

bridging the gap

Research Informing Policies & Practices
for Healthy Youth

School Policies and Practices to Improve Health and Prevent Obesity: National Secondary 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 national, 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 Michigan's Institute for Social Research and the University of Illinois at Chicago's Institute for Health Research and Policy. For more information, visit www.bridgingthegapresearch.org.

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Introduction

Today, nearly one-third of adolescents are either obese or overweight.¹ Obese children are at higher risk for serious health problems, have greater psychological stress, and are absent from school more often than their healthy-weight peers.²⁻⁵

In addition, significant disparities exist. Latino and non-Latino Black youths are more likely to be obese or overweight than non-Latino White youths,¹ and significant differences in overweight and obesity among children have been observed based on family income.⁶ Youth from lower income families, in particular, are more likely to be overweight as adults, which puts them at higher risk for lower educational attainment, chronic health problems, and dependency on welfare or unemployment compensation.⁷

Many leading public health authorities, including the Institute of Medicine (IOM), recognize the critical role schools play in preventing and reducing childhood obesity.⁸ The foods and beverages available in school have been shown to be significantly associated with the nutritional intake and weight of children across all grade levels.⁹⁻¹¹ Schools also provide important opportunities for physical activity to children across all grade levels.¹² A growing body of evidence shows that school-based policies can help reduce children's caloric intake,^{13,14} as well as their purchases and consumption of sugary drinks.¹⁵ School-based interventions also help increase the amount of time children spend in physical activity while at school.¹⁶ Because school

policies and practices impact millions of children nationwide, changing the school environment to support healthy eating and promote physical activity are important goals for improving children's health and addressing disparities in overweight and obesity.

Report Overview

This report updates one of the most comprehensive studies of health-related policies and practices in U.S. public middle and high schools to date, originally released in August 2011.¹⁷ The major findings and trends presented in this report describe issues relevant to childhood obesity for seven school years, from 2006-07 to 2012-2013. We examine foods and beverages offered through the National School Lunch Program and also outside of school meal programs, including those sold in vending machines, school stores and à la carte cafeteria lines. We also examine physical education requirements and rates of participation; participation in varsity and intramural sports; and walking and bicycling to and from school.

This report offers timely insights for the U.S. Department of Agriculture (USDA) to consider as it continues implementation of the Healthy, Hunger-Free Kids Act of 2010. The report also helps inform future policies that aim to prevent obesity and improve children's diets, physical activity levels and overall health. Data presented in this report:

- help document how secondary schools implemented district wellness policies during the seven years following implementation of the wellness policy mandate;
 - help document what foods and beverages were being offered through the National School Lunch Program (NSLP) meal in the first year of implementing the majority of new NSLP meal requirements (the 2012-2013 school year);^{18,19}
 - help provide a benchmark for documenting foods and beverages offered through so-called competitive venues (à la carte cafeteria sales, vending machines, and school or student stores, snack bars, or carts) before implementation of the new United States Department of Agriculture (USDA) Smart Snacks standards (set to begin in the 2014-2015 school year);²⁰
 - provide guidance for local, state, and federal policymakers about successes and areas where new legislation is needed to strengthen existing efforts;
 - help school administrators, school board members, and parents benchmark their own schools' progress and identify areas of greatest progress and weakness; and
 - help school administrators, policy makers, and the general public understand gains made and work still needed to address disparities in childhood obesity rates.
-

Major Findings

Our findings are based on surveys of administrators (primarily school principals) from nationally representative samples of public middle and high schools.^a Results describe policies and practices in place during the 2006–07 through 2012–13 school years, which are referred to throughout this report as 2007 through 2013, respectively (and were the years in which the surveys actually took place). Data are weighted to reflect the percentages of students nationwide who attended a school with a policy or practice referenced in the survey. Weighting by the numbers of students affected, rather than simply giving the percentage of schools with a particular practice, ensures that larger schools (which affect more students) count more heavily than smaller schools. All findings were examined for changes over time and differences 1) between middle and high school; 2) by school socioeconomic status (SES); 3) by student race/ethnicity; and 4) by school majority race/ethnicity. In the presentation of results that follows, we discuss time trends for all measures. In general, differences between middle and high school, or by SES, or by race/ethnicity, are discussed only if the differences are statistically significant. However, a separate document (“Complete Descriptive Statistics”, posted on the same page of the BTG website as this report) contains subgroup prevalence and trend data for virtually all individual questions contained in the survey series. This report concludes with Table 1, which summarizes key practices for the 2007 through 2013 school years. More information, including questionnaires and complete statistical findings for all variables and for all school years, is available at:

http://www.bridgingthegapresearch.org/research/secondary_school_survey/.

Since our study began in 2007, there have been important improvements in the nutrition environment of U.S. public secondary schools. Many schools have been making an effort to offer students healthier foods and beverages for lunch and to provide healthier options in competitive venues. Yet, most students still had easy access to sugary drinks and junk foods. Little to no progress was observed related to promoting physical activity among students during or after the school day. Physical education requirements for high school students were especially lax. Participation in sports and physical activity clubs remained low, as did the number of students who walk or bike between home and school.

This report also highlights a number of conditions in middle and high schools that contribute to disparities across socioeconomic levels and across the racial and ethnic groups served. For example, students in low-SES schools were less likely than students in high-SES schools to have a variety of healthy foods available through competitive venues, including fruits and vegetables, salads, and whole grains. Students in low-SES schools and majority Latino schools were less likely to participate in sports programs than their peers in predominantly White or high-SES schools. In addition, students in low-SES schools were less likely to attend a school that offered formal nutrition education or one that shared its recreational facilities outside of school hours. These are disparities that deserve focused attention and corrective action.

^a Companion reports that focus on health-related policies and practices in U.S. elementary schools for school years 2006-07 through 2009-10 are available at www.bridgingthegapresearch.org.

Nutrition: School Meals

Schools have a significant impact on students' nutritional choices and behaviors. According to the third School Nutrition Dietary Assessment Study in 2005 (the most recent data available), the average student obtained and consumed one quarter of their daily calories at school; among those who participated in school meals, the level reached almost 50 percent.²¹ School meals—in particular school breakfasts—have been shown to be especially important to lower-income youths. Based on an extensive review of the literature, Brown et al.²² reported that among children in lower-income households (who are at high risk for obesity), those who participated in the School Breakfast Program had better eating habits, nutritional status, educational preparedness and educational outcome measures than their lower income peers who did not eat breakfast.

The 2012-2013 school year was the first year of implementing the majority of new National School Lunch Program (NSLP) requirements.¹⁹ Public middle and high schools demonstrated real progress in improving the nutritional quality of foods and beverages available through the National School Lunch Program; however, more remains to be done.

Key Findings

The following section describes key findings from 2007–2013.

Student Eligibility to Receive Free and Reduced Price Lunch

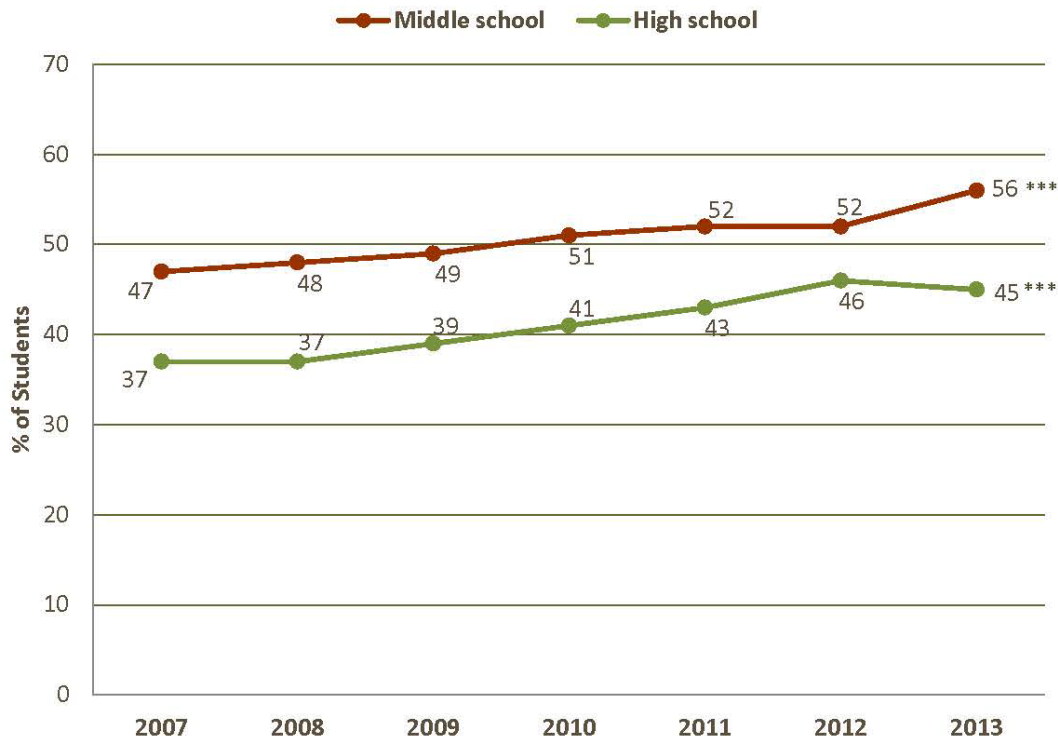
- As shown in Figure 1, reports from participating secondary school administrators

show that the percentage of students eligible to receive free and reduced-price lunch (FRPL) gradually increased from 47 percent in 2007 to 56 percent in 2013 for middle school, and from 37 percent to 45 percent for high school. These increases were significant for the total samples ($p < .001$) as well as all SES tertiles.^b The percentage of students eligible for FRPL in 2013 was significantly higher at the middle school level than high school ($p < .001$).

- While no significant increase was observed in majority Latino middle schools (where 50% or more of the students were Latino), the percentage of students eligible for FRPL significantly increased in predominately White (where 66% or more of the student population was White) and majority Black middle schools. The increase in predominately White middle schools was from 28 percent in 2007 to 37 percent in 2013 ($p < .01$); the increase in majority Black schools was from 78% in 2007 to 87% in 2013 ($p < .05$). At the high school level, the percentage of students eligible for FRPL significantly increased in both predominately White schools (from 25% in 2007 to 31% in 2013; $p < .01$) and majority Black schools (from 63% in 2007 to 81% in 2013; $p < .001$). This increased eligibility and reliance on free and reduced price foods in the schools no doubt derives in large part from the deep recession that occurred during this period. Since 2007, the percentage of students eligible for FRPL has been significantly higher in majority Black and Latino schools than in predominately White schools at both the middle and high school level ($p < .001$). Higher percentages of students eligible for FRPL indicate that the nutritional impact of foods and beverages available in schools is also likely to be higher among these populations.

^b SES tertiles for both middle and high school are calculated yearly and are based on school administrator-reported percentages of students eligible for free and reduced-price lunch (FRPL). Each tertile represents one-third of the students ranked by this percentage for their school.

FIGURE 1 Trends in the Percentage of US Public Middle and High School Students Eligible for Free and Reduced Price Lunch, 2007-2013



***p<.001 (significance level of differences between first and most recent year of data reported)
 Source: Bridging the Gap, Institute for Social Research, University of Michigan, 2014.

The percentage of students reported to be eligible for free and reduced price lunch in US public middle and high schools has been significantly increasing since 2007.

Eating Breakfast and Lunch at School

- Almost 80 percent of middle and high school students attended a school that participated in the School Breakfast Program in 2013 (78% of middle and 80% of high school students), and more than 80 percent of students attended schools participating in the National School Lunch Program (82% of middle and 87% of high school students). The data showed a significant decrease at the middle school level in reported participation in the National School Lunch Program (from 90% in 2007; p<.01). This decrease appeared to begin with a decrease to 87% in 2011 and to 86% in 2012 before dropping again to 82 percent in 2013.

- The percentage of students eating breakfast at school increased significantly from 25 percent in 2007 to 32 percent in 2013 (p<.01) at the middle school level, and from 20% to 25% (p<.05) at the high school level. Significantly more middle school students were reported to eat breakfast at school than high school students (p<.001). Eating breakfast at school continued to be significantly related to school SES and student race/ethnicity for both middle and high school students, with participation significantly and inversely associated with school SES (p<.001), and significantly more likely for Black and Latino students compared with White students (p<.01). In 2013, free breakfast for any student, regardless of ability to pay, was available to 19 percent of middle school students and 16 percent of high school

students. Such availability was much higher in low-SES schools than mid- or high-SES schools: 43 percent versus 10 percent and 3 percent for middle school students, and 40 percent versus 8 percent and 0 percent for high school students ($p < .001$). Free breakfast regardless of ability to pay was also significantly less likely for White students than for Black or Latino students: 10 percent versus 34 percent and 29 percent for middle school, and 5 percent versus 33 percent for Black and 34 percent for Latino high school students ($p < .001$).

- The 2013 average full price^c charged for a School Breakfast Program meal was \$1.30 for middle school students and \$1.40 for high school students (high school student prices were significantly higher than those for middle school students; $p < .05$). Average National School Lunch Program prices were \$2.14 for middle school and \$2.13 for high school.
- Figure 2 shows that about one-fifth of students (22% of middle and 20% of high school students) were reported to bring their own lunch in 2013 (a significant increase for both middle and high school students from 16% in 2007 for middle school students and from 15% in 2007 for high school students; $p < .001$). Seventy percent of middle school and over half of high school students (56%) ate the lunch meal offered by the school in 2013. (Middle school participation in school lunch was significantly higher than for high school; $p < .001$.) The percentage of students reported to be eating the school lunch meal was significantly and negatively associated with school SES for both middle and high school students ($p < .01$); that is, lower school SES was associated with more students eating the school lunch meal.
- Figure 2 also shows that the percentage of students who were reported to not eat any

lunch was 6 percent for middle and 8 percent for high school students in 2013 (high school rates were significantly higher; $p < .01$). The estimated percentage of students who did not eat lunch was significantly higher in low-SES schools than in high-SES schools (8% vs. 3% for middle school, $p < .001$; 9% vs. 6% for high school, $p < .05$).

- In 2013, 8 percent of high school students went off-campus at lunch, a significantly higher percentage ($p < .001$) than middle school, where no students were reported to go off-campus (Figure 2).
- Finally, very few students in 2013 (2% of middle school and 5% of high school students) were reported to typically purchase lunch from vending machines or stores, snack bars, or carts. High school students were significantly more likely to do so than middle school students ($p < .01$). The percentages of both middle and high school students obtaining lunch from competitive venues was significantly lower than in 2007, when rates were 4 percent for middle and 8 percent for high school ($p < .01$).

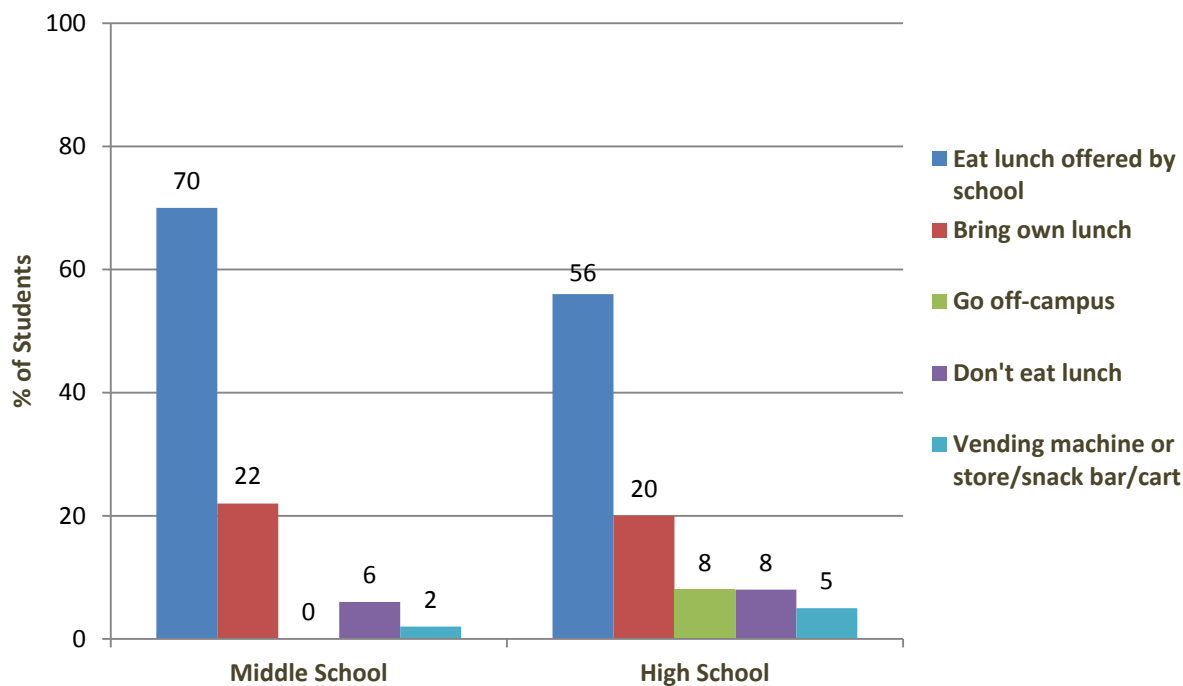
Response to New USDA School Lunch Meal Standards

As noted previously, the 2012-2013 school year was the first year during which the majority of new standards were implemented for meals served through the National School Lunch Program.¹⁹ A series of questions were posed to school administrators about changes resulting from the new standards.

- The overwhelming majority of students attended schools where administrators reported the lunch meals had changed as a result of the new standards (93% of middle and 89% of high school students).

^c Price data are reported here for students attending schools that (a) participated in the respective program (School Breakfast Program or National School Lunch Program) and (b) did *not* provide a free meal to all students.

FIGURE 2 Source of Lunch on Typical School Day, 2013



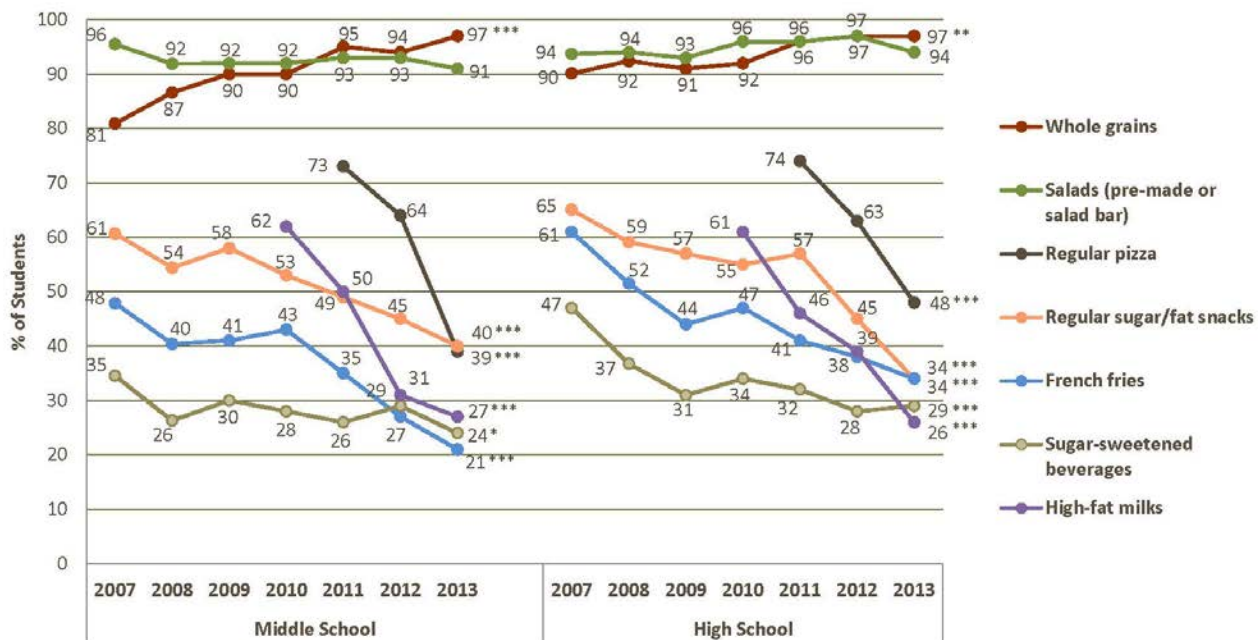
Source: Bridging the Gap, Institute for Social Research, University of Michigan, 2014.

Schools remain the primary lunch source for students, but while 70 percent of middle school students ate the lunch offered by the school, the rate was significantly lower (56%) among high school students in 2013 ($p < .001$).

If the school lunch meal did change as a result of the new standards:

- Approximately half of students (44% of middle and 53% of high school) attended schools where administrators reported that students had complained to a great or very great extent about the new meals at first. Yet, only 11 percent of middle and 18 percent of high school students attended schools where administrators reported continued strong complaints at the time of survey (Spring 2013). Both initial complaints and complaints at time of survey were significantly higher at the high school than middle school level ($p < .05$).
- By Spring 2013, 70 percent of middle and 63 percent of high school students attended schools where administrators reported that students generally seemed to like the new meals at least to some extent.
- Compared to the previous school year, slightly more than 10 percent of both middle and high school students attended schools where administrators reported less plate waste from students throwing away uneaten food (15% for middle and 14% for high school); approximately 40% of students attended schools where plate waste was reported to be about the same as the previous year (44% for middle and 41% for high school). A little more waste was reported at schools attended by 25% of both middle and high school students. Much more plate waste was reported at schools attended by only 16 percent of middle and 20 percent of high school students.

FIGURE 3 Percentage of Students With Selected Items Available at Lunch Meals



Data reported only for students whose schools participated in the National School Lunch Program.
 *p<.05; **p<.01; ***p<.001 (significance level of differences between first and most recent year of data reported)
 Source: Bridging the Gap, Institute for Social Research, University of Michigan, 2014.

In 2013, the availability of regular pizza, regular sugar/fat snacks, french fries, and high-fat milks continued to significantly decrease for both middle and high school students.

Beverages and Foods Available Through the National School Lunch Program Meal

There have been some significant improvements taking place in the mix of beverages available to students at school through the National School Lunch Program meal. Healthy beverages—those recommended by the IOM, including water, 100% juice, and nonfat or 1% milk—were available to virtually all secondary school students (98% for middle and 99% for high school students in 2013).

- The Healthy, Hunger-Free Kids Act of 2010 required that by the beginning of the 2011-2012 school year, schools participating in the National School Lunch Program make potable

water available at no charge in the place lunch is served during meal service.²³ In 2013, the great majority of students attended schools with such access. However, potable drinking water was *not* available in the cafeteria at lunchtime for 7 percent of middle and 4 percent of high school students attending schools participating in the National School Lunch Program, and for 8 percent of middle and 9 percent of high school students attending schools that did not participate in the National School Lunch Program.

- In 2013, 24 percent of middle school students had sugar-sweetened beverages available—down significantly from 35% in 2007 (p<.05). The availability of sugar-sweetened beverages also decreased significantly for high school

students from 47 percent in 2007 to 29 percent in 2013 ($p < .001$). Sugar sweetened beverages include regular soft drinks, sports drinks, and high calorie fruit drinks that are not 100% fruit juice.

- Availability of high-fat milks (flavored or unflavored) decreased significantly from 2010 (the first year data were available) to 2013: from 62 percent to 27 percent for middle school students ($p < .001$), and from 61 percent to 26 percent for high school students ($p < .001$). In contrast, any low-fat (1%) milks were available to 88 percent of middle and 85 percent of high school students in 2013; percentages for any non-fat milks were 82 percent for middle and 81 percent for high school students.
- Flavored low- or non-fat milks were available to more than three-fifths of secondary students, with higher non-fat availability. Specifically, flavored low-fat milk was available to 62 percent of middle and 60 percent of high school students in 2013. Flavored non-fat milk was available to 73 percent of middle and 74 percent of high school students.
- In 2013, availability of some form of fruit or vegetable was universal. One hundred percent of middle school students and 99 percent of high school students were able to access fresh fruits, while 92 percent and 91 percent, respectively, could also access dried or canned fruit. Vegetables were available some days or most/every day for 99 percent of students at both middle and high school in 2013.
- Availability of whole grains some days or most/every day increased significantly from 2007 to 2013 for middle school (81% to 97%; $p < .001$) and high school students (90% to 97%; $p < .01$).
- At least 80 percent of secondary school students were able to access pre-made main course salads in 2013, but only 41 percent of middle and 47 percent of high school students had a salad bar available. High school student access to salad bars had significantly decreased from 55 percent in 2007 to 47% in 2013 ($p < .05$).

- Foods with lower nutritional value that were served as part of the National School Lunch Program meal continued to be available to some middle and high school students, but significant decreases were observed. Availability of french fries^d on some days or most/every day decreased substantially from 48 percent in 2007 to 21 percent in 2013 for middle school students ($p < .001$) and from 61 percent to 34 percent for high school students ($p < .001$). High school students had significantly higher french fry availability than middle school students ($p < .01$).
- The availability of regular fat and sugary snacks^e also decreased substantially for both middle school students (from 61% in 2007 to 40% in 2013; $p < .001$) and high school students (from 65% in 2007 to 34% in 2013 ($p < .001$)).
- Pizza remained almost universally available (i.e., offered some days or most/every day) for almost all students (99% for middle and 98% for high school students in 2013). However, the types of pizza available showed significant changes over time. Healthier pizza (e.g., whole wheat crust, lower-fat versions) was available some days or most or every day for 92 percent of middle and 85 percent of high school students in 2013 (a significant increase for both grades since 2011 when data were first collected; $p < .01$), while regular pizza was available to 39 percent of middle and 48 percent of high school students in 2013, down from 73 and 74 percent, respectively, in 2011 (a significant decrease for both grades; $p < .001$). Middle school students had significantly higher availability of healthier pizza than did high school students ($p < .05$), while high school students had significantly higher availability of regular pizza ($p < .05$).

^d The full wording of the questionnaire item was “deep-fried fries (including fries that are just reheated).”

^e Any one or more of candy; salty snacks that are not low in fat, such as regular potato chips; cookies, crackers, cakes or other baked goods that are not low in fat; ice cream or frozen yogurt that is not low in fat.

School Food Policy Environment

- The Alliance for a Healthier Generation has developed a framework for improving the total school health environment, known as the Healthy Schools Program.²⁴ Areas of focus include policy and systems; school meals; competitive food and beverage options; health education; employee wellness; physical education; and student wellness. The Healthy Schools Program provides a variety of resources and tools to support and encourage changes designed to improve school health. In 2013, 28 percent of both middle and high school students attended schools that were participating^f in the program.
- The USDA initiative Team Nutrition offers a wide variety of resources to schools to improve nutrition choices available on school grounds and to improve nutrition education, ranging from fact sheets and education materials for students to classroom and school-wide events to competitive grant initiatives at the state level.²⁵ General school participation in Team Nutrition^f did not change significantly from 2007 through 2013, at 37 percent for middle school students and 38 percent for high school students in 2013.
- Also remaining statistically stable were the percentages of students who were in schools that had the school system as the food service provider (76% for both middle and high school) and food service management
- companies (approximately 20% for both middle and high school). Decisions about menus and food service issues continued to be made primarily at the district level; in 2013, 81 percent of middle and 75 percent of high school students attended schools with such decision-making. This represented a significant decrease at the high school level from 84 percent in 2007 ($p<.05$).
- The percentage of middle and high school students attending schools that provided menus to students significantly increased over time: from 90 percent in 2007 to 95 percent in 2013 for middle school ($p<.05$), and from 85 percent to 92 percent for high school ($p<.05$). Providing menus to parents increased for middle school students from 83 percent in 2007 to 93 percent in 2013 ($p<.001$); the rate for high school students increased from 80 percent in 2007 to 90 percent in 2013 ($p<.001$).
- Providing nutrition information to students also significantly increased over time. Such provision rose from 56 percent in 2007 to 70 percent in 2013 for both middle and high school students ($p<.001$). The percentage of students attending schools that provided nutrition information to parents significantly increased for both middle and high school students from 2007 to 2013 (from 50% to 67% for both middle and high school students; $p<.001$).

^f For both the Healthy Schools Program and Team Nutrition, administrators were asked, “Does your school participate in [program name]?” without specific detail on type of participation. Readers should be aware that participation can mean different things for different schools.

Nutrition: Competitive Foods and Beverages

Competitive foods are so-designated because they “compete” with the School Breakfast Program and the National School Lunch Program, and students must pay to obtain them. There can be a number of possible venues for competitive foods on school grounds, including vending machines, school or student-run stores and snack bars/carts. School cafeterias can also provide a venue for competitive foods when individual items are available for à la carte sale.

In June 2013, the USDA published the interim final rule governing school competitive nutrition environments as authorized by The Healthy, Hunger-Free Kids Act of 2010.²⁰ This rule provides standards for all foods and beverages served and sold in schools participating in the National School Lunch Program and School Breakfast Program, including items sold in vending machines, school stores and as à la carte purchases. The new standards are to be fully implemented by the beginning of the 2013-14 school year, approximately, meaning that schools have approximately 6 months to implement them past the period covered here.

The results presented below indicate that as of 2013, competitive foods and beverages remained widely available in both middle and high schools. While the availability of some less healthy competitive items (such as regular soft drinks, high-fat milks, and french fries) decreased significantly in competitive venues for both middle and high school students, the availability of healthier competitive items (such as salad bars and whole grains) had not significantly increased.

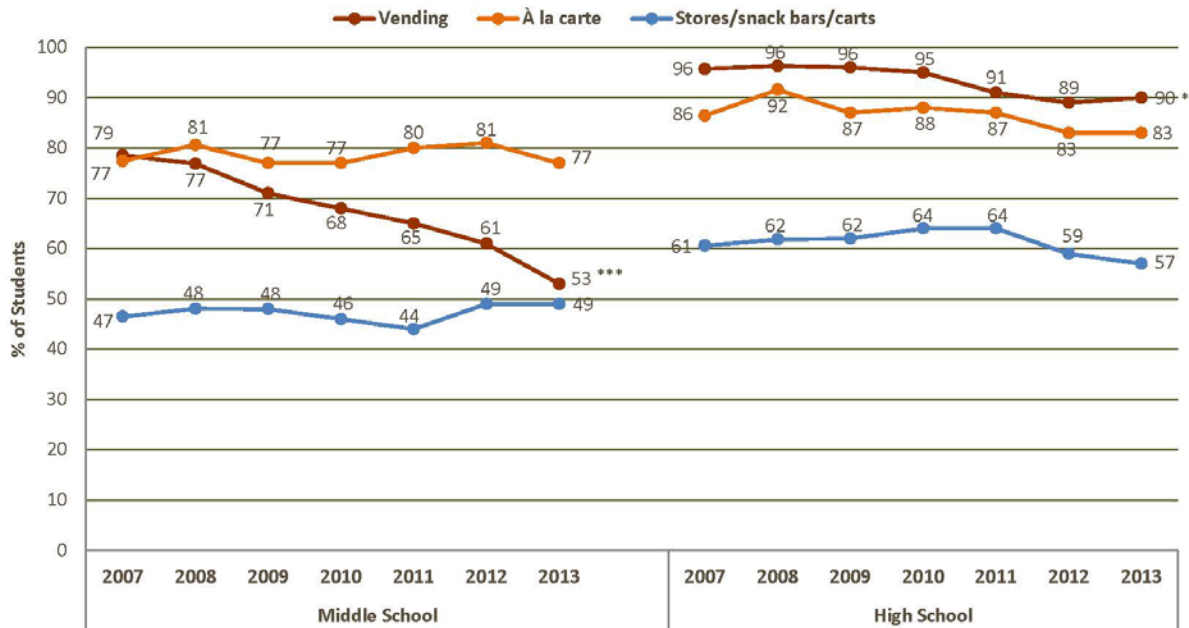
Key Findings

The following section describes key findings from 2007 to 2013.

Competitive Food and Beverage Venue Availability

- As shown in Figure 4, the most common competitive food and beverage venue for middle school students was à la carte sales in the cafeteria, available to 77 percent of students in 2013—the same percent as in 2007. The availability of stores or snack bars/carts also remained statistically unchanged (49 percent in 2013); but the availability of vending machines in middle schools decreased significantly from 79 percent in 2007 to 53 percent in 2013 ($p<.001$).
- In 2013, availability of both à la carte sales in the cafeteria and stores/snack bars/carts for high school students remained stable at 83 percent and 57 percent, respectively. Availability of vending machines for high school students decreased significantly from 96 percent in 2007 to 90 percent in 2013 ($p<.05$). Availability of both stores/snack bars/carts and vending machines was significantly higher for high school students than for middle school students ($p<.05$).
- Availability of both à la carte and vending machines varied significantly by school SES in 2013 ($p<.05$). In low-SES middle schools, à la carte sales were available to 62 percent of students vs. 89 percent in high-SES schools. In high schools, à la carte sales were available to 69 percent of students in low-SES schools vs. 94 percent in high-SES schools.
- Vending machines were available to 44 percent of middle school students in low-SES vs. 62 percent in high-SES schools. In high schools, vending machines were available to 81 percent of students in low-SES schools vs. 97 percent of students in high-SES schools.
- Vending machine availability was higher in 2013 for White than Black high school students (93% vs. 81%; $p<.01$), and middle school à la carte availability was significantly higher in 2013 for White than Black students (85% vs. 64%; $p<.01$).

FIGURE 4 Percentage of Students Attending Schools with Competitive Venues



*p<.05; ***p<.001 (significance level of differences between 2007 and 2013)
 Source: Bridging the Gap, Institute for Social Research, University of Michigan, 2014.

Availability of vending machines decreased significantly between 2007 and 2013 for both middle and high school students. However, the availability of all types of competitive venues remained high, particularly for high school students.

Competitive Food and Beverage Guidelines: Awareness and Implementation

In 2006, the Alliance for a Healthier Generation, a partnership of the American Heart Association and the William J. Clinton Foundation, reached agreement with the major food and beverage distributors to improve the nutrition of foods and beverages available to students in competitive venues at school. Both school beverage guidelines and nutritional guidelines for competitive foods were developed. Neither the school beverage guidelines nor the nutritional guidelines for competitive foods are mandatory. State education departments, school districts or individual schools determine whether, and to what extent, they will follow the guidelines.

- School administrator knowledge of the Alliance guidelines for both beverages and competitive foods has increased since 2007. The percentage of students attending schools where school administrators reported no knowledge of the Alliance beverage guidelines decreased significantly from 49 percent in 2007 to 29 percent in 2013 for middle school students (p<.001), and from 39 percent to 23 percent for high school students (p<.001). The percentage of middle school students attending schools where administrators reported no knowledge of the Alliance *nutritional* guidelines for competitive foods decreased from 63 percent in 2007 to 49 percent in 2013 (p<.01), and decreased from 57 percent to 38 percent for high school students (p<.001). Lack of knowledge about the Alliance nutritional guidelines was

significantly higher at the middle than high school level ($p < .01$).

- Since 2007, the percentage of middle school students attending schools without Alliance *beverage guideline* implementation for à la carte cafeteria sales and vending machines decreased significantly ($p < .01$). Significant decreases for the percentage of high school students attending schools without Alliance *beverage guideline* implementation were seen across all three competitive venues examined ($p < .01$). By 2013, the percentage of middle and high school students attending schools with no implementation of the beverage guidelines was 43 percent and 31 percent for à la carte sales, 42 percent and 37 percent for stores or snack bars/carts, and 37 percent and 31 percent for vending machines. Remaining students attended schools where the guidelines were either in process of being implemented or had been fully implemented.
- Since 2007, the percentage of students attending schools with competitive venues where the Alliance *nutrition guidelines for competitive foods* had not been implemented decreased significantly for both middle and high school students for à la carte sales ($p < .01$) and stores or snack bars/carts ($p < .05$). By 2013, the percentage of middle and high school students attending schools with no implementation of the nutrition guidelines decreased to 56 percent and 46 percent for à la carte sales, and 54 percent and 46 percent for sales in stores or snack bars/carts. The percentage of high school students attending non-implementing schools for vending machine sales also significantly decreased to 46 percent ($p < .001$), while for middle school students it decreased to 57 percent (though not with statistical significance). As with the beverage guidelines, remaining students attended schools where the guidelines were either in process of being implemented or had been fully implemented.

While both the Alliance guidelines for beverages and snack foods appear to have a

constructive influence on the offerings of a large and increasing number of schools, it is clear from the following presentation of competitive venue food and beverage availability that as of 2013, there remained a great deal of room to improve the nutritional quality of competitive foods and beverages.

Food and Beverage Availability in Competitive Venues

- A wide variety of food and beverage availability measures will be discussed below; trends for selected items are presented in Figure 5. For all measures other than healthier pizza, availability was significantly higher for high school students than for middle school students ($p < .05$). Such differences are not surprising given the findings above showing that overall competitive venue availability was significantly higher for high school than middle school students.
- The availability of all beverage categories decreased significantly over time for both middle and high school students. The widespread decreases were likely related to the observed decrease in vending machine availability.
- The 2013 availability of IOM-approved beverages (water, 100% juice, and nonfat or 1% milk) in competitive venues was very high for middle (89%) and high school students (98%). Although these levels remained quite high, they actually had significantly decreased from 2007 levels of 96 and 100 percent for middle and high school students, respectively ($p < .05$).
- In 2013, 93 percent of middle and 95 percent of high school students had access to free, potable drinking water at lunchtime when à la carte sales would occur. The availability of drinking fountains in other school locations was reported as follows: approximately 80 percent for gymnasium/locker rooms and approximately 95 percent for hallways near

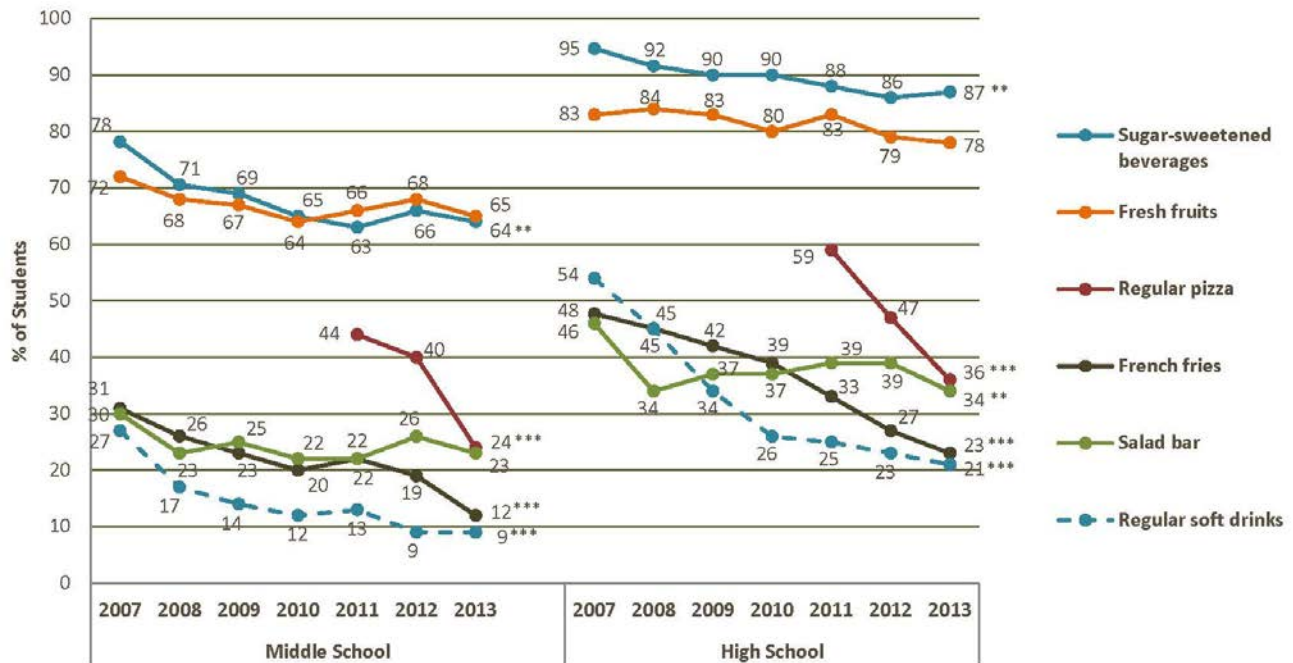
classroom areas. Availability in other non-cafeteria school locations was 40 percent for middle school students and 48 percent for high school students. In 2013, drinking fountains in gymnasiums/locker rooms were significantly less likely for students in low-SES middle schools and high schools compared with students in high-SES schools (77% vs. 92% for middle school, $p<.01$; 76% vs. 88% for high school, $p<.05$).

- Availability of all sugar-sweetened beverages, including regular soft drinks, sports drinks and high-calorie fruit drinks that are not 100% juice, decreased from 78 percent in 2007 to 64 percent in 2013 for middle school students ($p<.01$) and from 95 percent to 87 percent for high school students ($p<.01$).

- Importantly, the availability of regular soft drinks in any competitive venue decreased dramatically among both middle and high school students: from 27 percent in 2007 to 9 percent in 2013 for middle school, and from 54 percent to 21 percent in 2013 for high school ($p<.001$).

- Decreases in high school student regular soft drink availability occurred across competitive venue types. Among high school students, availability via à la carte sales in the cafeteria dropped 7 percentage points to 2 percent in 2013 ($p<.001$), availability via stores or snack bars/carts dropped 9 percentage points to 8 percent ($p<.01$), and availability via vending machines dropped 34 percentage points to 17 percent ($p<.001$).

FIGURE 5 Percentage of Students with Selected Items Available in Any Competitive Venue



Competitive venues include vending machines, school/student store or snack bars/carts, and à la carte at lunch.

** $p<.01$; *** $p<.001$ (significance level of differences between first and most recent year of data reported)

Source: Bridging the Gap, Institute for Social Research, University of Michigan, 2014.

Encouraging decreases between 2007 and 2013 were observed in competitive venue availability of regular soft drinks, regular pizza, and french fries for both middle and high school students. Decreases to a lesser degree were also observed for overall sugary drinks.

- Substantial decreases in the availability of any competitive venue high fat milks (flavored or unflavored) were also seen across the secondary school environment from 48% in 2010 (the first year data were available) to 22% in 2013 for middle school, and from 57% to 30% for high school; $p < .001$). In 2013, any low-fat milks were available in at least one competitive venue for 65 percent of middle and 75 percent of high school students; non-fat milk availability levels were very similar (61% of middle and 72% of high school students).
- The availability of competitive venue flavored low- or non-fat milks was widespread. In 2013, 49 percent of middle school students had low-fat flavored milks and 55 percent had non-fat flavored milks. At the high school level, the percentage of students with low- and non-fat flavored milks was 58 percent and 65 percent, respectively.
- Availability of fruits, vegetables, and whole grains in competitive venues did not change significantly from 2007 to 2013. In 2013, 65 percent of middle and 78 percent of high school students had fresh fruit available in competitive venues; 61 percent of middle and 74 percent of high school students had vegetables available; 55 percent of middle and 63 percent of high school students had whole grains available. (The availability of whole grains was measured only in à la carte cafeteria sales.)
- In 2013, 55 percent of middle and 68 percent of high school students had pre-made salads available; but only 23 of middle and 34 percent of high school students had salad bars available (a significant decrease for high school students from 46% in 2007; $p < .01$). (The availability of salad bars was measured only in à la carte cafeteria sales.)
- Fresh fruits and vegetables were predominately offered through à la carte sales in the cafeteria in 2013. While 64 percent of middle and 74 percent of high school students had fresh fruits available through à la carte cafeteria sales, only 16 percent of middle and 24 percent of high school students had fresh fruits available through stores or snack bars/carts; and only 3 percent of middle and 10 percent of high school students had access to fresh fruits in vending machines.
- Fifty-eight percent of middle and 70 percent of high school students had vegetables available through à la carte cafeteria sales; in contrast, only 14 percent of middle and 19 percent of high school students had vegetables available through stores or snack bars/carts, and only 3 percent of middle and 8 percent of high school students had access to vegetables in vending machines.
- Less healthy foods continued to be available to students in competitive venues, although some improvements were observed. The availability of french fries decreased significantly from 31 percent in 2007 to 12 percent in 2013 for middle school students ($p < .001$) and from 48 percent to 23 percent for high school students ($p < .001$). The availability of regular fat and sugary snacks[§] also significantly decreased from 71 percent in 2007 to 54 percent in 2013 for middle school students ($p < .001$), and from 83 percent in 2007 to 65 percent in 2013 for high school students ($p < .001$). Any pizza availability remained relatively stable at 62 percent for middle and 71 percent for high school students in 2013. However, the availability of regular pizza (vs. healthier pizza, such as whole wheat crust or low-fat pizza) significantly decreased, dropping from 44 percent in 2011 to 24 percent in 2013 for middle school students ($p < .001$) and from 59 percent to 36 percent for high school students ($p < .001$).
- For both middle and high school students, the availability of fresh fruits, vegetables, salads and whole grains was significantly lower for students in low-SES schools than for students in high-SES schools ($p < .001$). However, less

[§] Any one or more of candy; salty snacks that are not low in fat, such as regular potato chips; cookies, crackers, cakes or other baked goods that are not low in fat; ice cream or frozen yogurt that is not low in fat.

healthy foods (french fries and regular pizza) were also less likely to be available to students in low-SES schools than those in high-SES schools ($p < .05$). These differences are likely due to the previously discussed school SES-associated differences in overall competitive venue availability.

- Commercial fast foods^h in either competitive venues or the lunch meal were available to 17 percent of middle and 24 percent of high school students in 2013 (a significant decrease for middle school students from 27% in 2009, the first year these data were collected; $p < .01$).

School Policies on Competitive Foods and Beverages

- Approximately 60 percent of both middle and high school students attended schools where competitive venue prices were set to encourage consumption of healthier beverages and foodsⁱ in 2013. These rates were generally stable over time, other than a significant increase in the percentage of middle school students attending schools where prices were set to encourage consumption of healthier foods (rising from 48% in 2007 to 63% in 2013 ($p < .01$)).
- School administrators were asked if their school district had any restrictions on items sold to students as fundraisers. Approximately one-third of students (34% for middle and 37% for high school) attended schools where policy was reported to follow state or district wellness guidelines. Only twenty-one percent of middle school students and 24 percent of high school students attended schools where the policy prohibited “foods of minimal nutritional value (soft drinks, candy, and gum),” and 21 percent of both middle and 26 percent of high school students attended schools prohibiting sales of

soft drinks as fundraisers. Schools with a policy specifying “only healthy foods allowed” were attended by just 17 percent of middle and 14 percent of high school students.

- School administrators were also asked if mobile vendors (like those operating hot dog carts or ice cream trucks) were prohibited from selling food or beverages on school grounds during school hours. Responses indicated that 69 percent of middle school and 74 percent of high school students attended schools with such restrictions in 2013.

In-School Marketing, Including Exclusive Contracts

- Exclusive beverage contracts are typically multiyear contracts that grant a supplier sole rights to sell beverages on school grounds and, in turn, generate revenue for schools. Among middle schools, the percentage of students attending schools with exclusive beverage contracts declined from 67 percent in 2007 to 47 percent in 2013 ($p < .001$). A corresponding decline occurred among middle schools receiving a percentage of contract sales, from 54 percent of middle school students attending such schools in 2007 to 33 percent in 2013 ($p < .001$). The percentage of high school students attending schools with an exclusive beverage contract also decreased significantly from 74 percent in 2007 to 66 percent in 2013 ($p < .05$), and the percentage of high school students attending schools that reported receiving a specified percentage of sales from the existing contract decreased from 64 percent to 53 percent ($p < .05$). Exclusive beverage contracts and all related outcomes were significantly more likely for high school than middle school students ($p < .01$).
- In 2013, regular soft drinks were sold under an existing exclusive beverage contract in schools attended by 8 percent of middle and 16 percent of high school students. These percentages had decreased by about half from 2008 levels of 14 percent for middle and 37 percent for high school students ($p < .05$ for middle and $p < .001$

^h Any availability of food from pizza places, sandwich or sub shops, or fast food chains during a typical week.

ⁱ School administrators were asked “To what extent has your school or school district set food prices (in vending machines, stores, à la carte) with the intent of encouraging students to eat healthier foods (e.g., fruits, vegetables, low-fat foods)?” A similar question asked to what extent the school or district set beverage prices (e.g., for bottled water, low-fat milk, sugar-free beverages) to encourage students to drink healthier beverages.

for high school). (The first year this item was included in the study was 2008.)

- For food vending revenue, school administrators first confirmed if food vending machines were available to students and if a company such as a vending company or soft drink/beverage supplier sold food items in such venues. The percentage of students attending schools that received revenue from food vending machines decreased significantly at the middle school level (from 21% in 2007 to 14% in 2013; $p < .05$) and showed similar decreases (although not significant) for high school (from 46% in 2007 to 38% in 2013). Rates were significantly higher for high school than middle school students ($p < .001$).
- At the middle school level, no significant changes were observed in the percentage of middle school students exposed to advertising and promotion of soft drinks and/or items from

fast-food restaurants. Rates for middle school students ranged from 1 percent for textbook covers/menus and posters to 11 percent for sponsorships. Rates for high school students ranged from 1 percent for textbook covers/menus to 20 percent for sponsorships. Over time, significant decreases in exposure among high school students were observed for both sponsorships (dropping from 29% in 2007 to 20% in 2013; $p < .05$) and posters (dropping from 7% in 2007 to 3% in 2013; $p < .05$). The percentages of high school students exposed to sponsorships and exclusive beverage contract ads were significantly higher than for middle school students ($p < .01$).

In sum, there have been some important improvements in the types of foods and beverages being offered in the nation's public schools to their students. Advertising and promotion have declined, as well.

Physical Activity and Physical Education

Schools have historically played an important role in facilitating physical activity for their students during the school day.²⁶ However, physical education and other opportunities for activity, such as walking or biking to school, have been increasingly difficult to sustain due to competing demands for school time and resources as well as school siting choices that have been made. The importance of maintaining and improving support for these activities has been repeatedly emphasized.²⁷⁻³¹

Our results show little change from 2007 to 2013 in participation in physical education and walking or biking to school. Worse yet, there were significant recent *decreases* in the percentage of middle school students who were reported to participate in interscholastic or varsity sports *and* intramural sports or physical activity clubs. In contrast, significant *increases* were observed in areas of physical fitness testing and body mass index (BMI) assessment. Important differences remain evident by school SES and predominant race/ethnicity of the student body.

Key Findings

The following section describes key findings from 2007 to 2013. Trends for selected measures are presented in Figure 6.

Physical Education Requirements and Participation

- Overall, the percentage of students attending schools that required physical education (PE) at their grade level did not change significantly from 2007 to 2013. Similarly, the percentage of

students who participated in PE overall did not change. Requirements and participation rates were markedly different for middle and high school students. In 2013, PE was required for 79 percent of students in middle schools but only 29 percent of students in high schools ($p<.001$). Following suit, 89 percent of middle school students were reported to take PE in 2013, whereas only 50% of high school students were reported to have done so ($p<.001$).

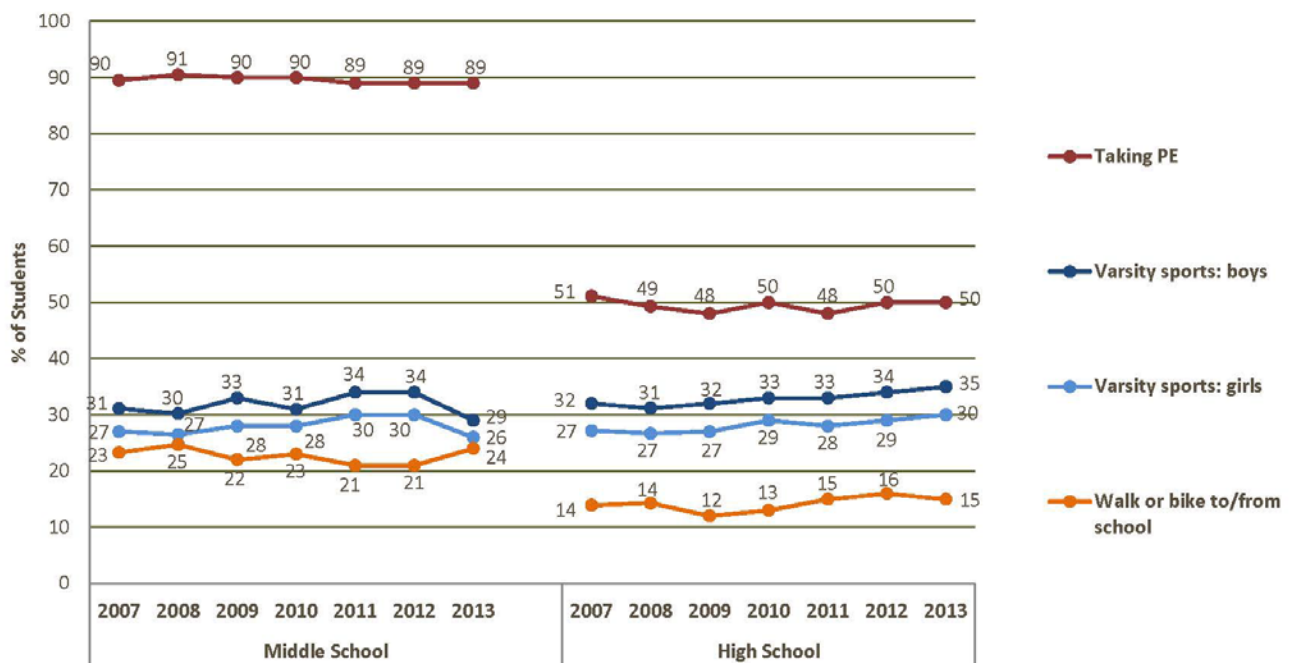
- While overall requirements and participation levels generally did not change significantly from 2007 to 2013, there was a significant *decrease* among students at low-SES high schools in both the percentage attending schools that required PE (42% in 2007 vs. 19% in 2013; $p<.01$) and participation in PE (54% in 2007 vs. 43% in 2013; $p<.05$).
- From 2010 through 2013, reported participation in PE was significantly lower for students attending low-SES secondary schools than mid- or high-SES secondary schools. On average, in 2013 in low-SES schools 85 percent of middle school students and 43 percent of high school students participated in PE compared with 92 percent and 54 percent of middle and high school students at mid-SES schools ($p<.05$). In 2013 reported PE participation rates remained higher in high-SES schools compared to low-SES schools, but not significantly so ($p<.10$).
- Participation in PE was also significantly lower for students in majority Latino middle schools compared to students in predominantly White middle schools. Ninety-four percent of students attending predominately White middle schools took PE versus 82 percent of students at majority Latino middle schools ($p<.01$).

Minutes and Weeks of PE

- There were dramatically different levels of PE participation between middle and high school. During the 2013 school year, the average number of minutes of PE per week was 150 minutes for middle school students and 94 minutes for high school students ($p < .001$). (This average represents the mean number of minutes across all target grade students and all weeks during the school year, regardless of

whether any particular student took PE for part or all of the school year.) The average number of weeks of PE during the school year was 26 weeks for middle school students and 15 weeks for high school students, again a significant difference ($p < .001$). These estimates were similar to the estimates in 2011, the first year these estimates were calculated.

FIGURE 6 Percentage of Students Participating in Various Forms of Physical Activity



Source: Bridging the Gap, Institute for Social Research, University of Michigan, 2014.

Participation rates for both middle and high school students in various forms of physical activity remained essentially flat and quite low over the 2007 to 2013 time interval.

Participation in Sports Programs

- Reported participation in interscholastic or varsity sports recently decreased significantly in middle schools from 2012 to 2013 for both boys and girls. In 2013, 29% of boys in middle school were reported to participate in interscholastic/varsity sports, down from 34% in 2012 ($p < .01$). Similarly, in 2013, 26% of middle school girls were reported to participate in interscholastic/varsity sports whereas in 2012, the rate was 30% ($p < .01$). Varsity sports participation rates in high school were significantly *greater* than those in middle school ($p < .01$) and that remained consistent over time (35% for boys and 30% for girls in 2013).
- Reported participation in intramural sports or physical activity clubs also significantly decreased recently for both middle school girls and boys from 2012 to 2013. In 2013, 22 percent of middle school boys were reported to participate in intramural sports or physical activity clubs down from 27% in 2012 ($p < .05$). For middle school girls, 20% were reported to participate in intramural sports or physical activity clubs in 2013 versus 23 percent in 2012 ($p < .05$). Participation in intramural sports or physical activity clubs was significantly lower in high school than in middle school for both boys and girls ($p < .001$). In high school, only about 14% of boys and 12% of girls were reported to participate in intramural sports or physical activity clubs in 2013.
- In both middle schools and high schools, students attending low-SES schools were significantly less likely than students in mid- and high-SES schools to participate in interscholastic or varsity sports ($p < .05$). This held true for both boys and girls.
- In predominantly White middle schools, the percentage of boys and girls reported to participate in interscholastic or varsity sports consistently was higher compared with students in majority Latino schools ($p < .001$).

Furthermore, in predominately White middle schools, the percentage of girls participating in interscholastic or varsity was higher compared to girls in majority Black middle schools ($p < .05$). At the high school level, students at predominantly White high schools had higher rates of interscholastic or varsity sports participation compared with students at either majority Black or Latino high schools for both boys and girls ($p < .001$).

- Low-SES and mid-SES schools had lower rates of participation in intramural sports or physical activity clubs compared to high-SES schools in both middle schools and high schools; this was true for both boys and girls ($p < .05$). Predominately White middle schools had higher rates of participation in intramural sports or physical activity clubs compared with majority Latino middle schools for both boys and girls ($p < .05$).

Fees for Participation in Interscholastic or Varsity Sports

- Increasingly, students need to pay fees in order to participate in interscholastic or varsity sports. Ten percent of middle school students attended schools that required an athletic participation fee for most of the varsity sports offered; an additional 18% of middle school students (attended schools that required an athletic participation fee the fee could be waived or reduced if the student could not afford to pay. The percentage of students attending high schools with a required participation fee with no option for a waiver was similar to that observed at the middle school level (11%), but the percentage of students attending high schools with required athletic participation fees with the potential for waiver/reductions was significantly higher than middle school at 25% ($p < .05$).
- Some schools charged team fees instead of or in addition to athletic participation fees. The percentage of students who attended schools that required additional team fees was 6 percent in middle school and 11 percent in high

school (high school rates were significantly higher; $p < .01$). An additional 12 percent of middle school students attended schools that charged additional team fees but waived or reduced those fees if the student couldn't afford to pay. About one in six high school students (17%) attended schools that charged additional team fees with waivers/reductions for financial need.

- Some schools required fees for items such as uniforms and equipment. The percentage of students who attended schools that required such fees was 6 percent in middle school and 11 percent in high school. An additional 11 percent of middle school and 25 percent of high school students attended schools that required uniform/equipment fees but provided waivers/reductions based on ability to pay (percentages were significantly higher at the high school level; $p < .05$).
- More than one in ten percent of secondary students (11% of middle and 13% of high school students) attended schools where administrators reported reduced student participation in varsity sports—to at least some extent—due to costs. These costs associated with athletic participation may well help to explain the disparities in participation rates that we observed with the SES and racial/ethnic composition of the schools.

Walking or Bicycling to School

- The percentage of students who walked or bicycled to school remained unchanged and very low. In 2013, about a quarter (24%) of middle school students and 15 percent of high school students walked or biked to school. Rates of walking or biking to school were significantly higher among middle school students compared to high school students ($p < .001$).
- Students in low-SES schools were significantly more likely to walk or bike to school than students in mid- and high-SES schools (39% versus 17% and 16% in middle school, and

22% versus 12% and 11% in high school; $p < .001$). More students in majority Black (28%) and majority Latino (44%) middle schools walked or biked to school than did students in predominately White middle schools (14%) ($p < .01$). In high schools, a much greater percentage of students in majority Latino schools walked or biked to school compared with students in predominately White schools (39% vs 9%; $p < .001$).

Physical Fitness Testing and Body Mass Index Assessment

- The percentage of students attending schools that gave any physical fitness tests increased significantly from 2007 to 2013. In 2013, 85 percent of middle school students were in schools that gave any fitness tests (up from 73 percent in 2007; $p < .01$). The corresponding figures for high school were 62 percent in 2013 compared with just 36 percent in 2007 ($p < .001$). A similar increase was seen for the percentage of students in high schools where *all* students were tested (from 12% in 2007 to 20% in 2013; $p < .05$). Students attending middle schools were significantly more likely to be given fitness tests relative to students high schools ($p < .001$).
- Students in low- and mid-SES middle schools consistently were less likely to attend a school that gave fitness tests to any students than students who attended high-SES middle schools ($p < .05$). Eighty-five percent of students in low-SES and 75 percent of students in mid-SES middle schools attended a school that gave fitness tests to any students compared with 94 percent at high-SES middle schools. However, there were significant increases in the numbers of students in low-SES middle and high schools who attended schools that provided testing since 2007 ($p < .01$).
- There also was an increase in the percentage of secondary school students who attended schools that measured student body mass index (BMI). For middle school students, 47 percent attended schools in 2013 where at

least some students were measured compared to 33 percent in 2007 ($p < .01$). For high school students, the percentage of students in schools that measured BMI on any students increased from 27 percent in 2007 to 35 percent in 2013 ($p < .05$). There also was a significant increase in the percentage of students in schools where *all* students were measured. Rates for middle school students increased from 24 percent in 2007 to 35 percent in 2013 ($p < .05$). There was almost a three-fold increase from 2007 to 2013 in the percentage of high school students who were in schools where *all* students were measured (from 6% in 2007 to 15% in 2013; $p < .01$). Still, the majority of secondary students attended schools that did not conduct BMI measurements on any students in 2013. The percentage of students attending schools with BMI testing was significantly higher at the middle versus high school level ($p < .01$)

- The percentage of students who attended schools that sent the results of fitness and BMI assessments to parents also increased significantly ($p < .01$), likely due to the increase in the percentage of students who underwent the tests.
- More than half (56%) of middle school students were at schools that sent fitness test results to parents in 2013 compared with 32 percent of high school students (a significant difference; $p < .001$). More than one-third (35%) of middle school students and about one-fifth (21%) of high school students were at schools that sent BMI results to parents (significantly higher at the middle school level; $p < .001$).

Shared Use of School Facilities: Joint Use Agreements

- The vast majority of middle and high school students (94% and 90%, respectively) attended schools that allowed external organizations and/or individuals to use school grounds or facilities for physical activity or sports programs outside of school hours. These rates were similar to those seen in 2010, when such joint use arrangements were first measured. Although the majority of students attended schools that shared their facilities, students in low-SES schools were significantly less likely to be in schools that allowed this access compared with students in high-SES schools (89% and 81% for middle school and high school students in low-SES schools compared with 99% and 97% for middle and high school students in high-SES schools; $p < .01$).
 - In sum, there was considerable evidence of important disparities in school practices related to student physical activity levels along both racial/ethnic and SES lines. As a result, some of the segments of the student population with the greatest problem of overweight were receiving the least opportunity to increase their levels of physical activity.
-

Wellness Policies

The Child Nutrition and WIC (Women, Infants, and Children) Reauthorization Act of 2004 required school districts or local education agencies that participate in federally subsidized child nutrition programs (such as the National School Lunch Program and School Breakfast Program) to establish and implement a local school wellness policy by the start of the 2006–07 school year. Our survey found that in 2013, 82 percent of middle school students and 87 percent of high school students were in schools that participated in the National School Lunch Program, so the great majority of districts represented in our sample were obliged to establish a wellness policy.

Key Findings

The following section describes key findings from 2007 to 2013.

Establishing and Implementing a Wellness Policy

In 2013, 76 percent of middle and 70 percent of high school students attended a school where a wellness policy had been established by either the school or school district. Slightly more than half of secondary students attended schools where an individual had been designated as responsible for wellness policy implementation (53% for middle and 52% for high school). However, only 30 percent of middle and 31 percent of high school students attended schools with a fully developed plan for implementing the wellness policy in 2013.

Specific Goals in the Wellness Policy

- The percentage of students attending schools with explicit wellness goals for physical activity, nutrition education, and foods and beverages available to students remained generally stable. Physical activity goals were in place in schools serving 54 percent of middle and 52 percent of high school students in 2013; nutrition education goals were in place for 50 percent of middle and 51 percent of high school students, and goals for foods and beverages available to students were in place for approximately three-fifths of both middle (57%) and high school (58%) students. The 57 percent at the middle school level represented a significant decrease from 67 percent in 2009 ($p < .05$).
- More than two-thirds of both middle and high school students attended schools with specific nutrition guidelines for all foods in 2013: 72 percent for middle and 70% for high school students (representing a significant increase at the high school level compared with 59% in 2007; $p < .01$)

Formal Classroom Instruction in Physical Activity and Nutrition

- Formal classroom instruction in physical activity, exercise and fitness decreased significantly compared with 2007 at both middle and high school levels. Ninety-six percent of middle school students were offered such instruction in 2007 compared with 89 percent in 2013 ($p < .01$); high school rates decreased from 98 percent in 2007 to 94 percent in 2013 ($p < .05$).
- Formal classroom instruction in nutrition and dietary behavior did not change significantly between 2007 and 2013. In 2013, 77 percent of middle and 90 percent of high school students were offered such instruction.

- Middle school students in low-SES schools were significantly less likely to receive formal classroom instruction on physical activity, exercise and fitness, than their peers in high-SES schools in 2013 (86% vs. 96%, $p < .05$). The findings for instruction on nutrition and dietary behavior (were similar (70% vs. 90%; $p < .001$). High school students in low-SES schools also were significantly less likely to receive formal classroom instruction on nutrition and dietary behavior than their peers in high-SES schools in 2013 (85% vs. 95%; $p < .01$). So, again, those with the greatest need to improve their exercise levels and diets were the least likely to receive the relevant assistance.
- Availability of formal instruction in both physical activity, exercise and fitness, as well as nutrition and dietary behavior, was significantly higher for high school students than for middle school students ($p < .05$).

Healthy School Recognition

- In 2013, only 7 percent of middle and 9 percent of high school students attended a school that was certified as a USDA HealthierUS school. While these percentages were low, they were a significant increase ($p < .05$) for both middle and high school students from 3 percent for middle and 4 percent for high school in 2010, the first year data on this issue were collected. Only approximately 5 percent of secondary students attended a school designated as having an Alliance for a Healthier Generation Healthy School Program, according to administrator reports. It should be noted, however, that nearly half of secondary school students attended schools where the administrator did not know if the school had received such certifications or designations.
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Concerns and Perceptions of School Administrators

The section of questionnaire that focused on the school administrators' perceptions asked specifically about their levels of concern for student nutrition, physical activity, and overweight, as well as for the perceived extent of effort directed towards addressing student nutrition and physical activity on the part of both the school and its school district. In general, the levels of concern about student nutrition, physical activity and overweight expressed by school administrators decreased from 2007 through 2013. Differences in levels of concern about student overweight, nutrition and physical activity were evident by school SES as is described below.

Key Findings

The following section describes key findings from 2007 to 2013.

Concern for Student Overweight, Nutrition and Physical Activity

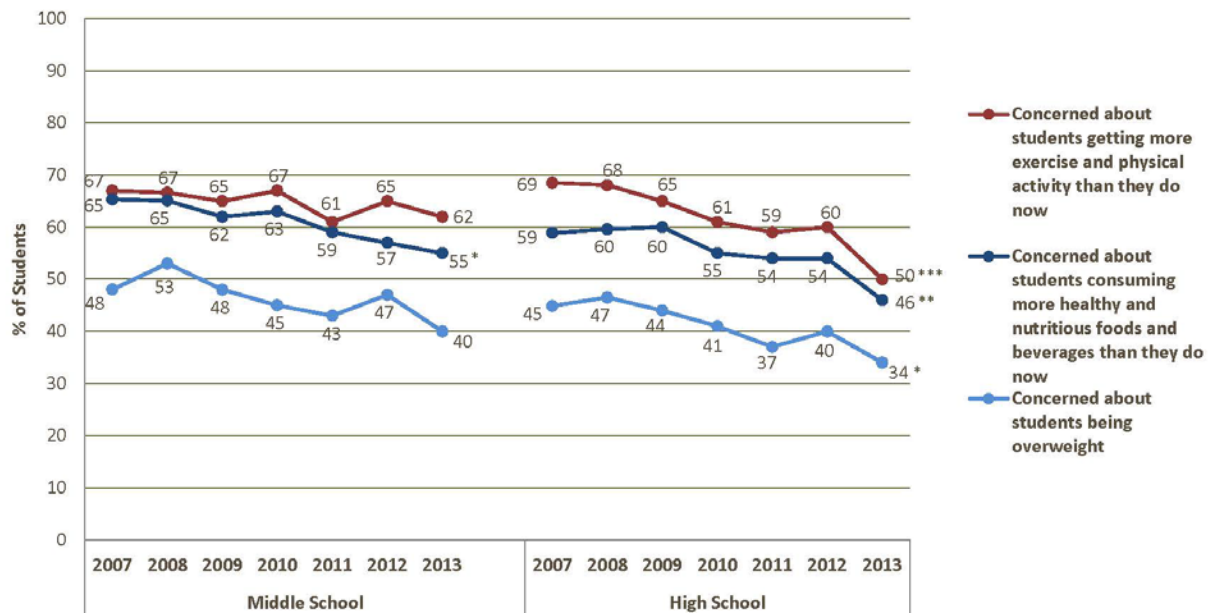
- Approximately half of both middle and high school students attended schools where administrators reported that schools should be involved to a "great" or "very great" extent in addressing the problem of childhood obesity (51% and 45%). The data for middle school represent a significant decrease ($p < .05$) from 61 percent in 2011 (the first year data were collected).
- As shown in Figure 7, administrators reported less concern about students being overweight than about nutrition and physical activity. In 2013, 62 percent of middle school students attended schools where the administrator expressed great or very great concern about student physical activity levels; the corresponding percentage for nutrition was 55 percent (a significant decrease from 2007 levels of 65%; $p < .05$); and 40 percent attended schools where the administrator expressed concern about students being overweight. (It is possible that the decline in concern about nutrition came from the positive changes that were reported over that interval, as is documented above.) Percentages for high school students were similar at 50 percent, 46 percent and 34 percent for physical activity, nutrition, and overweight, respectively. (At the high school level, concern for all three areas decreased significantly ($p < .05$) from 2007 even though little improvement was seen in related variables.) Levels of concern for both nutrition and physical activity were significantly higher at the middle school than high school levels in 2013 ($p < .05$).
- In 2013, middle and high school students attending low-SES schools were significantly more likely than their peers in high-SES schools to have school administrators expressing great or very great concern about student overweight (49% vs. 33% at the middle school level, and 44% vs. 23% at the high school level; $p < .05$). At the high school level, students attending low-SES schools were also significantly more likely than those in high-SES schools to have administrators express great or very great concern about student nutrition (59% vs. 32%; $p < .001$) and physical activity (60% vs. 41%; $p < .01$).

School and School District Efforts to Improve Student Nutrition and Physical Activity

Reported school or school district efforts to improve both student nutrition and physical activity remained fairly stable from 2007 to 2013. Approximately half of all middle and high school students attended schools where the school administrator reported efforts being made to improve student nutrition to a great or very great extent at the school district or school level. Roughly half of all middle school students

attended schools where such efforts to improve student physical activity at either the school district or school level were reported. Such efforts at the high school level were significantly lower, averaging about 40 percent ($p < .01$). Thus, at the level of schooling where there is the greatest need to increase student physical activity, the least effort seems to have been made.

FIGURE 7 Percentage of Students Attending Schools with Principals Who Were Concerned to a “Great Extent” or “Very Great Extent” About Student Overweight, Nutrition, and Physical Activity



* $p < .05$; ** $p < .01$; *** $p < .001$ (significance level of differences between 2007 and 2013)
 Source: Bridging the Gap, Institute for Social Research, University of Michigan, 2014.

School administrators consistently showed higher concern for student exercise and physical activity and nutrition than for student overweight.

Next Steps

Since 2007, a number of public secondary schools in the U.S. have made an effort to make healthier foods and drinks more available, but foods that are high in fat, sugar and/or sodium are still readily available in many schools. Clearly, there has been insufficient progress in helping students be active during and after the school day. This report also highlights a number of conditions in middle and high schools that may contribute to disparities in childhood obesity. Our data identify specific policies and practices that, if changed, may help address these disparities and create a healthier school environment for all students.

The Bridging the Gap team has been collecting nationally representative data on health-related 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. Annual surveys by Bridging the Gap will continue to track changes in state and district policies and school practices relevant to student health at least into 2014. Whether funding will permit further continuation beyond that point remains to be determined. We also will monitor

the impact of these changes to identify areas where progress is being made, as well as areas where particular need remains. These findings will provide timely guidance for the continued implementation of the Healthy, Hunger-Free Kids Act of 2010, including both improved nutrition standards for federally-reimbursable meal programs (National School Lunch and Breakfast Programs) and Smart Snacks standards (addressing all competitive foods and beverages available in the schools outside of school meals.

In addition, ongoing tracking will help assess the impact of the Healthy, Hunger-Free Kids act of 2010, the reauthorization of the Elementary and Secondary Education Act, and key state and local policies that impact children’s overall health. Future reports also will examine links between adopted wellness policies, their level of implementation in schools, and secondary school students’ self-reported physical activity levels, dietary patterns and body mass indices to identify policies with the greatest potential to reverse the childhood obesity epidemic.

Data on Health-Related Policies and Practices

Table 1 summarizes data from 2007 through 2013. All data are weighted to reflect the percentages of public secondary school students nationwide (separately for middle schools and high schools) who were impacted by these practices. Data for additional survey topics and demographic sub-sample comparisons are available at www.bridgingthegapresearch.org/research/secondary_school_survey. The statistical significance of the differences observed between years, and of differences between middle schools and high schools in 2013, are provided in the three right hand columns.

TABLE 1 Summary of Health-Related Policies and Practices in Secondary Schools

School Meals	Responses	Grade Level	Year							First v. Last ^a	Next to Last v. Last ^b	MS v. HS 2013 ^c
			2007	2008	2009	2010	2011	2012	2013			
Eating breakfast and lunch at school												
Eligibility for free and reduced price lunch	[Average %]	Middle School	47%	48%	49%	51%	52%	52%	56%	***	*	***
		High School	37%	37%	39%	41%	43%	46%	45%	***		
Students ate breakfast offered by school	[Average %]	Middle School	25%	26%	30%	30%	31%	31%	32%	**		***
		High School	20%	18%	20%	23%	22%	23%	25%	*		
Type of breakfast offered to students:												
...U.S.D.A. School Breakfast Program	Yes	Middle School	79%	82%	84%	80%	78%	77%	78%			
		High School	77%	86%	82%	83%	82%	80%	80%			
...any breakfast	Yes	Middle School	90%	89%	90%	91%	90%	93%	94%			
		High School	93%	94%	92%	93%	93%	94%	94%			
School offered breakfast free to all students	Yes	Middle School	--	--	22%	20%	19%	20%	19%			
		High School	--	--	18%	18%	16%	17%	16%			
Average full price charged for School Breakfast Program meal												
...as reported	[Average price]	Middle School	\$1.10	\$1.11	\$1.20	\$1.27	\$1.23	\$1.26	\$1.30	***		*
		High School	\$1.20	\$1.20	\$1.24	\$1.32	\$1.32	\$1.39	\$1.40	***		
...in constant 2013 dollars	[Average price]	Middle School	\$1.23	\$1.21	\$1.30	\$1.36	\$1.28	\$1.28	\$1.30			*
		High School	\$1.35	\$1.30	\$1.35	\$1.41	\$1.37	\$1.41	\$1.40			
Students allowed to go off-campus at lunch	Yes	Middle School	--	--	--	1%	1%	1%	1%			***
		High School	--	--	--	19%	23%	18%	20%			

School Meals, cont.	Responses	Grade Level	Year							First v. Last ^a	Next to Last v. Last ^b	MS v. HS 2013 ^c
			2007	2008	2009	2010	2011	2012	2013			
On a typical day for lunch, students:												
...each lunch offered by school	Yes	Middle School	73%	72%	73%	74%	73%	72%	70%			***
		High School	57%	55%	54%	58%	54%	55%	56%			
...bring their own lunch	Yes	Middle School	16%	18%	17%	18%	19%	19%	22%	***	*	
		High School	15%	14%	16%	16%	17%	19%	20%	***		
...go off campus to buy lunch	Yes	Middle School	0%	0%	0%	0%	0%	0%	0%			***
		High School	10%	11%	9%	9%	10%	8%	8%			
...don't eat lunch	Yes	Middle School	6%	6%	5%	5%	5%	5%	6%			**
		High School	8%	9%	10%	9%	9%	8%	8%			
...buy lunch from vending machine or store/snack bar/cart	Yes	Middle School	4%	4%	4%	3%	2%	3%	2%	**		**
		High School	8%	9%	8%	6%	6%	6%	5%	**		
School offered U.S.D.A. National School Lunch Program	Yes	Middle School	90%	92%	93%	90%	87%	86%	82%	**		
		High School	89%	95%	92%	92%	88%	85%	87%			
School offered lunch free to all students	Yes	Middle School	--	--	10%	9%	6%	6%	7%			
		High School	--	--	9%	8%	4%	3%	5%	*		
Average full price charged for National School Lunch Program meal												
...as reported	[Average price]	Middle School	\$1.84	\$1.93	\$2.08	\$2.05	\$1.99	\$2.06	\$2.14	***		
		High School	\$2.00	\$2.04	\$2.17	\$2.03	\$2.01	\$2.08	\$2.13	*		
...in constant 2013 dollars	[Average price]	Middle School	\$2.07	\$2.09	\$2.25	\$2.19	\$2.06	\$2.09	\$2.14			
		High School	\$2.24	\$2.21	\$2.35	\$2.17	\$2.09	\$2.11	\$2.13			
Average length of lunch period	[Time in minutes]	Middle School	31	31	30	31	31	31	32			***
		High School	34	34	33	34	34	33	34			
Response to new USDA school meal standards												
School lunch meal offerings changed as a result of the new standards	Yes	Middle School	--	--	--	--	--	--	93%			
		High School	--	--	--	--	--	--	89%			
If school lunch meal did change, extent to which:												
...students generally seemed to like the new meals	Some/great/very great	Middle School	--	--	--	--	--	--	70%			
		High School	--	--	--	--	--	--	63%			
...students complained at first	Great/very great	Middle School	--	--	--	--	--	--	44%			*
		High School	--	--	--	--	--	--	53%			
...students complained at time of survey	Great/very great	Middle School	--	--	--	--	--	--	11%			*
		High School	--	--	--	--	--	--	18%			

School Meals, cont.	Responses	Grade Level	Year							First v. Last ^a	Next to Last v. Last ^b	MS v. HS 2013 ^c
			2007	2008	2009	2010	2011	2012	2013			
...lunch meals modified in response to student complaints	Great/very great	Middle School	--	--	--	--	--	--	9%			
		High School	--	--	--	--	--	--	12%			
...compared to prior year, students throw away more or less food from school lunch meals	Much less/little less	Middle School	--	--	--	--	--	--	15%			
		High School	--	--	--	--	--	--	14%			
	About the same	Middle School	--	--	--	--	--	--	44%			
		High School	--	--	--	--	--	--	41%			
	Little more	Middle School	--	--	--	--	--	--	25%			
		High School	--	--	--	--	--	--	24%			
	Much more	Middle School	--	--	--	--	--	--	16%			
		High School	--	--	--	--	--	--	20%			
Beverages and food available through the National School Lunch Program meal												
Sources of free, potable drinking water at lunchtime:												
...existing drinking fountains in cafeteria	Yes	Middle School	--	--	--	--	--	70%	53%	***	***	
		High School	--	--	--	--	--	75%	60%	***	***	
...existing drinking fountains near cafeteria	Yes	Middle School	--	--	--	--	--	--	62%			
		High School	--	--	--	--	--	--	69%			
...installed new drinking fountains in cafeteria	Yes	Middle School	--	--	--	--	--	3%	4%			
		High School	--	--	--	--	--	7%	3%	*	*	
...water dispenser/pitcher and cups in food line	Yes	Middle School	--	--	--	--	--	11%	12%			
		High School	--	--	--	--	--	15%	13%			
...water dispenser/pitcher and cups elsewhere in cafeteria	Yes	Middle School	--	--	--	--	--	15%	20%			
		High School	--	--	--	--	--	15%	15%			
...water dispenser/pitcher but no cups (students bring bottles)	Yes	Middle School	--	--	--	--	--	2%	3%			
		High School	--	--	--	--	--	3%	3%			
...fee, potable drinking water is <i>not</i> available in cafeteria	Yes	Middle School	--	--	--	--	--	11%	7%			
		High School	--	--	--	--	--	10%	5%	**	**	
...in schools participating in the National School Lunch Program	Yes	Middle School	--	--	--	--	--	10%	7%			
		High School	--	--	--	--	--	9%	4%	*	*	
...in schools <i>not</i> participating in the National School Lunch Program	Yes	Middle School	--	--	--	--	--	16%	8%			
		High School	--	--	--	--	--	21%	9%			

School Meals, cont.	Responses	Grade Level	Year							First v. Last ^a	Next to Last v. Last ^b	MS v. HS 2013 ^c
			2007	2008	2009	2010	2011	2012	2013			
Beverages available in National School Lunch Program meals^d:												
...healthy beverages ^e	Some or most/every day	Middle School	98%	98%	96%	96%	97%	98%	98%			
		High School	99%	98%	95%	98%	99%	96%	99%		*	
...sugar-sweetened beverages ^f	Some or most/every day	Middle School	35%	26%	30%	28%	26%	29%	24%	*		
		High School	47%	37%	31%	34%	32%	28%	29%	***		
...sugar-sweetened beverages, revised ^g	Some or most/every day	Middle School	--	--	--	--	--	29%	25%			
		High School	--	--	--	--	--	31%	32%			
...whole or 2% milk (flavored or unflavored)	Some or most/every day	Middle School	--	--	--	62%	50%	31%	27%	***		
		High School	--	--	--	61%	46%	39%	26%	***	**	
...other beverages ^h	Some or most/every day	Middle School	39%	33%	32%	32%	30%	21%	22%	***		
		High School	50%	39%	35%	39%	30%	21%	28%	***		
...other beverages, revised ⁱ	Some or most/every day	Middle School	--	--	--	--	--	31%	33%			
		High School	--	--	--	--	--	33%	39%			
Healthier foods available in National School Lunch Program meals^d:												
...fruits and vegetables	Some or most/every day	Middle School	99%	100%	100%	99%	100%	99%	100%			
		High School	100%	100%	99%	100%	100%	100%	100%			
...fresh fruits	Some or most/every day	Middle School	99%	100%	99%	99%	100%	99%	100%			
		High School	98%	99%	98%	99%	100%	99%	99%			
...other fruits (e.g., dried or canned fruits)	Some or most/every day	Middle School	89%	91%	91%	92%	93%	90%	92%			
		High School	92%	95%	93%	92%	93%	93%	91%			
...vegetables (e.g., carrot sticks or celery sticks)	Some or most/every day	Middle School	96%	99%	98%	99%	100%	98%	99%			
		High School	99%	100%	98%	99%	100%	100%	99%			
...salads	Some or most/every day	Middle School	96%	92%	92%	92%	93%	93%	91%			
		High School	94%	94%	93%	96%	96%	97%	94%			
...pre-made, main course salads	Some or most/every day	Middle School	86%	83%	83%	79%	82%	82%	80%			*
		High School	84%	87%	85%	87%	86%	88%	88%			
...salad bar	Some or most/every day	Middle School	48%	41%	44%	43%	40%	41%	41%			
		High School	55%	43%	45%	48%	56%	56%	47%		*	
...whole grains	Some or most/every day	Middle School	81%	87%	90%	90%	95%	94%	97%	***		
		High School	90%	92%	91%	92%	96%	97%	97%	**		

School Meals, cont.	Responses	Grade Level	Year							First v. Last ^a	Next to Last v. Last ^b	MS v. HS 2013 ^c
			2007	2008	2009	2010	2011	2012	2013			
Less healthy foods available in National School Lunch Program meals^d:												
...french fries	Some or most/every day	Middle School	48%	40%	41%	43%	35%	27%	21%	***		**
		High School	61%	52%	44%	47%	41%	38%	34%	***		
...pizza	Some or most/every day	Middle School	97%	98%	99%	98%	99%	98%	99%			
		High School	98%	98%	98%	98%	99%	99%	98%			
.....regular pizza	Some or most/every day	Middle School	--	--	--	--	73%	64%	39%	***	***	*
		High School	--	--	--	--	74%	63%	48%	***	***	
....."healthier" pizza ^j	Some or most/every day	Middle School	--	--	--	--	75%	74%	92%	***	***	*
		High School	--	--	--	--	73%	80%	85%	**		
...regular fat and sugary snacks ^k	Some or most/every day	Middle School	61%	54%	58%	53%	49%	45%	40%	***		
		High School	65%	59%	57%	55%	57%	45%	34%	***	**	
School food policy environment												
School participated in Team Nutrition	Yes	Middle School	40%	44%	41%	35%	36%	36%	37%			
		High School	35%	45%	34%	37%	33%	33%	38%			
	No	Middle School	18%	24%	26%	25%	29%	29%	26%			
		High School	23%	28%	31%	33%	32%	27%	29%			
	Don't know	Middle School	42%	32%	34%	40%	35%	36%	38%			
		High School	42%	27%	34%	30%	34%	40%	33%	*	*	
School participated in Healthy School Program	Yes	Middle School	--	--	--	--	--	27%	28%			
		High School	--	--	--	--	--	25%	28%			
	No	Middle School	--	--	--	--	--	30%	32%			
		High School	--	--	--	--	--	39%	34%			
	Don't know	Middle School	--	--	--	--	--	43%	41%			
		High School	--	--	--	--	--	37%	38%			
School food service was provided by:												
...school system	Yes	Middle School	81%	79%	79%	79%	79%	81%	76%			
		High School	76%	81%	81%	78%	82%	77%	76%			
...food service management	Yes	Middle School	18%	20%	19%	18%	20%	18%	23%			
		High School	22%	16%	18%	22%	17%	23%	22%			
...other	Yes	Middle School	1%	3%	3%	3%	3%	4%	2%			
		High School	5%	5%	3%	2%	2%	2%	4%			

School Meals, cont.	Responses	Grade Level	Year							First v. Last ^a	Next to Last v. Last ^b	MS v. HS 2013 ^c
			2007	2008	2009	2010	2011	2012	2013			
Decisions about menus and food service issues were made by:												
...district	Yes	Middle School	85%	82%	80%	82%	84%	81%	81%	*		
		High School	84%	79%	81%	81%	76%	79%	75%			
...school	Yes	Middle School	19%	20%	18%	18%	16%	17%	12%	*		*
		High School	24%	31%	23%	23%	26%	21%	18%			
...contractor	Yes	Middle School	12%	14%	14%	13%	13%	13%	14%			
		High School	13%	10%	10%	12%	14%	13%	15%			
...other	Yes	Middle School	3%	6%	4%	5%	4%	3%	3%			
		High School	3%	3%	4%	3%	2%	5%	5%			
School provided menus to:												
...students	Yes	Middle School	90%	92%	91%	96%	95%	96%	95%	*		
		High School	85%	87%	87%	93%	91%	94%	92%			
...parents	Yes	Middle School	83%	88%	89%	92%	93%	94%	93%	***		
		High School	80%	81%	82%	86%	86%	90%	90%			
School provided nutrition information to:												
...students	Yes	Middle School	56%	64%	61%	58%	58%	64%	70%	***		
		High School	56%	64%	64%	59%	64%	67%	70%			
...parents	Yes	Middle School	50%	60%	55%	58%	59%	61%	67%	***		
		High School	50%	57%	53%	56%	59%	59%	67%			
Competitive Foods and Beverages			Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
Competitive food and beverage venue availability			2007	2008	2009	2010	2011	2012	2013			
School offered foods or beverages in the following competitive venues:												
...à la carte sales in the cafeteria	Yes	Middle School	77%	81%	77%	77%	80%	81%	77%			
		High School	86%	92%	87%	88%	87%	83%	83%			
...stores or snack bars/carts	Yes	Middle School	47%	48%	48%	46%	44%	49%	49%			*
		High School	61%	62%	62%	64%	64%	59%	57%			
...vending machines	Yes	Middle School	79%	77%	71%	68%	65%	61%	53%	***	*	***
		High School	96%	96%	96%	95%	91%	89%	90%			

Competitive Foods and Beverages, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
Competitive food and beverage guidelines: Awareness and implementation												
School administrator was aware of Alliance school beverage guidelines	No	Middle School	49%	28%	27%	33%	35%	29%	29%	***		
		High School	39%	14%	23%	26%	20%	30%	23%	***	*	
	Yes, some	Middle School	33%	56%	56%	53%	53%	61%	60%	***		
		High School	44%	66%	56%	56%	62%	49%	62%	***	**	
	Yes, quite a bit	Middle School	18%	17%	17%	14%	12%	10%	12%			
		High School	18%	21%	21%	18%	17%	21%	15%			
School offered foods or beverages in the following competitive venues but the Alliance <i>school beverage guidelines</i> had not been implemented:												
...à la carte sales in the cafeteria	Yes	Middle School	62%	43%	32%	37%	45%	42%	43%	**		*
		High School	57%	31%	34%	30%	31%	40%	31%	***	*	
...stores or snack bars/carts	Yes	Middle School	55%	40%	39%	39%	44%	40%	42%			
		High School	57%	26%	34%	34%	33%	44%	37%	**		
...vending machines	Yes	Middle School	57%	39%	33%	31%	38%	33%	37%	**		
		High School	56%	33%	30%	30%	30%	36%	31%	***		
School district or school implementing or planning to implement other beverage guidelines												
Yes	Yes	Middle School	--	--	31%	23%	25%	26%	31%			
		High School	--	--	33%	27%	24%	28%	26%	*		
School administrator was aware of Alliance nutritional guidelines for competitive foods												
No	No	Middle School	63%	46%	48%	51%	50%	46%	49%	**		**
		High School	57%	31%	44%	43%	44%	45%	38%	***		
	Yes, some	Middle School	27%	38%	42%	41%	42%	48%	42%	***		
		High School	31%	56%	42%	45%	47%	42%	47%	***		
	Yes, quite a bit	Middle School	10%	16%	10%	8%	8%	6%	9%			*
		High School	12%	13%	14%	12%	9%	14%	14%			
School offered foods or beverages in the following competitive venues but the Alliance <i>nutritional guidelines for competitive foods</i> had not been implemented:												
...à la carte sales in the cafeteria	Yes	Middle School	70%	51%	50%	51%	53%	54%	56%	**		*
		High School	72%	52%	56%	46%	48%	53%	46%	***		
...stores or snack bars/carts	Yes	Middle School	69%	49%	61%	49%	52%	55%	54%	*		
		High School	67%	46%	59%	47%	57%	58%	46%	**	*	
...vending machines	Yes	Middle School	68%	52%	59%	58%	52%	50%	57%			
		High School	71%	50%	54%	48%	52%	52%	46%	***		
School district or school implementing or planning to implement other food guidelines												
Yes	Yes	Middle School	--	--	32%	22%	21%	25%	32%			
		High School	--	--	29%	23%	25%	25%	25%			

Competitive Foods and Beverages, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
Competitive food and beverage availability												
Students have access to drinking fountains in:												
...gymnasium/locker rooms	Yes	Middle School	--	--	--	83%	83%	81%	83%			
		High School	--	--	--	82%	85%	86%	84%			
...hallways near classroom areas	Yes	Middle School	--	--	--	99%	98%	98%	95%	*		
		High School	--	--	--	97%	97%	97%	94%			
...other non-cafeteria locations at school	Yes	Middle School	--	--	--	47%	45%	39%	40%			
		High School	--	--	--	51%	42%	43%	48%			
Beverages available in competitive venues:												
...healthy beverages	Yes	Middle School	96%	96%	93%	95%	89%	90%	89%	**		***
		High School	100%	99%	98%	99%	98%	97%	98%	*		
...sugar-sweetened beverages (including regular soft drinks)	Yes	Middle School	78%	71%	69%	65%	63%	66%	64%	**		***
		High School	95%	92%	90%	90%	88%	86%	87%	**		
...sugar-sweetenee beverages, revised	Yes	Middle School	--	--	--	--	--	67%	66%			***
		High School	--	--	--	--	--	89%	85%			
...regular soft drinks	Yes	Middle School	27%	17%	14%	12%	13%	9%	9%	***		***
		High School	54%	45%	34%	26%	25%	23%	21%	***		
...whole or 2% milk (flavored or unflavored)	Yes	Middle School	--	--	--	48%	36%	30%	22%	***	*	*
		High School	--	--	--	57%	48%	39%	30%	***	*	
...other beverages	Yes	Middle School	74%	69%	65%	62%	60%	51%	47%	***		***
		High School	94%	88%	87%	87%	84%	77%	78%	***		
...other beverages, revised	Yes	Middle School	--	--	--	--	--	59%	58%			***
		High School	--	--	--	--	--	85%	84%			
Regular soft drinks available in:												
...à la carte sales in the cafeteria	Yes	Middle School	0%	1%	0%	0%	0%	0%	0%			**
		High School	10%	5%	3%	2%	2%	2%	2%	***		
...stores or snack bars/carts	Yes	Middle School	6%	4%	3%	2%	4%	3%	3%			**
		High School	17%	12%	10%	8%	9%	7%	8%	**		
...vending machines	Yes	Middle School	24%	15%	13%	10%	9%	7%	6%	***		***
		High School	51%	43%	32%	23%	21%	21%	17%	***		

Competitive Foods and Beverages, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
Healthier foods available in competitive venues:												
...fruits and vegetables	Yes	Middle School	74%	70%	69%	67%	68%	70%	69%			**
		High School	84%	86%	85%	83%	85%	81%	80%			
...fresh fruits	Yes	Middle School	72%	68%	67%	64%	66%	68%	65%			***
		High School	83%	84%	83%	80%	83%	79%	78%			
...other fruits (e.g., dried or canned fruits)	Yes	Middle School	64%	60%	61%	57%	58%	58%	59%			*
		High School	72%	79%	74%	72%	73%	71%	67%			
...vegetables (e.g., carrot sticks or celery sticks)	Yes	Middle School	64%	62%	62%	58%	61%	64%	61%			***
		High School	73%	78%	77%	74%	77%	73%	74%			
...salads	Yes	Middle School	68%	62%	64%	59%	62%	62%	61%			**
		High School	78%	78%	78%	76%	77%	73%	73%			
...pre-made, main course salads	Yes	Middle School	63%	59%	60%	54%	58%	55%	55%			**
		High School	72%	75%	73%	70%	74%	68%	68%			
...salad bar	Yes	Middle School	30%	23%	25%	22%	22%	26%	23%			**
		High School	46%	34%	37%	37%	39%	39%	34%	**		
...whole grains	Yes	Middle School	53%	54%	53%	50%	54%	56%	55%			*
		High School	61%	72%	69%	67%	69%	66%	63%			
Less healthy foods available in competitive venues:												
...french fries	Yes	Middle School	31%	26%	23%	20%	22%	19%	12%	***	*	***
		High School	48%	45%	42%	39%	33%	27%	23%	***		
...pizza	Yes	Middle School	65%	64%	62%	57%	62%	63%	62%			*
		High School	76%	79%	77%	74%	77%	73%	71%			
.....regular pizza	Yes	Middle School	--	--	--	--	44%	40%	24%	***	***	**
		High School	--	--	--	--	59%	47%	36%	***	**	
....."healthier" pizza	Yes	Middle School	--	--	--	--	47%	51%	55%	*		
		High School	--	--	--	--	55%	58%	60%			
...regular fat and sugared snacks	Yes	Middle School	71%	61%	61%	63%	57%	57%	54%	***		**
		High School	83%	77%	78%	76%	77%	68%	65%	***		
Commercial fast foods available in competitive venues and/or lunch meals¹												
	Yes	Middle School	--	--	27%	27%	21%	19%	17%	**		*
		High School	--	--	29%	28%	25%	28%	24%			

Competitive Foods and Beverages, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
School policies on competitive food and beverages												
Competitive venue prices were set to encourage consumption of healthier:												
...beverages	Some or a lot	Middle School	54%	55%	58%	54%	52%	55%	61%			
		High School	55%	57%	62%	63%	60%	60%	59%			
...foods	Some or a lot	Middle School	48%	51%	56%	52%	54%	56%	63%	**	*	
		High School	52%	58%	62%	64%	60%	61%	60%			
School district had restrictions on items sold to students as fundraisers:												
...no soft drinks allowed	Yes	Middle School	--	--	--	21%	19%	19%	21%			
		High School	--	--	--	23%	23%	19%	26%		*	
...no food products	Yes	Middle School	--	--	--	3%	3%	3%	4%			**
		High School	--	--	--	4%	2%	2%	1%	*		
...no foods of minimal nutritional value (soft drinks, candy, gum)	Yes	Middle School	--	--	--	23%	18%	21%	21%			
		High School	--	--	--	28%	25%	19%	24%			
...only healthy foods allowed	Yes	Middle School	--	--	--	17%	13%	11%	17%		*	
		High School	--	--	--	14%	10%	11%	14%			
...follow state or district wellness guidelines	Yes	Middle School	--	--	--	--	29%	29%	34%			
		High School	--	--	--	--	37%	29%	37%		*	
Mobile vendors:												
...prohibited from selling on school grounds during school hours	Yes	Middle School	--	--	--	78%	65%	65%	69%	*		
		High School	--	--	--	76%	73%	69%	74%			
...sell foods or beverages near school grounds during school hours	Yes	Middle School	--	--	--	--	6%	7%	9%			
		High School	--	--	--	--	6%	9%	7%			
In-school marketing, including exclusive contracts												
District or school had existing exclusive beverage contract in place	Yes	Middle School	67%	65%	63%	55%	49%	49%	47%	***		***
		High School	74%	79%	74%	71%	65%	69%	66%	*		
School received specified percentage of sales from exclusive beverage contract	Yes	Middle School	54%	55%	53%	45%	37%	33%	33%	***		***
		High School	64%	68%	62%	61%	53%	55%	53%	*		
Regular soft drinks sold to students under exclusive beverage contract	Yes	Middle School	--	14%	13%	12%	7%	6%	8%	*		**
		High School	--	37%	28%	19%	18%	20%	16%	***		
School received specified percentage of sales from food vending machines	Yes	Middle School	21%	19%	19%	20%	20%	17%	14%	*		***
		High School	46%	44%	43%	44%	42%	39%	38%			

Competitive Foods and Beverages, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
Soft drinks and/or fast-food restaurants were promoted by:	Yes	Middle School	11%	13%	9%	12%	13%	11%	11%	*		**
		High School	29%	21%	21%	17%	19%	22%	20%			
...sponsorships	Yes	Middle School	10%	11%	8%	7%	7%	7%	7%			
		High School	8%	6%	9%	8%	8%	7%	9%			
...coupons	Yes	Middle School	2%	3%	0%	1%	0%	0%	1%			
		High School	1%	2%	2%	2%	1%	1%	1%			
...textbook covers or menus	Yes	Middle School	7%	9%	9%	6%	5%	5%	4%			**
		High School	17%	19%	12%	14%	14%	14%	12%			
...exclusive beverage contract ads (excluding vending machine ads)	Yes	Middle School	2%	3%	4%	1%	1%	2%	1%			
		High School	7%	4%	2%	3%	3%	2%	3%			
...posters	Yes	Middle School	2%	3%	4%	1%	1%	2%	1%	*		
		High School	7%	4%	2%	3%	3%	2%	3%			
Physical Activity and Physical Education	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
School required physical education for student's grade level	Yes	Middle School	83%	83%	82%	83%	80%	82%	79%			***
		High School	37%	35%	32%	34%	33%	34%	29%			
Physical education participation:	[Average %]	Middle School	90%	91%	90%	90%	89%	89%	89%			***
		High School	51%	49%	48%	50%	48%	50%	50%			
...students took physical education	[Average # weeks]	Middle School	--	--	--	--	26	27	26			***
		High School	--	--	--	--	14	14	15			
...weighted number of weeks of physical education taken per year ^m	[Average # minutes]	Middle School	--	--	--	--	148	147	150			***
		High School	--	--	--	--	88	89	94			
Students participated in interscholastic or varsity sports:	[Average %]	Middle School	31%	30%	33%	31%	34%	34%	29%		**	***
		High School	32%	31%	32%	33%	33%	34%	35%			
...boys	[Average %]	Middle School	27%	27%	28%	28%	30%	30%	26%		**	**
		High School	27%	27%	27%	29%	28%	29%	30%			

Physical Activity and Physical Education, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
To participate in interscholastic or varsity sports, payment must be made for:												
...school athletic participation fee												
...fee required, no financial assistance	Yes	Middle School	--	--	--	--	--	--	--	10%		
		High School	--	--	--	--	--	--	--	11%		
...fee waived/reduced if student cannot afford it	Yes	Middle School	--	--	--	--	--	--	--	18%		*
		High School	--	--	--	--	--	--	--	25%		
...additional team fees												
...fee required, no financial assistance	Yes	Middle School	--	--	--	--	--	--	--	6%		**
		High School	--	--	--	--	--	--	--	11%		
...fee waived/reduced if student cannot afford it	Yes	Middle School	--	--	--	--	--	--	--	12%		
		High School	--	--	--	--	--	--	--	17%		
...additional costs for uniforms, equipment, etc.												
...costs required, no financial assistance	Yes	Middle School	--	--	--	--	--	--	--	6%		*
		High School	--	--	--	--	--	--	--	11%		
...school helps if student cannot afford it	Yes	Middle School	--	--	--	--	--	--	--	11%		***
		High School	--	--	--	--	--	--	--	25%		
Extent to which students do not participate in varsity sports due to cost	Some/great/very great	Middle School	--	--	--	--	--	--	--	11%		
		High School	--	--	--	--	--	--	--	13%		
Students participated in intramural sports or physical activity clubs:												
...boys	[Average %]	Middle School	26%	24%	23%	23%	25%	27%	22%	*	*	***
		High School	12%	13%	12%	13%	12%	13%	14%			
...girls	[Average %]	Middle School	23%	21%	20%	19%	22%	23%	20%		*	***
		High School	11%	10%	11%	12%	10%	12%	12%			
Students walked or bicycled from home to school	[Average %]	Middle School	23%	25%	22%	23%	21%	21%	24%			***
		High School	14%	14%	12%	13%	15%	16%	15%			
School gave students physical fitness tests:												
...had any testing	Yes	Middle School	73%	76%	83%	86%	84%	84%	85%	**		***
		High School	36%	41%	58%	63%	57%	58%	62%	***		
...all students were tested	Yes	Middle School	53%	54%	61%	62%	62%	65%	59%			***
		High School	12%	16%	27%	29%	24%	23%	20%	*		
...only students taking physical education were tested	Yes	Middle School	20%	20%	22%	24%	21%	19%	24%			***
		High School	23%	23%	29%	32%	31%	31%	37%	**		

Physical Activity and Physical Education, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
Parents or guardians provided with results of physical fitness tests	Yes	Middle School	44%	52%	53%	56%	58%	53%	56%	**		***
		High School	15%	21%	29%	32%	30%	35%	32%	***		
School measured students' body mass index (BMI):												
...had any assessments	Yes	Middle School	33%	37%	47%	45%	45%	49%	47%	**		**
		High School	27%	32%	42%	40%	38%	37%	35%	*		
...all students were assessed	Yes	Middle School	24%	26%	34%	33%	36%	38%	35%	*		***
		High School	6%	11%	20%	18%	18%	15%	15%	**		
...only students taking physical education were assessed	Yes	Middle School	7%	8%	11%	9%	8%	10%	10%			*
		High School	17%	15%	17%	17%	16%	18%	16%			
Parents or guardians provided with results of BMI measurement	Yes	Middle School	20%	24%	33%	35%	36%	38%	35%	***		***
		High School	11%	17%	25%	23%	20%	22%	21%	**		
School had activities in place to promote physical activity	Yes	Middle School	61%	65%	56%	48%	41%	45%	47%	**		***
		High School	46%	51%	41%	36%	36%	33%	29%	***		
Outside organizations/individuals allowed to use school facilities for physical activity or sports programs outside of school hours	Yes	Middle School	--	--	--	93%	91%	93%	94%			*
		High School	--	--	--	94%	93%	94%	90%			
Wellness Policies	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
District or school had established a wellness policy	Yes	Middle School	73%	78%	81%	81%	82%	80%	76%			
		High School	80%	84%	76%	77%	78%	73%	70%	*		
Implementation plan for wellness policy:												
...district or school had developed plan	Yes	Middle School	33%	33%	33%	34%	30%	28%	30%			
		High School	33%	36%	35%	35%	32%	34%	31%			
...district or school was currently developing plan	Yes	Middle School	23%	20%	20%	18%	18%	18%	14%	**		
		High School	26%	26%	19%	16%	16%	15%	15%	**		
...district or school had not developed plan	Yes	Middle School	20%	23%	22%	24%	27%	30%	28%	*		
		High School	25%	22%	24%	26%	27%	26%	29%			
...district or school had no wellness policy	Yes	Middle School	8%	7%	5%	4%	5%	6%	7%			
		High School	4%	4%	5%	7%	7%	8%	5%			
...administrator did not know if plan existed	Yes	Middle School	17%	17%	20%	21%	20%	18%	21%			
		High School	11%	12%	16%	16%	18%	17%	20%	*		
Designated individual was responsible for implementing school wellness policy	Yes	Middle School	55%	54%	60%	58%	56%	53%	53%			
		High School	61%	66%	63%	59%	53%	50%	52%			

Wellness Policies, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
Explicit student wellness goals had been developed for:												
...physical activity	Yes	Middle School	55%	58%	60%	63%	61%	56%	54%			
		High School	54%	53%	55%	55%	55%	55%	52%			
...nutrition education	Yes	Middle School	45%	50%	55%	56%	51%	51%	50%			
		High School	57%	60%	51%	56%	51%	58%	51%			
...food and beverages available to students	Yes	Middle School	--	--	67%	59%	62%	60%	57%	*		
		High School	--	--	60%	59%	61%	61%	58%			
If have explicit goals, have some or more implemented activities to achieve goals forⁿ:												
...physical activity	Yes	Middle School	--	--	--	--	--	99%	97%			
		High School	--	--	--	--	--	96%	92%			
...nutrition education	Yes	Middle School	--	--	--	--	--	97%	96%			
		High School	--	--	--	--	--	95%	94%			
...food and beverages available to students	Yes	Middle School	--	--	--	--	--	96%	93%			
		High School	--	--	--	--	--	95%	92%			
Significant activities underway to promote healthier eating and drinking practices	Yes	Middle School	60%	63%	50%	49%	41%	46%				
		High School	58%	55%	42%	45%	43%	39%				
District or school had nutrition guidelines for all foods	Yes	Middle School	66%	67%	70%	68%	68%	68%	72%			
		High School	59%	68%	68%	69%	67%	67%	70%	**		
Had advisory body for nutrition and/or exercise recommendations:												
...at district level only	Yes	Middle School	36%	44%	43%	39%	38%	42%	43%			
		High School	37%	44%	45%	44%	43%	43%	36%			
...at school level only	Yes	Middle School	6%	7%	5%	7%	8%	9%	6%			
		High School	6%	6%	5%	7%	7%	4%	6%			
...at both district and school level	Yes	Middle School	19%	17%	13%	12%	12%	12%	15%			
		High School	18%	15%	12%	11%	11%	14%	13%			
District offered formal classroom instruction on:												
...physical activity, exercise and fitness	Yes	Middle School	96%	94%	94%	91%	89%	91%	89%	**		*
		High School	98%	97%	95%	96%	95%	94%	94%	*		
...nutrition and dietary behavior	Yes	Middle School	78%	83%	81%	83%	80%	77%	77%			***
		High School	91%	95%	91%	90%	89%	89%	90%			

Wellness Policies, cont.	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
			2007	2008	2009	2010	2011	2012	2013			
School was certified as a USDA HealthierUS School	Yes	Middle School	--	--	--	3%	2%	4%	7%	*		
		High School	--	--	--	4%	3%	8%	9%	*		
	No	Middle School	--	--	--	50%	51%	51%	38%	**	***	
		High School	--	--	--	53%	55%	46%	43%	**		
	Don't know	Middle School	--	--	--	47%	47%	45%	55%		**	
		High School	--	--	--	43%	42%	47%	48%			
School designated as an Alliance for a Healthier Generation Healthy School Program	Yes	Middle School	--	--	--	1%	0%	4%	6%	**		
		High School	--	--	--	3%	2%	5%	5%			
	No	Middle School	--	--	--	51%	52%	50%	37%	***	***	*
		High School	--	--	--	54%	55%	47%	45%	*		
	Don't know	Middle School	--	--	--	48%	48%	46%	57%	*	**	
		High School	--	--	--	43%	43%	48%	50%			
Principals' Perceptions	Responses		Middle School							First v. Last	Next to Last v. Last	MS v. HS 2013
Extent of concern about student overweight	Great or very great	Middle School	48%	53%	48%	45%	43%	47%	40%		*	
		High School	45%	47%	44%	41%	37%	40%	34%	*		
Extent of concern about student nutrition	Great or very great	Middle School	65%	65%	62%	63%	59%	57%	55%	*		*
		High School	59%	60%	60%	55%	54%	54%	46%	**	*	
Extent of concern about student physical activity levels	Great or very great	Middle School	67%	67%	65%	67%	61%	65%	62%			**
		High School	69%	68%	65%	61%	59%	60%	50%	***	**	
Extent of school effort to improve student nutrition	Great or very great	Middle School	55%	59%	56%	51%	49%	50%	56%			
		High School	45%	49%	46%	48%	49%	48%	51%			
Extent of school district effort to improve student nutrition	Great or very great	Middle School	52%	62%	54%	52%	49%	52%	56%			
		High School	48%	52%	48%	47%	48%	50%	55%			
Extent of school effort to improve student physical activity	Great or very great	Middle School	56%	59%	58%	51%	51%	51%	51%			**
		High School	38%	43%	38%	38%	38%	35%	38%			
Extent of school district effort to improve student physical activity	Great or very great	Middle School	46%	47%	50%	43%	40%	43%	41%			
		High School	36%	38%	33%	36%	34%	33%	39%			
Extent schools should play a role in addressing childhood obesity	Great or very great	Middle School	--	--	--	--	61%	58%	51%	*	*	
		High School	--	--	--	--	48%	49%	45%			

Source: Bridging the Gap, Institute for Social Research, University of Michigan, 2014.

^a Significance of change from first year of data available to the most recent year of data available (2012-13) is indicated with * $p < .05$; ** $p < .01$; *** $p < .001$.

^b Significance of change from 2011-12 to the most recent year of data available (2012-13) is indicated with * $p < .05$; ** $p < .01$; *** $p < .001$.

^c Significance of differences between middle and high school in 2013 is indicated with † $p < .05$; ‡ $p < .01$; § $p < .001$

^d Data reported only for students whose schools participated in the National School Lunch Program.

^e Any one or more of beverages that have been defined by the Institute of Medicine as healthy beverages for students in all grades: bottled water; 100% fruit or vegetable juice with no added sweeteners; low-fat (1%) or non-fat (skim) milk.

^f Any one or more of regular soft drinks; sports drinks; and fruit drinks that are not 100% fruit juice and that are high in calories.

^g Any one or more of regular soft drinks; high-calorie sports drinks; high-calorie flavored waters; and fruit drinks that are not 100% fruit juice and that are high in calories.

^h Any one or more of diet soft drinks; other no-calorie or very low-calorie beverages; "light" juices.

ⁱ Any one or more of diet soft drinks; low-calorie (10 calories or less per 8 ounces) sports drinks; other no-calorie or very low-calorie beverages; "light" juices.

^j For example, whole wheat crust, lower-fat versions.

^k Any one or more of candy; salty snacks that are not low in fat, such as regular potato chips; cookies, crackers, cakes or other baked goods that are not low in fat; ice cream or frozen yogurt that is not low in fat.

^l Any availability of food from pizza places, sandwich or sub shops, or fast food chains during a typical week.

^m Data estimate for this item are slightly different in this monograph as compared with earlier versions due to changes in data coding procedures.

ⁿ Only for those that report having explicit goals.

Study Methods

The results presented here are derived from surveys of school administrators—mostly school principals—in a sample of schools chosen to be representative of secondary schools in the coterminous United States. Separate subsamples are used to represent middle schools and high schools, and the results for each are reported separately. A full description of the study can be found elsewhere.^{17,32}

Samples

The Bridging the Gap (BTG) initiative began in the 1996-1997 school year. Schools for the Bridging the Gap study were drawn each year from the half-sample of schools that had participated in the Monitoring the Future study, and were cycling out of that study after two years of having their students in a chosen grade surveyed in their classrooms. The annual Monitoring the Future samples consisted of three nationally representative subsamples—one each of schools containing 8th, 10th and 12th grade students. However, only about 200 schools participate each year in the BTG sample in total (including both public and private schools)—not enough to make reliable estimates of changes occurring in the conditions in U.S. schools. Therefore, as the focus of the Bridging the Gap shifted toward childhood obesity, a supplementary nationally representative sample

of almost 600 public secondary schools was added, and their principals were invited to complete a questionnaire each year beginning in 2007. These samples were defined in a way consistent with the Monitoring the Future design, in that three separate subsamples of schools are surveyed each year—one each of schools selected because they contained students in 8th, 10th or 12th grade.

For the years 2007 and 2008, the data presented here are taken from the supplementary nationally representative sample of public schools described above. Beginning in 2009, the annual Monitoring the Future samples were asked the full complement of questionnaire items related to childhood obesity. Thus, for 2009 and later, this monograph combines data from both the annual Monitoring the Future samples (public schools only) and the supplementary samples. Those selected in the 8th grade samples are here defined as middle schools, while those selected in the 10th or 12th grade samples are defined as high schools, and the 10th and 12th grade results have been combined here.

Response Rates and Sample Sizes

Sample sizes vary from year to year primarily as a result of slightly shifting response rates. Table 2 provides sample sizes and response rates for both the Monitoring the Future (MTF) and Supplementary samples.

TABLE 2 Response Rates, 2007-2013

Year	<u>Monitoring the Future Sample</u>		<u>Supplementary Sample</u>		
	Schools Responding	Response Rate	Schools Responding	Response Rate--Original	Response Rate--With Replacement
2007	N/A	N/A	446	76%	N/A
2008	N/A	N/A	527	77%	89%
2009	141	83% ^a	566	76%	91%
2010	136	85% ^a	569	73%	90%
2011	138	79%	529	65%	86%
2012	139	86%	528	66%	86%
2013	145	83%	507	60%	82%

Notes: Monitoring the Future schools were first combined with the larger supplement sample of schools in 2009. Replacement schools were first introduced into the supplement sample in 2008. ^aEstimates for these years differ slightly from those previously reported as a result of correcting a typographical error.

Presentation of Findings

This report contains results of two types. The first describes conditions in U.S. secondary schools as measured in the national school survey conducted that year. Results are reported separately for middle schools and high schools; and within each of those levels of schooling, are reported for the entire national sample of schools as well as for selected subgroups of schools and types of students. The second type of reporting deals with the amount of change that has been observed between the first year and the most recent data collection year (spanning up to seven survey years from 2007–2013). Indications of change in the policies and practices of schools are of particular importance, and provision of accurate change estimates is one of the major goals of Bridging the Gap. As additional years are added, we should have an even better understanding of changing conditions and of the rates of change in U.S. secondary schools.

All results reported here reflect the percentage of *students* enrolled rather than the percentage of *schools*. Thus, the answers describing conditions in the schools given by principals of large schools weigh in more heavily by virtue of the fact that their schools serve more students than do smaller schools. For example, if one school has

100 students in the target grade (8th, 10th or 12th) and a second school has 500 students in the same target grade, then the larger school will weigh into the results at a rate five times greater than the first. Put another way, when percentages are calculated for the answers to questions, each principal’s answers are weighted by the number of students enrolled in the target grade in that school.

The results presented in this report have been drawn from *Bridging the Gap: Complete Descriptive Statistics on Secondary Schools, School Years 2006-07 to 2011-13*, which provides a complete compilation of the findings from the 2007–2013 surveys (see www.bridgingthegapresearch.org/research/secondary_school_survey). In that report, results are provided separately and side-by-side to facilitate comparisons for:

- ~ all middle schools and all high schools;
- ~ three levels of socioeconomic status of the student body (separately for both middle schools and high schools);
- ~ middle schools and high schools weighted by the number of White, Black and Latino students attending each one; and
- ~ middle schools and high schools with student bodies that are predominately White (>66%),

majority Black (>50%), and majority Latino (>50%).

Note that there are two methods for comparing across diverse racial and ethnic populations. One looks at whole schools that are majority (or predominantly in the case of Whites) one race or ethnic group. Quite a number of schools do not fit into any of these three categories. Thus, the other method of comparison uses individual students as the unit of analysis. It looks at all schools and weighs each school into its calculations by how many students in each racial/ethnic group attend it in the grade of interest. So, for example, if one school serves 50 out of 1,000 Latino students in the entire 8th grade national sample, the characteristics of that school will account for 5 percent of the total value for Latino students on any school characteristic of interest, because 5

percent of all Latino students are exposed to the conditions in that particular school. A school that serves many Latino students will weigh into the estimates for those students more than a school that serves only a few, but all schools that serve Latino students will weigh into the calculation.

All differences between years and between groups are tested for statistical significance, and significant results are identified as such in the document *Bridging the Gap: Complete Descriptive Statistics on Secondary Schools, School Years 2006–07 to 2011–13*, as well as in this report. A guide to using that document has been carefully designed to be readable and understandable to the non-scientist to guide and facilitate its easy use. It can be accessed on the same link.

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References

1. Ogden CL, Carroll MD, Kit BK, et al. Prevalence of childhood and adult obesity in the United States, 2011-2012. *JAMA*. 2014;311(8):806-814.
2. Dietz WH. Health consequences of obesity in youth: Childhood predictors of adult disease. *J Pediatr*. 1998;101:518-525.
3. Freedman DS, Mei Z, Srinivasan SR, et al. Cardiovascular risk factors and excess adiposity among overweight children and adolescents: The Bogalusa Heart Study. *J Pediatr*. 2007;150(1):12-17.e2.
4. Geier AB, Foster GD, Womble LG, et al. The relationship between relative weight and school attendance among elementary schoolchildren. *Obesity*. 2007;15(8):2157-2161.
5. Schwartz MB, Puhl R. Childhood obesity: A societal problem to solve. *Obes Rev*. 2003;4(1):57-71.
6. Singh GK, Kogan MD. Childhood Obesity in the United States, 1976-2008: Trends and Current Racial/Ethnic, Socioeconomic, and Geographic Disparities. A 75th Anniversary Publication. Health Resources and Services Administration, Maternal and Child Health Bureau. Rockville, Maryland: U.S. Department of Health and Human Services; 2010.
7. Clarke PJ, O'Malley PM, Schulenberg JE, et al. Midlife health and socioeconomic consequences of persistent overweight across early adulthood: Findings from a national survey of American adults (1986-2008). *Am J Epidemiol*. 2010;172(5):540-548.
8. Institute of Medicine. Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation. Washington, DC: The National Academies Press; 2012.
9. 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. *J Am Diet Assoc*. 2009;109:Suppl-90.
10. Terry-McElrath YM, O'Malley PM, Johnston LD. (2014). Potential impact of national school nutrition environment policies: Cross-sectional associations with U.S. secondary student overweight/obesity, 2008-2012. *JAMA Pediatrics* (doi:10.1001/jamapediatrics.2014.2048).
11. Terry-McElrath YM, O'Malley PM, Johnston LD. (2014). Accessibility over availability: Associations between the school food environment and student fruit and green vegetable consumption. *Childhood Obesity* 10(3):241-250.
12. Ward D. School Policies on Physical Education and Physical Activity. Princeton, NJ: Robert Wood Johnson Foundation; 2011.
13. Chiqui JF. Competitive Food and Beverage Policies: Impact on Diet and BMI among Children and Adolescents. Princeton, NJ: Robert Wood Johnson Foundation; 2012.
14. Taber DR, Chiqui JF, Chaloupka FJ. Differences in nutrient intake associated with state laws regarding fat, sugar, and caloric content of competitive foods. *Arch Pediatr Adolesc Med*. 2012;166(5):452-458.
15. Cradock AL, McHugh A, Mont-Ferguson H, et al. Effect of school district policy change on consumption of sugar-sweetened beverages among high school students, Boston, Massachusetts, 2004-2006. *Prev Chronic Dis*. 2011;8:A74.
16. Kahn EB, Ramsey LT, Brownson RC, et al. The effectiveness of interventions to increase physical activity. A systematic review. *Am J Prev Med*. 2002;22(4S):73-107.
17. Johnston LD, O'Malley PM, Terry-McElrath YM, et al. School Policies and Practices to Improve Health and Prevent Obesity: National Secondary School Survey Results, School Years 2006-07 and 2007-08. Volume 1. Ann Arbor, MI: Bridging the Gap Program, Survey Research Center, Institute for Social Research; 2011. www.bridgingthegapresearch.org/research/secondary_school_survey. Accessed June 14, 2012.
18. United States Department of Agriculture. National School Lunch Program and School Breakfast Program: nutrition standards for all foods sold in school as required by the healthy, Hunger-Free Kids Act of 2010; interim final rule. *Fed Regist* 2013; 78(125):39068-39120.
19. US Department of Agriculture. Implementation Timeline for Final Rule: Nutrition Standards in the National School Lunch and School Breakfast Programs; 2012. http://www.fns.usda.gov/sites/default/files/implementation_timeline.pdf. Accessed September 25, 2014.
20. US Department of Agriculture. National School Lunch Program and School Breakfast Program: nutrition standards for all foods sold in school as required by the Healthy, Hunger-Free Kids Act of 2010. Federal Register. 2013;78(125):39068-39120.
21. Briefel RR, Crepinsek MK, Cabili C, et al. School food environments and practices affect dietary behaviors of US public school children. *J Am Diet Assoc*. 2009;109(2 Suppl 1):S91-S107.
22. Brown JL, Beardslee WH, Prothrow-Stith, D. Impact of School Breakfast on Children's Health and Learning: an Analysis of the Scientific Research. Gaithersburg, MD: Sodexo Foundation; 2008. http://www.sodexofoundation.org/hunger_us/Images/Impact%20of%20School%20Breakfast%20Study_tcm150-212606.pdf. Accessed June 14, 2012.
23. US Department of Agriculture. Child Nutrition Reauthorization 2010: Water Availability During National School Lunch Program Meal Service; 2011. http://www.fns.usda.gov/cnd/governance/Policy-Memos/2011/SP28-2011_osr.pdf. Accessed August 22, 2013.
24. Alliance for a Healthier Generation. Health Schools Program Framework: Criteria for Developing a Healthier School Environment; 2013. https://schools.healthiergeneration.org/_asset/1062yk/Healthy-Schools-Program-Framework.pdf. Accessed August 22, 2013.
25. Turner L, Ohri-Vachaspati P, Chaloupka F. Improving School Foods through the Team Nutrition Program: New Findings from U.S. Elementary Schools. BTG Research Brief. Chicago, IL: Bridging the Gap Program, Institute for Health Research and Policy, University of Illinois at Chicago; November 2011. http://www.bridgingthegapresearch.org/_asset/z9cm9b/btg_team_nutrition_111711.pdf. Accessed June 14, 2012.
26. Pate RR, Davis MG, Robinson TN, et al. Promoting physical activity in children and youth: A leadership role for schools. A scientific statement from the American Heart Association Council on Nutrition, Physical Activity, and Metabolism (Physical Activity Committee) in collaboration with the Councils on Cardiovascular Disease in the Young and Cardiovascular Nursing. *Circulation*. 2006;114(11):1214-24.
27. Centers for Disease Control and Prevention. Guidelines for school and community programs to promote lifelong physical activity among young people. *MMWR Morb Mortal Wkly Rep*. 1997;46(RR-6):1-36.
28. Institute of medicine. Educating the Student Body: Taking Physical Activity and Physical Education to School. Washington, DC: The National Academies Press; 2013.
29. Institute of Medicine. Preventing Childhood Obesity: Health in the Balance. Washington, DC: The National Academies Press; 2004.
30. National Association of State Boards of Education. Fit, Healthy, and Ready to Learn: A School Health Policy Guide. Alexandria, VA: National Association of State Boards of Education; 2000.
31. National Association for Sport and Physical Education. Physical Education is Critical to Educating the Whole Child [Position Statement]. Reston, VA: National Association for Sport and Physical Education; 2011.
32. Johnston LD, O'Malley PM, Bachman JG, et al. Monitoring the Future National Survey Results on Drug Use, 1975-2011. Volume I: Secondary School Students. Ann Arbor, MI: Institute for Social Research, The University of Michigan; 2012. http://monitoringthefuture.org/pubs/monographs/mtf-vol1_2011.pdf.

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