



Calories In, Calories Out: Food and Exercise in Public Elementary Schools, 2005



Background

Obesity among school-age children has become a national concern, with the number of overweight children aged 6 to 11 more than tripling over the past three decades. One way to address this health issue is to emphasize an "energy balance" approach—calories consumed versus calories expended—to support healthy eating and an active lifestyle. Because of the amount of time students spend at school each day, schools can play an important role in promoting good nutrition, physical activity, and healthy weight among children.

This study was designed to obtain current national information on the three key topics. These were:

- The availability of foods offered for sale outside of full school meals, including locations and times when foods were available, types of food offered for sale, and contracts with companies to sell foods at the school;
- Opportunities for students to engage in physical activity in school, including scheduled recess and physical education, and activities to encourage exercise; and
- The extent to which schools weigh students and calculate their body mass index, and whether this information is sent to parents.

The survey was mailed to a nationally representative sample of 1,198 regular public elementary schools in early spring 2005. It was conducted by the National Center for Education Statistics using the Fast Response Survey System (FRSS). The FRSS is designed to conduct short, quick-turnaround surveys on emerging issues in education. The response rate for the study was 91 percent.

Calories In: The Availability of Foods Outside of Full School Meals

"Competitive foods" is the term of art that refers to any foods offered for sale outside of full school meals. This includes healthy foods, such as fruit and milk, and less nutritious foods, such as soda and candy. Competitive foods may be sold at mealtimes or other times during the school day, or during school-sponsored before- and after-school activities. The foods may also be sold in a number of locations, including in and around the cafeteria (particularly as a la carte foods) and at vending machines, school stores, or snack bars that may or may not be located in the cafeteria.

Many schools rely on revenues generated by the sale of competitive foods to support food service operations or fund special projects. The revenue generated from sales of a la carte foods is often used to support the food service operation (such as food-service staff, food purchases, and equipment), while revenue generated from the sale of competitive foods in vending machines, school stores, and other venues is most commonly used to support student activities.

Our survey asked public elementary schools whether any foods or beverages were sold separately from full school meals and whether the foods were sold to generate funds to support food service operations at the school or school district. Most of the schools (94 percent) offered foods for sale outside of full school meals. Of these schools, 36 percent indicated that the foods were sold to generate funds to support food service operations at

the school or school district. (Note: A link to PowerPoint materials is provided at the end of this document.)

Availability of any vending machine foods and any school store/snack bar foods

Current federal law governs the authority of the U.S. Department of Agriculture (USDA) to regulate the sale of competitive foods, which fall into two categories. The first category of competitive foods, foods of minimal nutritional value, includes soft drinks, gum, and certain kinds of candies. These foods cannot be sold in food service areas (such as the cafeteria) during meal periods, but may be sold elsewhere in the school at any time. The second category is not under USDA authority and consists of all other types of competitive foods, including candy bars, chips, and cookies. These foods may be sold at mealtimes in the cafeteria and elsewhere in the school, such as in vending machines and at school stores or snack bars. In addition to federal regulations, states and local school food authorities may impose further restrictions on the sale of competitive foods, such as substituting healthier foods for the less nutritious items.

Schools in our survey indicated whether any foods were available at vending machines and at school stores or snack bars, and the times when those foods were available. Almost a quarter (23 percent) of public elementary schools offered vending machine foods for sale, and 35 percent offered foods for sale at school stores or snack bars. During mealtimes, vending machine foods were available in 8 percent of all public elementary schools, and school store or snack bar foods were available in 15 percent of the schools. At other times in the school day, foods were offered for sale at vending machines in 11 percent of the schools and at school stores or snack bars in 11 percent of the schools.

The survey also obtained information on whether each of 15 types of foods was offered for sale at one or more locations in the school; i.e., in the school cafeteria, and at vending machines or school stores or snack bars. The foods ranged from nutritious items such as 100% fruit or vegetable juice and green salad or fruit to less nutritious items such as soft drinks and candy. While a higher proportion of the schools offered healthier than less nutritious foods for sale at one or more locations in the school, 12 percent offered soft drinks, 15 percent offered candy, 25 percent offered salty snacks that are not low in fat, and 34 percent offered cookies or baked goods that are not low in fat.

Contract with companies to sell drinks or snack foods at the school

Some recent studies have found that many school districts negotiate contracts with companies to sell foods at the school, primarily soft drinks.

While these contracts may generate substantial revenues and noncash benefits, such as goods and services and in-kind support of school events, they often impose obligations on the school, such as minimum annual purchases.

In our study, 23 percent of the public elementary schools reported that one or more companies had a contract to sell drinks or snack foods at the school. There were some clear differences by locale, region, and the percent of minority enrollment at the school. Rural schools were more likely than those in other locales to report that companies had a contract to sell drinks or snack foods at the school, and schools in the Southeast were more likely than those in the West and Northeast to report such contracts. Schools with the lowest percent of minority enrollment were more likely than those with the highest percent of minority enrollment to have contracts with companies to sell drinks or snack foods at the

school. (Note: Other apparent differences were not significant at the 95 percent confidence level.)

I would like to point to a recent development in the changing landscape of competitive food sales. On May 3, 2006, the beverage industry announced that it is voluntarily eliminating the sale of sodas, diet sodas, sports drinks, and fruit drinks that are not 100% juice from all elementary schools. Data from our study, not included in the report, show that this will affect about one-third (34 percent) of elementary schools nationwide.

Calories Out: Opportunities for Physical Activity

The 2005 USDA report Dietary Guidelines for Americans recommends at least 60 minutes of daily physical activity for children 6 to 11 years old. Schools have a unique advantage in offering the environment, facilities, and teachers to promote daily physical activity for students to help meet this recommendation.

We collected information on three indicators of opportunity for physical activity—recess, physical education, and school programs or activities to encourage exercise. Schools reported recess and physical education information for each grade that was considered elementary at the school.

Scheduled recess and physical education

The Institute of Medicine recommends that schools provide recess and physical education on a daily basis. Data from our study show that while 83 to 88 percent of public elementary schools provided daily recess, depending on grade level, some schools did not schedule recess at all. The proportion of schools with no recess ranged from 7 percent for first and second grades to 13 percent for sixth grade.

Our study found that at least half of all public elementary schools scheduled physical education only one or two days a week, ranging from 50 percent for sixth grade to 55 percent for grades 1 through 4. One percent of the schools did not have a physical education schedule while the proportion that provided daily physical education ranged from 17 to 22 percent across elementary grades.

We reported differences by poverty concentration in the proportion of schools that scheduled recess and physical education. In this study, the percent of students eligible for free or reduced-price lunch was used as a proxy measure for poverty concentration at the school. High poverty schools were defined as having 75% or more of their students eligible for free or reduced-price lunch.

Our study found that high poverty schools were less likely to have any scheduled recess or daily recess, compared to schools with lower poverty concentrations. When the times for physical education and recess were combined, high poverty schools had lower averages in minutes per week, compared to other schools. This total time for recess and physical education reflects the opportunity students have to engage in physical activity.

To illustrate the pattern for all elementary grades, the data for first grade students show that high poverty schools reported lower averages in the number of minutes per week of recess, compared to other schools. High poverty schools also had lower averages in the number of minutes per week of recess and physical education combined.

School programs or activities to encourage exercise

Many public elementary schools are using a range of nontraditional programs to encourage their students to exercise. Almost two-thirds (64 percent) of the schools used nontraditional physical education activities, such as dance or kick-boxing, to make physical education enjoyable. Fifty-eight percent provided opportunities during the school day for organized physical activities outside of physical education, and 51 percent offered school-sponsored before- or after-school activities that emphasize exercise (e.g., walking or running, sports, dance, or group games). In addition, 55 percent of the schools participated in the President's Challenge Physical Activity and Fitness Award program.

Weighing Students and Notifying Parents

In 2005, the Institute of Medicine recommended that schools conduct annual physical assessments of their students' weight, height, and body mass index (BMI), and that schools send this information to parents. According to our survey, two-thirds of public elementary schools never calculated students' body mass index, 28 percent never measured students' height, and 29 percent never measured students' weight. Moreover, only 28 percent of all public elementary schools notified parents about the students' weight or their height, and only 17 percent informed parents' about the students' body mass index.

If you would like more information about this study, please contact Mike Bowler, the IES Communications Director, or Bernie Greene, the FRSS Project Director.