nutrient Standards and the US Dietary Guidelines and necessitated training for school foodservice personnel. Over the more than 10 years in which Project PA has been in existence training and educational strategies have targeted school foodservice personnel, school administrators, teachers, and parents and have included four statewide teleconferences, a train-the-trainer school foodservice program, four school mini-grant projects, local workshops, state and regional presentations, video and print material development, an extensive website, and a school breakfast promotion campaign based on the Stages of Change model<sup>36</sup>. Project PA efforts have focused on examining and supporting school environment and policy changes. Included among these projects are those involving development of materials and presentations for school administrators and parents related to school nutrition policies and childhood obesity to help school administrators recognize the connection between school nutrition policies and children's health and to encourage parents to be involved in addressing childhood obesity through home, school, and community environments.

Two recent projects have involved provision of mini-grants to schools to assess their school nutrition environments, develop nutrition policies, and implement strategies to encourage healthier food selections by students. These projects involved detailed, monthly reporting by the schools, site visits to the schools, as well as periodic in-depth interviews with key informants from each school. The school reports, observation notes and transcripts from interviews were reviewed by two team researchers to identify common themes. Several themes that emerged from the work conducted with these 22 schools including the following.

1. Schools identified weaknesses in the areas of marketing and communication. Although schools had successfully developed nutrition policies, for the most part, little thought was given about how to communicate about and market the policy to others in the school environment.
2. Schools had difficulty understanding the need for assessment and developing measures to assess the success of their project. Because the local wellness policy provision of the Child Nutrition and WIC Reauthorization Act of 2004 requires plans for measuring implementation, this is an area in which schools may need assistance.
3. Schools relied on sample policies and templates. Nutrition policy development represented a novel experience for many of the school employees involved. In particular, school foodservice personnel have not traditionally been involved in policy development. Therefore, policy examples proved useful. Sample policies and templates are now widely available on websites such as those of USDA's Team Nutrition Program, the School Nutrition Association, the National Alliance for Nutrition and Activity, and others.
4. Administrative support was critical in instituting policy changes, especially the support of school principals.
5. Media attention on the childhood obesity issue was a facilitator to enacting policy changes. This media attention has placed the issue of childhood obesity and its possible dire consequences in the national spotlight, perhaps making school personnel more receptive to accepting a role in addressing the issue.
6. Issues related to time and cost were identified as barriers to policy development. Time was required to meet as a group and develop the policy. Cost was an issue related to potential loss of finances resulting from policy changes.
7. Concerns were expressed among school employees about the possibility of weak enforcement of policies. This concern is substantiated by the literature in this area.
8. Wide variability exists in schools in terms of success rate of environmental changes. For example, in some cases, school personnel report that adolescents are unwilling to sample new foods. However, other schools report success with this type of activity among students of the same age.
9. In general, schools report that projects are most successful when students feel ownership for the projects. This level of student involvement exists along a continuum. At one level student involvement may be as simple as surveying them to assess food preferences to determine items that will be introduced in taste testing experiences and on the cafeteria line. A higher degree of involvement includes assigning older students the role of teacher for younger students.
10. Adult skepticism for environmental changes is often overcome upon recognizing the success of the environmental change.
11. Projects involving school foodservice directors have often resulted in the school foodservice director feeling more connected to the schools' educational mission.

The rapid increase in the rate of childhood obesity is becoming a global concern. The associated comorbidities include major chronic diseases and have the potential to bankrupt health care systems and shorten lives<sup>37</sup>. Recent legislation in the US targeted schools to create more healthful environments that have the potential to reduce

rates of childhood obesity. This paper described a state-wide campaign, Project PA, that has been working to improve school environments and reduce the rate of childhood obesity. Major findings from interventions in 22 Pennsylvania schools are outlined, including facilitators and barriers to creating more healthful environments.

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## PREVENCIJA PRETILOSTI KOD DJECE – ŠKOLSKI PROGRAM VEZAN UZ OKOLINSKE PROMJENE

### SAŽETAK

Učestalost pretilosti djece poprimila je alarmantne razmjere u mnogim državama. U SAD-u šesnaest posto djece školske dobi i adolescenata ima prekomjerne težine. Prema zakonu koji je prihvaćen 2004 godine, u SAD-u djeluju lokalne edukacijske agencije (LEA-s) koje za cilj imaju oformiti zdravstveno-prehrambeni program u svrhu smanjenja pretilosti kod djece. Za praćenje provođenja takvog programa, napravljen je PA projekt (suradnja između državnih agencija i sveučilišta). Intervencije su zahvatile osoblje koje radi u prehrambenim servisima, administraciju, učitelje, roditelje i učenike. Prema dvjema programima škola je utvrdila prehrambenu politiku i strategiju zdrave prehrane. S obzirom da su identificirane marketinške i komunikacijske slabosti takvog programa, promijenila se i medijska pozornost prema pretiloj djeci. Vrijeme i novac procijenjeni su kao najveće prepreke u provođenju programa.