

The New Jersey Child Health Study

The Prevalence of Childhood Obesity among School Children New Brunswick, 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 New Brunswick 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%

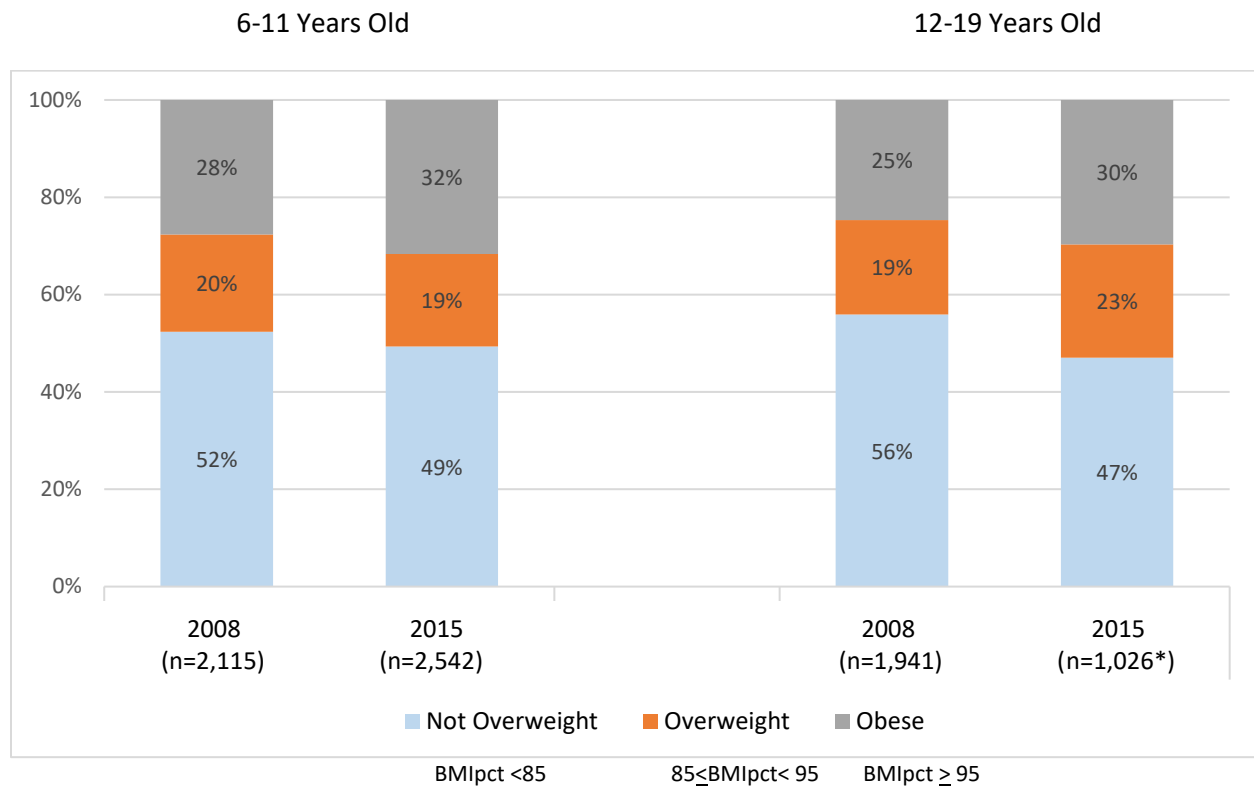
Sources: New Jersey Child Health Study; Trenton, Camden, New Brunswick, and Newark Public Schools 2008 and 2015 BMI Data;

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 New Brunswick, Age, 2008 and 2015

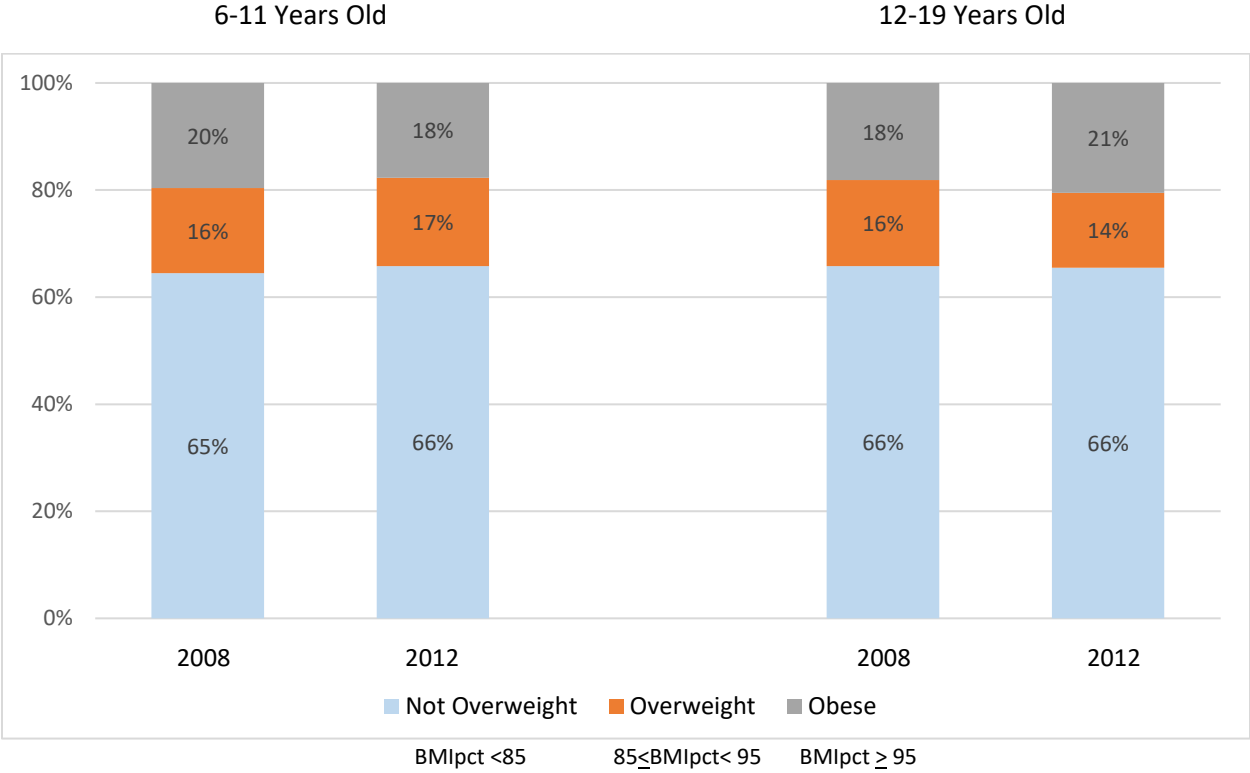


Source: Source: New Jersey Child Health Study; New Brunswick Public Schools 2008 and 2015 BMI Data;

*2015 Data on children aged 12-19 are based on measures of less than 50% of enrolled students

- Over time, among younger children (aged 6-11), there was an increase in the prevalence of obesity, which exceeded the slight decrease in those who were overweight (comparing the first to the third bar). This pattern was contrary to the national trend for this age group (see next page).
- Missing data on older children in 2015 precludes examination of the trend over time for this age group.

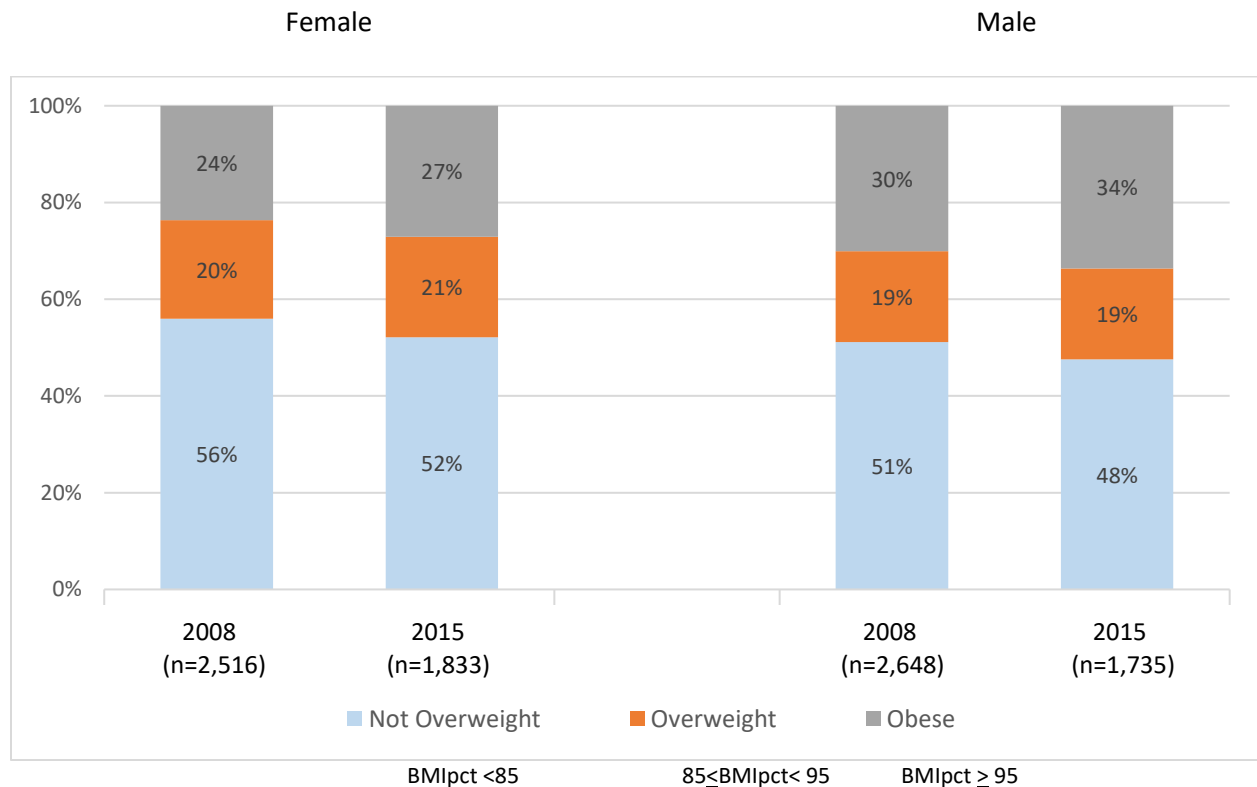
Figure 2. Prevalence of Childhood Obesity in the United States by Age, 2008 and 2012



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 ≥ 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 New Brunswick by Gender, 2008 and 2015

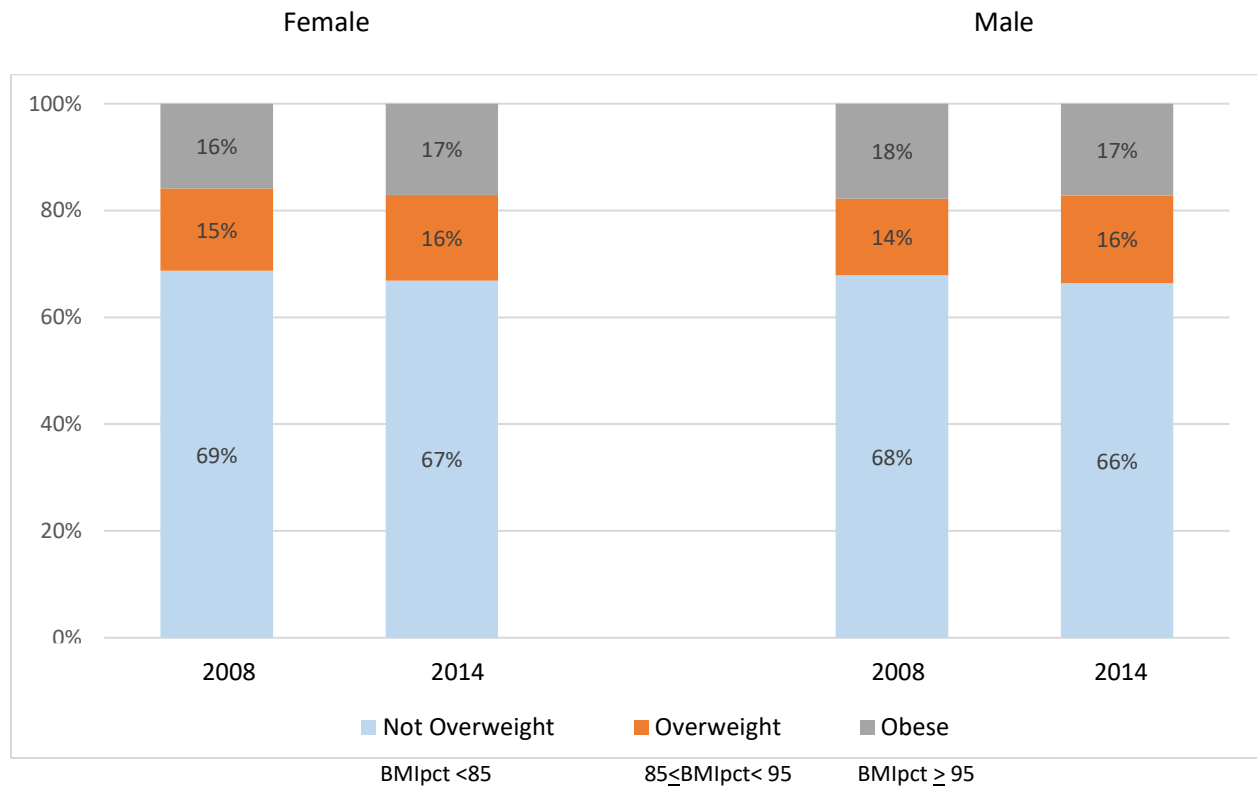


Source: Source: New Jersey Child Health Study; New Brunswick Public Schools 2008 and 2015 BMI Data

School Children, aged 6-19

- Among school children in New Brunswick, in 2008 as well as 2015, the prevalence of obesity (BMI p \geq 95) was higher in males than females, whereas the prevalence of overweight children was similar across gender (comparing the first to the third bar, and the second to the fourth).
- Comparing change over time by gender, the prevalence of obesity among females as well as males increased.

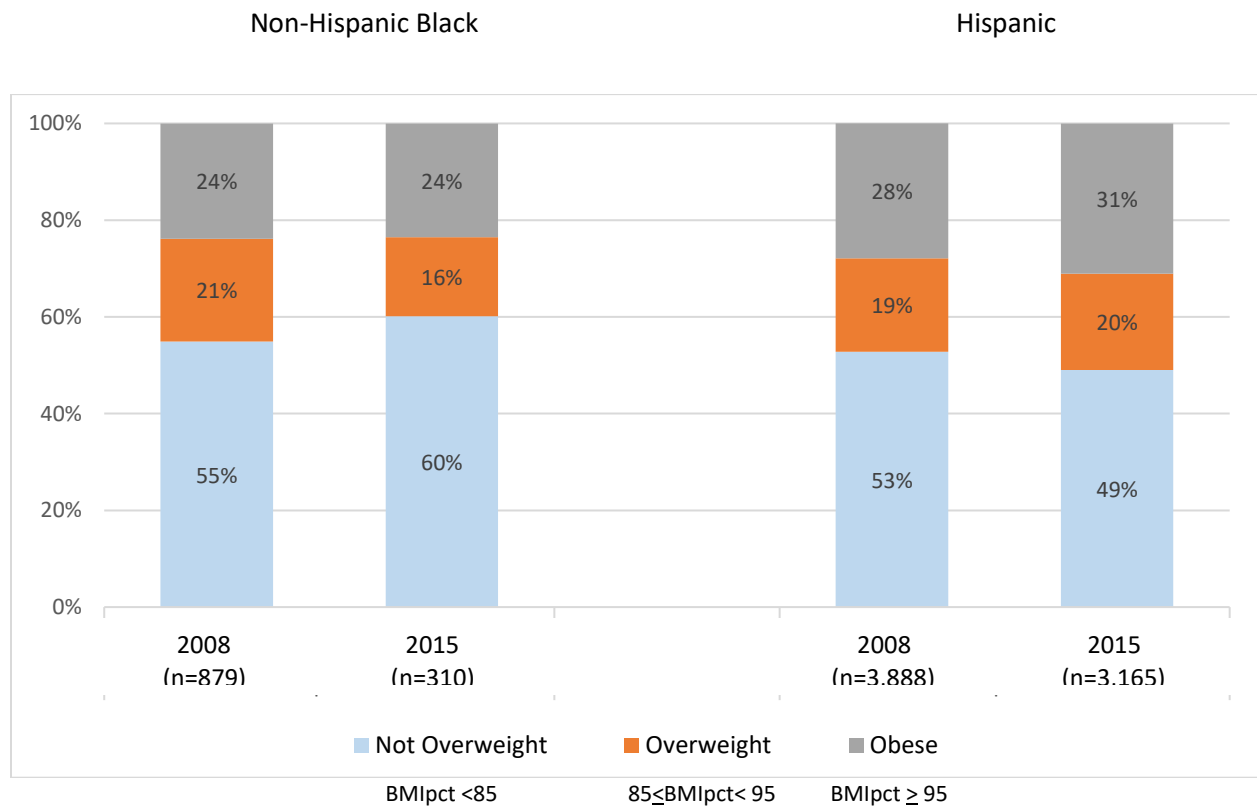
Figure 4. Prevalence of Childhood Obesity in the United States by Gender, 2008 and 2014



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 New Brunswick by Race/Ethnicity, 2008 and 2015



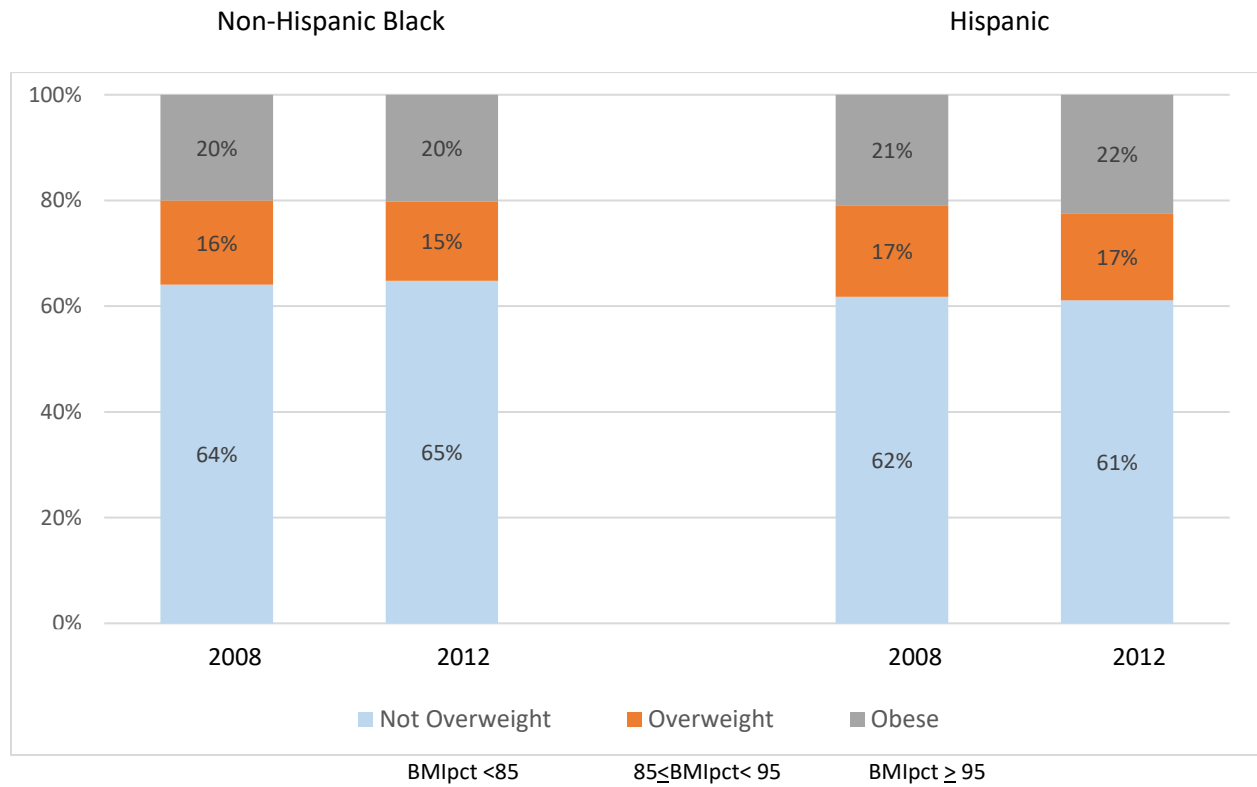
Source: New Jersey Child Health Study; New Brunswick Public Schools 2008 and 2015 BMI Data

School Children, aged 6-19

There are insufficient numbers of non-Hispanic white children in New Brunswick’s public schools to generate reliable estimates of obesity for this group.

- In both years (2008 and 2015), the prevalence of obesity (BMI pctl ≥ 95) was considerably higher among Hispanic as compared to non-Hispanic black children. This difference is consistent with national patterns with respect to race/ethnicity (see next page).
- Among non-Hispanic black children, the percentage who were overweight decreased over time. Among Hispanic children, the percentages who were overweight as well as obese increased over time.

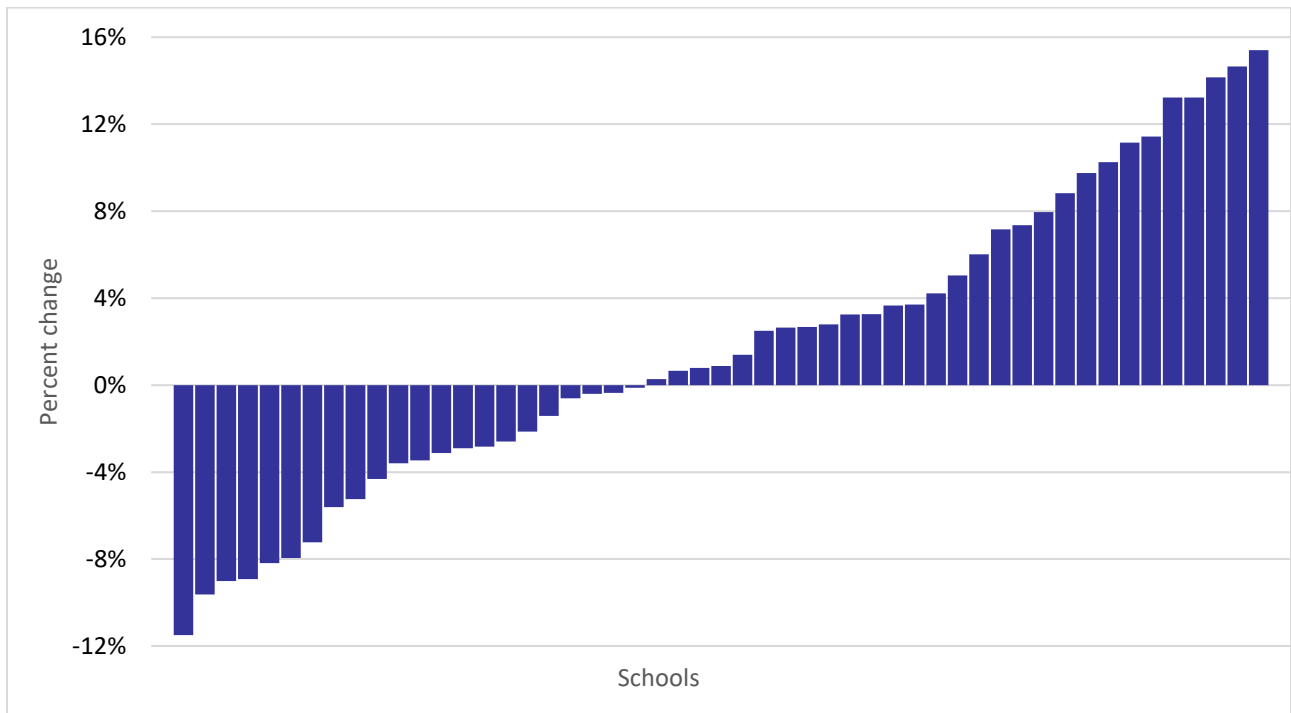
Figure 6. Prevalence of Childhood Obesity in the United States by Race/Ethnicity, 2008 and 2012



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 ($85 \leq \text{BMIpct} < 95$) 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.