

bridging the gap

Research Informing Policies & Practices
for Healthy Youth

School Policies and Practices to Improve Health and Prevent Obesity: National Elementary School Survey Results

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About Bridging the Gap

Bridging the Gap is a nationally recognized research program of the Robert Wood Johnson Foundation dedicated to improving the understanding of how policies and environmental factors affect diet, physical activity and obesity among youth, as well as youth tobacco use. The program identifies and tracks information at the state, community and school levels; measures change over time; and shares findings that will help advance effective solutions for reversing the childhood obesity epidemic and preventing young people from smoking. Bridging the Gap is a joint project of the University of Illinois at Chicago's Institute for Health Research and Policy and the University of Michigan's Institute for Social Research. For more information, visit www.bridgingthegapresearch.org.

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for Healthy Youth

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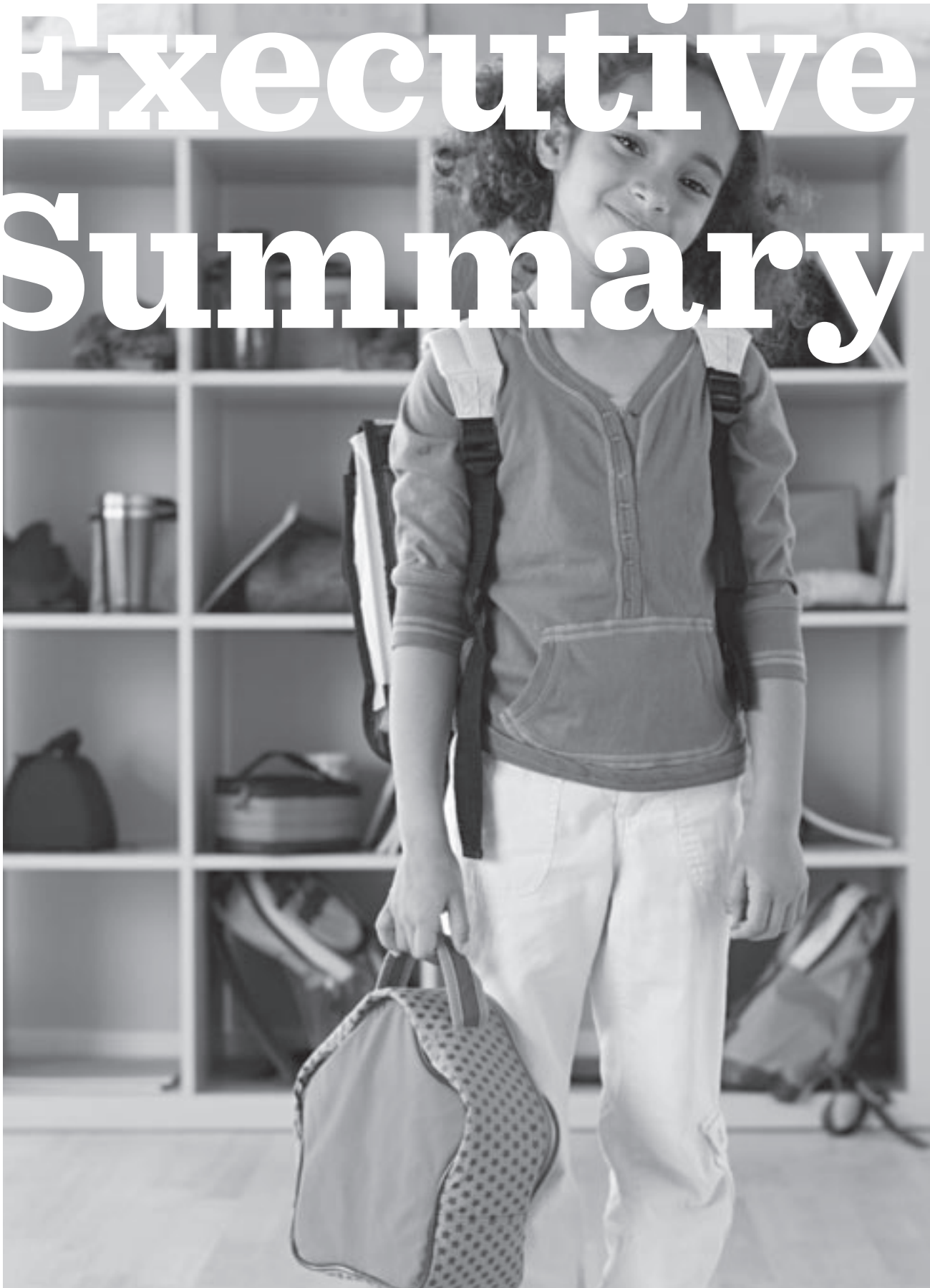
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Executive Summary



Executive Summary

The prevalence of obesity among children ages 6 to 11—those typically in elementary school—rose from 4 percent in the late 1970s¹ to nearly 20 percent in 2007–08.^{2,3} The dramatic increase in obesity prevalence is clearly associated with unhealthy eating habits and lack of physical activity.^{4–6} Because children spend a significant portion of their time in school, many researchers, health advocates and policy-makers at all levels of government are pushing for changes that will make the school environment healthier for students.

The Child Nutrition and WIC Reauthorization Act of 2004 (P.L. 108-265, Section 204) included language that required school districts participating in the National School Lunch Program, School Breakfast Program and other federal child nutrition programs to develop and implement a wellness policy by the first day of the 2006–07 school year. The Act required wellness policies to include:

- *goals for nutrition education and physical activity;*
- *assurance that reimbursable school meals meet the minimum federal school meal standards;*
- *guidelines for foods and beverages sold or served outside of school meal programs (i.e., “competitive foods”); and*
- *implementation plans.*

Recent studies indicate that the majority of U.S. school districts have developed a wellness policy, but overall the policies were weak, fragmented and did not necessarily require schools to take action.^{7,8}

Report Overview

This report summarizes findings from one of the most comprehensive studies to date of health-related policies and practices in U.S. elementary schools. Our survey examined topics addressed in the federal wellness policy mandate and many other issues relevant to childhood obesity, such as specific foods and beverages offered during school lunches; products sold through competitive venues (e.g., vending machines, à la carte lines); physical education programming; and walking and bicycling to school.

Our data were collected during the first two years following the wellness policy mandate. As such, these findings help to document school-level implementation of the new district wellness policies. Understanding how school practices and district policies facilitate healthy changes in school environments is particularly important as Congress considers reauthorization of child nutrition and WIC programs, K–12 education policies and transportation programs. These data also are critical for informing school- and district-level efforts to provide a healthier environment for students.

Our findings are based on data obtained from administrators at nationally representative samples of public and private elementary schools. Results describe policies and practices in schools during the 2006–07 and 2007–08 school years that ultimately impacted approximately 21 million K–5 students each year. Data are weighted to reflect the percentages of students^a nationwide who attended an elementary school that engaged in the practices referenced in our survey.

^a Because elementary schools vary in grade composition (e.g., pre-K–3, grades 2–5, K–6), and all schools we surveyed had at least one 3rd-grade class, we selected grade 3 as a proxy for weighting our data. We used each school’s 3rd-grade student population to develop weights that reflect the percentage of elementary school students nationwide who were impacted by the practices referenced in our survey.

Key findings presented in this summary focus on public elementary schools. The report also describes opportunities to improve practices in public elementary schools through policy changes at the district, state and federal levels. Although private schools often do not have districts that set policies, it is important to examine health-related practices that impact private students, who account for 13 percent⁹ of the U.S. elementary school student population. Results for private elementary school students are detailed separately in the final section of this executive summary.

This summary concludes with Table ES.2, which presents data for the 2007–08 school year that is featured in our full report. More information, including complete data for private school students and results for the 2006–07 school year, is available at www.bridgingthegapresearch.org.

Major Findings

Overall, U.S. public and private elementary schools simply are not making the grade when it comes to providing students a healthy environment. Our results indicate that major changes are needed to better support healthy eating and physical activity among all elementary school students.

As shown in Table ES.1, public elementary schools have made progress in some areas, but many practices were not consistent with national recommendations for diet and physical activity. For example, most public elementary school students had easy access to unhealthy foods and beverages on campus throughout the school day, and very few had the opportunity to get enough physical activity to satisfy the minimum recommendations set by the U.S. Department of Health and Human Services (USDHHS) or the National Association for Sport and Physical Education (NASPE).

TABLE ES.1 Percentage of Public Elementary School Students Exposed to Selected Policies and Practices, School Years 2006–07 and 2007–08

	2006–07	2007–08
SCHOOL MEALS		
Salad bar available most days or every day in National School Lunch Program meals	17%	21%
Whole grains available most days or every day in National School Lunch Program meals	15%	20%
High-fat milk (2% or whole milk) available most days or every day in National School Lunch Program meals	75%	77%
COMPETITIVE FOODS AND BEVERAGES		
Competitive items available in vending machines, à la carte, stores and/or snack bars	59%	62%
Unhealthy foods (e.g., fries, candy, cookies) available in competitive venue	47%	44%
Sugary beverages (e.g., sodas) available in competitive venue	17%	17%
PHYSICAL ACTIVITY AND PHYSICAL EDUCATION		
Daily physical education class offered to 3rd-grade students	20%	20%
At least 150 minutes of physical education offered per week for 3rd-grade students	19%	18%
At least 20 minutes of recess offered daily for 3rd-grade students	66%	68%
Physical fitness measured annually for all elementary school students	42%	34%

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010

Nutrition-Related Findings

School Meals

Key Findings

- Most public elementary school students had access to the School Breakfast Program and the National School Lunch Program, particularly at schools serving many lower-income students.
- Meals offered through the National School Lunch Program often included higher-fat products such as pizza, french fries and 2% or whole milk. In 2007–08, these products were available on some or most days for, respectively, 99 percent, 39 percent and 81 percent of public elementary school students. Only one-fifth of public elementary school students had salad bars and whole grains available most or all days of the week during the 2007–08 school year.
- In 2007–08, only 14 percent of public elementary school students attended a school with a fruit and/or vegetable garden and only 7 percent attended a school that participated in a farm-to-school program.

Policy Opportunities

Improve the Nutritional Quality of School Meals

School meals should provide more healthy foods and fewer low-nutrient, high-calorie options. The U.S. Department of Agriculture (USDA) regulations for school meals should be regularly updated to reflect the current dietary guidelines. The regulations also should meet the Institute of Medicine's 2009 recommendations¹⁰ for increasing the availability of fruits, vegetables and whole grains; decreasing saturated fat, trans fat, added sugars and salt; and limiting milk to 1% or nonfat options.

Increase Federal Reimbursement Rates for School Meals

Offering students more access to healthier foods, such as fruits, vegetables and whole grains and relying less on ready-to-serve entrees that are high in fat and sodium are two important strategies for improving the

nutritional quality of school meals. Yet both of these strategies will increase food service costs. At a time of strained budgets, increasing the reimbursement rates for school meals will be crucial for enabling school food service programs to offer healthier meals that comply with current nutrition guidelines.

Support School Gardens and Farm-to-School Programs

Participating in farm-to-school programs and using school gardens both in curriculum and food service are two emerging interventions that support nutrition education and may increase student consumption of healthy foods.^{11,12} However, such programs are not widespread and more research is needed to evaluate their impact on dietary behaviors. This presents an opportunity for the USDA to work with state and local governments, community groups, and school authorities to encourage partnerships between local farms and schools and to support schools in establishing gardens.

Competitive Foods and Beverages

Key Findings

- Competitive foods and beverages—those available through vending machines, à la carte lines, school stores and/or snack bars—were widely available for purchase by public elementary school students. In 2007–08, 62 percent of public elementary school students had access to at least one competitive food or beverage venue on campus, up from 59 percent in 2006–07.
- Less-healthy competitive products were commonly available. In 2007–08, 44 percent of public elementary school students could purchase foods such as potato chips, candy, cookies or french fries, 17 percent could purchase sugar-sweetened beverages, and 38 percent could purchase high-fat milks through vending machines, à la carte lines or other competitive venues on campus.

- As of 2007–08, awareness of the nutritional guidelines for competitive foods and the school beverage guidelines brokered by the Alliance for a Healthier Generation had increased, but implementation of the guidelines remained relatively low in public elementary schools.
- In 2007–08, 37 percent of public elementary school students attended a school that restricted sugary foods during class parties, and 39 percent attended a school that restricted the use of food as a reward for good academic performance.

Policy Opportunities

Update Standards for Competitive Foods and Beverages

The current federal regulations on the nutritional quality of foods sold or served outside of the school meal programs (i.e., competitive foods) are weak and outdated. Although some districts and states have enacted policies and legislation that restrict the availability of unhealthy competitive foods and beverages—or aim to improve the nutritional quality of products sold in competitive venues—these sales are unregulated in many schools.

Congress should give USDA the authority to update national nutrition standards for foods and beverages served outside of the school meal programs and apply them to the entire campus for the full school day. In tandem, states and school districts should update their policies to ensure that all competitive foods and beverages available on campus contribute to a healthy diet.

Limit the Availability of Unhealthy Products in the Classroom

Establishing and strengthening district policies regarding the use of non-food options for student rewards and classroom parties would remove a significant source of high-calorie, low-nutrient products in elementary schools.

Physical Activity and Physical Education

Key Findings

Opportunities for elementary school students to be physically active at school were generally lacking and were not aligned with national recommendations for daily physical activity.

- Although most 3rd-grade public school students were required to take physical education class, in 2007–08, only one in five were offered daily physical education. Also, about one in five were offered 150+ minutes of physical education per week, which is recommended by NASPE.¹³
- Thirty-four percent of public elementary school students attended a school that annually tested all students' physical fitness during the 2007–08 school year, down from 42 percent the year prior.
- Although more than 80 percent of 3rd-grade public school students had daily recess time in 2007–08, only two-thirds received 20+ minutes of recess per day as recommended by NASPE and other organizations.^{14,15} Public elementary school students at predominantly Black and Latino schools^b were even less likely to receive recommended amounts of recess than were students at predominantly White schools (43% and 55% compared with 77%, respectively).
- In 2007–08, approximately 20 percent of public elementary school students walked or bicycled to school, but close to one-third attended a school that did not allow students to bicycle to school. Participation in Safe Routes to School programs was low, and issues such as traffic danger, distance and lack of bike racks and crossing guards were commonly reported barriers to active commuting.

Policy Opportunities

Support High-Quality Physical Education in Schools

Ensuring that students have access to high-quality physical education programming, such as daily classes that allow students at least 150 minutes of physical

^bData from the National Center for Education Statistics (NCES) were obtained regarding school-level demographic characteristics. Using information on the racial and ethnic representation of students at the school, we classified schools as: majority White (>66% White), majority Black (>50% Black), or majority Latino (>50% Latino). A fourth group includes the remaining schools that did not fall into one of the aforementioned groups and which have a diverse student population.

education per week and engage students in moderate-to-vigorous physical activity, will help students meet national recommendations for daily activity and learn lifelong skills that contribute to healthy behavior. Increasing the use of fitness testing for goal-setting and monitoring student progress can help ensure that physical education programming is effective.

Increase Opportunities for Physical Activity

During the School Day

Ensuring that all students—particularly those at predominantly Black and Latino schools—have adequate daily recess and other opportunities to be active during the school day will help more children meet the USDHHS recommendation for at least 60 minutes of moderate-to-vigorous physical activity each day.

Support Walking and Bicycling to School

Increasing participation in programs such as Safe Routes to School and providing crossing guards and bike racks at school could increase active commuting. As new schools are built, planners should consider school location and sidewalk connections to residential areas.¹⁶

Implementation of Wellness Policies

Key Findings

- By the 2007–08 school year, 89 percent of public elementary school students attended a school that had a wellness policy in place at the district and/or school level.
- When a wellness policy was in place, public elementary school students were more likely to be covered by goals for nutrition and physical activity, as well as guidelines for reimbursable meals and competitive foods.
- In many cases, schools and/or districts had not established plans for evaluating the implementation of wellness policies, nor did they have an ongoing health or wellness advisory council to assist with implementation of the policies.

Policy Opportunities

Support Wellness Policy Implementation

Lack of support from district administrators, as well as lack of money and staff time, have been noted as key barriers for implementation of district wellness policies.¹⁷ Developing mechanisms to financially support school-level implementation of wellness policies will be an important consideration during the federal reauthorization process.

Monitor and Evaluate Policy Implementation

Monitoring school-level implementation of district-level wellness policies will enable decision-makers at all levels to track progress and evaluate the impact of both the federal mandate and specific wellness policy provisions.

Private Schools— A Special Challenge

Key Findings

As previously discussed, our findings indicate a strong need to strengthen and improve health-related policies and practices in public elementary schools. Further, for the one of every eight elementary school students in the United States who attends a private school,¹⁸ the environment is significantly less healthy than it is for public elementary school students. Compared with public elementary school students, private elementary school students:

- paid more for School Breakfast Program and National School Lunch Program meals, where available;
- more often were served meals sourced from commercial vendors, including fast-food outlets;
- were more likely to have competitive foods and beverages available on campus. In fact, approximately one-half of private elementary school students had access to nutrient-poor foods and sugary beverages through competitive venues; and
- spent less time in physical education and were offered physical education classes less frequently.

Opportunities for Improvement

Encourage Grassroots Change in Private Schools

Private schools vary tremendously in organization, size, philosophy and other important characteristics. Federal legislation, such as the Elementary and Secondary Education Act, generally does not apply to private schools. Further, because so few private schools participate in the USDA meal programs, most are not required to comply with the federal wellness policy mandate. Policy-making at private schools is typically done by the school board at each school, making it difficult to develop and implement federal and state policies that could have a wide-reaching impact on private school students.

These findings appear to be the first to specifically examine health-related policies and practices in private elementary schools, and to show that private elementary school students are faring even worse than those in public schools when it comes to having a healthy environment. Sharing these findings and maintaining a national media focus on school practices will help to inform school boards, administrators, teachers and parents of the need to garner community-based support for changes in private school policies and practices.

Next Steps

The Bridging the Gap team has been collecting nationally representative data on district policies and school practices in elementary, middle and high schools annually since the 2006–07 school year, which was the first year of the federal wellness policy mandate. Our annual school-level surveys will track changes in school policies and practices as districts, localities and states continue to develop and strengthen policies relevant to student health. We also will monitor the impact of these changes and identify areas where progress is being made, as well as areas that need additional policy focus. This research is vital for assessing the nation's progress in creating healthier school environments to help reverse the childhood obesity epidemic.

Summary of Health-Related Policies and Practices in Elementary Schools

Table ES.2 summarizes data included in our full report for the 2007–08 school year. All data are weighted to reflect the percentages of public and private elementary school students nationwide who were impacted by these practices. Data for the 2006–07 school year, additional survey topics and demographic sub-sample comparisons are available in the full report and at www.bridgingthegapresearch.org.

TABLE ES.2 Summary of Elementary School Policies and Practices by School Type, School Year 2007–08

School Meals	Responses	Public	Private	Total
School Breakfast Program available at school	Yes	86%	6%	80%
Students who were offered full-price School Breakfast Program meal in each price range	\$0.50 or less	18%	15%	18%
	\$0.51 to \$1.00	51%	37%	51%
	\$1.01 to \$1.50	28%	29%	28%
	\$1.51 or more	4%	19%	4%
National School Lunch Program available at school	Yes	97%	31%	92%
Students who were offered full-price National School Lunch Program meal in each price range	\$0.50 or less	3%	1%	3%
	\$0.51 to \$1.00	5%	1%	5%
	\$1.01 to \$1.50	28%	9%	28%
	\$1.51 to \$2.00	45%	42%	45%
	\$2.01 to \$2.50	15%	38%	16%
	\$2.51 or more	3%	9%	3%
French fries available in National School Lunch Program meals	Never	61%	51%	60%
	Some days	38%	48%	39%
	Most or every day	1%	2%	1%
Pizza available in National School Lunch Program meals	Never	0%	0%	0%
	Some days	94%	97%	95%
	Most or every day	5%	3%	5%
Salad bar available in National School Lunch Program meals	Never	66%	53%	65%
	Some days	14%	27%	14%
	Most or every day	21%	20%	21%
Whole grains available in National School Lunch Program meals	Never	17%	16%	17%
	Some days	63%	62%	63%
	Most or every day	20%	21%	20%
Nonfat or 1% milk available in National School Lunch Program meals	Never	8%	8%	8%
	Some days	2%	1%	2%
	Most or every day	90%	91%	90%
2% or whole milk available in National School Lunch Program meals	Never	20%	18%	20%
	Some days	4%	4%	4%
	Most or every day	77%	78%	77%
Duration of lunch period	Less than 20 minutes	2%	3%	2%
	20 to <30 minutes	33%	44%	34%
	30 minutes or more	65%	53%	64%

Due to rounding, some percentages may not sum to exactly 100. Exact numbers are available at www.bridgingthegapresearch.org.
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

TABLE ES.2, CONTINUED

School Meals (CONTINUED)	Responses	Public	Private	Total
Timing of lunch and mid-day recess for 3rd-grade students	Lunch before recess	57%	70%	58%
	Lunch after recess	15%	12%	15%
	No mid-day recess	14%	12%	14%
	Varies by class	14%	6%	13%
Supplier of school meals	School system food service	80%	34%	77%
	Food service company	17%	18%	17%
	Other	3%	46%	6%
Were any commercial foods offered in school (e.g., pizza, sub sandwiches, fast food)?	Yes	10%	48%	13%
Kitchen facilities at school	Full-service kitchen	76%	76%	76%
	Partial kitchen	21%	18%	21%
	No kitchen	3%	7%	3%
School garden	Yes	14%	14%	14%
Farm-to-school program	Yes	7%	5%	7%
Participated in Team Nutrition (among schools that participated in the School Breakfast Program or National School Lunch Program)	Yes	44%	34%	43%
School provided nutritional information to parents and/or students	Yes	69%	32%	66%
School or district set food and beverage prices to encourage consumption of healthier items	Some/a lot	28%	25%	29%

Competitive Foods and Beverages	Responses	Public	Private	Total
Awareness and implementation of the Alliance Nutritional Guidelines for Competitive Foods	Unaware of guidelines	62%	72%	63%
	Not implementing	10%	19%	11%
	Not implementing but planning to do so	1%	1%	1%
	In process of implementing	6%	3%	6%
	Have already implemented	20%	5%	19%
Awareness and implementation of the Alliance School Beverage Guidelines	Unaware of guidelines	54%	65%	55%
	Not implementing	12%	20%	13%
	Not implementing but planning to do so	1%	1%	1%
	In process of implementing	6%	4%	5%
	Have already implemented	27%	11%	25%
Vending machine availability on campus	Beverages	15%	35%	16%
	Foods	3%	16%	4%
	Foods and/or beverages	16%	36%	17%
Food and/or beverage availability in à la carte lines	Foods and/or beverages	47%	49%	47%
School store or snack bar availability on campus	Beverages	17%	23%	17%
	Foods	21%	30%	22%
	Foods and/or beverages	23%	33%	24%
Competitive food or beverage availability in any venue (e.g., vending, à la carte, stores and/or snack bars) on campus	Beverages	57%	71%	58%
	Foods	46%	57%	47%
	Foods and/or beverages	62%	74%	63%
Number of competitive venues (food or beverage) available on campus	None	38%	26%	37%
	One	41%	39%	41%
	Two	18%	26%	19%
	Three	3%	9%	4%

Due to rounding, some percentages may not sum to exactly 100. Exact numbers are available at www.bridgingthegapreseerach.org. Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

TABLE ES.2, CONTINUED

Competitive Foods and Beverages (CONTINUED)	Responses	Public	Private	Total
Healthy foods (e.g., fresh fruit, vegetables or salad) available in each competitive venue	Vending	1%	5%	2%
	Stores or snack bars	11%	19%	11%
	À la carte	30%	29%	30%
	Any competitive food venue	34%	38%	34%
Less-healthy foods (e.g., high-sugar, high-fat and/or high-sodium foods) available in each competitive venue	Vending	3%	15%	4%
	Stores or snack bars	21%	28%	22%
	À la carte	33%	32%	33%
	Any competitive food venue	44%	54%	45%
Healthy beverages (e.g., bottled water, 100% fruit juice, low-fat milk) available in any competitive venue	Yes	55%	69%	56%
Sugar-sweetened beverages (e.g., soda, sport drinks) available in any competitive venue	Yes	17%	41%	19%
Low-calorie or no-calorie beverages (e.g., diet soda, "light" juices) available in any competitive venue	Yes	18%	40%	20%
2% or whole milk available in any competitive venue	Yes	38%	47%	39%
Bottled water available in each competitive venue	Vending	13%	32%	14%
	Stores or snack bars	14%	17%	14%
	À la carte	27%	28%	28%
	Any competitive food venue	40%	54%	41%
Did school have an exclusive pouring contract with beverage distributor?	Yes	6%	17%	7%
	No	4%	12%	4%
	Don't know/no answer	6%	6%	6%
	N/A, no beverage vending	85%	66%	84%
Did school receive incentives for beverage sales through vending machines?	Yes	2%	7%	3%
	No	4%	18%	6%
	Don't know	9%	9%	9%
	N/A, no beverage vending	85%	66%	84%
Types of advertising present in any locations on school campus	Soft drinks/fast food/candy	1%	5%	1%
	Milk	80%	49%	78%
	Fruits/vegetables	78%	46%	76%
Were there restrictions on sugary foods during class parties?	Yes, schoolwide policy	37%	21%	36%
	Yes, in some classes	15%	23%	16%
	No	48%	56%	49%
Were there restrictions on sugary foods during snack time?	Yes, schoolwide policy	42%	36%	41%
	Yes, in some classes	15%	25%	16%
	No	19%	31%	20%
	N/A, no snack time	24%	8%	23%
Were teachers allowed to use food as a reward for good academic performance?	No	39%	47%	40%
	Yes, it is up to the teacher	32%	31%	32%
	Yes, but it is discouraged	29%	22%	28%
Were teachers allowed to use food as a reward for good student behavior?	No	39%	50%	40%
	Yes, it is up to the teacher	30%	29%	30%
	Yes, but it is discouraged	31%	21%	30%
Were students allowed to keep water bottles at their desks?	No	5%	17%	6%
	Yes, it is up to the teacher	93%	82%	92%
	Yes, but it is discouraged	1%	1%	1%

Due to rounding, some percentages may not sum to exactly 100. Exact numbers are available at www.bridgingthegapresearch.org.
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

TABLE ES.2, CONTINUED

Competitive Foods and Beverages (CONTINUED)		Responses	Public	Private	Total
Were beverages other than water regularly allowed in class?	No		92%	96%	92%
	Yes, it is up to the teacher		6%	3%	5%
	Yes, but it is discouraged		2%	1%	2%
Were foods regularly allowed in class?	No		80%	86%	80%
	Yes, it is up to the teacher		17%	12%	17%
	Yes, but it is discouraged		3%	2%	3%

Physical Activity and Physical Education		Responses	Public	Private	Total
Were elementary school students required to take physical education (PE)?	Yes		98%	98%	98%
Number of days per week 3rd-grade students had PE	None		1%	1%	1%
	One		23%	31%	24%
	Two		34%	44%	35%
	Three		18%	11%	17%
	Four		4%	3%	3%
Five		20%	10%	19%	
Did 3rd-grade students receive 60+ minutes of PE per week?	Yes		75%	71%	75%
Did 3rd-grade students receive 90+ minutes of PE per week?	Yes		50%	36%	49%
Did 3rd-grade students receive 150+ minutes of PE per week?	Yes		18%	10%	18%
Number of days per week 3rd-grade students had recess	None		6%	3%	6%
	One to four days per week		9%	6%	8%
	Five days per week		86%	92%	86%
Number of times per day 3rd-grade students had recess	None		7%	4%	7%
	Once per day		57%	46%	56%
	Twice per day		27%	42%	28%
	Three or more		9%	8%	9%
Did 3rd-grade students receive 20+ minutes of recess daily?	Yes		68%	79%	68%
Were intramural team sports available at school?	Yes		25%	45%	26%
Were extramural team sports available at school?	Yes		19%	60%	22%
Were school-sponsored after-school physical activities available at school?	Yes		38%	56%	39%
Were externally-sponsored after-school programs available at school?	Yes		43%	24%	42%
Were nontraditional PE activities (e.g., yoga, kick-boxing) available at school?	Yes		20%	18%	20%
Were opportunities for organized physical activities (outside of PE class) available during the school day?	Yes		42%	33%	42%
How adequate is the gymnasium?	N/A, don't have		17%	13%	17%
	Not very adequate		15%	7%	14%
	Adequate		29%	27%	29%
	Very adequate		39%	53%	40%
How adequate are the playing fields?	N/A, don't have		4%	11%	4%
	Not very adequate		17%	20%	17%
	Adequate		44%	38%	44%
	Very adequate		35%	32%	35%

Due to rounding, some percentages may not sum to exactly 100. Exact numbers are available at www.bridgingthegapresearch.org.
 Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

TABLE ES.2, CONTINUED

Physical Activity and Physical Education (CONTINUED)	Responses	Public	Private	Total
How adequate is the playground equipment?	N/A, don't have	2%	7%	2%
	Not very adequate	18%	13%	18%
	Adequate	48%	43%	48%
	Very adequate	32%	37%	33%
Barriers to implementing high-quality PE programming	Lack of staff	18%	8%	18%
	Inadequate indoor facilities	18%	13%	17%
	Inadequate outdoor facilities	7%	9%	7%
	PE is not a priority for district	4%	0%	4%
	Financial constraints	14%	12%	14%
	Competing demands for other subjects	22%	12%	21%
	No state or district policies requiring PE	2%	0%	2%
Were teachers allowed to withhold recess from students?	Yes, but it is discouraged	24%	17%	24%
	Yes, up to the teacher	43%	32%	42%
	No	33%	51%	34%
Were teachers allowed to use physical activity (e.g., running laps) as a punishment for poor student behavior?	Yes, but it is discouraged	2%	3%	2%
	Yes, up to the teacher	3%	9%	4%
	No	95%	88%	94%
Were students allowed to bicycle to school?	No	28%	31%	28%
	Yes, in certain grades	23%	26%	23%
	Yes, all students	49%	43%	48%
About what percentage of students walked or bicycled to school?	Average (SD)	21% (22)	6% (24)	20% (25)
Barriers to walking/bicycling (as perceived by principals)	School is too far away	40%	72%	43%
	Traffic danger	55%	76%	57%
	Bad weather	25%	25%	25%
	Crime	14%	13%	14%
	Lack of sidewalks	30%	30%	30%
	No bike racks	20%	20%	20%
	No crossing guards	20%	32%	21%
Was Safe Routes to School (or similar program) available at school?	Yes	15%	4%	14%
Was a walking school bus available at school?	Yes	4%	2%	4%
Were advertisements for sports and/or physical activity present in any locations on school campus?	Cafeteria	46%	23%	44%
	Elsewhere in school	48%	37%	47%
	Anywhere in school	72%	51%	70%
How often was student body mass index (BMI) measured/calculated?	Never	53%	80%	55%
	Selected grades only	26%	9%	25%
	Annually for all students	21%	11%	20%
Were results of student body mass index (BMI) measurements sent to parents?	Yes	28%	13%	27%
	No	12%	3%	12%
	Measured but don't know whether reported	7%	3%	7%
	N/A, not measured	53%	80%	55%
How often was student physical fitness measured?	Never	31%	49%	32%
	Selected grades only	35%	20%	34%
	Annually for all students	34%	31%	34%
Were results of student physical fitness testing sent to parents?	Yes	38%	24%	37%
	No	18%	18%	18%
	Measured but don't know whether reported	14%	9%	13%
	N/A, not measured	31%	49%	32%

Due to rounding, some percentages may not sum to exactly 100. Exact numbers are available at www.bridgingthegapresearch.org.
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

TABLE ES.2, CONTINUED

Wellness Policies	Responses	Public	Private	Total
Did school or school district have a wellness policy in place?	Yes, school and district	13%	7%	12%
	Yes, district only	72%	14%	68%
	Yes, school only	4%	26%	6%
	No	4%	43%	7%
	Don't know	6%	9%	7%

The following data show student exposure to each of the wellness policy provisions required as part of the Child Nutrition and WIC Reauthorization Act of 2004. Results are presented separately for schools with a wellness policy (WP) and those without (No WP).

	Responses	Public		Private	
		WP	No WP	WP	No WP
Did school or district have goals for nutrition education?	Yes, developed	54%	9%	49%	9%
	Currently developing	25%	9%	32%	12%
	No, not yet	15%	73%	17%	79%
	Don't know	7%	10%	2%	0%
Did school offer formal classroom instruction on nutrition education?	Yes	72%	48%	83%	74%
Did school or district have goals for physical activity?	Yes, developed	65%	38%	63%	36%
	Currently developing	19%	16%	24%	17%
	No, not yet	12%	42%	13%	47%
	Don't know	5%	4%	0%	0%
Did school offer formal classroom instruction on physical activity, exercise and health related fitness?	Yes	90%	87%	88%	84%
Did school or district have guidelines for reimbursable school meals?	Yes, developed	61%	52%	40%	5%
	Currently developing	6%	9%	4%	0%
	No, not yet	10%	28%	41%	87%
	Don't know	22%	12%	14%	8%
Did school or district have nutrition guidelines for competitive foods and beverages?	Yes, developed	49%	20%	39%	5%
	Currently developing	10%	11%	12%	5%
	No, not yet	16%	49%	37%	80%
	Don't know	26%	20%	12%	10%
Did school or district have plans for evaluation and implementation of wellness policy?	Yes, developed	40%	N/A	38%	N/A
	Currently developing	23%		28%	
	No, not yet	17%		29%	
	Don't know	20%		5%	
Did school or district designate one or more persons with operational responsibility for ensuring that the wellness policy was implemented?	Yes, school and district	14%	N/A	8%	N/A
	Yes, district only	51%		9%	
	Yes, school only	13%		52%	
	No	12%		29%	
	Don't know	10%		2%	
Did school or district have an ongoing health advisory council or an advisory group in place to make recommendations regarding nutrition and/or exercise for students?	Yes, school and district	16%	3%	7%	0%
	Yes, district only	40%	18%	8%	0%
	Yes, school only	5%	2%	23%	4%
	No	21%	57%	56%	95%
	Don't know	18%	20%	6%	1%

Due to rounding, some percentages may not sum to exactly 100. Exact numbers are available at www.bridgingthegapresearch.org.
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Overview of Study Methods

This study is based on mail-back survey data gathered from principals, food service managers, and other staff at nationally representative samples of public and private elementary schools during the 2006–07 and the 2007–08 school years. For the 2006–07 school year, we received responses from 837 schools (57.7% response rate), and for the 2007–08 school year, we received responses from 1,084 schools (74.4% response rate). Because elementary schools vary in grade composition (e.g., pre-K–3, grades 2–5, K–6), we selected grade 3 as a proxy for sampling and weighting our data. All schools included at least one grade 3 class, and the 3rd-grade student population at each school was used to develop weights that reflect the percentage of elementary students nationwide who were impacted by the practices referenced in our survey.

Data are presented on the weighed percentage of students nationwide who were enrolled in a school with each policy or practice discussed. Because some schools included higher grades (particularly at smaller schools and private schools), most of our survey items asked respondents to provide information on practices relevant only to K–5 students, although for some topics such as recess and physical education, we asked about grade 3 specifically. Findings in this report are based on analyses of school-level practices that ultimately impacted approximately 21 million K–5 students each year.

Introduction



1

Introduction

Over the past four decades, obesity rates in the United States have increased substantially among young children, adolescents and adults.^{19–22} The prevalence of obesity among children ages 6 to 11—those typically in elementary school—has more than quadrupled from 4 percent in the late 1970s²³ to nearly 20 percent in 2007–08.^{24,25} In fact, more than 35 percent of American children in this age range are either obese or overweight and at increased risk for cardiovascular disease, type 2 diabetes, asthma and other serious conditions.^{26,27} In the United States, childhood obesity accounts for \$14 billion annually in direct health expenses,²⁸ and costs attributed to adult obesity may be as high as \$147 billion per year.²⁹

While obesity rates are alarmingly high across all segments of the population, significant disparities exist among different racial and ethnic groups. For example, among children ages 6 to 11, 43 percent of Hispanic children are obese or overweight, compared with 38 percent of non-Hispanic Black and 35 percent of non-Hispanic White children.³⁰ There also is great variation from state to state. National data from 2007 indicate that statewide rates of childhood overweight and obesity range from 23 percent to 44 percent—and show that almost all southern states have rates higher than 33 percent.³¹

The dramatic increase in obesity prevalence is clearly associated with unhealthy eating habits and lack of physical activity.^{32–34} Because children spend a significant portion of their time in school, many experts are calling for changes that will make the school environment healthier for students. For example, increasing the availability of nutritious foods and beverages throughout the school day, limiting availability of and

access to sugar-sweetened beverages and junk foods, and increasing opportunities for physical activity are strategies that schools can use to help prevent and reduce childhood obesity.^{35–37}

Recent legislation demonstrates that policy-makers recognize the importance of school-based efforts to improve children's health. The Child Nutrition and WIC Reauthorization Act of 2004 (P.L. 108-265, Section 204) required all school districts participating in the National School Lunch Program, School Breakfast Program or other federal child nutrition programs to adopt and implement a wellness policy by the first day of the 2006–07 school year. The law required each wellness policy to include the following:

1. *goals for nutrition education, physical activity and other school-based activities designed to promote student wellness;*
2. *nutrition guidelines—to promote student health and reduce childhood obesity—for all foods and beverages available on campus throughout the school day, including competitive foods. The local school district was responsible for selecting the guidelines;*
3. *guidelines for reimbursable school meals that meet the minimum federal school meal standards established by the U.S. Department of Agriculture;*
4. *a plan for measuring implementation of the wellness policy, including designating at least one person with operational responsibility for ensuring that the school meets the wellness policy requirements; and*
5. *involvement of parents, students, representatives of the school food authority, the school board, school administrators and the public in the development of the wellness policy.*

The wellness policy requirement has the potential to improve nutrition and physical activity environments in schools nationwide. Yet several evaluations indicate that the majority of wellness policies initially developed were weak^{38–43} and that implementation was—and continues to be—a challenge for many districts.^{44–49} In July 2009, Bridging the Gap released the most comprehensive study of district wellness policies to date, using a nationwide sample of public school districts representing K–12 students. Analyses revealed that most students were enrolled in a district that had a wellness policy in place, but overall the policies were underdeveloped, fragmented and did not necessarily require schools to take action.⁵⁰

In 2010, as Congress considers reauthorization of the Child Nutrition Act and the Elementary and Secondary Education Act, it will be particularly important to understand how school practices and district policies facilitate healthy changes in school environments. Monitoring and evaluating school-based practices over time will help inform policy-makers at the local, state and national levels about successes and areas where new and/or stronger legislation is needed to support healthy eating, promote physical activity and prevent childhood obesity.

Report Overview

This report summarizes findings from the first two years of our annual survey of health-related policies and practices in public and private elementary schools. The chapters that follow focus on:

- *our study methodology and details about the schools and students included in our sample;*
- *administrators' perceptions about childhood obesity and the role that schools can play in addressing the issue;*
- *the availability, pricing and content of school meals, as well as details about the student lunch period;*

- *guidelines for and the availability of competitive foods and beverages, along with details about vending contracts and marketing of competitive products on campus;*
- *physical education programming, recess, other physical activity opportunities, and measures of student health, such as physical fitness and body mass index assessments; and*
- *the content, development and school-level implementation of district wellness policies, as reported by school administrators.*

We collected data from nationally representative samples of 837 elementary schools during the 2006–07 school year and 1,084 elementary schools during the 2007–08 school year. Our data are weighted to reflect the percentages of elementary school students who were impacted by school-level practices that ultimately impacted 19.7 million K–5 students in public schools and 1.5 million K–5 students in private schools during the 2006–07 school year, and 19.1 million students in public schools and 1.5 million students in private schools in those grades during the 2007–08 school year.

These are the first large-scale surveys to assess such health-related policies and practices in schools after districts were required to adopt and implement a wellness policy. Thus, data from this report provide a starting point from which to examine school-level practices immediately following the federal mandate. We also examine policies and practices not specifically mentioned in the mandate that are of key importance to children's health, such as physical education programming, the availability of specific foods and beverages through school meals and in competitive venues (e.g., vending machines, à la carte lines, school stores), student body mass index measurement and reporting, and administrators' perceptions about student health.

Through our annual surveys, we intend to identify school-based practices that most effectively promote improved nutrition and increased physical activity levels among young children, as well as those practices in need of attention. We will use our findings to inform future policy-making. Data presented in this report:

- *help to document school-level implementation of the new district wellness policies;*
- *provide timely guidance for policy-makers at the local, state and national levels about successes and areas where new legislation is needed to strengthen the policies;*
- *help school administrators, school board members and parents benchmark their own schools' progress and identify areas of greatest progress and weakness; and*
- *offer insight about areas where additional research is needed.*

Other Research on Health-Related Practices in Schools

Throughout this report, we reference two large, nationally representative projects that also evaluate important aspects of the school health environment: the School Nutrition and Dietary Assessment (SNDA) studies and the School Health Policies and Programs Study (SHPPS). Brief descriptions of both projects follow. We also provide a timeline to show how data from Bridging the Gap, SNDA and SHPPS will help assess the impact of key legislation and monitor the nutrition and physical activity environments in schools.

The School Nutrition and Dietary Assessment (SNDA) Studies

The SNDA studies are sponsored by the Food and Nutrition Service of the U.S. Department of Agriculture (USDA). The first study (SNDA-I) was conducted during the 1991–92 school year to examine school menus and students' diets. Results indicated that school meals contained higher levels of fat than recommended in the *Dietary Guidelines for Americans*.⁵¹ As a result, the USDA developed the School Meals Initiative for Healthy Children (SMI) in 1995, which established policies to limit the fat content of meals offered through USDA programs. SNDA-II, conducted during the 1998–99 school year, documented a reduction in fat content of school meals, but found that many meals still did not comply with the SMI standards.⁵²

The most recent data yielded by SNDA-III, conducted during the 2004–05 school year, includes a nationally representative sample of 398 public elementary, middle and high schools. School menu analysis and detailed examination of student dietary intake revealed that participants in the National School Lunch Program were significantly less likely to consume competitive foods and sugar-sweetened beverages at school, but that fewer than one-third of schools participating in the National School Lunch Program offered lunches that met the SMI standards for total fat or saturated fat.⁵³

Although SNDA results were based on a smaller sample of elementary schools than we report in the current study and did not include data from private schools, the SNDA datasets provide valuable insight about school practices and have helped to shape school nutrition policy. It also is important to note that all SNDA data were collected prior to the beginning of the 2006–07 school year, and thus present a picture of the school food environment *before* district wellness policies were implemented. SNDA-IV data were collected between January and June 2010 and will yield important information about changes made since the federal wellness policy requirement went into effect.

The School Health Policies and Programs Study (SHPPS)

SHPPS is a national survey conducted by the Centers for Disease Control and Prevention at six-year intervals to assess a variety of school health policies and practices.⁵⁴ The first survey was conducted in 1994, and subsequently in 2000 and 2006. The most recent survey, fielded between January and October 2006, provides comprehensive information regarding policies and practices in a nationally representative sample of more than 1,100 public and private elementary, middle and high schools across the United States, and in corresponding school districts and states.

School health components from eight domains are assessed, four of which are of particular relevance to childhood obesity and to the current report: health education; physical education and activity; health services; and nutrition services. Again, it is important to note that most of the SHPPS 2006 data collection period occurred prior to the beginning of the 2006–07 school year, and thus indicates the status of school practices prior to implementation of district wellness policies. The next round of SHPPS data will be collected in 2012 and will therefore yield information about changes in policies and practices since the federal wellness policy mandate went into effect.

TABLE 1.1 Major Studies in the Pre- and Post-Wellness Policy Eras

The timeline below presents an overview of prior, current and future research activities of particular relevance to children’s health and obesity prevention in school settings. As shown, Bridging the Gap, SNDA and SHPPS data will help evaluate the effectiveness of the federal wellness policy mandate and other key legislation on nutrition and physical activity environments in schools. This research is crucial for informing future policies that aim to prevent obesity and improve children’s diets, physical activity levels and overall health.

	Nutrition	Physical Activity	School Implementation of Wellness Policies	Evaluating District Wellness Policies
Pre-Wellness Policy Era				
COMPLETED RESEARCH				
1995				
1998-99 SNDA-II	X			
2000 SHPPS	X	X		
2004-05 SNDA-III	X			
2006 SHPPS	X	X		
Post-Wellness Policy Era				
COMPLETED RESEARCH				
2006-07 BTG Year 1	X	X	X	X
2007-08 BTG Year 2	X	X	X	X
2008-09 BTG Year 3	X	X	X	X
RESEARCH IN PROGRESS				
2009-10 BTG Year 4	X	X	X	X
2009-10 SNDA-IV	X			
ANTICIPATED RESEARCH				
2010-11 BTG Year 5	X	X	X	X
2011-12 BTG Year 6	X	X	X	X
2012 SHPPS	X	X	X	

USDA establishes School Meals Initiative for Healthy Children in 1995.

Federal wellness policy mandate takes effect on the first day of the 2006-07 school year.

Reauthorizations of Child Nutrition Act and Elementary and Secondary Education Act anticipated in 2010-11.

Study Overview





Study Overview

This chapter presents a brief description of our study methodology and summarizes the characteristics of schools and students included in this study. More detail is available in the Appendix.

Brief Study Methodology

In 2006 the Bridging the Gap research team began an ongoing, large-scale study to gather nationally representative data about school district policies and school practices relevant to childhood obesity. Through this research, we intend to identify practices that promote healthy changes to nutrition and physical activity environments in schools, as well as areas where progress is needed, and to use our findings to guide future policy-making. Our team will continue to gather annual data to:

- *track progress made since the federal wellness policy requirement went into effect on the first day of the 2006–07 school year;*
- *track changes as district wellness policies are strengthened and additional state and federal legislation is developed; and*
- *examine school-level implementation of district policies.*

Results of the first two years of data collection—for the 2006–07 and 2007–08 school years—are presented in three companion reports:

- *In July 2009 our team released results from the most comprehensive nationwide analysis of district wellness policies in U.S. elementary, middle and high schools for the first two years following the federal wellness policy requirement. The report and relevant materials, including the wellness policy coding tool used in the analyses, are available at www.bridgingthegapresearch.org.*
- *This report details health-related policies and practices in elementary schools. Data were collected through surveys of principals and food service staff at a nationally representative sample of public and private elementary schools. The complete surveys and detailed analyses for all survey questions are available at www.bridgingthegapresearch.org.*
- *A third report, slated for release in late 2010, will present nationally representative information about health-related policies and practices in public middle and high schools. The report and accompanying materials will be available at www.bridgingthegapresearch.org.*

This research is part of a larger effort by the Robert Wood Johnson Foundation to evaluate policy and environmental influences that increase healthy eating and physical activity, decrease sedentary behavior, and prevent obesity among children and adolescents. Future reports from Bridging the Gap will present results of subsequent years of data collection for each of the three topics described above: 1) school district wellness policies; 2) policies and practices in elementary schools; and 3) policies and practices in secondary schools.

Survey

This study is one of the largest, most comprehensive surveys of health-related policies and practices in U.S. elementary schools to date, and the first national survey project to examine such policies and practices after districts were required to adopt and implement wellness policies.

Through a mail-back paper survey, we obtained data from respondents (principals, food service staff and other relevant staff) at nationally representative samples of public and private elementary schools during the 2006–07 and the 2007–08 school years (see Appendix for more details). Throughout this report we refer to respondents as “administrators,” as most were school principals or assistant principals. We offered a \$100 incentive for participating, paid either to the respondent(s) or the school.

Sample

Our data are weighted to reflect the percentage of students nationwide who attended an elementary school that engaged in the practices referenced in our survey. Because elementary schools vary in grade composition (e.g., pre-K–3, K–6, grades 2–5), we selected grade 3 as a proxy for sampling and weighting our data and used the 3rd-grade student population at each school to develop data weights. Survey items asked about policies and practices relevant to K–5 students at each school. Our results describe policies and practices that ultimately impacted 19.7 million K–5 public students and 1.5 million K–5 private students during the 2006–07 school year, and 19.1 million public students and 1.5 million private students in those grades during the 2007–08 school year.

Private Elementary School Students

As of 2006, 13 percent of elementary school students in the United States attended private schools.⁵⁵ This proportion is projected to remain stable over time.⁵⁶ Because few prior surveys have included private elementary schools and none that we know of have

examined health-related policies and practices that specifically impact private elementary school students, we present results separately for public and private students. For many topics, the differences are striking. Therefore, combining the two groups would provide an inaccurate picture of the areas in need of policy attention. We conducted significance tests between public and private schools; because this resulted in a large number of pairwise comparisons, we set the significance level for interpreting statistical tests at $p < .01$.

Presentation of Findings

Given the large amount of data yielded by our survey, we present a selected set of items in this report. Variables were selected to parallel topics described in the July 2009 Bridging the Gap report on school district policies, and additional topics of key relevance to childhood obesity. For many variables, we found minimal changes between the 2006–07 and the 2007–08 school year; thus, we focus primarily on the most recent year of data in our interpretations. In addition, sometimes the wording of our survey items was revised in ways that reduced comparability from one year to the next. In such cases we present data only from the 2007–08 school year. Descriptive statistics for all survey variables and for both years of data are available at www.bridgingthegapresearch.org.

In each chapter, we explain how survey items were worded and how the responses were measured. We also provide details about how we created composite variables (e.g. combining items to examine availability of bottled water in any competitive venue, or examining whether physical education time met recommended levels). Copies of the original surveys are available at www.bridgingthegapresearch.org.

Our survey assessed many topics that are included in the federal wellness policy mandate and were evaluated in the July 2009 Bridging the Gap review of district wellness policies.⁵⁷ In this school-level report, we reference district-level findings from the previous companion report to help inform readers about

the strengths and weaknesses of wellness policy provisions that are relevant to the corresponding school-level practices. Although results from our school-level study and the July 2009 district-level study are fairly consistent, there are slight differences, which may be attributed to the following:

- *Data for the district-level study were based on researcher-coded analyses of publicly available policies, whereas data for this school-level study are based on information reported by school administrators.*
- *It is possible that district-level policies were not implemented in schools, that school administrators were not aware of district-level policies, or that schools had gone beyond what was required by district-level policies.*

School and Demographic Characteristics

Some analyses presented in this report and online at www.bridgingthegapresearch.org provide subgroup analyses by school race and ethnic composition and by socioeconomic status (SES) within each school. These school characteristics were gathered from publicly available datasets from the National Center for Education Statistics (NCES).

Following the approach used by Bridging the Gap researchers in prior analyses of secondary school survey data,⁵⁸ we classified schools into four mutually-exclusive and exhaustive subgroups according to the proportion of White, Black and Latino students at

each school. Each school was classified as one of the following: majority White (>66% White students), majority Black (>50% Black students), majority Latino (>50% Latino students), or diverse (no clear majority of White, Black or Latino students).

The NCES public school dataset provides information on the percentage of students eligible for free and reduced-price lunch (FRL); however, this information is not available for private schools. For public schools only, we used the percentage of students at each school eligible for FRL as a proxy for SES within each school. FRL eligibility is based on verified household income—children whose families have a household income less than 185 percent of the federal poverty guidelines are eligible for reduced-price meals and children whose families have a household income less than 130 percent are eligible for free meals. Homeless children and those whose families receive assistance through certain programs such as the Food Stamp Program or Temporary Assistance to Needy Families (TANF) are automatically eligible for free meals.⁵⁹

Throughout this report, FRL eligibility was used as a proxy for SES within each school. FRL groupings were computed as tertiles based on each school year's distribution of schools before applying data weights to represent student population. The categories were defined as: low SES ($\geq 62\%$ of students eligible for FRL for 2006–07; $\geq 59\%$ for 2007–08); medium SES (32% to 61% FRL for 2006–07; 32% to 58% for 2007–08); and high SES ($\leq 31\%$ FRL for both years).

TABLE 2.1 Characteristics of the Study Population by School Type and Year

The table below summarizes the characteristics of schools and students included in this study. Data show the percentages of students who were enrolled in a school with each demographic characteristic. In general, the characteristics of participating schools were very similar across both survey years, although only 65 percent of the schools that participated in 2007-08 had also participated in 2006-07.

	Public		Private	
	2006-07	2007-08	2006-07	2007-08
Number of 3rd-grade students in thousands	3,469	3,384	264	283
Survey response rate	54.6%	70.6%	66.2%	84.4%
SCHOOL SIZE				
Average number of total students at school	577	563	483	448
Average number of 3rd-grade students at school	96	93	44	45
Average number of grades at school	7	7	10	10
SOCIOECONOMIC STATUS (SES)				
% students in low-SES schools	36%	36%	N/A	N/A
% students in medium-SES schools	32%	32%	N/A	N/A
% students in high-SES schools	32%	32%	N/A	N/A
RACE AND ETHNICITY				
% students in majority White (>66%) schools	47%	47%	78%	76%
% students in majority Black (>50%) schools	10%	7%	6%	4%
% students in majority Latino (>50%) schools	21%	20%	5%	5%
% students in diverse schools	21%	26%	12%	16%
LOCALE				
% students in schools located in cities	29%	29%	42%	44%
% students in schools located in a suburb	42%	42%	47%	46%
% students in schools located in a town	6%	7%	4%	4%
% students in schools located in a rural area	23%	22%	7%	7%
REGION				
% students in schools located in the West	25%	24%	19%	19%
% students in schools located in the Midwest	22%	22%	28%	28%
% students in schools located in the South	38%	39%	32%	30%
% students in schools located in the Northeast	16%	15%	22%	23%

Due to rounding, some columns may not sum to exactly 100. Exact numbers are available at www.bridgingthegapresearch.org.

School Size

On average, public elementary school students in this study attended a school with a larger total enrollment and a larger 3rd-grade enrollment than did private elementary school students.

Socioeconomic Status

Tertiles for SES were established based on the distribution of public schools in the sample, and when data weights to represent student-level populations were applied we found that 36 percent of public students were enrolled in a low-SES school, and 32 percent of students were in a medium- or high-SES group.

Race and Ethnicity

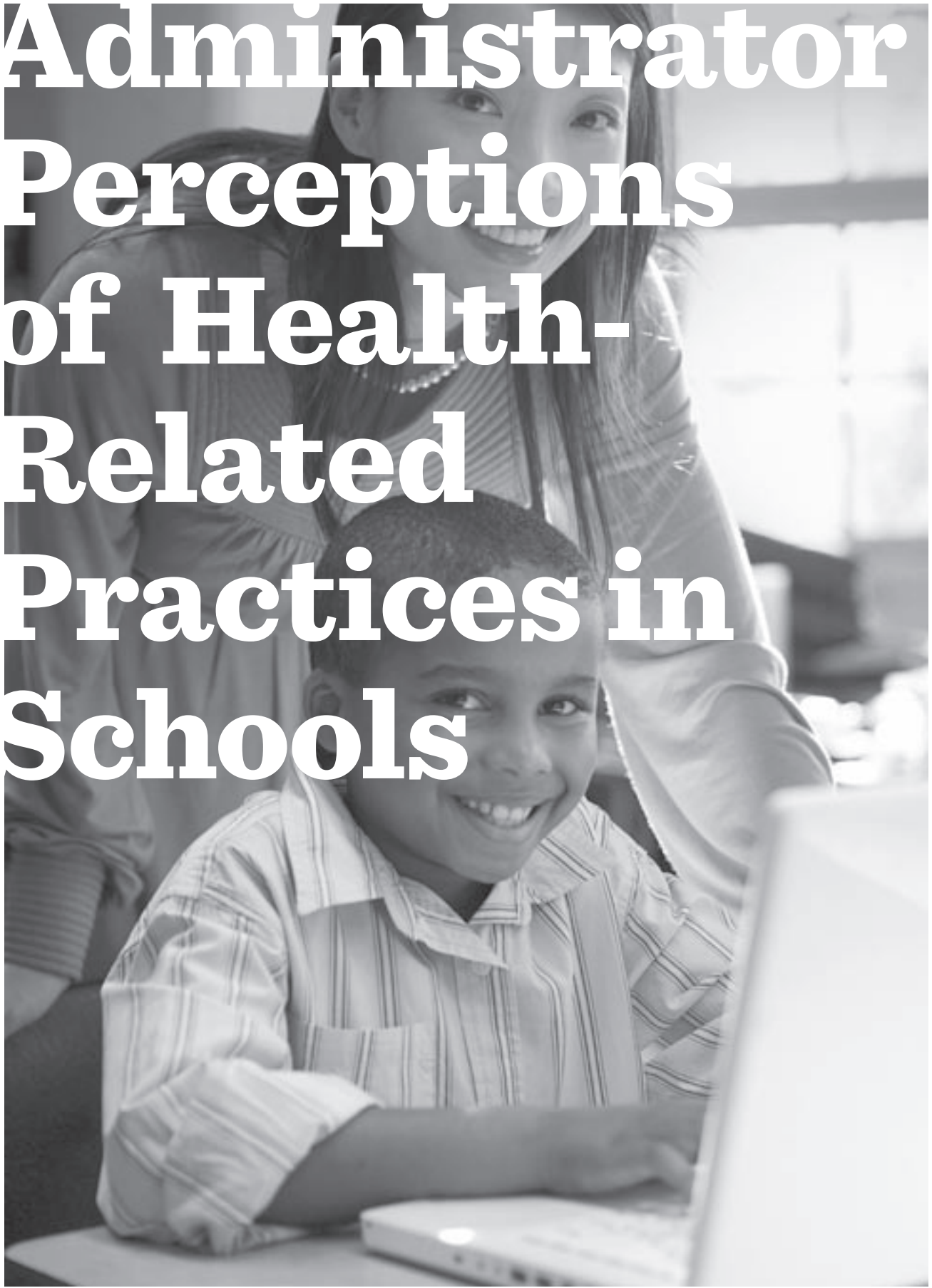
Approximately one-half of public students and three-quarters of private students were enrolled in a school with a predominantly White student population.

Locale

Most public and nearly all private elementary school students were enrolled in a suburban or city school; fewer were enrolled in a school that was located in a rural area or township.

Region

Although all regions of the country were represented, across both study years, the greatest percentages of both public and private students were enrolled in a school that was located in the South, while the lowest percentages were enrolled in a school that was located in the Northeast.



Administrator Perceptions of Health- Related Practices in Schools



Administrator Perceptions of Health-Related Practices in Schools

Support from multiple stakeholders—such as administrators, teachers, parents and students—is essential for creating healthier nutrition and physical activity environments in schools nationwide. Recent surveys indicate strong grassroots support from parents and teachers for making schools healthier places to learn and work, yet we found no existing research that examined whether school administrators recognize obesity as a problem and are willing to make additional efforts to improve health-related practices in schools.

A national survey commissioned by the Robert Wood Johnson Foundation and the National Education Association in 2003 found that more than 90 percent of parents favored converting the contents of school vending machines to healthy foods and beverages, and more than 80 percent favored requiring daily physical education class for students in every grade.⁶⁰ Results of a companion survey found nearly identical rates of support for these practices from school teachers.⁶¹ Parents who responded to a 2009 survey conducted by the Alliance for a Healthier Generation shared very similar views: 96 percent believed that their child's school should limit access to unhealthy snacks and sugar-sweetened beverages, and 98 percent believed that the school should offer opportunities for physical activity throughout the day.⁶²

Despite strong parent and teacher support for such changes, many schools have not limited student access to unhealthy foods and beverages, and few provide daily physical education. Given the integral role administrators have in advancing and executing changes to school policies and practices, it is important to understand how they perceive such health-related issues.

Key Findings: Administrator Perceptions of Health-Related Practices in Schools

We asked administrators who responded to our 2006–07 school survey to indicate whether they agreed with a series of statements about childhood obesity, nutrition and physical activity.

During the 2006–07 school year, 99 percent of public and private elementary school students attended a school where the administrator believed that physical activity helps students perform better in academics and other classroom activities.

TABLE 3.1 Administrator Perceptions of Health-Related Practices

The table below indicates the percentage of school administrators who agreed with each statement.

	Public	Private	Total
I am concerned about students at this school being overweight	80%	65%	79%
Schools can play a role in addressing the problem of childhood obesity	96%	97%	96%
I am interested in encouraging students at this school to consume more nutritious foods and beverages	99%	98%	98%
I am interested in encouraging students at this school to get more exercise and physical activity than they do now	97%	90%	96%
Keeping children physically active helps them to perform better in other classroom activities and academics	99%	99%	99%

Data reflect responses for the 2006–07 school year.

Exact numbers are available at www.bridgingthegapresearch.org.

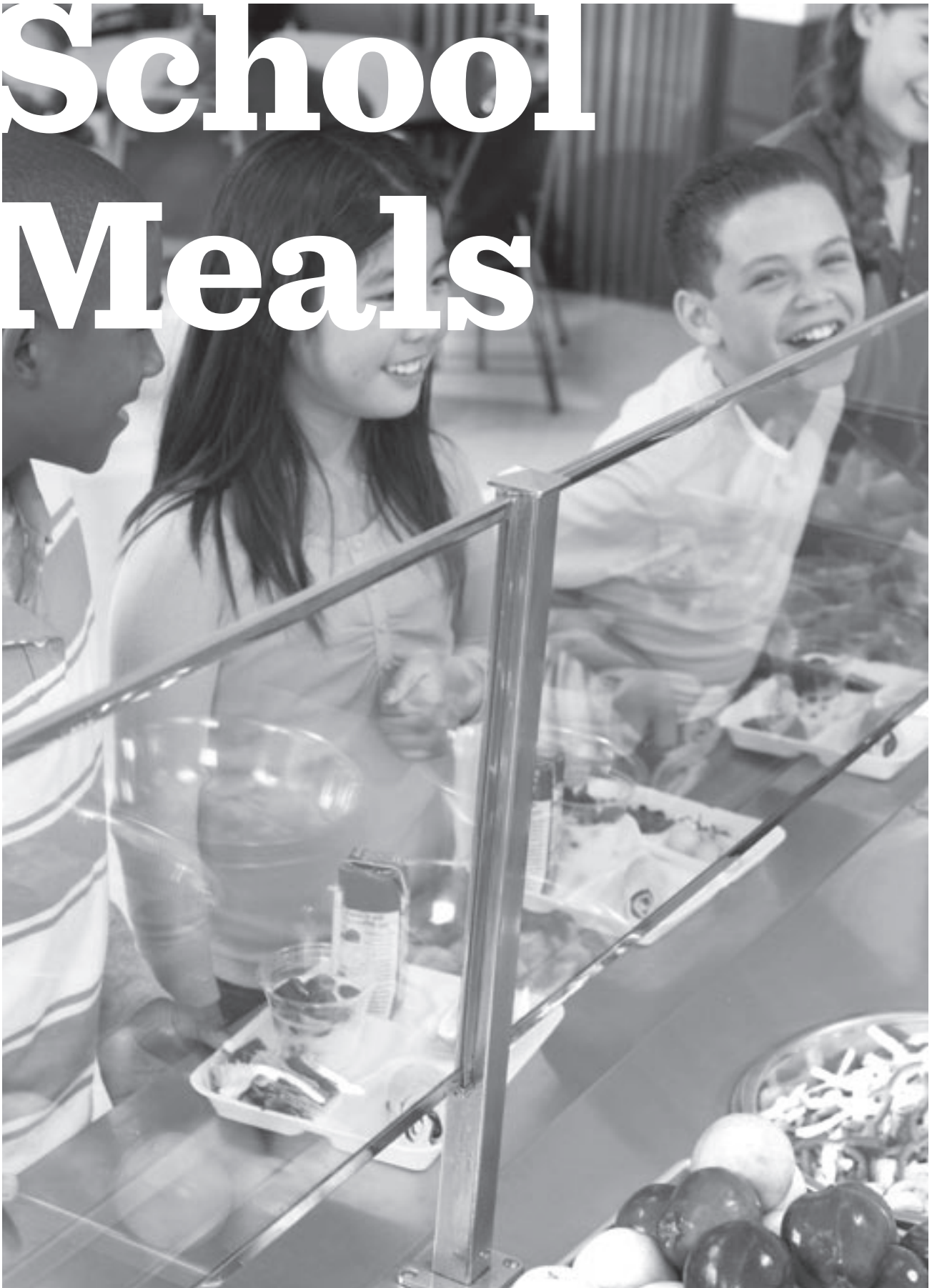
Conclusions

Our findings show that the vast majority of administrators at public and private elementary schools believed schools have a role to play in addressing childhood obesity. They also expressed support for changes that would make schools healthier places to learn and work. Yet it's clear that school administrators need cooperation, support and resources from other sectors to make the school environment healthier for students.

Implications and Opportunities

As policy-makers at all levels of government consider strategies for improving the school nutrition and physical activity environments, it will be important to support administrators in their efforts to implement changes. Leaders at the district, state and federal levels can capitalize on administrator support in many ways, such as providing financial resources, technical assistance and public recognition for school-level implementation of policies that promote better nutrition and increased physical activity among students.

School Meals



School Meals

Federal School Meal Programs

The National School Lunch Program and School Breakfast Program, sponsored by the U. S. Department of Agriculture (USDA), are the two largest federal school meal programs. Over the past several decades, these programs have addressed hunger, food insecurity and poor nutrition by providing free or low-cost meals in schools each day. In fiscal year 2008, more than 10 million students received breakfast and more than 31 million received lunch through these programs.^{63,64} At participating schools, all students may purchase breakfast or lunch through the programs, and meals are available for free or at a reduced price for students from lower-income families.

Although each local school food authority decides which specific foods to serve for these meals, all schools participating in the USDA meal programs are required to meet certain nutritional criteria. The USDA requirements are outdated and based on the 1995 Dietary Guidelines for Americans,⁶⁵ which recommend that no more than 30 percent of calories come from fat, with fewer than 10 percent from saturated fat. USDA requirements also state that lunch should provide at least one-third of the Recommended Dietary Allowances (RDAs) for protein, Vitamin A, Vitamin C, iron and calcium, and one-third of each child's daily calories.^{66,67}

Financial Barriers

In 2003, the U.S. Government Accounting Office documented an increasing shortfall in revenues from

school meal programs. School food service personnel expressed concerns that raising meal prices would result in lower participation rates, thus they have been using other strategies to contain costs, such as purchasing lower-priced or pre-packaged foods, and foods that require less preparation. Unfortunately, these products also are typically high in calories and low in nutrients. Such cost-driven decisions often result in schools serving fewer fresh and nutritious foods, which are generally more expensive than pre-packaged convenience foods. Data yielded by the third School Nutrition and Dietary Assessment (SNDA-III), conducted during the 2004–05 school year, found that 43 percent of school lunch entrees consisted of pre-packaged foods that were high in calories, fat and sodium, such as pizza, breaded chicken nuggets, beef patties and burritos.⁶⁸ The Institute of Medicine (IOM) acknowledges that providing additional servings of fruits, vegetables and whole grains to improve the nutritional quality of school meals may increase the costs of meals by as much as 25 percent for breakfast and 9 percent for lunch.⁶⁹

Federal Policies: Improving the Nutritional Quality of School Meals

The 2009 IOM report on school meals⁷⁰ offers recommendations for updating school meal standards to reflect the 2005 Dietary Guidelines for Americans⁷¹ and Dietary Reference Intakes (DRIs),⁷² which are based on the most current nutritional science. The IOM recommendations encourage offering more fruits and vegetables, substituting whole grains for refined

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grains, and decreasing saturated fat, trans fat, added sugars and salt. Specific strategies for meeting these recommendations include offering 1% or skim milk and fewer salty and sweetened foods. The USDA is reviewing the IOM recommendations and considering revisions to its school meal standards for lunch.

The Child Nutrition and WIC Reauthorization Act of 2004 mandated that school districts participating in the National School Lunch Program, School Breakfast Program or other child nutrition programs adopt and implement a wellness policy by the first day of the 2006–07 school year. The federal legislation specifically noted that each wellness policy must include guidelines for reimbursable school meals that meet the minimum federal school meal standards established by the USDA.

In the largest, most comprehensive national study to date of district wellness policies, Bridging the Gap researchers found that most public elementary school students were covered by a wellness policy that addressed the nutritional aspects of school meals. At the beginning of the 2007–08 school year, 87 percent of public elementary school students were enrolled in a district that explicitly required the school meal program to meet the minimum federal standards based on the outdated 1995 Dietary Guidelines, up from 75 percent in 2006–07.⁷³ However, for the 2007–08 school year only 18 percent of public elementary school students were enrolled in a district that required the school meal offerings to exceed the 2005 Dietary Guidelines, up from 10 percent in 2006–07.⁷⁴

Key Findings: Practices in Elementary Schools

While policies to address nutrition guidelines for school meals have become more prevalent since the wellness policy mandate went into effect, it is unclear whether changes in school practices—both those mentioned in the mandate and other practices—have occurred during this same period. As detailed in findings that follow, our

school-level surveys assessed several aspects of school meals during 2006–07 and 2007–08, thus representing the two-year period immediately following the requirement for districts to adopt and implement a wellness policy. This chapter presents information on:

- *school and student participation in the School Breakfast Program and National School Lunch Program;*
- *prices for school breakfasts and lunches;*
- *the specific types of foods and beverages offered during school lunches;*
- *a variety of student-oriented aspects of the lunch environment, such as how long students have to eat and when recess is scheduled in relation to lunch; and*
- *several aspects of the food service environment, including kitchen facilities, sources of school meals, the availability of commercial foods, and participation in farm-to-school or school garden programs.*

Figures show results separately for public and private students and reflect the percentages of elementary school students nationwide who were impacted by each school practice. Most figures present both the 2006–07 and 2007–08 school years; however, sometimes the wording of our survey items was revised in a way that reduced comparability from one year to the next. In such cases only data from the 2007–08 school year are presented. For many variables in this chapter we found minimal changes between the two years, thus we focus on the most recent year in our interpretations.

We cite corresponding findings from the Bridging the Gap report on district wellness policies to help inform readers about the strengths and weaknesses of wellness policy provisions that are relevant to each school-level practice. Descriptive statistics for both years of school- and district-level survey data discussed in all Bridging the Gap reports are available at www.bridgingthegapresearch.org.

The School Breakfast Program

Breakfast provides important energy and nutrients for growing children. Children who eat breakfast establish better eating habits and are less likely to be overweight than those who do not eat breakfast.⁷⁵⁻⁷⁷ However, approximately 16 percent of school-age children do not eat breakfast⁷⁸ and skipping breakfast is even more common among children from lower-income families,⁷⁹ who are at high risk for weight-related health problems. Making the School Breakfast Program available at schools may increase children’s likelihood of eating breakfast.⁸⁰

Participation in the School Breakfast Program specifically is associated with lower body mass index, particularly among non-Hispanic White students.⁸¹ Participation in the program also has been found to improve nutrient intake, academic test scores and attendance among students who would not otherwise eat breakfast.⁸²⁻⁸⁶

School Participation in the School Breakfast Program

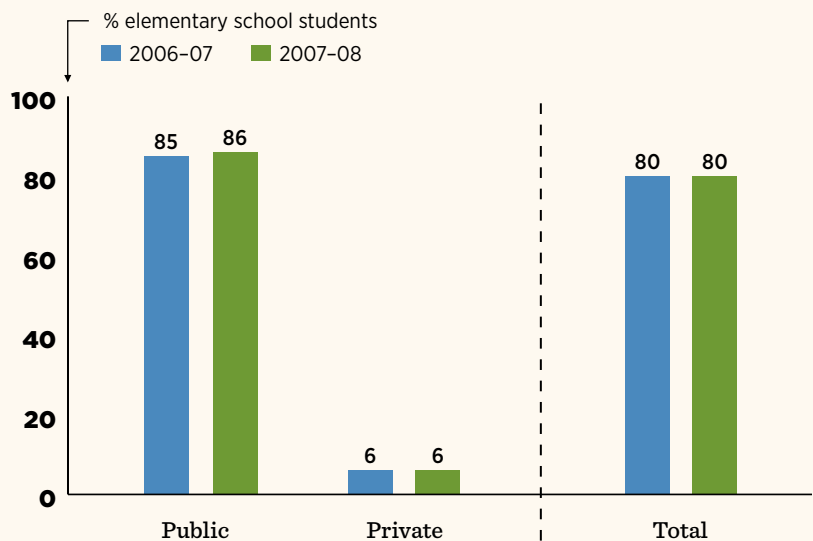
SNDA-III found that during the 2004-05 school year, 85 percent of public schools participating the National School Lunch Program also participated in the School Breakfast Program.⁸⁷ Estimates of school-level participation were slightly lower in the 2006 School Health Policies and Programs Study (SHPPS 2006), which found that 63 percent of schools participated in the School Breakfast Program.⁸⁸

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007-08 school year, 53 percent of public elementary school students were enrolled in a district with a strong wellness policy that specifically referenced participation in the School Breakfast Program. This was an increase from 43 percent in 2006-07.⁸⁹

As part of our school survey, we asked administrators whether their school participated in the School Breakfast Program.

- Among both public and private schools, participation rates were stable from the 2006-07 to the 2007-08 school year.
- Public elementary school students were much more likely than private elementary school students to have access to the School Breakfast Program. During the 2007-08 school year, 86 percent of public elementary school students attended a school that participated in the program, compared with only 6 percent of private elementary school students.

FIGURE 4.1 School Breakfast Program Available at School



Public differs from private at $p < .01$ or better for both years.

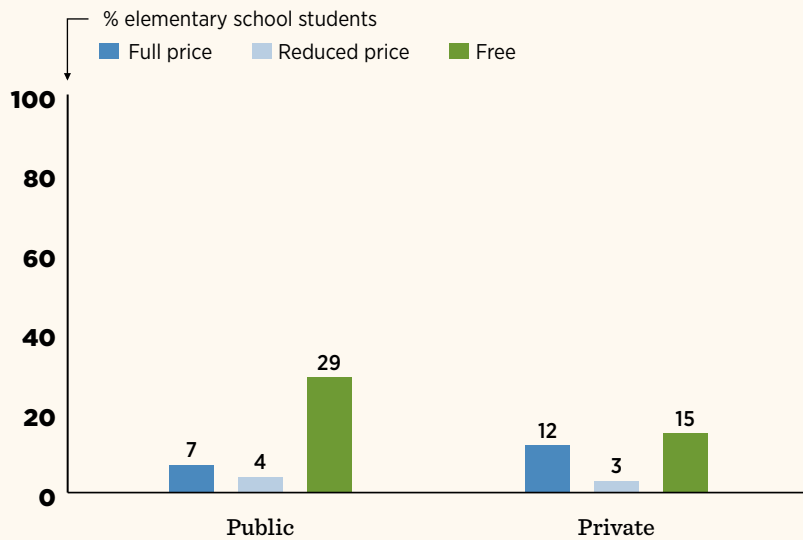
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Student Participation in the School Breakfast Program

As part of our 2007–08 school survey only, we asked administrators to indicate how many students eat the USDA-reimbursable breakfast meal at each price level and divided that number by the total number of students at each school to calculate average student participation rates at each price. These estimates do not represent the percentage of meals served at each price, but rather the percentage of elementary school students who ate breakfast at each price during the 2007–08 school year. These data are presented only for schools that participated in the School Breakfast Program.

- An average of 40 percent of public elementary school students participated in the School Breakfast Program during the 2007–08 school year. This is slightly higher than SNDA-III results, which found that during the 2004–05 school year, 31 percent of public elementary school students participated in the program.⁹⁰ The difference is not surprising considering that our data were collected three years after SNDA-III and the School Breakfast Program continues to grow steadily each year.
- Participation rates were significantly lower among private elementary school students, but the same pattern emerged for public and private elementary school students—a higher percentage of students ate breakfast for free than for reduced price or full price.

FIGURE 4.2 Typical Daily Student Participation in the School Breakfast Program at Each Payment Level, 2007–08



Percentage of students eating lunch for free differs between public and private at $p < .01$ or better.

Includes only schools that participated in the School Breakfast Program.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007–08, on average only 40 percent of public and 30 percent of private elementary school students participated in the School Breakfast Program.

Price of School Breakfast Program Meals

Price is a consistently important predictor of student participation in school meal programs.⁹¹⁻⁹³ SNDA-III found that when the full price charged for breakfast was higher, fewer students participated.⁹⁴ Holding all other factors equal, participation rates in the School Breakfast Program during the 2004-05 school year were 13 percent in schools charging \$.70 per meal compared with 9 percent in schools charging \$1.00 per meal.⁹⁵ Given the recent economic downturn, it is likely that this effect will be exacerbated.

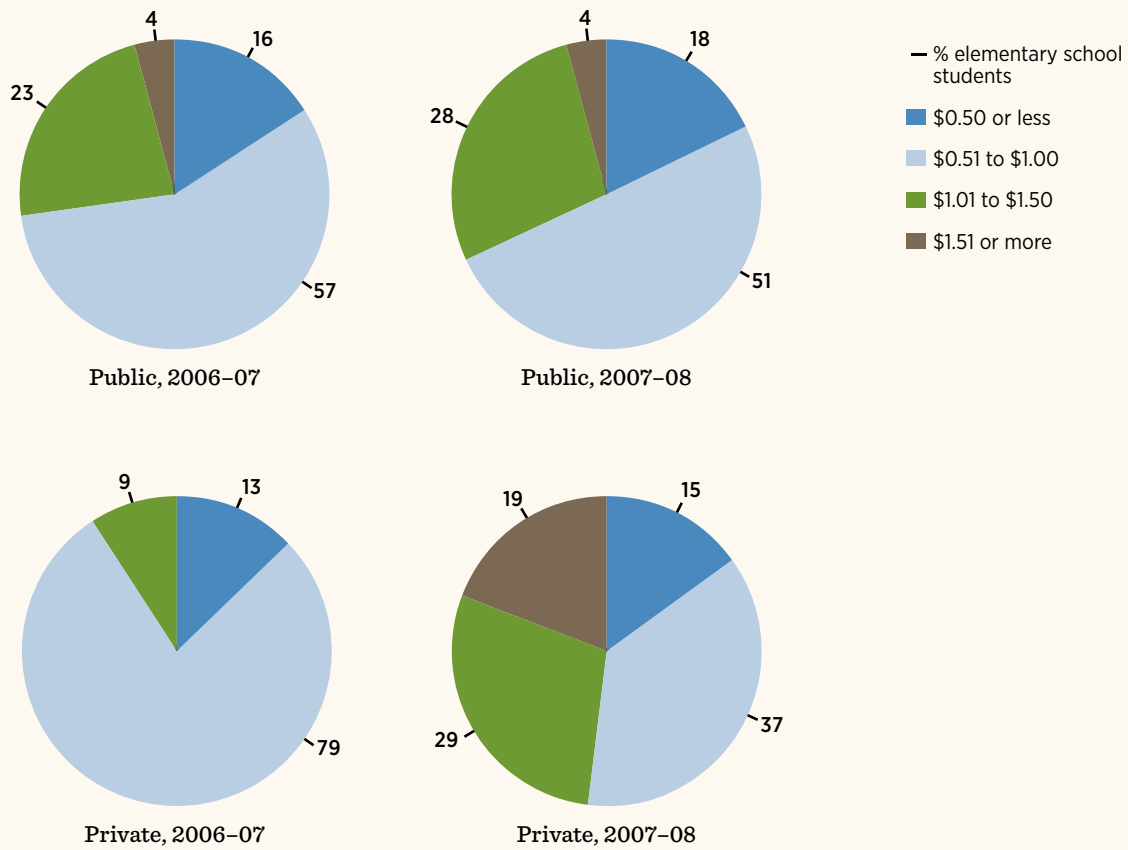
For most schools, federal reimbursement provides a primary funding source for meal programs. However, the proportion of meal revenue obtained from federal reimbursement has decreased, while budgetary pressures have increased.⁹⁶ Federal reimbursement rates paid to schools serving the USDA breakfast during the 2007-08 school year were \$.24 for a full-price meal, \$1.05 for a reduced-price meal and \$1.35 for a free meal.⁹⁷ This was a very minimal increase from reimbursement rates during the 2006-07 school year, which were \$.24 for a full price meal, \$1.01 for a reduced-price meal and \$1.31 for a free meal.^c

As part of our school survey, we asked administrators to report the full price charged for a School Breakfast Program meal.

- Breakfast prices increased across the two-year period of our survey.
 - Among public elementary school students, breakfast cost \$1.00 or less for 73 percent of students during the 2006-07 school year, compared with 69 percent of students in 2007-08.
 - The increase in breakfast price was even more striking for private elementary school students; breakfast cost \$1.00 or less for 92 percent of private students during the 2006-07 school year, compared with only 52 percent of private students in 2007-08.

^c For both years, reimbursement rates were higher for schools in Alaska and Hawaii and those that served at least 40 percent of breakfasts at reduced-price or for free.

FIGURE 4.3 Price Charged for a Full-Price School Breakfast Program Meal



Data show the percentage of elementary school students who were offered a full-price meal at each price range.

Includes only schools that participated in the School Breakfast Program.

Public differs from private at $p < .01$ or better in 2007-08.

Due to rounding, some segments may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

The National School Lunch Program

Elementary school students obtain a substantial amount of their daily calorie intake while at school. SNDA-III results indicated that during the 2004–05 school year, elementary school students who participated in the National School Lunch Program obtained 40 percent of their daily calorie intake from foods eaten at school, compared with 35 percent among nonparticipants.⁹⁸ SNDA-III also found that participation in the National School Lunch Program was *not* associated with children's weight status,⁹⁹ but was associated with students making healthier food and beverage choices. Public elementary school students participating in the National School Lunch Program drank more milk, ate more vegetables and salad, and consumed less candy, soda and snack chips, compared with nonparticipants.^{100,101} Although 93 percent of elementary schools offered meal options that met the standard for fat content set by the School Meals Initiative for Healthy Children (SMI), few students consistently chose low-fat options.¹⁰²

SNDA findings show that some aspects of elementary school meals have become more nutritious, but many are not consistent with national nutritional guidelines. SNDA-II data, from the 1998–99 school year, indicated that 15 percent of public elementary schools offered meals that met USDA limits on saturated fat content, while SNDA-III reported an increase to 34 percent in the 2004–05 school year. However, SNDA-III also found that three-quarters of public elementary schools did not meet the standard for total fat content of school lunches, only 6 percent met all of the SMI standards, including total calories and fat content, and no schools met the standards for limits on sodium content.¹⁰³ In fact, the average sodium levels of school meals were nearly double the recommended limit.¹⁰⁴ Clearly there is much room for improvement. Given that SNDA-III data were collected one year prior to the required wellness policy implementation, it is possible that improvements have occurred since that time.

Several interventions to improve the quality of school lunches have been successful in promoting healthier choices among students. For example, an evaluation of the Texas Public School Nutrition Policy showed an increase in consumption of vegetables and milk as part of the National School Lunch Program meal, and a decrease in consumption of sugar-sweetened beverages, snack chips and percentage of calories from fat.¹⁰⁵ The Child and Adolescent Trial for Cardiovascular Health (CATCH) project, an intervention that promoted a healthier food environment at multiple elementary schools in the United States, significantly reduced intake of total fat and saturated fat among young children.¹⁰⁶ Furthermore, other studies have found that improving the nutritional quality of school meals by providing healthier options may actually increase student participation in school meal programs.^{107,108}

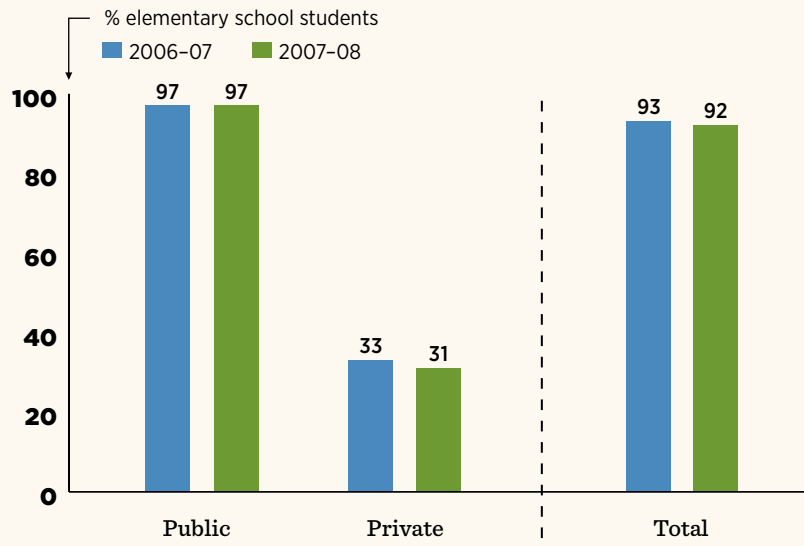
School Participation in the National School Lunch Program

During 2008 the National School Lunch Program operated in more than 101,000 public and private schools and child-care institutions nationwide.¹⁰⁹ SHPPS 2006 found that 84 percent of all public and private schools participated in the program.¹¹⁰

As part of our school survey, we asked administrators whether their school participated in the National School Lunch Program.

- Among both public and private schools, participation rates were stable from the 2006–07 to the 2007–08 school year.
- Public elementary school students were more likely than private elementary school students to have access to the National School Lunch Program. During the 2007–08 school year, 97 percent of public elementary school students attended a school that participated in the program, compared with 31 percent of private elementary school students.

FIGURE 4.4 National School Lunch Program Available at School



Public differs from private at $p < .01$ or better for both years.

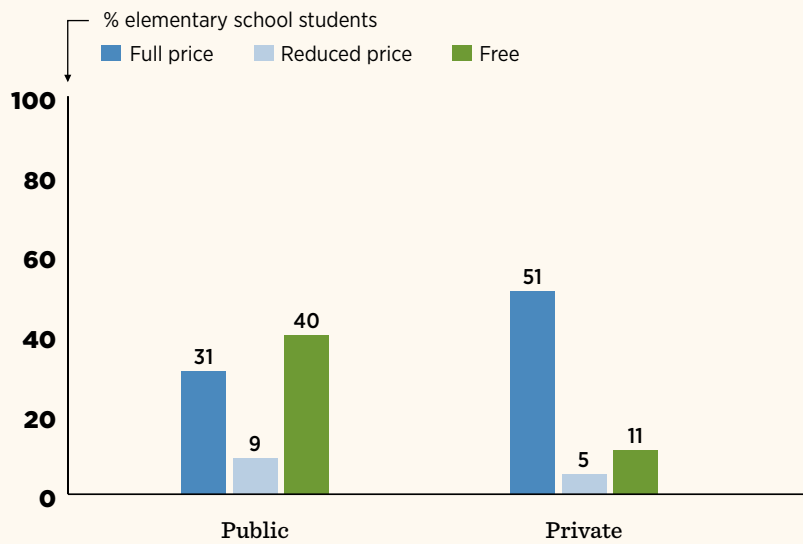
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Student Participation in the National School Lunch Program

As part of our 2007–08 school survey only, we asked administrators to indicate how many students eat the USDA-reimbursable lunch at each price level, and divided that number by the total number of students at each school to calculate average student participation rates at each price. These estimates do not represent the percentage of meals served at each price, but rather the percentage of elementary school students who ate lunch at each price during the 2007–08 school year. These data are presented only for schools that participated in the National School Lunch Program.

- At schools offering a National School Lunch Program meal, 80 percent of public elementary school students participated in the program on an average day during the 2007–08 school year. This is similar to results from SNDA-III, which also found that 80 percent of public elementary school students participated in the program during the 2004–05 school year.¹¹¹
 - Fewer private elementary school students (67%) participated on an average day.
 - About one-half of the public elementary school students who participated in the National School Lunch Program on an average day received the meal for free.

FIGURE 4.5 Typical Daily Student Participation in the National School Lunch Program at Each Payment Level, 2007–08



Includes only schools that participated in the National School Lunch Program.

Public differs from private at $p < .01$ or better.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Among public elementary school students who participated in the School Breakfast Program or the National School Lunch Program, the greatest percentage received meals for free in 2007–08.

Price of National School Lunch Program Meals

Similar to findings for the School Breakfast Program, SNDA-III found that higher meal prices were associated with lower participation rates in the National School Lunch Program. With all other factors held equal, student participation rates during the 2004–05 school year were 56 percent in schools charging \$1.50 per lunch compared with 50 percent in schools charging \$2.00 per meal.¹¹² Given the recent economic downturn, it is likely that this effect will also be exacerbated.

For most schools, federal reimbursement provides a primary funding source for meal programs. However, the proportion of meal revenue obtained from federal reimbursement has decreased, while budgetary pressures have increased.¹¹³ Federal reimbursement rates paid to schools serving a National School Lunch Program meal during the 2007–08 school year were \$.23 for a full-price meal, \$2.07 for a reduced-price meal and \$2.47 for a free meal.¹¹⁴ This was a very minimal increase from reimbursement rates during the 2006–07 school year, which were \$.23 for a full-price meal, \$2.00 for a reduced-price meal and \$2.40 for a free meal.^d

As part of our school survey, we asked administrators to report the full price charged for a National School Lunch Program meal.

- For both public and private elementary school students, lunch prices increased slightly across the two-year study period. Prices were higher for private students than for public students.
 - Among public elementary school students, lunch cost \$2.00 or less for 86 percent of students during the 2006–07 school year, compared with 81 percent of students in 2007–08.
 - Among private elementary school students, lunch cost \$2.00 or less for 60 percent of students during the 2006–07 school year, compared with 53 percent of students in 2007–08.

^d For both years, reimbursement rates were slightly higher for schools in Alaska and Hawaii and those that served at least 60 percent of lunches at reduced-price or for free.

FIGURE 4.6 Price Charged for a Full-Price National School Lunch Program Meal



Foods and Beverages Available in Lunch Meals

Evaluating the specific food and beverage products that are available to students can offer insights about why student diets do or do not meet nutritional recommendations. For example, many schools do not offer fresh produce or whole grains on a daily basis, which makes it difficult for students to meet the recommended daily intake for these foods. SNDA data indicate that from the 1998-99 to the 2004-05 school year, the percentage of public elementary schools offering fresh fruit daily increased from 36 percent to 48 percent, while green salads increased from 28 percent to 34 percent.^{115,116} However, availability of french fries or similar potato products also increased dramatically during that period, from 3 percent to 21 percent.^{117,118} In addition, during the 2004-05 school year, only 5 percent of lunch menus offered foods made from whole grains.¹¹⁹

The 2005 Dietary Guidelines emphasize the importance of consuming skim or low-fat milk products during childhood and adolescence.¹²⁰ Although SNDA-III found that the most common milk products offered in schools during the 2004-05 school year were 1% or skim milk, 57 percent of elementary school menus offered 2% milk and 30 percent offered whole milk.¹²¹ Student-level data from the same year indicated that fewer than 2 percent of elementary school students actually consumed whole milk, and 13 percent consumed 2% milk.¹²²

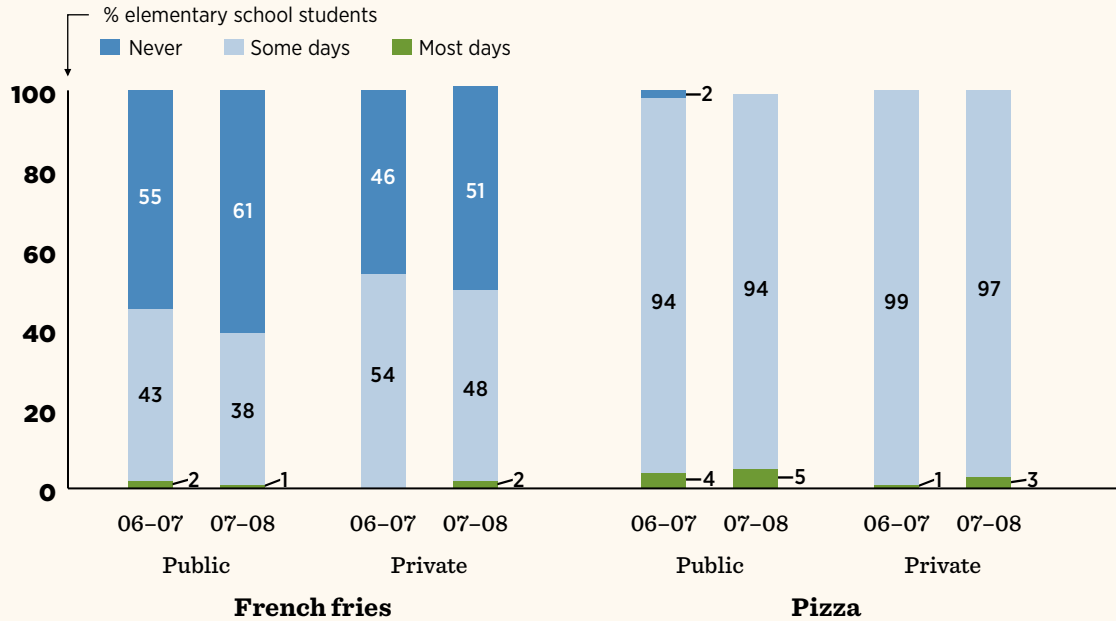
As part of our school survey, we asked administrators how frequently a variety of foods and beverages were available in the school lunch meal. The survey assessed general categories of foods, such as pizza, french fries and whole grains. We also asked about availability of milks, classified as lower-fat milk (1% or nonfat milk) and higher-fat milk (2% or whole milk).

Results presented here are only for schools that participated in the National School Lunch Program. Data reflect the percentages of public and private elementary school students nationwide with these products available in the National School Lunch Program meal.

Foods Available in Lunch Meals Offered at Schools Participating in the National School Lunch Program

- During the two-year study period, the availability of french fries slightly decreased, while the availability of salad bars and whole grains slightly increased. This was true for both public and private elementary school students. We will continue to examine these trends as we analyze school survey data in subsequent years.
- For the 2007–08 school year, 39 percent of public and 50 percent of private elementary school students had french fries available during lunch on some or most days.
- For both years, pizza was available during lunch on at least some days for almost all public and private elementary school students.
- For both years, the majority of public and private elementary school students never had a salad bar option at lunch, and public students were less likely than private students to attend a school that offered a salad bar for lunch.
- For the 2007–08 school year, only about one-fifth of public and private elementary school students had whole grains available for lunch on most days of the week.

FIGURE 4.7 Availability of Less-Healthy Foods in Lunch Meals Offered at Schools Participating in the National School Lunch Program

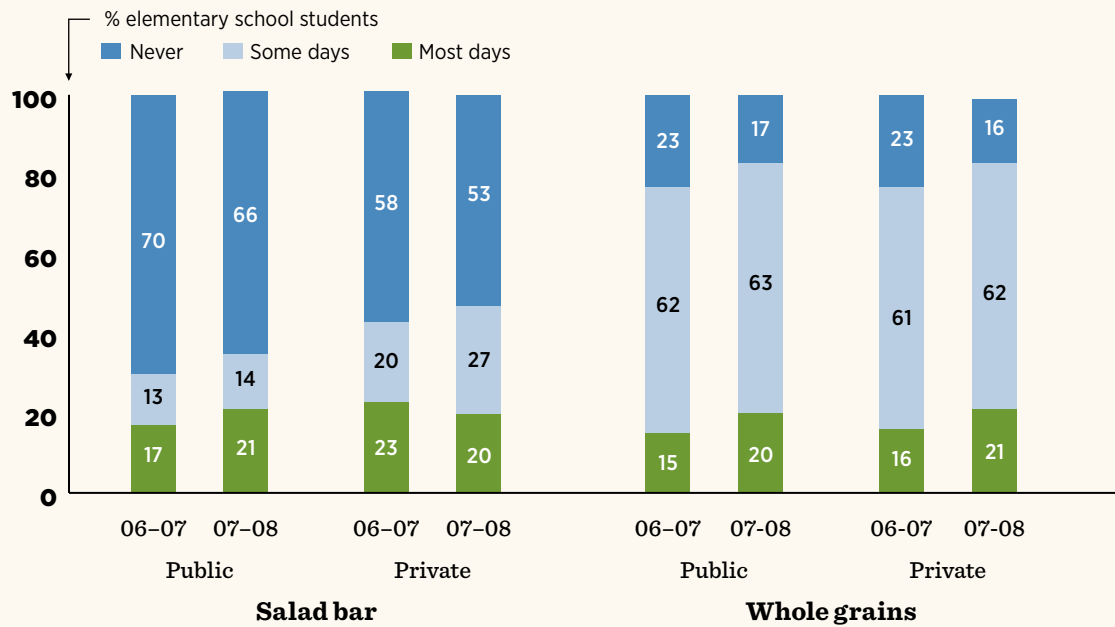


Includes only schools that participated in the National School Lunch Program.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 4.8 Availability of Healthier Foods in Lunch Meals Offered at Schools Participating in the National School Lunch Program



Public differs from private at $p < .01$ or better for salad bar in 2007-08.

Includes only schools that participated in the National School Lunch Program.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

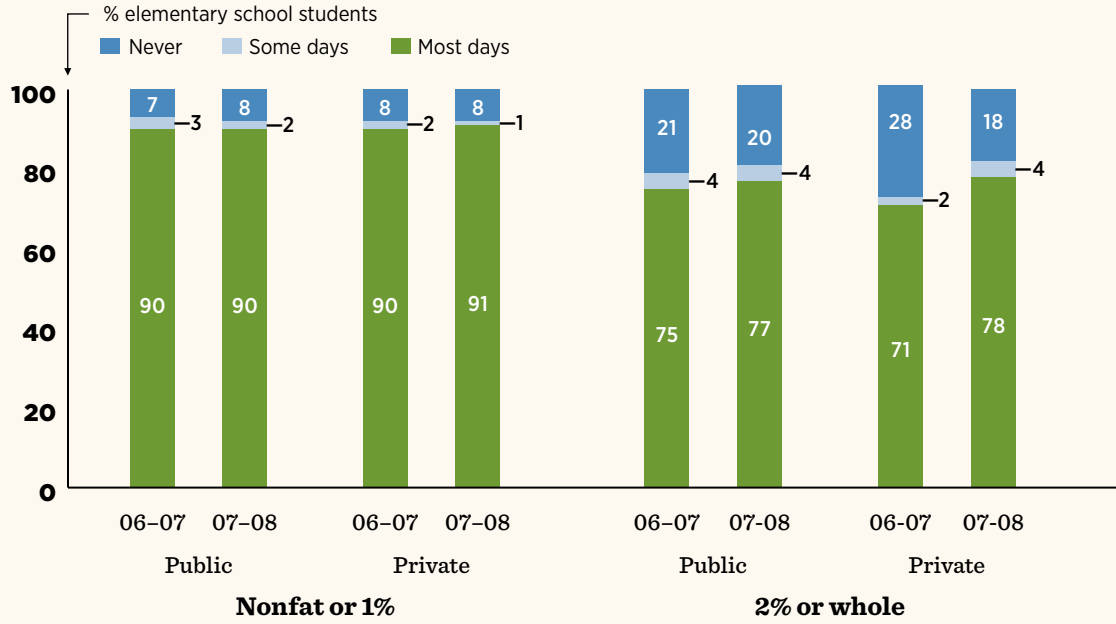
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

For the 2007-08 school year, two-thirds of public elementary school students had no salad bar available to them during the lunch period.

Beverages Available in Lunch Meals Offered at Schools Participating in the National School Lunch Program

- During both years, the majority of public and private elementary school students had low-fat and higher-fat milk beverages available in the National School Lunch program meal on some or most days.

FIGURE 4.9 Availability of Milk in Lunch Meals Offered at Schools Participating in the National School Lunch Program



Includes only schools that participated in the National School Lunch Program.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

High-fat milk products were available to approximately 80 percent of public and private elementary school students at lunch during the 2007-08 school year.

Duration and Timing of the Lunch Period

How Long Do Students Have for Lunch?

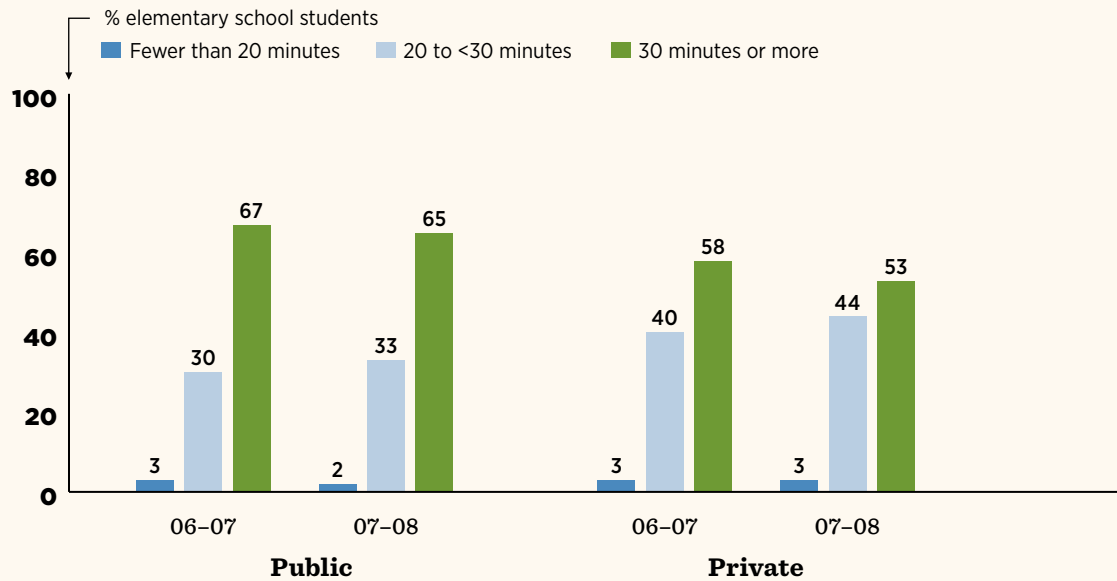
According to a joint statement from the USDA, American Academy of Pediatrics, American Dietetic Association and other experts, having sufficient time to eat lunch with a minimum wait time is crucial for promoting healthy eating behaviors among children.¹²³ National organizations including the American School Health Association, the National Association of State Boards of Education, and the National Alliance for Nutrition and Activity (NANA) recommend that students have at least 20 minutes to eat from the time they are seated with their meal.¹²⁴⁻¹²⁶ Given that students often wait for several minutes to receive their lunch,¹²⁷ scheduling a 30-minute lunch period may be necessary to help encourage healthy behaviors. Research found that elementary school students who were given 30 minutes for lunch consumed more foods and nutrients, such as calcium and vitamin A, than did those with a 20-minute lunch period.¹²⁸

SHPPS 2006 found that 79 percent of schools gave students at least 20 minutes to eat lunch after being seated.¹²⁹ Yet, results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007-08 school year only 11 percent of public elementary school students were enrolled in a district with a strong wellness policy specifying that students should have at least 20 minutes to eat lunch. Another 51 percent of public elementary school students were enrolled in a district with a weak wellness policy that only suggested students receive “adequate” time to eat and did not specify a minimum amount of time, or a policy that specified students had less than 20 minutes for lunch.¹³⁰ This was an increase from the 2006-07 school year, during which 10 percent and 41 percent were enrolled in a district with strong and weak wellness policies, respectively.¹³¹

As part of our school survey, we asked administrators about the duration of the daily lunch period in total minutes. This measure does not assess actual time available to eat, because it includes time spent waiting for the meal. We grouped data into three categories: 1) fewer than 20 minutes; 2) 20 to <30 minutes; and 3) 30 minutes or more.

- During both years, nearly all public and private elementary school students were offered at least 20 minutes to eat lunch.
- For the 2007-08 school year, public elementary school students were significantly more likely to have 30 minutes or more for lunch, compared with private elementary school students.

FIGURE 4.10 Duration of Lunch Period



Public differs from private at $p < .01$ or better for 2007-08.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During the 2007-08 school year, approximately two-thirds of public elementary school students were given 30 minutes or more for their daily lunch period.

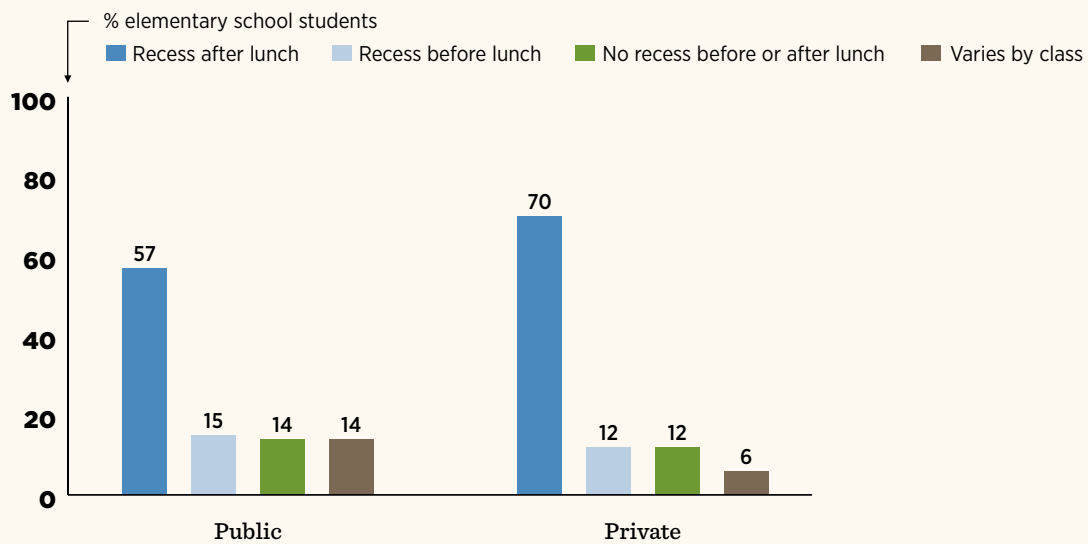
Timing of the Lunch Period in Relation to Recess

Research shows that timing of the lunch period impacts students' eating behaviors. For example, scheduling recess before lunch can reduce plate waste.^{132,133} NANA recommends that recess be scheduled before lunch in elementary schools.¹³⁴ SHPPS 2006 found that only 10 percent of schools scheduled recess before lunch,^{135,136} which was an increase from fewer than 5 percent of schools as reported by SHPPS 2000.¹³⁷

As part of our school survey, we asked administrators about the timing of the lunch period in relation to recess. Because cafeteria space and scheduling requirements often necessitate that students eat in shifts according to grade level, timing of the lunch period in relation to recess was asked specifically for 3rd-grade students.

- For the 2007–08 school year, only 15 percent of public and 12 percent of private 3rd-grade students had recess before lunch.

FIGURE 4.11 Timing of Lunch in Relation to Recess for 3rd-Grade Students, 2007–08



Public differs from private at $p < .01$ or better for 2007–08.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

For the majority of public and private 3rd-grade students, recess was scheduled after the lunch period during the 2007–08 school year.

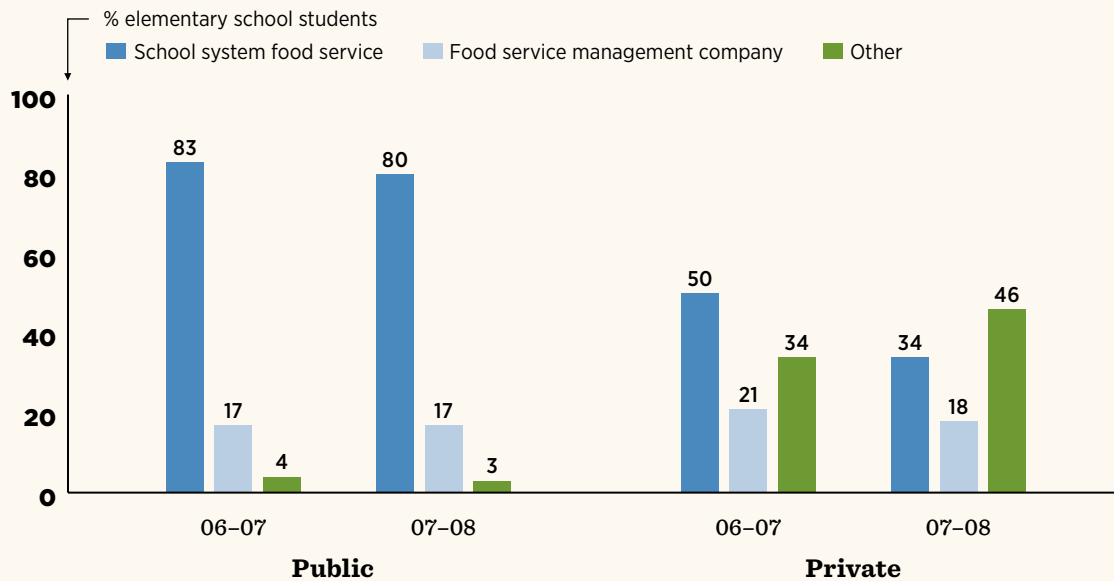
Who Provides the Meals Served at School?

According to the IOM, preparing food in onsite facilities could help increase the number of schools offering meals that meet recommended nutritional and menu planning standards.¹³⁸ However, many schools subcontract food services to outside companies. SHPPS 2006, for example, found that 24 percent of schools that offered breakfast or lunch used an outside food service company to provide meals.¹³⁹

As part of our school survey, we asked administrators to indicate how food service was provided. Because some schools use a combination of options for providing foods, respondents were instructed to check all applicable responses.

- During both years, most public elementary school students attended a school where the meal was provided by the school system’s food service program. Yet private elementary school students were more likely to attend a school where the meal was provided by an “other” source—that is, a food service management company or service other than the school. Written responses indicated that these other sources were often local restaurants and catering companies.
- Over the two years, there was a noticeable increase in the percentage of private elementary school students who had food available from “other” sources, increasing from 34 percent during the 2006–07 school year to 46 percent in 2007–08.

FIGURE 4.12 Supplier of School Meals



Public differs from private at $p < .01$ or better for school system food service and other for both years.

Bars do not sum to 100 because respondents were allowed to endorse more than one option.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Meals from Commercial Sources

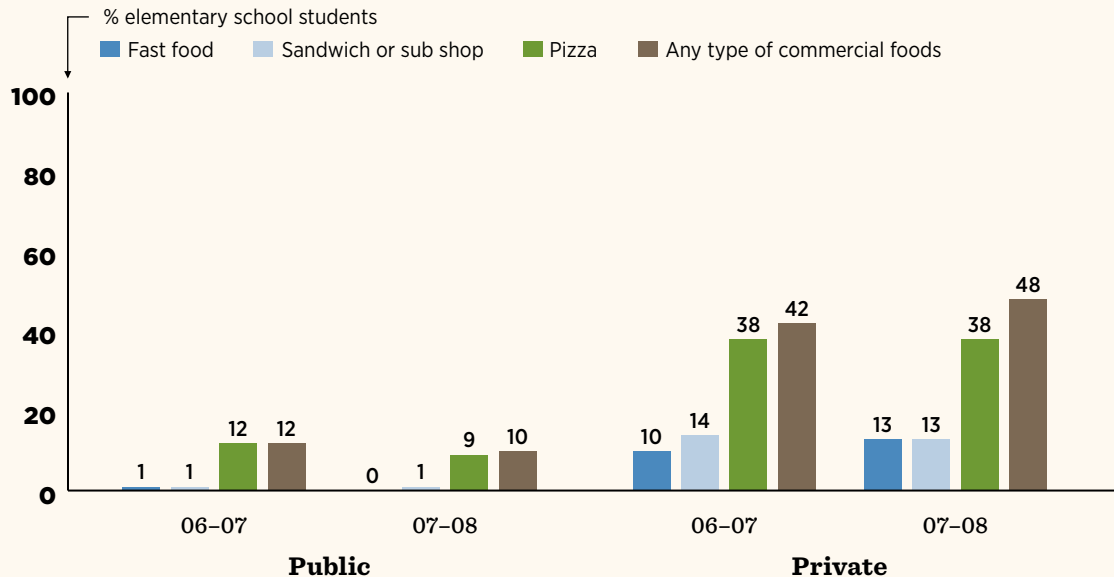
As noted above, many students—particularly those in private schools—have access to foods at school that are provided by outside vendors such as restaurants and catering companies. Although a small number of our survey respondents indicated that their private school participated in the National School Lunch Program by sourcing meals from a nearby public school district, foods from an outside source are most commonly offered outside of the National School Lunch Program and therefore are not required to comply with USDA nutritional requirements.

Often, foods from outside sources are high-calorie, low-nutrient fast foods. In 2003, the California High School Fast Food Survey found that one-fourth of districts reported selling brand-name fast foods such as Taco Bell, Subway and Pizza Hut.¹⁴⁰ This is consistent with SHPPS 2006 results, which indicated that 24 percent of high schools sold name-brand fast foods. SHPPS 2006 found this practice to be less common in elementary schools, with only 12 percent of elementary schools offering brand-name fast foods. Among all schools that offered fast-food meals, three-quarters offered these products one day per week or less frequently.¹⁴¹

As part of our school survey, we asked administrators whether their school offered commercial foods from a variety of sources, and if they offered commercial foods how frequently they did so.

- During both years, and across all food types, private elementary school students were much more likely than public elementary school students to have commercial foods available. For the 2007–08 school year, some type of commercial food was available to 10 percent of public students, compared with 48 percent of private students.
- Commercial foods also were offered less frequently to public than to private elementary school students. During the 2007–08 school year, these products were available no more than one day per week for 95 percent of public elementary school students, compared with 53 percent of private elementary school students.

FIGURE 4.13 Availability of Commercial Foods at School



Public differs from private at $p < .01$ or better for all food types for both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

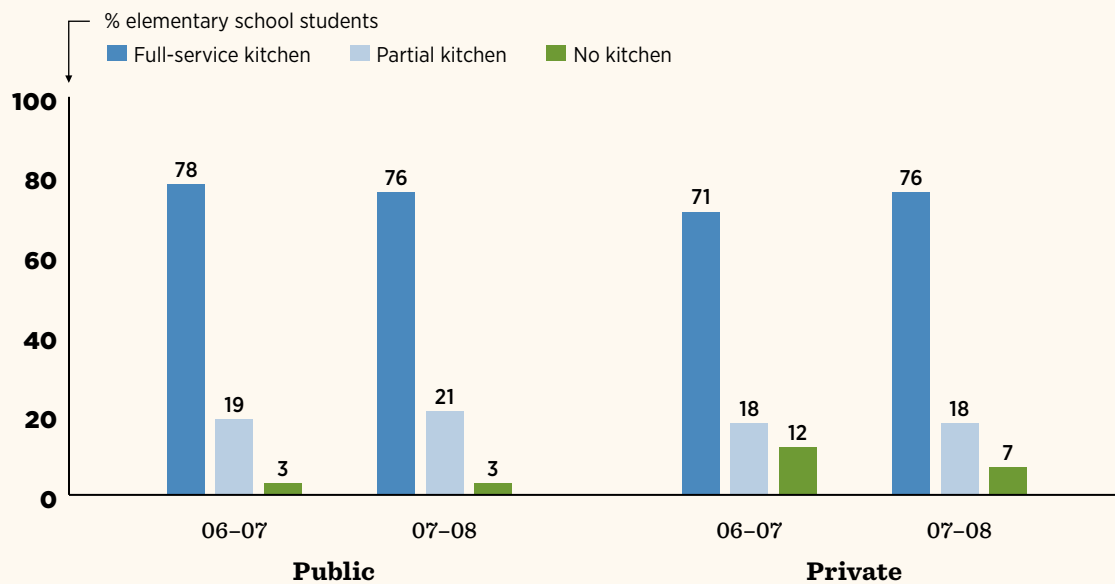
School Kitchen Facilities

A lack of kitchen facilities prevents some schools from preparing meals from scratch and may limit their ability to store fresh foods, particularly among recently built schools that do not have a full-scale kitchen.

As part of our school survey, we asked administrators whether their school had: 1) a full service kitchen (e.g., ovens, refrigerators, stove); 2) a partial kitchen (e.g., warming oven or microwave only); or 3) no kitchen.

- During both years, more than 70 percent of public and private elementary school students attended a school with a full-service kitchen.

FIGURE 4.14 School Kitchen Facilities



Public differs from private at $p < .01$ or better for 2006-07.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

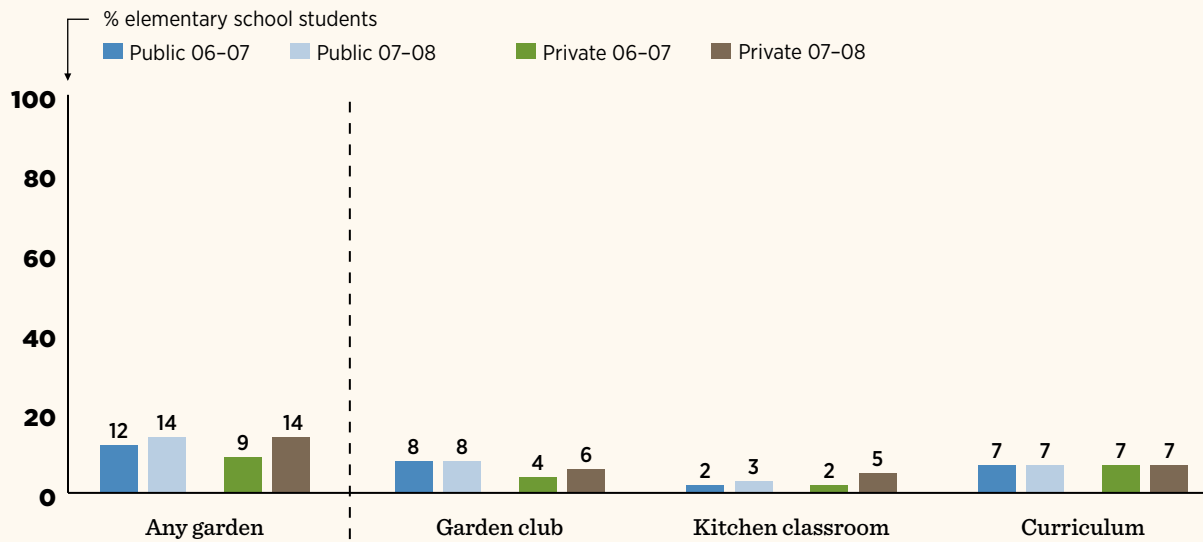
School Gardens

School gardens supply fresh produce that can be served to students during the day. Garden programs also provide an opportunity for hands-on nutrition education and have increased fruit and vegetable consumption among children.¹⁴²

As part of our school survey, we asked administrators whether their school currently had a garden program. If the school had a garden program, we also asked about garden-related activities that were available, such as garden clubs, kitchen classrooms or garden-based curriculum activities.

- During the 2007-08 school year, 14 percent of public and private elementary school students attended a school that had a garden program.
- For approximately one-half of these students, the garden was used in the school curriculum or a garden club.

FIGURE 4.15 School Gardens and Garden Activities



Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Only 14 percent of public and private elementary school students had a garden program at school in 2007-08, and this was an increase from the previous year.

Farm-to-School Programs

Farm-to-school programs connect schools with local farmers by sourcing ingredients for school meals from regional suppliers. These programs have become increasingly popular in recent years. As of 2009, 19 states had laws that established farm-to-school programs, compared to only one state that had a law five years earlier.¹⁴³ Such programs have been successful in increasing fruit and vegetable consumption among students, and can also promote changes in the types of foods children select at lunch, leading them to make healthier choices.¹⁴⁴

As part of our school survey, we asked administrators whether their school participated in any farm-to-school programs that incorporated locally-produced food into meals offered at schools. For 2006–07 only, if respondents indicated that they had a program, we asked whether fruits, vegetables or dairy products were offered.^e

- During the 2006–07 school year, 5 percent of public elementary school students were enrolled in a school with a farm-to-school program, and no private elementary school students were enrolled in a school with such a program.
- For public elementary students during the 2006–07 school year, all farm-to-school programs involved the use of locally-sourced fruit (5% of students) and most included vegetables (4% of students), but dairy products were rarely included (1% of students) in such programs.
- By the 2007–08 school year, participation in farm-to-school programs had increased slightly, with 7 percent of public elementary school students enrolled in a school with a farm-to-school program, compared to 5 percent of private elementary school students.



^e Corresponding figure not presented. Complete data are available at www.bridgingthegapresearch.org.

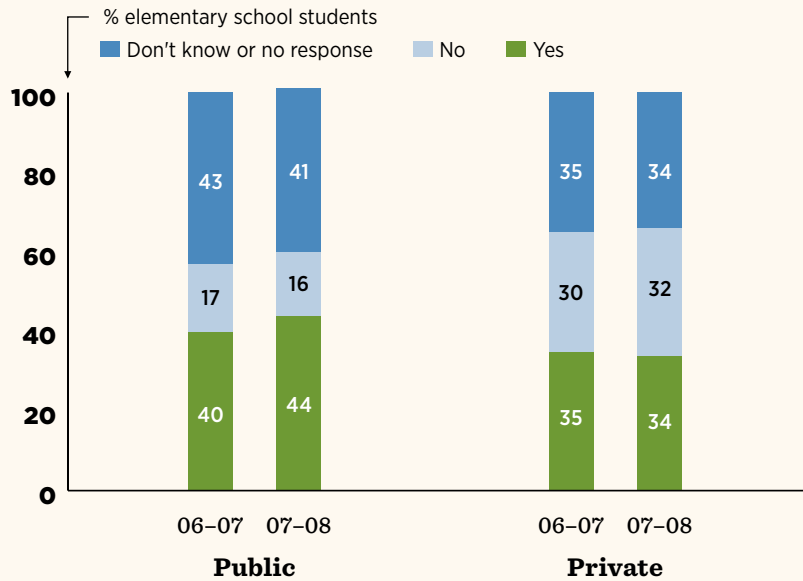
The USDA Team Nutrition Program

Team Nutrition is an initiative of the USDA Food and Nutrition Service that is designed to provide technical assistance and support for healthy eating according to recommendations offered by the Dietary Guidelines for Americans¹⁴⁵ and MyPyramid.¹⁴⁶ The program provides a toolkit and other resources to help food service professionals create healthier school food environments. SHPPS 2006 found that 48 percent of schools participated in the Team Nutrition program.¹⁴⁷

As part of our school survey, we asked administrators whether their school participated in the Team Nutrition program. Because this program is primarily offered as a support for the USDA meal programs, we selected only schools where the School Breakfast Program and/or the National School Lunch Program were offered and examined whether the Team Nutrition program also was used.

- Participation in the Team Nutrition program was fairly stable during the two-year study period among both public and private elementary school students.
- During both years, a significantly higher proportion of public than private elementary school students attended a school that participated in the Team Nutrition program.

FIGURE 4.16 Participation in the USDA Team Nutrition Program



Public differs from private at $p < .01$ or better for 2007-08.

Includes only schools that participated in the School Breakfast Program or the National School Lunch Program.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Providing Nutritional Information

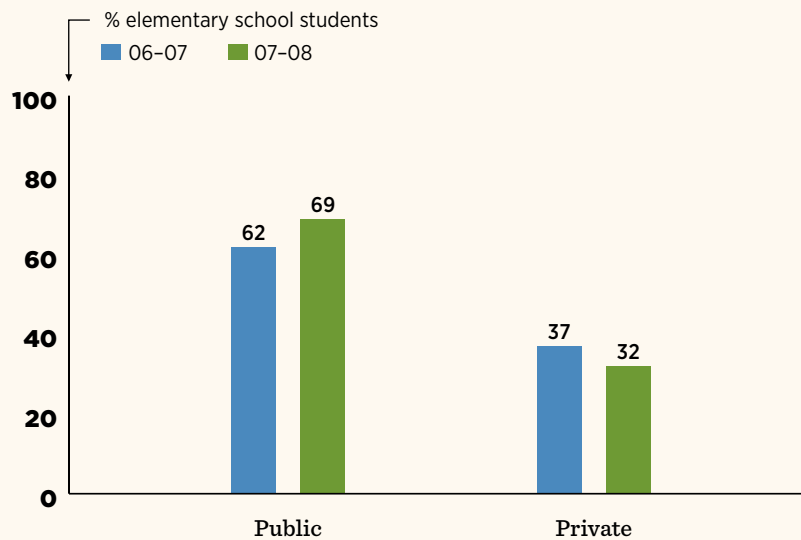
Menu labeling is receiving increasing attention as a strategy for educating consumers about the nutritional qualities of prepared foods, such as restaurant meals.¹⁴⁸ This strategy can impact food choices and decrease caloric intake among adults,¹⁴⁹ but it does not appear to have been studied among children. While many schools make breakfast and lunch menus available, these menus do not necessarily include nutritional information. There is relatively little national data about school-based efforts to include nutritional information on meal menus. SNDA-III found that during the 2004–05 school year, 61 percent of public elementary schools provided nutritional information for USDA school meals.¹⁵⁰

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year only 19 percent of public elementary school students were enrolled in a district with a strong wellness policy specifying that nutritional information (e.g., calories, fat content, sodium content) be provided for school meals. Another 9 percent were enrolled in a district with a weak wellness policy that encouraged or suggested such action.¹⁵¹ This was an increase from 12 percent and 8 percent of students, respectively, who were in a district with a strong or weak policy in 2006–07.¹⁵² The discrepancy between Bridging the Gap district findings and the SNDA-III school estimates may be because schools did make the nutritional information available, but districts did not address it in their wellness policies.

As part of our school survey, we asked administrators whether their school provided nutritional information to students and/or parents for foods and beverages available at school. In 2006–07 two separate items asked about whether information was provided to parents and separately to students, and these items were combined for analyses. In 2007–08 one item asked whether nutrition information was provided to “parents/students.”

- During both years, nutritional information was more likely to be made available to public elementary school students and their parents than to private elementary school students and their parents.

FIGURE 4.17 School Provided Nutritional Information to Parents and/or Students



Public differs from private at $p < .01$ or better for both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

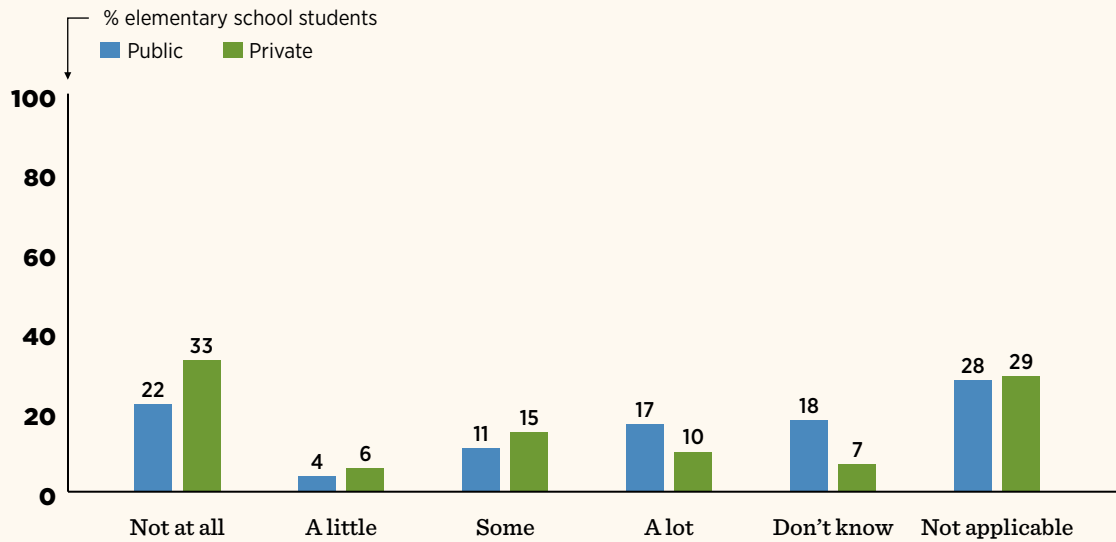
Making Nutritious Foods and Beverages Affordable: Pricing to Encourage Healthier Choices

In 2009, Bridging the Gap researchers analyzed evidence linking price sensitivity and body weight outcomes and concluded that increasing the price of low-nutrient, high-calorie items while decreasing the price of healthy items is a promising strategy for lowering obesity rates, particularly among children, adolescents and lower-income populations.¹⁵³ This strategy also may encourage students to make healthier choices at school. In fact, the CDC's 2009 *Recommended Community Strategies and Measurements to Prevent Obesity in the United States* recommends establishing a pricing structure in public service venues, such as schools, to promote the consumption of healthier items by making them more affordable than less-healthy products.¹⁵⁴

As part of our 2007–08 school survey, we asked administrators to indicate to what extent their school or school district had set food or beverage prices to encourage students to eat healthier foods and/or beverages.

- During the 2007–08 school year, very few public or private elementary school students attended a school that set prices to encourage consumption of healthier items.

FIGURE 4.18 Pricing to Encourage Consumption of Healthier Foods and Beverages, 2007–08



Public differs from private at $p < .01$ or better.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

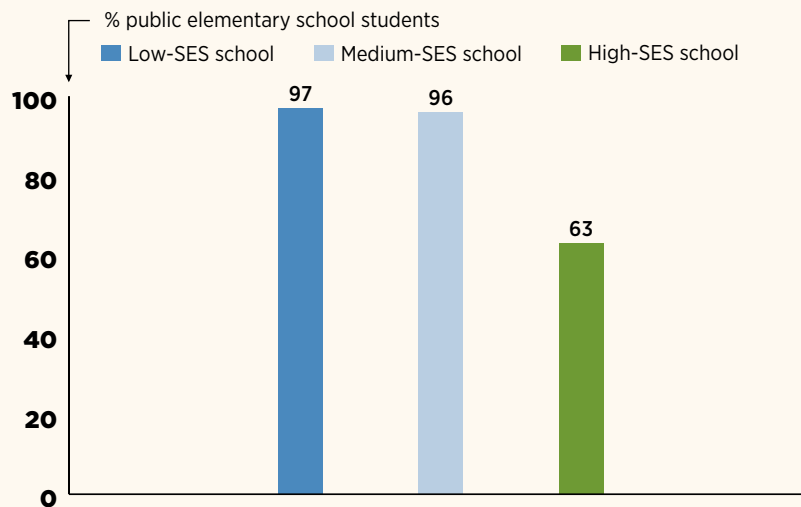
School Meals by Socioeconomic Status (SES)

Some school meal practices varied by the socioeconomic composition of the school.^f Results presented below are for the 2007–08 school year for public schools only.^g

School Participation in the School Breakfast Program, by School Socioeconomic Status

- Public elementary school students at high-SES schools were significantly less likely than were public elementary school students at medium- and low-SES schools to be offered the School Breakfast Program during the 2007–08 school year.

FIGURE 4.19 Availability of the School Breakfast Program, by School Socioeconomic Status, 2007–08



Nearly all public elementary school students in low- and medium-SES schools were offered the School Breakfast Program.

Includes only public elementary school students.

Low SES and medium SES differ from high SES at $p < .01$ or better for both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

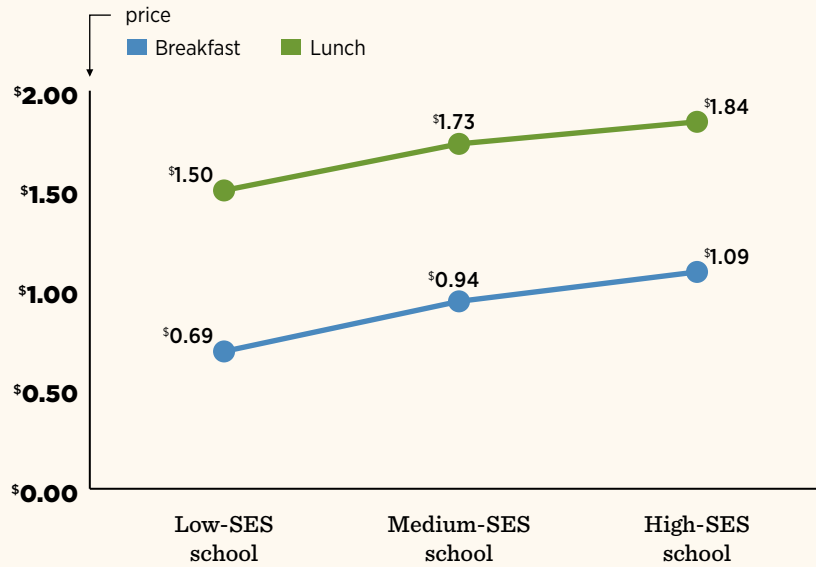
^f Data from the National Center for Education Statistics (NCES) were obtained regarding school-level demographic characteristics. Free and reduced-price lunch (FRL) information from the NCES was used as a proxy for socioeconomic status (SES) of each participating school. For both years, we computed tertiles for overall school FRL participation.

^g NCES data on FRL participation are available only for public schools, and the smaller sample sizes for the private schools may result in unstable estimates, therefore only the public schools are included in SES comparisons.

School Breakfast Program and National School Lunch Program Prices, by School Socioeconomic Status

- Public elementary school students at high-SES schools were charged significantly more than were public elementary school students at low-SES schools, for a full-price breakfast and lunch during the 2007-08 school year.

FIGURE 4.20 Average Price Charged for Full-Price School Breakfast Program and National School Lunch Program Meals, by School Socioeconomic Status, 2007-08



Includes only public elementary school students.

Low SES differs from medium SES and high SES at $p < .01$ or better.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

TABLE 4.1 Percentage of Public Elementary School Students Exposed to Selected Policies and Practices, School Years 2006–07 and 2007–08

The table below summarizes key findings among public elementary school students that are particularly important for informing wide-reaching policies that will impact federal school meal programs. The table also highlights changes from the 2006–07 to the 2007–08 school year, which were the first two years following the federal wellness policy mandate. These data can be used to monitor school-level implementation of the district wellness policies and assess the nation's progress in creating healthier school environments to help reverse the childhood obesity epidemic.

School Meals	2006–07	2007–08
School participated in National School Lunch Program	97%	97%
School participated in School Breakfast Program	85%	86%
Percentage of students who paid \$2 or less for full-price National School Lunch Program meal (where available)*	86%	81%
Percentage of students who paid \$1 or less for full-price School Breakfast Program meal (where available)	73%	69%
Salad bar available in National School Lunch Program meal most days or every day*	17%	21%
Whole grains available in National School Lunch Program meal most days or every day*	15%	20%
French fries available in National School Lunch Program meal some days, most days or every day*	45%	39%
Higher-fat milk (2% or whole milk) available in National School Lunch Program meal most days or every day*	75%	77%
Meals from commercial vendors (e.g., fast-food restaurants) were available at lunch	12%	10%

*For lunches provided at schools that participated in the National School Lunch Program. Exact numbers are available at www.bridgingthegapresearch.org.

Conclusions

Our data related to school meals reveal some improvements in the nutrition environment over the two-year study period, but indicate that most public and private elementary schools offer an abundance of unhealthy foods and beverages to students. For example, the availability of french fries slightly decreased, and the availability of salad bars and whole grains slightly increased. Yet, less-healthy products—such as fried potatoes, pizza and high-fat milk—were still widely available at lunch, and very few students had healthier options, such as a salad bar or whole grains, in the lunch meal every day. There was a small increase in the prevalence of school gardens and participation in farm-to-school programs, but overall participation rates remained very low.

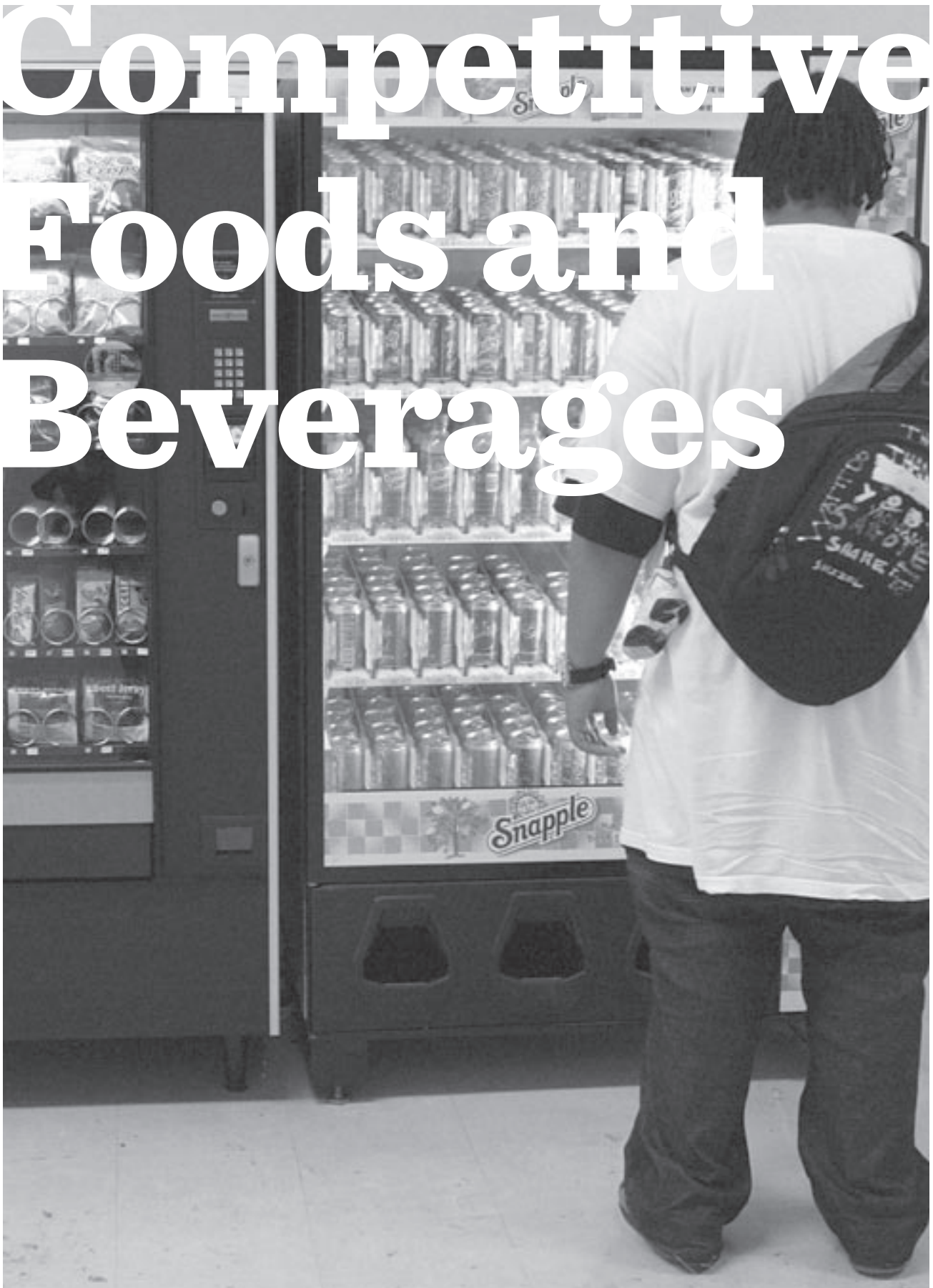
We also found significant differences between public and private elementary schools: few private schools offered the School Breakfast Program or the National School Lunch Program to students; private students paid higher prices for USDA meals when they were available; and private students were more likely to have commercial foods available at lunch.

Implications and Opportunities

As noted in this chapter, the USDA school meal standards are based on the outdated 1995 Dietary Guidelines and do not reflect the current nutrition science. To help schools improve the nutritional quality of meals offered to students, the USDA regulations for school meals should be regularly updated to meet or exceed the current dietary guidelines, as well as IOM recommendations for increasing the availability of fruits, vegetables and whole grains, and limiting milk options to skim or 1%.

Rising food costs also present challenges for schools as they work to improve the nutritional quality of breakfast and lunch meals. However, research shows that adding healthier foods to the National School Lunch Program meals also can increase student participation and generate additional revenues for schools.¹⁵⁵ A key policy consideration during the Congressional debate over the reauthorization of child nutrition and WIC programs will be increasing the reimbursement rates for school meals, which would enable school food service programs to offer healthier meals that comply with current dietary guidelines.

Competitive Foods and Beverages



Competitive Foods and Beverages

Competitive foods and beverages include all items served or sold in schools outside of the federally reimbursable meal programs.¹⁵⁶ Competitive products are commonly sold in vending machines, à la carte lines in the cafeteria, school stores and snack bars. Fundraisers, classroom parties and student rewards also are major sources of such items.

Competitive foods and beverages are widely available in schools today, far more so than in prior decades.^{157,158} The third School Nutrition and Dietary Assessment Study (SNDA-III), conducted during the 2004–05 school year, provides valuable information about the availability of competitive foods and beverages in public schools prior to the federal wellness policy mandate. SNDA-III found that 73 percent of public elementary schools offered one or more sources of competitive foods and beverages, and 29 percent of elementary school students consumed one or more competitive items during the average day.¹⁵⁹ Classroom parties, bake sales and other fundraisers were the most common sources of competitive foods for elementary school students.¹⁶⁰

Competitive Products: Impact on Student Dietary Patterns

When competitive products are available at school, students tend to consume more calories and more unhealthy foods and beverages. Although most schools offer a variety of competitive products, national data show that items purchased in competitive venues are typically high-calorie, nutrient-poor products, such as candy, cookies, cakes, brownies and carbonated soda.¹⁶¹

Many students who purchase lunch also buy competitive items in the cafeteria, and these students tend to eat less of their lunch, consume more fat and take in fewer nutrients.¹⁶²

SNDA-III found that, on average, elementary school students who consumed competitive foods took in an extra 216 calories per day from these products, and 135 of those calories were from low-nutrient, energy-dense foods.¹⁶³ It has been suggested that the availability of junk food in schools may account for as much as 20 percent of the increase in adolescents' body mass index (BMI) over the past decade.¹⁶⁴

Sugar-sweetened beverages, such as soda, sports drinks and fruit-flavored drinks, also are associated with obesity and other negative health consequences,^{165,166} yet they are often available at school. SNDA-III found that 68 percent of children consumed sugar-sweetened beverages during the school day, and elementary school students who consumed such beverages took in an average of 112 calories per day at school from these products.¹⁶⁷

Fortunately, interventions have been effective in changing student behavior and show promise for preventing obesity. A study conducted in three middle schools found that improving the nutritional quality of snacks at school decreased student consumption of unhealthy products at school, and that students did not compensate by eating additional unhealthy items at home.¹⁶⁸ Another study found that reducing consumption of soda prevented excess weight gain among young children.¹⁶⁹ Estimates from one study suggest that

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drinking water instead of sugar-sweetened beverages could eliminate an average of 235 calories per day among children and teens.¹⁷⁰ The importance of these findings is underscored by a national study that estimated that reducing children's average daily intake by 110 to 165 calories could have prevented the dramatic rise in childhood obesity from the late 1980s to the early 2000s.¹⁷¹

Setting Limits on Competitive Products in Schools

Over the past few years, many leading authorities on children's health have issued guidelines concerning the sale of competitive foods and beverages at school. The Institute of Medicine (IOM) recommends specific limits on fat, sugar, calories and serving sizes for competitive products sold during the school day.¹⁷² The Centers for Disease Control and Prevention (CDC) recommends policies to prohibit the sale of less-healthy foods and beverages on public school campuses during the school day.¹⁷³

Yet student access to competitive foods and beverages before, during and after the school day is virtually exempt from federal regulation. U.S. Department of Agriculture (USDA) regulations prohibit the sale of foods of minimal nutritional value (FMNV) in the cafeteria during meals. This includes a small subset of products—gum, certain candies and soft drinks. However, these products may still be sold elsewhere in the school, even during lunch.¹⁷⁴

Some states and school districts have developed policies regarding the sale of competitive items. As of mid-2009, 27 states had adopted nutritional standards for competitive foods,¹⁷⁵ and 29 states had imposed limits that were more restrictive than the USDA regulations for FMNV.¹⁷⁶

The Child Nutrition and WIC Reauthorization Act of 2004 mandated that school districts participating in the National School Lunch Program, School Breakfast Program or other child nutrition programs must adopt and implement a wellness policy by the first day of the 2006–07 school year. The federal legislation specifically noted that each wellness policy must include nutrition guidelines for all foods—including competitive foods and beverages—available on campus throughout the school day. However, the local school district was responsible for selecting the guidelines, which allowed for much variability in focus, strength and implementation of such policies.

In the largest, most comprehensive national study to date of district wellness policies, Bridging the Gap researchers found that many elementary school students were not covered by nutritional guidelines for competitive foods and beverages. At the beginning of the 2007–08 school year, 65 percent of public elementary school students were enrolled in a district with a wellness policy that included guidelines for all foods and beverages sold or served outside of the school meal program, an increase from 55 percent in 2006–07.¹⁷⁷ Since the wellness policy mandate went into effect, policies to address competitive foods and beverages have become more common. However, it is unclear whether there have been changes in school practices over the same period.

Key Findings: Practices in Elementary Schools

In this chapter, we examine school-level practices regarding the availability of competitive foods and beverages that were sold or served in elementary schools during the 2006–07 and 2007–08 school years. We present data for topics addressed by the wellness policy mandate, such as the presence of competitive venues and the types of products offered. We also provide details about issues not addressed by the wellness policy mandate, including vending contracts; marketing of competitive products on campus; the use of food as a reward; and the availability of sugary foods in the classroom, as well as during parties and snack time.

Figures in this chapter include results separately for public and private students and reflect the percentages of elementary school students nationwide who

were impacted by each school practice. Most figures present both the 2006–07 and 2007–08 school years; however, sometimes the wording of our survey items was revised in a way that reduced comparability from one year to the next. In such cases only data from the 2007–08 school year are presented. For many variables in this chapter we found minimal changes between the two years, thus we focus on the most recent year in our interpretations.

We cite corresponding findings from the Bridging the Gap report on district wellness policies to help inform readers about the strengths and weaknesses of wellness policy provisions that are relevant to each school-level practice. Descriptive statistics for both years of school- and district-level survey data discussed in all Bridging the Gap reports are available at www.bridgingthegapresearch.org.

Nutritional Guidelines for Competitive Foods and Beverages

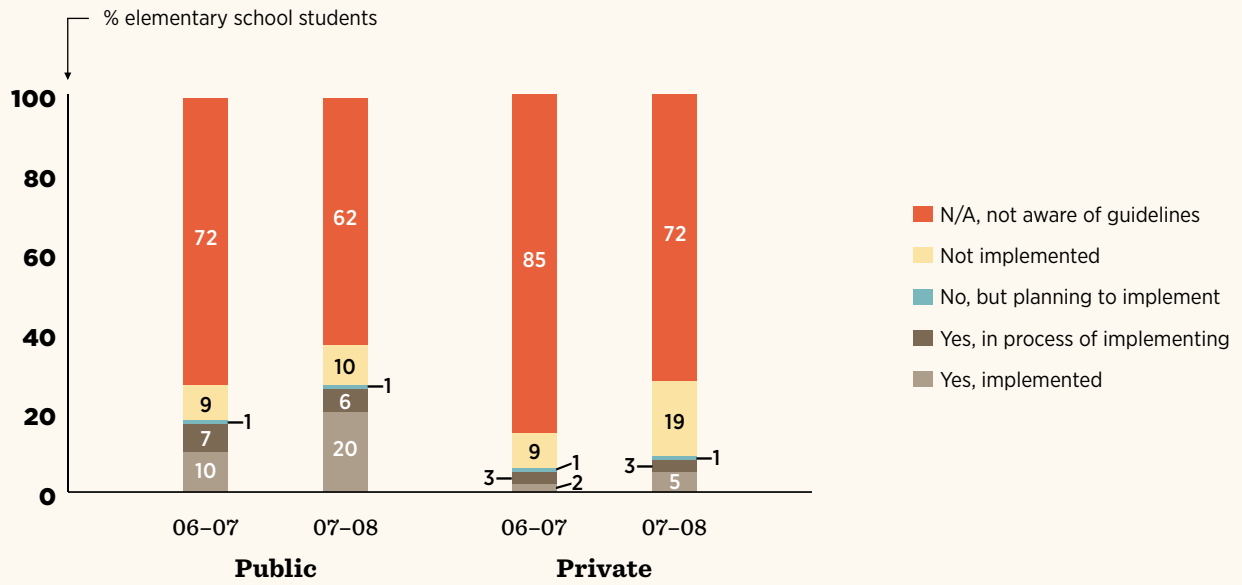
Nutritional Guidelines for Competitive Foods

In October 2006, the Alliance for a Healthier Generation (Alliance), a joint initiative of the American Heart Association and the William J. Clinton Foundation, reached an agreement with several major food manufacturers regarding the nutritional content of competitive foods sold in schools. The nutritional guidelines for competitive foods adopted under the agreement¹⁷⁸ establish restrictions for calories, total fat, saturated fat, trans fat, sugar and sodium, and were based on the 2005 Dietary Guidelines for Americans¹⁷⁹ as well as the American Heart Association's Dietary Guidelines for Healthy Children.^{180,181}

As part of our school survey, we provided a brief description of the Alliance nutritional guidelines for competitive foods and asked administrators whether they were aware of the guidelines and whether they were implementing the guidelines.

- The percentage of public and private elementary school students who attended a school where the administrator was aware of the Alliance nutritional guidelines for competitive foods increased from the 2006–07 to the 2007–08 school year.
- During the 2007–08 school year, 26 percent of public elementary school students attended a school where the Alliance nutritional guidelines had already been or were currently being implemented. This represented an increase from 17 percent during the prior school year.
- During both years, the percentage of students attending a school where the Alliance nutritional guidelines had been implemented was higher among public than private elementary school students.

FIGURE 5.1 Awareness and Implementation of the Alliance Nutritional Guidelines for Competitive Foods



Public differs from private at $p < .01$ or better, both years.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007-08, the majority of public and private elementary school students attended a school where the administrator was not aware of the Alliance nutritional guidelines for competitive foods. Yet there was a marked increase in awareness between the first and second year of the survey.

School Beverage Guidelines

In May 2006, the Alliance for a Healthier Generation (Alliance), the American Beverage Association and several major beverage companies announced a voluntary agreement to limit portion sizes and calorie content of all beverages offered to students during the regular and extended school day.

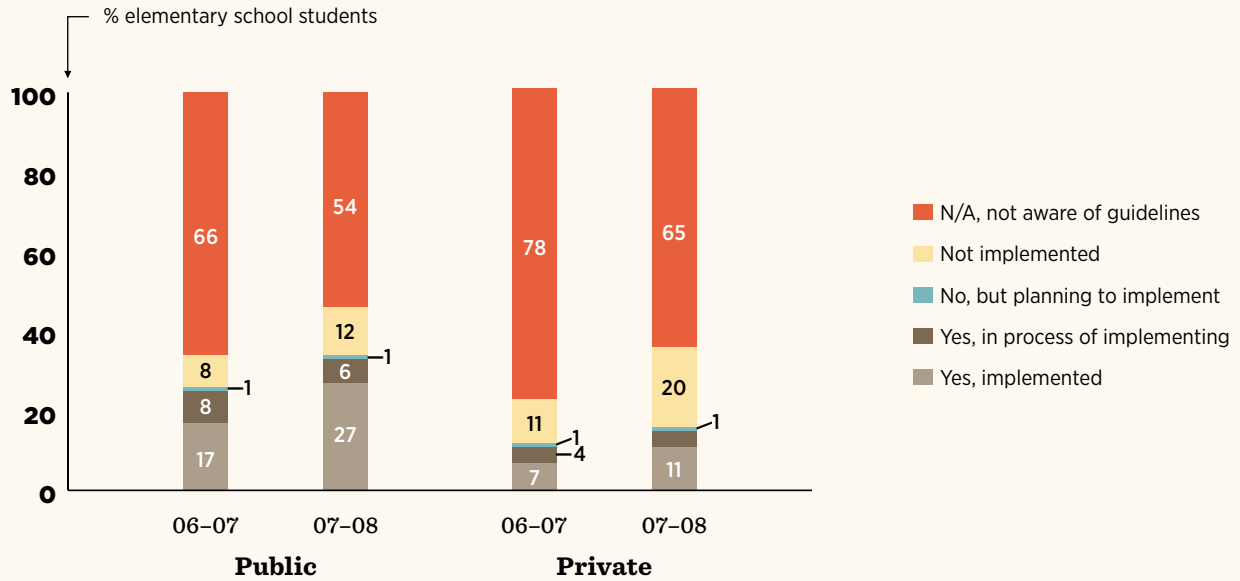
At the elementary school level, the Alliance school beverage guidelines allow for bottled water, as well as serving sizes of no more than 8 ounces of 100% juice and fat-free flavored or unflavored milk.¹⁸² The Alliance requirements are consistent with the IOM's recommendations for beverages sold in competitive venues.¹⁸³

In March 2010, an evaluation sponsored by the American Beverage Association reported an 88 percent reduction in total calories for beverages shipped to schools and a 95 percent reduction in full-calorie carbonated soft drinks shipped to schools between the 2004–05 and the 2009–10 school years.¹⁸⁴ The evaluation also reported that 99 percent of school district contracts were aligned with the voluntary guidelines. As detailed below and elsewhere in this chapter, our data indicate that as of the 2007–08 school year, not all schools were in compliance with the Alliance guidelines and that during the school day, many students had access to beverages that did not meet the guidelines. The discrepancies between our data and the industry's evaluation could be attributed to the fact that most schools included in the American Beverage Association's analysis had beverage distribution contracts, whereas our data were drawn from a nationally representative sample of schools regardless of contract status. We will continue to monitor school-level data to track the rate of compliance with the guidelines over time.

As part of our school survey, we provided a brief description of the Alliance school beverage guidelines and asked administrators whether they were aware of the guidelines and whether their school had implemented the guidelines.

- The percentage of public and private elementary school students who attended a school where the administrator was aware of the Alliance school beverage guidelines increased from the 2006–07 to the 2007–08 school year.
- During the 2007–08 school year, 33 percent of public elementary school students attended a school where the Alliance school beverage guidelines had already been or were currently being implemented. This represented an increase from 25 percent during the prior school year.
- During both years, the percentage of students attending a school where the Alliance school beverage guidelines had been implemented was higher among public than private elementary school students.

FIGURE 5.2 Awareness and Implementation of the Alliance School Beverage Guidelines



Public differs from private at $p < .01$ or better, both years.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007-08, the majority of both public and private elementary school students had an administrator who was not aware of the school beverage guidelines. Similar to findings for the Alliance nutritional guidelines for competitive foods, there was a marked increase in awareness of the Alliance school beverage guidelines between the first and second year of the survey.

Where Can Students Purchase Competitive Foods and Beverages on Campus?

SNDA-III found that 73 percent of public elementary schools offered one or more sources of competitive foods and beverages during the 2004–05 school year.¹⁸⁵ And they were even more prevalent in secondary schools—one or more sources of competitive foods or beverages were available in 97 percent of middle schools and 100 percent of high schools.¹⁸⁶

As part of our school survey, we asked administrators about the presence of three competitive food and beverage venues: 1) vending machines; 2) school stores or snack bars; and 3) à la carte sales during the lunch service. We obtained detailed information about the types of products sold in each of these three venues. The data were combined across venue by food or beverage type, as detailed below.

Vending Machines

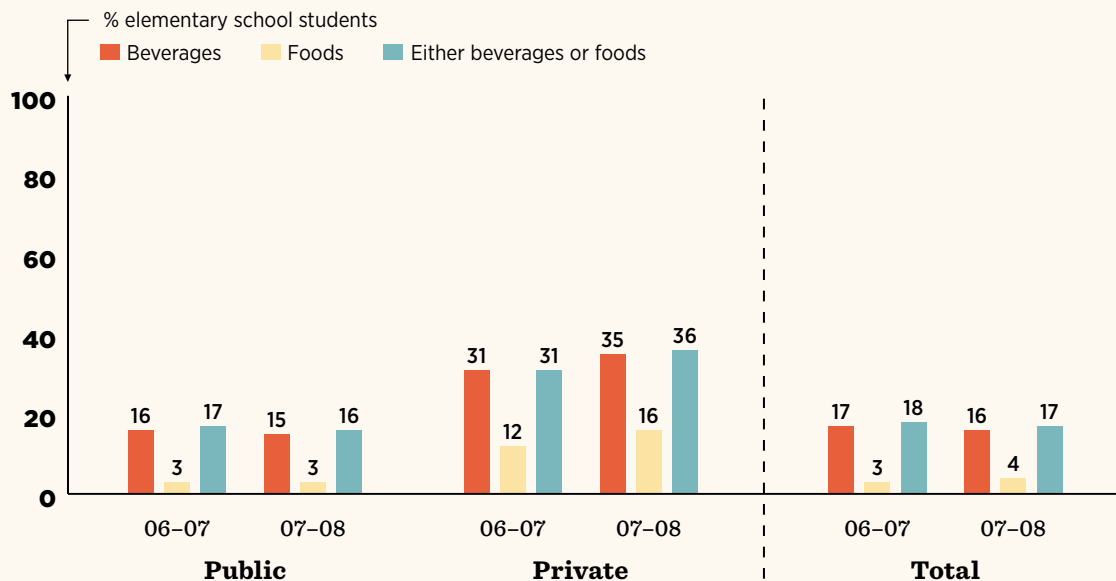
SNDA results indicate that the percentage of public elementary schools with vending machines on campus remained relatively stable from the 1991–92 to the 2004–05 school year, during which 17 percent of elementary schools had vending machines.¹⁸⁷ SHPPS 2006 results were quite similar, indicating that 21 percent of elementary schools had at least one vending machine on campus from which students could purchase beverages or foods.¹⁸⁸

Although most school districts have policies regarding student access to and contents of vending machines, the policies are fairly weak. Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, 50 percent of public elementary school students were enrolled in a district with a wellness policy that banned vending machines, banned competitive foods or required vending machine sales to comply with district nutrition standards. Another 33 percent were enrolled in a district with a weaker wellness policy that suggested, but did not require, the same.¹⁸⁹ This was an increase from the 2006–07 school year, during which 39 percent and 31 percent of students were enrolled in a district with a strong or weak policy, respectively.¹⁹⁰

As shown below, results from our school survey were very similar to other nationally representative studies of the school environment.

- The availability of vending machines at both public and private elementary schools was relatively stable from the 2006–07 to the 2007–08 school year.
- During the 2007–08 school year, 16 percent of public and 36 percent of private elementary school students had access to vending machines in school.
- Among both public and private elementary school students who had access to vending machines at school, beverages were almost always available. This was true for both school years.

FIGURE 5.3 Vending Machine Availability on Campus



Public differs from private at $p < .01$ or better, both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

The percentage of public and private elementary school students who had access to vending machines on campus remained about the same from the 2006-07 to the 2007-08 school year.

À la Carte Sales

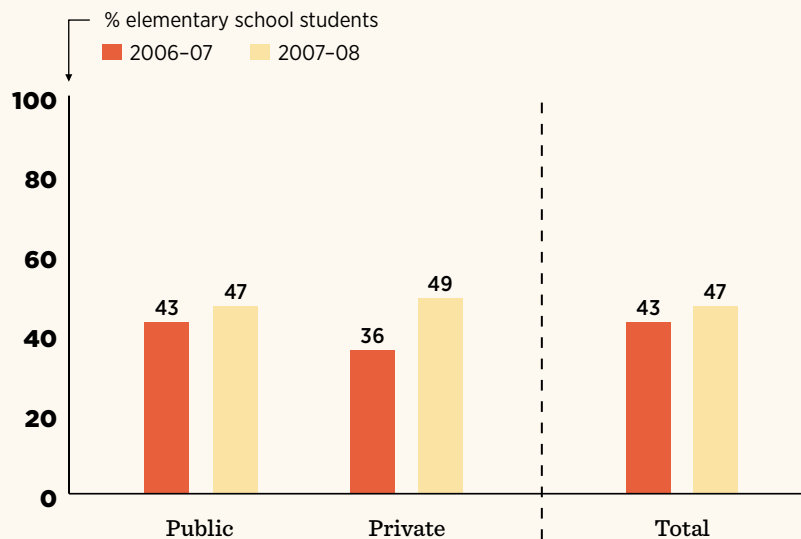
At some schools, a variety of foods and beverages that are not part of the school meal program are offered to students in the cafeteria during the lunch period. These à la carte sales represent a substantial source of competitive items, including snacks, ice cream, fruits, vegetables, soda, chips and pastries. SNDA-III found that during the 2004–05 school year, 32 percent of public elementary schools offered à la carte sales during lunch.¹⁹¹

Most school districts address à la carte sales in their wellness policy, but the majority have weak restrictions in place. Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, only 36 percent of public elementary school students were enrolled in a district with a wellness policy that banned à la carte sales, banned competitive foods and beverages, or imposed limits on fat, sugar and/or calorie content of à la carte items. An additional 45 percent were enrolled in a district with a weaker wellness policy that suggested, but did not require, the same.¹⁹² This was an increase from the 2006–07 school year, during which 26 percent and 43 percent of students were enrolled in a district with a strong or weak policy, respectively.¹⁹³

Our estimates of student access to à la carte offerings were higher than those from SNDA-III results from the 2004–05 school year. This is consistent with the general trend of increasing availability of competitive foods in schools over time. It also may indicate that public schools have tried to offset widening deficits in meal service budgets by generating revenues from competitive foods.

- The availability of à la carte items at both public and private elementary schools increased from the 2006–07 to the 2007–08 school year.
- In the 2007–08 school year, 47 percent of public and 49 percent of private elementary school students had access to à la carte items on campus.

FIGURE 5.4 Food and/or Beverage Availability in À la Carte Lines



In 2007–08, nearly one-half of public and private elementary school students were able to purchase à la carte items on campus. This represented an increase from the previous year among both groups.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

School Stores and/or Snack Bars

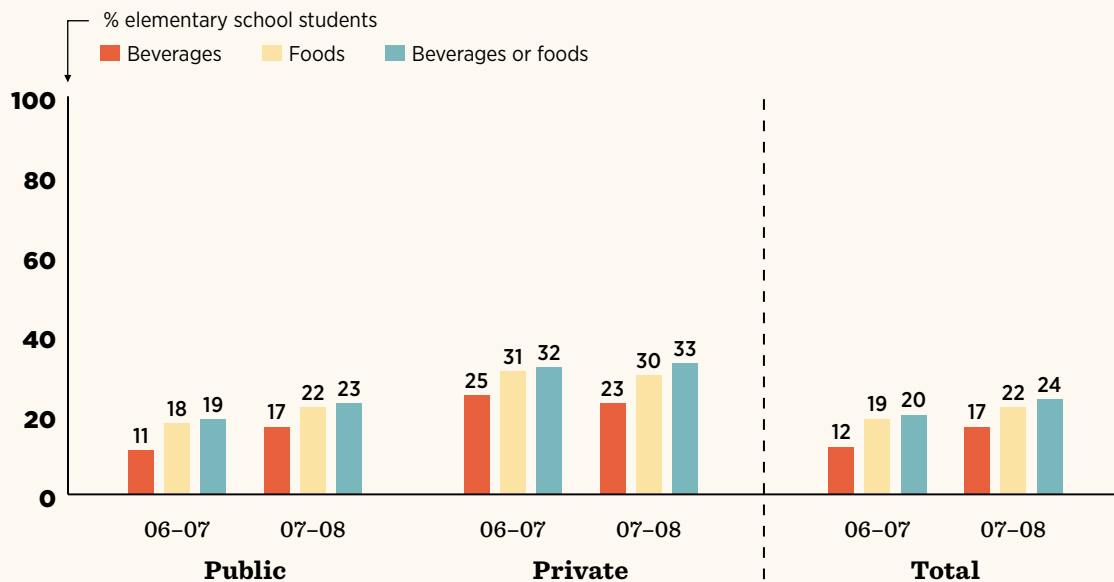
Although vending machines and à la carte lines are available to a greater percentage of students nationwide, school stores and snack bars also represent a significant source of competitive food and beverage sales. SNDA-III found that during the 2004–05 school year, 8 percent of public elementary schools had school stores and 1 percent had snack bars.¹⁹⁴ These estimates were higher in the 2006 CDC’s School Health Policies and Programs Study administered one year later (SHPPS 2006), where 17 percent of elementary schools had a school store, canteen or snack bar.¹⁹⁵

Although some districts have policies that restrict school store sales, the strength of the policies varies greatly. Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, 42 percent of public elementary school students were enrolled in a district with a wellness policy that banned school stores, banned competitive foods or beverages, or required school stores to comply with district nutrition standards. Another 32 percent were enrolled in a district with a weaker wellness policy that suggested, but did not require, the same.¹⁹⁶ This was an increase from the 2006–07 school year, during which 32 percent of students were enrolled in a district with a strong wellness policy and another 31 percent were in district with a weak policy.¹⁹⁷

Our estimates of student access to competitive foods in stores and snack bars were higher than those from other nationally representative studies. This is similar to what we found regarding the availability of competitive foods sold in à la carte lines. Again, these findings reflect the general trend of increasing availability of competitive foods in schools and may indicate that public schools have tried to offset budget shortfalls by generating revenues from competitive foods.

- From the 2006–07 to the 2007–08 school year, there was a slight increase in the percentages of public elementary school students who had access to a school store and/or snack bar that offered foods and/or beverages. Among private elementary school students, the percentages remained stable over the two-year study period.

FIGURE 5.5 School Store or Snack Bar Availability on Campus



Public differs from private at $p < .01$ or better, both years, except beverages in 2007–08.

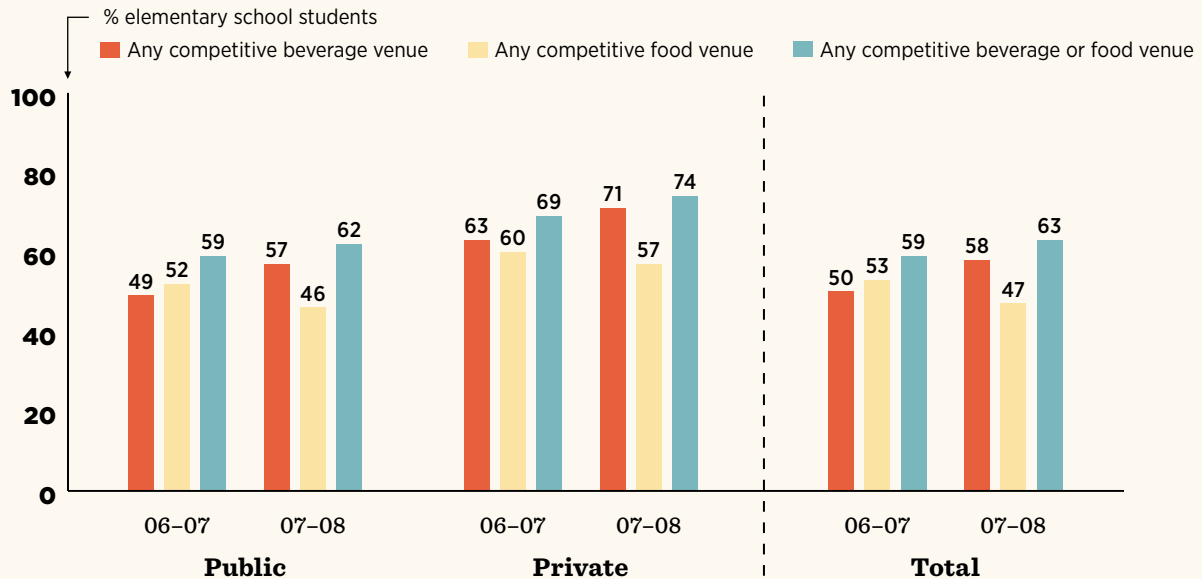
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Availability of Competitive Products Across Venues

In addition to analyzing student access to vending machines, à la carte lines, and school stores and snack bars, our school-level survey also assessed the availability of competitive foods and beverages across all three school venues. Our estimates were slightly lower than estimates from SNDA-III, which indicated that during the 2004–05 school year, 73 percent of public elementary schools offered one or more sources of competitive items.¹⁹⁸ This difference is likely to be explained by the fact that SNDA-III estimates of competitive food and beverage availability included fundraisers and foods served in the classroom, but we did not.

- Among public and private elementary school students, the availability of competitive food venues appeared to decrease slightly from the 2006–07 to the 2007–08 school year, but there was an increase in competitive beverage venues during the same period, resulting in a slight increase overall for access to any competitive venues.
- Competitive beverages were more widely available than were competitive foods for public and private elementary school students during both years.
- During the 2007–08 school year, 62 percent of public and 74 percent of private elementary school students had access to competitive foods or beverages in one or more venues. During the previous year, the percentage also was higher among private than public elementary school students in 2006–07.
- When public and private elementary school students had access to competitive products on campus, they most commonly had access to only one venue. Only 4 percent of all elementary school students attended a school that offered all three types of competitive venues.

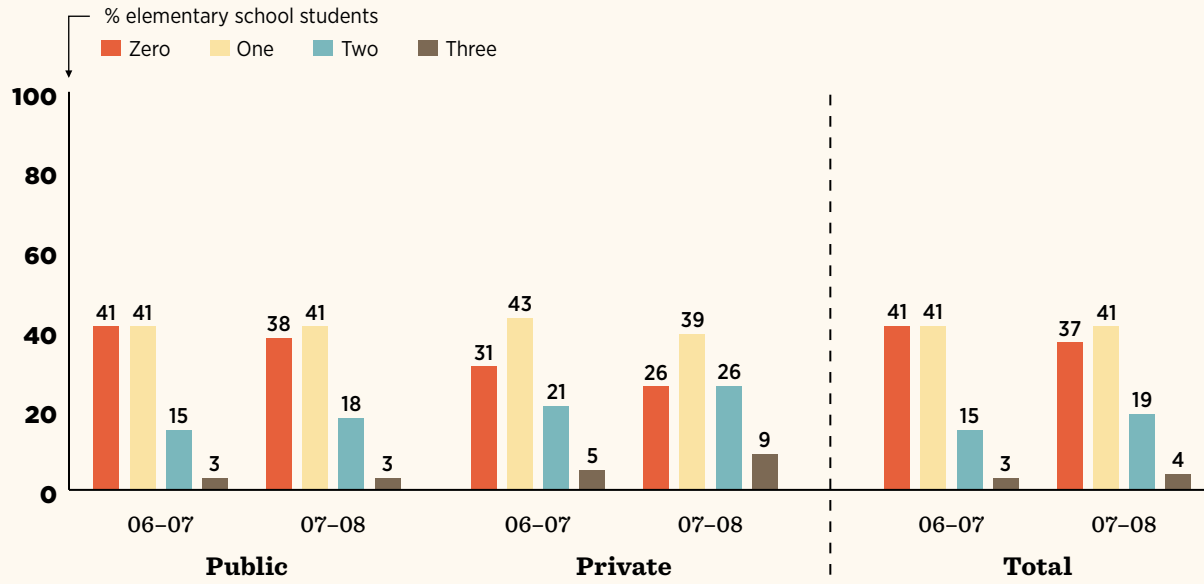
FIGURE 5.6 Competitive Food or Beverage Availability in Any Venue on Campus



Public differs from private at $p < .01$ or better, both years, except food and beverage/food in 2006–07.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 5.7 Number of Competitive Food or Beverage Venues Available on Campus



Public differs from private at $p < .01$ or better in 2007-08.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Food and Beverage Availability in Competitive Venues

Results from the 2004–05 SNDA-III survey and SHPPS 2006 indicated that a variety of high-calorie, low-nutrient items were available to elementary school students through competitive venues.^{199,200}

As part of our school survey, we asked administrators to report on the availability of a variety of food and beverage products, including bottled water, soda, milk, ice cream and regular and low-fat salty snacks. Because we collected a large amount of data, we combined beverages according to the Alliance school beverage guidelines; we combined fresh fruit, vegetables, premade salads and salad bars together; and we combined all high-salt, high-fat and high-sugar foods into a “less-healthy” food group.

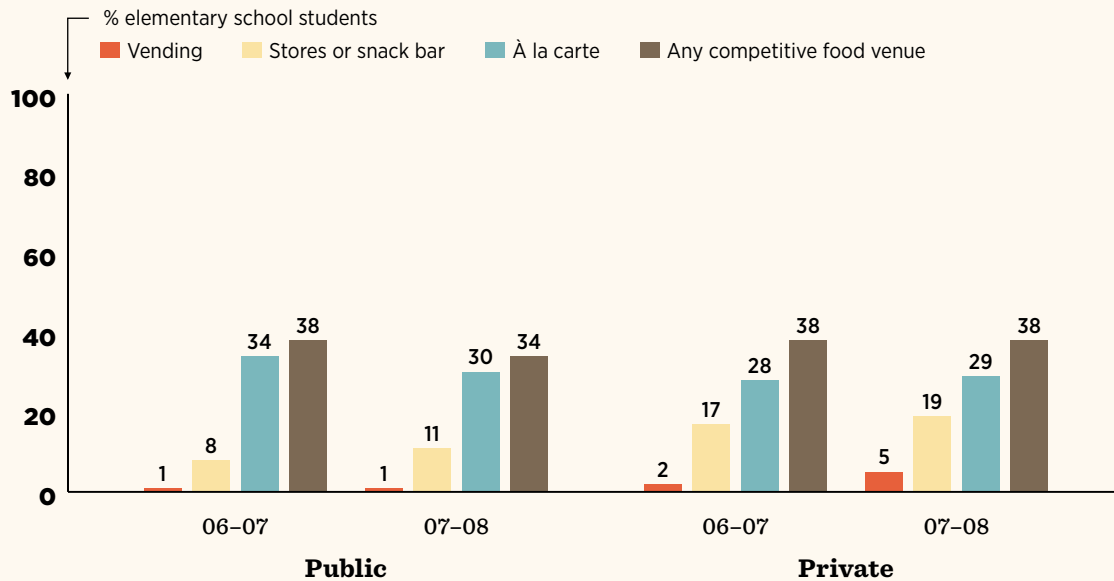
Fruits and Vegetables

SHPPS 2006 found that during a typical week, 75 percent of elementary schools offered fruit and 66 percent offered lettuce, vegetable or bean salads in à la carte venues.²⁰¹ However, one year earlier, SNDA-III found that among elementary school students who consumed competitive foods at school, only 10 percent consumed fruits and juices, and only 3 percent consumed vegetables.²⁰²

Our school survey data indicated that few students were consistently able to purchase produce through competitive venues.

- The availability of fruits and vegetables in competitive food venues was relatively stable from the 2006–07 to the 2007–08 school year among both public and private elementary school students.
- During the 2007–08 school year, only 34 percent of public and 38 percent of private elementary school students had access to fresh fruits, vegetables or salad through a competitive food venue at school.

FIGURE 5.8 Availability of Fresh Fruits, Vegetables or Salad, by Venue



Public differs from private at $p < .01$ or better for all columns except à la carte, both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

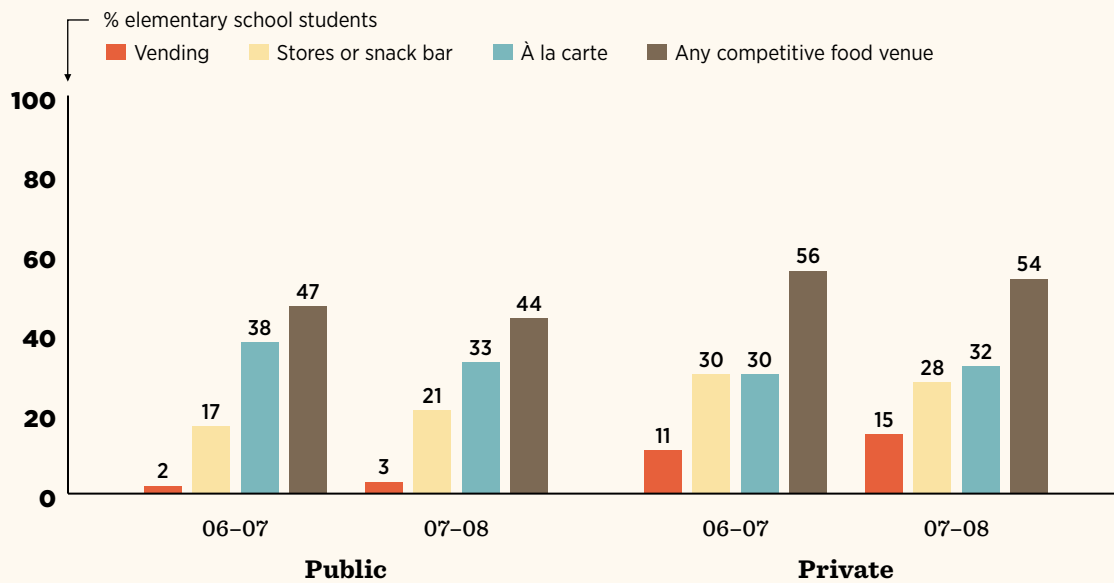
Less-Healthy Foods

SHPPS 2006 found that during a typical week, cookies, crackers, cakes or pastries were available from à la carte venues in 45 percent of elementary schools and from vending, stores or snack bars in 12 percent of elementary schools. Nine percent of elementary schools offered deep-fried potatoes and 53 percent offered oven baked french fried potatoes in à la carte venues.²⁰³

We combined our school survey items regarding availability of less-healthy foods in vending machines, à la carte lines and school stores and snack bars. For purposes of this survey, less-healthy foods included salty snacks such as potato chips, candy, ice cream, cakes, cookies and french fries.

- Availability of less-healthy foods in competitive food venues was relatively stable from the 2006–07 to the 2007–08 school year among both public and private elementary school students.
- During the 2007–08 school year, 44 percent of public and 54 percent of private elementary school students had access to at least one of the less-healthy food products through a competitive food venue at school.

FIGURE 5.9 Availability of Less-Healthy Foods, by Venue



Public differs from private at $p < .01$ or better for vending both years and stores/snack bar in 2006-07.

Less-healthy items include candy, ice cream, cakes, cookies, salty snacks and fries.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007–08, almost one-half (44%) of public elementary school students were able to purchase less-healthy foods, such as potato chips, candy, ice cream, cakes, cookies and/or french fries, in a competitive food venue on campus. À la carte lines were the most common venue for selling these items among both public and private elementary school students.

Beverages

As noted earlier in this chapter, the Alliance school beverage guidelines²⁰⁴ specify three categories of beverages that have health benefits and are appropriate in the elementary school environment: 1) water; 2) 100% fruit or vegetable juice; and 3) non-fat or 1% milk. According to SHPPS 2006, 63 percent of elementary schools offered 100% fruit or vegetable juice in à la carte venues and 17 percent offered these items in vending machines, school stores, canteens or snack bars.²⁰⁵ Bottled water was available through vending machines, school stores, canteens or snack bars in only 22 percent of elementary schools.²⁰⁶

The IOM and Alliance for a Healthier Generation also recommend prohibiting the sale of three categories of unhealthy beverages in the elementary school environment: 1) sugar-sweetened beverages, including soda, sports drinks, sweetened iced teas and fruit-flavored beverages that are not 100% juice; 2) no-calorie or low-calorie beverages, such as diet soda and “light” juices; and 3) high-fat milk products, including 2% and whole milk. Many of these products are available to students in elementary schools. SHPPS 2006 found that during a typical week, à la carte options included regular soda at 11 percent of elementary schools, sports drinks at 13 percent of elementary schools, and sweetened iced teas at 10 percent of elementary schools.²⁰⁷ The study also found that soda or sweetened juices were available through vending machines or stores at 16 percent of elementary schools.²⁰⁸

Nationwide, districts are beginning to establish policies to regulate the nutritional qualities and specific types of beverages sold in competitive food venues in schools. Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, only 54 percent of public elementary school students were enrolled in a district with a wellness policy that prohibited soda sales. Another 14 percent were enrolled in a district with a weaker wellness policy that restricted or limited soda sales. This represented an increase from the 2006–07 school year, during which 42 percent and 14 percent of students, respectively, were enrolled in a district with a strong or weak policy for soda sales.²⁰⁹ The same study found during the 2007–08 school year only 20 percent of public elementary school students were enrolled in a district that banned all other sugar-sweetened beverages and only 13 percent were enrolled in a district required that milk options be limited to nonfat or 1%, which was an increase from 14 percent and 6 percent, respectively, in 2006–07.²¹⁰

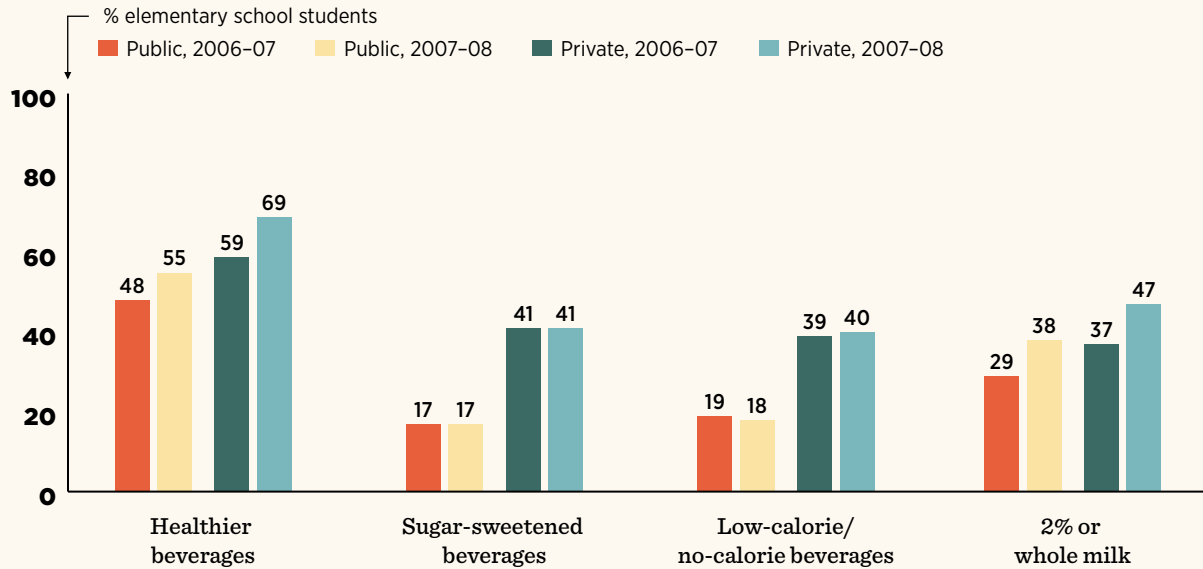
We combined our school survey beverage data into four groups: 1) “healthier” beverages including bottled water, 100% fruit juice, 1% and skim milk; 2) sugar-sweetened beverages^h; 3) no-calorie or low-calorie beveragesⁱ; and 4) 2% or whole milk.

- The availability of healthier beverages in competitive venues increased slightly from the 2006–07 to the 2007–08 school year among both public and private elementary school students.
- Private elementary school students were more likely to have access to all beverage product types, across both years. This is due to a higher overall availability of competitive food venues for private elementary school students relative to public elementary school students.
- During the 2007–08 school year, 38 percent of public and 47 percent of private elementary school students had access to higher-fat milk products in competitive venues.
- Analysis of the beverages offered to public and private elementary school students in vending machines, school stores and snack bars showed that water was typically one of the available products. However, bottled water was only available for slightly more than one-half of the public and private elementary school students who had access to à la carte lines.

^h Sugar-sweetened beverages included soda, sport drinks and fruit drinks not containing 100% juice.

ⁱ Low-calorie or no-calorie beverages included diet soda, “light” juices and other no-calorie or low-calorie beverages.

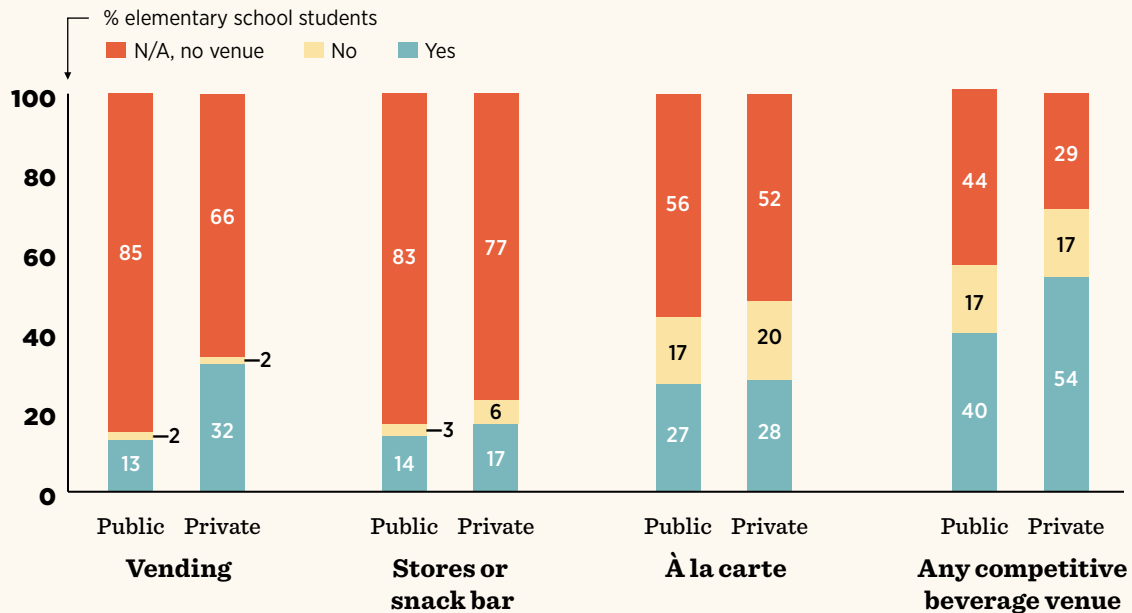
FIGURE 5.10 Availability of Beverages in Any Competitive Venue on Campus



Public differs from private at $p < .01$ or better for all beverages in 2007-08, and sugar-sweetened beverages and low-calorie/no-calorie beverages in 2006-07.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 5.11 Availability of Bottled Water, by Venue, 2007-08



Public differs from private at $p < .01$ or better for vending and any competitive venue.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

School Beverage Vending Contracts

Contracts between schools and beverage companies are quite common. Many of these contracts are exclusive, and prohibit schools from selling products from other companies on campus. Many also include incentives for schools that agree to sign a long-term contract or meet sales quotas during the contract period.

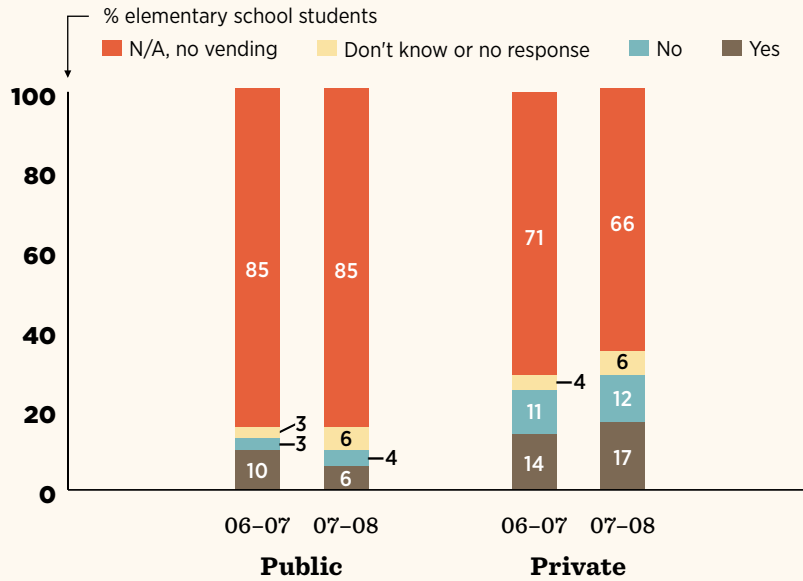
In 2007, the Center for Science in the Public Interest (CSPI) analyzed 120 public school and school district beverage vending machine contracts and found that schools raised fairly modest amounts of money from the contracts. When calculated on a per-capita basis to account for number of students in a school, the amount of revenue raised by these contracts averaged only \$18 per student per year.²¹¹ Most of these contracts (93%) were exclusive to a single company, which was most commonly a regional bottler or distributor. Contracts that included a signing bonus when the agreement was initiated carried an average cash advance of \$6.08 per student per year, and some contracts offered non-cash incentives, such as computer software or sports equipment, when beverage sales reached a certain level.²¹² SHPPS 2006 found that 34 percent of elementary schools received a specified percentage of the revenue generated by soft drink sales, and 9 percent received incentives from the beverage company when sales reached a specified amount.²¹³

Interestingly, CSPI also found that beverage sales contracts are actually less profitable than other forms of fund raising, including non-food-related fund-raisers such as sales of gift wrap and candles. Further, among schools and districts that improved the nutritional quality of fund-raising products offered, most increased their revenues.²¹⁴

As part of our school survey, we asked administrators whether their school had a contract with a soft drink bottler or beverage distributor that gave the company exclusive rights to sell beverages. We also asked whether their school received incentives—such as cash awards or equipment donations—when total beverage sales exceeded a specified amount.

- As previously indicated in this chapter, the majority of public and private elementary school students did not have access to vending machines on campus. However, when vending machines were present, there often was an exclusive contract with a bottler.
- Over the two-year study period, the percentage of public elementary school students who attended a school that had an exclusive contract with a bottler decreased (from 10% to 6%), but there was an increase (from 14% to 17%) among private elementary school students.
- During the 2007–08 school year, 2 percent of public and 7 percent of private elementary school students attended a school that received incentives based on vending sales revenues.

FIGURE 5.12 Schools and/or Districts With Exclusive Beverage Distribution Contract



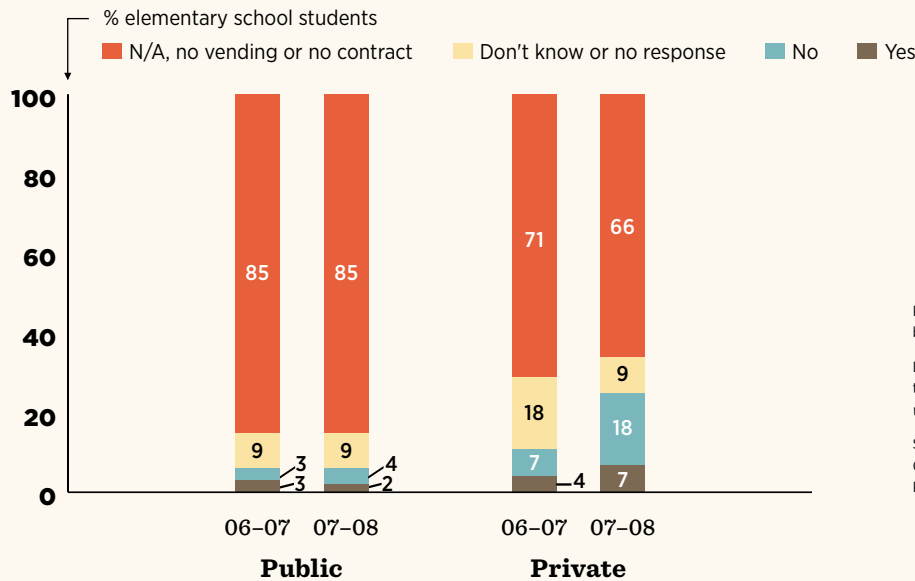
Among public and private elementary school students who had vending machines on campus, their school often had an exclusive contract with a bottler.

Public differs from private at $p < .01$ or better, both years.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 5.13 Schools and/or Districts That Received Incentives for Vending Revenues



Public differs from private at $p < .01$ or better, both years.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Marketing Foods and Beverages on Campus

Children and adolescents are particularly susceptible to food and beverage marketing—it affects their preferences, purchasing behaviors and consumption habits.^{215,216} Children as young as age 2 recognize food brands, and by the time children enter grade 1 they are familiar with approximately 200 different brands of products such as cereal, snacks and toys.²¹⁷ Research shows that children and adolescents frequently influence family purchasing habits, with requests for products such as presweetened cereals and soda. A national study found that the top four products purchased and consumed by children ages 8 to 12 without parental permission are high-calorie, low-nutrient foods and beverages.²¹⁸

Because children spend so much time at school, it is important to consider the marketing influences in these settings. The IOM calls for schools to promote healthy diets for children throughout the school environment by marketing healthy products and making healthier choices available on campus.²¹⁹ In December 2009, an interagency commission of the CDC, USDA, U.S. Food and Drug Administration (FDA) and the Federal Trade Commission (FTC) issued tentative proposed standards to limit the types of foods marketed to children under age 17 to those that meet certain nutritional criteria and make a meaningful contribution to a healthy diet.²²⁰

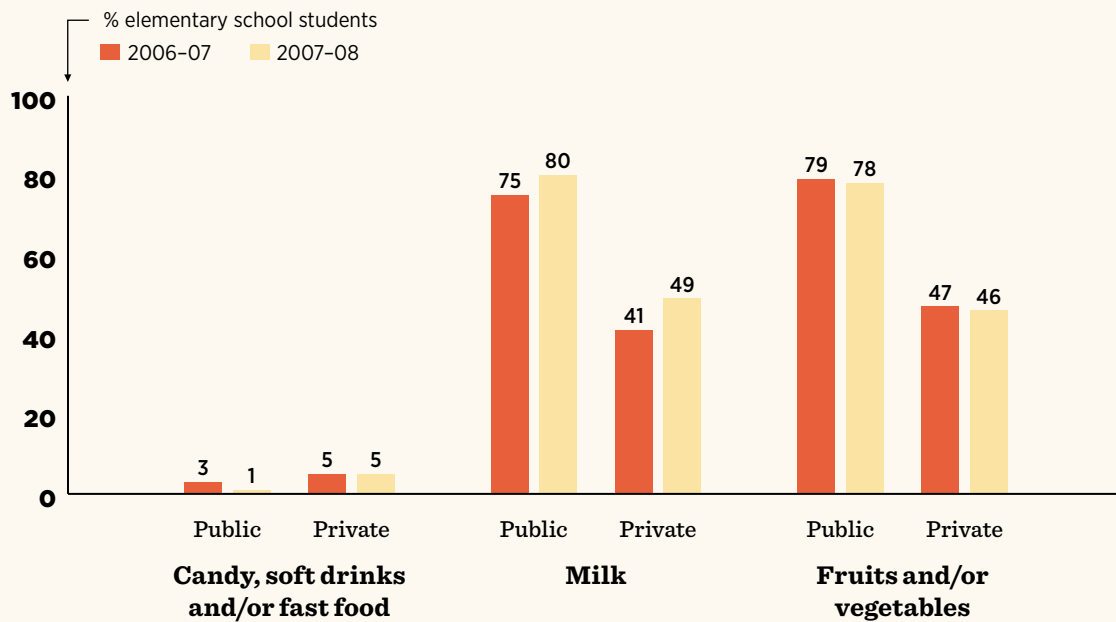
Food and beverage companies use a variety of strategies for marketing products in schools, such as posters or banners in gymnasiums and lunchrooms, vending machine displays, logos on scoreboards or in athletic facilities, and students give-aways, including textbook covers and clothing.²²¹ SHPPS 2006 found that 16 percent of elementary, middle, and high schools allowed soft drink companies to advertise on school grounds and 5 percent allowed the advertising of fast food, candy or soft drinks through distribution of products such as t-shirts, hats or book covers.²²²

Some districts are starting to address the marketing of foods and beverages in their district wellness policies, but few have strong policies in place. Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, only 9 percent of public elementary school students were enrolled in a district with a wellness policy that required the promotion of healthy foods and beverages throughout the school.²²³ Another 15 percent suggested, but did not require, the same. These percentages were relatively unchanged from 9 and 13 percent, respectively, in 2006–07. The same study found that only 16 percent of public elementary school students were enrolled in a district with a wellness policy that prohibited the promotion of unhealthy foods and beverages throughout the school, and only 9 percent had a wellness policy that discouraged such practices. These percentages increased slightly from 10 percent and 8 percent, respectively, in 2006–07.²²⁴

As part of our school survey, we asked administrators whether posters or other advertisements were present where students eat or anywhere else on campus, including outside of the school building and on school buses. We specifically asked about advertising for candy, soft drinks, fast food, milk, and fruits or vegetables.

- Relatively few public or private elementary school students attended a school with advertisements for unhealthy products such as candy, soft drinks and/or fast food.
- Advertising of healthier products was relatively stable over time—approximately three-quarters of public and one-half of private elementary school students attending a school with advertisements for healthier products during both years.

FIGURE 5.14 Advertisements to Promote Foods and Beverages on Campus



Public differs from private at $p < .01$ or better for both years, except candy, soft drinks and/or fast food in 2006-07.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During both study years, most public elementary school students attended a school that had advertisements for milk or produce, while very few had advertisements for candy, soft drinks and/or fast food.

Other Sources of Competitive Foods and Beverages: Fund-raisers

Fund-raisers and bake sales are primary sources of unhealthy competitive foods for elementary school students.²²⁵ Yet, there are healthy and profitable ways for schools to raise funds. According to a CSPI report, walk-a-thons, book fairs, recycling fund-raisers, auctions and car washes are profitable fundraising options.²²⁶ Furthermore, the CSPI finds that schools retain 45 percent of revenue from product fund-raisers (e.g., wrapping paper), compared with only 33 percent of revenues from beverage vending machine sales.²²⁷

National data indicate that elementary schools are engaged in a variety of fund-raising activities, and that many of these involve selling unhealthy items. SNDA-III found that during the 2004–05 school year, 37 percent of public elementary schools had fund-raisers,²²⁸ and SHPPS 2006 reported that at 76 percent of elementary schools, an organization such as the parent-teacher-association sold foods or beverages at school or in the community to raise money.²²⁹ Specifically in elementary schools, these items were chocolate candies (50% of schools), baked goods (50% of schools) and sugar-sweetened beverages (21% of schools). One-quarter of elementary, middle and high schools held fund-raiser events at fast-food restaurants.²³⁰ Interestingly, SHPPS 2006 also found that the percentage of schools that sold baked goods as a fund-raiser decreased from 67 percent in 2000 to 54 percent in 2006.²³¹

As part of our school survey, we asked administrators whether the school had any guidelines addressing the nutritional quality of items sold for fund-raisers. In 2007–08 we included an additional question about fund-raisers organized specifically by the parent-teacher-association. These responses rarely differed from other fund-raisers, and were combined to assess the prevalence of guidelines for both types of activities.[†]

- For the 2006–07 school year, 34 percent of public elementary school students attended a school with a guideline regarding the nutritional quality of items sold as fund-raisers. This was significantly more than the 19 percent of private elementary school students who were covered by such guidelines.
- For the 2007–08 school year, 31 percent of public elementary school students attended a school with a guideline regarding the nutritional quality of items sold as fund-raisers. This was significantly more than the 19 percent of private elementary school students who were covered by such guidelines.

[†] Corresponding figure not presented. Complete data are available at www.bridgingthegapresearch.org.

Other Sources of Competitive Foods and Beverages: Classroom Practices

As part of our school survey, we asked administrators to provide information on several classroom-based practices through which children may be exposed to competitive foods and/or beverages: classroom parties, classroom snack times, allowing foods or beverages in class, and the use of food as a reward.

Parties

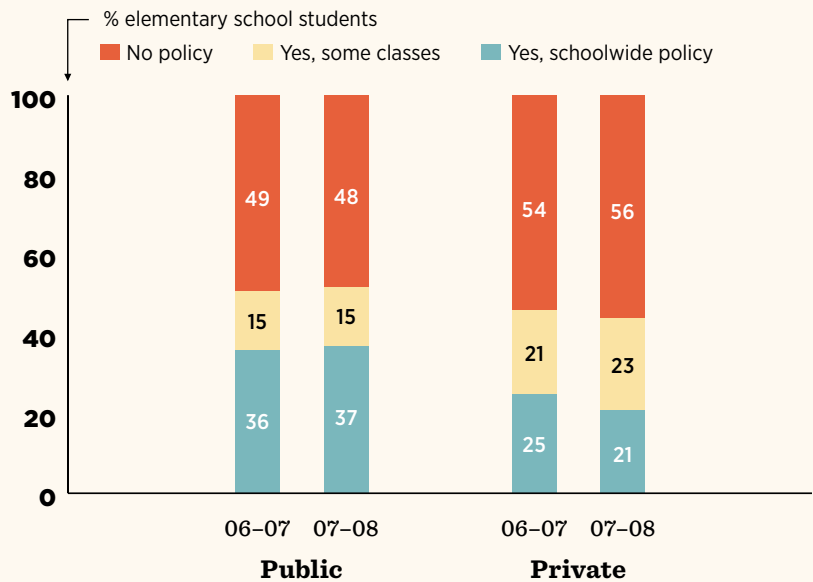
Like fund-raisers and bake sales, classroom parties are a primary source of unhealthy competitive foods that are consumed by elementary school students while at school.²³² Despite some controversy, provisions that prohibit sweets during classroom parties (e.g., “cupcake bans”) are becoming more prevalent in district policies.

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007-08 school year, 59 percent of public elementary school students were enrolled in a district with a wellness policy that suggested healthy foods be provided or discouraged unhealthy foods during classroom parties, while only 6 percent required such practices and/or banned competitive foods during classroom parties.²³³ This was an increase from 2006-07, during which 53 percent of students were covered by a wellness policy restricting competitive foods during parties and 1 percent of students were covered by a strong wellness policy banning competitive foods during parties.²³⁴

As part of our school survey, we asked respondents to indicate whether their school restricted sugary items (e.g., candy, cupcakes, cookies) during school parties.

- The prevalence of restrictions on sugary items during parties was fairly stable from the 2006-07 to the 2007-08 school year among both public and private elementary school students.
- For both years, slightly more than one-third of public elementary students had a schoolwide restriction on serving sugary foods during class parties. The percentage was significantly lower among private elementary school students.

FIGURE 5.15 Restrictions on Sugary Foods During Class Parties



Public differs from private at $p < .01$ or better, both years.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

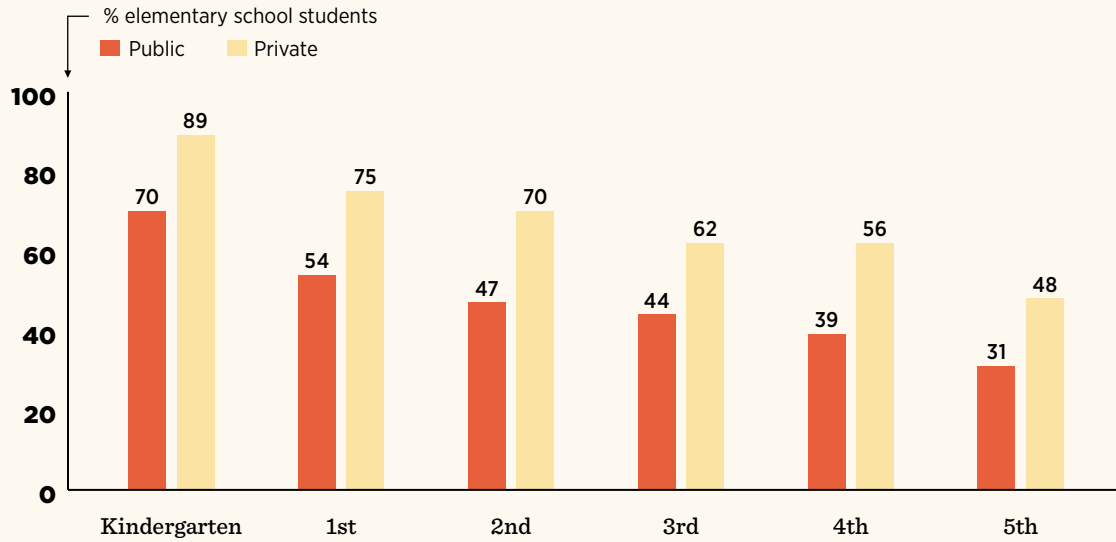
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Snack Time in Class

As part of our school survey, we asked respondents to indicate which—if any—grades were allowed time for a snack during the day. We also asked respondents to indicate whether there were restrictions on sugary foods during snack time, and evaluated these restrictions among the schools that allowed a snack time for at least one grade level.

- The prevalence of restrictions on sugary items during snack time was fairly stable from the 2006–07 to the 2007–08 school year among both public and private elementary school students.
- During the 2007–08 school year, many public and private elementary school students were provided time for a snack during the school day, and the percentage who had snack time declined as grade level increased.
- During the 2007–08 school year, snack time was more common for private than for public elementary school students at all grade levels.
- During both years, slightly more than one-third of public elementary school students attended a school that had a schoolwide restriction on sugary foods during snack time.

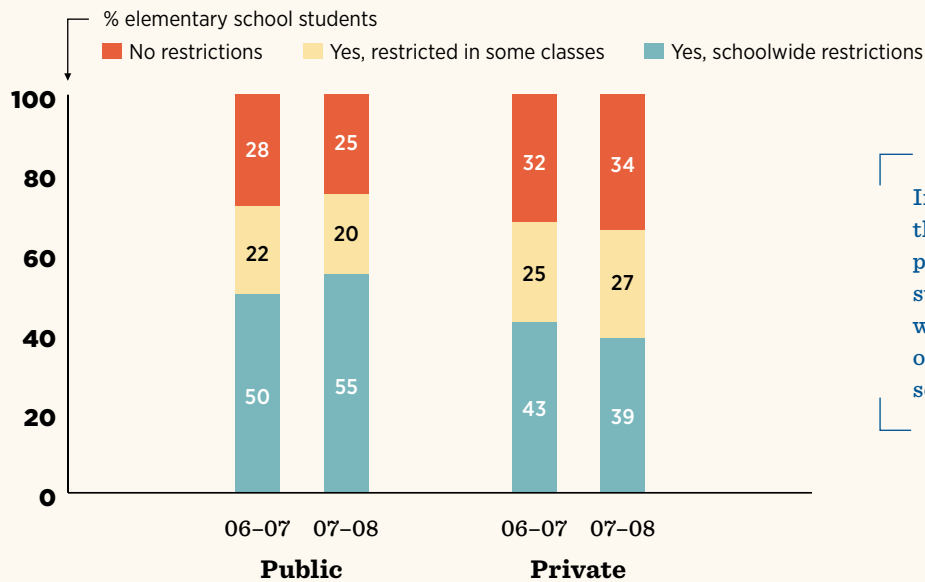
FIGURE 5.16 Students Were Offered Regular Snack Time, by Grade, 2007–08



Public differs from private at $p < .01$ or better.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 5.17 Restrictions on Sugary Foods During Snack Time



In 2007–08, slightly more than one-third of public and private elementary school students attended a school with a schoolwide restriction on sugary foods during a scheduled snack period.

Public differs from private at $p < .01$ or better, both years.

Includes only schools that offered snack time.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Rewarding Students with Food

The use of food as a reward for good student behavior or good academic performance is problematic for a variety of reasons, including academic, psychological and health considerations. Some educators have argued that when teachers provide students with external rewards for academic performance it reduces students' own internal motivation,^{235,236} although others disagree.^{237,238} Using candy to reward good behavior teaches children to associate good behavior with sugary rewards and sets an expectation that may be difficult to discourage.²³⁹ Lastly, since most foods that are given as a reward are high-sugar, high-calorie products,²⁴⁰ there may be negative health consequences, particularly among younger children. Alternatives such as providing additional privileges (e.g., extra recess or playing an educational computer game) or non-food rewards (e.g., school supplies, water bottles, stickers) can be appealing and inexpensive rewards.²⁴¹

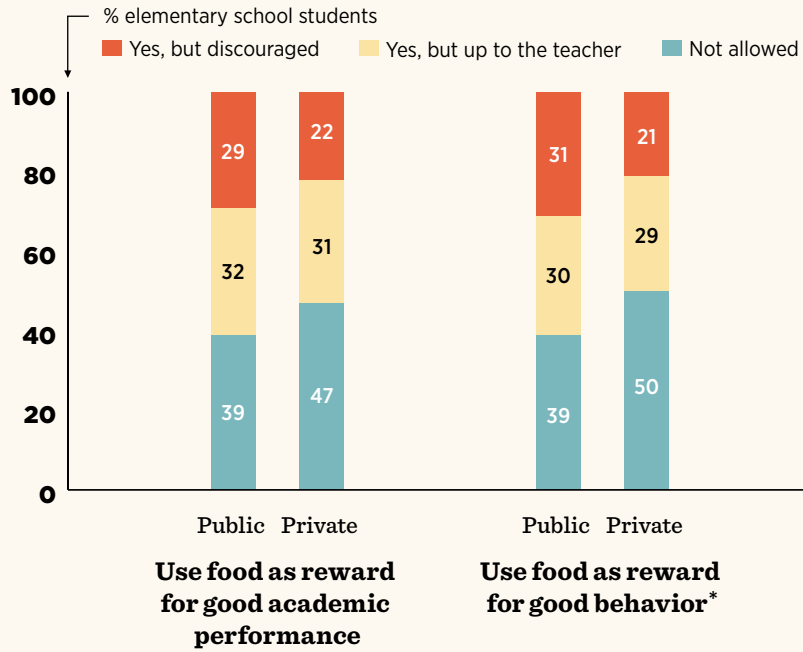
Despite these troublesome issues, the use of food as a reward is common in school classrooms. SHPPS 2006 found that only 17 percent of all schools prohibited the use of food or food coupons as a reward for good behavior or good academic performance and an additional 19 percent discouraged such practices.²⁴²

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007-08 school year, only 8 percent of public elementary school students were enrolled in a district with a wellness policy that explicitly prohibited using food as a reward, and an additional 28 percent were enrolled in a district that suggested, but did not require, such restrictions.²⁴³ These percentages were relatively unchanged from 9 percent and 23 percent, respectively, in 2006-07.²⁴⁴

As part of our 2007-08 school survey, we asked administrators whether their school allowed the use of food as a reward for good academic performance or good student behavior.

- During the 2007-08 school year, at least one-half of public and private elementary school students attended a school that allowed teachers to use food as a reward for good academic performance and/or good behavior.
- Private elementary school students were more likely than public elementary school students to attend a school that prohibited the use of food as a reward for good behavior.

FIGURE 5.18 Teachers Allowed to Use Food as a Reward, 2007–08



* Public differs from private at $p < .01$ or better.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007–08, approximately 60 percent of public elementary school students attended a school where food was allowed to be used as a reward for either good behavior or good academic performance.

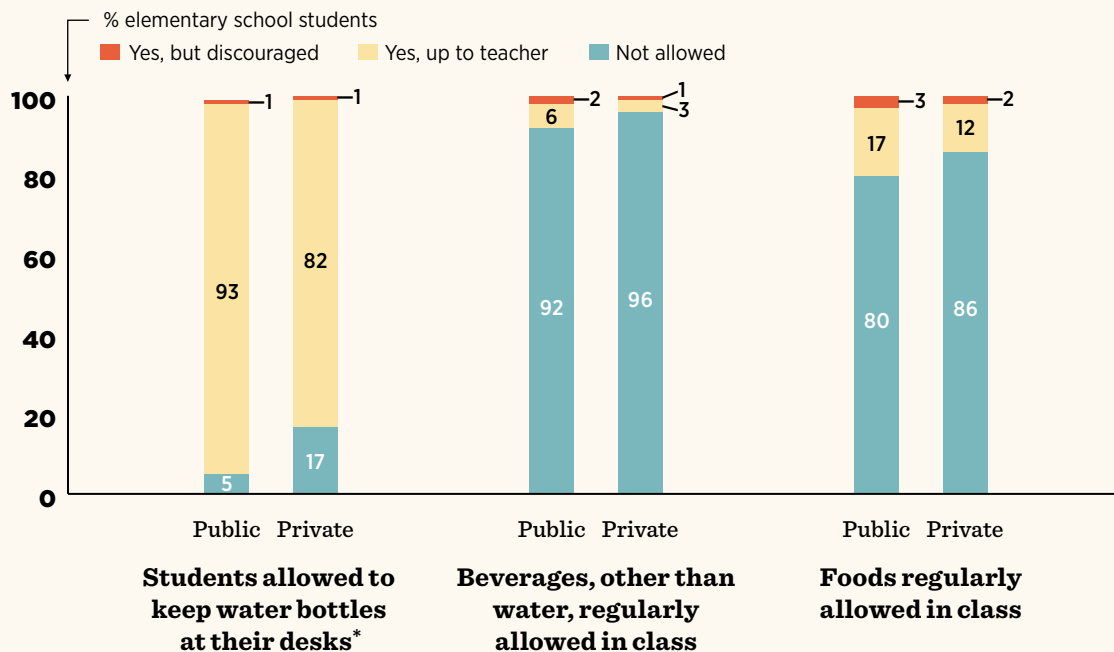
Allowing Foods and Drinks in the Classroom

There also are classroom rules and practices that affect student access to and consumption of competitive foods and beverages. For example, allowing food and beverages in class has been associated with an increase in student body mass index.²⁴⁵

As part of our 2007–08 school survey, we asked administrators about three additional classroom practices related to competitive foods and beverages: 1) whether students were allowed to keep water bottles at their desks; 2) whether beverages other than water were regularly allowed in class; and 3) whether foods were regularly allowed in class outside of snack time, parties or other events.

- During the 2007–08 school year, the vast majority of public and private elementary school students were allowed to keep water bottles at their desks, but very few were allowed to have beverages other than water during class.
- During the 2007–08 school year, generally, few public or private elementary school students were allowed to have foods in class on a regular basis.

FIGURE 5.19 Classroom Food and Beverage Practices, 2007–08



* Public differs from private at $p < .01$ or better.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007–08, very few public and private elementary school students were allowed to keep beverages other than water at their desks during class, and most were not regularly allowed to keep foods in class.

Competitive Food and Beverage Practices by School Race and Ethnicity^k

Several competitive food variables varied by the racial and ethnic composition of the school. Results presented below are for the 2007–08 school year for public schools only.^l

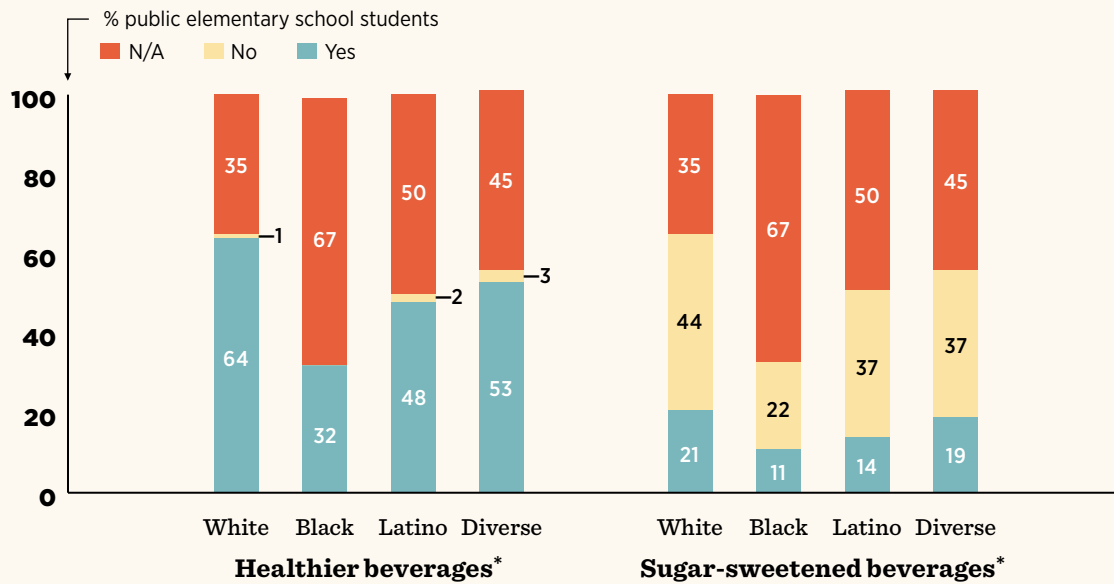
Access to Competitive Foods and/or Beverages, by School Race and Ethnicity

- During the 2007–08 school year, access to competitive foods and/or beverages in any venue at school varied significantly by school race and ethnic characteristics. Significantly fewer public elementary school students at predominantly Black schools had access to competitive venues (37%) than did public elementary school students at predominantly White schools (68%) or at predominantly Latino schools (63%).^m

Availability of Certain Foods and Beverages in Competitive Venues, by School Race and Ethnicity

- During the 2007–08 school year, public elementary school students at predominantly White schools were significantly more likely than were public elementary school students at predominantly Black schools to have access to healthier beverages in competitive venues, but they were also more likely to have access to sugar-sweetened beverages in these venues.

FIGURE 5.20 Availability of Products in Any Competitive Venue, by School Race and Ethnicity, 2007–08



Includes only public elementary school students.

* White vs. Black comparisons differ at $p < .01$ or better.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

^k Data from the National Center for Education Statistics (NCES) were obtained regarding school-level demographic characteristics. Using information on the racial/ethnic representation of students at the school, we classified schools as: majority White (>66% White), majority Black (>50% Black), or majority Latino (>50% Latino). A fourth group includes the remaining schools that did not fall into one of these groups and which have a diverse student population.

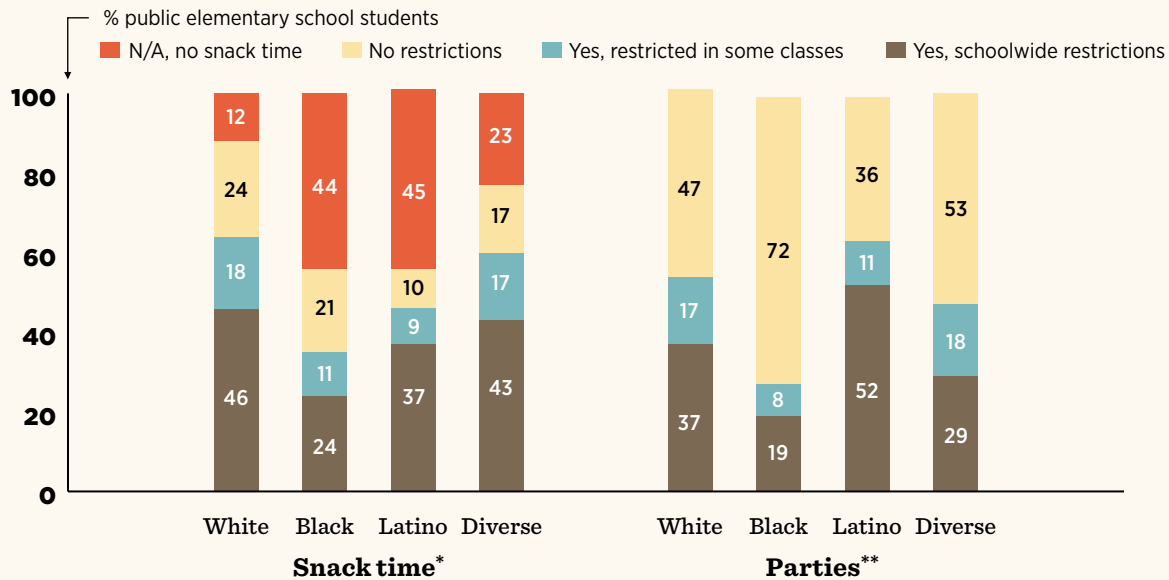
^l Smaller sample sizes for the private schools may result in unstable estimates, therefore only the public schools were included in subsample comparisons.

^m Corresponding figure not presented. Complete data are available at www.bridgingthegapresearch.org.

Restricting Sugary Products During Snack Time and Class Parties, by School Race and Ethnicity

- During the 2007–08 school year, public elementary school students at predominantly White schools were significantly more likely than were public elementary school students at predominantly Black and predominantly Latino schools to have snack time during the school day.
- During the 2007–08 school year, 24 percent of public elementary school students in predominantly White schools had snack time without any restrictions on the types of products to be consumed, compared with 21 percent of public elementary school students at predominantly Black schools and 10 percent of students at predominantly Latino schools.
- During the 2007–08 school year, public elementary school students at predominantly Black schools were significantly less likely than were public elementary school students at predominantly White and predominantly Latino schools to have restrictions on the types of products allowed during class parties.

FIGURE 5.21 Restrictions on Sugary Foods During Snack Time and Parties, by School Race and Ethnicity, 2007–08



Includes only public elementary school students.

* White vs. Black and White vs. Latino comparisons differ at $p < .01$ or better

** Black vs. Latino comparisons differ at $p < .01$ or better.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During the 2007–08 school year, public elementary school students at predominantly Latino schools were most likely to have sugary products restricted during class parties.

TABLE 5.1 Percentage of Public Elementary School Students Exposed to Selected Policies and Practices, School Years 2006–07 and 2007–08

The table below summarizes key findings among public elementary school students that are particularly important for informing wide-reaching policies that will impact guidelines for competitive foods and beverages. The table also highlights changes from the 2006–07 to the 2007–08 school year, which were the first two years following the federal wellness policy mandate. These data can be used to monitor school-level implementation of the district wellness policies and assess the nation’s progress in creating healthier school environments to help reverse the childhood obesity epidemic.

Competitive Foods and Beverages	2006–07	2007–08
Competitive items were available in vending machines, à la carte, stores and/or snack bars	59%	62%
Healthy foods (e.g., fresh fruit, vegetables) were available in a competitive venue	38%	34%
Unhealthy foods (e.g., french fries, candy, cake) were available in a competitive venue	47%	44%
Sugary beverages (e.g., sodas) were available in a competitive venue	17%	17%
Healthy beverages (e.g., water, low-fat milk) were available in a competitive venue	48%	55%
Advertising of unhealthy products (e.g., candy, soft drinks, fast food) on school campus	3%	1%
Advertising of healthy products (e.g., fruits, vegetables) on school campus	79%	78%

Exact numbers are available at www.bridgingthegapresearch.org.

Conclusions

Similar to other major national studies, our survey found widespread availability of competitive products that provide elementary school students with a major source of high-calorie, low-nutrient foods and beverages. During both study years, more than one-half of all elementary school students had access to competitive foods or beverages on campus in venues such as vending machines, à la carte lines in the cafeteria, school stores and snack bars. We found that less-healthy products were more commonly available in these venues than were healthy products.

Our data also reveal striking policy differences by race and ethnicity. Students in predominantly Black schools were the least likely to have access to a wide variety of competitive products, including healthier beverages, sugary beverages and less healthy foods. All of these products were significantly more available to students in predominantly White schools. Students in predominantly Latino schools were the most likely to have sugary products restricted during class parties. We will continue to examine our data for such differences to better understand how school practices may impact students' dietary habits, especially among racial and ethnic groups that have disproportionately high rates of childhood obesity.

We found significant differences between public and private elementary school students. Competitive foods were more widely available for private elementary school students, particularly in vending machines, school stores and snack bars.

Implications and Opportunities

The current federal regulations on the nutritional quality of competitive foods are weak and outdated. Although some districts and states have enacted policies and legislation that restrict the availability of unhealthy competitive foods and beverages—or aim to improve the nutritional quality of products sold in these venues—our findings show that these sales are unregulated in many schools. Congress should give USDA the authority to update national nutrition standards for foods and beverages served outside of the school meal programs and apply them to the entire campus for the full school day. It also will be critical for states and school districts to update their policies to strengthen their own individual competitive food standards.

Competitive food and beverage sales generate significant revenues for some schools, which are often used to cover shortfalls in food service operating costs.^{246,247} As such, some schools may be reluctant to reduce or regulate competitive sales, particularly given current economic challenges. However, schools that have replaced less-healthy competitive products with healthier items have reported no loss in revenues.²⁴⁸ In fact, adding healthier competitive foods can even increase participation in the National School Lunch Program and attract new revenues.^{249,250} Improving the nutritional quality of products offered in competitive food venues also could help to reinforce practices encouraged by school-based nutrition education.



Physical Activity, Body Mass Index Screening and Fitness Assessment



Physical Activity, Body Mass Index Screening and Fitness Assessment

Regular physical activity promotes significant health benefits, including cardiovascular and respiratory fitness, optimal weight and favorable body composition.²⁵¹ It also reduces risk factors for serious conditions, such as heart disease, type 2 diabetes and osteoporosis. Promoting adequate physical activity among children is an important strategy for encouraging lifelong habits that will help them build and maintain physical fitness, prevent obesity and reduce risk factors for weight-related health problems.²⁵² Studies overwhelmingly show that physical activity levels decline considerably across the lifespan, decreasing throughout childhood into adolescence and adulthood.^{253–258}

Physical Activity Recommendations for Children

Several public health guidelines have addressed the issue of physical activity among children and adolescents. Many organizations recommend 60 minutes or more of age-appropriate physical activity throughout each day for children and adolescents.^{259–261} The 2008 Physical Activity Guidelines for Americans,²⁶² established by the U.S. Department of Health and Human Services (USDHHS), recommend that children and adolescents engage in 60 minutes or more of physical activity each day, most of which should be either moderate or vigorous aerobic activity. These guidelines also recommend that muscle- and bone-strengthening activities be incorporated into physical activities at least three days per week. Because children tend to be active in intermittent bursts, any brief episode of moderate-to-vigorous activity counts toward the recommended daily level of physical activity.²⁶³ The

Institute of Medicine (IOM) recommends that at least half of the amount of daily physical activity, 30 minutes or more, occur during the school day.²⁶⁴

Although many younger children appear to be meeting these recommendations, results from several large studies vary considerably. One study that used accelerometers to measure physical activity found that 100 percent of children in grades 1 to 3 engaged in at least 60 minutes of moderate-to-vigorous physical activity five days per week or more, compared with 34 percent of males and 25 percent of females in grades 10 to 12.²⁶⁵ In contrast, data collected by devices that monitor physical activity for the 2003–04 National Health and Nutritional Examination Survey (NHANES) indicated that only 42 percent of children ages 6 to 11 and 8 percent of adolescents ages 12 to 19 engaged in 60 minutes of activity each day of the week.²⁶⁶ Self-report data suggest that 20 percent of U.S. children ages 8 to 16 engage in two or fewer episodes of vigorous physical activity per week.²⁶⁷

The Importance of Physical Activity in Schools

In addition to the well-documented health benefits of physical activity, a significant body of research links physical education and physical activity with enhanced academic performance.²⁶⁸ This association may be due to intermediate outcomes, such as improved concentration and better ability to focus on classroom tasks. Of key importance is the consistent finding that allocating school time for physical education and physical activity does not decrease academic performance.²⁶⁹

The World Health Organization and the Centers for Disease Control and Prevention (CDC) have called for schools to assume a leadership role in promoting physical activity among children.²⁷⁰⁻²⁷² The National Association for Sport & Physical Education (NASPE) recommends that schools implement a Comprehensive School Physical Activity Program (CSPAP) that includes programming before, during and after the school day.²⁷³ A core aspect of each school's CSPAP is quality physical education, including the provision of daily physical education classes with a total of 150 minutes of class per week in elementary schools. NASPE standards for high-quality physical education also address curriculum, assessment, standards-based assessment, student-teacher ratio and provision of adequate equipment.

The Child Nutrition and WIC Reauthorization Act of 2004 mandated that school districts participating in the National School Lunch Program, School Breakfast Program or other child nutrition programs must adopt and implement a wellness policy by the first day of the 2006–07 school year. The federal legislation only noted that each wellness policy must include goals for physical activity; it did not require districts to address specific aspects of physical activity, such as physical education and recess. As such, there was much variability in focus, strength and implementation of policies related to physical activity.

In the largest, most comprehensive national study to date of district wellness policies during the 2006–07 and 2007–08 school years, Bridging the Gap researchers found that most elementary school students were covered by goals for physical activity. At the beginning of the 2007–08 school year, 89 percent of public elementary school students were enrolled in a district with a wellness policy that included goals for physical activity, an increase from 76 percent in 2006–07.²⁷⁴ Since the wellness policy mandate went into effect, policies to address physical activity goals have become more common. However, it is unclear whether there have been changes in school practices over the same period.

Key Findings: Practices in Elementary Schools

As detailed in this chapter, our 2006–07 and 2007–08 school-level surveys assessed several aspects of physical activity in both public and private elementary schools, including physical education; recess; sports and other opportunities for physical activity; school facilities; walking and bicycling to school; and practices related to student body mass index (BMI) and fitness assessments. Although the federal wellness policy mandate did not specifically reference these practices, both the Bridging the Gap review of wellness policies and this school-level survey examined these topics. Throughout this chapter, we reference corresponding findings from the previous Bridging the Gap report on district wellness policies to help inform readers about the strengths and weaknesses of district policy provisions relevant to each school-level practice.

Figures in this chapter include results separately for public and private students and reflect the percentages of elementary school students nationwide who were impacted by each school practice. Most figures present both the 2006–07 and 2007–08 school years; however, sometimes the wording of our survey items was revised in a way that reduced comparability from one year to the next. In such cases only data from the 2007–08 school year are presented. For many variables in this chapter we found minimal changes between the two years, thus we focus on the most recent year in our interpretations. Because duration and timing of physical education classes and recess periods differ across grade, we asked specifically about students in grade 3 for these two topics. Responses to all other items pertain to all K–5 students.

Descriptive statistics for both years of data and for all school- and district-level survey variables discussed in all Bridging the Gap reports are available at www.bridgingthegapresearch.org.

Physical Education: Requirements, Frequency and Duration

Quality school-based physical education increases students' levels of physical activity, improves students' levels of physical fitness,^{275,276} and helps students gain knowledge and skills that promote lifelong physical activity.^{277,278}

Physical Education Requirements

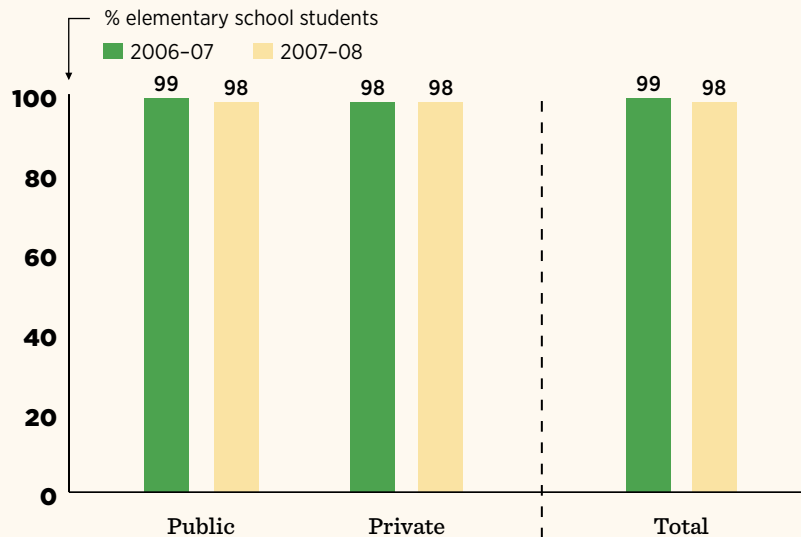
The CDC's 2009 Recommended Community Strategies and Measurements to Prevent Obesity in the United States include requiring physical education in schools, and recommend 150 minutes per week of physical education for elementary school students.²⁷⁹ The CDC's School Health Policies and Programs Study 2006 (SHPPS 2006) collected data from a nationally representative sample of public and private elementary, middle and high schools and found that 69 percent of elementary schools required students to take physical education classes.²⁸⁰

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007-08 school year, 89 percent of public elementary school students were enrolled in a district with a wellness policy that either included provisions related to physical education or referenced state physical education standards. This was a substantial increase from 76 percent in 2006-07.²⁸¹

As part of our school survey, we asked administrators whether elementary school students were required to take physical education classes.

- During both the 2006-07 and the 2007-08 school years, the vast majority of public and private elementary school students were required to take physical education classes.

FIGURE 6.1 Physical Education Required for Elementary School Students



Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Frequency and Duration of Physical Education

Several major organizations have issued recommendations regarding the frequency and duration of physical education programs for elementary school students. The Healthy People 2010 Objective 22.8 seeks to increase the number of schools that require daily physical education for all students,²⁸² and both NASPE and the National Association of School Boards of Education (NASBE) recommend daily physical education. The IOM, NASPE, NASBE and the American Heart Association also recommend that elementary school students participate in at least 150 minutes of physical education per week.²⁸³⁻²⁸⁶

The Alliance for a Healthier Generation's Healthy Schools Program includes physical education as an important criterion for developing a healthier school environment. Within the program, schools must meet several criteria to achieve various levels of recognition. The Alliance bronze level requires elementary schools to offer students at least 60 minutes of physical education each week throughout the school year, the silver level requires at least 90 minutes and the gold level requires at least 150 minutes.²⁸⁷

However, few elementary schools meet current recommendations. SHPPS 2006 found that only 4 percent of elementary schools provided all students in grades 1-5 daily physical education or provided physical education for at least 150 minutes per week for the entire year, and 5 percent provided that amount for one-half of the year.²⁸⁸

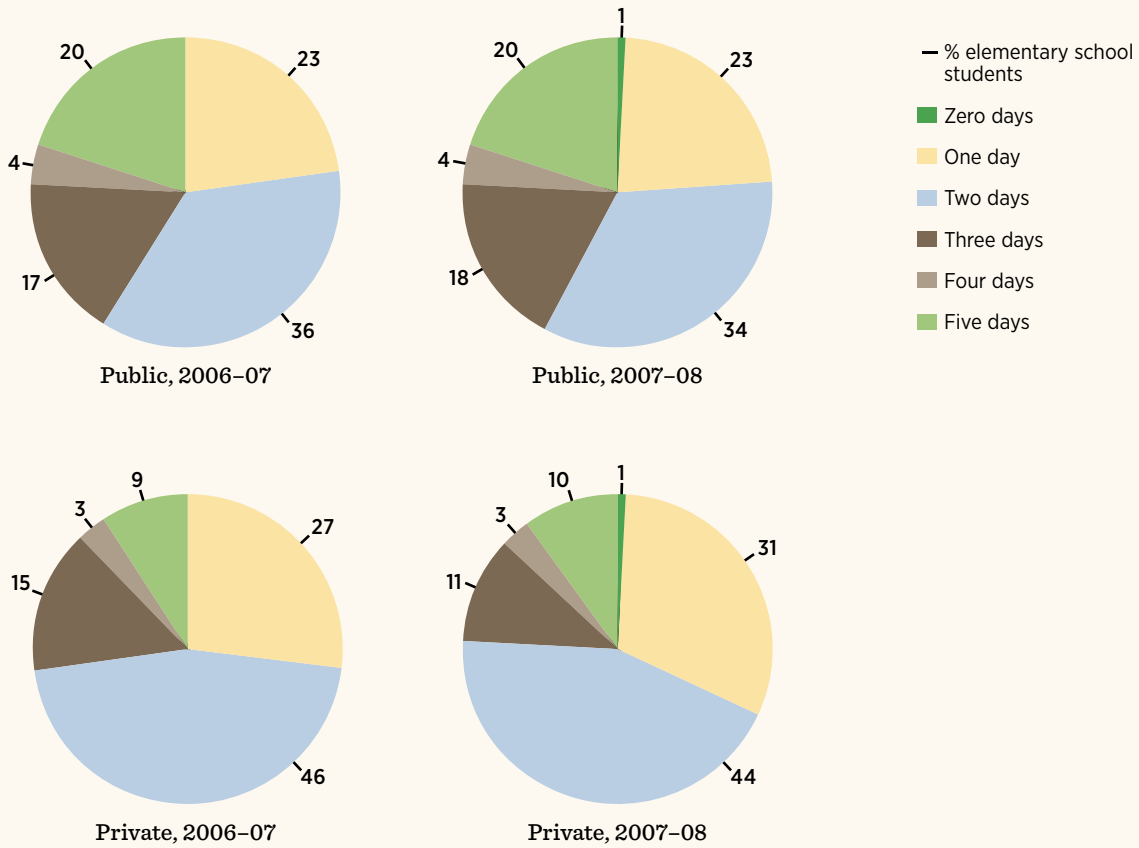
Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007-08 school year, fewer than 4 percent of public elementary school students were enrolled in a district with a wellness policy requiring 150 minutes of physical education per week.²⁸⁹ This percentage was relatively unchanged from 3 percent in 2006-07.²⁹⁰

As part of our school survey, we asked administrators how many days of physical education classes were scheduled for 3rd-grade students during a typical week, and how long each physical education class lasted. From these two items we calculated average minutes per week of physical education time for 3rd-grade students. We also calculated a summary measure of minutes per week using the commonly recommended criterion of at least 150 minutes per week for elementary school students. Because so few students received at least 150 minutes per week of physical education, we also evaluated whether students received the Alliance silver level of at least 90 minutes of physical education per week or the bronze level of at least 60 minutes.

Our results regarding the frequency and duration of physical education were higher than estimates from SHPPS 2006. This is likely because our assessment was specific to 3rd-grade students, and did not require all students in grades 1-5 to meet the same criteria. In addition, we asked about physical education during a "typical week," rather than across an entire school year, as required by SHPPS. Thus, it is likely that differences are due to measurement, and do not indicate a dramatic increase in the frequency and/or duration of physical education among elementary school students.

- Among public and private 3rd-grade students, the number of days per week for which physical education class was offered was fairly stable from the 2006-07 to the 2007-08 school year.
- During the 2007-08 school year, 20 percent of public 3rd-grade students were offered daily physical education, compared with 10 percent of private 3rd-grade students.
- Very few 3rd-grade students received the recommended 150 or more minutes of physical education per week. During the 2007-08 school year, 18 percent of public 3rd-grade students received the recommended physical education time, which was significantly more than the 10 percent of private 3rd-grade students who had 150 or more minutes per week.

FIGURE 6.2 Days per Week of Physical Education for 3rd-Grade Students



Public differs from private at $p < .01$ or better.

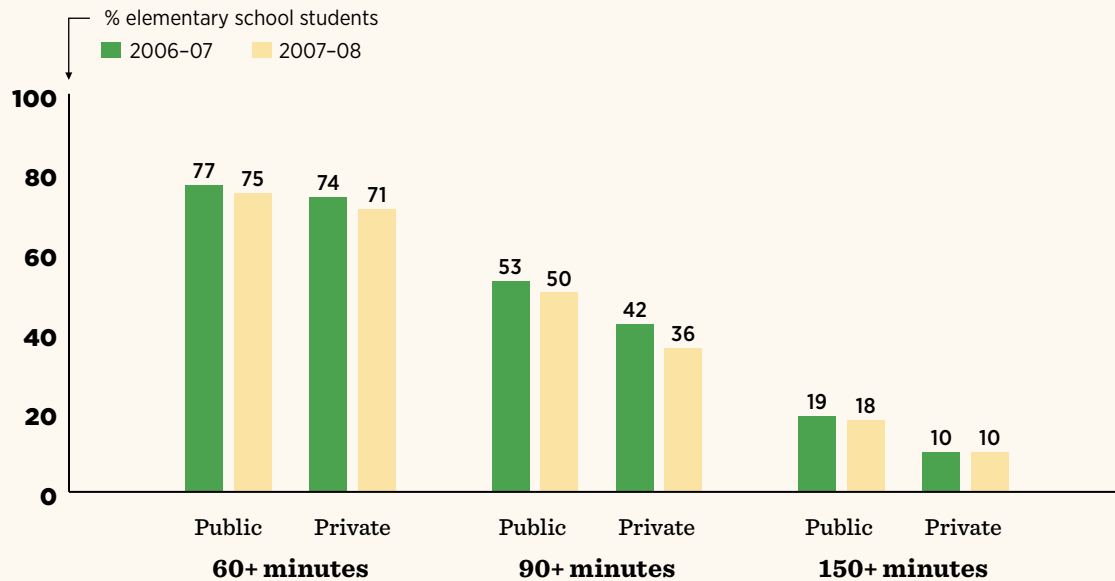
Due to rounding, some segments may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007-08, only 20 percent of public and 10 percent of private 3rd-grade students were offered daily physical education. Most 3rd-grade students had physical education only one or two days per week.



FIGURE 6.3 Physical Education Class Time per Week for 3rd-Grade Students



Public differs from private at $p < .01$ or better for 90+ minutes in 2007-08 and 150+ minutes in both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007-08, only 18 percent of public and 10 percent of private 3rd-grade students received at least 150 minutes of physical education per week. Most 3rd-grade students received at least 60 minutes per week.

Recess

In addition to physical education, recess provides another important opportunity for regular physical activity, particularly among elementary school students. The unstructured nature of recess provides students discretionary time to be active while playing. Participating in recess also is associated with teacher reports of better student classroom behavior, better focus and less fidgeting among students.²⁹¹⁻²⁹⁴

Prominent organizations such as the USDHHS, CDC, NASPE and the National Association for the Education of Young Children consider daily recess an important part of promoting children's academic, social and physical growth.²⁹⁵⁻²⁹⁷ However, recess time is not an adequate substitute for structured physical education classes.²⁹⁸ NASPE recommends that all elementary school students be provided with at least one daily session of recess for a period of at least 20 minutes.²⁹⁹ This criterion also is supported by the Alliance for a Healthier Generation's Healthy Schools Program.³⁰⁰

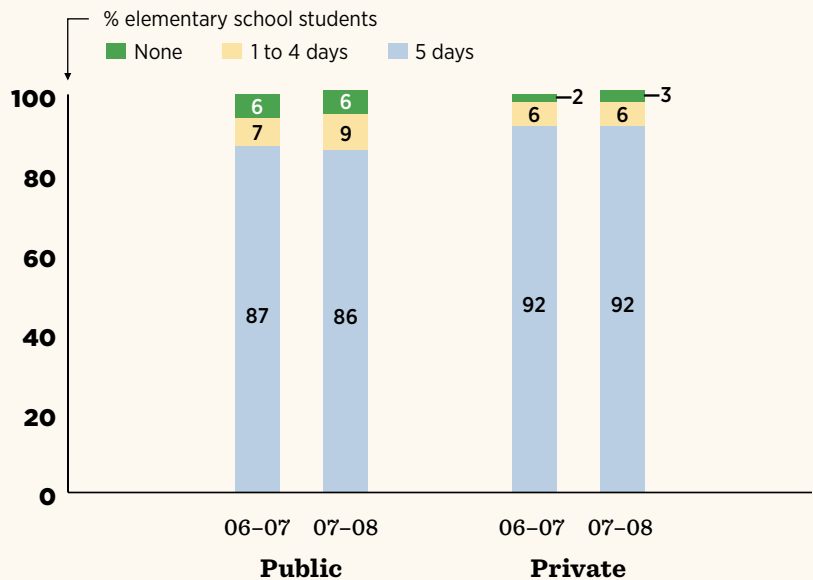
National data show that many students do not attend schools that meet these recommendations for recess. SHPPS 2006 found that 74 percent of schools had regularly scheduled recess for all K-5 students, with an average of 30 minutes daily.³⁰¹ Data from the Early Childhood Longitudinal Study revealed that 30 percent of 3rd-graders had fewer than 15 minutes of recess each day during the 1998-99 school year.³⁰²

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, only 18 percent of elementary school students were enrolled in a district that had a strong wellness policy requiring daily recess, and an additional 22 percent were enrolled in a district with a weak wellness policy—one that encouraged but did not require recess, or one that did not require recess for all elementary grades.³⁰³ This was an increase from 15 percent and 15 percent, respectively, in 2006–07.³⁰⁴

As part of our school survey, we asked administrators to indicate the following: 1) how many days per week the typical 3rd-grade student had recess; 2) the number of times per day the typical 3rd-grade student had recess; and 3) the total minutes of recess per day for 3rd-grade students. From the first and last items we calculated average minutes per week of recess time, and also calculated a summary measure to indicate whether 3rd-grade students received at least 20 minutes of recess daily.

- During both the 2006–07 and the 2007–08 school years, more than 80 percent of public and private 3rd-grade students were offered recess all five days of the week, and a majority were offered recess once or twice per day.
- During both years, approximately two-thirds of public 3rd-grade students were offered 20 minutes of recess daily (totaling at least 100 minutes total per week), compared with nearly 80 percent of private 3rd-grade students.
- Although findings from the Bridging the Gap review of district-level policies indicated that wellness policies often did not require recess, these school-level findings indicate that many elementary school students were actually offered recess. This difference is likely attributed to the fact that recess was not required by the federal wellness policy mandate and many schools did not address it in their wellness policy.

FIGURE 6.4 Days per Week of Recess for 3rd-Grade Students

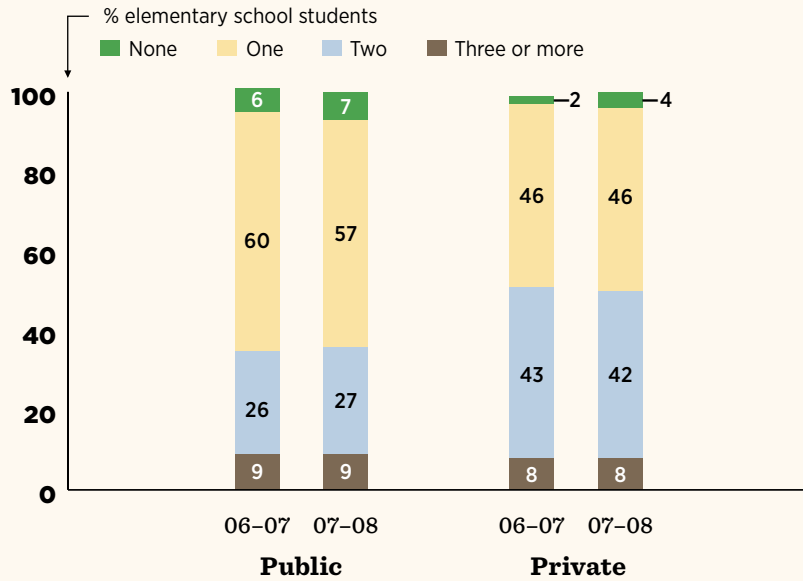


During both study years, most public and private 3rd-grade students were offered a recess daily.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 6.5 Number of Daily Recess Periods for 3rd-Grade Students



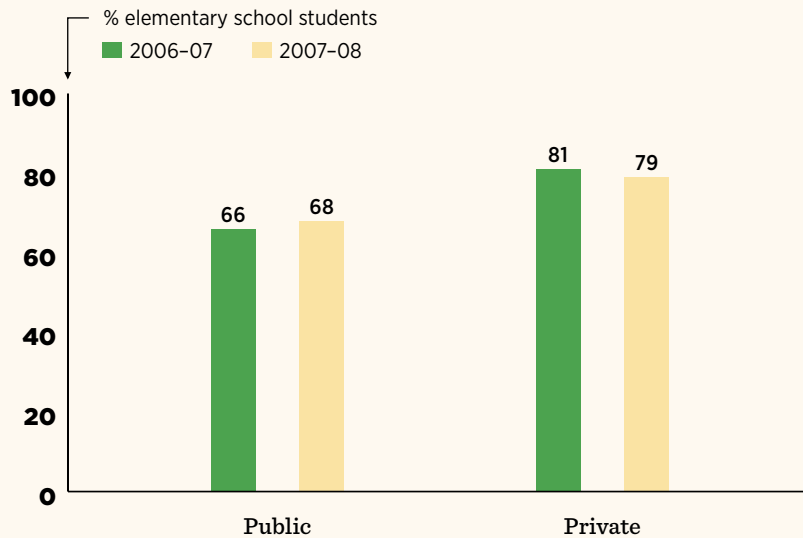
Public differs from private at $p < .01$ or better, both years.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During both study years, the majority of public and private 3rd-grade students were offered recess once or twice per day.

FIGURE 6.6 Percentage of 3rd-Grade Students Who Received 20 or More Minutes of Recess Daily



Public differs from private at $p < .01$ or better, both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Sports, After-School Activities and Other Opportunities for Physical Activity

In addition to offering structured physical education classes and dedicated recess time, schools can facilitate children's physical activity in other ways. These additional opportunities for activity can contribute substantially to helping children meet the recommended minimum of 60 minutes of physical activity each day.

NASPE recommends that each Comprehensive School Physical Activity Program include the opportunity for students to participate in activities before and after school, such as intramural sports (sports played against teams from the same school) and extramural or interscholastic sports (sports played against teams from other schools).³⁰⁵ Although more common in middle and high schools, extramural sports could also provide younger students with opportunities for physical activity. SHPPS 2006 found that one-half of elementary schools offered intramural sports or physical activity clubs.³⁰⁶ The most commonly offered sports at the elementary level were baseball or softball, basketball, and track or running clubs.³⁰⁷

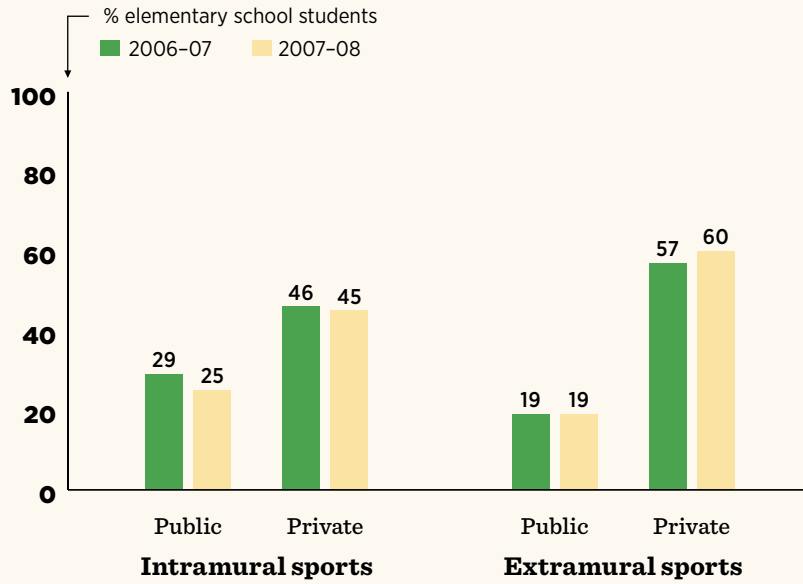
In a nationally representative sample of children ages 9 to 13, the CDC's Youth Media Campaign Longitudinal Survey found that only 39 percent of students reported participating in organized sports. Slightly more than 60 percent of children did not participate in organized physical activity during nonschool hours, and 23 percent did not participate in any free time physical activity at all. Black and Latino students were less likely than White students to participate in organized physical activities. These low levels of overall physical activity outside of school highlight the importance of ensuring that children receive adequate opportunities to be active during school hours.³⁰⁸

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007-08 school year, 37 percent of elementary school students were enrolled in a district with a strong wellness policy requiring physical activity outside of physical education, and an additional 28 percent were enrolled in a district with a weak wellness policy that encouraged but did not require physical activity outside of physical education.³⁰⁹ This was an increase from 33 percent and 27 percent, respectively, in 2006-07.³¹⁰ The same study found that for the 2007-08 school year, 10 percent of elementary school students were enrolled in a district with a strong wellness policy regarding the provision of physical activity opportunities (e.g., physical activity breaks) throughout the school day and another 45 percent were enrolled in a district with a weak wellness policy on this topic.³¹¹ This was an increase from 9 percent and 37 percent, respectively, in 2006-07.³¹²

As part of our school survey, we asked administrators whether their school participated in or offered each of six activities that can contribute to children's physical activity both during and after the school day, including: 1) intramural sports; 2) extramural sports; 3) after-school physical activities sponsored by the school; 4) after-school physical activities sponsored by sports and recreation or park district agencies; 5) non-traditional physical education activities (e.g., yoga, kick-boxing); and 6) other school-based opportunities for organized activity outside of physical education classes (e.g., walking, running laps during recess).

- Among public and private elementary school students, the availability of all six types of activities was relatively stable from 2006-07 to the 2007-08 school year.
- Private elementary school students were significantly more likely than public elementary school students to be offered intramural sports, extramural sports and after-school activities sponsored by the school.
- Public elementary school students were significantly more likely than private elementary school students to be offered externally-sponsored after-school activities and organized physical activities during the school day.
- During both years, slightly more than 40 percent of public and 30 percent of private elementary school students were offered opportunities during the school day for organized physical activity outside of physical education class.

FIGURE 6.7 Availability of Intramural and Extramural Sports

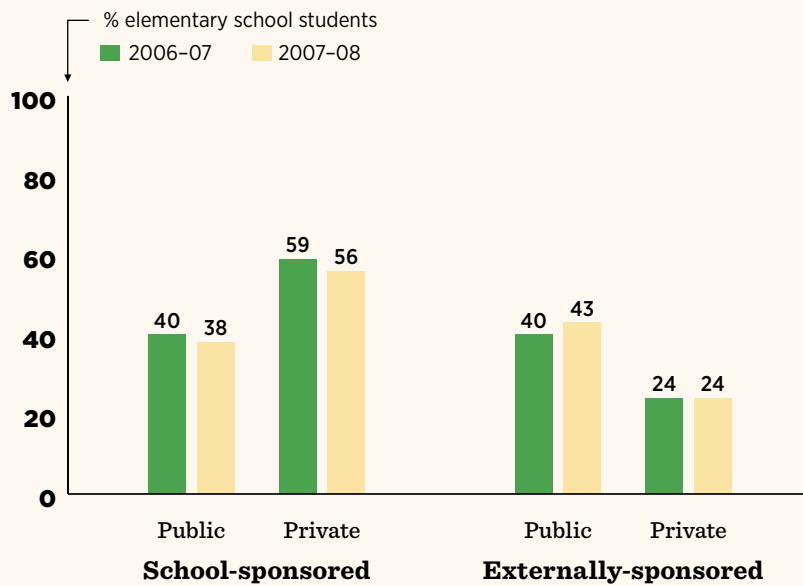


In 2007-08, intramural sports were available to only one-quarter of public elementary school students, and extramural sports were available to only 19 percent.

Public differs from private at $p < .01$ or better, both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 6.8 Availability of After-School Activities

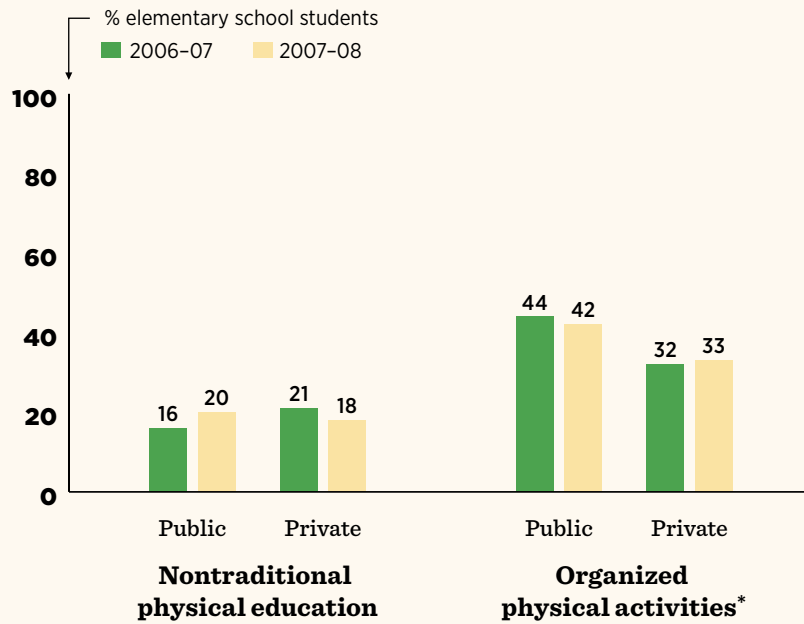


In 2007-08, fewer than one-half of public elementary school students were offered after-school activities.

Public differs from private at $p < .01$ or better, both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 6.9 Physical Activity Opportunities Available During the School Day



* Public differs from private at $p < .01$ or better, both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007-08, only 42 percent of public and 33 percent of private elementary school students had organized physical activities available during the school day.

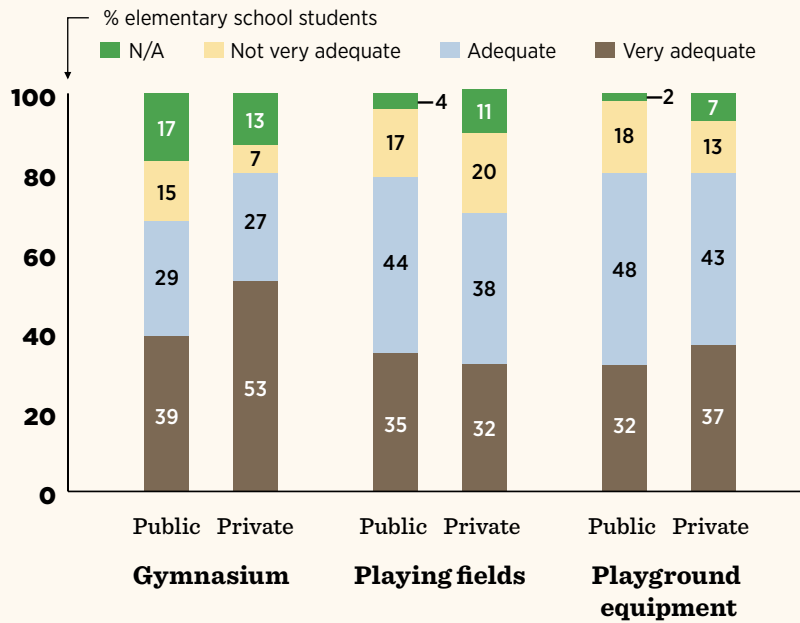
School Facilities and Characteristics that Supported or Hindered Physical Activity

Students tend to be more active when well-maintained facilities that support physical activity are available at school.^{313,314} SHPPS 2006 found that the majority of elementary schools had facilities for physical activity, including a gymnasium (77%), playing fields (93%) and playground equipment (94%).³¹⁵

As part of our 2007–08 school survey, we asked administrators to report on the availability and adequacy of school facilities, including playing fields, playground equipment and a gymnasium. We also asked administrators to indicate the types of barriers they faced in implementing or maintaining physical education classes at school, with a variety of response options, as noted in Figure 6.11.

- During the 2007–08 school year, approximately one-third of public elementary school students attended a school that either did not have a gymnasium or had a gymnasium that the administrator considered inadequate.
- Although more than 95 percent of public elementary school students attended a school where playing fields and playground equipment were available during the 2007–08 school year, many administrators perceived these facilities as inadequate.
- Generally, few public and private elementary school students attended a school where the administrator reported barriers to implementing regular physical education classes during the 2007–08 school year. The most commonly-reported barrier was competing demands for teaching other subjects, affecting 22 percent of public and 12 percent of private elementary school students.

FIGURE 6.10 Perceived Adequacy of School Facilities, 2007–08



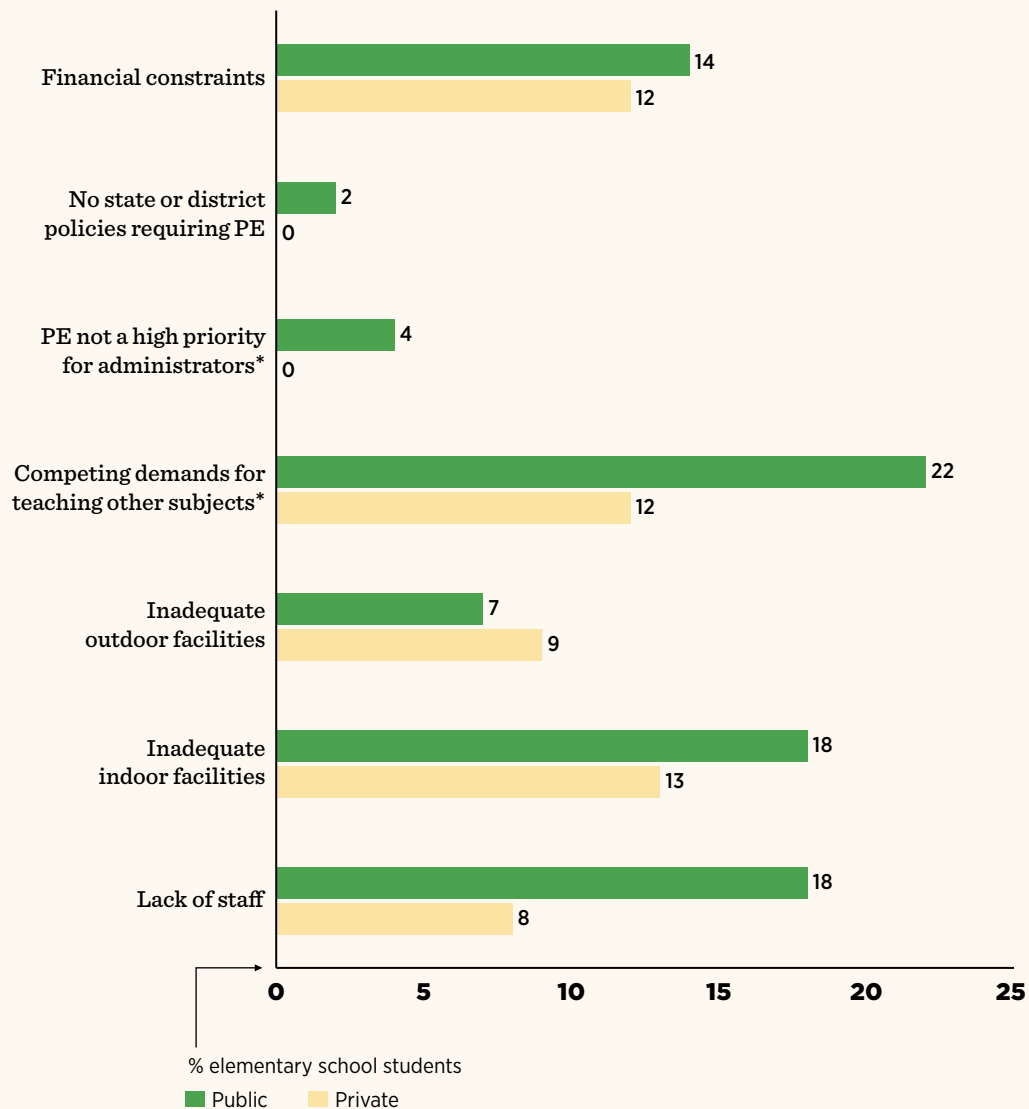
The majority of public and private elementary school students attended a school with adequate facilities.

Public differs from private at $p < .01$ or better.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

FIGURE 6.11 Perceived Barriers to Implementing Regular Physical Education Classes, 2007–08



* Public differs from private at $p < .01$ or better.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Withholding Recess or Using Physical Activity as a Punishment

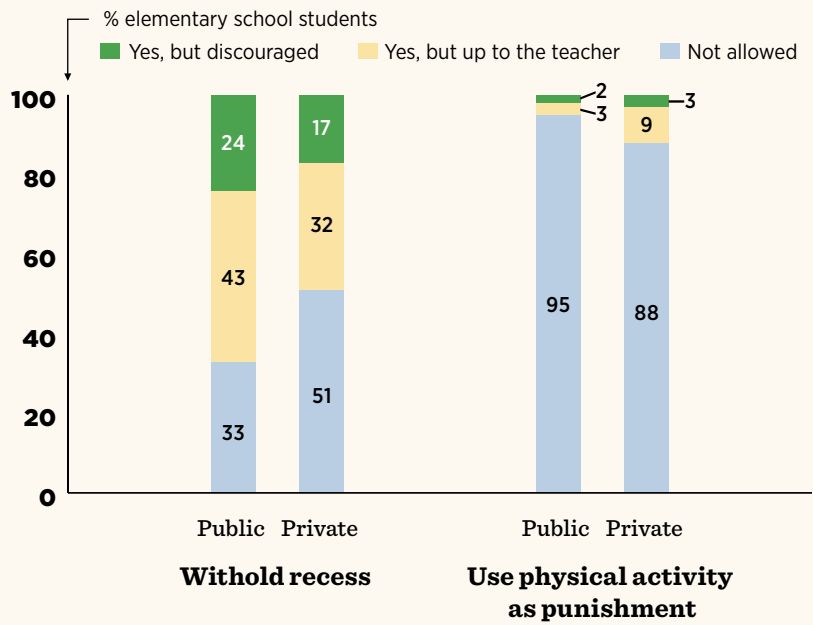
NASPE³¹⁶ and the CDC³¹⁷ discourage using physical activity as a punishment. They also discourage withholding physical activity opportunities, such as recess, as a punishment for poor student behavior. Nevertheless, these practices occur commonly in elementary schools. SHPSS 2006 found that 32 percent of schools allow the use of physical activity (e.g., pushups, running laps) as a consequence for poor student behavior, while only 9 percent actively discourage this practice.³¹⁸ Further, SHPSS 2006 found that among schools with regular recess, 82 percent allowed students to be withheld from recess.³¹⁹

Results from the Bridging the Gap review of school district wellness policies indicated that very few public elementary school students were enrolled in a district with a policy that addressed these practices. At the beginning of the 2007–08 school year, 64 percent of public elementary school students were enrolled in a district that did not address using or withholding physical activity as punishment.³²⁰ This was a decrease from 75 percent in 2006–07, suggesting that school districts are increasingly addressing these practices in their wellness policies.³²¹

As part of our 2007–08 school survey, we asked administrators to indicate the following: 1) whether students are kept inside during recess as punishment for poor behavior; and 2) whether physical activity is used as a punishment for poor behavior.

- Although one-quarter of public elementary school students attended a school that discouraged withholding recess, most attended a school where this practice was not explicitly prohibited during the 2007–08 school year.
- A significantly greater percentage of private elementary school students (51%) than public elementary school students (33%) attended a school where withholding recess was explicitly prohibited during the 2007–08 school year.
- Use of physical activity as a punishment was reported relatively infrequently during the 2007–08 school year, with only 5 percent of public elementary school students attending a school where the practice was not explicitly prohibited. In contrast, however, 12 percent of private elementary school students attended a school where the practice was not explicitly prohibited.

FIGURE 6.12 Teachers Allowed to Withhold Recess or Use Physical Activity as a Punishment, 2007–08



Public differs from private at $p < .01$ or better.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007–08, the majority of public elementary school students attended a school that allowed teachers to withhold recess as a punishment. Most public and private elementary school students attended a school that prohibited the use of physical activity as a punishment.

Walking and Bicycling to School

Active commuting to school, primarily through walking and bicycling, provides an important but often overlooked source of daily activity for children. Children who actively commute have higher energy expenditure and are more likely to meet physical activity recommendations compared with children who are driven to school.³²²⁻³²⁴ Active commuting may also prevent excess weight gain among elementary school students,³²⁵ although this relationship appears to be fairly weak or mixed.³²⁶

NASPE guidelines encourage the use of active commuting to school through walking and bicycling.³²⁷ However, over the past few decades the rate of walking to school has declined substantially in the United States, from 41 percent of students in 1969³²⁸ to 13 percent of students in 2001.³²⁹ The distance between home and school has generally increased over time and is strongly related to declining levels of active commuting.^{330,331} However, as recently as 1999, only 31 percent of students living within one mile from school actively commuted.³³²

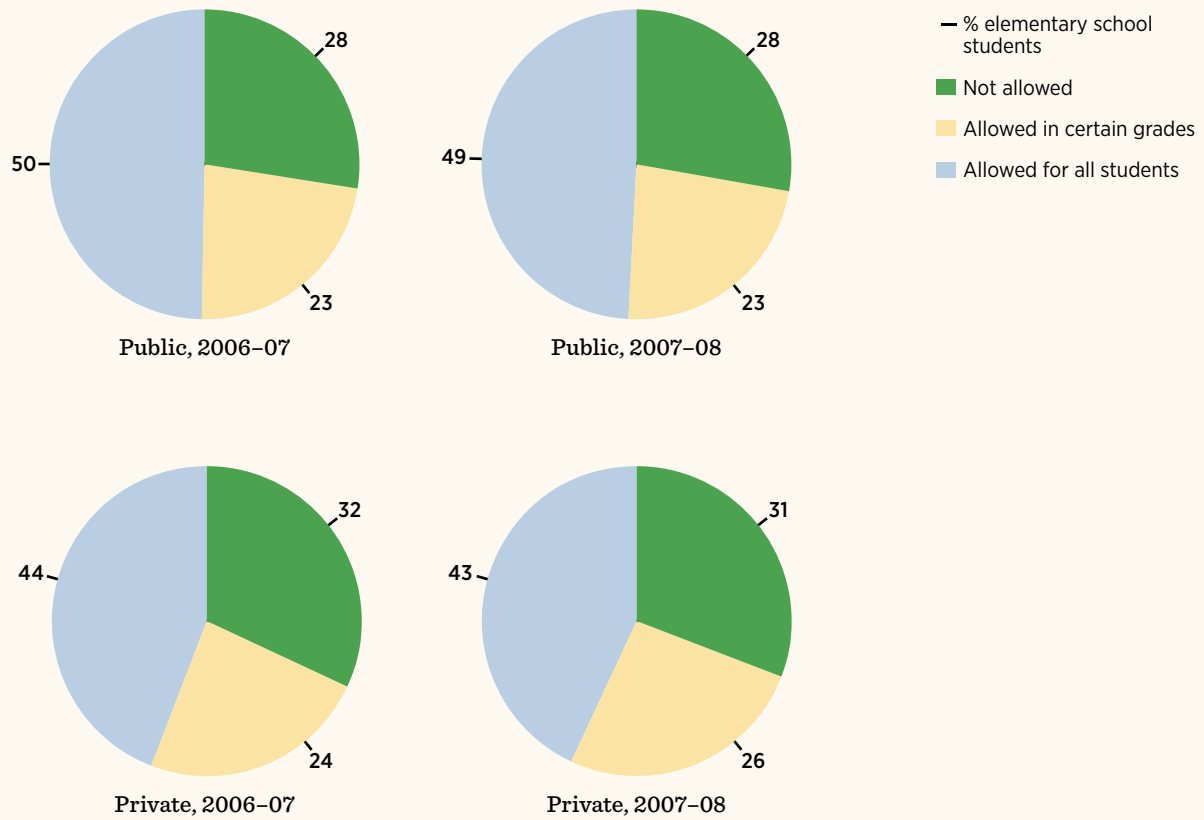
A recent comprehensive review identifies a number of variables potentially related to active commuting.³³³ According to parents, distance between home and school is the most common barrier to active commuting; it also is one of the strongest predictors of active commuting. There is not a strong association between children's active commuting and parental concerns about traffic safety or neighborhood crime. There also is little evidence regarding the impact of weather on active commuting.³³⁴

As part of our 2007–08 school survey, we asked administrators to indicate approximately what percentage of students walked or bicycled to school. For both years, we asked whether students were allowed to bicycle to school, and we asked administrators to indicate agreement with a list of potential barriers that may prevent students from walking or bicycling to school. We considered responses of “to a great extent” or “to a very great extent” as agreement with each barrier.

- During the 2007–08 school year, on average, 21 percent of public elementary school students walked or bicycled to school, significantly more than the 6 percent of private elementary school students who walked or bicycled to school.ⁿ
- Among public and private elementary school students, restrictions on students walking and bicycling to school were stable from the 2006–07 to the 2007–08 school year.
- During both years, approximately 30 percent of elementary school students were not allowed to bicycle to school. This did not differ significantly between public and private students.
- Distance from home to school and traffic danger were the two most-commonly reported reasons students did not walk to school, affecting significantly more private than public elementary school students in 2007–08.

ⁿ Corresponding figure not presented. Complete data are available at www.bridgingthegapresearch.org.

FIGURE 6.13 Restrictions on Students Bicycling to School

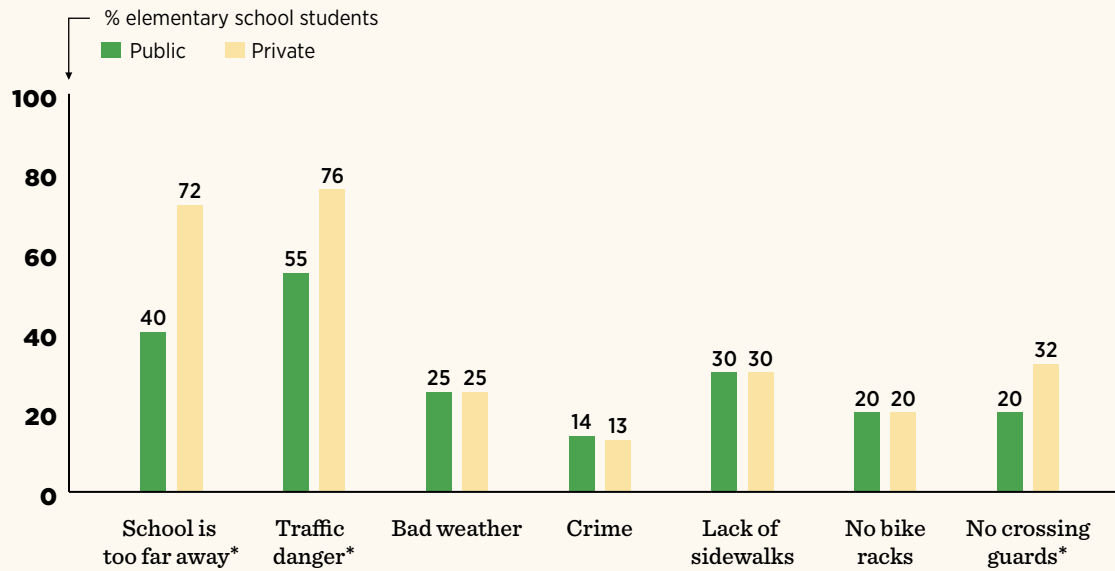


Due to rounding, some segments may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007-08, only about one in five public elementary school students regularly walked or bicycled to school.

FIGURE 6.14 Perceived Barriers to Students Walking and Bicycling to School, 2007–08



* Public differs from private at $p < .01$ or better.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Among public and private elementary school students, traffic danger was most often cited as the reason children did not walk to school.

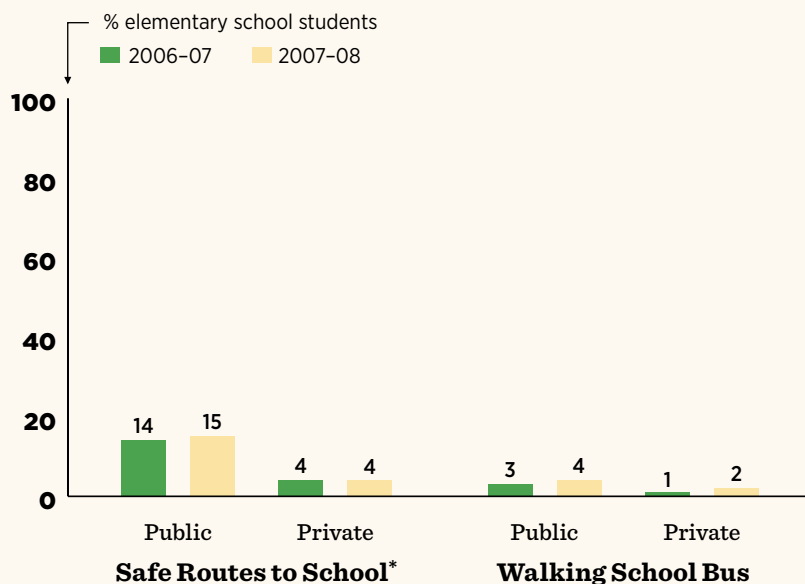
Two of the most widely-disseminated approaches for encouraging active commuting are the Safe Routes to School (SRTS) program and the Walking School Bus.

- The SRTS program aims to increase active commuting among schoolchildren. The program in the United States began as a grassroots effort, and received federal funding starting in 2005 through the Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users (SAFETEA-LU). Program goals are to promote walking and bicycling to school and to make active commuting safer. Evaluations of SRTS programs have shown an increase in the proportion of trips that are made by walking or bicycling, and reductions in the number of students who are driven to school.^{335,336}
- The Walking School Bus program encourages adults to walk with children to and from school along a fixed route with designated stops and pickup times. The program has been well-received by parents and community members,³³⁷ and can effectively increase rates of active commuting. Walking School Bus programs tend to be more common in Australia, New Zealand and the United Kingdom; however, some U.S. communities have implemented and evaluated such programs. In a lower-income urban Seattle neighborhood, for example, a Walking School Bus program successfully increased the number of students walking to school, although the number of students who were driven to school or took a school bus did not decrease.³³⁸ Because these programs are volunteer-based, longer-term sustainability may be a challenge.³³⁹

As part of our school survey, we asked administrators whether their school participated in the SRTS initiative or a similar program, and whether the school organized a Walking School Bus program.

- Among public and private elementary school students, rates of participation in both SRTS and Walking School Bus programs were fairly low and stable during the two-year study period.
- A significantly greater percentage of public than private elementary school students attended a school that participated in the SRTS program.

FIGURE 6.15 Availability of Safe Routes to School Program or Walking School Bus



* Public differs from private at $p < .01$ or better, both years.

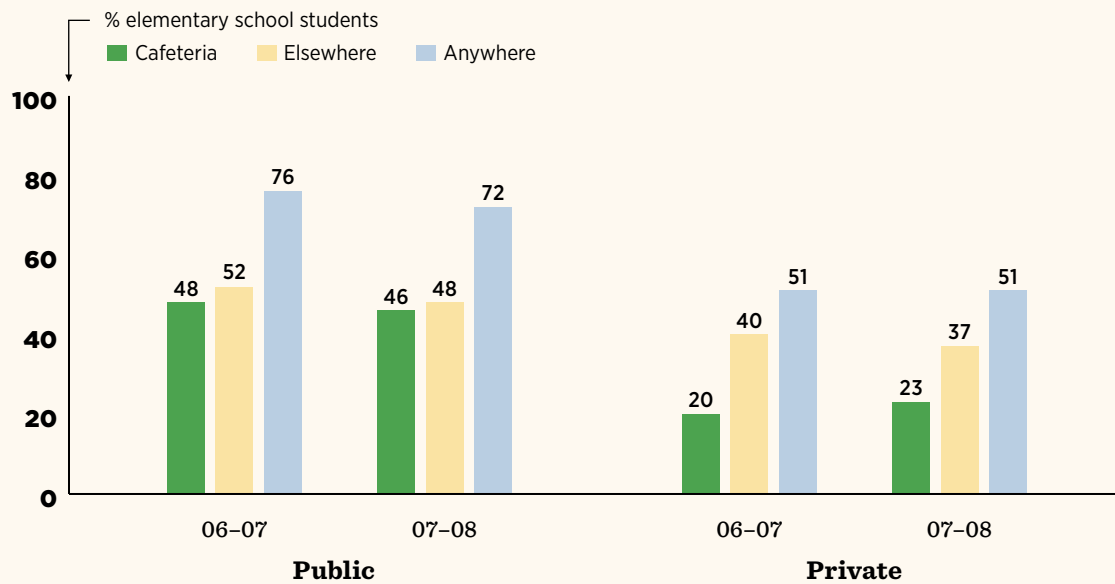
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Advertisements to Promote Physical Activity

We asked respondents to indicate whether any posters or other advertisements promoting physical activity or sports, such as those provided by campaigns like VERB™ or Jump Rope for Heart, were present either in the cafeteria, in other places where students eat or anywhere else in the school, including locations outside the school or on school buses.

- Advertising to support physical activity was fairly stable from the 2006–07 to the 2007–08 school year. During both years, approximately three-quarters of public elementary school students attended schools with advertising for physical activities, compared with approximately one-half of private elementary school students.

FIGURE 6.16 Advertisements to Promote Physical Activity on Campus



Public differs from private at $p < .01$ or better, both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Across both study years, the majority of public and private elementary school students attended a school that had advertisements to promote physical activity.

Body Mass Index Screening and Fitness Assessments

The IOM calls for school health services to take a leadership role in addressing childhood obesity.³⁴⁰ In addition to providing counseling on nutrition and physical activity, school health services can serve an important function by providing other health services such as body mass index (BMI) screening and fitness assessments.

Body Mass Index Screening

BMI is the standard measure for monitoring weight status for children and adults, and is calculated based on a person's height and weight. Although height and weight are often tracked during children's medical visits, many pediatricians do not calculate BMI, and many rely instead on less reliable visual inspection to diagnose overweight or obesity.³⁴¹⁻³⁴³ Furthermore, many children are not covered by health insurance or do not participate in annual preventive care visits. Some schools already collect student height and weight data, and thus schools represent an important venue for childhood obesity screening.^{344,345}

Despite initial concerns about the potential adverse effects of widespread school-based BMI measurement (e.g., burden on schools, confidentiality issues and potential stigmatization of children),³⁴⁶ evaluation of the first six years of Arkansas' statewide BMI screening efforts in public schools revealed several beneficial outcomes but few adverse effects.³⁴⁷

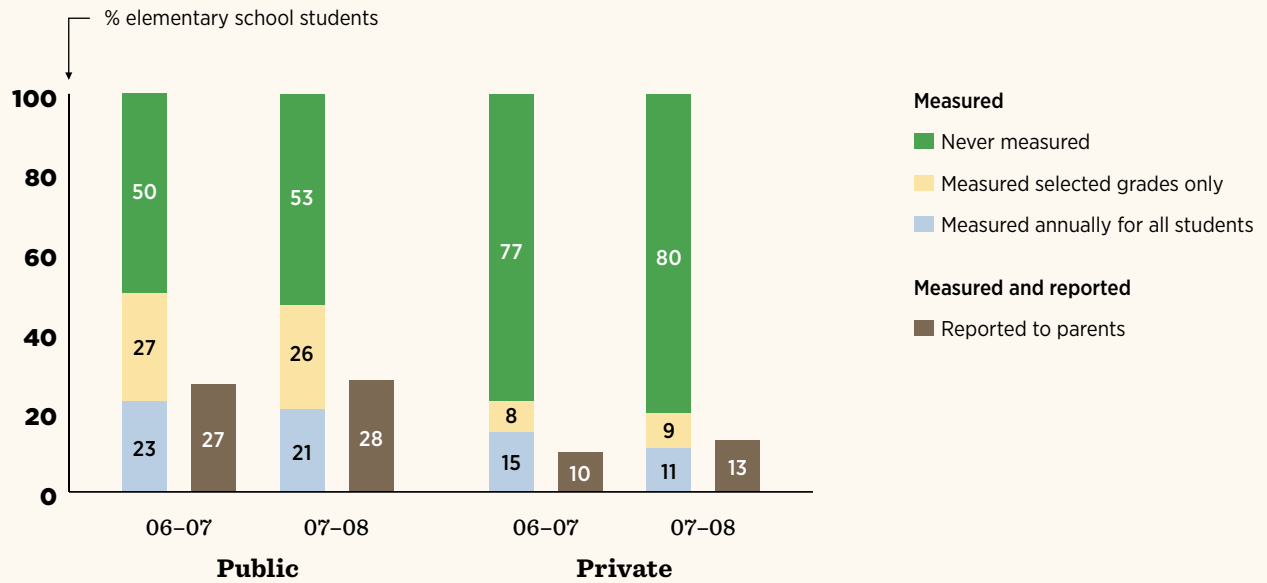
The IOM recommends that schools annually measure each student's weight and height, calculate BMI percentile, and provide this information to parents and students.³⁴⁸ An increasing number of states require BMI or other weight-related screening of children—in 2009 as many as 20 states required such screening.³⁴⁹ SHPPS 2006 found that 43 percent of elementary schools conducted BMI or height and weight screening.³⁵⁰

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, fewer than 1 percent of public elementary school students were enrolled in a district that required school-based BMI screening, and 26 percent were enrolled in a district that had a weak wellness policy that only suggested that BMI information be collected or required it but not for all grade levels.³⁵¹ This was an increase from 2006–07, during which no students were enrolled in a district with a strong policy and only 16 percent of students were enrolled in a district with a weak policy.³⁵²

As part of our school survey, we asked administrators whether height, weight and BMI were measured for elementary school students, either for selected grades or annually for all students. If BMI was measured, we asked if the information collected was sent to parents.

- Among public and private elementary school students, the prevalence of student BMI measurement and reporting was fairly stable from the 2006–07 to the 2007–08 school year.
- During the 2007–08 school year, 47 percent of public elementary school students attended a school that measured BMI either annually for all students or for selected grades only. Only 28 percent of public elementary school students attended a school that measured BMI and reported it to parents.
- Private elementary school students were significantly less likely than public elementary school students to attend a school that measured and reported BMI.

FIGURE 6.17 Measurement and Reporting of Student Body Mass Index



Public differs from private at $p < .01$ or better, both years.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

In 2007-08, approximately one-half of public and one-fifth of private elementary school students attended a school that had BMI screening for all or some grades. When measured, approximately one-half of students' parents did not receive a report from the school.

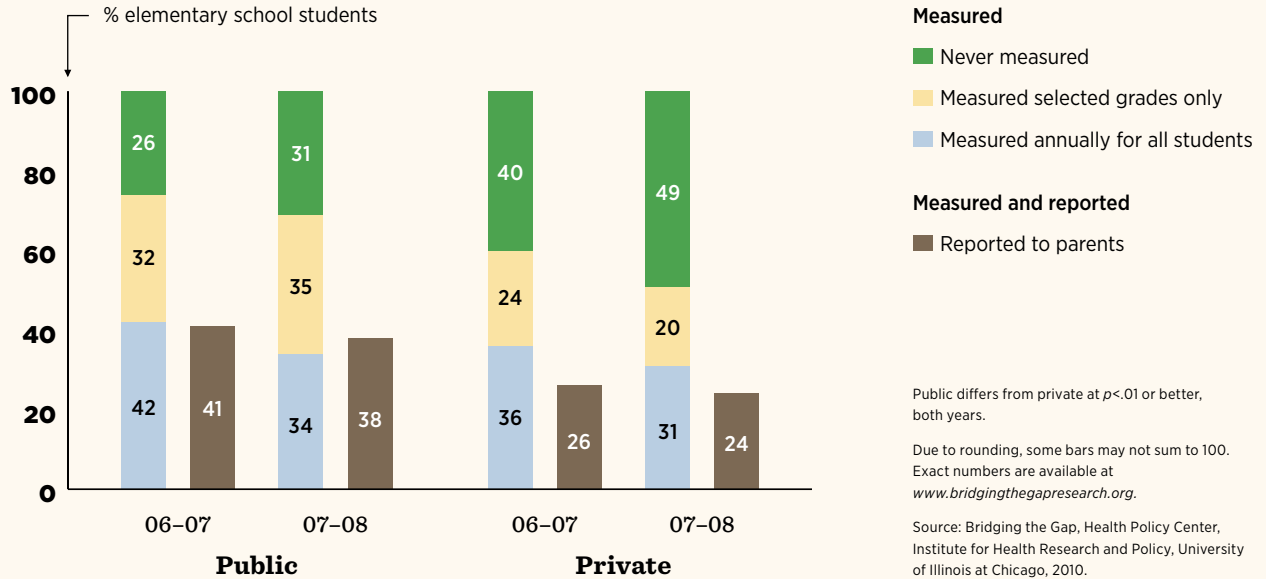
Fitness Assessments

NASBE recommends the use of health-related fitness testing as part of the school curriculum, and recommends providing results to students and parents. NASBE also recommends that results be used for goal setting and monitoring progress in meeting goals, but not for assigning grades.³⁵³ SHPPS 2006 found that 28 percent of school districts required elementary schools to test student physical fitness levels, and an additional 40 percent of districts recommended these tests for elementary grades.³⁵⁴

As part of our school survey, we asked respondents whether student physical fitness was measured for elementary school students, either for selected grades or annually for all students. We also asked respondents whether the information collected was sent to parents.

- The prevalence of fitness testing declined from 42 percent in the 2006–07 school year to 34 percent in the 2007–08 school year among public elementary school students. This decrease was smaller among private elementary school students, from 36 percent to 31 percent.
- During the 2007–08 school year, 69 percent of public elementary school students attended a school that conducted student fitness testing either for all students or for selected grades only. Only 38 percent of public elementary school students attended a school that measured student physical fitness and reported it to parents.
- Private elementary school students were significantly less likely than public elementary school students to attend a school that measured and reported student physical fitness.

FIGURE 6.18 Measurement and Reporting of Student Physical Fitness



In 2007–08, 69 percent of public and 51 percent of private elementary school students attended a school that conducted fitness assessments for all or some grades. Approximately two-fifths of public elementary school students attended a school that reported these results to parents.

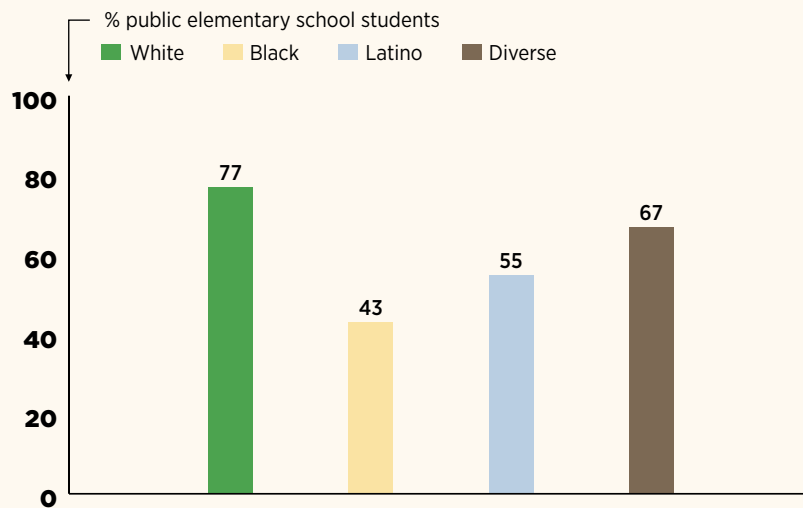
Physical Activity and Student Health Measurement by School Race and Ethnicity

Some physical activity practices varied by the racial and ethnic composition of the school.^o Results presented below are for the 2007–08 school year for public schools only.^p

Recess, by School Race and Ethnicity

- Public elementary school students who attended predominantly White schools were significantly more likely than were public elementary school students who attended predominantly Black or Latino schools to be offered 20 minutes of recess daily during the 2007–08 school year.
- Our results are consistent with prior research showing that Black elementary school students were significantly less likely than White elementary school students to have recess.³⁵⁵

FIGURE 6.19 Students Who Received 20 or More Minutes of Recess Daily, by School Race and Ethnicity, 2007–08



Compared with public elementary school students at predominantly Black and Latino schools, public elementary school students at predominantly White schools were more likely to have at least 20 minutes of daily recess.

Includes only public elementary school students.

For both years, White vs. Black and White vs. Latino comparisons significant at $p < .01$ or better.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

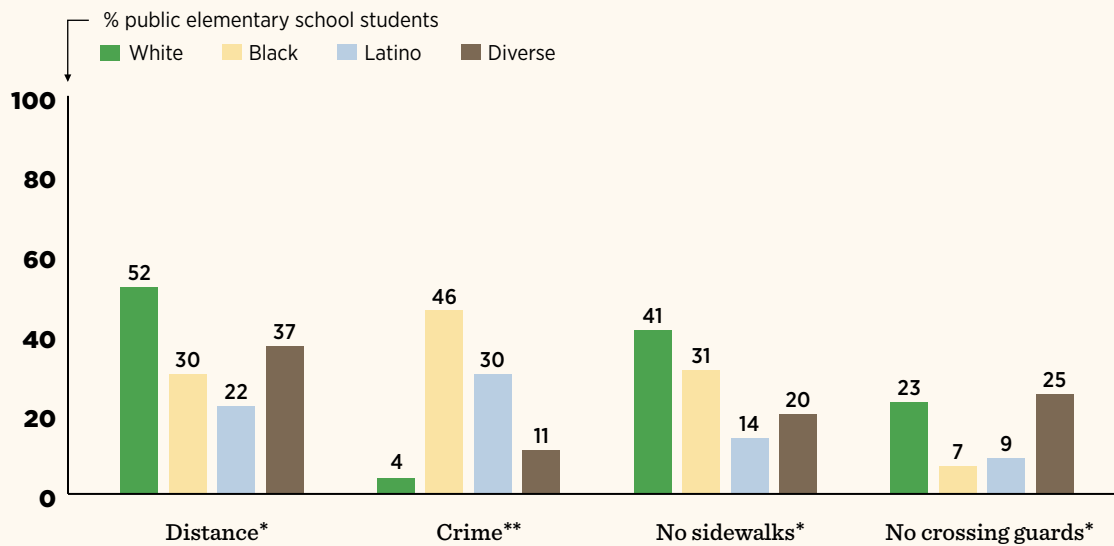
^o Data from the National Center for Education Statistics (NCES) were obtained regarding school-level demographic characteristics. Using information on the racial/ethnic representation of students at the school, we classified schools as: majority White (>66% White), majority Black (>50% Black), or majority Latino (>50% Latino). A fourth group includes the remaining schools that did not fall into one of these groups and which have a diverse student population.

^p Smaller sample sizes for the private schools may result in unstable estimates, therefore only the public schools are included in subsample comparisons.

Walking and Bicycling to School, by School Race and Ethnicity

- Although prior research has found that Black and Latino students are more likely to actively commute to school,³⁵⁶ we did not find that the percentage of public elementary school students who walked or bicycled to school differed significantly among schools with different racial and ethnic demographics.
- However, we found significant racial and ethnic differences in perceived barriers to public elementary school students walking and bicycling to school during the 2007–08 school year.
 - Public elementary school students at predominantly White schools were significantly more likely than were public elementary school students at predominantly Black or Latino schools to attend a school where the administrator perceived distance, a lack of sidewalks and a lack of crossing guards as barriers to students walking and bicycling.
 - Public elementary school students at predominantly White schools were significantly less likely than were public elementary school students at predominantly Latino or Black schools to attend a school where the administrator perceived crime to be a barrier to students walking or bicycling to school.

FIGURE 6.20 Perceived Barriers to Walking and Bicycling to School, by School Race and Ethnicity, 2007–08



Includes only public elementary school students.

* White vs. Latino comparisons significantly different at $p < .01$ or better.

** White vs. Black and White vs. Latino comparisons significantly different at $p < .01$ or better.

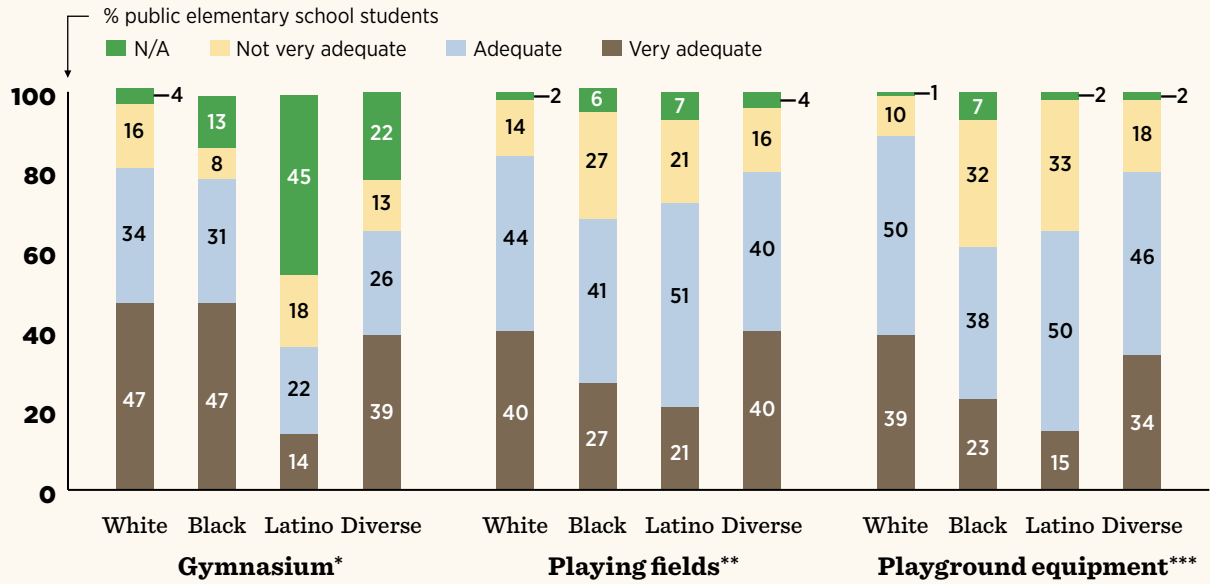
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During the 2007–08 school year, crime was more likely to be perceived as a barrier to walking and bicycling for public elementary school students at predominantly Black and Latino schools, whereas distance from school was more likely to be a barrier for public elementary school students at predominantly White schools.

Adequacy of Facilities, by School Race and Ethnicity

- We found significant racial and ethnic differences in perceived adequacy of facilities available for public elementary school students during the 2007–08 school year.
 - Public elementary school students at predominantly Latino schools were significantly less likely than were public elementary school students at predominantly Black and predominantly White schools to attend a school where the administrator rated the gymnasium as adequate.
 - Public elementary school students at predominantly White schools were significantly more likely than were public elementary school students at predominantly Black and predominantly Latino schools to attend a school where the administrator rated the playground equipment as adequate.

FIGURE 6.21 Perceived Adequacy of Facilities, by School Race and Ethnicity, 2007–08



Includes only public elementary school students.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

* White vs. Latino and Black vs. Latino comparisons significantly different at $p < .01$ or better.

** White vs. Latino comparisons significantly different at $p < .01$ or better.

*** White vs. Black and White vs. Latino comparisons significantly different at $p < .01$ or better.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During the 2007–08 school year, public elementary school students at predominantly Latino schools were more likely to have no gymnasium or an inadequate gymnasium, whereas public elementary school students at predominantly Black schools were more likely to have no playground equipment or inadequate playground equipment.

TABLE 6.1 Percentage of Public Elementary School Students Exposed to Selected Policies and Practices, School Years 2006–07 and 2007–08

The table below summarizes key findings among public elementary school students that are particularly important for informing wide-reaching policies that will impact guidelines for physical activity, such as physical education classes, recess and programs that support walking and biking to school. The table also highlights changes from the 2006–07 to the 2007–08 school year, which were the first two years following the federal wellness policy mandate. These data can be used to monitor school-level implementation of the district wellness policies and assess the nation's progress in creating healthier school environments to help reverse the childhood obesity epidemic.

Physical Activity and Physical Education	2006–07	2007–08
Physical education was required for elementary school students	98%	98%
Physical education class was offered daily for 3rd-grade students	20%	20%
At least 150 minutes of physical education was offered per week for 3rd-grade students	19%	18%
At least 20 minutes of recess was offered daily for 3rd-grade students	66%	68%
Students were not allowed to bicycle to school or only some grades were allowed	51%	51%
Percentage of students who walked or bicycled to school on a typical day	20%	21%
School participated in Safe Routes to School Program	14%	15%
Physical fitness was measured annually for all elementary school students	42%	34%

Exact numbers are available at www.bridgingthegapresearch.org.

Conclusions

Similar to findings from other major studies, our data show that public and private elementary schools need to offer students more opportunities for physical activity before, during and after the school day. Although nearly all public and private elementary schools require physical education and provide it for most students, fewer than one-fifth of 3rd-grade students received the recommended 150 minutes per week of physical education. We also found that, among public students who attend predominantly Black or Latino schools, issues such as inadequate facilities and lack of recess time inhibit physical activity. Few public or private students actively commuted to school, which is not surprising given the barriers reported by principals who responded to our survey, such as distance between home and school, traffic danger, and a lack of sidewalks.

We also found significant differences between public and private elementary school students. For example, private elementary school students were significantly less likely to have daily physical education, to be offered at least 150 minutes of physical education per week, and to walk or bicycle to school. However, private students were more likely to meet standards for weekly recess time and to be offered sports and school-sponsored after-school activities.

The evidence suggests that private schools are providing different types of physical activity opportunities than are public schools, and that both are falling far short of ideal levels.

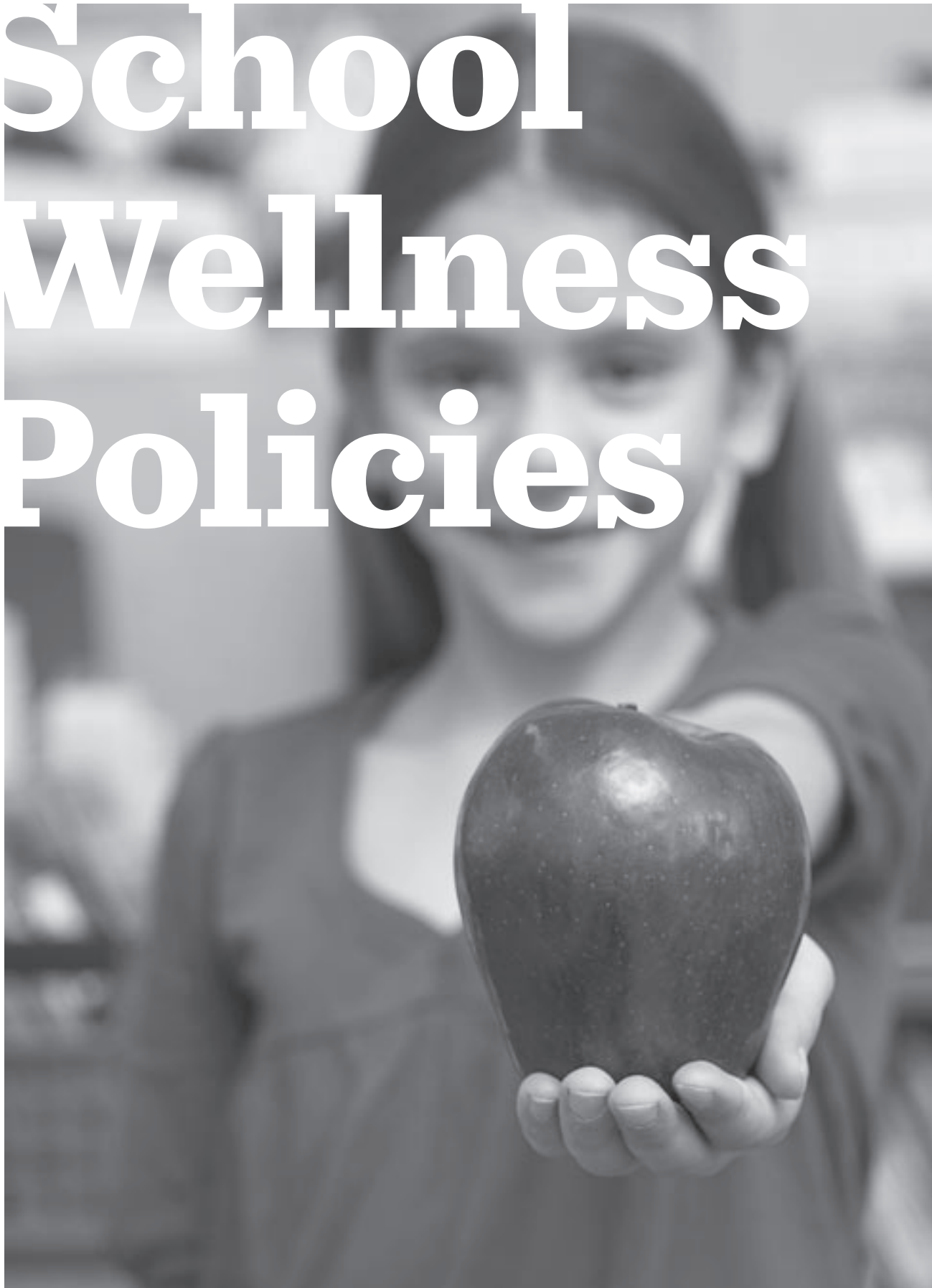
Implications and Opportunities

Findings from this survey indicate that many policies and practices in elementary schools are not consistent with evidence-based guidelines for daily physical activity. It is likely that stronger and more specific guidance from the federal wellness policy requirement would help schools and districts more effectively support regular physical activity.

For example, increasing the availability of high-quality physical education programming in elementary schools, such as providing at least 150 minutes of weekly physical education that includes moderate-to-vigorous physical activity, will help young students meet national recommendations and learn lifelong skills that contribute to healthy behavior. Encouraging schools to use fitness testing for goal-setting and monitoring student progress can help ensure that physical education programming is effective.

There also are opportunities to promote physical activity outside of physical education classes. Ensuring that all students—particularly those at predominantly Black and Latino schools—have adequate daily recess and other opportunities to be active during the school day will help more children to meet the USDHHS recommendation for at least 60 minutes of moderate-to-vigorous physical activity each day. Supporting Safe Routes to School programs and providing crossing guards and bike racks on campus may help increase active commuting.

School Wellness Policies





School Wellness Policies

At the beginning of the 2006–07 school year, school districts participating in the National School Lunch Program or other child nutrition programs were required by Congress to adopt and implement a wellness policy as part of the federal Child Nutrition and WIC Reauthorization Act of 2004. According to the Act, each wellness policy was required to include:

- *goals for nutrition education, physical activity and other school-based activities to promote student wellness;*
- *guidelines for foods and beverages sold or served outside of the school meal programs;*
- *guidelines for reimbursable school meals that meet the minimum federal school meal standards established by the U.S. Department of Agriculture (USDA);*
- *implementation plans; and*
- *involvement of parents, students, representatives of the school food authority, the school board, school administrators and the public in the development of the wellness policy.*

Strength and Implementation of the Wellness Policies

According to national and state-specific research, most school districts adopted a wellness policy as mandated by law, but the majority of the policies initially developed were weak, fragmented, and did not necessarily require schools to take action.^{357–362}

Bridging the Gap researchers conducted the largest, most comprehensive national study to date of district wellness policies during the 2006–07 and 2007–08 school years, which were the first two years following

the deadline for districts to adopt and implement a wellness policy. The majority of public elementary school students were enrolled in a district that had a wellness policy, increasing from 83 percent at the beginning of the 2006–07 school year to 96 percent at the beginning of the 2007–08 school year.³⁶³ Generally, there were not striking differences in the prevalence of specific policies covering elementary, middle and high school students; however, elementary school students were the most likely to be covered by stronger policies related to competitive foods and beverages.³⁶⁴

For many districts implementing the wellness policies was—and continues to be—a challenge. Several studies found that provisions for implementing wellness policies at the district and school level were quite weak.^{365–370} Limited resources, such as funding, time and labor, were cited as the primary barrier to implementing wellness policies at the school level. The Bridging the Gap review of wellness policies indicated that, at the beginning of the 2007–08 school year, only 5 percent of public elementary school students nationwide were enrolled in a district that addressed making resources available for implementation of its wellness policy.³⁷¹ Additionally, fewer than one-third of public elementary school students were enrolled in a district that required future policy review or required reporting on wellness policy compliance and/or implementation efforts.³⁷²

As part of our school survey, we assessed awareness and implementation of the provisions required by the federal wellness policy mandate. These are the same provisions that were examined in the July 2009 Bridging the Gap report on district wellness policies.



Key Findings: Practices in Elementary Schools

As part of our school survey, we asked administrators whether their school or school district had established a wellness policy. We also asked administrators to report on the extent to which their school had implemented each of the federally required wellness policy provisions, such as nutrition standards and physical activity goals.

We found that school-level practices pertaining to each of the specific wellness policy provisions differed according to whether the school and/or school district had a wellness policy in place. Thus, figures in this chapter present results separately for schools and/or school districts that had wellness policy and those that did not. For simplicity of presentation we refer to schools that were covered by a wellness policy as “schools with a wellness policy,” recognizing that such policies were developed at either the school level, district level or both.

Although results from our school-level study and the July 2009 Bridging the Gap district-level study are fairly consistent, there are slight differences which may be attributed to the following:

- *Data for the district-level study are based on researcher-coded analyses of publicly-available policies and data for our school-level study are based on information reported by school administrators.*
- *It is possible that district-level policies were not implemented in schools, that school administrators were not aware of district-level policies or that schools had gone beyond what was required by district-level policies.*

Figures in this chapter present results separately for public and private students and reflect the percentages of elementary school students nationwide who were impacted by each school practice. Most figures present both the 2006–07 and 2007–08 school years; however, sometimes the wording of our survey items

was revised in a way that reduced comparability from one year to the next. In such cases only data from the 2007–08 school year are presented. For many variables in this chapter we found minimal changes between the two years, thus we focus on the most recent year in our interpretations.

The descriptive statistics for both years of school- and district-level survey data that are discussed in all Bridging the Gap reports are available online at www.bridgingthegapresearch.org.

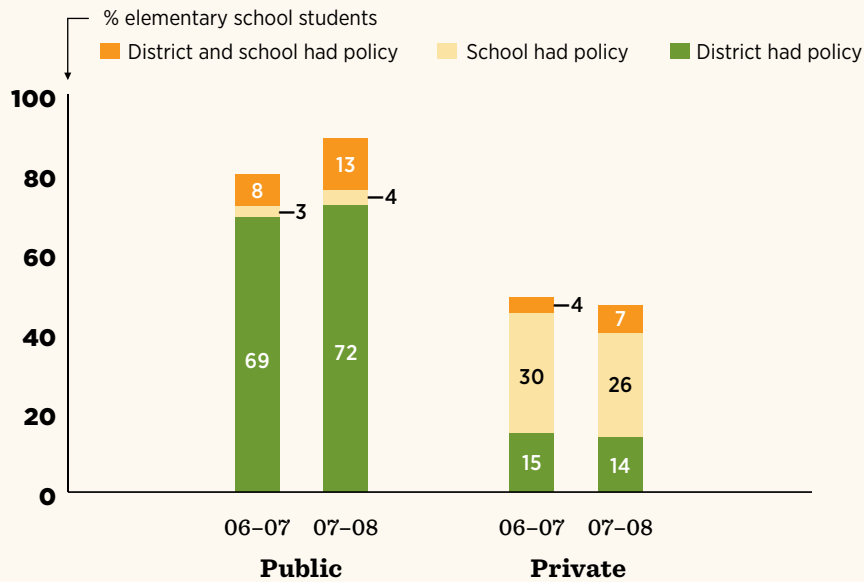
Prevalence of Wellness Policies

According to the Bridging the Gap review of district wellness policies, 96 percent of public elementary school students were enrolled in a district with a wellness policy at the beginning of the 2007-08 school year. This was an increase from 83 percent in 2006-07.³⁷³

As part of our school survey, we asked administrators whether their school and/or school district had established a wellness policy that addressed student nutrition and/or physical activity.

- For the 2007-08 school year, 89 percent of public elementary school students were enrolled in a school where the administrator indicated that the school had a wellness policy.
- During the same year, only 47 percent of private elementary school students were enrolled in a school where the administrator indicated that the school had a wellness policy. The difference between public and private schools is most likely due to low rates of participation in federal meal programs among private schools, which means that fewer private schools were required to have a wellness policy.
- Not surprisingly, the vast majority of wellness policies covering public elementary school students were developed at the district level, while policies covering private elementary school students were much more likely to be developed at the school level.

FIGURE 7.1 Prevalence and Source of Wellness Policies



Across both study years, most public elementary school students and approximately one-half of private elementary school students were enrolled in a school and/or district with a wellness policy.

Public differs from private at $p < .01$ or better, both years.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Student Exposure to Required Wellness Policy Provisions

Many of the following sections report on student exposure to each of the wellness policy provisions required as part of the Child Nutrition and WIC Reauthorization Act of 2004.

Nutrition Education

The Centers for Disease Control and Prevention (CDC) recognizes the key role that schools play in addressing childhood obesity and recommends a Coordinated School Health Program that includes health education as a key component.^{374,375} Further, according to a report by the Institute of Medicine (IOM), school-based health education helps to encourage physical activity and healthy eating among students.³⁷⁶ Interventions that promote significant changes in student behavior and weight outcomes generally involve more comprehensive multi-component interventions; however, some interventions have significantly reduced rates of obesity among students through classroom curriculum alone.³⁷⁷

The CDC's School Health Policies and Programs Study 2006 (SHPPS 2006)³⁷⁸ found that 66 percent of elementary schools had adopted health education goals based on the National Health Education Standards, which include objectives such as practicing healthy behaviors, avoiding health risks and understanding how school and community environments can promote health.³⁷⁹

Although middle and high schools provide health education through topic-specific courses, health education at the elementary level typically occurs as part of the curriculum for the entire grade. SHPPS 2006 found that 85 percent of elementary schools required students to be taught about nutrition and dietary behavior in at least some courses or grades. While many schools are addressing these topics, they are not covering them in detail. SHPPS 2006 found that elementary schools dedicated a median of only 3.4 hours of total instruction per year to nutrition education.³⁸⁰

NUTRITION EDUCATION: GOALS

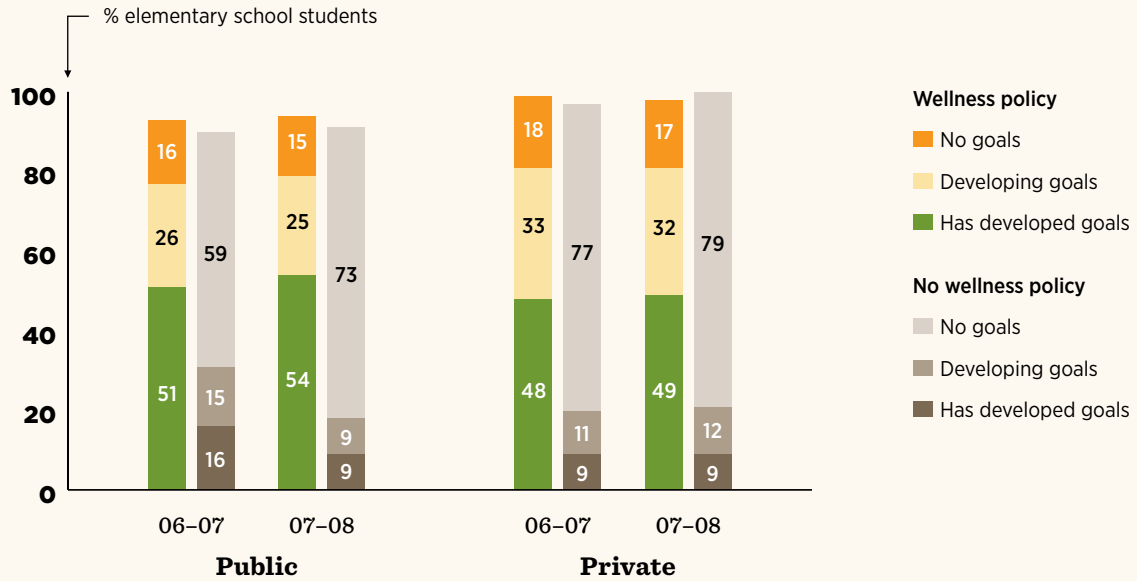
The Child Nutrition and WIC Reauthorization Act of 2004 required that wellness policies include goals for nutrition education.

Results from the Bridging the Gap review of district wellness policies indicated that 92 percent of public elementary school students nationwide were enrolled in a school district with a wellness policy that had definitive nutrition education goals for the 2007–08 school year. This was an increase from 79 percent in 2006–07. However, the goals were quite inconsistent. Many students were enrolled in a district with a wellness policy that only suggested a nutrition education curriculum, while others were enrolled in a district that did not define or indicate whether nutrition education was a component of the health education curriculum. Approximately one-half of public elementary school students were enrolled in a district with a wellness policy that did not address integrating nutrition education into core subjects during the 2006–07 and 2007–08 school years.³⁸¹

As part of our school survey, we asked administrators whether their school or school district had developed—or was currently developing—goals for nutrition education. Results are presented separately for schools with a wellness policy and those without.

- The prevalence of students covered by school or district goals for nutrition education was fairly stable from the 2006–07 to the 2007–08 school year. This was true for both public and private elementary school students.
- During both years, public and private elementary school students were significantly more likely to be enrolled in a school with nutrition education goals if the school had a wellness policy in place.
 - Among schools that had a wellness policy for the 2007–08 school year, 54 percent of public elementary school students were enrolled in a school that had developed nutrition education goals and another 25 percent were enrolled at a school that was in the process of developing goals.
 - The percentages were significantly lower if the school had no wellness policy.
 - Among schools that did not have a wellness policy, only 9 percent of public elementary school students were enrolled in a school that had developed nutrition education goals and another 9 percent were enrolled at a school that was in the process of developing goals.
 - Findings among private elementary school students were very similar, and also varied markedly based on whether the school had a wellness policy.

FIGURE 7.2 Development of Goals for Nutrition Education, by Wellness Policy Status



Wellness policy differs from no policy at $p < .01$ or better for public and private, both years.

Numbers do not sum to 100 because "don't know" responses are not shown.

Information reflects goals developed at the school and/or district level.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Having a wellness policy in place greatly increased the likelihood of students being covered by goals for nutrition education. This was true for both public and private elementary school students.

NUTRITION EDUCATION: FORMAL CLASSROOM INSTRUCTION

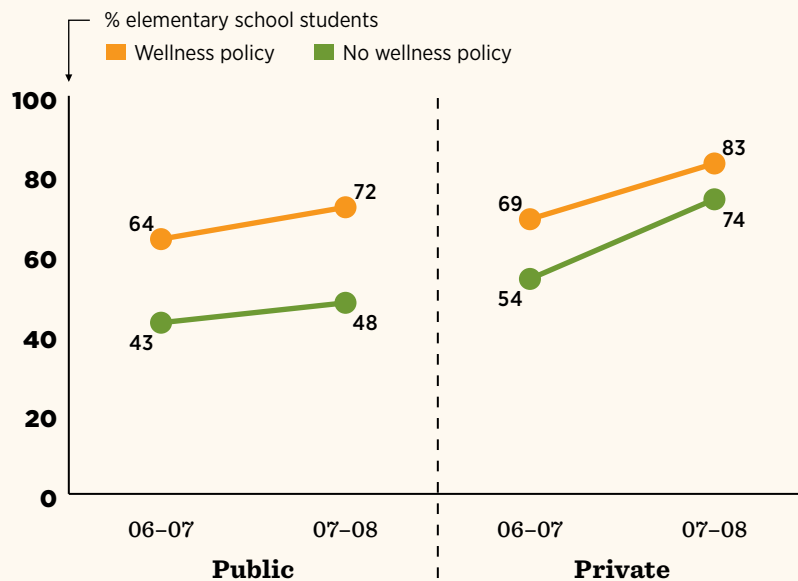
Although the federal wellness policy mandate did not require formal classroom instruction on nutrition education, classroom-based education is an important strategy for teaching children and adolescents about healthy eating. As such, we included items to assess this as part of our survey. National data indicate inconsistency in how nutrition education is taught in elementary schools, and show that some schools lack such programs altogether.³⁸²

Results from the Bridging the Gap review of district wellness policies found that at the beginning of the 2007–08 school year, only 38 percent of public elementary school students were enrolled in a district that had a definitive nutrition education curriculum. An additional 34 percent were enrolled in a district that suggested such a curriculum or only made it available to selected grade levels. This was an increase from 35 percent and 31 percent, respectively, in 2006–07. In many cases where districts did not have a nutrition education curriculum, they followed a curriculum developed by the state.³⁸³

As part of our school survey, we asked administrators whether their school offered formal classroom instruction on nutrition for elementary school students. Results are presented separately for schools with a wellness policy and those without.

- Formal classroom instruction on nutrition increased from the 2006–07 to the 2007–08 school year for public and private elementary school students, regardless of the school’s wellness policy status.
- During the 2006–07 school year, public and private elementary school students were significantly more likely to be enrolled in a school that offered formal classroom instruction on nutrition if the school had a wellness policy in place.
 - Among private elementary school students, these differences were no longer significant by the 2007–08 school year, due to a larger increase in formal classroom education on nutrition for students enrolled in a school that had no wellness policy.
 - Among public elementary school students in the 2007–08 school year, 72 percent who were enrolled in a school with a wellness policy had formal classroom instruction on nutrition. The same was true for only 48 percent of students who were enrolled in a school that had no wellness policy.

FIGURE 7.3 Offered Formal Classroom Instruction on Nutrition, by Wellness Policy Status



Wellness policy differs from no policy at $p < .01$ or better for public in 2006-07.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Public elementary school students were more likely to be offered formal classroom instruction on nutrition education if the school had a wellness policy in place. In 2007-08, nearly three-quarters of these students attended a school that offered such classes.

Physical Activity

The federal mandate required that wellness policies include goals for physical activity during the school day, but did not require schools to create specific guidelines for school-based physical activity. Not surprisingly, there was great variability in school practices regarding physical activity.

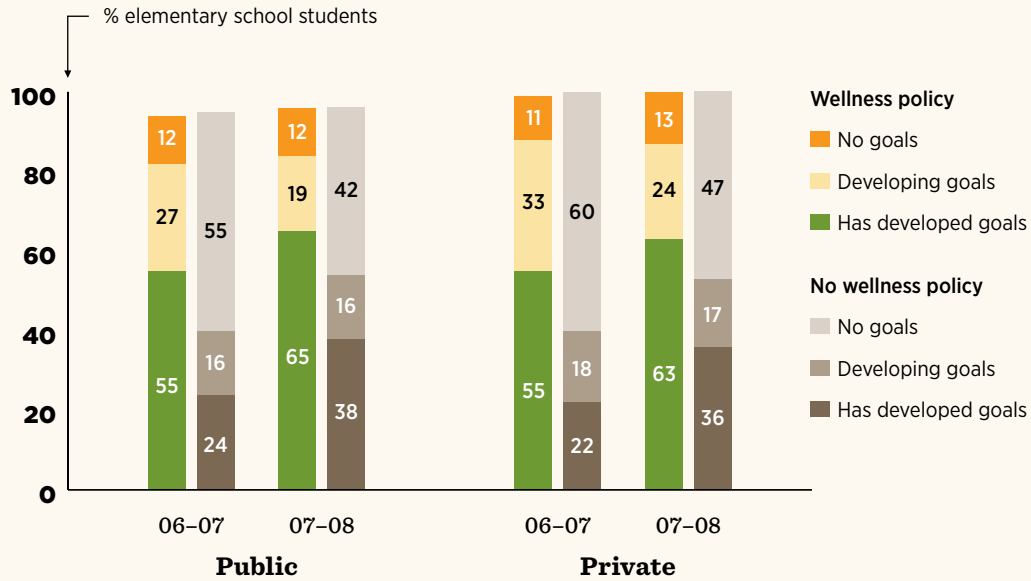
PHYSICAL ACTIVITY: GOALS

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, 89 percent of public elementary school students nationwide were enrolled in a school district with a wellness policy that had definitive physical activity goals, which was a substantial increase from 76 percent in 2006–07. However, the same study found that in 2007–08, only 10 percent of elementary school students were enrolled in a public school district with a wellness policy that required physical activity breaks throughout the school day, relatively unchanged from 9 percent in 2006–07.³⁸⁴

As part of our school survey, we asked administrators whether their school or school district had developed—or was currently developing—goals for physical activity. Results are presented separately for schools with a wellness policy and those without.

- The prevalence of developed goals for physical activity increased from the 2006–07 to the 2007–08 school year, even among public and private elementary school students who attended a school with no wellness policy in place.
- Public and private elementary school students were significantly more likely to be enrolled in a school with physical activity goals if the school had a wellness policy in place.
 - For the 2007–08 school year, among schools that had a wellness policy, 65 percent of public elementary school students were enrolled in a school that had physical activity goals and another 25 percent were in the process of developing goals.
 - The percentages were significantly lower if a school had no wellness policy.
 - Among schools that did not have a wellness policy, only 38 percent of public elementary school students were enrolled in a school that had physical activity goals and another 16 percent were enrolled in a school that was in the process of developing goals.
 - Findings among private elementary school students were very similar, and also varied markedly based on whether the school had a wellness policy.

FIGURE 7.4 Development of Goals for Physical Activity, by Wellness Policy Status



Wellness policy differs from no policy at $p < .01$ or better for public and private, both years.

Numbers do not sum to 100 because "don't know" responses are not shown.

Information reflects goals developed at the school and/or district level.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

Having a wellness policy in place greatly increased the likelihood of being covered by goals for physical activity among both public and private elementary school students. Among schools with a wellness policy, there was an increase in the percentage that had developed goals and a decrease in the percentage that were developing goals across the two-year period. This may indicate that schools are making progress in setting goals for physical activity.



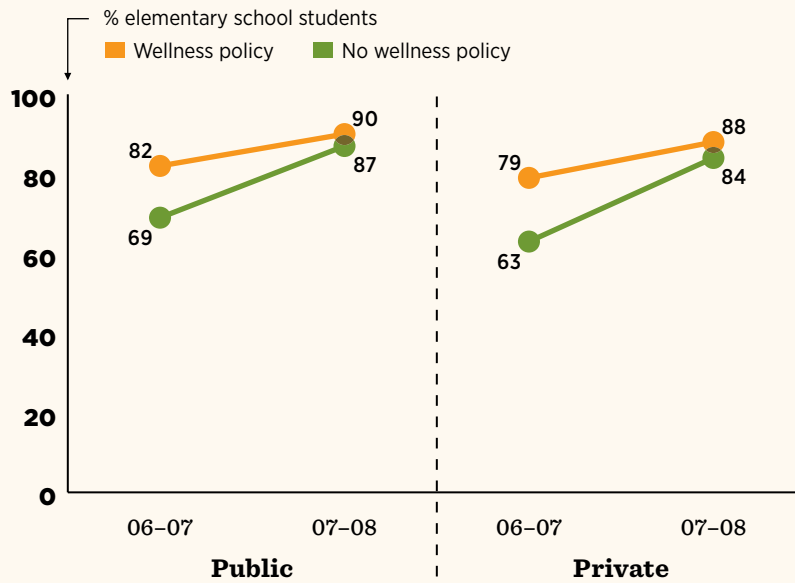
PHYSICAL ACTIVITY: FORMAL CLASSROOM INSTRUCTION

SHPPS 2006 found that 80 percent of elementary schools required students to be taught about physical activity and fitness, yet schools dedicated a median of only 2.4 hours of total instruction time per year to these topics.³⁸⁵

As part of our school survey, we asked administrators whether their school or school district offered formal classroom instruction on physical activity, exercise and health-related fitness for elementary school students. Results are presented separately for schools with a wellness policy and those without.

- Formal classroom instruction on physical activity increased from the 2006–07 to the 2007–08 school year for public and private elementary school students, regardless of the school’s wellness policy status.
- For the 2006–07 school year, public and private elementary school students were significantly more likely to be enrolled in a school that offered formal classroom instruction on physical activity if the school had a wellness policy in place.
- However, by the 2007–08 school year, these differences were no longer significant, due to a larger increase in formal classroom education for public and private elementary school students who were enrolled in a school without a wellness policy.

FIGURE 7.5 Offered Formal Classroom Instruction on Physical Activity, Exercise and Health-Related Fitness, by Wellness Policy Status



Wellness policy differs from no policy at $p < .01$ or better for public and private for 2006-07 only.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

By 2007-08, most public and private elementary school students were enrolled in a school with formal classroom instruction on physical activity, regardless of whether the school had a wellness policy.

Guidelines for Reimbursable School Meals

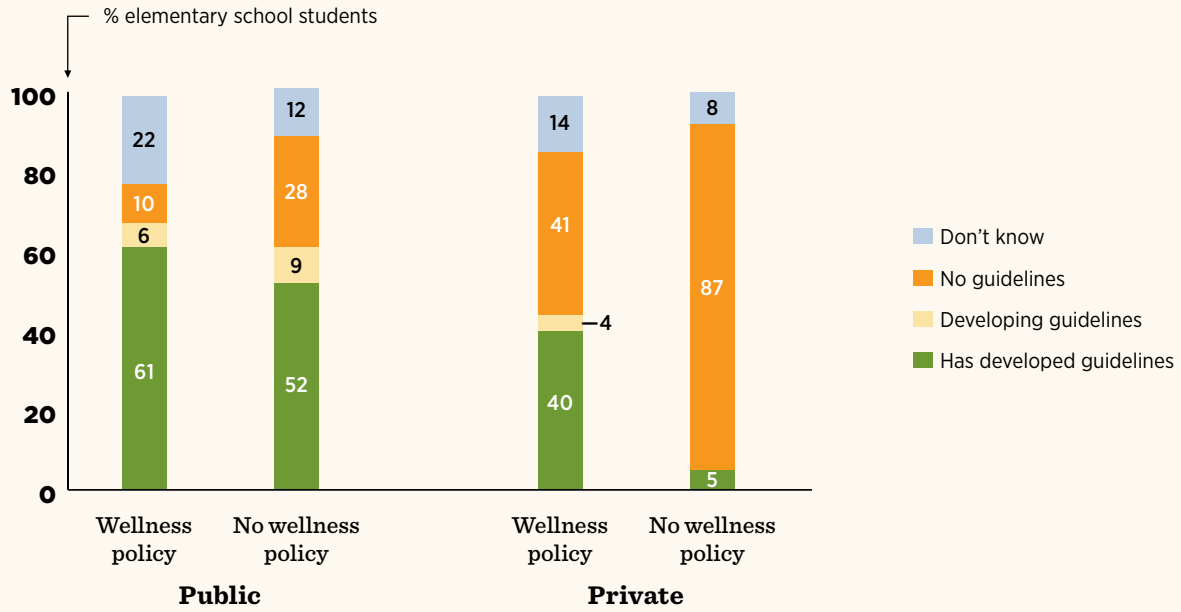
According to the federal mandate, each wellness policy was required to include nutrition guidelines for reimbursable school meals that meet the minimum federal standards set by the USDA. It is important to note that the USDA school meal standards are based on the outdated 1995 Dietary Guidelines.³⁸⁶⁻³⁸⁸ The 2009 IOM school meals report³⁸⁹ recommended that the USDA school meal standards be updated to reflect the 2005 Dietary Guidelines, which are based on the most current nutrition science.³⁹⁰ The USDA is considering revisions to improve the federal meal standards.

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, 87 percent of public elementary school students were enrolled in a district with a wellness policy that met the existing, but outdated, USDA standards. This was a substantial increase from 75 percent in 2006–07. Only 18 percent of public elementary school students were enrolled in a district with a strong wellness policy that required the school meal offerings to exceed the 2005 Dietary Guidelines (e.g., requiring that a specific amount of fruits and vegetables be offered daily, limiting milk options to 1% or skim or requiring that at least half of grains offered are whole grains), which was an increase from 10 percent in 2006–07.³⁹¹

As part of our 2007–08 school survey only, we asked administrators whether their school or school district had developed—or was currently developing—explicit plans, goals or guidelines for reimbursable school meals. We did not ask respondents to indicate whether their guidelines for meals were consistent with the 1995 or 2005 Dietary Guidelines. Results are presented separately for schools with a wellness policy and those without.

- During the 2007–08 school year, both public and private elementary school students were significantly more likely to be enrolled in a school that had developed nutritional guidelines for school meals if the school had a wellness policy in place.
 - Among public elementary school students, 61 percent who were enrolled in a school with a wellness policy had nutritional guidelines for school meals, compared with 52 percent who were enrolled in a school with no wellness policy.
 - The impact of a wellness policy was even more striking for private elementary school students—among those enrolled in a school with a wellness policy, 40 percent had nutritional guidelines for school meals, which was eight times greater than the percentage who had such guidelines at a school with no wellness policy.
- A substantial percentage of public and private elementary school students had an administrator who was unsure whether the wellness policy addressed school meals. This suggests that many school administrators were unaware of important aspects of their school or school district wellness policy during the 2007–08 school year.

FIGURE 7.6 Development of Guidelines for Reimbursable School Meals, by Wellness Policy Status



Wellness policy differs from no policy at $p < .01$ or better for private.

Information reflects guidelines developed at the school and/or district level.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During the 2007–08 school year, having a wellness policy in place greatly increased the likelihood of having nutritional guidelines for school meals among both public and private elementary school students.

Nutrition Guidelines for Competitive Foods and Beverages

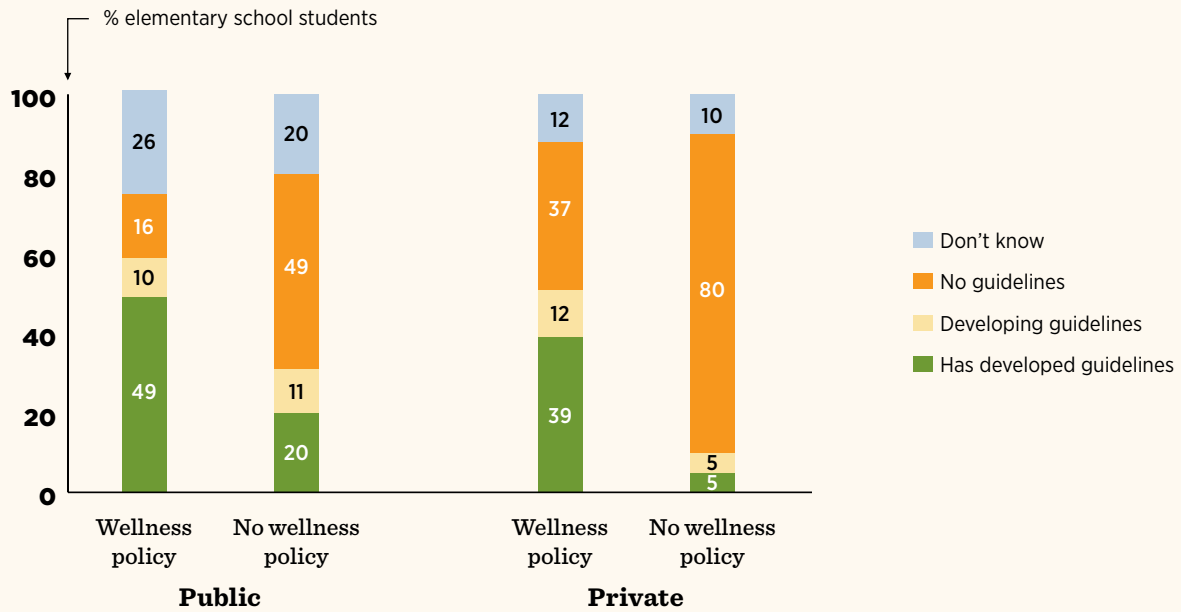
According to the federal mandate, district wellness policies were required to include nutritional guidelines for all foods and beverages sold outside of the reimbursable school meal program. These competitive foods and beverages include items sold through à la carte cafeteria sales, vending machines, school stores, snack bars and fund-raisers, as well as items served during classroom parties or offered as rewards for students.

Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, only 65 percent of public elementary school students were enrolled in a district with a strong wellness policy that definitively required guidelines for competitive food and beverage sales, up from 55 percent in 2006–07.³⁹²

As part of our 2007–08 school survey only, we asked administrators whether their school or school district had developed—or was currently developing—explicit plans, goals or guidelines for non-reimbursable (competitive) foods and beverages. Results are presented separately for schools with a wellness policy and those without.

- During the 2007–08 school year, both public and private elementary school students were significantly more likely to be enrolled in a school with nutritional guidelines for competitive foods and beverages if the school had a wellness policy in place. This difference was most pronounced for private students.
 - Among public elementary school students who were enrolled in a school with a wellness policy, 49 percent had nutritional guidelines for competitive foods and beverages, compared with only 20 percent of those enrolled in a school with no wellness policy.
 - The impact of a wellness policy was even more striking for private elementary school students—among those enrolled in a school with a wellness policy, 39 percent had nutritional guidelines for competitive foods and beverages, which was eight times greater than the percentage who had such guidelines and no wellness policy.
- A substantial percentage of public and private elementary school students had an administrator who was unsure whether the school or school district wellness policy addressed competitive foods and beverages. This suggests that many school administrators were unaware of important aspects of their school wellness policy during the 2007–08 school year.

FIGURE 7.7 Development of Nutritional Guidelines for Competitive Foods and Beverages, by Wellness Policy Status, 2007–08



Wellness policy differs from no policy at $p < .01$ or better for private.

Information reflects guidelines developed at the school and/or district level.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During the 2007–08 school year, having a wellness policy in place greatly increased the likelihood of having nutritional guidelines for competitive foods and beverages among both public and private elementary school students.

Wellness Policy Implementation

The federal mandate required each wellness policy to include a plan for measuring implementation of the policy itself and for designating at least one person to ensure that the school and/or school district meets the requirements of the policy provisions. The following sections report on efforts to implement and evaluate wellness policy provisions. Because many districts relied on existing or newly formed health advisory councils to help support their wellness policy implementation efforts, we also report on the presence of such councils at the school and district level.

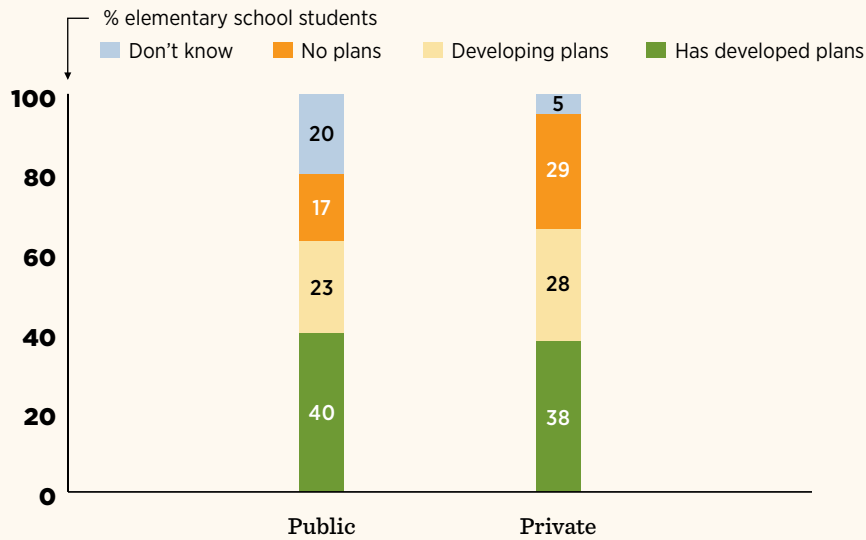
Results from the Bridging the Gap review of district wellness policies indicated that at the beginning of the 2007–08 school year, only 10 percent of public elementary school students were enrolled in a district that clearly included evaluation plans in their wellness policy. This was relatively unchanged from 9 percent in 2006–07. About three-quarters (78%) of students were enrolled in a district with an implementation plan that designated one or more persons responsible for ensuring implementation at the school or district level, which was a substantial increase from 65 percent in 2006–07.³⁹³

PLANS FOR IMPLEMENTATION AND EVALUATION

As part of our 2007–08 school survey only, we asked administrators to indicate whether their school or school district had developed—or was currently developing—plans for evaluation and implementation of wellness policy provisions. Results are presented only for schools with a wellness policy in place.

- During the 2007–08 school year, approximately 40 percent of public and private elementary school students were enrolled in a school that had a wellness policy and had made plans for implementing and evaluating that policy.

FIGURE 7.8 Development of Plans for Evaluation and Implementation of Student Wellness Policies, 2007–08



Note: Only includes schools with a wellness policy.

Information reflects plans developed at the school and/or district level.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

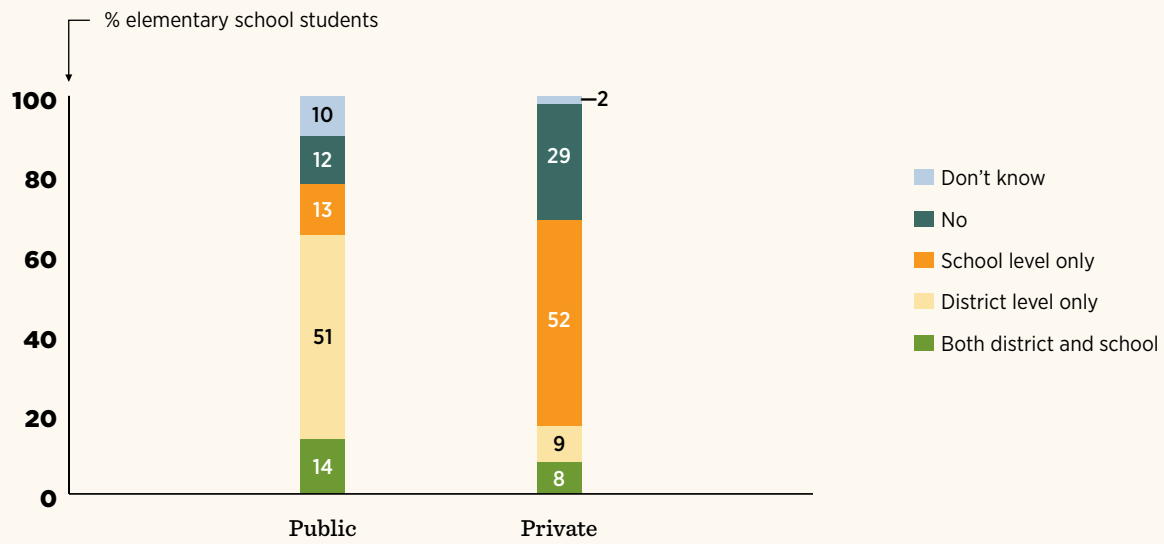
Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

During the 2007–08 school year, only 40 percent of public elementary school students attended a school that had a wellness policy and had made plans for implementing and evaluating the policy.

We asked administrators to indicate whether their school or school district had designated one or more persons responsible for implementation of the wellness policy and whether personnel were at the school level, district level or both. Results are presented for 2007–08, and only for schools with a wellness policy in place.

- During the 2007–08 school year, more than three-quarters of public elementary school students and more than two-thirds of private elementary school students were enrolled in a school that had designated personnel responsible for ensuring implementation of the wellness policy. These personnel were primarily at the district level for public students and at the school level for private students.

FIGURE 7.9 Designated Personnel Responsible for Wellness Policy Implementation, 2007–08



Note: Only includes schools with a wellness policy.

Due to rounding, some bars may not sum to 100. Exact numbers are available at www.bridgingthegapresearch.org.

Source: Bridging the Gap, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, 2010.

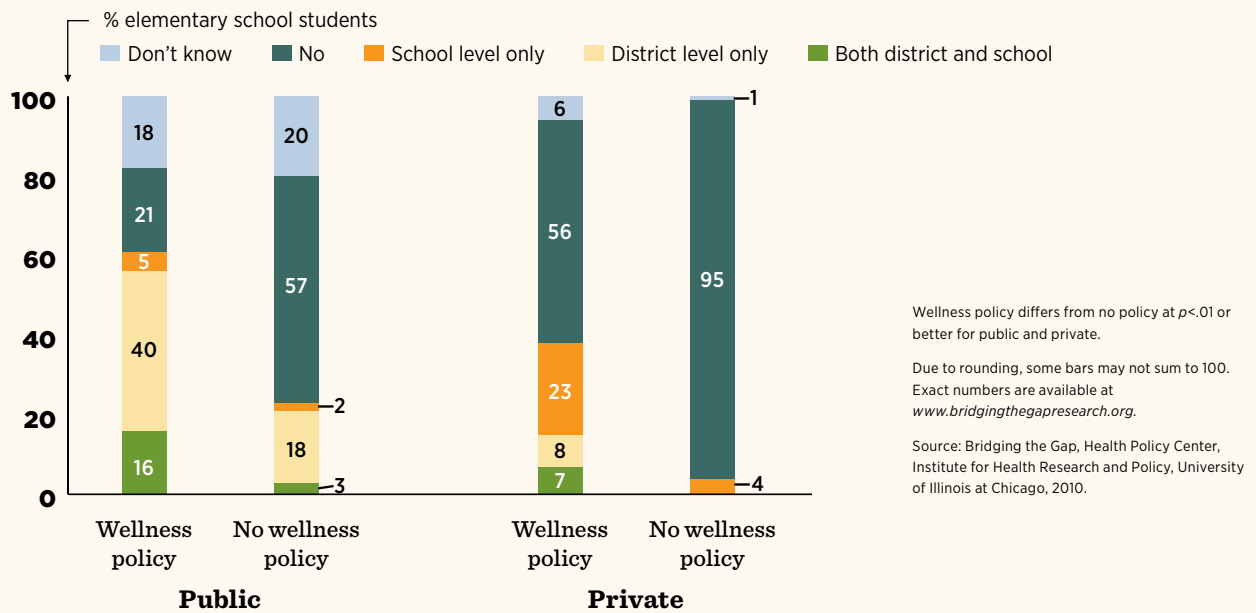
HEALTH ADVISORY COUNCILS

Results from the Bridging the Gap review of school district wellness policies indicated that at the beginning of the 2007–08 school year, 49 percent of public elementary school students were enrolled in a district that had an ongoing health advisory council, up from 38 percent in 2006–07.³⁹⁴

As part of our school survey, we asked administrators to indicate whether their school and/or school district had an ongoing health advisory council or an advisory group to make recommendations regarding nutrition and/or physical activity. Results are presented only for 2007–08, and separately for schools with a wellness policy and those without.

- During the 2007–08 school year, both public and private elementary school students were significantly more likely to be enrolled in a school with a health advisory council if the school had a wellness policy in place.
 - Sixty-one percent of public elementary school students and 38 percent of private elementary school students were enrolled in a school that had had an ongoing health advisory council at the school and/or school district level. These councils were primarily at the district level for public students and at the school level for private students.
- A substantial percentage of public elementary school students had a school administrator who was unsure whether the school and/or school district had a health advisory council.

FIGURE 7.10 Established a Health Advisory Council, by Wellness Policy Status, 2007–08



During the 2007–08 school year, having a wellness policy greatly increased the likelihood of having a health advisory council among both public and private elementary school students. Yet, approximately 40 percent of students who were enrolled in a school with a wellness policy had no health advisory council or had an administrator who did not know whether the school had a health advisory council.

TABLE 7.1 Percentage of Public Elementary School Students Exposed to Selected Policies and Practices, School Years 2006–07 and 2007–08

The table below summarizes key findings among public elementary school students that are particularly important for informing wide-reaching policies that will impact district wellness policies. The table also highlights changes from the 2006–07 to the 2007–08 school year, which were the first two years following the federal wellness policy mandate. These data can be used to monitor school-level implementation of the district wellness policies and assess the nation's progress in creating healthier school environments to help reverse the childhood obesity epidemic.

Wellness Policies	2006–07	2007–08
District or school had a wellness policy in place	80%	89%
District or school had goals for nutrition education*	51%	54%
District or school had goals for physical activity*	55%	65%
District or school had guidelines for reimbursable school meals*	N/A	61%
District or school had guidelines for competitive foods*	N/A	49%
District or school had plans for evaluation and implementation*	N/A	40%
District or school had designated staff to oversee implementation*	N/A	78%
District or school had a health advisory council in place*	N/A	61%

*Data presented only for schools where a wellness policy was in place at the district and/or school level. Exact numbers are available at www.bridgingthegapresearch.org.

Conclusions

By the 2007–08 school year, most public and nearly one-half of private elementary school students were enrolled in a school that had a wellness policy in place at the school and/or district level. The difference between public and private schools is not surprising, given that more public school districts participate in federal meal programs and were required to implement a wellness policy at the beginning of the 2006–07 school year.

Overall, the presence of a wellness policy had a significant impact—it increased the likelihood of having goals for nutrition education and physical activity; nutritional guidelines for school meals and for competitive foods and beverages; and an advisory council. Yet we also found that many elementary schools have not addressed or implemented all of the wellness policy provisions. As such, there are strong opportunities for improving the impact, quality and strength of wellness policies. For example, a substantial percentage of public and private school administrators were unaware of important aspects of their school wellness policy, such as provisions related to school meals and competitive foods and beverages. And in most cases, schools and/or districts had not established plans for evaluating the implementation of wellness policies, nor did they have an ongoing health or wellness advisory council to assist with implementation of the policies.

Implications and Opportunities

Our data show that there is great variability in how schools have approached implementation and evaluation of wellness policies. For many schools, it will be difficult to measure the effectiveness of the new provisions or determine their impact on student nutrition and physical activity. Yet understanding how these policies facilitate healthy changes and where they fall short will be particularly important as Congress considers reauthorization of the child nutrition programs during 2010 and looks for opportunities to make schools healthier for students of all ages.

Lack of money, staff time and support from district administrators have been noted as key barriers for implementation of district wellness policies. As such, developing mechanisms to financially support school-level implementation of wellness policies will be an important consideration during the federal reauthorization process. It also will be important to monitor school-level implementation of district-level wellness policies to help decision-makers at all levels track progress and evaluate the impact of both the federal mandate and specific wellness policy provisions.

Appendix

This appendix provides information on the survey development, sampling design, weighting, recruitment, data processing and analysis approach for this study.

Survey Development

Development of the elementary school survey began in late 2006 with a review of similar existing instruments and development of original items to assess key topics relevant to childhood obesity, including many aspects of the school nutrition and physical activity environments. The survey included items to assess components of the federal wellness policy mandate, including guidelines for nutrition education, school meals, competitive foods and beverages, physical activity, and wellness policy development and implementation.^a

After developing a preliminary version of our survey, we sought and received feedback from several experts on nutrition, physical activity and childhood obesity. To improve clarity and respondent comprehension, we conducted cognitive interviews with our target respondents (elementary school principals), and revised the survey accordingly. In the second year of the study we made minor modifications to several survey items based on additional feedback and results of the first year survey data.

Sampling

The sampling strategy used a multi-stage probability proportional to size (PPS) design, with districts selected at the first stage and schools selected at the second stage. The overall sampling goal was to develop three separate but connected samples, each of which would be nationally representative. The data gathered from each of three samples form the basis for each monograph in this companion series, including the current report which is the second in the series. The three nationally representative samples were:

1. *a sample of public, K–12 school districts;*
2. *a sample of public elementary schools (with grade 3) from within those districts; and*
3. *a sample of public secondary schools (with grade 8, 10 or 12) from within those districts.*

In addition, we identified a separate nationally representative sample of private elementary schools to provide a complete picture of the school environment experienced by elementary school students in the United States. In 2006, 13 percent of elementary school students attended private schools,³⁹⁶ and thus represent a substantial portion of all elementary school students.

^a Many of our survey items assess topics identical to those included in the wellness policy coding scheme used in the July 2009 Bridging the Gap report,³⁹⁵ and wherever possible throughout this report we highlight the relevant district-level findings.

The public school sampling frame was developed using the National Center for Education Statistics (NCES) Common Core of Data (CCD) for the 2004–05 school year. The first stage of sampling was at the district level; thereafter, elementary schools were selected from within those districts based on probability proportional to size, with 3rd-grade enrollment as the measure of size. To be eligible, public elementary schools were required to be located in one of the 48 coterminous states, to have a 3rd-grade with enrollment of at least 20 students and to be a regular school, as opposed to a vocational school, home school coordinating office or alternative school.

The private school sampling frame was developed using the National Center for Education Statistics (NCES) Private School Survey (PSS) for the 2003–04 school year. To be eligible, private elementary schools were required to be located in one of the 48 coterminous states and have a 3rd-grade enrollment of at least 20 students. The one-stage selection procedure used probability proportional to size, with 3rd-grade enrollment as the measure of size.

A replacement school was selected for each school in our first year sample, and schools that did not respond in the first year of the study (2006–07 school year) were replaced for the second year of the study (2007–08 school year).

For both years, our initial sample included 1,070 public elementary schools and 400 private elementary schools. Each year we screened the sample with preliminary phone calls to identify schools that had closed or were otherwise ineligible (e.g., those that were actually a high school, not an elementary school). The total number of eligible schools was 1,450 for the 2006–07 school year and 1,457 for the 2007–08 school year.

Recruitment and Participation

The recruitment process was the same for both years of surveying. We telephoned each school to verify the name of the principal and mailing address, then mailed a personalized invitation letter and survey to the principal at each school. We offered a \$100 payment for responding, to be paid either to the respondent or to the school. We followed up with multiple reminder calls, e-mails and letters. Instructions requested that the principal or other school administrator complete Part 1 of the survey, which included items about school characteristics, physical activity practices, various competitive food and beverage practices, and development and implementation of wellness policies.

A second, and separate, part of the survey asked for details about the specific foods and beverages offered during school lunches and in competitive venues. We suggested that Part 2 be completed by a food service manager, cook or other staff with knowledge of food service practices. In most schools the survey was completed by a combination of multiple staff members (e.g., principals, food service managers, teachers, nurses). At a majority of schools the principal or assistant principal was involved in completing Part 1 of the survey (74% in 2006–07; 87% in 2007–08). In approximately one-quarter of schools (27% in 2006–07; 22% in 2007–08), Part 2 was completed by food service personnel, but in most schools (64% in 2006–07; 59% in 2007–08) it was completed by a principal. For simplicity throughout this report we refer to respondents as “administrators.”

For the 2006–07 school year, recruitment began in April and ran primarily during the spring and summer. We left the recruitment period open through October, but received very few additional surveys during the fall months. For the 2007–08 school year, recruitment began in February and ran primarily during the spring and summer. We left the recruitment period open through September but, again, we received very few additional surveys during the fall months.

For the 2006–07 school year, we received responses from 837 of the 1,450 eligible schools (578 public schools and 259 private schools), yielding a response rate of 54.6 percent for public schools, 66.2 percent for private schools, and 57.7 percent overall. For the 2007–08 school year, we received responses from 1,084 of the 1,457 eligible schools (748 public and 336 private), yielding a response rate of 70.6 percent for public schools, 84.4 percent for private schools, and 74.4 percent overall.

The design of the study involved selecting one replacement school for each original selection. In 2007–08 we replaced 633 schools that did not respond in 2006–07 or were determined to be ineligible in 2006–07. Of these replacements, 12 schools were ineligible, and one of the schools that responded for 2006–07 had closed. Therefore, our total for recruitment in 2007–08 was 1,457 schools, including 836 returning schools and 621 replacement schools. For the 2007–08 school year, we received responses from 703 of the 836 returning schools (84.1% response rate), and 381 of the 621 replacement schools (61.4% response rate). Thus, there was considerable overlap between the 2006–07 and 2007–08 sample; among the 1,084 schools that responded in 2007–08, 65 percent (703 schools) had also participated in the prior year.

Data Processing and Analysis

Once returned in the mail, surveys were individually coded and entered into a SPSS data entry module that was custom-programmed for the project. To ensure data quality, each survey was double entered. During the second round of entry, our data entry software provided automated detection of discrepancies, allowing for immediate reconciliation of inaccurate first-round entries.

All data were analyzed with the survey command in STATA 10.0, and clustered on school district to account for the increased similarity among schools from within the same district. Each private school was considered

to come from a unique district. There was considerable clustering of public schools within districts. In 2006–07, we received responses from 578 public schools, which came from within 396 school districts. A majority of these districts (67%) supplied only one responding school, 27 percent supplied two schools, and 8 percent supplied three or more schools. In 2007–08, we received responses from 748 public schools, which came from within 469 school districts. A majority of these districts (59%) supplied only one responding school, 26 percent supplied two schools, and 14 percent supplied three or more schools.

Non-response-adjusted data weights were calculated, which adjusted for differential patterns of responding by schools with different demographic characteristics (e.g., smaller schools were significantly more likely to respond than were larger schools). Weights were developed to allow for inference to all elementary students in the United States. These data weights are used throughout the current report and in materials available on the Bridging the Gap Web site at www.bridgingthegapresearch.org.

Because elementary schools vary in grade composition (e.g., pre-K–3, grades 2–5, K–6), and all schools we surveyed had at least one 3rd-grade class, we selected grade 3 as a proxy for sampling and weighting our data. We used each school's 3rd-grade student population to develop weights that reflect the percentage of students nationwide who were impacted by the practices referenced in our survey. Survey items asked about practices relevant to students in kindergarten to grade 5 at the school. Ultimately, our results describe school-level practices that ultimately impacted 19.7 million public students and 1.5 million private students in kindergarten to grade 5 during the 2006-07 school year, and 19.1 million public students and 1.5 million private students in those grades during the 2007-08 school year.

Some analyses in this report, and tables available at www.bridgingthegapresearch.org, provide subgroup analyses by school race and ethnic composition and

by socioeconomic status (SES) within each school. These school characteristics were gathered from publicly available datasets from the NCES, for both public and private schools. Following the approach used by Bridging the Gap researchers in prior analyses of secondary school survey data,³⁹⁷ we classified schools into four mutually-exclusive and exhaustive subgroups according to the proportion of students who were White, Black or Latino. Each school was classified as: majority White (>66% White students), majority Black (>50% Black students), majority Latino (>50% Latino), or diverse (no clear majority of White, Black or Latino students).

For public schools only, the NCES datasets provided information on the percentage of students eligible for free and reduced-price lunch (FRL). We used the percentage of students eligible for FRL as a proxy for SES within each school. FRL eligibility is based on verified household income—children whose families have a household income less than 185 percent of the federal poverty guidelines are eligible for reduced-price meals and children whose families have a household income less than 130 percent are eligible for free meals. Homeless children and those whose families receive assistance through certain programs such as the Food Stamp Program or Temporary Assistance to Needy Families (TANF) are automatically eligible for free meals.³⁹⁸ FRL groupings were computed as tertiles based on each school year's distribution, but groupings were similar across years. The categories were defined as: low SES ($\geq 62\%$ of students eligible for FRL for 2006–07; $\geq 59\%$ for 2007–08); medium SES (32% to 61% FRL for 2006–07; 32% to 58% for 2007–08); and high SES ($\leq 31\%$ FRL for both years).

Given the large amount of data yielded by our survey, we presented only a selected set of items in this report. Descriptive statistics for all survey variables are available at www.bridgingthegapresearch.org.

Because we used a variety of response metrics for survey items, we explain how survey items were worded and how responses were measured for each set of results. Some analyses used composite variables that were created by combining multiple survey items (e.g., examining availability of bottled water in all competitive venues) or created by reducing responses for comparison with certain standards (e.g., examining whether physical education time met recommended levels). Throughout the report we provide details regarding these analytic decisions where appropriate. Copies of the original survey instruments are available at www.bridgingthegapresearch.org.



References

- Ogden CL, Carroll MD, Curtin LR, et al. "Prevalence of Overweight and Obesity in the United States, 1999–2004." *Journal of the American Medical Association*, 295(13): 1549–1555, 2006.
- Ogden CL, Carroll MD and Flegal KM. "High Body Mass Index for Age Among U.S. Children and Adolescents, 2003–2006." *Journal of the American Medical Association*, 299(20): 2401–2405, 2008.
- Ogden CL, Carroll MD, Curtin LR, et al. "Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007–2008." *Journal of the American Medical Association*, 303(3): 242–249, 2010.
- Institute of Medicine Committee on Prevention of Obesity in Children and Youth. *Childhood Obesity: Health in the Balance*. Koplan, JP, Liverman, CT and Kraak, VI (eds). Washington, DC: National Academy of Sciences, 2005.
- Barlow SE. "Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report." *Pediatrics*, 120(Suppl 4): S164–S192, 2007.
- Davis MM, Gance-Cleveland B, Hassink S, et al. "Recommendations for the Prevention of Childhood Obesity." *Pediatrics*, 120(Suppl 4): S229–S253, December 2007.
- Belansky E, Chiqui JF and Schwartz MB. "Local School Wellness Policies: How Are Schools Implementing the Federal Mandate?" Robert Wood Johnson Foundation Research Brief, 2009, www.rwjf.org/files/research/20090708loalwellness.pdf (accessed April 2010).
- Chiqui JF, Schneider L, Chaloupka FJ, et al. *Local Wellness Policies: Assessing School District Strategies for Improving Children's Health*. School Years 2006–07 and 2007–08. Chicago, IL: Bridging the Gap, Health Policy Center, Institute for Health Policy and Research, University of Illinois at Chicago, 2009, www.bridgingthegapresearch.org.
- National Center for Education Statistics. "Projection of Education Statistics to 2018." 2009. http://nces.ed.gov/programs/projections/projections2018/tables/table_02.asp?referrer=list (accessed April 2010).
- Institute of Medicine. *School Meals: Building Blocks for Healthy Children*. Washington, DC: National Academies Press, 2009.
- Robinson-O'Brien R, Story M and Heim S. "Impact of Garden-Based Youth Nutrition Intervention Programs: A Review." *Journal of the American Dietetic Association*, 109(2): 273–280, 2009.
- Joshi A, Kalb M and Beery M. *Going Local: Paths to Success for Farm to School Programs*. 2009, <http://departments.oxy.edu/uepi/cfj/publications/goinglocal.pdf> (accessed April 2010).
- National Association for Sport and Physical Education (NASPE). *Physical Activity for Children: A Statement of Guidelines for Children Ages 5–12*. Reston, VA: 2004.
- Alliance for a Healthier Generation. *Healthy Schools Program Framework*. 2009, www.healthiergeneration.org/uploadedFiles/For_Schools/Healthy_Schools_Program_Framework/Framework_July09_sp_highres.pdf (accessed April 2010).
- National Association for Sport and Physical Education (NASPE). *Recess for Elementary School Students*. Reston, VA: 2006, www.aahperd.org/naspe/standards/upload/Recess-for-Elementary-School-Students-2006.pdf (accessed April 2010).
- McMillan TE. *Walking and Biking to School, Physical Activity and Health Outcomes*. Active Living Research, 2009, www.activelivingresearch.org/files/ALR_Brief_ActiveTransport.pdf (accessed April 2010).
- Longley CH and Sneed J. "Effects of Federal Legislation on Wellness Policy Formation in School Districts in the United States." *Journal of the American Dietetic Association*, 109(1): 95–101, 2009.
- National Center for Education Statistics. "Projection of Education Statistics to 2018." 2009, http://nces.ed.gov/programs/projections/projections2018/tables/table_02.asp?referrer=list (accessed April 2010).
- Centers for Disease Control and Prevention. "Prevalence of Overweight, Obesity and Extreme Obesity Among Adults: United States, Trends 1960–1962 Through 2005–2006," 2008, www.cdc.gov/nchs/data/hestat/overweight/overweight_adult.htm.
- Ogden CL, Carroll MD, Curtin LR, et al. "Prevalence of Overweight and Obesity in the United States, 1999–2004." *Journal of the American Medical Association*, 295(13): 1549–1555, 2006.
- Ogden CL, Carroll MD and Flegal KM. "High Body Mass Index for Age Among U.S. Children and Adolescents, 2003–2006." *Journal of the American Medical Association*, 299(20): 2401–2405, 2008.
- Ogden CL, Carroll MD, Curtin LR, et al. "Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007–2008." *Journal of the American Medical Association*, 303(3): 242–249, 2010.
- Ogden CL et al. "Prevalence of Overweight and Obesity in the United States, 1999–2004."
- Ogden CL, Carroll MD and Flegal KM.
- Ogden CL et al. "Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007–2008."
- Freedman DS, Mei Z, Srinivasan SR, et al. "Cardiovascular Risk Factors and Excess Adiposity Among Overweight Children and Adolescents: The Bogalusa Heart Study." *Journal of Pediatrics*, 150(1): 12–17, 2007.
- Gilliland F, Berhane K, Islam T, et al. "Obesity and the Risk of Newly Diagnosed Asthma in School-Age Children." *American Journal of Epidemiology*, 158(5): 406–415, 2003.
- Marder W and Chang S. *Childhood Obesity: Costs, Treatment Patterns, Disparities in Care, and Prevalent Medical Conditions*. Thomson Medstat Research Brief, 2005.
- Finkelstein E, Trogon J, Cohen J, et al. "Annual Medical Spending Attributable to Obesity: Payer- and Service-Specific Estimates." *Health Affairs*, 28(5): w822–w831, 2009.
- Ogden CL et al. "Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007–2008."
- F as in Fat: How Obesity Policies Are Failing in America*, 2009. Washington: Trust for America's Health, 2009.

32. Barlow SE. "Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report." *Pediatrics*, 120(Suppl 4): S164–S192, 2007.
33. Davis MM, Gance-Cleveland B, Hassink S, et al. "Recommendations for the Prevention of Childhood Obesity." *Pediatrics*, 120(Suppl 4): S229–S253, 2007.
34. Institute of Medicine. *Childhood Obesity: Health in the Balance*. Koplan JP, Liverman CT and Kraak VI (eds). Washington: National Academies Press, 2005.
35. Brownell KD, Schwartz MB, Puhl RM, et al. "The Need for Bold Action to Prevent Adolescent Obesity." *Journal of Adolescent Health*, 45: S8–S17, 2009.
36. Institute of Medicine. *Childhood Obesity: Health in the Balance*.
37. Story M, Kaphingst KM and French S. "The Role of Schools in Obesity Prevention." *Future of Children*, 16(1): 109–142, 2006.
38. *School Wellness Policy Report*. Connecticut State Department of Education and Rudd Center for Food Policy & Obesity at Yale University, 2008.
39. Belansky E, Cutforth N, Delong E, et al. "Early Impact of the Federally Mandated Local Wellness Policy on Physical Activity in Rural, Low-Income Elementary Schools in Colorado." *Journal of Public Health Policy*, 30(Suppl 1): S141–S160, 2009.
40. Chriqui JF, Schneider L, Chaloupka FJ, et al. *Local Wellness Policies: Assessing School District Strategies for Improving Children's Health. School Years 2006–2007 and 2007–2008*. Chicago: Bridging the Gap, Health Policy Center, Institute for Health Policy and Research, University of Illinois at Chicago, 2009, www.bridgingthegapresearch.org.
41. Metos J and Nanney MS. "The Strength of School Wellness Policies: One State's Experience." *Journal of School Health*, 77(7): 367–372, 2007.
42. Nanney MS and Davey C. "Evaluating the Distribution of School Wellness Policies and Practices: A Framework to Capture Equity Among Schools Serving the Most Weight-Vulnerable Children." *Journal of the American Dietetic Association*, 108(9): 1436–1439, 2008.
43. Serrano E, Kowaleska A, Hosig K, et al. "Status and Goals of Local School Wellness Policies in Virginia: A Response to the Child Nutrition and WIC Reauthorization Act of 2004." *Journal of Nutrition Education & Behavior*, 39(2): 95–100, 2007.
44. *School Wellness Policy Report*.
45. *Local Wellness Policies One Year Later: Showing Improvements in School Nutrition and Physical Activity*. Skokie, IL: Action for Healthy Kids, 2007.
46. Belansky E et al.
47. Chriqui et al.
48. Longley CH and Sneed J. "Effects of Federal Legislation on Wellness Policy Formation in School Districts in the United States." *Journal of the American Dietetic Association*, 109(1): 95–101, 2009.
49. *Local School Wellness Policies: A Survey of the Progress and Policies Being Developed by Local School Districts*. Alexandria, VA: School Nutrition Association, 2006.
50. Chriqui et al.
51. Fox MK, Crepinsek MK, Connor P, et al. *School Nutrition Dietary Assessment Study-II Final Report*. Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service, 2001.
52. Ibid.
53. Gordon A and Fox MK. *School Nutrition Dietary Assessment Study-III: Summary of Findings*, Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service, 2007.
54. *SHPPS: School Health Policies and Programs Study*. Centers for Disease Control and Prevention, 2009, www.cdc.gov/HealthyYouth/shpps/ (accessed April 2010).
55. *Digest of Education Statistics, 2008, Table 3*. United States Department of Education, National Center for Education Statistics, 2009, <http://nces.ed.gov/fastfacts/display.asp?id=65> (accessed April 2010).
56. *Projection of Education Statistics to 2018*. United States Department of Education, National Center for Education Statistics, 2009, http://nces.ed.gov/programs/projections/projections2018/tables/table_02.asp?referrer=list (accessed April 2010).
57. Chriqui et al.
58. O'Malley PM, Johnston LD, Delva J, et al. "Variation in Obesity Among American Secondary School Students by School and School Characteristics." *American Journal of Preventive Medicine*, 33(4, Suppl 1): S187–S194, 2007.
59. *Eligibility Manual for School Meals: Federal Policy for Determining and Verifying Eligibility*. Washington: Child Nutrition Programs, Food and Nutrition Service, United States Department of Agriculture, 2008.
60. *Healthy Schools for Healthy Kids*. Princeton, NJ: Robert Wood Johnson Foundation, 2003, www.rwjf.org/files/newsroom/RWJF_HealthySchools.pdf (accessed April 2010).
61. Ibid.
62. *Study Shows Overwhelming Parent Support for Healthier Schools*. New York: Alliance for a Healthier Generation, 2009, www.healthiergeneration.org/media.aspx?id=4121 (accessed April 2010).
63. *School Breakfast Program Participation and Meals Served*. Washington: United States Department of Agriculture, 2009.
64. *National School Lunch Program: Participation and Lunches Served*. Washington: United States Department of Agriculture, 2009.
65. *Nutrition and Your Health: Dietary Guidelines for Americans, 1995*. Washington: United States Department of Agriculture and United States Department of Health and Human Services, 1995.
66. *National School Lunch Program Fact Sheet*. Washington: United States Department of Agriculture, 2008.
67. *National School Breakfast Program Fact Sheet*. Washington: United States Department of Agriculture, 2008.

68. Gordon A, Hall J, Zeidman E, et al. *School Nutrition Dietary Assessment Study III: Volume III: Sampling and Data Collection*. Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service, 2007.
69. Institute of Medicine. *School Meals: Building Blocks for Healthy Children*. Washington: National Academies Press, 2009.
70. Ibid.
71. *Dietary Guidelines for Americans 2005: Executive Summary*. Washington: United States Department of Health and Human Services & United States Department of Agriculture, 2008.
72. Institute of Medicine. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements*. Washington: National Academies Press, 2006.
73. Chriqui et al.
74. Ibid.
75. Berkey CS, Rockett HR, Gillman MW, et al. "Longitudinal Study of Skipping Breakfast and Weight Change in Adolescents." *International Journal of Obesity and Related Metabolic Disorders*, 27(10): 1258-1266, 2003.
76. Gleason PM and Dodd AH. "School Breakfast Program but Not School Lunch Program Participation Is Associated With Lower Body Mass Index." *Journal of the American Dietetic Association*, 109(2:Suppl): S118-S128, 2009.
77. Rampersaud GC, Pereira MA, Girard BL, et al. "Breakfast Habits, Nutritional Status, Body Weight, and Academic Performance in Children and Adolescents." *Journal of the American Dietetic Association*, 105(5): 743-760, 761.
78. Briefel RR, Wilson A, Gleason PM. "Consumption of Low-Nutrient, Energy-Dense Foods and Beverages at School, Home, and Other Locations Among School Lunch Participants and Nonparticipants." *Journal of the American Dietetic Association*, 109(2:Suppl): S79-S90, 2009.
79. Frazao E. "Meal Patterns, Milk, and Soft Drink Consumption, and Supplement Use." *Agriculture Information Bulletin #796-4*, 2005.
80. Bartfeld J, Kim M, Ryo JH, et al. *The School Breakfast Program: Participation and Impacts*. USDA-ERS contractor report 54. Washington: United States Department of Agriculture, Economic Research Service, 2009, www.ers.usda.gov/Publications/CCR54/CCR54.pdf (accessed April 2010).
81. Gleason PM and Dodd AH.
82. Bhattacharya J, Currie J and Haider SJ. *Evaluating the Impact of School Nutrition Programs: Final Report*. E-FAN No.(EFAN04008). Washington: United States Department of Agriculture, Economic Research Service, 2004. www.ers.usda.gov/publications/efan04008/ (accessed April 2010).
83. Brown JL, Beardslee WH and Prothrow-Stith D. Impact of School Breakfast on Children's Health and Learning: An Analysis of the Scientific Research, 2008, www.sodexofoundation.org/hunger_us/Images/Impact_of_School_Breakfast_Study_tcm150-212606.pdf (accessed April 2010).
84. Kennedy E and Davis C. "U.S. Department of Agriculture School Breakfast Program." *American Journal of Clinical Nutrition*, 67(4): 798S-803S, 1998.
85. Kleinman RE, Hall S, Green H, et al. "Diet, Breakfast, and Academic Performance in Children." *Annals of Nutrition & Metabolism*, 46(Suppl 1): 24-30, 2002.
86. Rampersaud GC et al.
87. Gordon and Fox.
88. O'Toole TP, Anderson S, Miller C, et al. "Nutrition Services and Foods and Beverages Available at School: Results From the School Health Policies and Programs Study 2006." *Journal of School Health*, 77(8): 500-521, 2007.
89. Chriqui et al.
90. Gordon A, Fox MK, Clark M, et al. *School Nutrition Dietary Assessment Study-III: Volume II: Student Participation and Dietary Intakes*. Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service, 2007.
91. Gleason PM. "Participation in the National School Lunch Program and the School Breakfast Program." *American Journal of Clinical Nutrition*, 61(1:Suppl): S213-S220, 1995.
92. Gordon, Hall, et al.
93. Maurer KM. "The National Evaluation of School Nutrition Programs: Factors Affecting Student Participation." *American Journal of Clinical Nutrition*, 40: 425-447, 1984.
94. Gordon, Hall, et al.
95. Ibid.
96. *School Meal Programs: Revenue and Expense Information From Selected States*. Washington: United States Government Accountability Office, 2003.
97. *National School Lunch, Special Milk, and School Breakfast Programs, National Average Payments/Maximum Reimbursement Rates*. Washington: United States Department of Agriculture, 2007.
98. Briefel et al.
99. Gleason and Dodd.
100. Briefel et al.
101. Condon EM, Crepinsek MK and Fox MK. "School Meals: Types of Foods Offered to and Consumed by Children at Lunch and Breakfast." *Journal of the American Dietetic Association*, 109(2:Suppl): S67-S78, 2009.
102. Gordon A, Crepinsek MK, Nogales R, et al. *School Nutrition Dietary Assessment Study-III: Volume I: School Foodservice, School Food Environment, and Meals Offered and Served*. Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service, 2007.
103. Gordon and Fox.
104. Crepinsek MK, Gordon AR, McKinney PM, et al. "Meals Offered and Served in US Public Schools: Do They Meet Nutrient Standards?" *Journal of the American Dietetic Association*, 109(2:Suppl): S31-S43, 2009.

105. Cullen KW, Watson K and Zakeri I. "Improvements in Middle School Student Dietary Intake After Implementation of the Texas Public School Nutrition Policy." *American Journal of Public Health*, 98(1): 111-117, 2008.
106. Lytle LA, Stone EJ, Nichaman MZ, et al. "Changes in Nutrient Intakes of Elementary School Children Following a School-Based Intervention: Results From the CATCH Study." *Preventive Medicine*, 25(4): 465-477, 1996.
107. Wharton CM, Long M and Schwartz MB. "Changing Nutrition Standards in Schools: The Emerging Impact on School Revenue." *Journal of School Health*, 78(5): 245-251, 2008.
108. Wojcicki JM and Heyman MB. "Healthier Choices and Increased Participation in a Middle School Lunch Program: Effects of Nutrition Policy Changes in San Francisco." *American Journal of Public Health*, 96(9): 1542-1547, 2006.
109. *National School Lunch Program Fact Sheet*.
110. O'Toole et al.
111. Gordon, Fox, et al.
112. Gordon, Hall, et al.
113. *School Meal Programs: Revenue and Expense Information From Selected States*.
114. *National School Lunch, Special Milk, and School Breakfast Programs, National Average Payments/Maximum Reimbursement Rates*. Washington: United States Department of Agriculture, 2007.
115. Fox MK, Crepinsek MK, Connor P, et al. *School Nutrition Dietary Assessment Study-II Final Report*. Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service, 2001.
116. Gordon, Crepinsek, et al.
117. Fox MK, Crepinsek MK, Connor P, et al. *School Nutrition Dietary Assessment Study-II Final Report*. Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service, 2001.
118. Gordon, Crepinsek, et al.
119. Ibid.
120. *Dietary Guidelines for Americans 2005: Executive Summary*.
121. Condon et al.
122. Ibid.
123. *Changing the Scene—Improving the School Nutrition Environment. A Call to Action*. Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service. 2000.
124. American School Health Association. "ASHA Supports Providing Adequate Time to Eat School Meals," 2006.
125. *Model Local School Wellness Policies on Physical Activity and Nutrition*. National Alliance for Nutrition and Activity, 2005, www.schoolwellnesspolicies.org (accessed April 2010).
126. *Fit, Healthy, and Ready to Learn: Chapter C: Policies to Encourage Healthy Eating*. National Association of School Boards of Education, 2000.
127. Sanchez A, Hoover LC, Sanchez NF, et al. "Measurement and Evaluation of School Lunch Time Elements in Elementary, Junior High, and High School Levels." *The Journal of Child Nutrition and Management*, 25:13-18, 1999.
128. Bergman EA, Buerger NSETF and Femrite A. "The Relationship Between the Length of the Lunch Period and Nutrient Consumption in the Elementary School Lunch Setting." *The Journal of Child Nutrition and Management*, 28(2), 2004.
129. O'Toole et al.
130. Chriqui et al.
131. Ibid.
132. Bergman EA, Buerger NS, Englund TF, et al. "The Relationship of Meal and Recess Schedules to Plate Waste in Elementary Schools." *The Journal of Child Nutrition and Management [serial online]*, 2004.
133. Getlinger M, Laughlin C, Bell E, et al. "Food Waste Is Reduced When Elementary-School Children Have Recess Before Lunch." *Journal of the American Dietetic Association*, 96: 906-908, 1996.
134. *Model Local School Wellness Policies on Physical Activity and Nutrition*.
135. Centers for Disease Control and Prevention. *SHPPS 2006 Fact Sheet*, 2009.
136. Lee SM, Burgeson CR, Fulton JE, et al. "Physical Education and Physical Activity: Results From the School Health Policies and Programs Study 2006." *Journal of School Health*, 77(8): 435-463, 2007.
137. Wechsler H, Brener ND, Kuester S, et al. "Food Service and Foods and Beverages Available at School: Results From the School Health Policies and Programs Study 2000." *Journal of School Health*, 71(7): 313-324, 2001.
138. Institute of Medicine. *School Meals: Building Blocks for Healthy Children*.
139. O'Toole et al.
140. Craypo L, Samuels S and Purcell A. *California High School Fast Food Survey 2003: Findings and Recommendations*. Oakland, CA: Public Health Institute, 2003.
141. O'Toole et al.
142. Robinson-O'Brien R, Story M and Heim S. "Impact of Garden-Based Youth Nutrition Intervention Programs: A Review." *Journal of the American Dietetic Association*, 109(2): 273-280, 2009.
143. *F as in Fat: How Obesity Policies Are Failing in America, 2009*.
144. Joshi A, Kalb M and Beery M. *Going Local: Paths to Success for Farm to School Programs*. Los Angeles, CA: National Farm to School Program and Center for Food and Justice, Occidental College, 2009.
145. *Dietary Guidelines for Americans 2005: Executive Summary*.
146. *MyPyramid*. Washington: United States Department of Agriculture, 2009.
147. O'Toole et al.

148. Pomeranz JL and Brownell KD. "Legal and Public Health Considerations Affecting the Success, Reach, and Impact of Menu-Labeling Laws." *American Journal of Public Health*, 98(9): 1578-1583, 2008.
149. Roberto CA, Larsen PD, Agnew H, et al. "Evaluating the Impact of Menu Labeling on Food Choices and Intake." *American Journal of Public Health*, 100: 312-318, 2010.
150. Finkelstein DM, Hill EL and Whitaker RC. "School Food Environments and Policies in US Public Schools." *Pediatrics*, 122(1): e251-e259, 2008.
151. Chriqui et al.
152. Ibid.
153. Powell LM and Chaloupka FJ. "Food Prices and Obesity: Evidence and Policy Implications for Taxes and Subsidies." *Milbank Quarterly*, 87(1): 229-257, 2009.
154. Centers for Disease Control and Prevention. "Recommended Community Strategies and Measurements to Prevent Obesity in the United States." *MMWR - Morbidity & Mortality Weekly Report*, 58 (RR07): 1-26, 2009.
155. Wharton et al.
156. *Foods Sold in Competition With USDA School Meal Programs*. Washington: United States Department of Agriculture, 2001, www.fns.usda.gov/cnd/lunch/_private/competitivefoods/report_congress.htm (accessed April 2010).
157. Gordon and Fox.
158. *School Meal Programs: Competitive Foods Are Widely Available and Generate Substantial Revenue for Schools*. Washington: United States Government Accountability Office, 2005.
159. Fox MK, Gordon A, Nogales R, et al. "Availability and Consumption of Competitive Foods in US Public Schools." *Journal of the American Dietetic Association*, 109(2:Suppl): S57-S66, 2009.
160. Ibid.
161. Gordon and Fox.
162. Templeton SB, Marlette MA and Panemangalore M. "Competitive Foods Increase the Intake of Energy and Decrease the Intake of Certain Nutrients by Adolescents Consuming School Lunch." *Journal of the American Dietetic Association*, 105(2): 215-220, 2005.
163. Fox, Gordon, et al.
164. Anderson PA and Butcher KF. *Reading, Writing and Raisinets: Are School Finances Contributing to Children's Obesity?* Cambridge, MA: National Bureau of Economic Research, 2005.
165. Malik V, Schulze M and Hu F. "Intake of Sugar-Sweetened Beverages and Weight Gain: A Systematic Review." *American Journal of Clinical Nutrition*, 84(2): 274-288, 2006.
166. Vartanian L, Schwartz M and Brownell K. "Effects of Soft Drink Consumption on Nutrition and Health: a Systematic Review and Meta-Analysis." *American Journal of Public Health*, 97(4): 667-675, 2007.
167. Briefel et al.
168. Schwartz MB, Novak SA and Fiore SS. "The Impact of Removing Snacks of Low Nutritional Value From Middle Schools." *Health Education & Behavior*, 36(6): 999-1011, 2009.
169. James J, Thomas P, Cavan D, et al. "Preventing Childhood Obesity by Reducing Consumption of Carbonated Drinks: Cluster Randomised Controlled Trial." *British Medical Journal*, 328(7450): 1237, 2004.
170. Wang YC, Ludwig DS, Sonnevile K, et al. "Impact of Change in Sweetened Caloric Beverage Consumption on Energy Intake Among Children and Adolescents." *Archives of Pediatrics & Adolescent Medicine*, 163(4): 336-343, 2009.
171. Wang YC, Gortmaker SL, Sobol AM, et al. "Estimating the Energy Gap Among US Children: A Counterfactual Approach." *Pediatrics*, 118(6): e1721-e1733, 2006.
172. Institute of Medicine. *Nutrition Standards for Foods in Schools: Leading the Way Toward Healthier Youth*. Washington: National Academies Press, 2007.
173. Centers for Disease Control and Prevention. "Recommended Community Strategies and Measurements to Prevent Obesity in the United States."
174. *Foods Sold in Competition With USDA School Meal Programs*.
175. *F as in Fat: How Obesity Policies are Failing in America*, 2009.
176. Ibid.
177. Chriqui et al.
178. *Competitive Food Guidelines*. New York, NY: Alliance for a Healthier Generation, 2009, www.healthiergeneration.org/companies.aspx?id=2540 (accessed April 2010).
179. *Dietary Guidelines for Americans 2005: Executive Summary*.
180. *Dietary Recommendations for Healthy Children: AHA Scientific Position*. Dallas, TX: American Heart Association, 2010, www.americanheart.org/presenter.jhtml?identifier=4575 (accessed April 2010).
181. Lichtenstein AH, Appel LJ, Brands M, et al. "2006 Diet and Lifestyle Recommendations Revision 2006: A Scientific Statement From the American Heart Association Nutrition Committee." *Circulation*, 114(1): 82-96, 2006.
182. *Competitive Beverage Guidelines*. New York: Alliance for a Healthier Generation, 2009, www.healthiergeneration.org/companies.aspx?id=1376 (accessed April 2010).
183. Institute of Medicine. *Nutrition Standards for Foods in Schools: Leading the Way Toward Healthier Youth*. Washington: National Academies Press, 2007.
184. *Alliance School Beverage Guidelines Final Progress Report*. American Beverage Association, 2010. [www.healthiergeneration.org/uploadedFiles/About_The_Alliance/SBG_FINAL_PROGRESS_REPORT_\(March_2010\).pdf](http://www.healthiergeneration.org/uploadedFiles/About_The_Alliance/SBG_FINAL_PROGRESS_REPORT_(March_2010).pdf) (accessed April 2010).
185. Fox, Gordon, et al.
186. Ibid.
187. Gordon and Fox.
188. O'Toole et al.

189. Chriqui et al.
190. Ibid.
191. Gordon and Fox.
192. Chriqui et al.
193. Ibid.
194. Gordon and Fox.
195. O'Toole et al.
196. Chriqui et al.
197. Ibid.
198. Fox, Gordon, et al.
199. Ibid.
200. O'Toole et al.
201. Ibid.
202. Fox, Gordon, et al.
203. O'Toole et al.
204. *Competitive Beverage Guidelines*.
205. O'Toole et al.
206. Ibid.
207. Ibid.
208. Ibid.
209. Chriqui et al.
210. Ibid.
211. Johanson J, Smith J and Wootan MG. *Raw Deal: School Beverage Contracts Less Lucrative Than They Seem*. Center for Science in the Public Interest and the Public Health Advocacy Institute, 2006.
212. Ibid.
213. O'Toole et al.
214. Johanson et al.
215. Harris JL, Pomeranz JL, Lobstein T, et al. "A Crisis in the Marketplace: How Food Marketing Contributes to Childhood Obesity and What Can Be Done." *Annual Review of Public Health*, 30: 211-225, 2009.
216. Institute of Medicine. *Food Marketing to Children and Youth: Threat or Opportunity?* Washington: National Academies Press, 2006.
217. Ibid.
218. Ibid.
219. Ibid.
220. Federal Trade Commission, Centers for Disease Control and Prevention, Food and Drug Administration, et al. *Interagency Working Group on Food Marketed to Children: Tentative Proposed Nutrition Standards*, 2009.
221. Story M and French S. "Food Advertising and Marketing Directed at Children and Adolescents in the U.S." *The International Journal of Behavioral Nutrition and Physical Activity*, 1(3): 1-3, 2004.
222. O'Toole et al.
223. Chriqui et al.
224. Ibid.
225. Fox, Gordon, et al.
226. Johanson J and Wootan MG. *Sweet Deals: School Fundraising Can Be Healthy and Profitable*. Center for Science in the Public Interest, 2007.
227. Ibid.
228. Gordon and Fox.
229. O'Toole et al.
230. Ibid.
231. Ibid.
232. Fox, Gordon, et al.
233. Chriqui et al.
234. Ibid.
235. Deci EL, Koestner R and Ryan RM. "Extrinsic Rewards and Intrinsic Motivation in Education: Reconsidered Once Again." *Review of Educational Research*, 71: 1-27, 2001.
236. Kohn A. *The Risks of Rewards*. Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education, 1994.
237. Cameron J, Banko KM and Pierce WD. "Pervasive Negative Effects of Rewards on Intrinsic Motivation: The Myth Continues." *The Behavior Analyst*, 24(1): 44, 2001.
238. Akin-Little KA, Eckert TL, Lovett BJ, et al. "Extrinsic Reinforcement in the Classroom: Bribery or Best Practices." *School Psychology Review*, 33(3): 344-362, 2004.
239. Epstein LH, Leddy JJ, Temple JL, et al. "Food Reinforcement and Eating: A Multilevel Analysis." *Psychological Bulletin*, 133(5): 884-906, 2007.
240. Fox, Gordon, et al.
241. *Fact Sheet: Constructive Classroom Rewards: Promoting Good Habits While Protecting Children's Health*. Washington: Center for Science in the Public Interest, 2010.
242. O'Toole et al.
243. Chriqui et al.
244. Ibid.
245. Kubik MY, Lytle LA and Story M. "Schoolwide Food Practices Are Associated With Body Mass Index in Middle School Students." *Archives of Pediatrics & Adolescent Medicine*, 159(12): 1111-1114, 2005.
246. *School Meal Programs: Competitive Foods Are Widely Available and Generate Substantial Revenue for Schools*.
247. *School Meal Programs: Revenue and Expense Information From Selected States*.
248. French S, Story M, Fulkerson JA, et al. "An Environmental Intervention to Promote Lower-Fat Food Choices in Secondary Schools: Outcomes of the TACOS Study." *American Journal of Public Health*, 94(9): 1507-1512, 2004.
249. Wojcicki et al.
250. Wharton et al.
251. *The Surgeon General's Call to Action to Decrease Overweight and Obesity 2001*. Rockville, MD: United States Department of Health and Human Services, Public Health Service, Office of the Surgeon General, 2001.
252. Ibid.

253. Gordon-Larsen P, Nelson MC and Popkin BM. "Longitudinal Physical Activity and Sedentary Behavior Trends: Adolescence to Adulthood." *American Journal of Preventive Medicine*, 27(4): 277-283, 2004.
254. Institute of Medicine. *Childhood Obesity: Health in the Balance*.
255. Nader PR, Bradley RH, Houts RM, et al. "Moderate-to-Vigorous Physical Activity From Ages 9 to 15 Years." *Journal of the American Medical Association*, 300(3): 295-305, 2008.
256. Nelson MC, Gordon-Larsen P, Adair LS, et al. "Adolescent Physical Activity and Sedentary Behavior: Patterning and Long-Term Maintenance." *American Journal of Preventive Medicine*, 28(3): 259-266, 2005.
257. Sallis JF, Prochaska JJ and Taylor WC. "A Review of Correlates of Physical Activity of Children and Adolescents." *Medicine and Science in Sports and Exercise*, 32(5): 963-975, 2000.
258. Strong WB. "Evidence Based Physical Activity for School-Age Youth." *Pediatrics*, 146: 732-737, 2005.
259. *Physical Activity for Children: A Statement of Guidelines for Children Ages 5-12*. Reston, VA: National Association for Sport and Physical Education, 2004.
260. Strong.
261. Ibid.
262. Ibid.
263. Ibid.
264. Institute of Medicine. *Childhood Obesity: Health in the Balance*.
265. Pate RR, Freedson PS, Sallis JF, et al. "Compliance With Physical Activity Guidelines: Prevalence in a Population of Children and Youth." *Annals of Epidemiology*, 12(5): 303-308, 2002.
266. Troiano RP, Berrigan D, Dodd KW, et al. "Physical Activity in the United States Measured by Accelerometer." *Medicine & Science in Sports & Exercise*, 40(1): 181-188, 2008.
267. Anderson RE, Crespo CJ, Bartlett SJ, et al. "Relationship of Physical Activity and Television Watching With Body Weight and Level of Fatness Among Children: Results From the Third National Health and Nutrition Examination Survey." *Journal of the American Society for Preventive Dentistry*, 279: 938-942, 1998.
268. Trost SG. *Active Education: Physical Education, Physical Activity, and Academic Performance. A Research Brief*. Princeton, NJ: Robert Wood Johnson Foundation, 2009.
269. Ibid.
270. Centers for Disease Control and Prevention. "Recommended Community Strategies and Measurements to Prevent Obesity in the United States."
271. Centers for Disease Control and Prevention. "Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People." *MMWR - Morbidity & Mortality Weekly Report*, 46(RR-6): 1-36, 1997.
272. *School Policy Framework: Implementation of the WHO Global Strategy on Diet, Physical Activity and Health*. Geneva, Switzerland: World Health Organization, 2008.
273. *Comprehensive School Physical Activity Programs: Position Statement*. Reston, VA: National Association for Sport and Physical Education, 2008.
274. Chriqui et al.
275. *Guide to Community Preventive Services. Behavioral and Social Approaches to Increase Physical Activity: Enhanced School-Based Physical Education*. Atlanta: Centers for Disease Control and Prevention, Community Guide Branch, 2009.
276. Centers for Disease Control and Prevention. "Recommended Community Strategies and Measurements to Prevent Obesity in the United States."
277. Baranowski T, Bar-Or O, Blair S, et al. "Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People." *MMWR - Morbidity & Mortality Weekly Report*, 50(RR6): 1-36, 1997.
278. *Physical Activity for Children: A Statement of Guidelines for Children Ages 5-12*.
279. Centers for Disease Control and Prevention. "Recommended Community Strategies and Measurements to Prevent Obesity in the United States."
280. Lee et al.
281. Chriqui et al.
282. *Healthy People 2010: Understanding and Improving Health*. Washington: United States Department of Health and Human Services, 2000.
283. *Policy Position Statement on Physical Education in Schools*. Dallas: American Heart Association, 2008, www.americanheart.org/presenter.jhtml?identifier=3054236 (accessed April 2010).
284. Institute of Medicine. *Childhood Obesity: Health in the Balance*.
285. *Policies to Encourage Physical Activity*. Arlington, VA: The National Association of School Boards of Education, 2009.
286. *Physical Activity for Children: A Statement of Guidelines for Children Ages 5-12*.
287. *Healthy Schools Program Framework*. New York: Alliance for a Healthier Generation, 2009.
288. Lee et al.
289. Chriqui et al.
290. Ibid.
291. Barros RM, Silver EJ and Stein REK. "School Recess and Group Classroom Behavior." *Pediatrics*, 123(2): 431-436, 2009.
292. Jarrett OS, Maxwell DM, Dickerson C, et al. "The Impact of Recess on Classroom Behavior: Group Effects and Individual Differences." *Journal of Educational Research*, 92(2): 121-126, 1998.
293. Pellegrini AD, Huberty PD and Jones I. "The Effects of Recess Timing on Children's Playground and Classroom Behaviors." *American Education Research Journal*, 32(4): 845-864, 1995.
294. Roth J, Brooks-Gunn J, Linver M, et al. "What Happens During the School Day? Time Diaries From a National Sample of Elementary School Teachers." *Teachers College Record*, 105(3): 317-343, 2003.

295. *Recess for Elementary School Students*. Reston, VA: National Association for Sport and Physical Education, 2006.
296. *Recess-It's Indispensable!* Washington: National Association for the Education of Young Children, 2009.
297. *Promoting Better Health for Young People Through Physical Activity and Sports*. Washington: United States Department of Health and Human Services & United States Department of Education, 2000.
298. *Recess for Elementary School Students*.
299. *Comprehensive School Physical Activity Programs: Position Statement*.
300. *Healthy Schools Program Framework*.
301. Lee et al.
302. Barros et al.
303. Chriqui et al.
304. Ibid.
305. *Comprehensive School Physical Activity Programs: Position Statement*.
306. Lee et al.
307. Ibid.
308. Centers for Disease Control and Prevention. "Physical Activity Levels Among Children Aged 9–13 Years: United States, 2002."
309. Chriqui et al.
310. Ibid.
311. Ibid.
312. Ibid.
313. Centers for Disease Control and Prevention. "Physical Activity Levels Among Children Aged 9–13 Years: United States, 2002."
314. Sallis JF, Conway TL, Prochaska JJ, et al. "The Association of School Environments With Youth Physical Activity." *American Journal of Public Health*, 91(4): 618–620, 2001.
315. Lee et al.
316. *Recess for Elementary School Students*.
317. Centers for Disease Control and Prevention. "Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People."
318. Lee et al.
319. Ibid.
320. Chriqui et al.
321. Ibid.
322. Heelan KA, Donnelly JE, Jacobsen DJ, et al. "Active Commuting to and From School and BMI in Elementary School Children—Preliminary Data." *Child: Care, Health & Development*, 31(3): 341–349, 2005.
323. Sallis, Conway, et al.
324. Tudor-Locke C, Ainsworth BE, Adair LS, et al. "Objective Physical Activity of Filipino Youth Stratified for Commuting Mode to School." *Medicine & Science in Sports & Exercise*, 35(3): 465–471, 2003.
325. Rosenberg DE, Sallis JF, Conway TL, et al. "Active Transportation to School Over 2 Years in Relation to Weight Status and Physical Activity." *Obesity*, 14(10): 1771–1776, 2006.
326. Davison KK, Werder JL and Lawson CT. "Children's Active Commuting to School: Current Knowledge and Future Directions." *Preventing Chronic Disease*, 5(3): A100, 2008.
327. *Comprehensive School Physical Activity Programs: Position Statement*.
328. *National Personal Transportation Survey: Travel to School, 1969*. Washington: United States Department of Transportation, 1972.
329. *2001 National Personal Transportation Survey*. Washington: United States Department of Transportation, 2001.
330. McDonald NC. "Active Transportation to School: Trends Among U.S. Schoolchildren, 1969–2001." *American Journal of Preventive Medicine*, 32(6): 509–516, 2007.
331. *Policies to Encourage Physical Activity*.
332. Centers for Disease Control and Prevention. "Barriers to Children Walking and Biking to School--United States, 1999." *MMWR - Morbidity & Mortality Weekly Report*, 51(32): 701–704, 2002.
333. Davison.
334. Ibid.
335. Boarnet MG, Anderson CL, Day K, et al. "Evaluation of the California Safe Routes to School Legislation: Urban Form Changes and Children's Active Transportation to School." *American Journal of Preventive Medicine*, 28(2:Suppl- 2): S134–S140, 2005.
336. Staunton CE, Hubsmit D and Kallins W. "Promoting Safe Walking and Biking to School: The Marin County Success Story." *American Journal of Public Health*, 93(9): 1431–1434, 2003.
337. Kong AS, Sussman AL, Negrete S, et al. "Implementation of a Walking School Bus: Lessons Learned." *Journal of School Health*, 79(7): 319–325, 2009.
338. Mendoza JA, Levinger DD and Johnston BD. "Pilot Evaluation of a Walking School Bus Program in a Low-Income, Urban Community." *BMC Public Health*, 9, 122, 2009.
339. Kingham S and Ussher S. "Ticket to a Sustainable Future: an Evaluation of the Long-Term Durability of the Walking School Bus Programme in Christchurch, New Zealand." *Transportation Policy*, 12(4): 314–323, 2009.
340. Institute of Medicine. *Childhood Obesity: Health in the Balance*.
341. Barlow SE, Bobra SR, Elliott MB, et al. "Recognition of Childhood Overweight During Health Supervision Visits: Does BMI Help Pediatricians?" *Obesity*, 15(1): 225–232, 2007.
342. Perrin EM, Flower KB and Ammerman A. "Body Mass Index Charts: Useful Yet Underused." *Journal of Pediatrics*, 144(4): 455–460, 2004.
343. Voelker R. "Improved Use of BMI Needed to Screen Children for Overweight." *Journal of the American Medical Association*, 297(24): 2684–2685, 2007.
344. Institute of Medicine. *Childhood Obesity: Health in the Balance*.
345. Story, Kaphingst, et al.
346. Ikeda J, Crawford P and Woodward-Lopez G. "BMI Screening in Schools: Helpful or Harmful." *Health Education Research*, 21(6): 761–769, 2006.

347. Year Six Evaluation: Arkansas Act 1220 of 2003 to Combat Childhood Obesity. Little Rock, AR: University of Arkansas for Medical Sciences, Fay W. Boozman College of Public Health, 2009.
348. Institute of Medicine. *Childhood Obesity: Health in the Balance*.
349. *F as in Fat: How Obesity Policies are Failing in America, 2009*.
350. Brener ND, Wheeler L, Wolfe LC, et al. "Health Services: Results From the School Health Policies and Programs Study 2006." *Journal of School Health*, 77(8): 464-485, 2007.
351. Chriqui et al.
352. Ibid.
353. *Policies to Encourage Physical Activity*.
354. Lee et al.
355. Roth.
356. McDonald NC. "Critical Factors for Active Transportation to School Among Low-Income and Minority Students. Evidence From the 2001 National Household Travel Survey." *American Journal of Preventive Medicine*, 34(4): 341-344, 2008.
357. *School Wellness Policy Report*.
358. Belansky et al.
359. Metos J and Nanney MS. "The Strength of School Wellness Policies: One State's Experience." *Journal of School Health*, 77(7): 367-372, 2007.
360. Nanney and Davey.
361. Serrano E, Kowaleska A, Hosig K, et al. "Status and Goals of Local School Wellness Policies in Virginia: a Response to the Child Nutrition and WIC Reauthorization Act of 2004." *Journal of Nutrition Education & Behavior*, 39(2): 95-100, 2007.
362. Chriqui et al.
363. Ibid.
364. Ibid.
365. *School Wellness Policy Report*.
366. *Local Wellness Policies One Year Later*.
367. Belansky et al.
368. Longley et al.
369. *Local School Wellness Policies*.
370. Chriqui et al.
371. Ibid.
372. Ibid.
373. Ibid.
374. Wechsler H, McKenna ML, Lee SM, et al. "The Role of Schools in Preventing Childhood Obesity." *The State Education Standard*, 2004.
375. Centers for Disease Control and Prevention. "Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People."
376. Institute of Medicine. *Childhood Obesity: Health in the Balance*.
377. Gortmaker SL, Peterson K, Wiecha J, et al. "Reducing Obesity Via a School-Based Interdisciplinary Intervention Among Youth: Planet Health." *Archives of Pediatrics & Adolescent Medicine*, 153(4): 143-151, 1999.
378. Kann L, Telljohann SK and Wooley SF. "Health Education: Results From the School Health Policies and Programs Study 2006." *Journal of School Health*, 77(8): 408-434, 2007.
379. Joint Committee on National Health Education Standards. *National Health Education Standards, Second Edition, Achieving Excellence*. Atlanta: American Cancer Society, 2007.
380. Kann et al.
381. Chriqui et al.
382. Kann et al.
383. Chriqui et al.
384. Ibid.
385. Kann et al.
386. *National School Breakfast Program Fact Sheet*.
387. *National School Lunch Program Fact Sheet*.
388. *Nutrition and Your Health*.
389. Institute of Medicine. *School Meals: Building Blocks for Healthy Children*.
390. *Dietary Guidelines for Americans 2005: Executive Summary*.
391. Chriqui et al.
392. Ibid.
393. Ibid.
394. Ibid.
395. Ibid.
396. *Digest of Education Statistics, 2008, Table 3*.
397. O'Malley et al.
398. *Eligibility Manual for School Meals: Federal Policy for Determining and Verifying Eligibility*.

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