

**The School as a Contributing Factor to Adolescent Obesity**  
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Unfortunately many people in the general population do not consider childhood obesity to be a problem of more than aesthetic dimensions. Adolescent obesity is thought of as contributing to other problems like being seen as a social outcast, lowering self-esteem, and contributing to bullying, but not as a physical health concern. Many in society don't understand why school health educators and the public health community are so concerned about the topic. Since the public perception of the problem is aesthetic, professionals will find it more difficult to initiate an energetic public response to adolescent obesity. Until we can make parents and adults in our communities understand just how serious the problem is, we will have little success dealing with obesity in schools and the community.

Despite the rather passive attitude of most Americans on the topic of obesity it is dangerous and expensive. "An estimated 300,000 deaths per year may be attributable to obesity. The risk of death rises with increasing weight. Even moderate weight excess (10 to 20 pounds for a person of average height) increases the risk of death, particularly among adults aged 30 to 64 years. Individuals who are obese (BMI > 30)\* have a 50 to 100% increased risk of premature death from all causes, compared to individuals with a healthy weight." (1) In a study done by Sturm (2) he concluded obesity to be more dangerous than smoking, heavy drinking and poverty. The problem has not arisen suddenly nor have the effects of obesity been unknown until now. "Obesity is a serious public health threat that manifests itself in diseases and chronic disabling conditions such as diabetes, coronary heart disease and high blood pressure. This is not a newly identified phenomenon; the American Heart Association had identified obesity as a cardiac risk factor—modifiable through diet and exercise—as early as 1952. However, the situation half a century later is far worse." (3)

While professionals have accepted the role of obesity as a risk factor in coronary heart disease for some time it is frustrating that overweight continues to be a modifiable risk factor that increases in prevalence within the adult and adolescent populations. Among adolescents the prevalence has nearly tripled in the past 2 decades, (1) and the cost is not in lives and health only. In 2001, the Surgeon General announced that obesity and overweight cost U.S. taxpayers \$117 billion per year in direct health care costs and indirect costs such as lost wages. (1)

While one might not think that schools would be a factor in the obesity problem faced by our children, a closer look at one day in the life of a youngster as he arises in the morning and heads off to school might prove to be enlightening:

**A day at school with Joe**

Joseph wakes up at 6:15 and statistics suggest he will probably not have breakfast. In Florida only 46.6% of students eat breakfast.(4) He will shower, get dressed, walk to the corner and wait for the school bus. He will get on and sit down for a 45-minute to an hour ride to school. Once at school Joseph will go to his locker then to homeroom where he will sit and watch the morning announcements on closed circuit television. After homeroom Joe will walk to his first class and sit in one seat after another till noon. At noon Joseph will go to the lunchroom for a meal that may include a variety of choices of varying nutritional value. Lunch may well be at least partially provided by outside

vendors who offer pizza, fried chicken fingers, tacos and burritos, hamburgers, etc. There are vending machines in the lunchroom and hallways of the school but Joseph cannot access them until 2:00 as a concession to reduce the amount of snack foods consumed on campus. After 2:00 Joe has access to a cornucopia of salted and high sugar snacks and carbonated drinks. During his day he may go to a physical education class for 1 hour where he will join in with 40 or more other students sitting in the bleachers or patiently waiting for a turn at throwing or kicking something. This experience neither provides Joe with physical activity nor does it prepare him to participate in physical activity after required physical education. At the end of the day he will go outside on the bus bell to the curb and get on the bus for a 45-minute to an hour bus ride home. When he gets home Joe will watch TV, use his computer or play video games for 3 or more hours during the remainder of the day and night.(3) Mom works outside the home so she gets to the house at 5:30 to 6:00 and is bushed. It is too late to start cooking so she has brought a bag of burgers or a pizza for dinner. After dinner it is homework, music and instant messaging till bedtime.

As a result of his day at school Joe has gotten little physical activity, a mixed nutritional experience and gone home to more of the same.

What we should learn from Joseph's day is that he exhibits 2 significant risks for becoming overweight and consequential health problems related to obesity, and that at least some of his risk is a result of attending school. The school contributes to Joseph's possible weight problem by exposing him to too much of the wrong nutrition and too little physical activity during his school day. For those engaged in the ongoing debate on obesity this fictional example of a school day demonstrates the seeming bifurcation of views on how the discussion should be framed. Vending machines have been under attack for the effect soft drinks play in providing excess sugars to children in schools.(5-8) and as a result many schools and school districts across the US are changing their policies regarding vending machines and sale of food items at school stores and so forth. This shift in policy demonstrates community concern with nutrition in the schools and a rising awareness of obesity as a major concern in the adolescent population. In response to criticism that carbonated soft drinks are contributing greatly to obesity the National Soft Drink Association replied on its website that soft drinks are a healthy part of a daily hydration program. This group attempts to re-direct the conversation to the issue of decreased physical activity as the major cause of obesity in young people while pointing to the positive part soft drinks play in the daily hydration needs of healthy people.(9) First a discussion of nutrition in the schools.

### **School nutrition.**

Public schools have a part to play in adolescent nutrition in 3 basic ways. The first way is in the area of the school nutrition program; the second way is access to vending machines that provide sugar, salt and carbonation and the third way is access to educational activities that prepare students to make informed decisions about nutrition and foods now and in the future.

Much of what is served in school lunchrooms is the result of standards set by The National School Lunch Program, a federally funded program that provides assistance and funding to schools and other agencies so that they can provide nutritious meals at free or reduced rates. In addition to financial assistance, the program provides donated commodity foods to help reduce lunch program costs.(10) In part the federal school

lunch program requires that milk be provided with each lunch served and in describing the grains allowed under the program there is no preference for whole grains over enriched grains. In fact whole grains are listed as a substitute.(10) Of course while school lunch programs are largely the result of USDA requirements, what is served is also very much a product of parental involvement and student choice. School districts have to balance the need to control cost with the need to offer appealing choices students will select. In order to strike this balance between cost and choice school lunch programs often turn to outside vendors that will come to campus and provide pizza, tacos and fried chicken fingers. In Leon County School District director of food services Tim Tankersly removed pizza (delivered by a national chain) from the menu only to have parents demand it be put back on the menu because their children liked it. Tankersly reinstated the pizza selection but only twice a week while demanding the pizza chain use low fat cheeses and reduced calorie and reduced fat meats.(11)

### **Vending Machines in Schools**

One of the most debated topics of late regarding schools and obesity is school vending machines and the choices contained in those machines. In an American Academy of Pediatrics (AAP) Press Release, January 5, 2004 the academy put forth a new policy statement on school vending of soft drinks. In that press release the academy advocated, “that school districts should consider restricting the sale of soft drinks to safeguard against health problems that result from overconsumption.”(5) The AAP policy points out that sweetened drinks constitute the primary source of added sugar in the daily diet of children, and that each 12-ounce serving of a carbonated, sweetened soft drink contains the equivalent of 10 teaspoons of sugar. Sugared soft drink consumption has been associated with increased risk of overweight and obesity, currently the most common medical condition of childhood.(5) The AAP further highlights the tension between revenue in the school lunchroom verses the damage done by poor nutritional choices found in vending machines. “...the high percentage of students drinking 1 or more soft drinks per day and the need to provide alternatives to high sugar and high fat snacks in school vending machines. The concept becomes a hard sell when schools see removing or restricting vending choices as a revenue loss. Lunchrooms in many schools find it difficult to operate without losing money so they feel they have to make sacrifices to nutrition as a result of monetary need.”(5) The National Soft Drink Association defends against calls for reducing or eliminating soft drinks from schools by staking out the position that these “...are beverages that have existed for over 100 years. They can quench thirst and help fulfill daily fluid intake requirements that are needed to maintain proper hydration for individuals. Soft drinks are a complement to many types of foods that together form a balanced diet.”(9) They further contend that “...Consuming at least 67 ounces of fluid each day (even more for those who are physically active) is important to your health. Adults and children should consume a wide variety of fluids each day, including water, milk, juices, teas, sports drinks and soft drinks to maintain proper hydration.”(9) The ASDA rightfully points to the need for increased physical activity as a needed change in controlling obesity in school aged children but does not accept complicity in the problem. Clearly businesses that make or distribute soft drinks or snacks look to develop brand loyalty while maximizing profits in the current market so it is important to them to have a presence in the schools. Some companies are willing to pay contracts for exclusive placement and brand rights while increasing the placement of

different choices in the machines. Some school districts are restricting student access to vending machines during school hours and others are replacing some of the carbonated beverages with water and fruit juices replacing sugar and salt laden snacks with healthier choices. The results are mixed with some districts finding total revenue unchanged or increased while others find declining income from vending sales. In order to make an impact on this issue there will be a need for "...strong public advocacy ...to ensure that schools are adequately funded from noncommercial sources."(8)

### **Physical Activity and Health Education**

There are pressures schools must respond to in order to be successful. Some of the pressure points are public demands, political demands (at the school, district and state level), and legal pressures (state, local, and federal). The result of these internal and external pressures often restricts adequate physical activity and health education offerings. A very powerful example of these pressures is statewide testing. Some form of high stakes testing exists in nearly every state in the United States and impacts how schools are funded. In many states poor performance on Math, Science or Reading tests may result in dramatically lower funding to "failing" schools. In order to focus on key curriculum areas, "non-essential" subjects have lost funding to increase time devoted to subject areas that are tested. Schools have suffered losses in the arts, music, physical education, and school health among others to make way for time to improve math, science and reading instruction. Due to the strong connection between physical activity and positive academic outcomes (12), sacrificing Physical Education and Health Education, traditional areas for dealing with life decisions including tobacco use, alcohol and weight management may be too great a sacrifice. For example, in a study by Shepard it was found that a reduction of 240 minutes per week in academic class time to provide additional time for physical activity led to consistently higher math scores.(13)

While there is a call for increased physical activity to help reduce overweight among children, the activity should be focused more toward the goal of developing lifelong fitness. "For too long, some fitness experts say, physical education has not lived up to its name: Traditional phys-ed classes provide too little activity to too few students, offer little or no guidance for maintaining a healthful lifestyle, and can make less athletic children feel inadequate, which can further turn them off to exercise."(14) Though no doubt, many adults thrived on the competition provided in their physical education classes, many found the experience anxiety producing and humiliating. The result has been the creation of a generation of people who find most forms of exercise something to be avoided. Most physical education experts agree that programs that focus on sport and competitive types of activities have fallen short of their goal to energize students to maintain an active healthy lifestyle. The call has gone out for a new physical education that places greater emphasis on lifelong fitness activities and less on sports and in the past several years, many physical education programs have been developed that stress fitness, health awareness, and lifelong exercise habits.(14) Sturm found that planned exercise is higher today than in the past but that "incidental" exercise has decreased. That is to say scheduled physical activities such as going to the fitness center have increased while walking to the store and walking to school have declined and much of that is due to the layout of residential areas, which are becoming more separated from stores and workplaces.(2) I would suggest it is also in part due to the dangerous nature of the communities in which we live. The days of baby boomers living naively in assured

safety and security are over. In communities today safety of unsupervised children is not an accepted truth. In fact it is the opposite with kidnappings and murders and violence in our neighborhoods and schools it is not always reasonable for parents to send their children out to walk to school unsupervised. Neither is it always reasonable for all parents to send their children out to play without a responsible adult nearby. If we accept that we live in more dangerous times the problem becomes how to create environments where adolescents are encouraged to engage in vigorous activity in safe environments. The school can and should play a larger role in the development of this environment.

### **In conclusion**

While the surgeon general called for us collectively to create more opportunities for physical activity at worksites and to make community facilities available and accessible for physical activity for all people, including the elderly,(1) his remarks seemed directed more to the business sector. This concept should be broadened to include public schools and public recreation facilities. We should be looking for ways to create alternative partnerships to provide cooperative use of facilities between the larger community and schools to provide a safe environment for physical activity. School gymnasiums, sadly underutilized during school hours, can become a hub of physical activity for children and adults during non-traditional times. Partnerships should be forged between public and private agencies to make school fields, gymnasium facilities, and recreational facilities available to individuals and groups looking for a safe environment in which to meet, learn, recreate, and become physically fit. Lunchrooms need to become areas where children learn about healthy eating and make informed food choices that will provide the energy needed to be active learners. Schools need to decide what is more important, profits from vending machines filled with “junk” or the health of our next generation. Finally, Health Education must take a more prominent role in the curriculum rather than merely existing as intermittent embedded topics somewhere in the science or physical education program.

In order to convince schools to re-invest in the health and physical education of our youth we must provide more data to support the argument that healthier, more active children are better students. We must also focus on research that provides sound financial data on the impact of revenue from school vending machines on school budgets. I believe we must fight against allowing the discussion to focus on either physical activity or school nutrition/vending as the answer to the problem.

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