Action for Healthy Kids™

THE LEARNING CONNECTION

The Value of Improving Nutrition and Physical Activity in Our Schools

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Preface

A Message From David Satcher

In December 2001, when I was Surgeon General, we released the *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*, which identified schools as a key setting to help address this national health challenge. Obesity is not a cosmetic issue; it is a health issue, and our best hope for combating this epidemic is to prevent children from becoming overweight in the first place. Schools have the opportunity — even the responsibility — to teach and model healthful eating and physical activity, both in theory and in practice.

The Learning Connection: The Value of Improving Nutrition and Physical Activity in Our Schools examines the impact of the root causes of childhood obesity, revealing a strong link between nutrition, physical activity, and academic success. We must understand this important truth: that improving children's health likely improves school performance. It may even help a school's bottom line.

Why schools? Schools are uniquely poised to play a significant role in preventing and decreasing childhood overweight. School is where children spend their time; where they *learn*, be it from books, from example, from teachers or from their peers. Schools provide all children equal access to information about nutrition and physical activity — regardless of their family's background or knowledge of these issues. Children spend nearly 2,000 hours each year at school. This influence cannot be overstated and shouldn't be underutilized.

Since 2002, Action for Healthy Kids (AFHK) has galvanized a remarkable coalition of school administrators, educators, healthcare professionals, policy-makers and other committed individuals. They work in collaboration to improve children's eating habits, increase their physical activity, and educate about the role of sound nutrition and physical activity in academic achievement.

Some great things are already happening at the national, state, district and school levels. AFHK has set standards for developing and evaluating quality school-based nutrition and physical activity initiatives — an important step that will help educators share best practices. Policy-makers have begun to address the need for schools to adhere to U.S. dietary guidelines. Schools and school districts are implementing improvements, from scheduling more recess and physical education to offering healthier foods in the cafeteria and vending machines. Teachers are learning better ways to motivate students, from non-candy rewards to healthier classroom parties.

We still have a long way to go in the fight against childhood obesity, but I'm encouraged by partnerships such as AFHK that are working within our schools and communities to take action. Together, we can make a difference.

David Satcher, M.D., Ph.D.
Director, National Center for Primary Care, Morehouse School of Medicine
Founding Chair, Action for Healthy Kids

A Message From Gene Carter

As education professionals we choose to get involved in elementary and secondary education for one key reason: We want to help children fulfill their potential. We want them to have happy and rewarding childhoods and to grow up to make positive contributions to society.

We know that the playing field isn't level for all children. Students come to school with a variety of family backgrounds and life experiences that affect their readiness to learn, for better or worse. And just as there are disparities in academic achievement along the lines of race, ethnicity, and socioeconomic status, there are disparities in health as well.

Schools across the United States understand the need to close the achievement gap, and educators are working to do so. One of the most promising directions lies in efforts to improve students' eating habits and increase their levels of physical activity, which can lead to better academic and health outcomes. Unfortunately, such efforts are limited. Informed school and classroom leaders understand the importance of educating the whole child, but too often their attention is diverted. The challenge to raise test scores, for instance, may cause us to focus too narrowly on core academic subjects at the expense of developing the whole child.

As *The Learning Connection: The Value of Improving Nutrition and Physical Activity in Our Schools* makes clear, schools cannot afford to act as if student health is somebody else's problem. Indeed, poor nutrition and physical inactivity among children and adolescents are *everybody's* problems. Families, schools, and communities must work together to find creative solutions to students' academic and health disparities. Examples abound of schools that have implemented programs that have had a positive effect on their students' achievement and health outcomes as well as on the financial and community resources available to the schools.

As educators, we have a responsibility to teach children not only how to develop their minds but also how to care for their bodies. This requires arming them with the knowledge they will need to make decisions about their health, nutrition, and general welfare. If we are to prepare them properly for their lives tomorrow, we must lay the solid foundation for healthy behaviors and decision making today.

Gene R. Carter, Ed.D
Executive Director, CEO
Association for Supervision and Curriculum Development


EXECUTIVE SUMMARY

Executive Summary: Healthy Children, Healthy Schools

The purpose of this paper is to bring attention to the costs that poor nutrition and physical inactivity impose on our schools. There is mounting evidence that, by taking action to improve these areas, schools can meet performance goals and alleviate financial constraints.

The majority of American youth are sedentary and do not eat well. These unhealthful practices can lead to learning problems in school and health-related problems that may begin during school-age years and continue into adulthood. Perhaps one of the biggest consequences is the risk of becoming overweight. Sixteen percent of school-aged children and adolescents — or nine million — are overweight, a figure that has risen three-fold since 1980. Poor nutrition, lack of physical activity, and being overweight can lead to complications such as elevated cholesterol and blood pressure, gallbladder disease, joint problems, asthma, Type II diabetes, depression and anxiety. Between 70 and 80 percent of overweight children and adolescents remain overweight or become obese as adults.

The nation's schools can play a critical role in combating problems associated with poor nutrition and inactive lifestyles. But schools cannot be expected to take steps to address these issues unless it is in their interest to do so.

The Cost to Schools Today

Schools currently bear avoidable or reducible costs due to poor nutrition, inactivity, and weight problems among students.

Impact on Learning

Many studies show a direct link between nutritional intake and academic performance, as well as between physical activity and academic achievement. For example, increased participation in breakfast programs is associated with increased academic test scores, improved daily attendance, and better class participation, and has also been shown to reduce tardiness. A meta-analysis of nearly 200 studies of the effectiveness of exercise on cognitive functioning found that regular physical activity supports better learning. Other recent studies found a significant relationship between academic achievement and fitness levels. Physical activity in adolescents has consistently been related to higher levels of self-esteem and lower levels of anxiety and stress — each of which has been associated with better academic performance.

Emerging research also suggests an association between weight problems and lower academic achievement. Perhaps the most obvious reason is increased absenteeism, which has been clearly and directly linked to poorer academic performance. It is probable that students with poor nutrition, inactivity and weight problems have a higher prevalence of physical conditions and psychological/social problems that are frequent causes of absenteeism.

Economic Costs

In addition to the economic toll on our nation, poor nutrition, inactivity, and weight problems are beginning to take an economic toll on our school systems as well. One burden comes from the potential reduction in funding in the nine states where attendance helps to determine the level of state funding for schools. A single-day absence can cost a district between $9 - $20 per student. One study found that severely overweight students miss one day per month or nine days per year (median value). While more research in this area is needed, one can use these figures to develop a preliminary estimate of the potential impact of poor nutrition, physical inactivity, and weight problems on attendance, and thus on school funding in these states. Using an estimate of the rate of absenteeism among overweight students, combined with an average prevalence of overweight students, the extrapolation shows a potential loss of state aid of $95,000 per year in an average-sized school district in Texas, and $160,000 per year in an average-sized California school district. The loss in large cities is likely to be much higher; for example, New York City could lose about $28 million each year, while Chicago could forfeit an estimated $9 million and Los Angeles an estimated $15 million.

Data do not currently exist to know the exact proportion of funds lost as a result from absenteeism due to poor nutrition, inactivity, and weight problems among students. Compelling reasons exist, however, to suppose that a significant proportion of the absences (and thus the loss in state funds) could be a direct or indirect result of these problems. Poor nutrition and inactivity are linked to an increased risk of getting a cold or the flu, while poor nutrition is associated with dental caries; all are common reasons for students to miss school. There is evidence that poor nutrition, inactivity and weight problems may also lead to more days of missed school due to other physical, psychological, and social problems.

Poor nutrition, inactivity, and weight problems can also indirectly drive up a school's costs. First, schools bear significant costs in helping students whose academic performance and/or behavior suffers because of these problems. These costs include additional staff time spent with these students, but also expenses related to formal remediation programs. Second, schools must spend resources to oversee the administration of prescription drugs to treat students with physical and emotional problems caused by poor nutrition, inactivity, and weight problems. Schools that use administrative staff to administer medications to students could also be exposing themselves to potential legal risks. A third area of hidden costs relates to poor nutrition and inactive lifestyles of school staff. Like most employers, schools are increasingly burdened by the rapidly rising cost of providing health coverage to employees, high levels of employee absenteeism, and suboptimal levels of productivity.

Schools Unknowingly Undermine Their Own Interests

Many school practices and policies related to nutrition and physical activity may be counterproductive to schools' goals for improving academic performance and generating additional revenues. For example, 80 percent of school districts sell foods that compete with school meal programs; most of these "competitive" foods are low in nutrients and high in

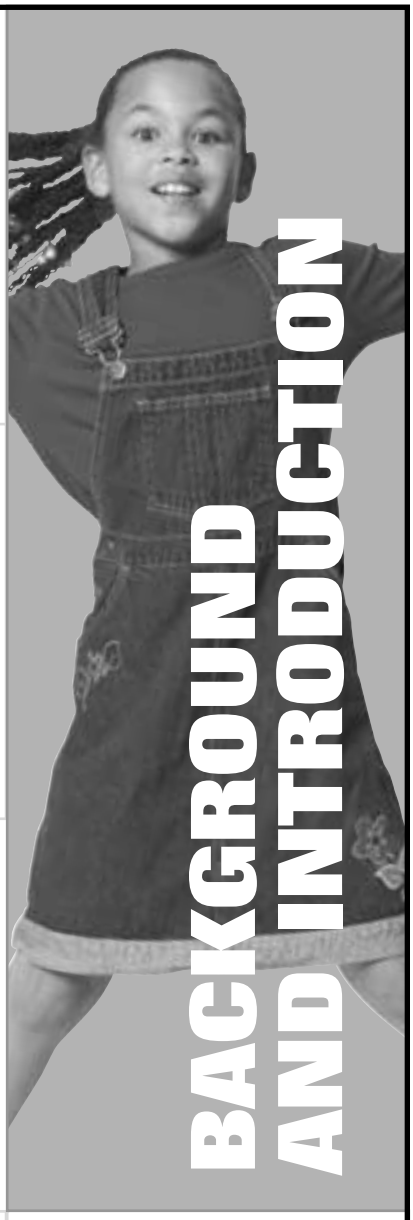
calories. The availability of these foods can decrease participation in school meal programs that offer more nutritionally balanced foods and beverages. In turn, selling competitive foods may not help (and could even hurt) a school's finances as government funding for school meal programs declines with lower participation. Also, these low-nutrient foods do not help enhance students' readiness to learn. Schools that at least offer more healthful options outside of the meal program are not aggravating students' health and learning and they may be able to do so without losing revenues. Some schools, in fact, have even seen gains.

Schools have reduced the amount of time dedicated to recess and after-school physical activity opportunities; few offer daily physical education. Schools have reportedly been cutting back on physical activity and physical education programs, primarily to allow for more classroom time to improve test scores and grades. Yet there is little or no data to support this practice. A growing body of evidence suggests less time dedicated to physical education/activity may undermine the goal of better performance, while *adding* time for physical activity may support improved academic performance.

A Call to Action: Schools as Part of the Solution

The ultimate goal for schools is to provide high quality education for all students. Combating poor nutrition and physical inactivity can help schools meet this goal by boosting the academic achievement of their students while maintaining (if not improving) their own financial situation. In addition to eliminating counterproductive strategies, schools can offer and promote consumption of nutritious foods and provide opportunities for students to engage in physical activity both during school and in after-school programs.

Just as the problems that have led to poor nutrition, physical inactivity, and weight problems among youth are multifaceted, so are the solutions. Tackling these problems is the responsibility of every individual, every community, and every state in the nation. Therefore, public and private stakeholders at all levels must join together. Action for Healthy Kids (AFHK), a public-private partnership, includes over 40 national organizations and government agencies that provide guidance to the 51 AFHK State Teams (includes the District of Columbia). These teams are helping schools to find solutions that will help improve student's health and readiness to learn. Action for Healthy Kids calls on schools to include daily physical activity, provide quality health and physical education, increase the availability of health-promoting foods and beverages, and offer more after-school programs providing nutritious snacks, physical activity and nutrition education.



BACKGROUND AND INTRODUCTION

Background and Introduction

The trends in children's and adolescents' eating and physical activity habits are startling. The majority of American youth are sedentary and do not eat well. These unhealthful practices have both short- and long-term consequences, resulting in learning difficulties and health-related problems that begin during school-age years and continue into adulthood. The National Association for Sports and Physical Education recommends that children engage in at least 60 minutes — and as much as several hours — of age-appropriate physical activity all or most days of the week. Yet almost half of young people age 12 to 21 and more than a third of high school students do not participate in physical activity on a regular basis.[1] Fewer than one in four American children get 30 minutes or more of physical activity per day — and more than three in four get no more than 20 minutes of vigorous physical activity per week.[2]

The statistics are no better when it comes to nutrition. Only 2 percent of school-aged children consume the recommended daily number of servings from all five major food groups. Less than 20 percent eat five servings of fruits or vegetables a day, and only 30 percent consume the recommended serving amounts for the milk group.[3] As milk consumption, a critical source of calcium, has drastically decreased, consumption of carbonated soft drinks has increased by 41 percent between 1970 and 1994.[4] Between 56 and 85 percent of children (depending on age and gender) consume soda on any given day; over a third of teenagers consume more than three servings of soda a day.[5]

More than 80 percent of children and adolescents eat too much total fat (i.e., more than 30 percent of total calories from fat), and more than 90 percent eat too much saturated fat (i.e., more than 10 percent of total calories from saturated fat).[6] Some of this fat intake is due to too frequent snacking; 98 percent of 6-18 year old students report having at least 3 snacks per day and more than 50 percent report five or more snacks each day.[7] This type of unbalanced eating leads to lowered intakes of nutrients critical for growth, cognitive function, and prevention of chronic conditions.

There are many health and learning consequences from poor nutrition and low fitness levels, with the most visible risk being overweight. Nine million children and adolescents between the ages of 6 and 19 are considered overweight.[8] Roughly 10 percent of 2-to-5-year-olds and 16 percent of 6-to-19 year-olds are overweight; these percentages have risen two-fold and three-fold respectively since 1980.[9,10] Childhood weight problems are a medical concern, not a cosmetic issue. Poor nutrition, lack of physical activity, and being overweight can lead to complications such as elevated blood cholesterol and blood pressure, gallbladder disease, osteoarthritis and joint problems, asthma, Type II diabetes, depression, anxiety, and sleep apnea.[11] Poor nutrition and lack of physical activity contribute to 27 percent of children age 5–10 having one or more adverse risk factors for heart disease. For overweight children, 61 percent of this age group has at least one risk factor for heart disease.[12] These problems often continue into adulthood, as between 70 and 80 percent of overweight children and adolescents continue to be overweight or become obese as adults.[13]

Schools strive to ensure high standards of performance for every child and to prepare each child to be a productive citizen. To many it may seem that schools have no compelling need to combat poor nutrition, physical inactivity, and weight problems in students. These problems are often seen as being outside of the core competencies of administrative and teaching staff. In addition, because the underlying causes of poor nutritional habits, sedentary lifestyles, and weight problems among America's youth extend beyond the school's walls, schools may not seem like a logical place to address these issues. Schools have a full agenda, and thus students' nutrition and physical activity levels may be seen as outside the priorities of meeting performance goals and managing stringent budgets.

The Council of Chief State School Officers' *Policy Statement on School Health* acknowledges the enormous impact that health has on the academic achievement of our nation's youth.[15] Children's physical, cognitive, and emotional health is linked to their readiness to learn and ability to achieve academic success. Schools have to make difficult choices, though, in an effort to meet performance goals and manage effectively under financial constraints. To do so, many are trying to fit as much classroom time as possible into the day. As a result, there is less time available for physical education, recess, health education, or an adequate lunch period. Faced with financial strains that threaten valued academic programs and important co-curricular and after-school activities, schools sell foods and beverages and make exclusive contracts with vendors in order to generate additional revenues. These practices contribute to poor eating habits, can aggravate weight and other health problems, and undermine the nutritional contributions of school meal programs.

Success Stories: Healthy Practices Pay Off for Schools

After analyzing disciplinary referrals, administrators at Whitefish Central School in Montana noticed that most disruptive behavior occurred 40 to 60 minutes after lunch, and they hypothesized that this may be the result of students eating unhealthy foods that are high in fat and sugar content. The school made several changes, including replacing vending-machine sodas with bottled waters and 100 percent juices, eliminating candy from the lunch menu and vending machines, and increasing the nutritional content of its vending machine items through the sale of sandwiches, yogurt, fruit, milk, bagels, and salads. Within two years of making the change, disciplinary referrals after lunch have fallen dramatically, from an average of six to eight per day to one or two per week.[14]

This Action for Healthy Kids report brings attention to the costs of poor nutrition and physical inactivity to our schools. There is sufficient evidence that promoting good nutrition and allotting more time for physical activity and physical education can lead to better academic achievement for students. There is also evidence that such programs can be implemented so that, at a minimum, they will not hurt a school financially; if implemented well, they may even generate additional funds. It is critical that in their

search for solutions to help meet performance outcomes and minimize the impact of budget cuts, schools do not further aggravate problems of poor nutrition and inactive lifestyles in our nation's youth, which in turn, may undermine the very objectives that schools are trying to achieve. Our goal is to motivate school leaders to take steps to improve these areas, as such actions will help in achieving performance goals and in alleviating the financial constraints experienced by most school districts.

Defining Overweight and Risk of Being Overweight in Children

The medical definitions for overweight rely upon body mass index (BMI), a number calculated by dividing weight (in kilograms) by height (in meters) squared. For children, appropriate BMI ranges change by age and gender. These ranges are plotted on a standard growth curve to obtain a percentile ranking for each child. Children whose BMI is between the 85th and 94th percentile are considered to be at risk of being overweight. Children whose BMI is above the 95th percentile are considered overweight. The term obese is not generally used for children. BMI growth charts are developed by the National Center for Health Statistics of the Centers for Disease Control and Prevention and are available at www.cdc.gov/growthcharts.

THE COSTS OF THE STATUS QUO

The Costs of the Status Quo: The Impact of Poor Nutrition, Inactivity, and Weight Problems on Schools Today

The case for schools to take action begins with an understanding of the burden that schools face today because of the status quo — that is, the costs that schools must bear because of poor nutrition, inadequate physical activity, and resulting overweight problems among students.

Cost #1: Suboptimal Academic Achievement

Perhaps the most important consequence is the impact on learning. There is a growing body of evidence demonstrating that children who eat poorly or who engage in too little physical activity do not perform as well as they could academically, and that improvements in nutrition and physical activity can result in improvements in academic performance. In addition, emerging research indicates that overweight children face additional barriers that could contribute to poor academic performance.

The Link Between Nutrition and Academic Achievement

Well-nourished students tend to be better students, while poorly nourished children tend to have weaker academic performance and score lower on standardized achievement tests. Given that the majority of our nation's youth have poor eating habits, this creates a tremendous challenge for meeting achievement outcomes. This link between nutrition and academic achievement exists for a variety of reasons. Inadequate consumption of key food groups deprives children of essential vitamins, minerals, fats, and proteins that are necessary for optimal cognitive function.[16,17] For example, iron deficiency has been linked to shortened attention span, irritability, fatigue, and difficulty with concentration,[18] while low protein intake has been associated with lower achievement scores.[19] Poor nutrition and hunger also interfere with cognitive function and are associated with lower academic achievement, and these conditions can be present in underweight, normal weight, or overweight children. One study found that students who are "food-insufficient" have significantly lower math scores and are more likely to repeat a grade, see a psychologist, and be suspended from school.[20] Another study found that hungry children and those at risk for being hungry were twice as likely to have impaired functioning (as reported by parent or child); teachers reported higher levels of hyperactivity, absenteeism, and tardiness among hungry/at-risk children than among their peers who were not hungry.[21]

Several studies, moreover, have shown a direct link between nutritional intake and academic performance. Transient hunger from missing meals and moderate under-nutrition can compromise cognitive development and school performance. Omitting breakfast can

interfere with learning even in well-nourished children. Numerous studies have found that increased participation in School Breakfast Programs is associated with increases in academic test scores, daily attendance, and class participation, and it has also been linked to reductions in absences and tardiness.[22,23,24,25,26,27,28,29] Both parents and teachers report that students participating in these breakfast programs are calmer in class and have more energy for studying.

Chronically undernourished children attain lower scores on standardized achievement tests, are more irritable, have difficulty concentrating, and have lower energy levels. Undernourished students have less ability to resist infection and are more likely to become sick, and therefore miss school,[30] which can undermine academic achievement since attendance is positively correlated with school completion and academic success.[31]

Success Stories: Healthy Practices Pay Off for Schools

Southlake Elementary School in Maryland saw an 8 percent decline in tardiness, a 50 percent decline in suspensions, and a 5 percent increase in the number of students scoring satisfactorily on state testing after increasing participation in its school breakfast program.

The Link Between Physical Activity and Academic Achievement

Physical activity has also been linked to academic performance. A recent study found that California schools with high percentages of students who did not routinely engage in physical activity and healthy eating habits had smaller gains in test scores than did other schools.[32] Schools that offer intense physical activity programs have seen positive effects on academic performance and achievement (e.g., improved mathematics, reading, and writing test scores, less disruptive behavior), even when the added physical education time takes away from class time for academics.[33] A recent national survey of 500 teachers and 800 parents conducted for The Robert Wood Johnson Foundation found that 90 percent of teachers and 86 percent of parents are convinced that physically active children are better able to learn.[34]

A meta-analysis examined the effect of exercise on cognitive function. Surveying results from nearly 200 studies including adults and children, this analysis found that physical activity supports learning.[35] The California Department of Education recently analyzed 2001 results of physical fitness testing and compared them with the Stanford Achievement Test, Ninth Edition (SAT 9), which was given as part of the California Standardized Testing and Reporting Program. The analysis showed a significant relationship between academic achievement and fitness. In the study, reading and mathematics scores were matched with fitness scores of 353,000 fifth graders, 322,000 seventh graders, and 279,000 ninth graders. Higher achievement was associated with higher levels of fitness at each of the three grade levels measured. The relationship

between academic achievement and fitness was greater in mathematics than in reading, particularly at higher fitness levels. Students who met minimum fitness levels in three or more physical fitness areas showed the greatest gains in academic achievement at all three grade levels. Females demonstrated higher achievement than males, particularly at higher fitness levels.[36] Physical activity among adolescents is consistently related to higher levels of self-esteem and lower levels of anxiety and stress — each of which has been associated with better academic performance.

One study linked physical activity programs to stronger academic achievement, increased concentration, and improved math, reading, and writing test scores. And another study found that students participating in daily physical education exhibit better attendance, a more positive attitude towards school, and superior academic performance.[37] While the effect of physical activity on attendance needs more study, it is well-documented that moderate physical activity has a positive effect on immune function.[38] Of course, whether one gets sick depends on many factors. Nonetheless, because physical activity and good nutrition have a positive effect on the immune system, they can help to prevent colds and the flu, two of the most common childhood ailments.

The (More Tenuous) Link Between Weight and Academic Achievement

While the evidence on the direct effect of weight on academic achievement is less conclusive, there is little doubt that overweight students face additional barriers to learning that likely lead to poorer academic achievement.

To date, only a handful of studies have directly examined the relationship between weight and achievement. Because multiple factors must be controlled in conducting this type of research, it is difficult to draw definitive conclusions. A 2003 *JAMA* study found that severely overweight children and adolescents (those above the 95th percentile for weight) were four times more likely than healthy children and adolescents to report "impaired school functioning."[39] Another study found that severely overweight inner city school children tended to have abnormal scores on the Child Behavior Checklist, and that these children were twice as likely to be placed in special education and remedial class settings than were children who are not overweight.[40] A 2004 study of 11,192 kindergartners by researchers at RAND Corporation found that overweight children had significantly lower math and reading test scores at the beginning of the year than did their non-overweight peers, and that these lower scores continued into first grade.[41,42]

A correlation between weight problems and academic achievement does not necessarily imply causation, and therefore results must be interpreted cautiously. In some of the studies cited above, the underlying cause of poorer academic achievement among overweight students can also be related to other factors, such as socioeconomic status, parents' level of education, poor nutrition, and/or inadequate physical education. Hispanic and non-Hispanic black children are less likely to participate in organized physical activity than are white, non-Hispanic children. Children of parents with lower income and educational levels are also less likely to participate in organized

physical activity.[43] In several studies, including the one conducted by RAND, the authors concluded that being overweight should be thought of as a "marker" for poor performance — not the underlying cause. One recent study, however, found that lower math scores among overweight boys in kindergarten could not be explained by other factors such as race/ethnicity and the mother's level of education. For these boys the negative effect of being overweight on math scores was found to be statistically equivalent to watching two extra hours of television each day.[44] These emerging findings indicate that for some students, being overweight could contribute to poor school performance.

There are a number of possible ways that being overweight may affect students' readiness to learn — one being increased time away from the classroom due to related health problems. Absenteeism is directly linked to academic performance; if being overweight causes a child to miss school, it follows that he or she might suffer academically as a result. A 2004 study in Texas found that the higher the attendance rate in a given district, all other things being equal, the higher the district's pass rate on the Texas Assessment of Knowledge and Skills.[45]

Schools do not systematically collect and report reasons for students' absences. However, it's reasonable to assume that being overweight can cause students to miss more class time. One study found that severely overweight students (those who had sought medical attention for the problem) are absent up to four times more often than normal weight students.[46] Being overweight can trigger or exacerbate a variety of chronic medical conditions in school-aged children, including asthma, joint problems, Type II diabetes, high blood pressure, high cholesterol, depression/anxiety, and sleep apnea.[47,48,49] Sixty percent of overweight children have at least one risk factor for heart disease.[50] These weight-related medical conditions undoubtedly cause students to miss class time, either through absences or visits to the nurse's office. In fact, some of these conditions appear to be significant sources of absenteeism. For example, asthma alone accounts for more than 14 million missed school days each year.[51]

In addition to missing school, children who are overweight might face physical, psychological, and/or social problems that are directly related to their weight and that lead to academic problems. For example, overweight children are more likely to be victims of bullying or to be bullies than are normal-weight children, according to a study published in *Pediatrics*.[52] Several studies support the link between psychological and social problems faced by overweight students and academic achievement. For example, a 2004 study found a strong association between being overweight in kindergarten and behavior problems such as anxiety, loneliness, low self-esteem, sadness, anger, arguing, and fighting.[53]

Another recent study on correlates of weight status in adolescents found that severely overweight (>95th percentile) girls were more likely than average-weight girls to report being held back a grade and to consider themselves poor students. The same study found that severely overweight (as well as underweight) boys were more likely than average-weight boys to dislike school and consider themselves poor students.[54]

Cost #2: Economic Strains on Schools

Little, if any, analysis has been conducted to evaluate the impact of poor nutrition, physical inactivity, and the increasing number of overweight students on a school's ability to manage within its budget. At first glance, the relationship may appear to be nonexistent. Upon closer inspection, however, reasons to believe that poor nutrition, physical inactivity, and the increasing prevalence of weight problems among students are beginning to take an economic toll on our nation's schools become most apparent.

These economic strains may not seem obvious. The manner in which poor nutrition, physical inactivity, and the increasing prevalence of weight problems among students may potentially affect school finances is subtle and indirect.

Reduced State Funding

In nine states (California, Idaho, Illinois, Kentucky, Mississippi, Missouri, New York, Tennessee, and Texas) collectively serving more than one-third of all students in the U.S., state funding for schools is determined using the Average Daily Attendance (ADA) methodology. In other words, public education dollars in these states are determined not by how many students are enrolled, but by how many actually show up at school. Student absenteeism can therefore have a negative impact on a school's bottom line. Data from The Finance Project, a nonprofit policy research and technical assistance group, demonstrate how absenteeism can be a significant problem for school budgets. These data suggest that a single-day absence by one student costs a school district in these states anywhere between $9 and $20.

While these figures may seem small, they add up quickly. An estimated 16 percent of youth are overweight to a degree that affects their health. One study found that severely overweight students miss (using the median number) one day per month or nine days per year.[55] While additional research on the role of weight, nutrition, and inactivity on absenteeism is needed, one can use these figures to derive a rough, preliminary estimate of the maximum potential impact of poor nutrition, physical inactivity, and weight problems on attendance, and therefore on school budgets in the nine ADA states. This type of absentee rate among overweight students in a student population with average prevalence of overweight could lead to a potential loss of state aid of $95,000 per year in an average size school district in Texas, and $160,000 per year in an average California school district. The loss in state funding in large cities could be much higher; for example, New York City could lose about $28 million each year, while Chicago could forfeit an estimated $9 million and Los Angeles an estimated $15 million.

The impact of nutrition, inactivity, and weight-related absenteeism on school budgets is likely to vary across geographic regions and even across schools within a local region. For example, schools in areas where the prevalence of poor nutrition, physical inactivity, and/or weight problems among students is above the national average (e.g., such as New York City, where more than 24 percent of elementary school students are

overweight[56]), as well as those schools that serve populations (e.g., Hispanics, African-Americans) where childhood weight and nutrition problems and physical inactivity tend to be more common, may experience a larger loss in state funds due to higher levels of absenteeism. In New York City, for example, 31 percent of Hispanic elementary school children were found to be overweight.[57] A study in Texas found that 27 percent of Hispanic and 31 percent of African-American fourth-grade girls were overweight.[58]

Data do not exist that show exactly what proportion of the total loss of funds from absenteeism is due to poor nutrition, lack of physical activity, and weight problems among students. However, given that most school-age children are sedentary and do not eat well, and that 16 percent of them are overweight, there are compelling reasons to believe that a meaningful percentage of the loss in state revenues is directly or indirectly related to these problems. Poor nutrition and inactivity are linked to an increased risk of getting a cold or the flu, while poor nutrition is associated with dental caries.[59] These problems represent some of the most common reasons that students miss school. In addition, poor nutrition and inactivity are associated with being overweight, a condition that exacerbates asthma (a major source of absenteeism) and that is linked with diabetes, both of which are thought to result in significant amounts of missed school time. Children who are overweight are reported to suffer from lower self-esteem, depression, and/or fear of being bullied or teased (especially in physical education classes), each of which represent additional reasons why overweight children may miss more school.

Indirect or "Hidden" Costs

Poor nutrition, physical inactivity, and overweight can indirectly drive up a school's cost structure, for several reasons.

First, it is likely that schools unknowingly bear significant costs (including staff time and money) on programs designed to help students whose academic performance and/or behavior suffers because of poor nutrition, physical inactivity, and/or weight problems.

Success Stories: Healthy Practices Pay Off for Schools

Adopting healthier practices can help schools meet their education goals and generate additional revenue, as well.

Mississippi's McComb Separate School District serves 3,000 students, 80 percent of whom live in public housing projects. McComb met the federally mandated "Annual Yearly Progress" requirements for every sub-group of students in 2002 — an achievement Superintendent Pat Cooper attributes to changes made in recent years to promote better student health. These changes have also had a positive impact on the district's bottom line. Over the past five years average daily attendance has increased from 93 to 96 percent, which translated into an additional $390,000 in state funding. In addition, vending machine revenues from water sales are up by 30 percent.[60]

In addition, some schools have reported linkages between poor nutrition and disruptive behavior and fatigue in the classroom. Students who misbehave, are fatigued, and/or who fall behind academically typically require extra attention, meaning that teachers and other school staff end up spending extra time with them. Some of these students may also require formal remediation programs. These programs typically involve additional, after-hours class time for teachers, and most school districts pay extra for this time. While it is difficult to assess how much of these indirect costs are due to the nutritional and sedentary habits of students, one can safely assume that the proportion is meaningful, given that poor nutrition and physical inactivity are so common and have such direct links to underachievement.

Second, the wide variety of physical and emotional problems that can be caused by poor nutrition and physical inactivity — including being overweight and weight-related medical conditions — can place a significant burden on teachers, medical personnel, counselors, and administrative staff within schools. More students are coming to schools with conditions — such as Type II diabetes, asthma, anxiety, depression, and joint problems, among others — that require the use of prescription medicines that must be administered under the supervision of school personnel. While the Americans with Disabilities Act requires schools to accommodate students with these and other medical conditions, schools do not receive federal reimbursement for the costs of managing these illnesses. Many schools cannot afford the professional resources needed in the area of student health; less than half of all American schools have the American Federation of Teachers recommended ratio of one nurse for every 750 students. Consequently, students' health needs are either neglected or addressed by non-medical staff who are called on to administer medications, such as insulin for children with diabetes, inhalants for those with asthma, and medications for those suffering from anxiety and other mental disorders. Schools bear the costs, either through increased student health costs (for the few schools that hire more nurses), reduced time for administrators to do their "real jobs" (for schools using non-medical personnel to meet these needs), or unmet health needs among students (for schools that cannot afford to do anything). A potentially significant cost for schools using non-medical personnel relates to increased risk of liability; schools using assistant principals and other administrative staff to administer medications to students may open themselves up to potential legal risks.

A third area of hidden costs relates to school staff. Like most employers, schools are increasingly burdened by the rapidly rising cost of providing health coverage to employees, high levels of employee absenteeism, and suboptimal levels of employee productivity. Data from the U.S. Census Bureau indicate that employee benefit costs in schools have risen 32 percent from 1996, and that in 2001-2002 they represented nearly 17 percent of total school expenditures. Health care is responsible for roughly two-thirds of these costs.[61] These data do not include the costs of hiring substitutes to fill in for teachers when they are sick.

Rising health costs and absenteeism and falling levels of productivity not only drive up labor costs for schools, but they also drive down the quality of instruction in a variety

of ways. When good teachers miss class, teaching quality inevitably declines, no matter how competent a substitute might be. And rising costs and falling productivity mean that fewer resources are available to invest in academic instruction. In fact, a recent survey by the Association for School Business Officials suggests that rising health care costs are forcing schools to reduce spending in important areas, such as teacher positions (43 percent are cutting back in this area) and professional development and technological upgrades (40 percent are cutting back in these areas).[62]

These data make it clear that improving nutrition and physical activity among school employees should yield significant benefits to schools by reducing the prevalence of poor nutrition, physical inactivity, and obesity-related illnesses and absences among teachers and other staff. Much of corporate America has already gotten this message. A number of major corporations, in fact, have invested in wellness programs that are designed, among other things, to boost physical activity levels and improve the dietary habits of employees. These programs have been found to result in a positive financial return, typically more than $3 in benefits for every $1 spent on health management programs, and even greater returns for demand management and disease management initiatives.[63]

School leaders would be wise to consider enacting programs to combat physical inactivity, poor nutrition, and overweight/obesity among school staff, especially teachers and principals who serve as role models for students. Such programs will not only lead to better nutrition and improved physical activity among students who emulate their teachers' behaviors, they can also reduce expenses and lead to higher-quality instruction.

The Costs of the Status Quo: Schools Unknowingly Undermine Their Own Interests

Another central reason for schools to combat poor nutrition, physical inactivity, and weight problems is the unintended consequences of many current school practices in these areas. Today many school leaders are cutting back on physical education and health education programs in the hope that they can boost academic performance among students by putting more time into reading and math. At the same time, most schools promote and sell low-nutrient, high-calorie foods in an effort to generate additional revenues. This section briefly reviews current school practices and policies with respect to nutrition, physical activity, and physical education, and highlights problems related to these strategies and their relative lack of success in meeting stated objectives. It also presents anecdotal evidence that schools that reverse these practices — i.e., improve nutrition and increase the time allotted for physical activity — can reap benefits in terms of higher academic achievement and in some cases improved finances.

School Nutrition: Practice and Policy

Most schools make high-calorie, low-nutrient foods and beverages available. Eighty percent of American school districts sell competitive foods (foods and beverages sold in competition with school meal programs) in a la carte lines, school stores, snack bars, and vending machines. This includes nearly 98 percent of high schools, 74 percent of middle schools, and 43 percent of elementary schools.[64] Most of the foods sold are low in nutrients and high in calories. A recent study evaluating the contents of 1,420 school vending machines in 251 middle and high schools found that 75 percent of beverage options and 85 percent of snack options were of "poor nutritional quality."[65]

Schools not only sell non-nutritious foods and beverages, but they also promote their consumption. For example, some schools allow their students to see advertisements for these types of foods on Channel 1, which offers "educational" programming to millions of students in schools across the country each day. It is also common practice for schools to sell non-nutritious foods as a part of fundraising activities, be it classroom bake sales or booster group sales featuring donuts, cookies, and cake; class parties with pizza and soda; or after-school sporting events that feature soda and candy bars. Even teachers who want to recognize accomplishments by their students add to this type of promotion by rewarding students with candy and soda.

These practices make participation in meal programs, which tend to offer more nutritious foods, less desirable for many students. Students who do participate in the National School Lunch Program enjoy better nutrition than those who make other lunchtime

choices. They consume more vegetables and grain foods, drink more milk and fewer sugary drinks, and eat fewer cookies, cakes, and salty snacks.[66] School lunch and breakfast programs may also protect against being overweight in some students; one study found that food-insecure girls whose families participated in the Food Stamp Program and the National School Breakfast and Lunch Programs had a lower risk of being overweight than did food-insecure girls who did not participate in these programs.[67] But fewer and fewer students — including many who qualify for free or reduced-price meals — are choosing school meals. Less than 60 percent of students choose such lunches today. While school enrollment increased by 6.8 percent in the last 20 years, participation in school meals actually *decreased* by 1.2 percent over the same time frame.[68]

There are several reasons for declining participation in school meals programs, many of which are directly related to school practices and/or policies. First, students may not feel they have enough time to eat a full meal. Often children are given as little as 10 to 15 minutes to eat lunch so that everyone in crowded schools can be served. One study of 285 elementary schools in Pennsylvania found that more than one-half of the students had 20 minutes or less to eat.[69] In another Pennsylvania study, more than 25 percent of middle schoolers reported that they did not have enough time to eat.[70] Second, students may opt out of school meals because they do not want to be publicly identified as coming from a low-income household. "Children may perceive that school meals are primarily for poor children rather than nutrition programs for all children," according to a USDA report to Congress in 2001. "Because of this perception, the willingness of low-income children to accept free or reduced price meals and non-needy children to purchase school meals may be reduced."[71]

The net impact of school practices that offer and promote competitive foods is, not surprisingly, to drive students to these foods (which do not have to meet federal nutrition guidelines) and that undermines the nutritional status of students. Several recent studies have found that the availability of these foods in a la carte lines and vending machines displaces the consumption of more nutritious foods.[72] One study found that a la carte offerings of low-nutrient foods and beverages were negatively associated with daily fruit and vegetable consumption. Students from schools that did not offer these foods had higher consumption of fruits and vegetables and were more likely to meet the recommended intake levels for fat.[73] Another study found that fifth graders who entered a school offering a la carte foods and snack bars significantly decreased their consumption of fruit (by 33 percent), vegetables (42 percent), and milk (35 percent) from the levels consumed in fourth grade.[74] Conversely, in states that restrict the sale of competitive foods, rates of participation in the school meal program have held steady or are even higher than the national average, according to the USDA.[75]

The irony, moreover, is that schools that sell competitive foods may not be helping their overall financial situation, in the short- or long-term. Competitive foods drive down participation in school meal programs, causing schools to lose potential revenues from federal meal reimbursements for participation in the National School Lunch and

Breakfast Programs. For example, a major survey of vending contracts in the state of Texas estimated annual revenues from these contracts to be approximately $54 million. However, the total loss in revenues from the declining meal sales (due to increased vending machine sales) was much greater than this figure — yielding a net loss of $60 million to the schools.[76] At the same time, case studies regarding schools and school districts that have improved the healthfulness of food and beverage offerings while simultaneously maintaining or increasing total revenues from food sales are accumulating. For example:

• The city of Philadelphia realized increased revenues and reduced costs after pursuing several strategies designed to improve the nutritional value of its food and beverage offerings in schools. Moving from whole to low-fat milk cut costs by $340,000 (1.6 cents per pint). Adding more 100 percent juice and water to new glass-front vending machines sent beverage revenues up by 18 percent. And in a four-school pilot, overhauling the menu and vending offerings to focus on more healthful eating resulted in an increase in sales from vending machines.[77]

• When campuses in Texas's Midland Independent School District agreed to stop selling all competitive foods during the school day, sales of school meals increased, more than doubling the food services department's income.[78]

• North Community High School in Minneapolis, Minnesota, decreased soft drink sales and increased profits from vending machine sales by $4,000 by adding machines stocked with water, 100 percent fruit/vegetable juices, and sports drinks, while also limiting the availability of soft drinks to one machine for a limited time each day.[79]

• Fayette County Public Schools in Lexington, Kentucky, developed a request for proposal (RFP) for vendor contracts that paid higher commissions for healthful items, priced healthful items advantageously, and required an increase in the upfront payment to the school district from $500,000 to $900,000. Revenues increased in the first 6 months after implementation of the new program.[80]

School Physical Activity: Practices and Policies

Few schools offer opportunities for physical activity throughout the school day nor do they offer recommended amounts of physical education. Recently, schools have been confronted with having to make a choice between physical activity opportunities and more classroom time. The National Association for Sport and Physical Education's position statement recommends that elementary schools offer 150 minutes of physical education per week and that secondary schools offer 225 minutes per week — ideally with some instruction being offered every day. However, just 8 percent of elementary schools, 6.4 percent of middle/junior high schools, and 5.8 percent of senior high schools provide daily physical education.[81] While 48 states have laws requiring public

schools to teach physical education, those laws are rarely enforced. New York, for example, mandates 120 minutes of physical exercise per week, but a study of 51 New York schools found that only 25 percent met the requirement for second graders and only 40 percent did so for fifth graders.[82] An estimated 20 percent of all elementary schools have dropped recess in favor of more classroom time, according to the American Association for the Child's Right to Play.

Student participation in physical education appears to be declining overall, with the rate of activity varying greatly by gender and generally declining with age. According to the CDC, 42 percent of high school students had physical education every day for at least one semester in 1991. By 1999, that figure had dropped to 29 percent and has remained steady through the last published CDC report in 2003.[83] The CDC estimates that one in four children do not attend any physical education classes, and that less than half of all schools offer intramural activities and only 14 percent of these schools offer transportation home.[84]

Some of the decline in physical activity is due to schools' implementation of strategies designed to improve achievement outcomes. But the theory that spending more time learning academics in the classroom will lead to higher test scores and grades has not been proven. In fact, there is a growing body of evidence that suggests the opposite is true. In other words, allotting too little time to physical education may undermine the goal of better performance, while *adding* time for physical activity may support improved academic performance. For example:

• A highly respected study found that doubling the amount of time for physical education over a two-year period did not harm academic achievement, and may have even boosted reading scores.[85]

• According to the President's Council on Physical Fitness and Sports, evidence indicates that time spent in physical education does not decrease learning in other subjects. Youths 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.[86]

• Several studies suggest that providing more time for physical activity (by reducing class time) can lead to increased test scores, particularly in the area of mathematics.[87,88] For example, in one of these studies, students placed in an experimental group engaged in 24 minutes of additional physical activity per week — and had a corresponding decrease in class time for academics. Mathematics test scores in this group were consistently higher than for students in a control group, who saw no change in time allocation.[89]

• Classroom-based physical activity integrated into science, math, history, or other subjects has been successfully implemented through several programs. One example is the Michigan Department of Education's program, *Brain Breaks*, which provides elementary school children with activities that are either integrated as a part of the class or are used as a transition between classes.[90] The data suggest that these types of breaks for physical activity can help children to be more focused, less disruptive, and better able to learn.

An additional benefit of adding time for physical activity is improved health for students. A 2004 report concluded that adding one hour per week of physical education time for first graders can significantly reduce body mass index for overweight and at-risk-for-overweight girls.[91]

The Bottom Line: Time for a Change

Without question, many school practices and policies — cutting back on physical activity while promoting and selling competitive foods in schools — aggravate students' health and their readiness to learn. Ironically, these approaches seem to have little chance of being effective in achieving their stated goals — improving academic performance and enhancing schools' revenues. Instead, these practices undermine progress toward these objectives. Schools need to reconsider their utility given that these practices and policies will have negative health consequences for students, and will not, in the long term, help advance the school's mission of preparing each child to succeed as a productive citizen.

A CALL TO ACTION

A Call to Action: Schools as Part of the Solution

The ultimate goal for schools is to provide high-quality education for all students. There are strong reasons to believe that combating poor nutrition and physical inactivity can help schools meet this goal by boosting the academic achievement of their students while simultaneously maintaining (if not improving) their own financial situation. Such actions are an important part of a comprehensive plan for becoming or staying a high-performing school. When groups of students make insufficient academic progress, interventions that support students' emotional and physical health — such as quality physical education programs, more nutritious food and beverage options, and classroom nutrition and health education — can be included as part of the school's improvement plan. There is no reason to wait to implement these types of interventions when the evidence is clear that having healthier students can lead to better learning and the preservation of school resources (both human and financial). Schools can take proactive steps to offer and promote consumption of nutritious foods and provide opportunities for students to engage in physical activity both during school and in after-school programs.

Schools Need Not Act Alone: The Importance of Collaboration and Partnership

Just as the problems that have led to poor nutrition, physical inactivity, and weight problems among youth are multifaceted, so are the solutions. Tackling these problems is the responsibility of every individual, every community, and every state in the nation. Public and private stakeholders at all levels must join in the effort. From parents to local health care providers, from community-based organizations to health plans and insurers, from public health departments to state and federal government agencies, a broad spectrum of players must come together to encourage children and adolescents to change their behaviors so that they can live long, healthy lives.

Action for Healthy Kids – A Collaborative Response

Action for Healthy Kids (AFHK) is a public-private partnership that includes more than 40 national organizations and government agencies representing education, physical activity, health, and nutrition. Along with its partner organizations, AFHK is comprised of 51 state teams that have enlisted nearly 5,000 volunteers including school administrators, educators, health professionals, and other committed individuals. These AFHK teams are taking actions that work to improve students' eating habits and increase their physical activity while educating administrators, teachers, parents, students and others about the role of good nutrition and physical activity in academic achievement.

(Detailed information on the activities of the state teams is available at AFHK's web site: www.ActionForHealthyKids.org.)

To help schools implement these best practices, experts from AFHK's Partner Steering Committee and state teams have developed the following "top 5" list of near-term actions that can enhance children's health and readiness to learn:

1. 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 assess the school, develop plans, and implement policies and programs that address nutrition and physical activity that make sense for the local school community.

2. Develop a comprehensive wellness policy. With the recent passing of the Child Nutrition Reauthorization Act, all schools that participate in federal school meal programs will need to develop a local wellness policy that includes goals for nutrition education and physical activity. This "road map" needs to include guidelines for all foods and beverages sold on school campus as well as for teaching students how to make good decisions about what they eat. The policy should also address staff training needs. The effectiveness of the policy in meeting its objectives will need to be evaluated, with adjustments made as necessary.

3. 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 assignments. For more information and ideas for approaches that work, visit the What's Working database at: www.ActionForHealthyKids.org.

4. Incorporate nutrition education and physical activity into after-school programs. Students who stay on campus after classes let out can do more than finish homework, play board games, and watch movies. Time should be set aside for physical activities that engage students in fun and innovative ways to get them moving and to increase their physical skills. In addition, after-school programs should provide access to healthy snacks and hands-on opportunities to learn about food and nutrition. Turnkey programs are available for schools to assist with implementation.

5. 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 healthy foods, staff can also set a powerful example for students.

For additional information on how schools can make positive changes for student health, visit the Action for Healthy Kids web site (www.ActionForHealthyKids.org). The site offers many resources, including toolkits, program ideas, and case studies.

A Call to Action: Committed to Change — States Take Action

Setting Positive Goals

In October 2002, Action for Healthy Kids leaders and its partners developed "The Commitment to Change" based on the *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity.* The 12 goals outlined in this document represent "best practices" for school environments that support improving students' health and readiness to learn, and protecting schools from the risks and costs associated with poor nutrition and physical inactivity:

1. Provide age-appropriate and culturally sensitive instruction in health education and physical education that helps students develop the knowledge, attitudes, skills, and behaviors to adopt, maintain, and enjoy healthy eating habits and a physically active lifestyle.

2. Provide students in pre-kindergarten through grade 12 with behavior-focused nutrition education integrated into the curriculum that is interactive and teaches the skills they need to adopt healthy eating habits.

3. Ensure that meals offered through all school feeding programs meet federal nutrition standards.

4. Adopt policies ensuring that all foods and beverages available on school campuses and at school events contribute toward eating patterns that are consistent with the Dietary Guidelines for Americans.

5. Provide food options that are low in fat, calories, and added sugars, such as fruits, vegetables, whole grains, and low-fat or nonfat dairy foods.

6. Ensure that healthy snacks and foods are provided in vending machines, school stores, and other venues within the school's control.

7. Prohibit student access to vending machines, school stores, and other venues that contain foods of minimal nutritional value and that compete with healthy school meals in elementary schools, and restrict access to such foods in middle, junior, and high schools.

8. Provide an adequate amount of time for students to eat school meals, and schedule lunch periods at reasonable hours around midday.

9. Provide all children, from pre-kindergarten through grade 12, with quality daily physical education that helps develop the knowledge, attitudes, skills, behaviors, and confidence needed to be physically active for life.

10. Provide daily recess periods for elementary school students, featuring time for unstructured but supervised active play.

11. Provide adequate co-curricular physical activity programs, including fully inclusive intramural programs, physical activity clubs, and after-school programs that include physical activity.

12. Encourage the use of school facilities for physical activity programs offered by the school and/or community-based organizations outside of school hours.

Action for Healthy Kids State Teams have developed action plans focusing on several of these goals, spurring change among states, school districts, and individual schools throughout the nation. For example:

Putting Goals into Action

• The Massachusetts state team worked with the MA Department of Education and MA School Food Service Association to develop and disseminate nutrition guidelines for foods and beverages sold in a la carte to all 1,893 MA school districts, positively impacting nearly 1,000,000 students.

• The Connecticut state team is helping put fun back in the school day as it collaborates on "Connecticut at PLAY!", a physical activity challenge for Connecticut schools. "Connecticut at PLAY!" will encourage more than 15,000 students at more than 100 schools to be involved in physical activity at school.

• The Delaware state team developed and disseminated a la carte food recommendations that were implemented by 84 percent of school districts, impacting more than 105,000 students.

• The Alabama state team is leading change for more than 750,000 students in 1,529 schools, with its recommendations for increased physical activity at school, and healthy food choices in vending, school stores, school parties and school fund-raisers.

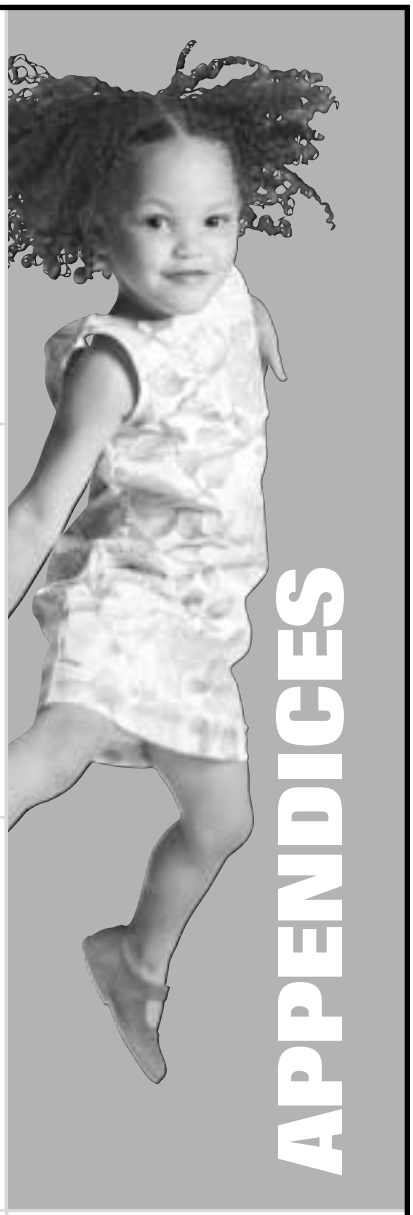
• The West Virginia state team, in consultation with the West Virginia Department of Education, has developed an innovative training program for principals. “Recipe for Success” trains principals, using practical strategies for improving physical activity and nutrition, to make sustained change in their schools. The state team’s effort has led to the training of fifteen principals and will impact 15,000 students in West Virginia.

• The Indiana state team is mobilizing local coalitions through its identification of “Community Champions,” who will in turn establish local programming. The state team has also developed materials on the benefits of recess before lunch and healthy vending options that has been shared with superintendents throughout the state. In one district alone, 13 schools with nearly 8,000 students have implemented recess before lunch as a direct result of the state team’s action.

• In the state of Texas, with a student population of more than 4,000,000, the state team is working to ensure that the majority of school districts have a school health advisory council responsible for making recommendations and monitoring nutrition and physical activity programs within their districts. The state team recently completed a training of 22 specialists that will assist districts in forming these councils.

• The Ohio state team has worked to increase the number of children that participate in school breakfast programs. Over 150 schools throughout the state have initiated programs with another 50 to start in the upcoming school year. The work of the state team on this goal accounts for a 3.3 million increase in breakfast meals served to students this year.

• The Montana state team is encouraging parents to take action by providing grants to parent groups, in public and private schools, for efforts that will improve food and beverage choices and/or to enhance the physical activity opportunities in their school community. These parent-led mini-grant projects will serve as "models" for other parent groups to follow in creating healthier school environments.



APPENDICES

APPENDICES

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Action for Healthy Kids Partner Steering Committee

American Academy of Family Physicians
American Academy of Pediatrics
American Association of School Administrators
American Diabetes Association
American Dietetic Association
American Federation of Teachers
American Public Health Association
American School Health Association
Association for Supervision and Curriculum Development
Association of School Business Officials International
Association of State & Territorial Chronic Disease Program Directors
Association of State & Territorial Health Officials
Association of State & Territorial Public Health Nutrition Directors
Council of Chief State School Officers
Family, Career & Community Leaders of America
Food Research and Action Center
National Association for Sport and Physical Education
National Association of Elementary School Principals
National Association of Pediatric Nurse Practitioners
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National Association of Secondary School Principals
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National Association of Student Councils
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National Coalition for Promoting Physical Activity
National Dairy Council
National Education Association — *Health Information Network*
National Future Farmers of America Organization/Foundation
National Medical Association
National Middle School Association
National PTA
National School Boards Association
The Robert Wood Johnson Foundation
School Nutrition Association
Society for Nutrition Education

Society of State Directors of Health, Physical Education and Recreation

U.S. Department of Agriculture — *Food and Nutrition Service*

U.S. Department of Education — *Office of Safe and Drug-Free Schools*

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