Healthy and Ready to Learn

David Satcher

Research shows that nutrition and physical activity affect student academic achievement.

Remember when children came home from school and played outside before dinner? When fast food was a novel treat, and soft drinks came in a cup small enough for a child to hold in one hand? When kids walked or rode their bikes to school and went home for lunch?

Things have changed in recent decades. Students no longer go home for lunch, restaurant serving sizes have expanded along with customers' waistlines, and many children—out of desire or necessity—stay indoors watching television or playing computer games. Only 2 percent of school-age children in the United States consume the recommended daily number of servings from all five major food groups (U.S. Department of Agriculture, 1994–1996). Schools have changed, too, selling candy, chips, and soda while offering fewer opportunities for students to be physically active.

During the last two decades, many school systems have abolished recess and cut back on physical education and extracurricular sports. According to the American Association for the Child’s Right to Play, an estimated 20 percent of all elementary schools in the United States have dropped recess in favor of more classroom time (Tyre, 2004). Fewer than 25 percent of children in the United States get at least 30 minutes of any kind of daily physical activity (International Life Sciences Institute, 1997), and fewer than 30 percent of U.S. high school students attend physical education class every day (Centers for Disease Control and Prevention, 1999). Not surprisingly, these cultural shifts have resulted in a marked decline in children's health.

Today, 9 million children in the United States are overweight—triple the number in 1980 (Ogden, Flegal, Carroll, & Johnson, 2002). Poor nutrition and sedentary lifestyles are the root causes. The incidence of overweight in children is much higher among African American and Latino children than in other groups (Hoelscher et al., 2004; Thorpe et al., 2004). Overweight and obesity are not just cosmetic issues—they are health issues. Childhood weight problems can lead to elevated blood pressure and cholesterol, joint problems, Type II diabetes, gallbladder disease, asthma, depression, and anxiety (U.S. Department of Health and Human Services, 2001). Severely overweight children miss four times as much school as normal-weight children and often suffer from depression, anxiety disorders, and isolation from their peers (Schwimmer, Burwinkle, & Varni, 2003). These problems often continue into adulthood, with 70–80 percent of overweight children and adolescents becoming obese adults.

A Wake-Up Call to Schools

Schools can be a powerful catalyst for change when it comes to preventing and reducing overweight and obesity. The school setting is a great equalizer, providing all students and families—regardless of ethnicity, socioeconomic status, or level of education—with the same
access to good nutrition and physical activity. Because children also teach their parents, important lessons learned at school can help the entire family.

In 2004, the nonprofit organization Action for Healthy Kids released a special report identifying the link among the factors of poor nutrition, inactivity, and academic achievement (2004). It is a wake-up call to schools: Improving children's health likely improves school performance.

The relationship is based on substantial research. Well-nourished students tend to be better students, whereas poorly nourished students tend to demonstrate weaker academic performance and score lower on standardized achievement tests. The majority of U.S. children are not eating a balanced, nutrient-rich diet. Inadequate consumption of key food groups deprives children of essential vitamins, minerals, fats, and proteins necessary for optimum cognitive function (Tufts University School of Nutrition, 1995). Children who suffer from poor nutrition during the brain's most formative years score much lower on tests of vocabulary, reading comprehension, arithmetic, and general knowledge (Brown & Pollitt, 1996). In a 1989 study, 4th graders with the lowest amount of protein in their diets showed the lowest achievement test scores (School Nutrition Association). A 2001 study revealed that 6- to 11-year-old children from food-insufficient families had significantly lower arithmetic scores and were more likely to repeat a grade (Alaimo, Olson, & Frongillo). Even skipping breakfast has been shown to adversely affect student achievement on problem-solving tests (Pollitt, Leibel, & Greenfield, 1991).

That nutrition affects academic achievement comes as no revelation. After all, as children we were told to eat our breakfast before leaving for school. What may come as a surprise, however, is that physical activity also plays an important role in students' performance—even when it uses time that is normally set aside for academics.

Students who participate in daily physical education exhibit better attendance, a more positive attitude toward school, and superior academic performance (National Association for Sport and Physical Education & Council of Physical Education for Children, 2001). Two studies demonstrated that providing more time for physical activity—by reducing class time—can lead to increased test scores, particularly in the area of mathematics (Shephard, 1997; Shephard et al., 1984). Another study linked physical activity programs to stronger academic achievement; increased concentration; and improved math, reading, and writing test scores (Symons, Cinelli, James, & Groff, 1997). The President's Council on Physical Fitness and Sports states that

Evidence suggests that time spent in physical education does not decrease learning in other subjects. Youth who spend less time in other subjects to allow for regular physical education have been shown to do equally well or better in academic classes. (1999)

The California Department of Education analyzed results of student physical fitness testing in 2001 and compared them with the same students' scores on the Stanford Achievement Test (SAT-9). The analysis showed that higher academic achievement correlated strongly with higher levels of fitness at each of the three grade levels measured (grades 5, 7, and 9). The relationship was greatest in mathematics: Girls in the higher fitness levels demonstrated higher achievement than males at similar fitness levels (2004).

**Healthy Change**

Educators across the United States are facilitating changes at the state, district, and school levels to improve student health. Collaborating in teams as part of the Action for Healthy Kids initiative, they are creating and distributing nutritional guidelines, educating policymakers,
helping to develop school wellness policies, instituting changes in vending and other noncafe

The Arizona Action for Healthy Kids team worked in cooperation with the Arizona Department of Education and USDA Team Nutrition to create and implement a model healthy school policy in eight pilot schools (see “Arizona Healthy School Environment Model Policy”). The policy addresses food-service operation, nutrition education, food choices at school, physical education, and a healthy school environment. To facilitate implementation, each pilot school received $5,000–$10,000 as part of a USDA Team Nutrition grant. Among other improvements, participating schools replaced low- or no-nutrient foods with more healthful items, such as water, juice, low-fat milk, fruits, and vegetables.

The pilot study found no negative impacts on vending machine or cafeteria sales once healthier options were offered. In fact, sales in some schools increased with the more healthful selections. The Healthy Food Sales and Schools Act, which has been introduced in the Arizona legislature, proposes that all schools be required to implement nutrition standards on the basis of those recommended in the initial Healthy School Environment Model Policy created by Arizona Action for Healthy Kids. A bill addressing physical education standards has also been introduced.

Several states have worked to create and disseminate nutritional standards for schools. In Idaho, the Action for Healthy Kids team developed "Idaho Recommendations for Promoting a Healthy School Nutrition Environment." The guidelines recommend that all foods and beverages available on school campuses and at school events meet USDA dietary guidelines. The state superintendent of public instruction and the state board of education endorsed the team's recommendations and distributed them to school district leaders throughout the state. Sixteen of Delaware's 19 school districts agreed to adopt health standards, beginning with the 2004–2005 school year. In Massachusetts, statewide distribution of nutritional guidelines will affect 1 million students.

Students themselves are concerned about these issues. In a 2002 poll conducted by Action for Healthy Kids, 81 percent of the 1,308 student leaders surveyed believed that schools should make eating healthy a priority, and 72 percent believed that schools should make physical activity more of a priority. In Massachusetts, the Action for Healthy Kids team is working in collaboration with the Department of Education student advisory group to educate student governments on creating nutrition and physical activity policies.

The team approach can often open doors for especially committed individuals, providing support and resources that wouldn't otherwise be available. For example, a minigrant provided by the Minnesota Action for Healthy Kids team enabled a physical education teacher to enhance her school's physical education program by weaving more activity into students' daily lives. Jo Zimmel started using pedometers at Garlough Elementary School in West St. Paul, Minnesota, to obtain a baseline measure of kids' activity levels while at school. She developed strategies to increase activity during school hours and taught kids as well as teachers how to find time for extra movement each day. At the conclusion of the program, Zimmel will evaluate the students' progress, using the pedometers to measure their post-activity levels.

Schools need not act alone to tackle the issues of good nutrition and physical activity. They can encourage community partners to sponsor an extracurricular fitness program or draw on grandparents to help start a walking club. Schools will benefit as both achievement scores and attendance improve. Students will benefit as they perform and behave better in school and experience more energy and fewer illnesses. Schools not only need to teach good eating
habits and healthy levels of physical activity, but they also need to model and reinforce these habits every day throughout the building.

**What Schools Can Do**

Schools can take a number of steps to promote student health.

*Form a school health advisory council.* Principals, superintendents, and board members do not have to change schools on their own. Instead, they need to engage a group of volunteers—including parents, students, medical professionals, business professionals, school administrators, youth group leaders, and law enforcement officials—to help conceive and implement nutrition education and physical activity programs that make sense for the local school community.

*Develop a comprehensive wellness policy.* With the 2004 passage of the Child Nutrition Reauthorization Act, all schools that participate in federal school meal programs will need to develop a local wellness policy. This road map needs to include guidelines for all foods and beverages sold in school as well as guidelines for teaching students how to make good decisions about what they eat. The policy must include goals for increasing students' physical activity and school strategies for promoting student wellness. Policies should include recommendations for staff training on developing nutrition education curriculums and for new approaches in physical education. In addition, policies should address program implementation, monitoring, and evaluation.

*Integrate physical activity and nutrition education into the regular school day.* Teachers can start classes with fun calisthenics or dancing and can incorporate nutrition information and physical activity into reading, writing, math, science, and other subjects.

*Incorporate nutrition education, healthy snacks, and physical activity into after-school programs.* Students who stay after school can do more than finish homework, play board games, and watch television. Time should be set aside for physical activities that engage students in fun and innovative ways. In addition, after-school programs should provide access to healthful snacks and hands-on opportunities to learn about food and nutrition. Turnkey programs, including one sponsored by Action for Healthy Kids and the National Football League, can assist schools with implementation.

*Encourage staff to model healthy lifestyles.* A wellness program for faculty and staff can enhance school effectiveness by strengthening morale, reducing absenteeism, and cutting insurance costs. By exercising regularly and eating healthful foods, staff can also set a powerful example for students.

By taking these fundamental steps, schools can create healthy environments and, at the same time, promote student achievement.
Arizona Healthy School Environment Model Policy

Following are some guidelines for physical activity adapted from the Arizona Healthy School Environment Model Policy, modeled after the National Association of State Boards of Education (NASBE) sample policy.

**Recommendations for Physical Activity**

- Offer physical education courses in an environment in which students learn, practice, and are assessed on developmentally appropriate motor skills, social skills, and knowledge.
- Provide students with at least 60 minutes of physical activity on all or most days of the week.
- Discourage extended periods of inactivity (periods of two or more hours).
- Provide at least 150 minutes each week of physical education classes for elementary school students and at least 225 minutes each week for middle and high school students for the entire school year.
- Ensure that students are moderately to vigorously active in physical education classes for at least 50 percent of the time.

**Encouraging Lifetime Physical Activity**

- Provide daily recess periods of at least 20 minutes for all elementary school students.
- Provide physical activity breaks during classroom hours.
- Encourage parents and community members to institute programs that support physical activity, such as a walk-to-school program.

The complete model policy is available at [www.actionforhealthykids.org](http://www.actionforhealthykids.org).

Reprinted with permission.

---

Aims of Education

*Education . . . is a process of living and not a preparation for future living.*

—John Dewey
Resources for Improving the School Health Environment

- Model school-based approaches, a school wellness policy tool, statistics relating to childhood nutrition and physical activity, and information on joining a state team are available at [www.actionforhealthykids.org](http://www.actionforhealthykids.org).
- For an overview of issues relating to foods and beverages in schools and for strategies to improve school health environments, read *Making It Happen: School Nutrition Success Stories*. To download a free copy, go to [www.cdc.gov/healthyyouth](http://www.cdc.gov/healthyyouth).
- The Centers for Disease Control and Prevention offer a tool that schools can use to identify the strengths and weaknesses of nutrition policies and programs and to develop an action plan for improvement. *School Health Index: A Self-Assessment and Planning Guide* is available at [http://apps.nccd.cdc.gov/shi](http://apps.nccd.cdc.gov/shi).

References


California Fitnessgram correlation with SAT scores. California Department of Education. Available: [www.cde.ca.gov/nr/ne/yr02/yr02re137.asp](http://www.cde.ca.gov/nr/ne/yr02/yr02re137.asp)


---

**David Satcher** is Director of the National Center for Primary Care at the Morehouse School of Medicine and Interim President of the Morehouse School of Medicine. He is the former Surgeon General of the United States and is Founding Chair and Board Member of Action for Healthy Kids, 4711 West Golf Rd., Ste. 806, Skokie, IL 60076; [info@actionforhealthykids.org](mailto:info@actionforhealthykids.org).

Copyright © 2005 by Association for Supervision and Curriculum Development