

## Childhood Obesity is a Serious Concern in New York City Higher Levels of Fitness Associated with Better Academic Performance

Childhood obesity is epidemic throughout the United States. In 1980, 7% of children ages six to 11 years were considered obese. By 2006, this figure more than doubled to 17%. Childhood obesity increases the likelihood of adult obesity, which is associated with heart disease and cancer. Both childhood and adult obesity are associated with diabetes, high blood pressure, and high cholesterol.

Physical activity has many health benefits, including preventing obesity and losing weight. The Office of Fitness and Health Education was created in 2003 as a joint effort between the NYC Department of Health and Mental Hygiene (DOHMH) and the NYC Department of Education (DOE). An initiative from this

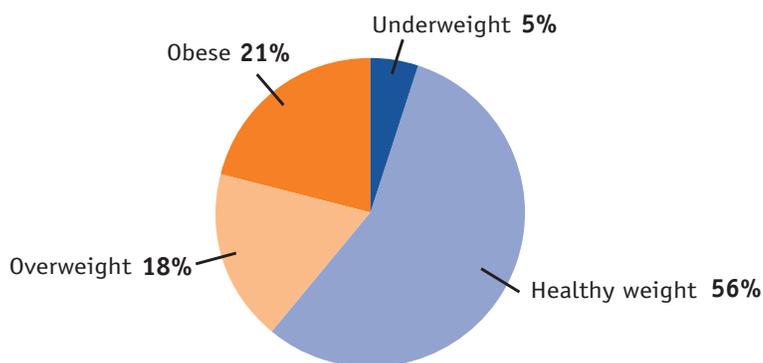
collaboration includes extensive teacher training and the introduction of a standards-based fitness curriculum and assessment (NYC FITNESSGRAM).

To better understand the prevalence of childhood obesity and how physical fitness may be associated with academic performance in New York City, the DOHMH and DOE reviewed academic and fitness records of public school students in grades K-8 who participated in the NYC FITNESSGRAM program during the 2007-08 school year. The results of this study will be used to inform strategies to continue raising student achievement levels. Page four provides recommendations for improving student wellness through increased physical activity and improved nutrition.

### More than 20% of students are obese

- More than one in five public school children (kindergarten through eighth grade) are obese (21%), and a similar number of students are overweight (18%).
- Compared with children nationwide, NYC children are more likely to be obese (21% vs. 17%) and overweight (18% vs. 14%).

Weight status in NYC public schools, kindergarten–eighth grade

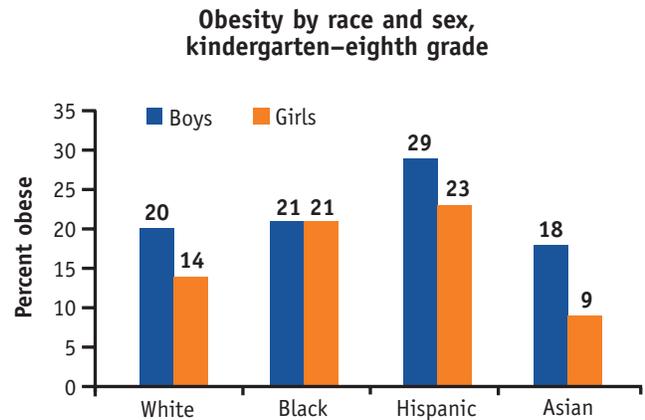


Data presented in this report are taken from NYC FITNESSGRAM reports from the 2007-08 school year, when more than 600,000 students K-12 were assessed. This report examines BMI data in grades kindergarten through eighth grade and physical fitness results in grades four through eight. BMI data were weighted to reflect all NYC public school students in these grades. National estimates of overweight and obese children (ages five to 14) are from National Health and Nutrition Examination Survey (NHANES), 2005 and 2006 combined data.

**Fitness assessment:** NYC FITNESSGRAM measures individual fitness performance and improvement. Students are not compared with each other or to a standardized norm. The NYC FITNESSGRAM report provides students with feedback on their performance as compared with criterion-reference standards and offers suggestions for lifelong fitness ([schools.nyc.gov/fitness](http://schools.nyc.gov/fitness)). The NYC FITNESSGRAM is based on FITNESSGRAM/ACTIVITYGRAM™ 8.0, owned by the Cooper Institute, Dallas, TX, and published by Human Kinetics, Champaign, IL.

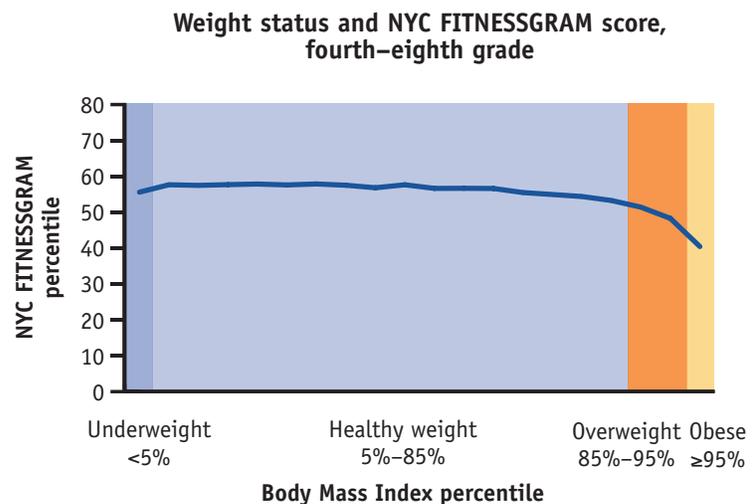
## Childhood obesity affects all student groups, regardless of race, ethnicity, or sex

- While obesity is common among all racial and ethnic groups in kindergarten through eighth grade, Hispanic students are the most affected. Twenty-nine percent of Hispanic boys are obese.
- In general, boys are more likely to be obese than girls (24% vs. 19%). This difference is seen across racial and ethnic groups, except among black students for whom there is no difference between boys and girls.



## Overweight and obese students are less physically fit

- Overweight and obese students are less physically fit than healthy weight students. On average, healthy weight students score in the 56th percentile on NYC FITNESSGRAM; overweight students score in the 49th percentile and obese students score in the 40th percentile.
- Among healthy weight students, there is little variation in average NYC FITNESSGRAM score.
- The pattern between BMI and NYC FITNESSGRAM does not vary considerably by sex.



**Measuring obesity in children.** Body mass index (BMI) is a measure of a person's weight-to-height ratio. Among children, underweight is defined as a BMI less than the fifth percentile, overweight as a BMI between the 85th and 95th percentile, and obese as a BMI greater than or equal to the 95th percentile, for age and sex using 2000 CDC guidelines. BMI is intended only to serve as a screening tool. Health care professionals should determine a healthy weight range for each child. To learn more about how obesity is defined in children, visit [www.cdc.gov/bmi](http://www.cdc.gov/bmi).

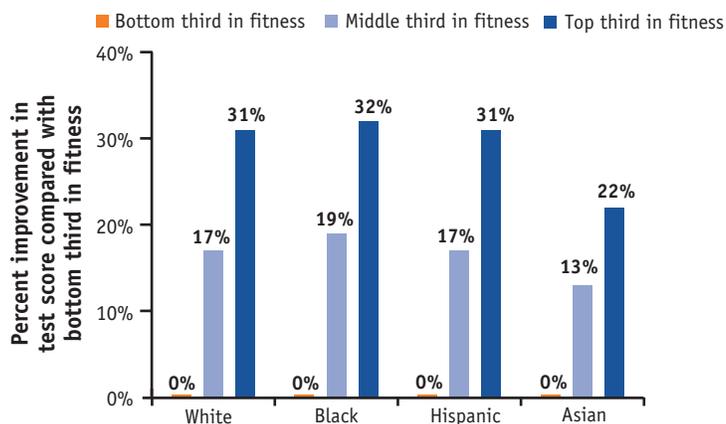
**Fitness assessment percentiles** for this report were calculated based on a student's mean percentile on three NYC FITNESSGRAM assessments: pushups (upper body strength), curlups (abdominal strength), and PACER (aerobic capacity).

## Students with better physical fitness have higher academic test scores

- Academic test scores\* increased with higher NYC FITNESSGRAM scores across all racial and ethnic groups.
- Students in the top third of NYC FITNESSGRAM scores had, on average, higher academic test scores than students in the bottom third of NYC FITNESSGRAM.

\* Academic test score is an average of a student's NYS Standardized English Language Arts (ELA) and NYS Standardized Math test percentile, as measured by grade level.

Percent improvement in academic test score by NYC FITNESSGRAM score, by race, fourth–eighth grade, 2007–08

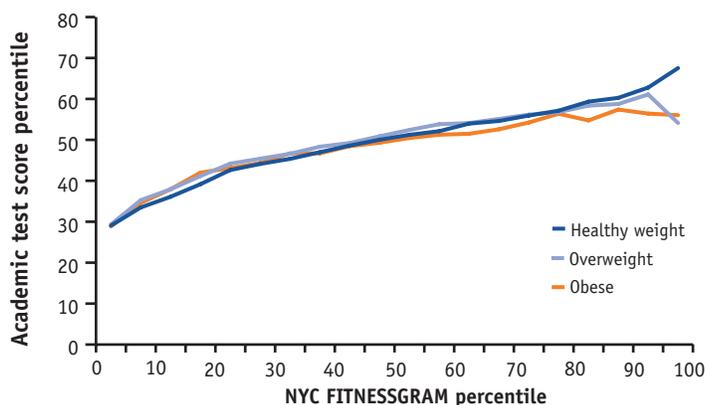


**Fitness and academic performance.** Findings presented here are consistent with recent research from other states showing that students with higher fitness levels score higher on standardized achievement tests. However, because information collected for this study provides only a snapshot view of a student's fitness and academic performance, it is not possible to show the direction of the association. For example, improved physical fitness may lead to better test performance or better test performance may lead to an improvement in physical fitness. Additionally, this report does not examine the impact of poverty or other factors that may influence students' academic achievement and fitness levels.

## Students' academic test scores increase with physical fitness scores across all weight categories

- Standardized test score performance increases consistently with increasing NYC FITNESSGRAM score across all weight groups. Underweight students follow a similar pattern.
- Overall, students in the top 5% in NYC FITNESSGRAM score 36 percentile points higher on standardized tests than students in the bottom 5% in NYC FITNESSGRAM (65th vs. 29th percentile).

Academic test and NYC FITNESSGRAM scores, by weight status



# Recommendations

## Help Children Be Fit Through Daily Physical Activity.

**PARENTS** are role models when they are physically active with their children.

- Children should get at least one hour of physical activity a day. Fun activities work best — try bicycling, dancing, jumping rope, playing basketball, or going for a walk with your child.
- Limit your TV, video game and internet use. Ensure that your children's screentime is no more than one hour per day for elementary school students and two hours per day for middle and high school students.

**SCHOOLS** support academic skills, good health, and physical and mental fitness.

- School leaders can make sure that all students receive the required physical education instruction each week, as mandated by the New York State Education Commissioner's Regulations. For specific mandates by grade level, visit <http://www.emsc.nysed.gov/ciai/pe/documents/part135.pdf>.
- Teachers and administrators can encourage fitness breaks in classrooms through planned physical activity during the school day.

**HEALTH CARE PROVIDERS** should include a discussion of physical activity routines in every meeting with children and adolescents.

- Encourage children to participate in fitness activities tailored to a wide range of athletic abilities and interests.

## Help Children Develop Healthy Eating Habits.

**PARENTS** can serve children portions appropriate for their age. To learn more, visit: <http://www.cnpp.usda.gov/MyPyramidforKids.htm>.

- Prepare healthy meals at home. Offer children fruits and vegetables at every meal and snack.
- Don't let your children drink their calories. Choose water and low-fat milk, not juice or high-calorie, sugar-sweetened beverages, such as sodas.

**SCHOOLS** can support student wellness in key areas.

- Provide skills-based health education, including information on the connection between good health and academic success.
- Encourage students to take advantage of healthy food provided by the school, including free breakfast, water, and low-fat milk.

**HEALTH CARE PROVIDERS** should include a discussion of healthy eating habits in every meeting with children and adolescents.



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