

Data Brief – Obesity and Severe Obesity among Philadelphia schoolchildren, 2006/07 – 2012/13

Executive summary

- From 2006/07 to 2012/13, the prevalence of obesity among Philadelphia schoolchildren declined from 21.7% to 20.3% (a 6.3% reduction) and severe obesity declined from 8.6% to 7.4% (a 13.5% reduction).
 - Obesity declines were larger among boys than girls, and among African Americans and Asians than whites and Hispanics.
 - Over the last three years (2009/10 – 2012/13), obesity declined to a lesser degree than in the first four years of study (2006/07 – 2009/10). It continued to decrease significantly among boys (including African Americans, Asians, and those in grades K-5), trended downward in girls, but increased significantly among Hispanic girls and girls in grades K-5.
 - Over the last three years, severe obesity also continued to decrease significantly among both boys and girls (including African American girls).
 - By 2012/13, Hispanics had the highest prevalence of obesity among boys (25.9%) and girls (23.0%). Hispanic boys (10.1%) and African American (8.6%) girls had the highest prevalence of severe obesity.
 - Obesity and severe obesity have continued to decline among many children in Philadelphia, particularly boys, African Americans, and Asians, but obesity has increased among Hispanic girls and girls in grades K-5 after initial reductions. Further monitoring and interventions—especially among Hispanics and girls—are needed to effectively address childhood obesity in Philadelphia.
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Background

- Multiple U.S. communities have reported reductions in obesity among school-aged children.¹
- In a 2012 paper,² the Philadelphia Department of Public Health (PDPH) documented a 4.8% reduction in obesity among Philadelphia public school students between 2006/07 and 2009/10. The largest reductions were seen among African American boys and Hispanic girls.
- With three additional years of data, we assessed trends in obesity and severe obesity among Philadelphia public school children between 2006/07 and 2012/13.

Methods

- Heights and weights for public schoolchildren were measured by school nurses, entered into a database along with age, gender, and race/ethnicity, and shared with PDPH.³
- Body mass index (BMI) and BMI percentiles were calculated using age- and sex-specific growth charts from the Centers for Disease Control and Prevention. Obesity was defined

as a BMI percentile ≥ 95 , and severe obesity as a BMI percentile $\geq 120\%$ of the obesity threshold. Students who would have met adult criteria for overweight (BMI ≥ 25), obesity (BMI ≥ 30) or severe obesity (≥ 35) were also classified as such.

- Obesity and severe obesity were reported for the total population, for each gender, and within gender by grade and race/ethnicity.
- Trends over time were assessed in multi-variable models, including race/ethnicity, year of age, and grade. The three time periods of interest were 2006/07 to 2009/10 (the initial study period), 2009/10-2012/13 (the follow-up study period), and 2006/07-2012/13 (the entire study period).

Results – study population

- The number of enrolled K-12 students in the School District of Philadelphia declined from 186,176 in 2006/07 to 147,818 in 2012/13.
- The number of students with valid BMI assessments varied by school year, starting at 114,909 in 2006/07, peaking at 122,448 in 2009/10, and declining to 88,798 in 2012/13. The percentage with valid BMI assessments ranged from 62% in 2006/07 to 73% in 2010/11 to 60% in 2012/13.

Results – obesity (Figures 1, 3, and 4)

- From 2006/07 to 2012/13, obesity declined from 21.7% to 21.3%—a decline of 6.3%. Reductions were larger in the first four years (4.5%) than in the last three years (1.8%).
- Among **boys**, obesity declined from 21.9% to 20.1% over seven years—a decline of 8.1%.
 - The largest declines were seen in grades K-5 (8.8%) and among African Americans (11.3%) and Asians (18.8%).
 - All race/ethnicity groups saw declines between 2006/07 and 2009/10, but only African-American and Asian boys had significant continuing reductions in obesity between 2009/10 and 2012/13.
 - Boys in grades K-5 also saw a significant reduction in obesity in the last three years.
- Among **girls**, obesity declined from 21.5% to 20.6% over seven years—a decline of 4.3%. However, the declines were smaller (and not statistically significant) in the final three years.
 - The largest reductions were seen in grades 6-8 (6.1%) and among African Americans (3.7%) and Asians (7.1%).
 - Among Hispanic females, obesity initially declined from 22.7% to 20.9% from 2006/07 to 2009/10 but then increased significantly to 23.0% by 2012/13.
 - Girls in K-5 also experienced an increase in the last three years from 19.2% to 19.5%.

Results – severe obesity (Figures 2, 5, and 6)

- From 2006/07 to 2012/13, severe obesity declined significantly for all children (8.6% to 7.4%, a relative decline of 13.5%), boys (8.9% to 7.5%), and girls (8.3% to 7.4%). The largest reductions were seen among African Americans and Asians.
- Over the last three years, severe obesity continued to decline significantly for boys and girls. All race/ethnicity groups, except for Hispanics, saw continued declines. Notably, African American girls experienced a 7.4% reduction during this period. Hispanic girls experienced a non-significant increase in severe obesity over the final three years but a 7.4% decrease over the entire study period.

Discussion

- Obesity and severe obesity have continued to decline among many children in Philadelphia, particularly boys, African Americans, and Asians, but obesity has increased among Hispanic girls and girls in grades K-5 after initial reductions.
- Declines in obesity may be due to local initiatives—such as [Get Healthy Philly](#)—focusing on environmental change interventions in schools, after-school programs, communities, and the media, and state and federal efforts.⁴
- Hispanic children and girls may face bigger challenges related to certain mediators of good nutrition and physical activity than other racial/ethnic groups and boys, respectively. For Hispanics, such challenges may include unhealthy food availability in schools,^{5,6} advertising of unhealthy foods and beverages on Spanish-language media,^{7,8,9,10} sugary drink intake,¹¹ and limited moderate to vigorous exercise.¹² For girls, social and biological factors may be at play,¹³ including significantly lower levels of moderate to vigorous exercise.¹⁴
- Broader and more effective social, environmental, and clinical interventions are needed to sustain and advance reductions in childhood obesity in Philadelphia and across the U.S.

Figure 1: Obesity among Philadelphia public school children, 2006/07 - 2012/13

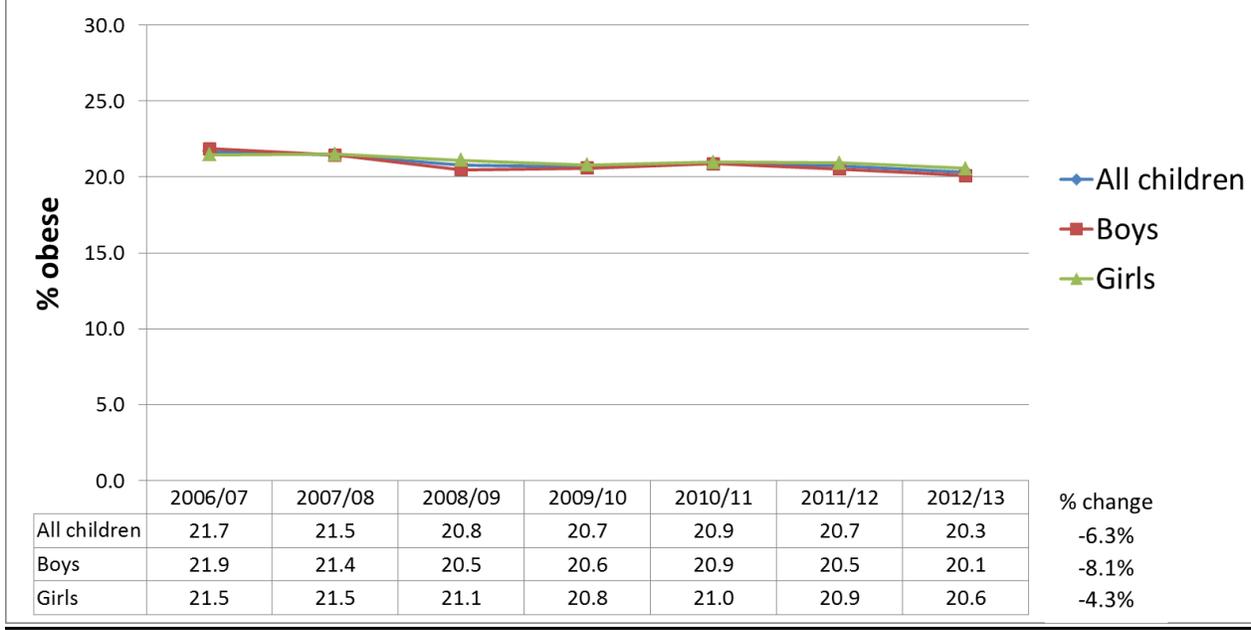


Figure 2: Severe obesity among Philadelphia public school children, 2006/07 - 2012/13

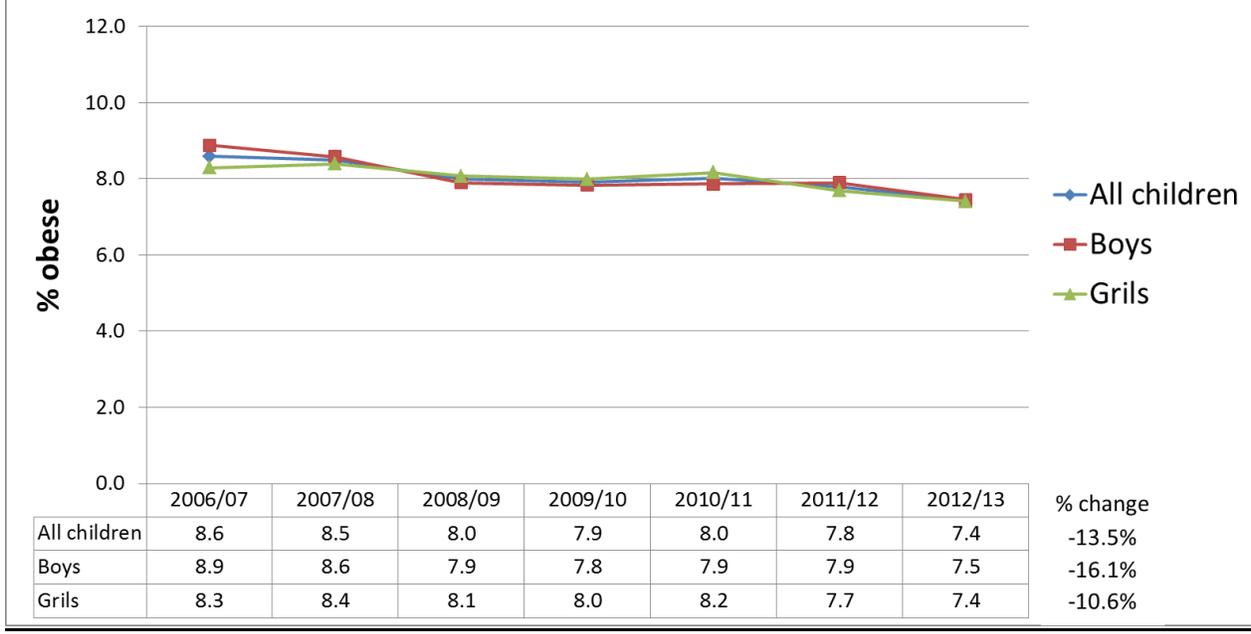


Figure 3: Obesity among male Philadelphia public school children, by race/ethnicity, 2006/07 - 2012/13

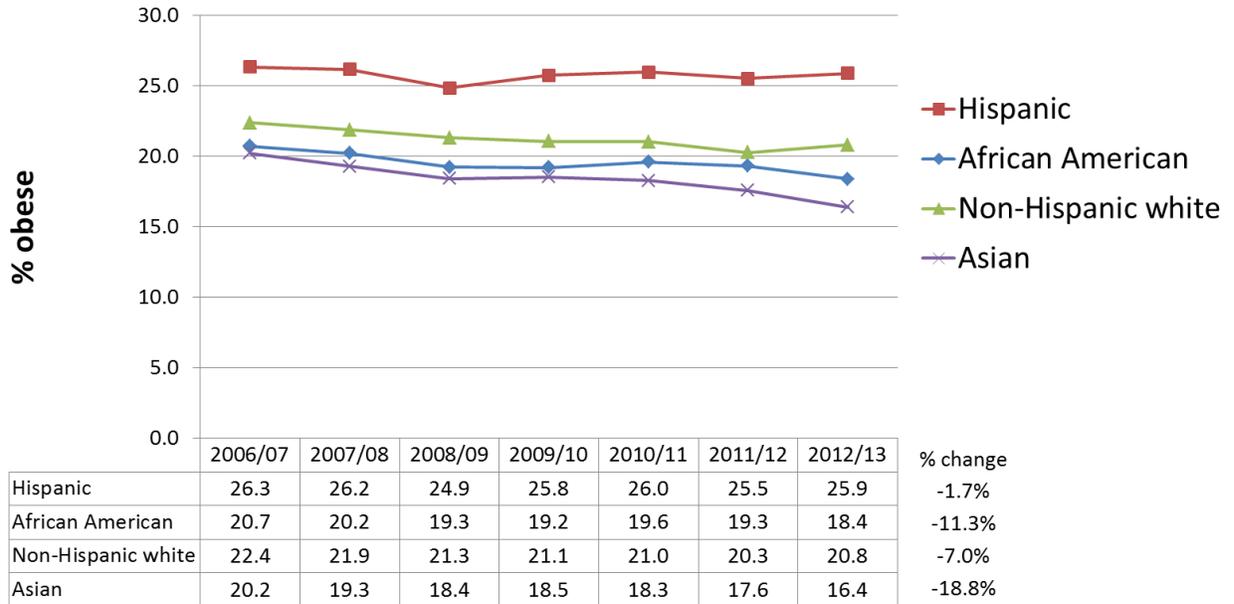


Figure 4: Obesity among female Philadelphia public school children, by race/ethnicity, 2006/07 - 2012/13

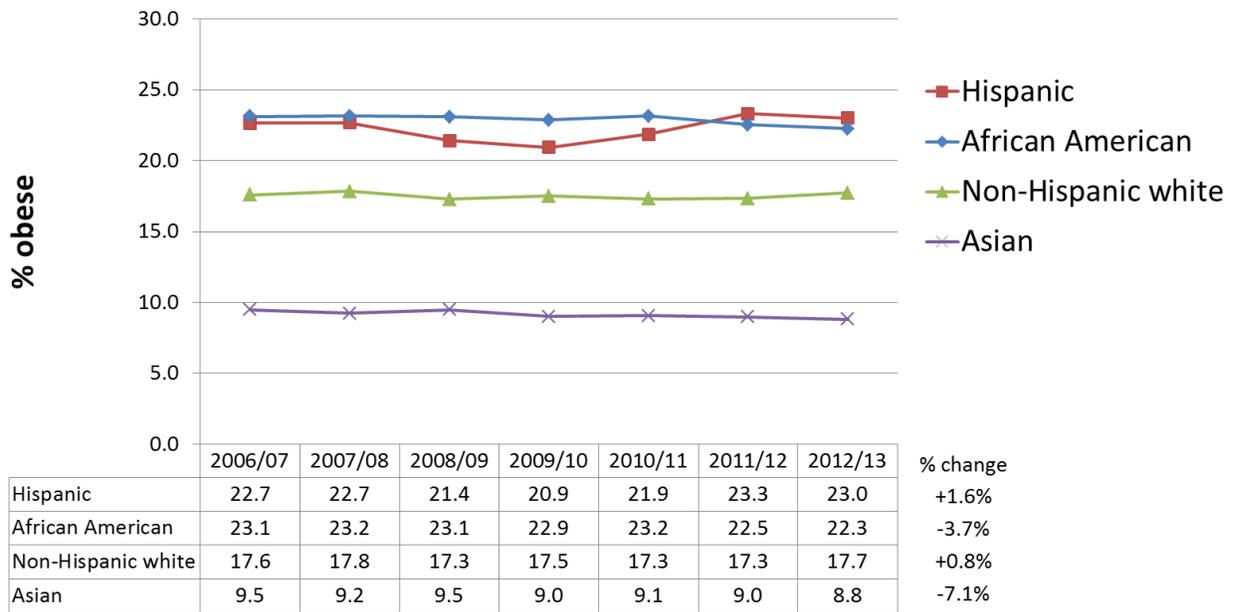


Figure 5: Severe obesity among male Philadelphia public school children, by race/ethnicity, 2006/07 - 2012/13

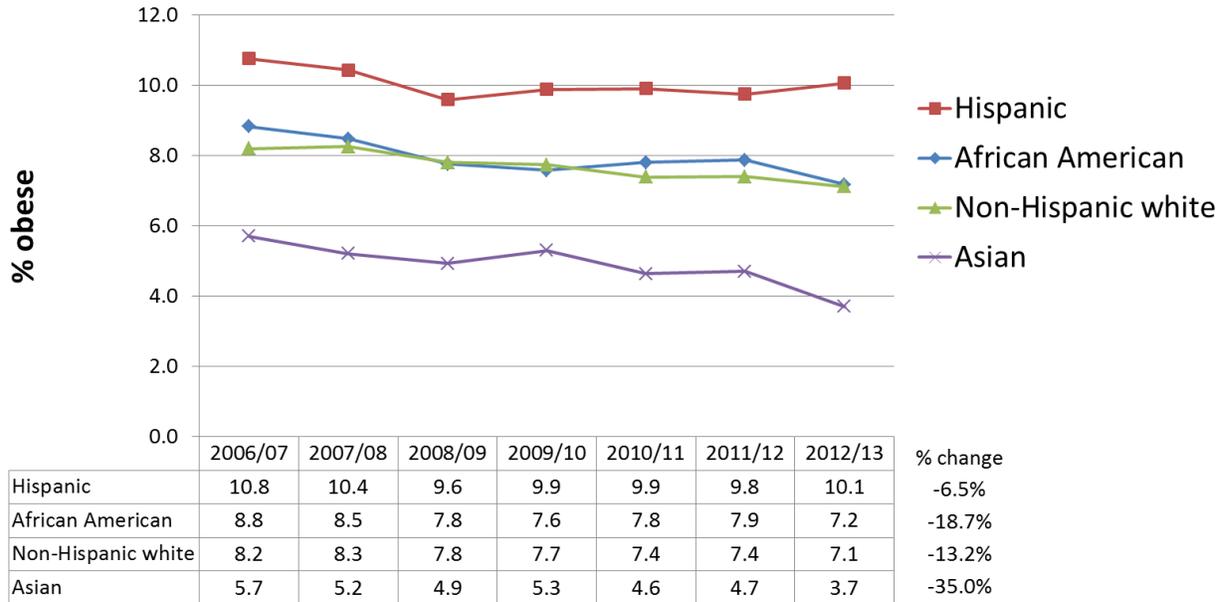
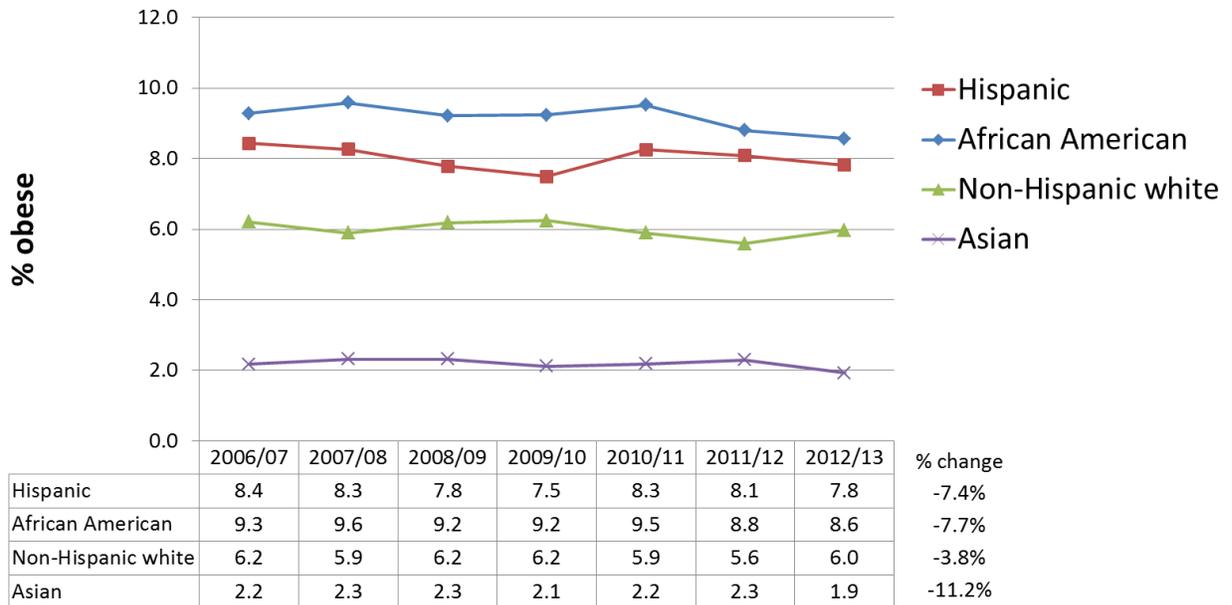


Figure 6: Severe obesity among female Philadelphia public school children, by race/ethnicity, 2006/07 - 2012/13



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