

The New Jersey Child Health Study

The Prevalence of Childhood Obesity among School Children Newark, 2008 and 2015

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In these charts...

The tables and graphs in this chart book were created using data collected by the Newark public schools during the 2008 and 2015 school years. Staff of the NJ Child Health Study obtained de-identified, nurse-measured heights and weights from each school in both years. Using these data, we calculated a body mass index (BMI) score and a BMI percentile (BMIpct) for each child. Using the BMIpct, we categorized each child's weight status as follows:

BMIpct	Weight Status
BMIpct < 85	Not Overweight or Obese
85 ≤ BMIpct < 95	Overweight but not Obese
BMIpct ≥ 95	Obese

In the charts that follow, we show trends in weight status for each city over time for all children as well as for subgroups (by age, gender, and race/ethnicity). For comparison purposes, we show corresponding trends based on data from the National Health and Nutrition Survey (NHANES). As noted on each of the national charts, the age groups and years of data from NHANES sometimes differ from those from our study. We used the most comparable national data available.

About the NJ Child Health Study...

This project, funded by the National Heart, Lung, and Blood Institute (NHLBI/NIH), is designed to identify alterable factors in the food and physical activity (PA) environment that contribute to declines in obesity rates among school children. While overall obesity rates remain high in the U.S., there have been promising reports of declines among specific subgroups across the country. Yet, little is known about the causes of such declines. This study aims to identify changes in the food and PA environments in schools and the surrounding communities that predict sustained obesity declines over time among a panel of K-12 schools, and explore whether these predictors differ by race/ethnicity, age, and gender of students.

The project focuses on all public schools in four NJ cities: Newark, Trenton, Camden, and New Brunswick. The research will prospectively follow 120 schools (30,000 students/year) over the study period. Nurse-measured heights, weights, and demographic data on students will be collected. At parallel times, schools will be surveyed to identify changes in food and PA environments in the schools (e.g., salad bars, drinking water in cafeterias, recess), and changes in the food and PA environment surrounding schools will be documented (e.g., new/renovated parks and trails, new food stores or PA facilities, upgraded corner stores). Changes will be geocoded to establish proximity to schools. The promise of the research derives from our having identified schools for study that have experienced declines and increases in obesity rates and our ability to identify alterable factors in the environment that can be linked to obesity trends among varied age, gender, and race/ethnicity groups. The study is designed to provide critical evidence for developing tailored community and school interventions for reducing the burden of childhood obesity.

 New Jersey
Child Health Study

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Table 1. Prevalence of Childhood Obesity (BMIPCT_≥95) in Four New Jersey Cities, 2008 and 2015

City	2008	2015
Camden	24.0%	24.4%
Newark	25.3%	27.3%
New Brunswick	26.2%	31.1%
Trenton	28.5%	30.5%
Total US Population	16.9%	17.0%

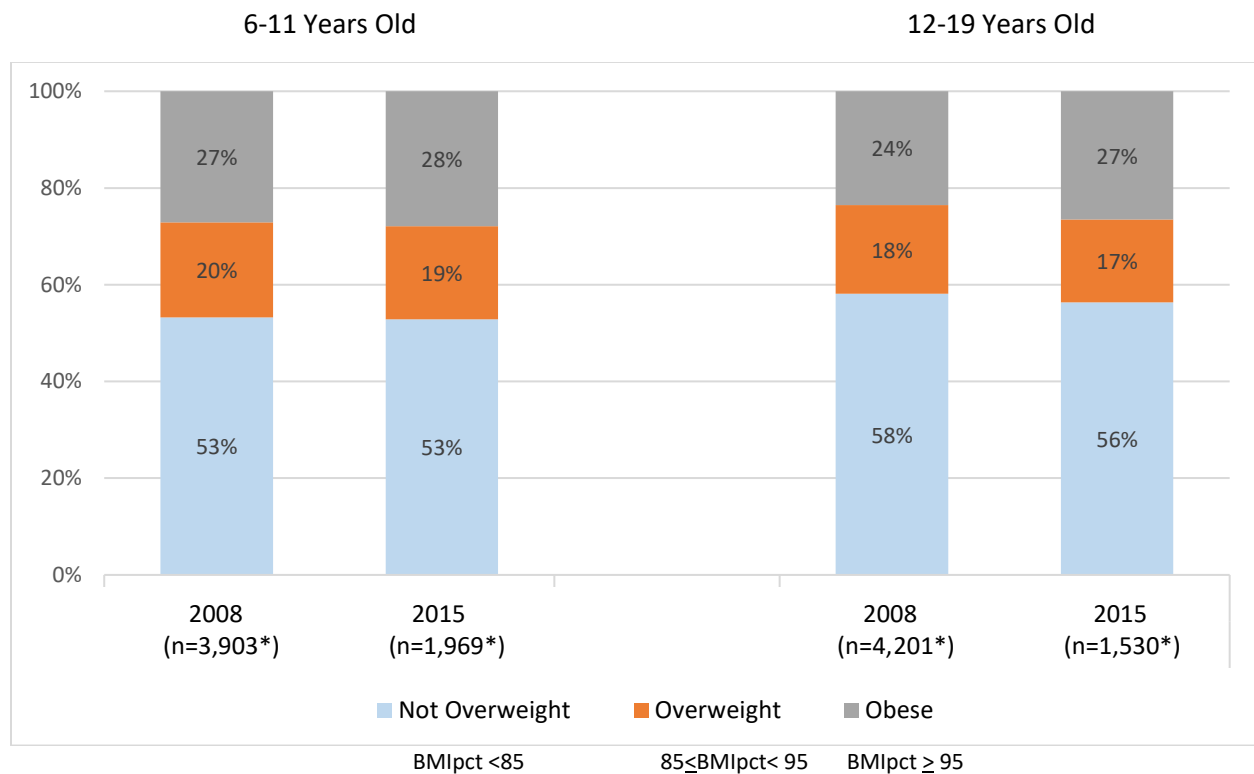
Sources: New Jersey Child Health Study; Trenton, Camden, New Brunswick, and Newark Public Schools 2008 and 2015 BMI Data;

US: National Health and Nutrition Survey (NHANES), 2008 and 2012

Note the differences in the age group and years for the US prevalence rates: Data on NJ includes school children aged 6-19 in years 2008 and 2015; US data includes all children aged 2-19 for the years 2008 and 2012 (the most comparable data available)

- Across the four NJ cities, increases in obesity prevalence ranged from 0.4% to 4.9%.
- For the nation as a whole, there was an increase of 0.1% between 2008 and 2012. However, for comparison purposes, the US rate may be understated because it includes children aged 2-5, a subgroup for which nationally weight status improved over this period as contrasted with older children.
- The absolute prevalence rates for obesity were considerably higher in all four NJ cities compared to the national average. However, the population of the NJ cities are different from the U.S. population in ways that affect obesity; they are more diverse in racial/ethnic mix but poorer in average income. So it's important to look at rates among demographic subgroups.

Figure 1. Prevalence of Childhood Obesity in Newark, Age, 2008 and 2015

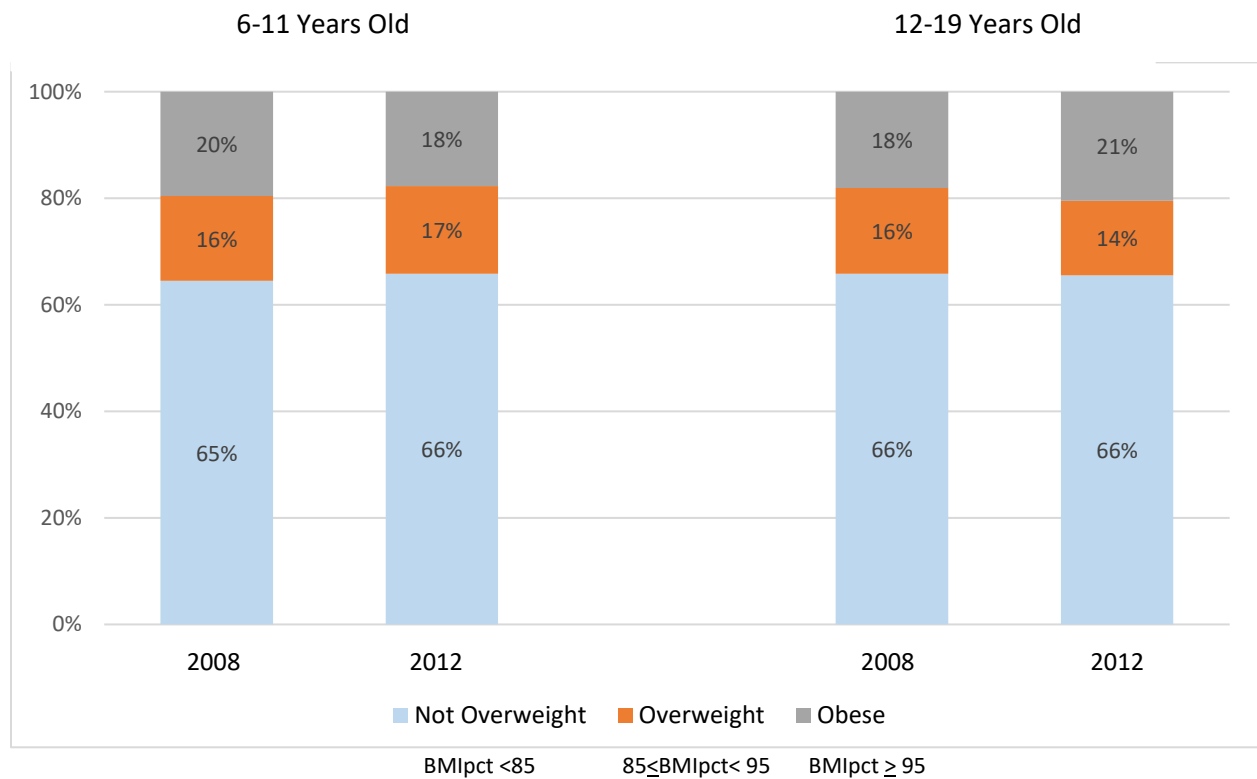


Source: New Jersey Child Health Study; Newark Public Schools 2008 and 2015 BMI Data

*Random sample of students by grade and by school

- Among Newark school children, in any given year (2008 or 2015), younger children tended to be more overweight and more obese than older children (comparing the first to the third bar, and the second to the fourth).
- Comparing change over time within each age group, there was very little overall change among 6-11 year-olds. But there was an increase in obesity (BMI pctl ≥ 95) among 12-19 year-olds. The increase in obesity among older children is similar to the national trend for this age group (see next page).

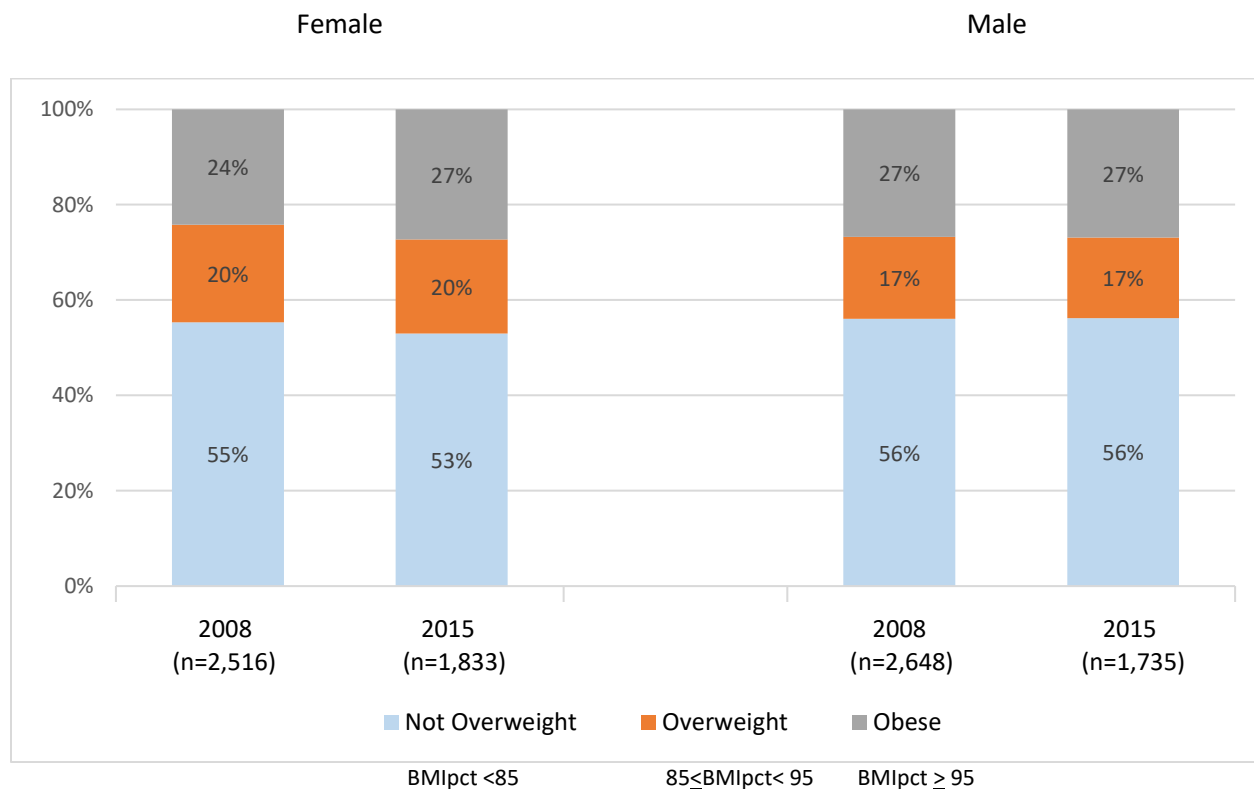
Figure 2. Prevalence of Childhood Obesity in the United States by Age, 2008 and 2012



Source: National Health and Nutrition Survey (NHANES), 2008 and 2012

- Among children aged 6-11, nationwide, there was a slight overall improvement in weight status; most notably a decrease in the percentage who were obese (BMI pctl \geq 95).
- Among older children, there was a slight decrease in the prevalence of those who were overweight, but a slight increase in those who were obese.

Figure 3. Prevalence of Childhood Obesity in Newark by Gender, 2008 and 2015



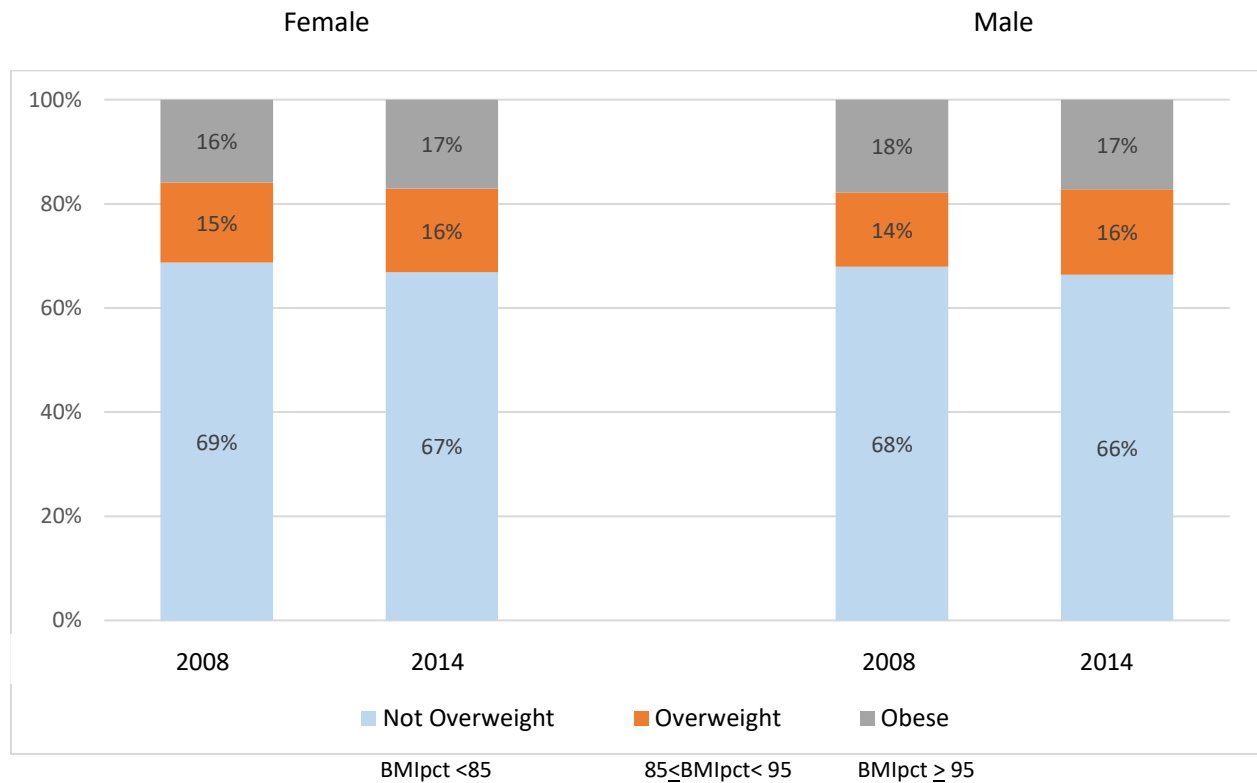
Source: New Jersey Child Health Study; Newark Public Schools 2008 and 2015 BMI Data

School Children, aged 6-19

*Random sample of students by grade and by school

- Among school children in Newark, the percentage of females who were overweight ($85 \leq \text{BMI pctl} < 95$) was higher than for males in 2008 as well as 2015 (comparing the first to the third bar, and the second to the fourth).
- Comparing change over time by gender, the prevalence of obesity ($\text{BMI pctl} \geq 95$) increased among female students, while the weight status of males remained unchanged.

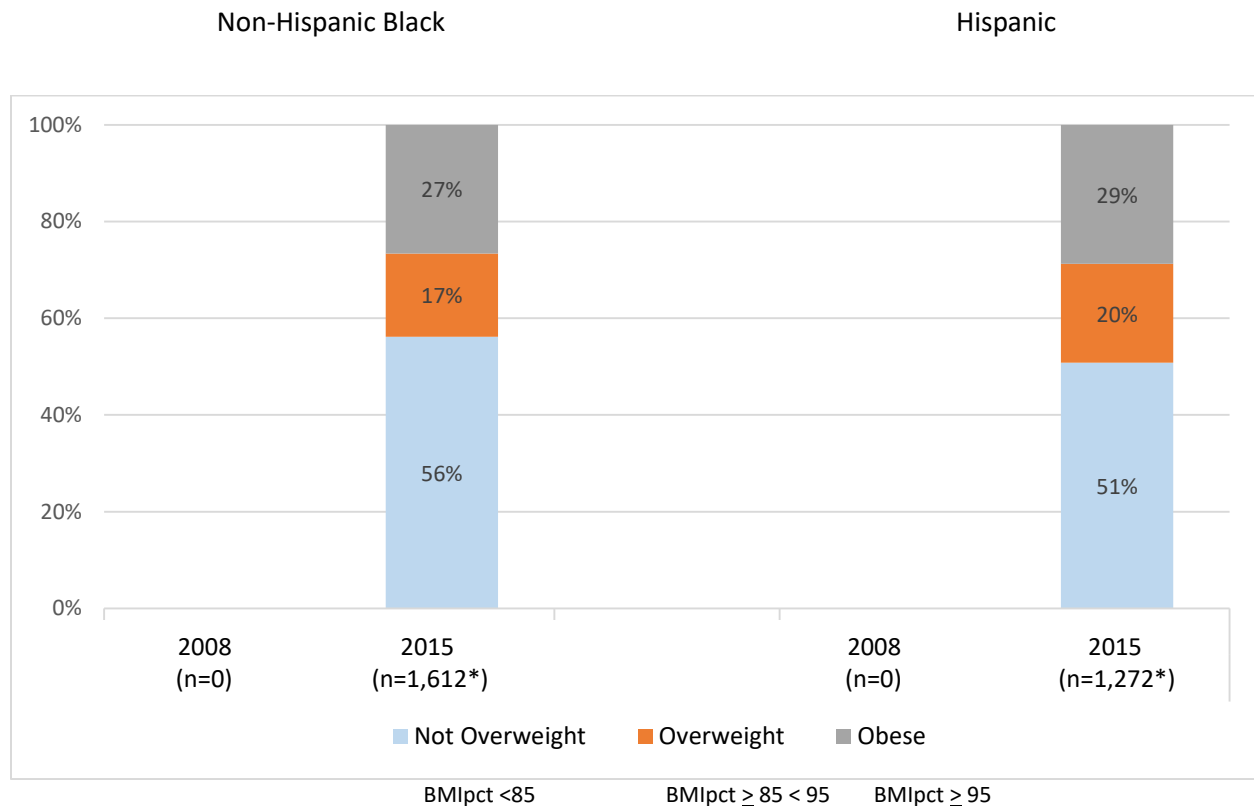
Figure 4. Prevalence of Childhood Obesity in the United States by Gender, 2008 and 2014



Source: National Health and Nutrition Survey (NHANES), 2008 and 2014
Children aged 2-19

- Nationwide, the percentage of females who were obese and overweight increased slightly over time. The percentage of overweight males increased, while the percentage of obese males decreased slightly over the same period.

Figure 5. Prevalence of Childhood Obesity in Newark by Race/Ethnicity, 2008 and 2015



Source: New Jersey Child Health Study; Newark Public Schools 2008 and 2015 BMI Data

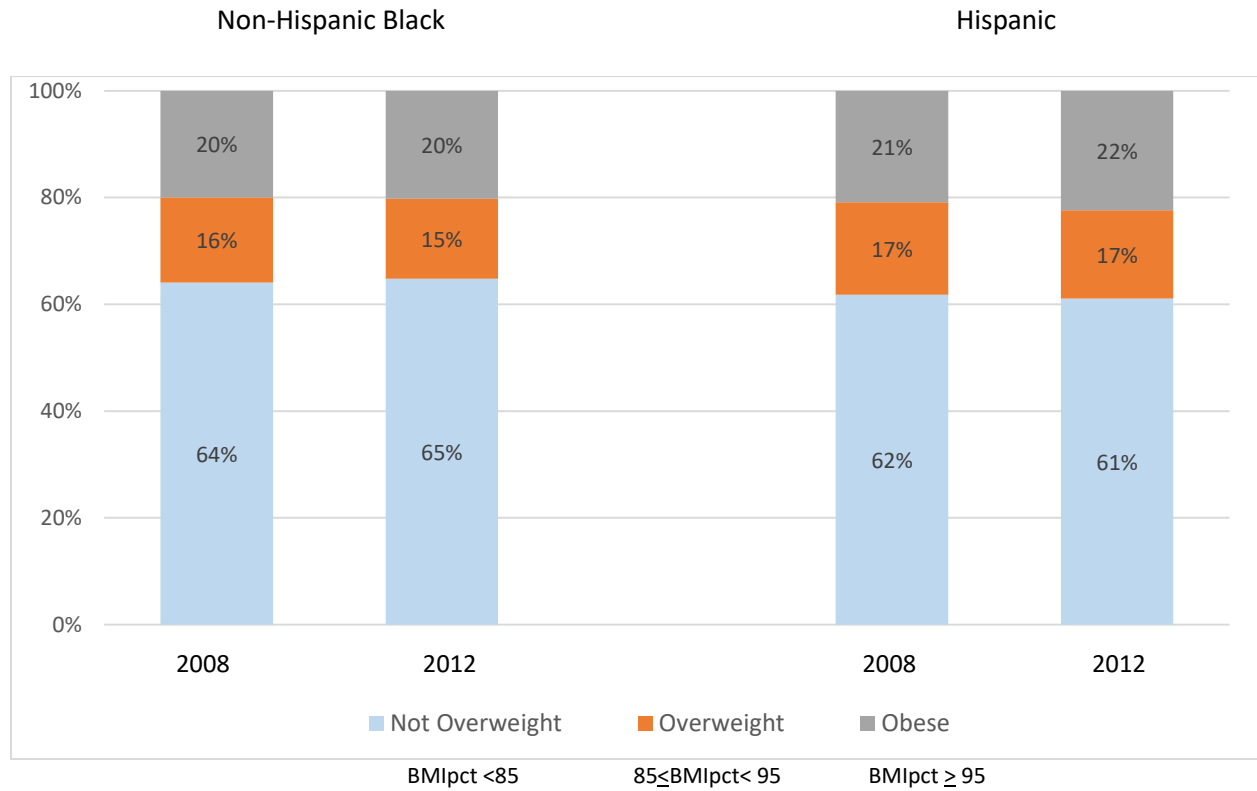
School Children, aged 6-19

Race/Ethnicity of child was not available for 2008

*Random sample of students by grade and by school

- In 2015, the rates of Hispanic children who were obese as well as overweight were higher than those of non-Hispanic black children. This difference is consistent with national patterns with respect to race/ethnicity (see next page).
- Data on race/ethnicity were not available for 2008.

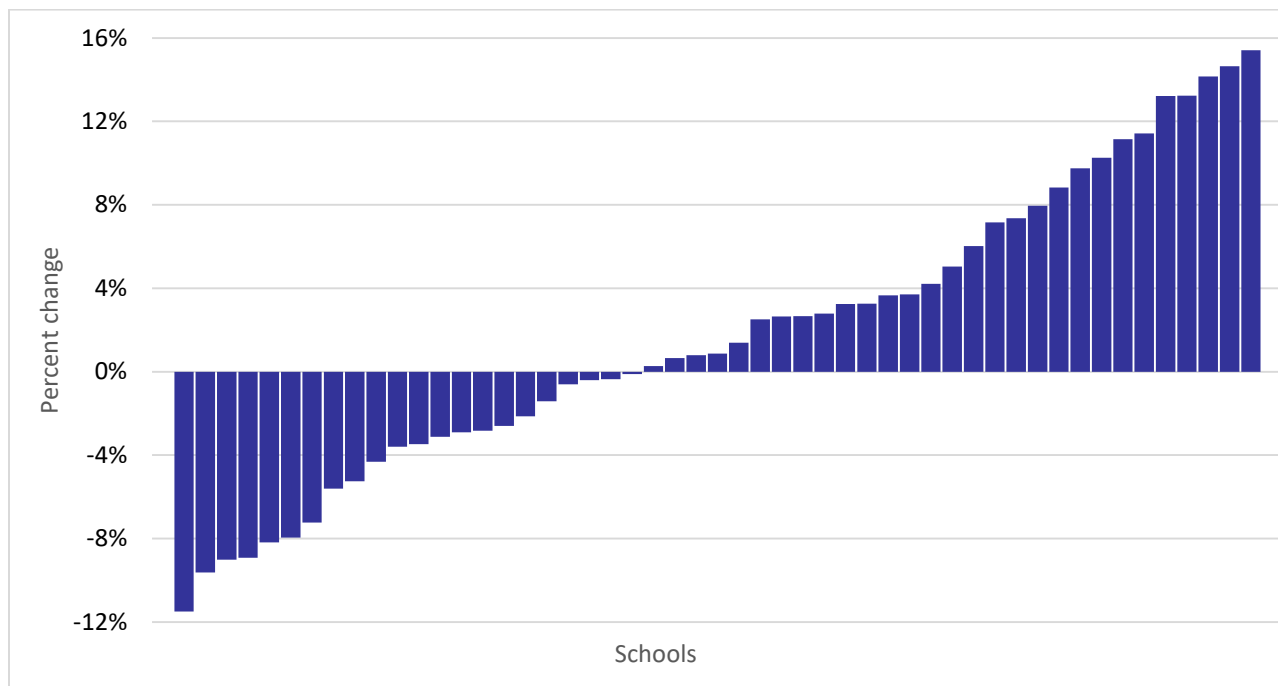
Figure 6. Prevalence of Childhood Obesity in the United States by Race/Ethnicity, 2008 and 2012



National Health and Nutrition Survey (NHANES), 2008 and 2012
Children aged 2-19

- In the United States, in both years, the percentages of hispanic children who were obese and overweight were higher than the corresponding percentages of non-Hispanic black children.
- The percentage of non-Hispanic black children who were overweight ($85 \leq BMI_{pct} < 95$) decreased slightly over time. The percentage of Hispanic children who were obese increased slightly.

Figure 7. Change in Overweight and Obesity Prevalence by School between 2008 and 2015 (BMI_{pct}≥85)



Source: New Jersey Child Health Study; Public Schools 2008 and 2015 BMI Data

Each bar represents one school in the 4 study cities for which adequate data for making estimates are available for 2008 and 2012.

- There was considerable variation in changes in weight status among the schools in our study.
- There were substantial subgroups of schools that showed declines and similarly large groups that showed increases, suggesting that local differences in the school and surrounding environment may contribute to prevalence of obesity among school children.