

# Participation in Physical Education and Physical Activity in U.S. Elementary Schools

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## Introduction

Overweight and obesity have risen rapidly among US children and adolescents, reaching epidemic proportions in recent years. Recent figures show 16.3% of children and adolescents are overweight. Research shows regular physical activity, including school-based physical education (PE), reduces risk for the development of overweight among youth. Higher amounts of PE have also been associated with improved academic performance. School-based physical activity programs may consist of PE and other physical activity opportunities including recess, intramural and extramural/interscholastic sports, as well as walk and bike to school initiatives.

The purpose of this research was to identify characteristics of school physical education and physical activity programs in a national sample of U.S. elementary schools and determine if differences exist in programs offered based on a school's racial/ethnic and socioeconomic composition.

## Methods

The Food and Fitness Project was launched in 2007 to assess obesity-relevant policies and practices among US elementary schools and their corresponding schools districts. Our sampling approach involved a two-stage procedure, whereby a nationally-representative sample of school districts was selected, and from within those districts, a sample of elementary schools were selected with probability proportional to size (3<sup>rd</sup> grade enrollment). In addition, we drew a representative sample of private schools serving elementary aged (3<sup>rd</sup> grade) students.

We sent a pen-and-paper survey to school principals beginning in spring 2007. Principals were provided pre-paid return envelopes, and we offered \$100 for completing the survey. Multiple follow-up efforts were made by mail, email, and phone to all non-responders. By fall of 2007, we received responses from 578 public schools (54.5% response rate) and 259 private schools (66.2% response rate). Our sample weights were adjusted to account for non-response.

Analyses presented here are weighted to provide inference to elementary schools in the U.S.

### School Characteristics:

	Public schools (n = 578)	Private schools (n = 259)
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )
Total students at school	561.9 (236.5)	446.6 (284.3)
Total 3 <sup>rd</sup> grade students	92.7 (47.8)	47.1 (23.8)
Schools with > 40% Non-White students	42.8%	17.7%
Schools with > 30% free/reduced lunch	66.4%	n/a

For more information, see: [www.impacteen.org/foodandfitnesshome.htm](http://www.impacteen.org/foodandfitnesshome.htm)

## Results

### Physical Education

Nearly all schools (98.7%) reported that students were required to take physical education classes. Among those schools, PE was offered:

- 19.31% had PE daily
- 20.43% had PE 3 or 4 times a week
- 60.26% had PE 1 Or 2 times a week
- Average length of PE class was 39.2 minutes in length (students were active for 84.6% of class time)

- Average class size was 27 students

### Reported Barriers to Implementing or Maintaining Regular PE Classes:

Barrier	% of schools that reported each barrier
Lack of necessary staff	19.0
Inadequate indoor facilities/equipment	21.2
Inadequate outdoor facilities/equipment	11.8
Competing demands for other subjects	25.4
Low priority for district administrators	6.4
No state or district policies requiring PE	2.9
Financial Constraints	15.8

- Nearly all schools (92.6%) reported having a PE teacher, but only 32.6% of the schools reported having a district-level PE coordinator
- 40.3% of the schools measured students' physical fitness annually

### Recess

- 90.5% of schools reported having recess 5 days per week
- Average length was 27.5 minutes

### Walking/Biking to School

- On average 19.1% of students walk or bike to school
- 24.9% of schools indicated that no children walk or bike to school
- 27.9% of schools indicated that no children are allowed to walk or bike to school
- 22.5% of schools indicated that only children in certain grades were allowed to walk or bike to school
- School too far away and traffic danger were the most often cited perceived barriers followed by lack of sidewalks and crossing guards

### After-School Activities

- 32.0% of the schools offered intramural team sports
- 25.7% of the schools offered extramural team sports
- 6.2% of the schools offered individual sports
- 40.3% of the schools offered after-school school-sponsored physical activities

### Lower-Income vs. Higher-Income Schools

Because obesity rates are elevated by racial/ethnic groups and in lower-income communities, we compared differences among both higher-income schools vs. lower-income schools, using percent of students qualifying for free lunch to create two groups (> 30 free/reduced price lunch considered lower-income), as well as by schools having greater than 25 percent White, Black or Hispanic students. These data are only available for public schools, therefore these analyses exclude private schools.

We found the following significant differences between Higher- and Lower-income schools:

	Higher-Income	Lower-Income	<i>p</i>
Daily Recess	95.6%	87.8%	<.001
Daily PE	17.2%	21.4%	<.001
Intramural Sports	23.3%	33.4%	<.001
Extramural Sports	16.2%	22.7%	<.001
Individual Sports	6.1%	4.1%	<.001
Formal Classroom Instruction on PA	9.7%	13.7%	<.001

We also found significant differences by race/ethnicity:

	>25% White	>25% Black	>25% Hispanic	<i>p</i>
Daily Recess	95.15%	83.36%	84.16%	<.001
Daily PE	16.95%	15.20%	25.36%	<.001
Intramural Sports	30.08%	36.25%	33.86%	<.001
Extramural Sports	26.69%	21.59%	26.97%	<.001
Individual Sports	7.49%	6.38%	2.94%	<.001
Formal Classroom Instruction on PA	12.20%	16.10%	16.62%	<.001

We found no significant differences between public and private schools.

## Discussion and Conclusions

Establishing physical activity habits early in childhood has been shown to help students develop skills and interest for maintaining that activity later in life. Schools can play an important role in promoting children's physical activity. Although the majority of schools offered daily recess, most schools only offered PE once or twice a week; with less than 20 percent of elementary schools nationally offering PE daily. Furthermore, in most instances, less than a third of the elementary schools surveyed offered some type of organized physical activity programs. Finally, less than 20 percent of students walk or bike to school, primarily due to unsafe routes to school.

Although most schools provide physical education, we found significant differences in physical activity opportunities by socioeconomic status and race/ethnicity indicating a need to improve physical education and physical activity policies and programs in elementary schools.

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