



New Jersey Childhood Obesity Study

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School Nurse Professional Development Session

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Grant support from the Robert Wood Johnson Foundation is gratefully acknowledged. We also thank the public school nurses and support staff in the five targeted cities.

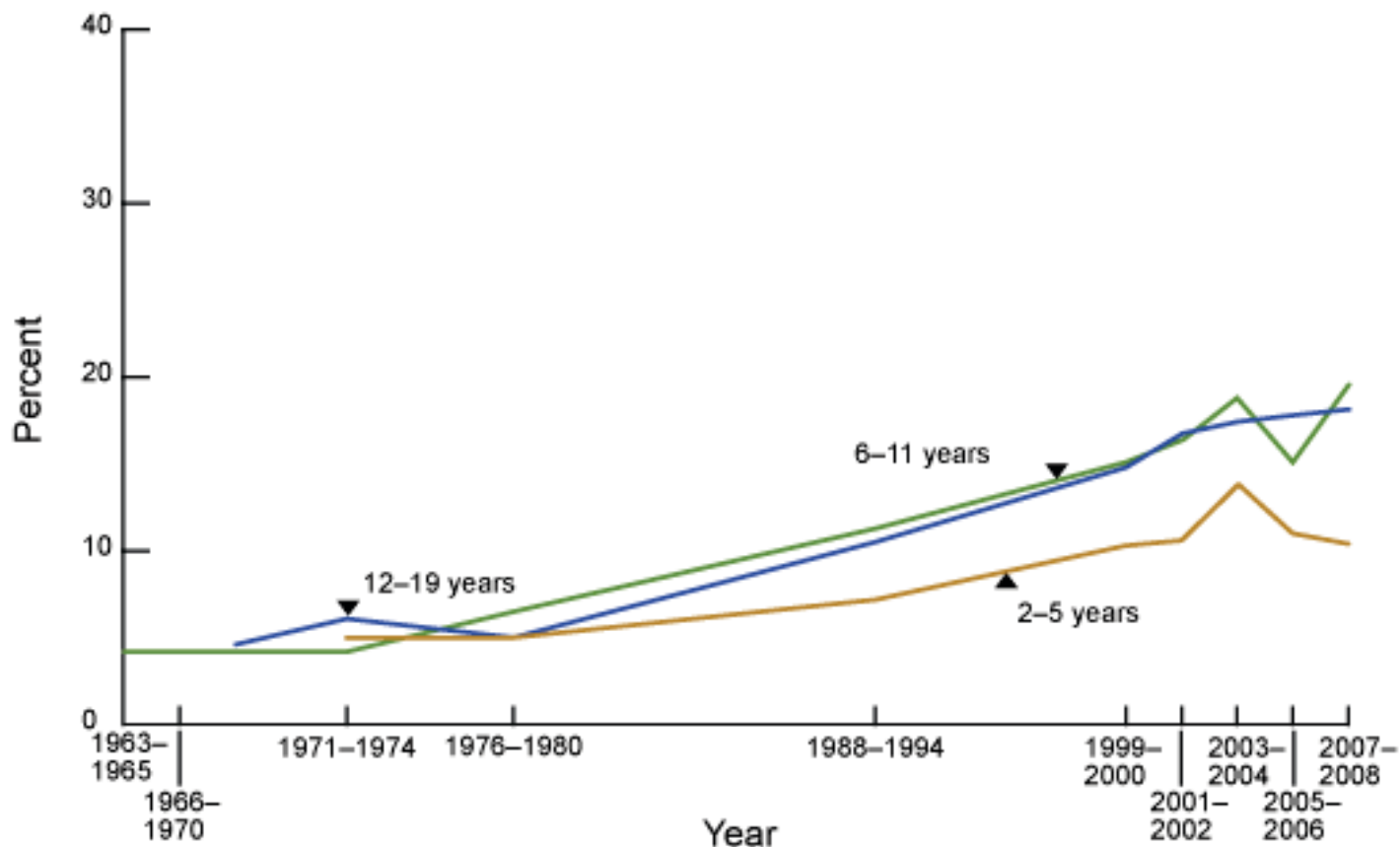
Research Team

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Outline

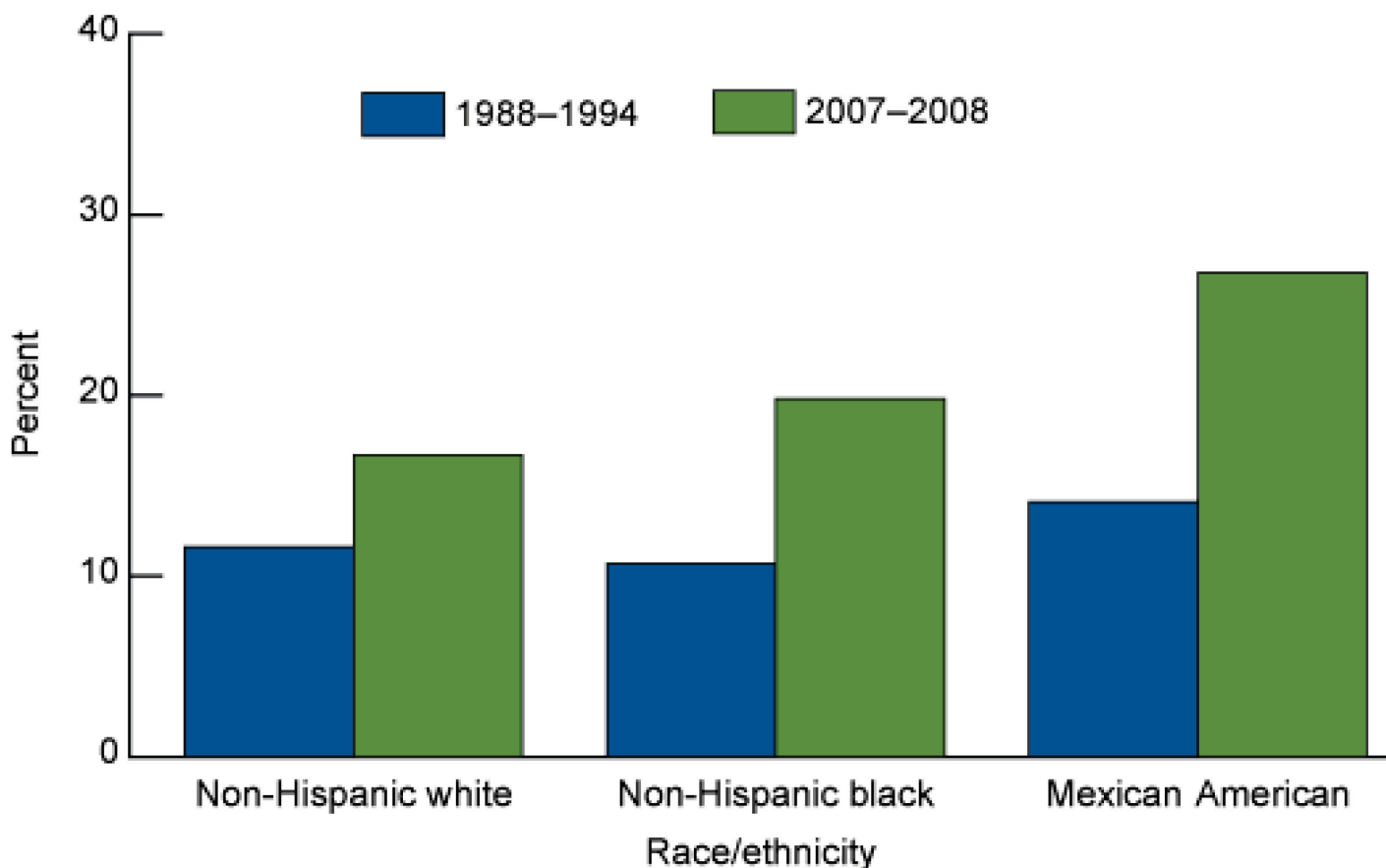
- National Obesity Trends
- New Jersey Childhood Obesity Study
 - School BMI Data
 - Food and Physical Activity Environment Maps
 - Selected Results from Household Survey
- Summary
- Questions/Discussion

**Figure 1. Trends in obesity among children and adolescents:
United States, 1963–2008**



NOTE: Obesity is defined as body mass index (BMI) greater than or equal to sex- and age-specific 95th percentile from the 2000 CDC Growth Charts.
 SOURCES: CDC/NCHS, National Health Examination Surveys II (ages 6–11), III (ages 12–17), and National Health and Nutrition Examination Surveys (NHANES) I–III, and NHANES 1999–2000, 2001–2002, 2003–2004, 2005–2006, and 2007–2008.

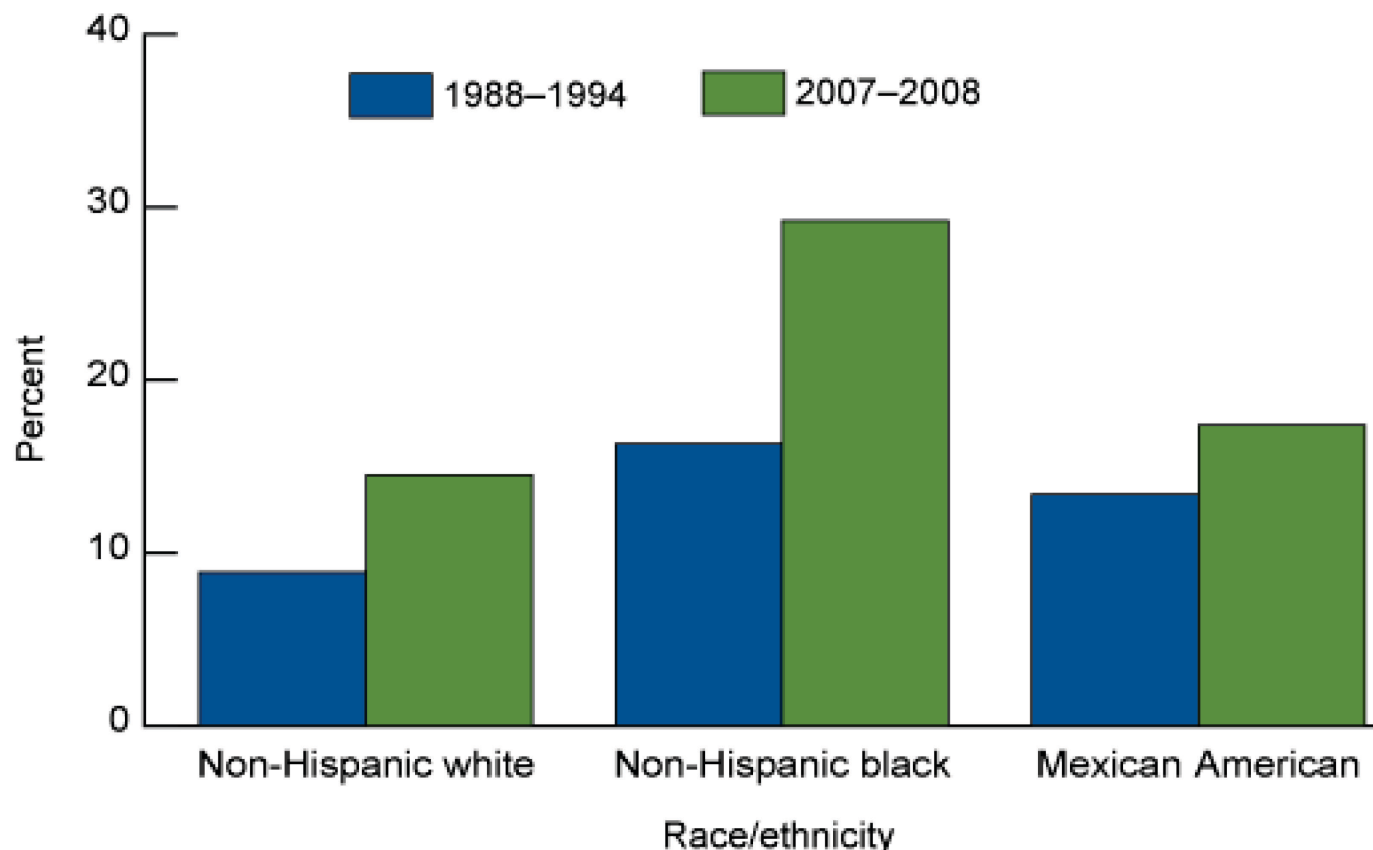
Figure 2. Prevalence of obesity among boys aged 12–19 years, by race/ethnicity: United States, 1988–1994 and 2007–2008



NOTE: Obesity is defined as body mass index (BMI) greater than or equal to sex- and age-specific 95th percentile from the 2000 CDC Growth Charts.

SOURCES: CDC/NCHS, National Health and Nutrition Examination Survey (NHANES) III 1988–1994 and NHANES 2007–2008.

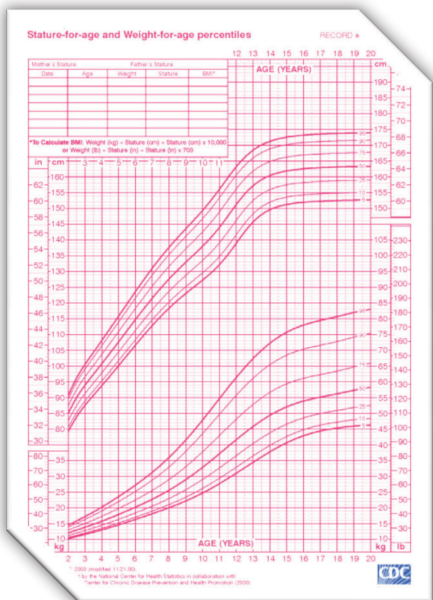
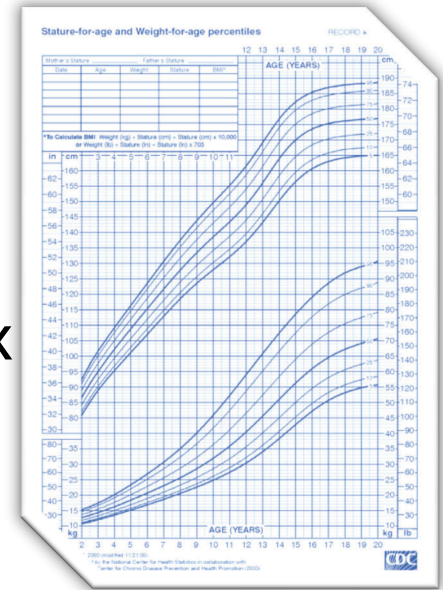
Figure 3. Prevalence of obesity among girls aged 12–19 years, by race/ethnicity: United States, 1988–1994 and 2007–2008



NOTE: Obesity is defined as body mass index (BMI) greater than or equal to sex- and age-specific 95th percentile from the 2000 CDC Growth Charts.
 SOURCES: CDC/NCHS, National Health and Nutrition Examination Survey (NHANES) III 1988–1994 and NHANES 2007–2008.

2000 CDC Growth Charts

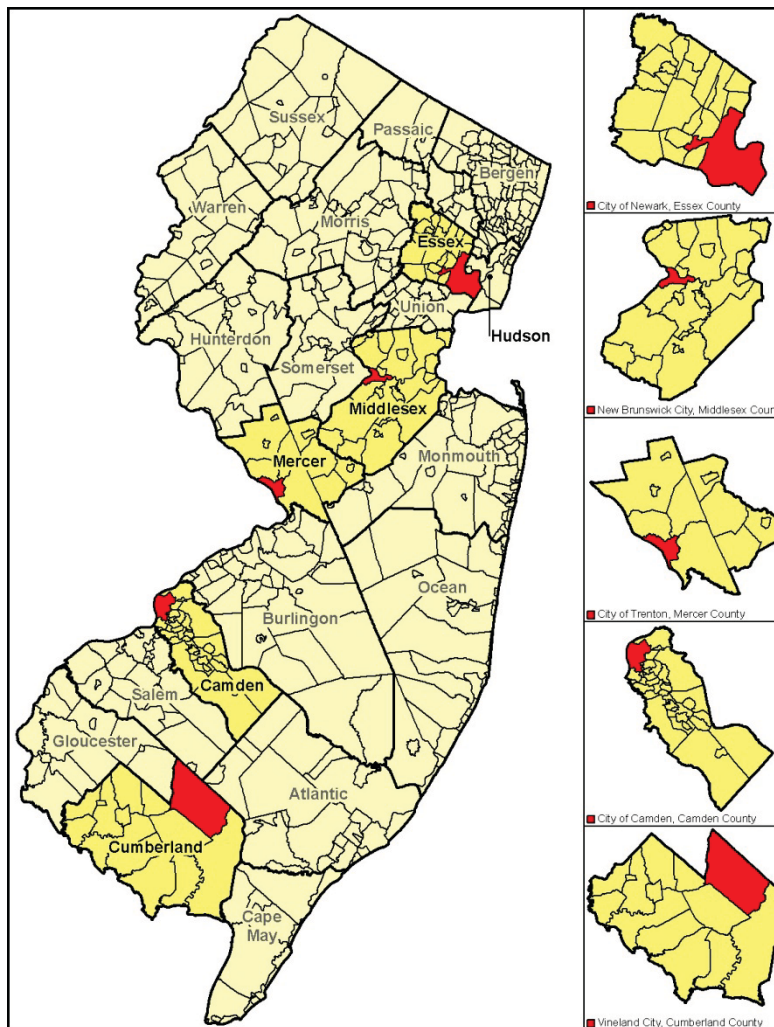
- Reference for categorizing children and adolescents into different Body Mass Index (BMI) categories



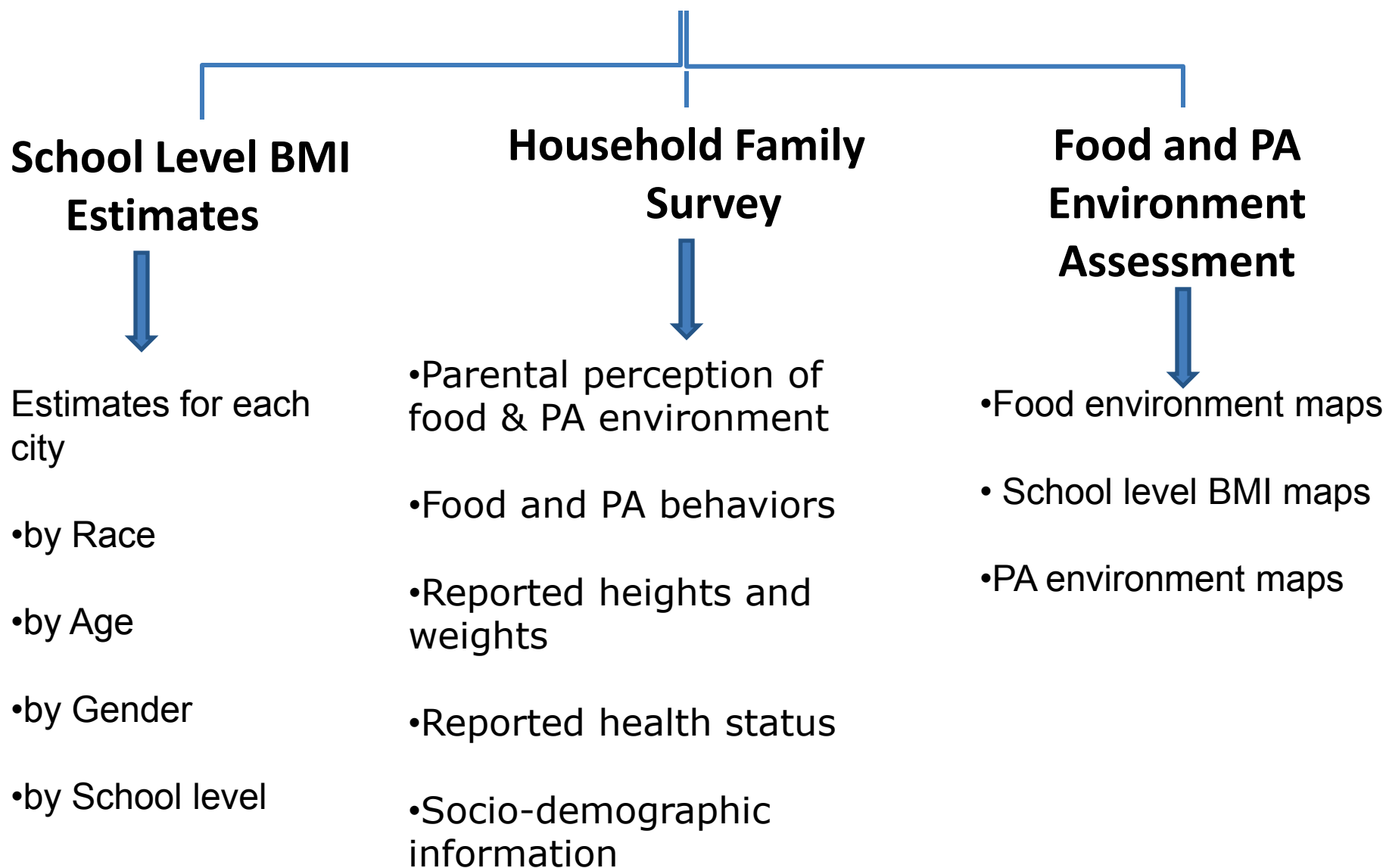
- Uses age- and gender-specific percentiles to classify weight status as:
 - Overweight = $\geq 85^{\text{th}}$ percentile
 - Obese = $\geq 95^{\text{th}}$ percentile
- Reference population is racially and ethnically diverse

New Jersey Childhood Obesity Study

Provide vital information for planning, implementing, and evaluating interventions aimed at preventing childhood obesity in five New Jersey communities; *Camden, New Brunswick, Newark, Trenton, Vineland.*



New Jersey Childhood Obesity Study



School BMI Estimates

Heights and Weights of Public School Children and Adolescents

RUTGERS FAMILY HEALTH STUDY									
STUDENT HEIGHT AND WEIGHT FORM									
School Name									
School Address									
Race / Ethnicity	Date of Birth	OR	Age	Grade	Sex	Weight	Height		Date of Measurement
WHITE/BLACK/HISPANIC/ASIAN/MIXED/OTHER	MM/DD/YEAR		YEARS & MONTHS		M/F	POUNDS	FEET	INCHES	MM/DD/YEAR

Nurse-measured and recorded height and weight for all public school children in grades K-12 in Camden, New Brunswick, Trenton, and Vineland, and from a sample of public schools in Newark.

Prevalence of Childhood Overweight and Obesity In Five New Jersey Cities

		Overweight & Obese (BMIPCT ≥ 85)	Obese (BMIPCT ≥ 95)	Very Obese (BMIPCT ≥ 97)
City (Ages 3-19)	Camden	39.8%	23.3%	17.3%
	Newark	44.2%	25.2%	18.3%
	New Brunswick	46.4%	26.7%	19.9%
	Trenton	47.3%	28.0%	21.0%
	Vineland	43.6%	25.3%	18.5%
NHANES (Ages 2-19)	All	31.7%	16.9%	11.9%
	Non-Hisp Black	35.9%	20.0%	14.9%
	Mexican Am	38.9%	20.8%	14.9%
	Hispanic	38.2%	20.9%	15.2%
	Non-Hisp White	29.3%	15.3%	10.5%

Sources:

CSHP 2010, BMI data from public schools in 5 NJ cities, 2008-2009

NHANES 2007-2008 data

RUTGERS

Center for State Health Policy

Funding provided by the Robert Wood Johnson Foundation

New Brunswick

Prevalence of Childhood Overweight & Obesity

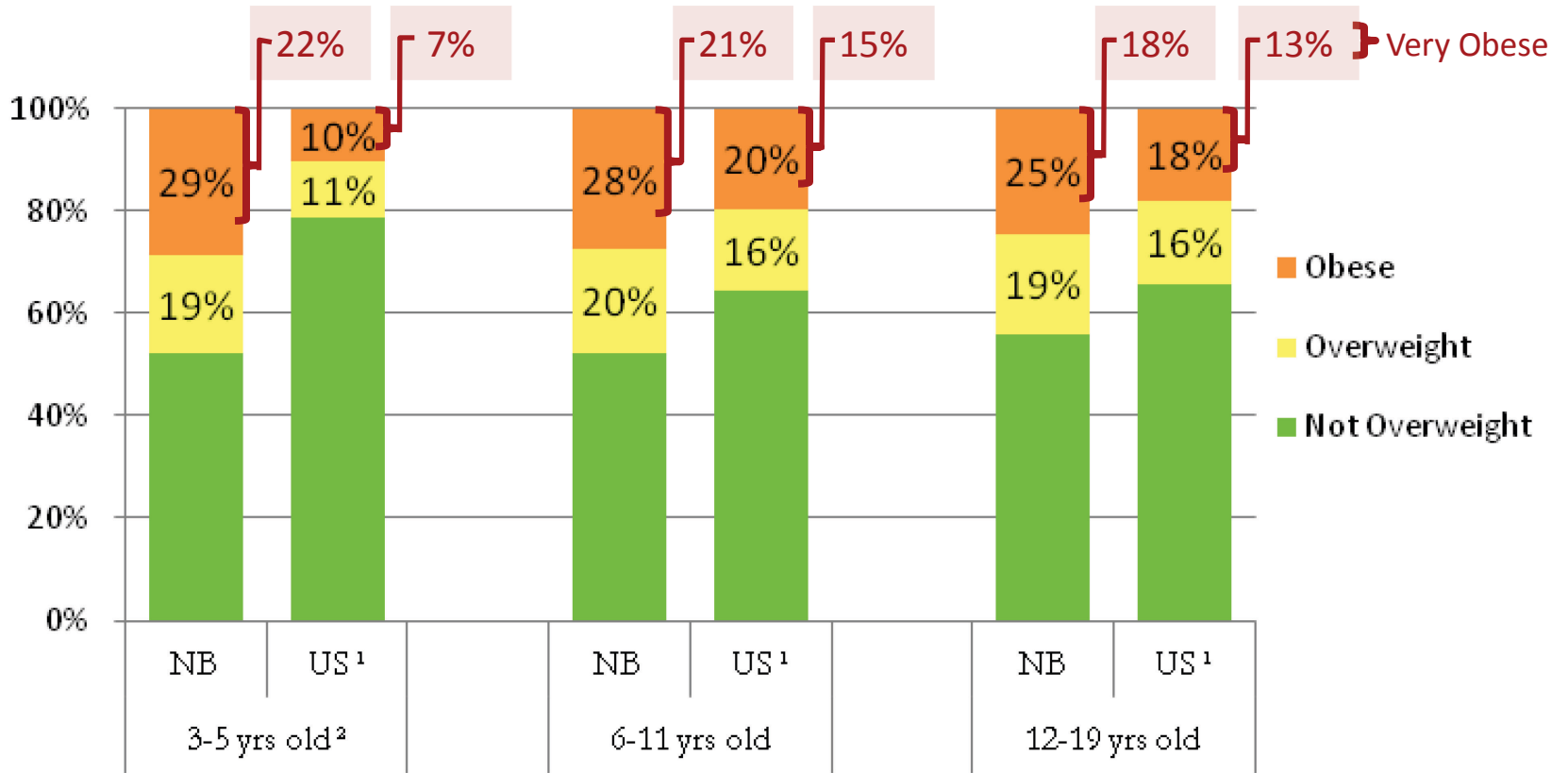
By Age Group

		Not Overweight (BMIPCT < 85)	Overweight & Obese (BMIPCT ≥ 85)	Obese (BMIPCT ≥ 95)	Very Obese (BMIPCT ≥ 97)
3-5 yrs	(n=1,108)	52.1%	47.9%	28.7%	22.1%
6-11 yrs	(n=2,115)	52.3%	47.7%	27.6%	20.7%
12-19 yrs	(n=1,941)	56.0%	44.0%	24.6%	17.9%
Total	(n=5,164)	53.6%	46.4%	26.7%	19.9%

New Brunswick

Prevalence of Childhood Overweight & Obesity

By Age Group



¹ US estimates are based on NHANES 2007-2008 data

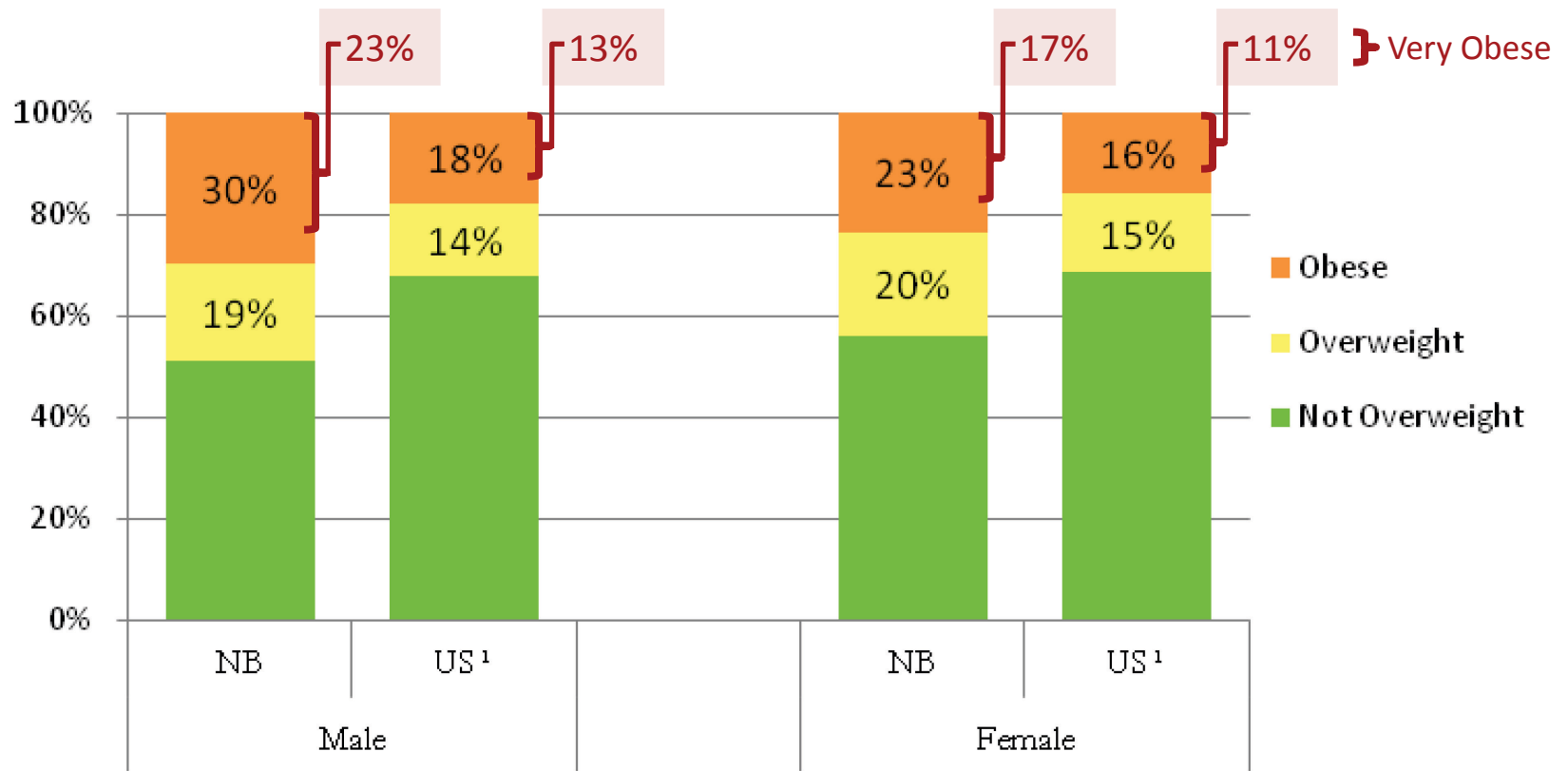
² US estimates are for ages 2-5

New Brunswick

Prevalence of Childhood Overweight & Obesity By Gender

		Not Overweight (BMIPCT < 85)	Overweight & Obese (BMIPCT ≥ 85)	Obese (BMIPCT ≥ 95)	Very Obese (BMIPCT ≥ 97)
Male	(n=2,648)	51.2%	48.8%	29.8%	22.6%
Female	(n=2,516)	56.2%	43.8%	23.4%	17.1%
Total	(n=5,164)	53.6%	46.4%	26.7%	19.9%

New Brunswick Prevalence of Childhood Overweight & Obesity By Gender



¹ US estimates are based on NHANES 2007-2008 data

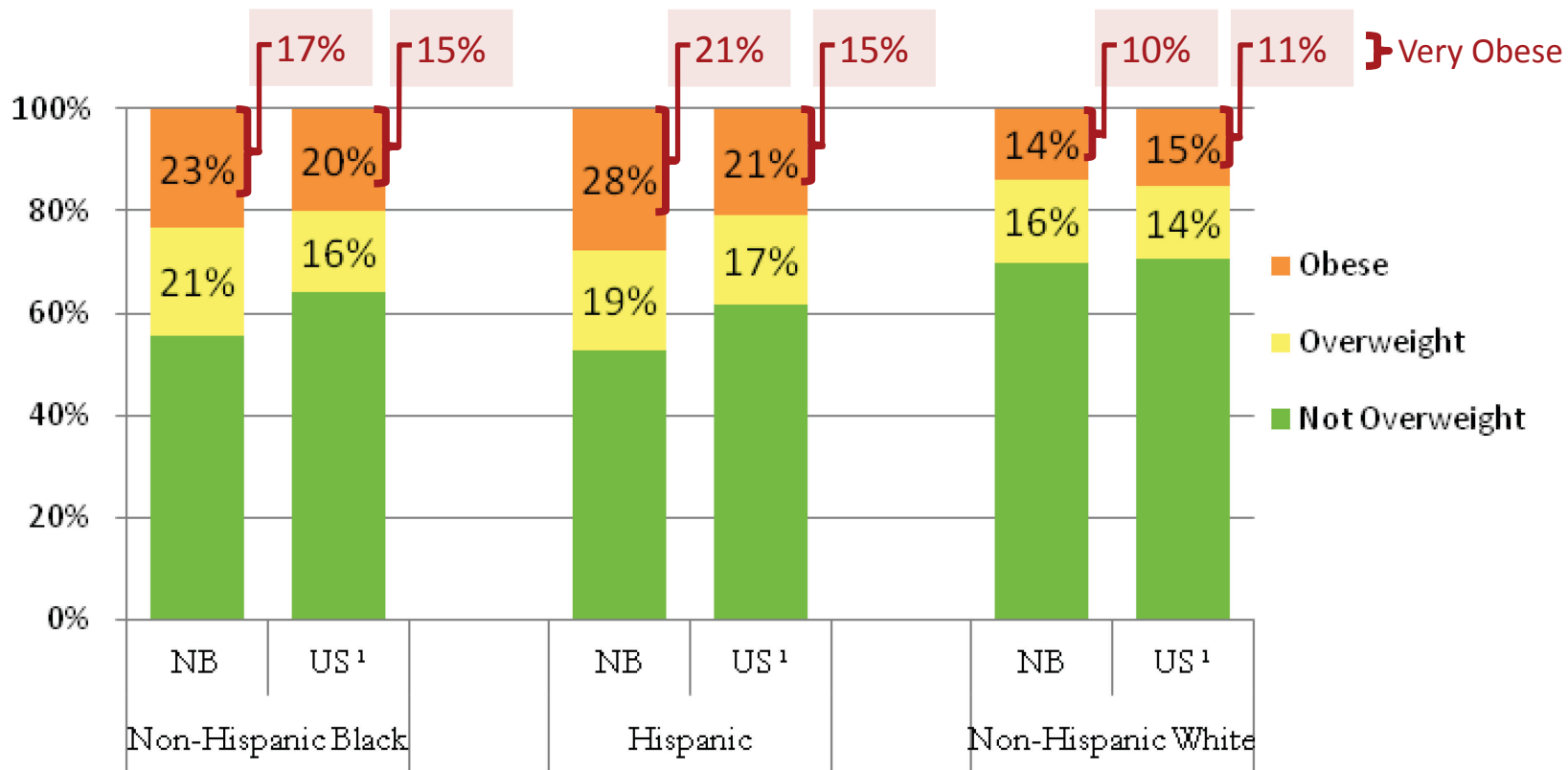
New Brunswick

Prevalence of Childhood Overweight & Obesity by Race/Ethnicity

		Not Overweight (BMIPCT < 85)	Overweight & Obese (BMIPCT ≥ 85)	Obese (BMIPCT ≥ 95)	Very Obese (BMIPCT ≥ 97)
Non-Hispanic Black	(n=879)	55.5%	44.5%	23.1%	17.2%
Hispanic	(n=3,888)	52.8%	47.2%	27.8%	20.7%
Non-Hispanic White	(n=80)	70.0%	30.0%	13.8%	10.0%
Other	(n=228)	52.2%	47.8%	28.5%	23.2%
Total *	(n=5,164)	53.6%	46.4%	26.7%	19.9%

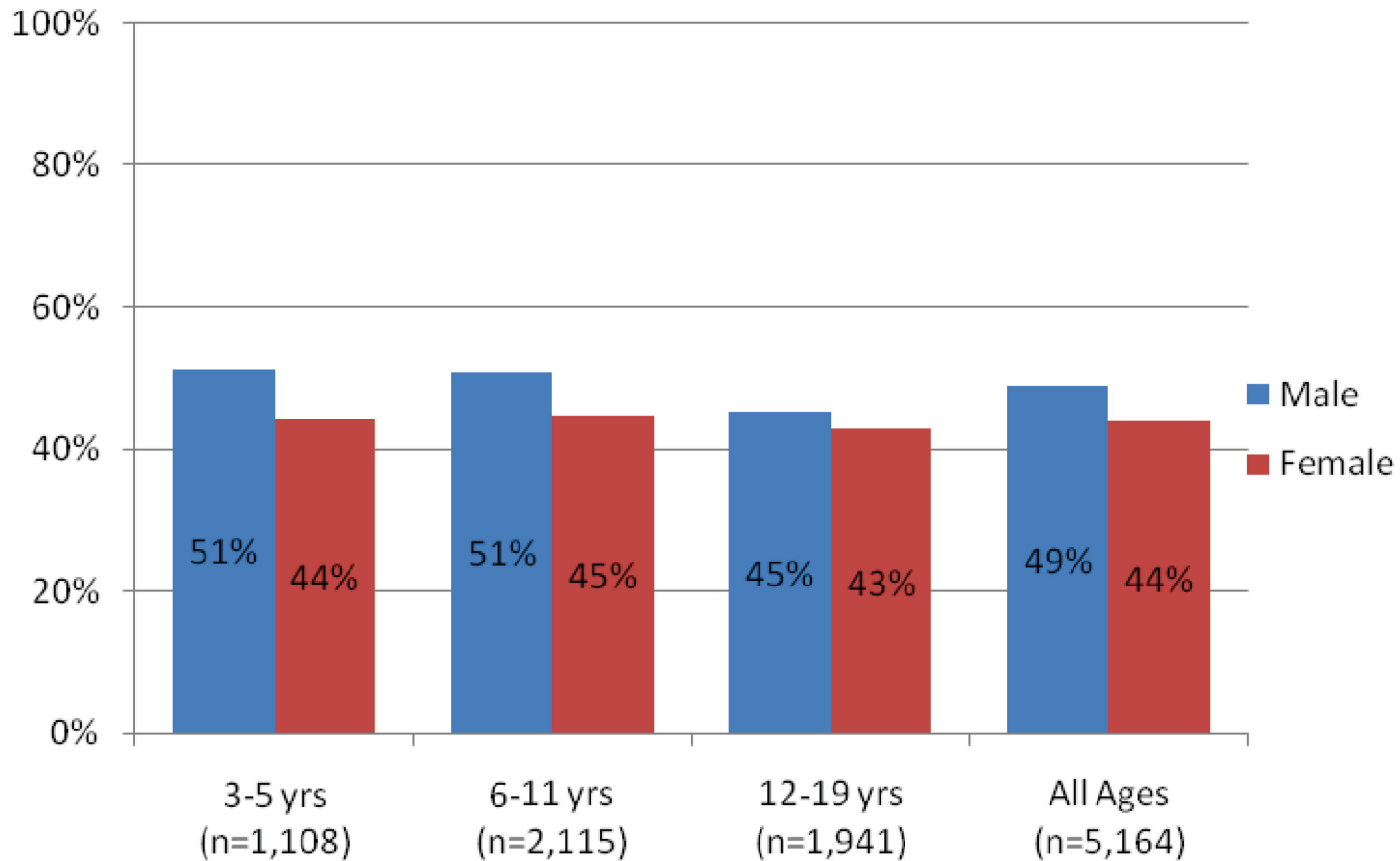
* Note: Total includes individuals whose race/ethnicity information is unknown

New Brunswick Prevalence of Childhood Overweight & Obesity by Race/Ethnicity

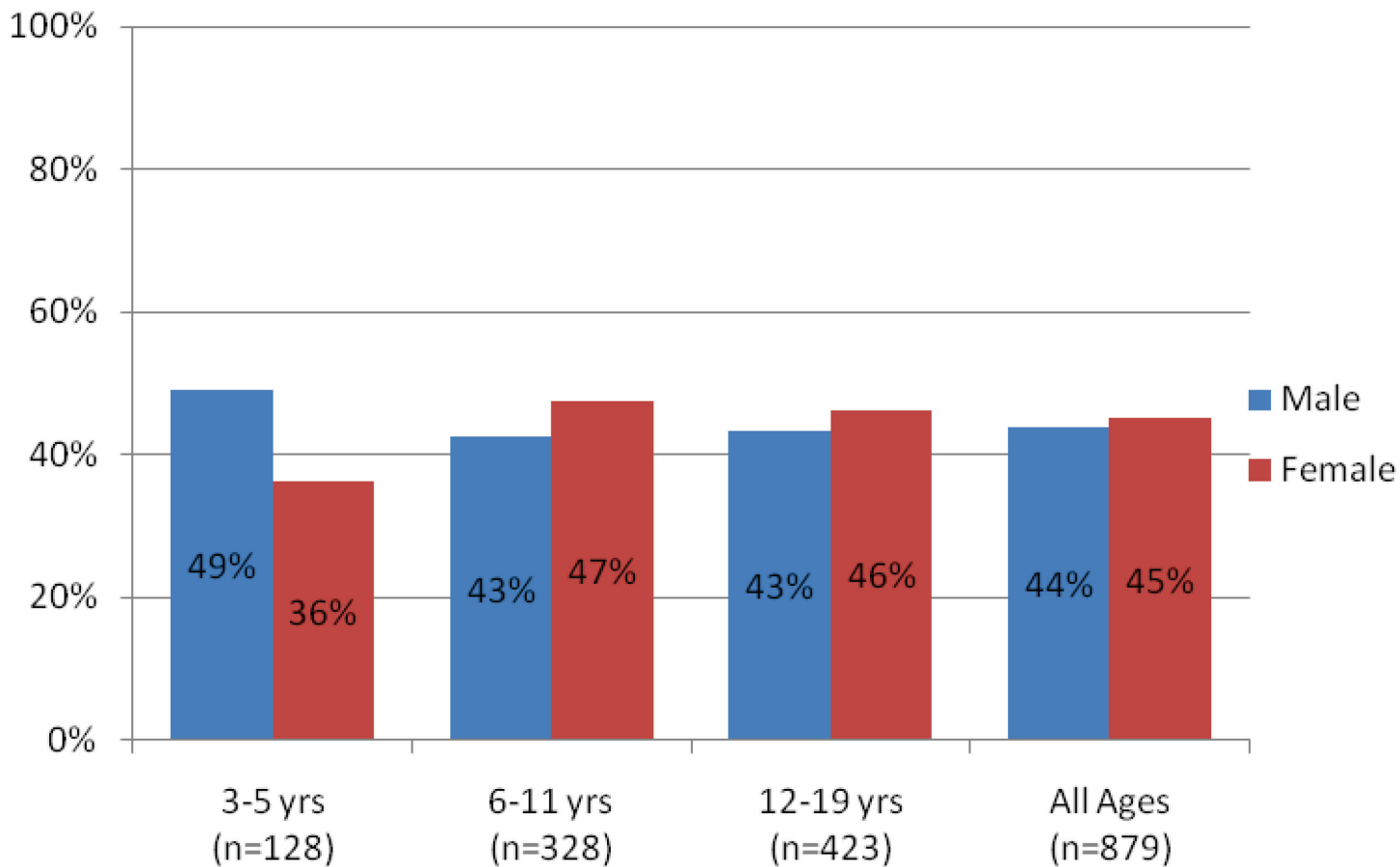


¹ US estimates are based on NHANES 2007-2008 data

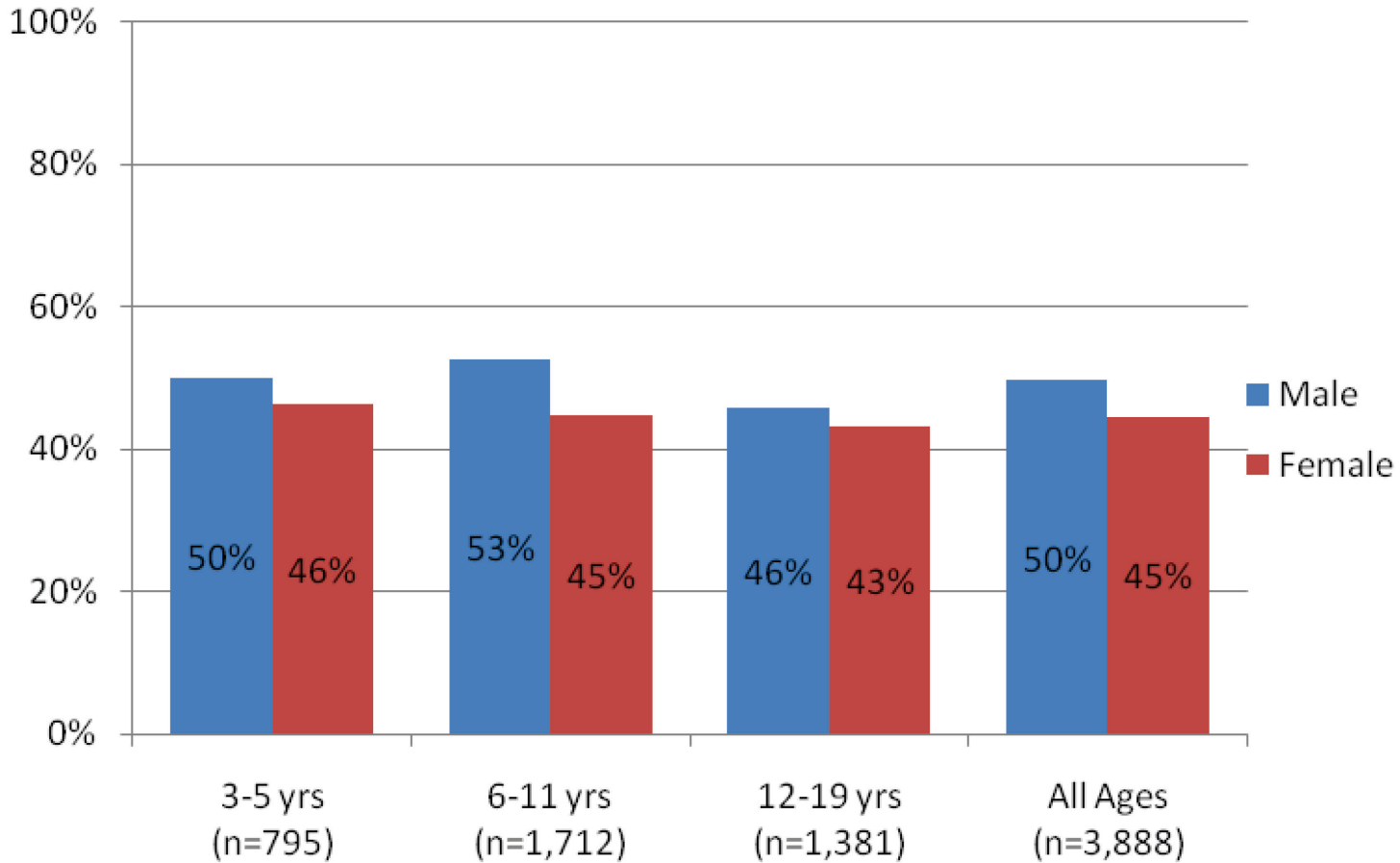
New Brunswick, All Racial/Ethnic Groups Prevalence of Childhood Overweight & Obesity By Age & Gender



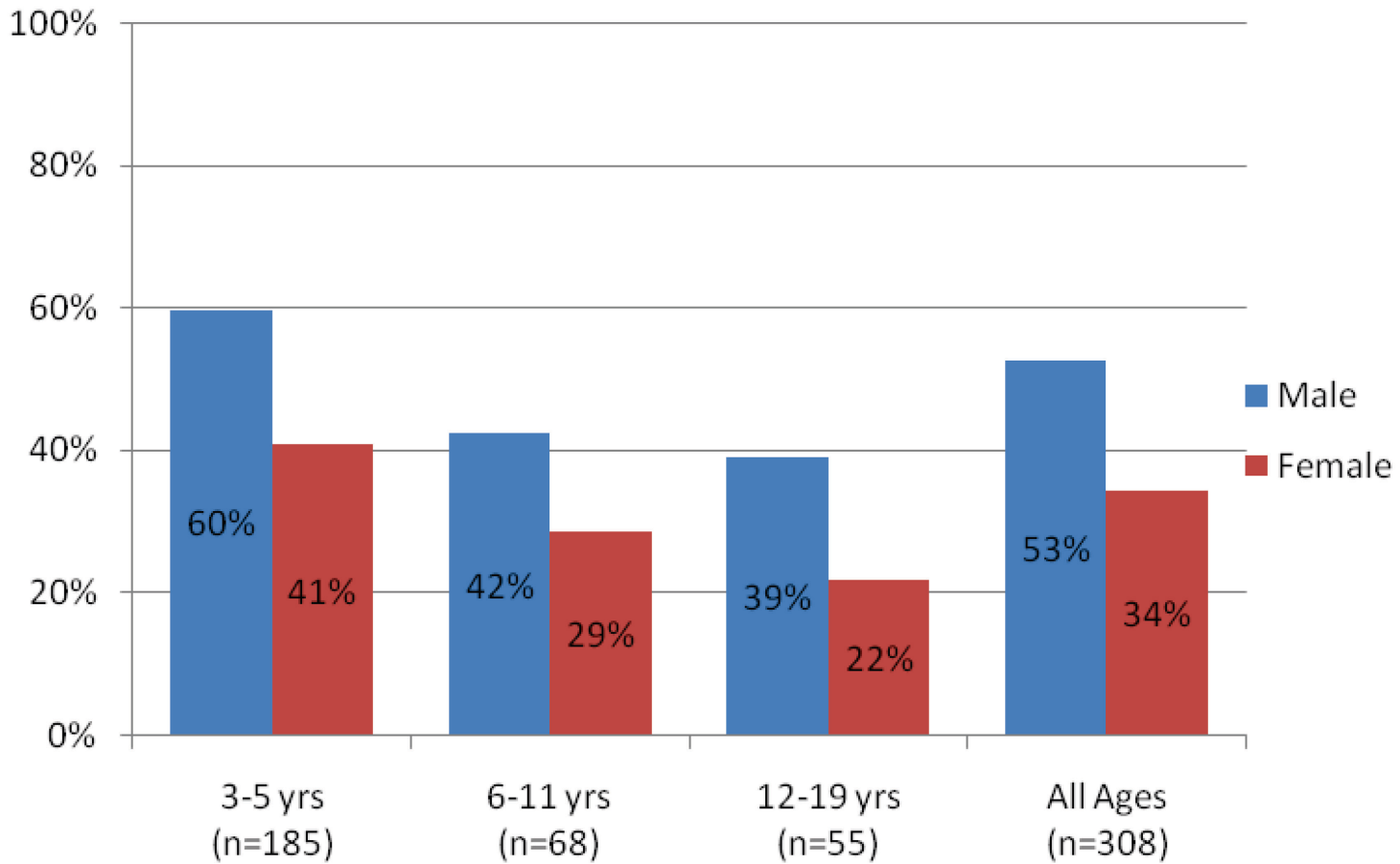
New Brunswick, Non-Hispanic Black Prevalence of Childhood Overweight & Obesity By Age & Gender



New Brunswick, Hispanic Prevalence of Childhood Overweight & Obesity By Age & Gender



New Brunswick, “Other” and Non-Hispanic White Prevalence of Childhood Overweight & Obesity By Age & Gender



New Brunswick Public Schools Data

School	ENROLL	RECEIVED	USEABLE	OVER19	BIV	FINAL	CALCPERC
050-NEW BRUNSWICK HIGH	1317.0	1056	1041	4	2	1035	78.59
055-NEW BRUNSWICK MIDDLE	858.5	710	706	0	2	704	82.00
060-A CHESTER REDSHAW	723.0	324	322	0	0	322	44.54
080-LINCOLN	462.0	278	246	0	0	246	53.25
090-LIVINGSTON	560.0	191	172	0	6	166	29.64
100-LORD STIRLING	587.0	573	564	0	2	562	95.74
110-MCKINLEY COMM	732.5	59	58	0	1	57	7.78
123-PAUL ROBESON COMM	482.0	391	375	0	7	368	76.35
125-ROOSEVELT ELEM	744.0	649	582	0	8	574	77.15
140-WOODROW WILSON	369.0	406	374	0	2	372	100.81
503-EARLY CHILDHOOD EDUCATION	.	798	770	0	9	761	.

Total = 5,167 records

(64% of New Brunswick total public school enrollment)

New Brunswick Public Schools

School	% Students Overweight or Obese
Livingston ^{b, d}	33.7
McKinley Comm ^{b, c, d}	41.1
Lord Stirling	42.9
Woodrow Wilson	43.0
New Brunswick High ^a	43.1
New Brunswick Middle	45.6
Early Childhood Education ^e	48.1
A. Chester Redshaw ^{b, d}	50.9
Roosevelt Elementary ^{a, d}	50.9
Lincoln ^{a, d}	52.8
Paul Robeson Comm ^{a, d}	54.9

^a Only 50-80% of the students were measured

^b Less than 50% of the students were measured

^c Male students over-represented

^d Data not representative by grade

^e School gender, race/ethnicity and grade composition not available

Built Environment – effects on health

People who have

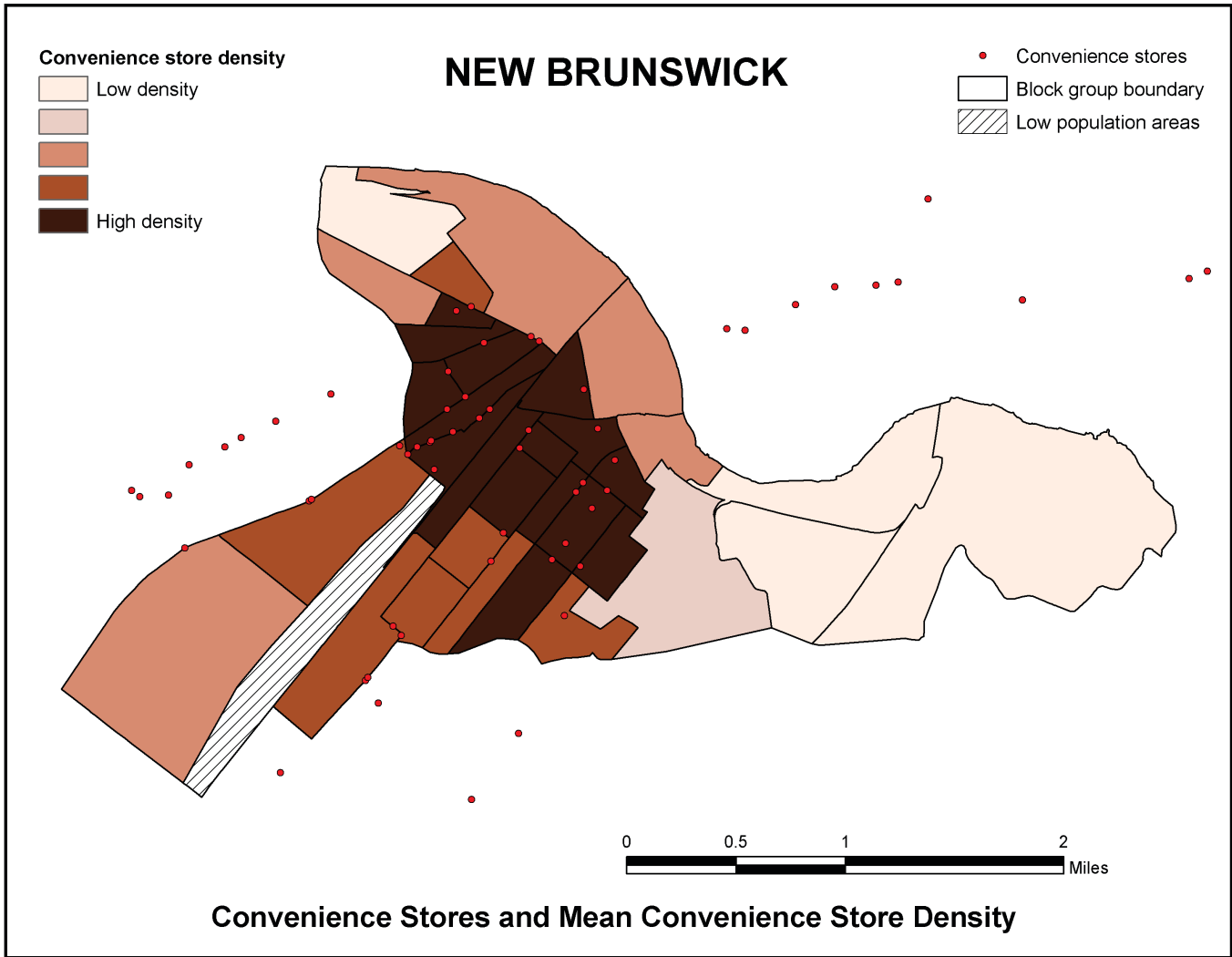
- Access to safe place to be active
- Walkable neighborhoods
- Nearby markets selling healthful food

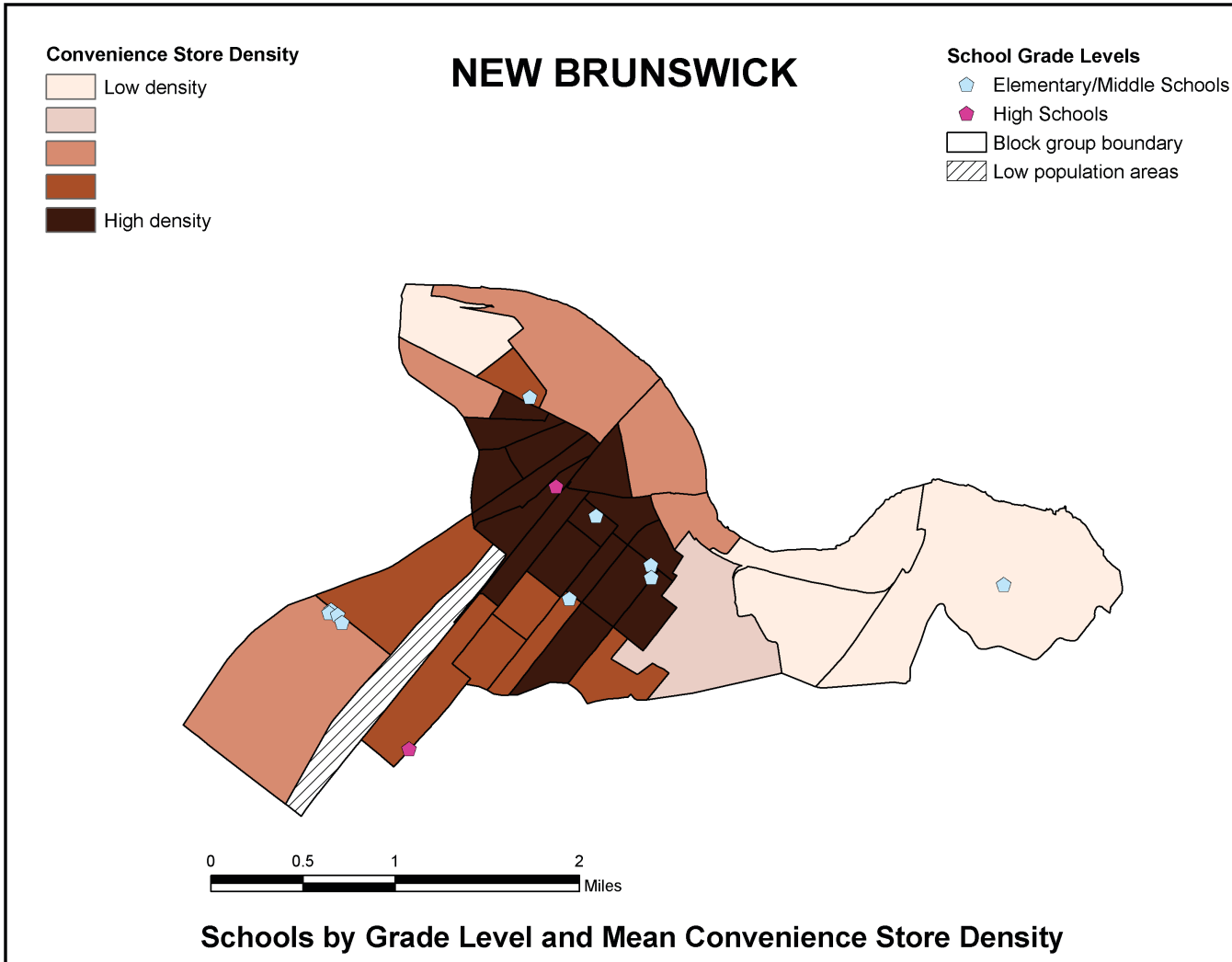


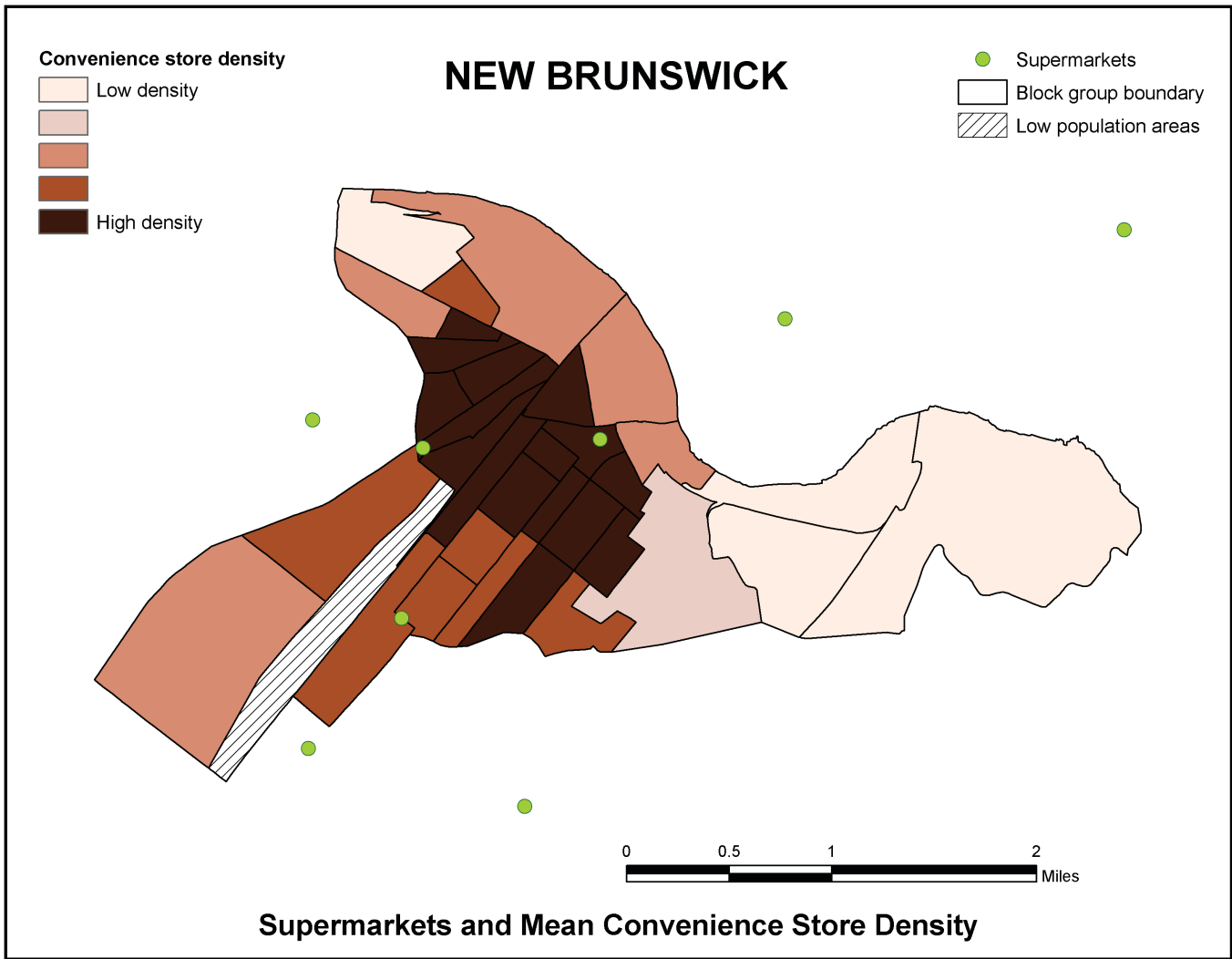
are likely to be more active and to eat more healthful food—two types of behavior that can lead to good health and may help prevent obesity.

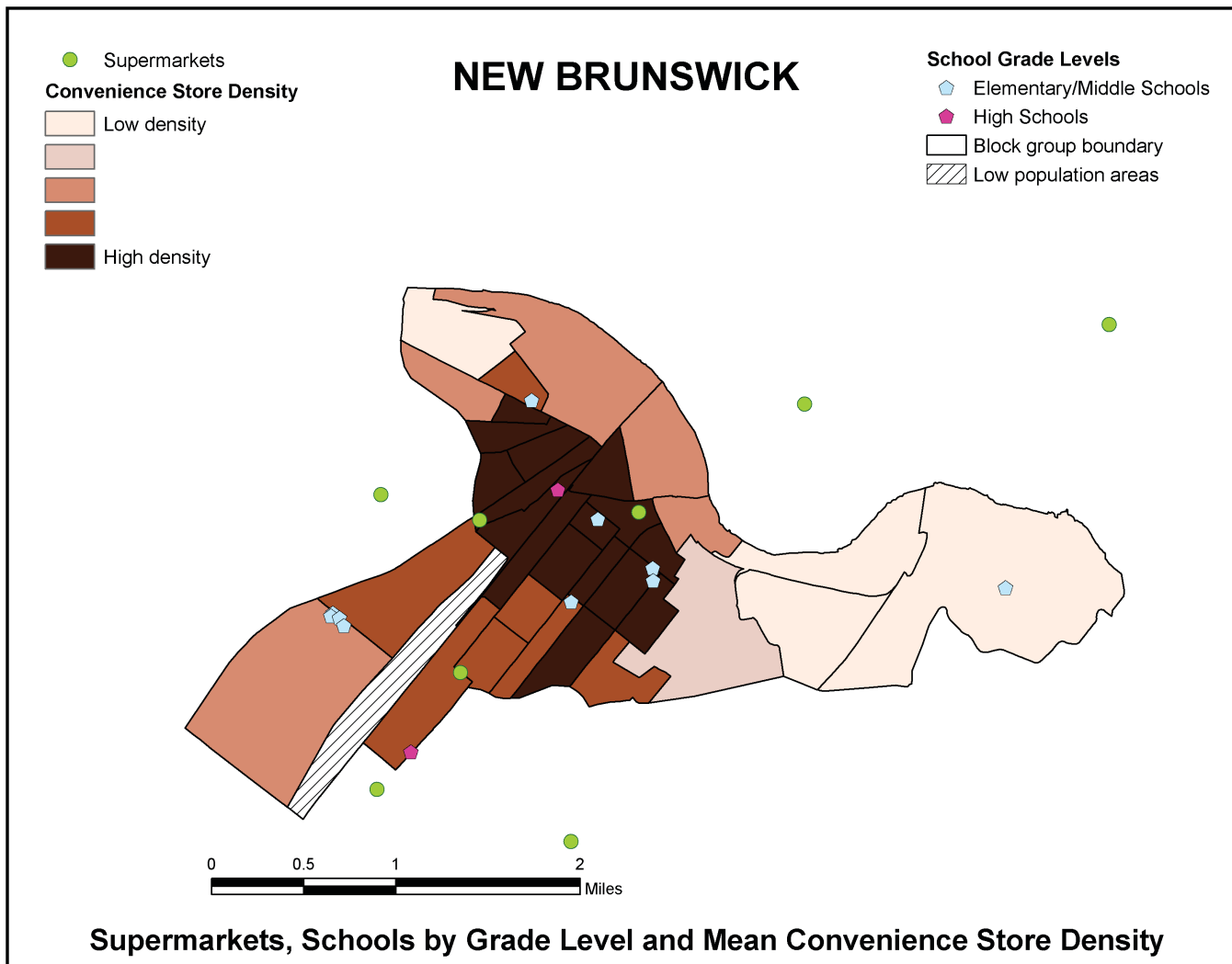


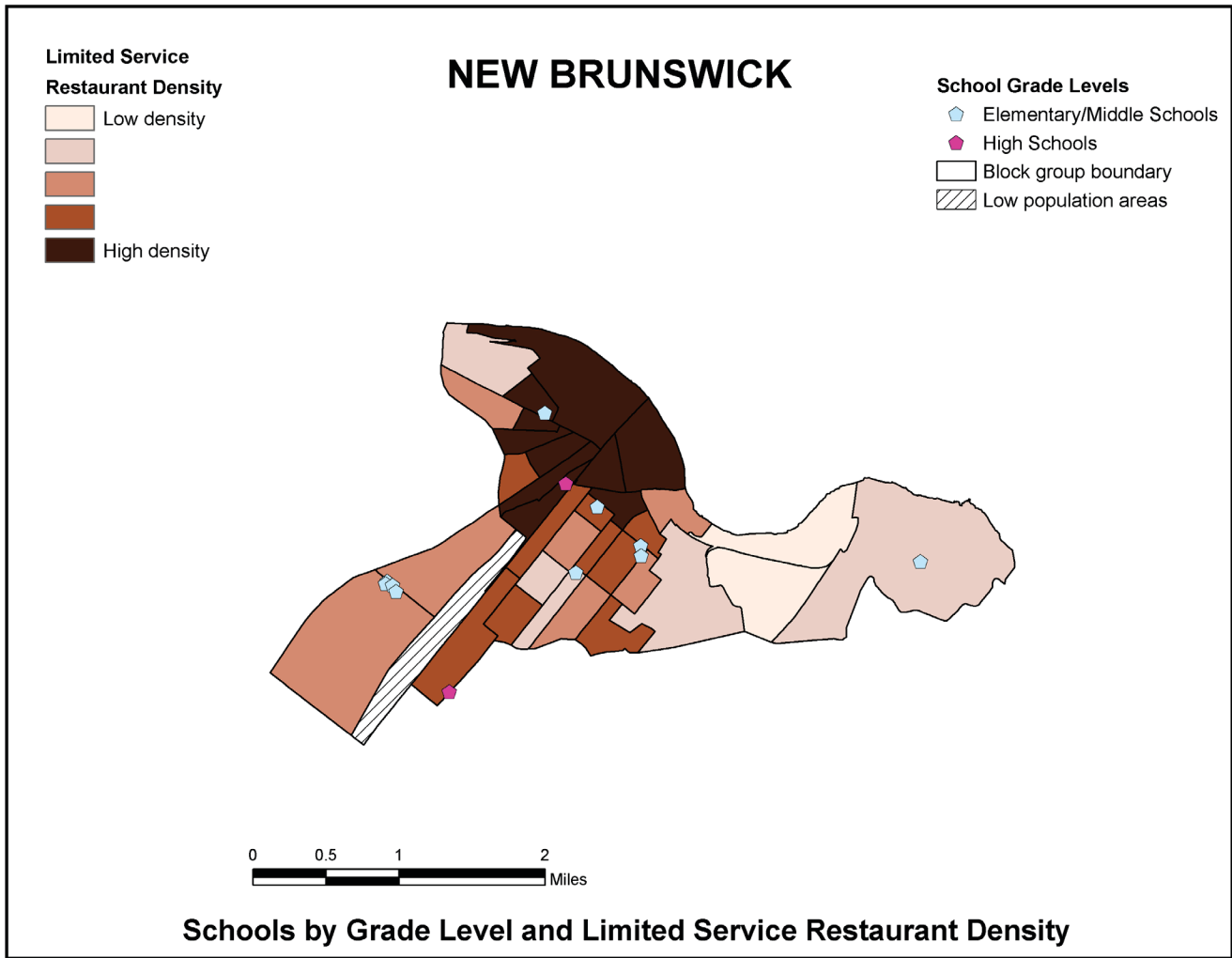
Neighborhood Food Outlet Densities around Schools



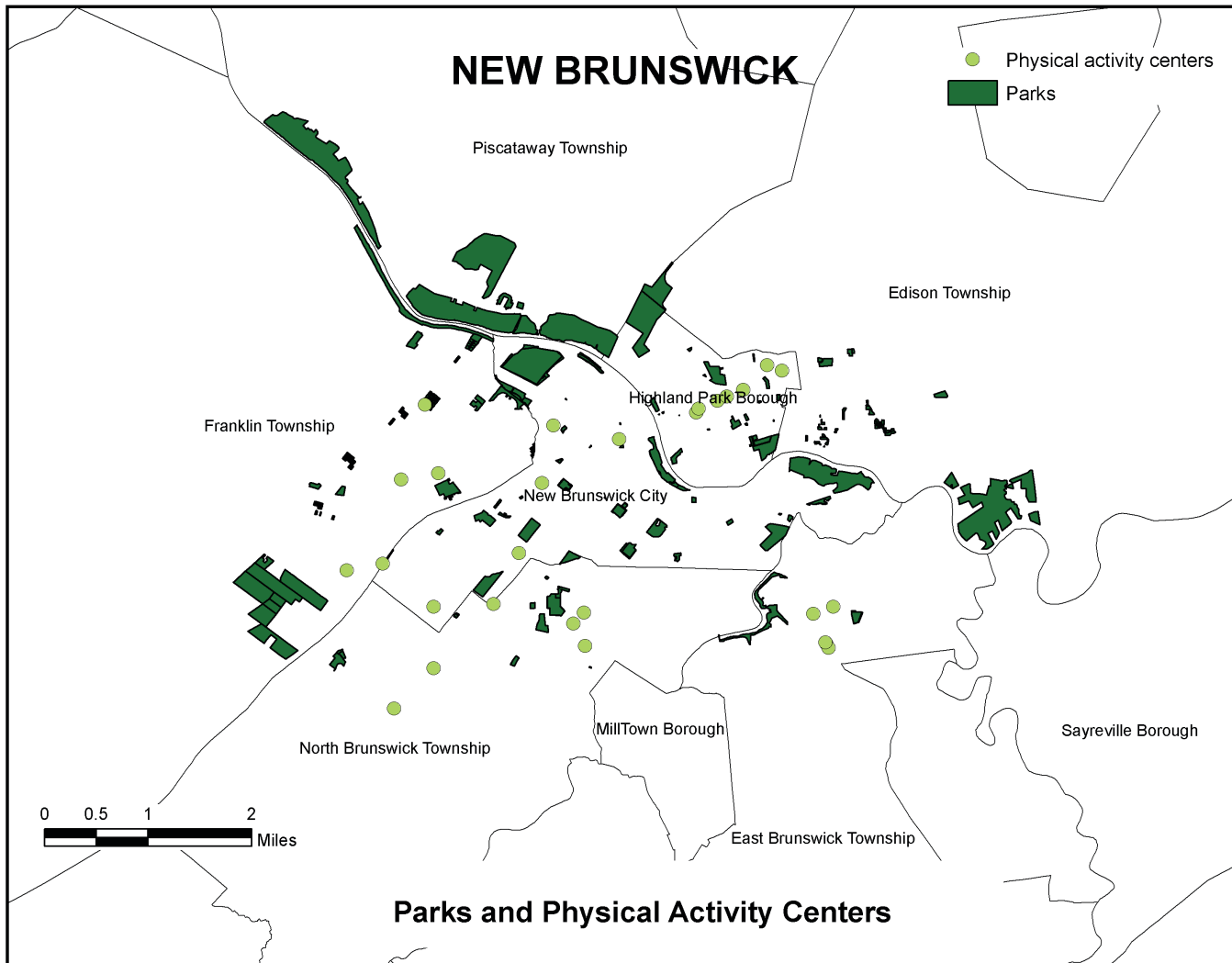


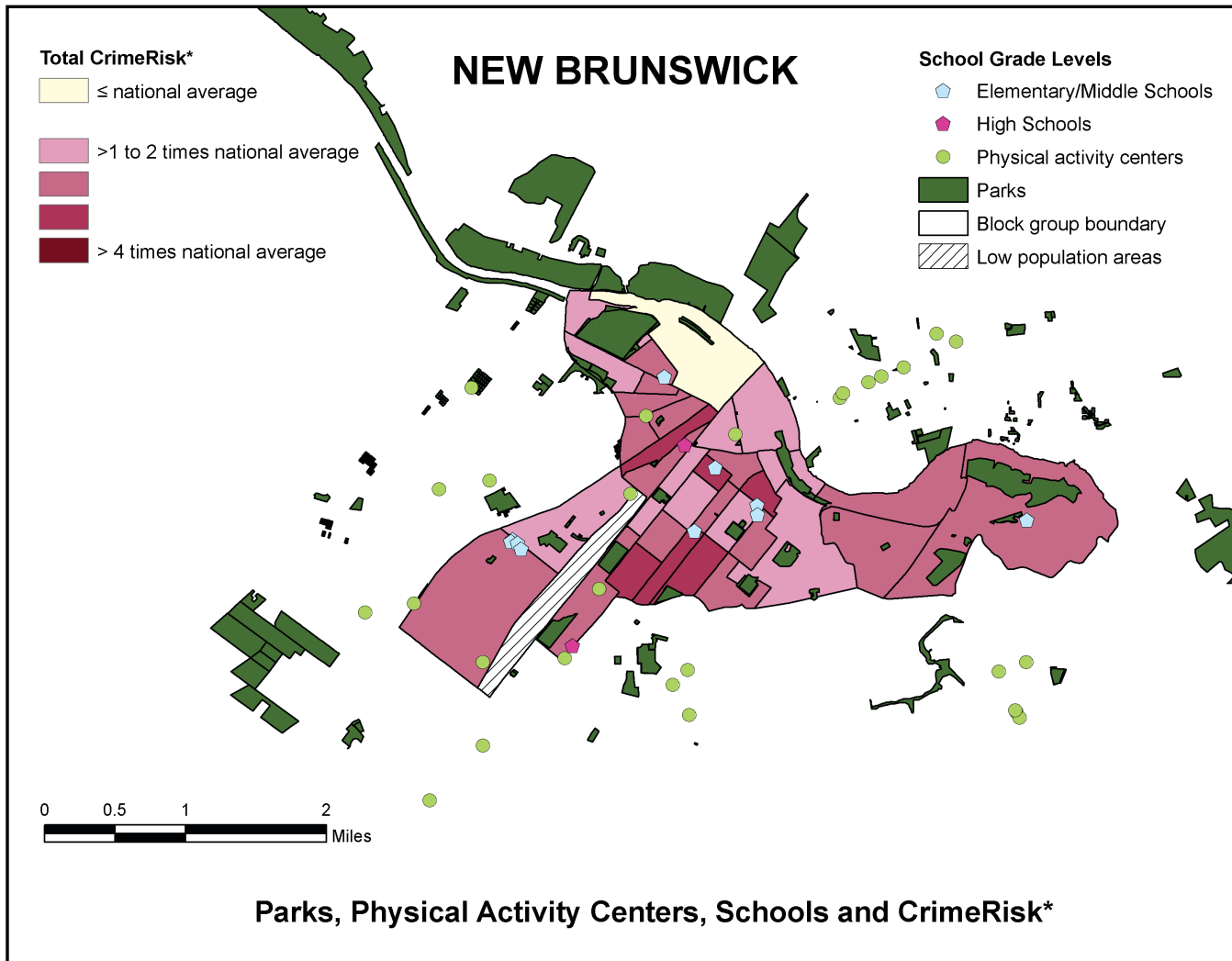






Neighborhood Physical Activity Environment around Schools

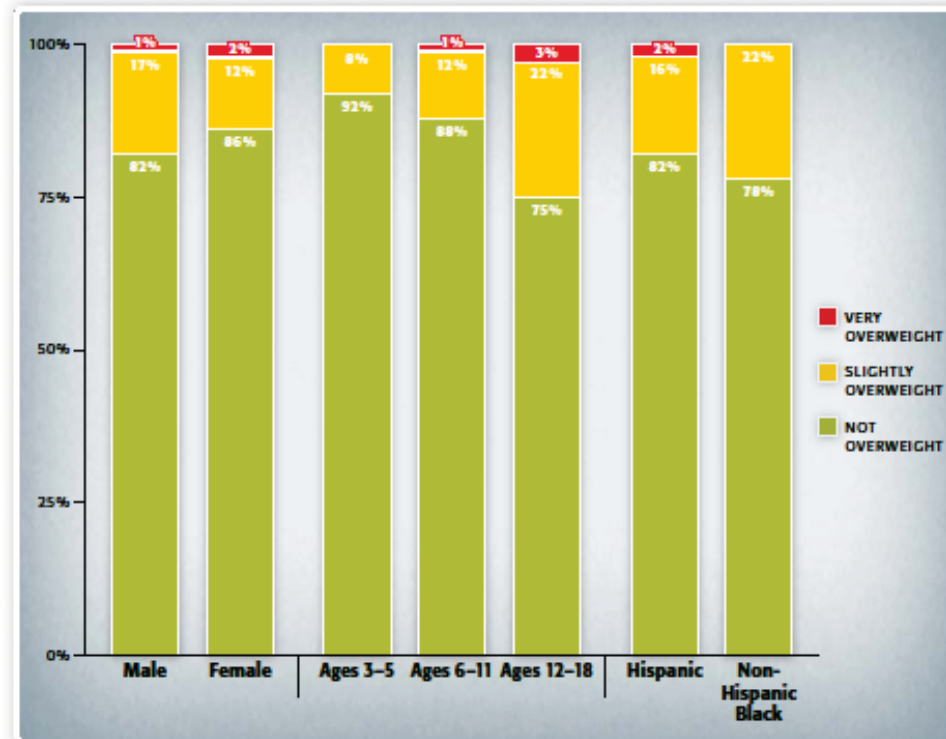




Household Survey Selected Results

Parent's perception of child's weight status (based on survey data)

- Despite the high prevalence of overweight and obesity among children attending New Brunswick public schools, when asked about their child's weight status on the survey, a vast majority of parents of New Brunswick children do not think their children are overweight or obese. This chart (and the remainder of the chartbook) is based on survey data.



NOTE: Bar totals may not equal 100% due to rounding. This chart (and the remainder of the chartbook) are based on survey data.

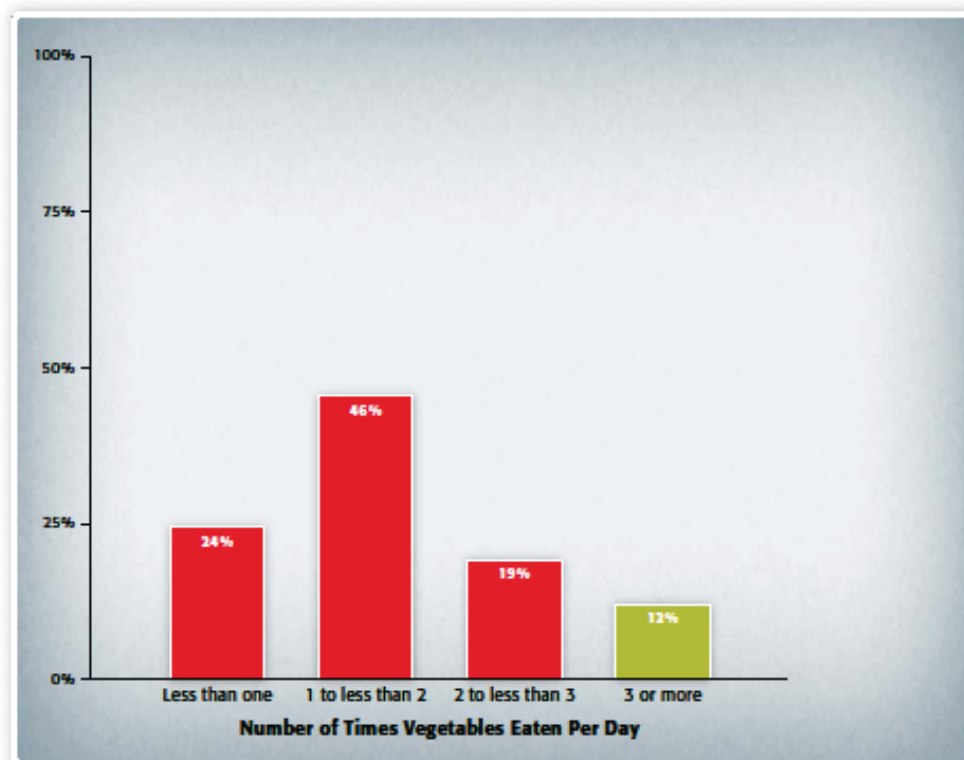
Number of times vegetables* eaten per day

The U.S. Department of Health and Human Services' Healthy People 2010 objectives state that individuals 2 years and older should eat vegetables at least 3 times a day.

In New Brunswick

- Only 12% of the children meet the Healthy People 2010 recommendation.
- 24% of the children eat vegetables LESS THAN ONE time per day.

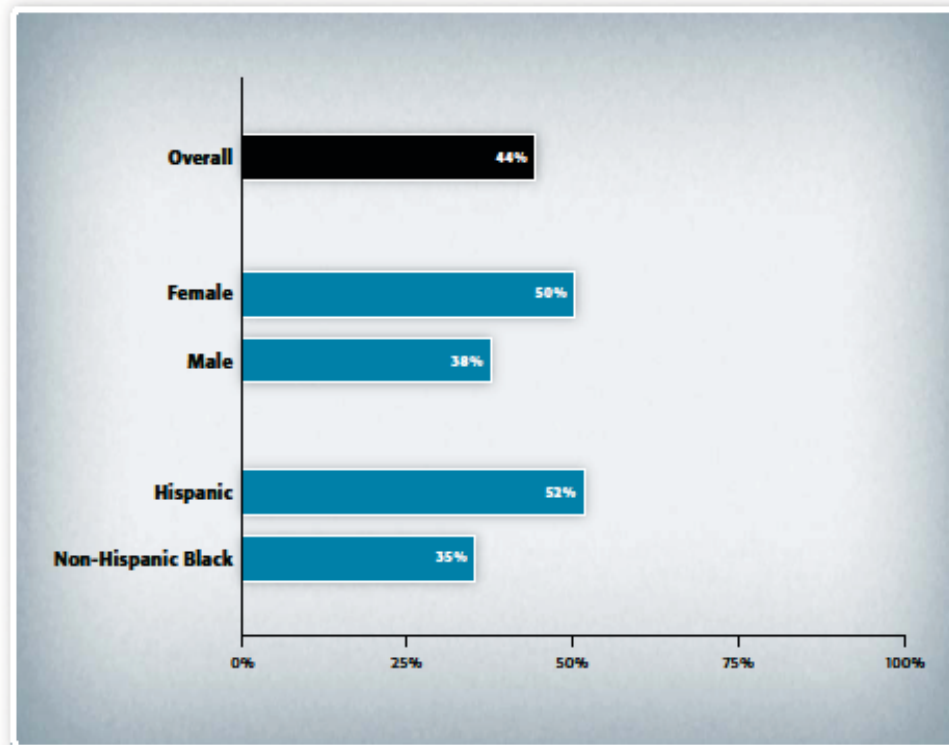
* Includes green leafy or lettuce salad, potatoes (baked, boiled, mashed), cooked or canned dried beans, other vegetables (e.g., tomatoes, green beans, carrots, corn, cooked greens, sweet potatoes, broccoli). Excludes french fries, potato chips, tater tots, or other fried potatoes.



Percentage who do not consume fruit or 100% juice at least 2 times a day*

- Overall, 44% of 3–18 year old children in New Brunswick consume less than the recommendation of fruit or 100% juice.
- Half of New Brunswick girls do not consume fruit or 100% juice two times a day, compared to 38% of boys.
- 52% of Hispanic children in New Brunswick do not consume fruit or 100% juice two times a day, compared to 35% of non-Hispanic black children.

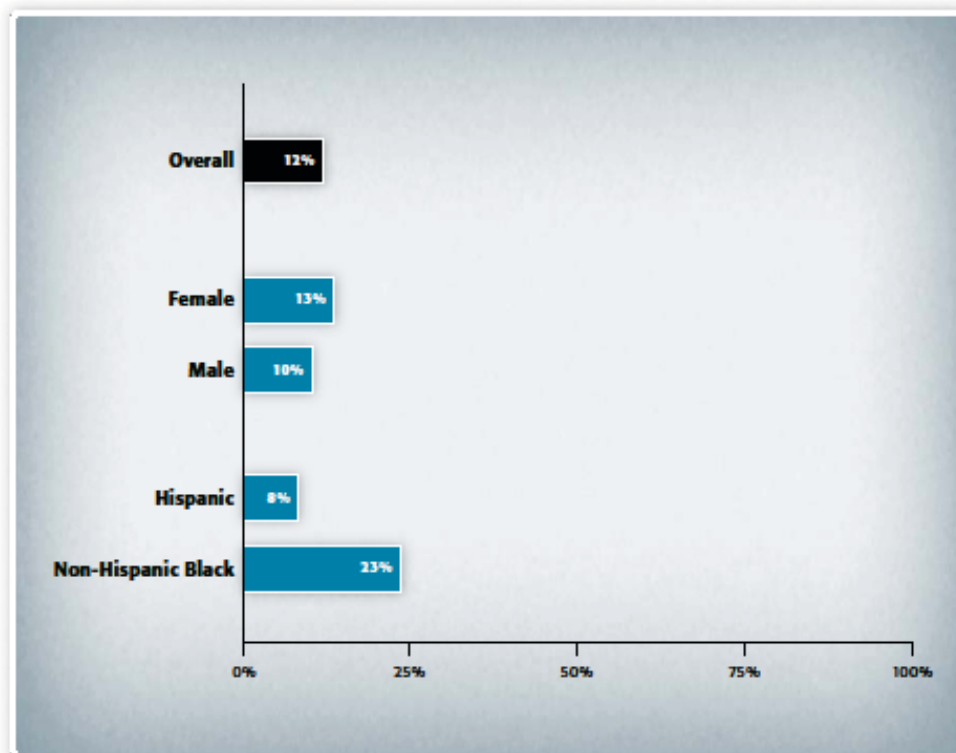
* Includes fresh, frozen, canned, or dried fruits and 100% fruit juice such as orange, apple, or grape juice. Excludes fruit-flavored drinks with added sugar like Hi-C, Gatorade, or fruit punch.



Percentage with two or more fast-food* visits per week

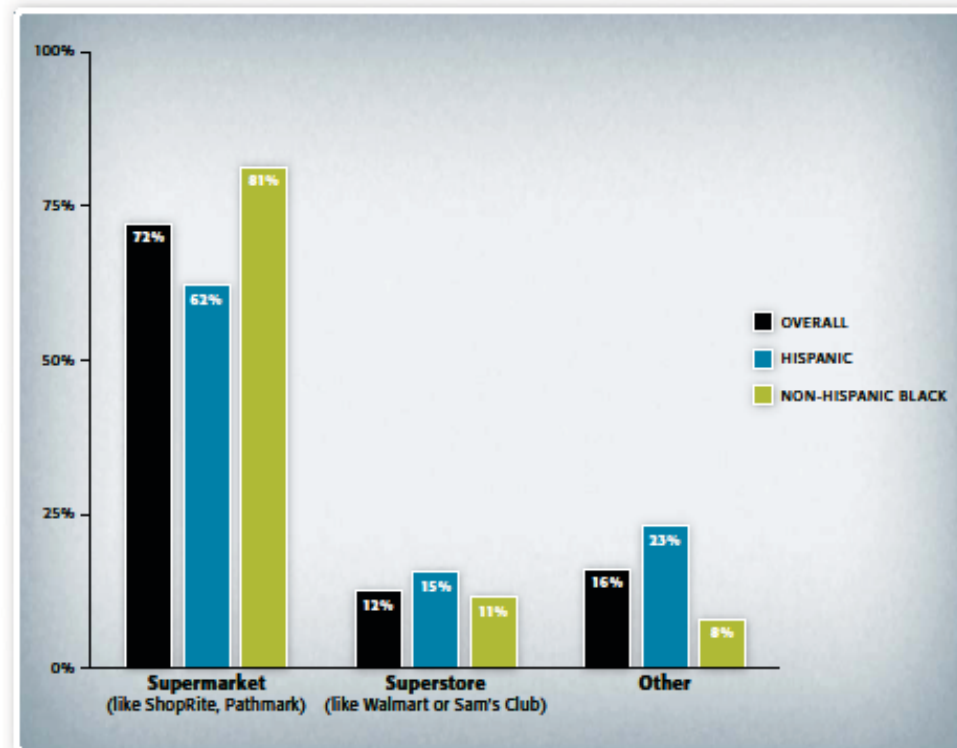
- Overall, 12% of 3–18 year old children in New Brunswick eat at fast-food restaurants 2 or more times a week.
- 23% of non-Hispanic black children in New Brunswick eat at fast-food restaurants 2 or more times a week, compared to 8% of Hispanic children.
- This behavior varies little by gender.

* Includes any fast food restaurant, deli, or pizza, burger, taco, or chicken place where you pay before you eat.



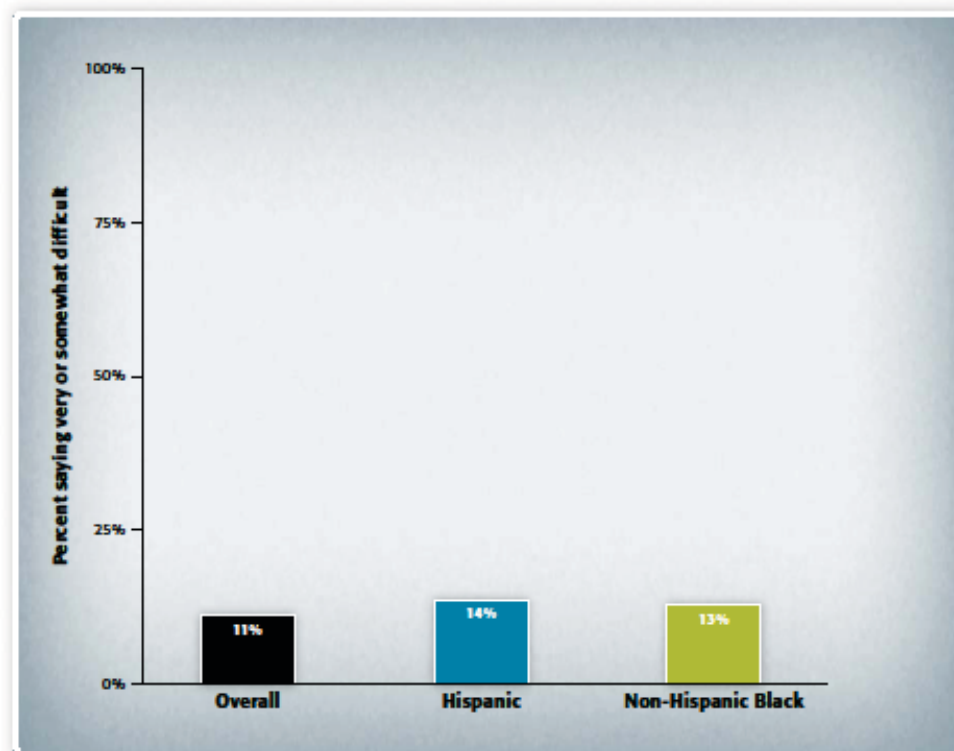
Parents do most of their food shopping at supermarkets and superstores

- Overall, 72% of New Brunswick parents of children ages 3–18 do most of their food shopping at supermarkets (like ShopRite, Stop & Shop, Pathmark), and 12% food-shop at superstores (like Walmart or Sam’s Club).
- Parents of Hispanic children are less likely to shop at supermarkets (62%), compared to non-Hispanic black parents (81%).
- Nearly a fourth of the parents of Hispanic children (23%) shop at corner stores or bodegas for most of their food shopping.



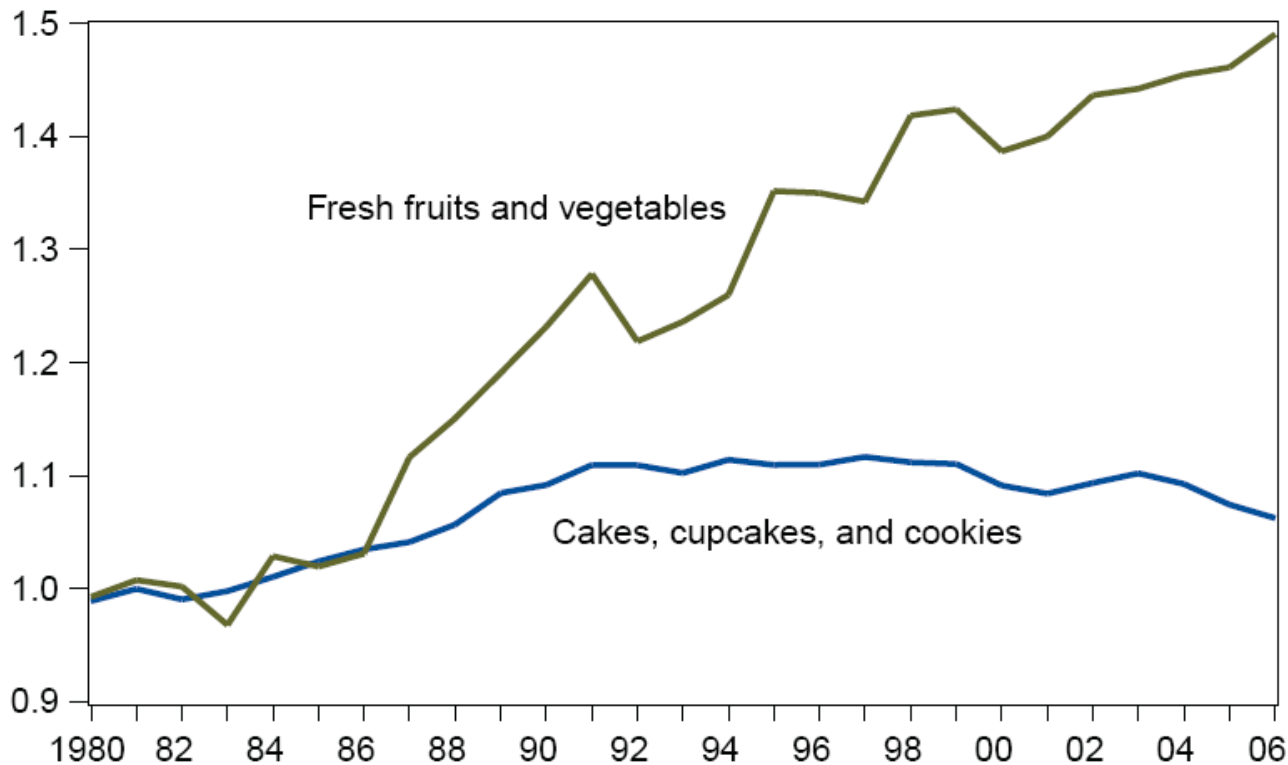
Percentage who say it is difficult to get to store where most of food shopping is done

- 14% of Hispanic parents in New Brunswick and 13% of non-Hispanic black parents say it is difficult to get to the store where they do most of their food shopping.



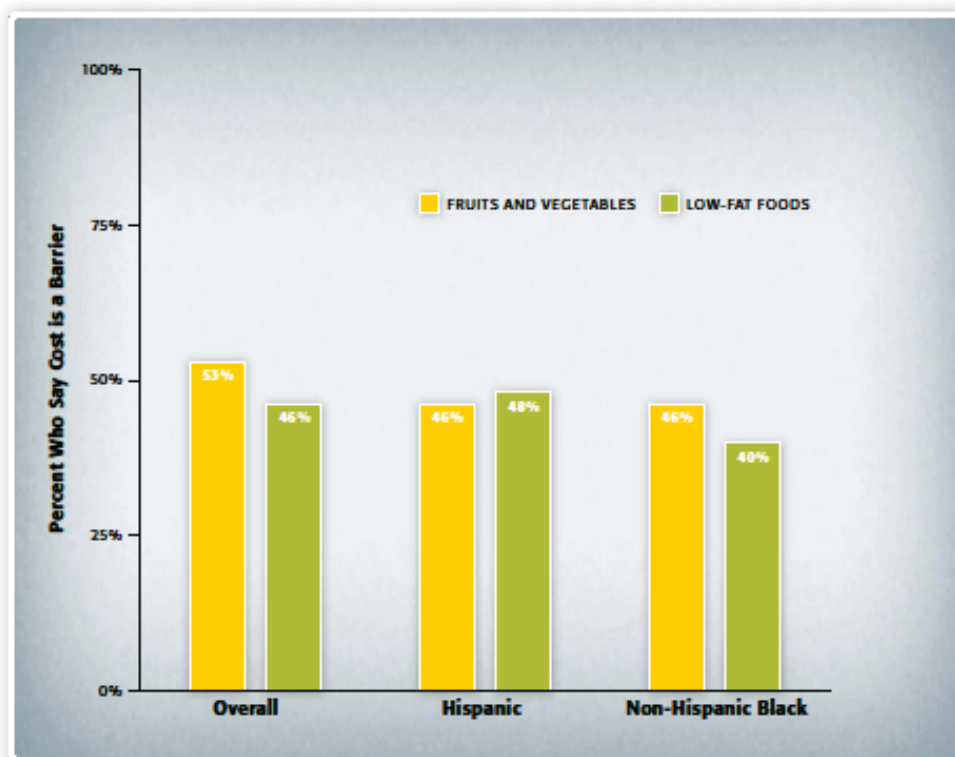
Steep Increase in Fruits and Vegetable Prices Compared to Cookies and Cupcakes

Consumer price index for fresh fruits and vegetables and consumer price index for cakes, cupcakes, and cookies (both relative to CPI-U for all items)



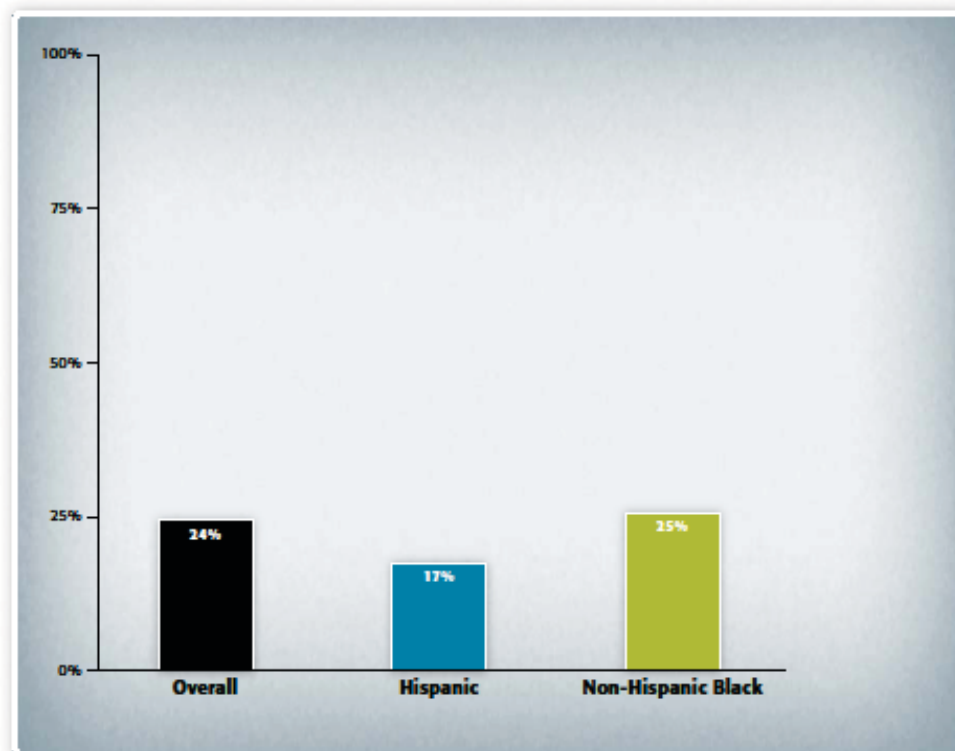
Percentage who say cost is a barrier to purchasing fresh fruits and vegetables and low-fat foods at main food store

- 46% of New Brunswick parents with Hispanic or non-Hispanic black children ages 3–18 say that cost is a barrier to the purchase of fresh fruits and vegetables at their main food store.
- Cost is reported as a barrier to purchasing low-fat foods at their main store for 48% of Hispanic and 40% of non-Hispanic black parents.



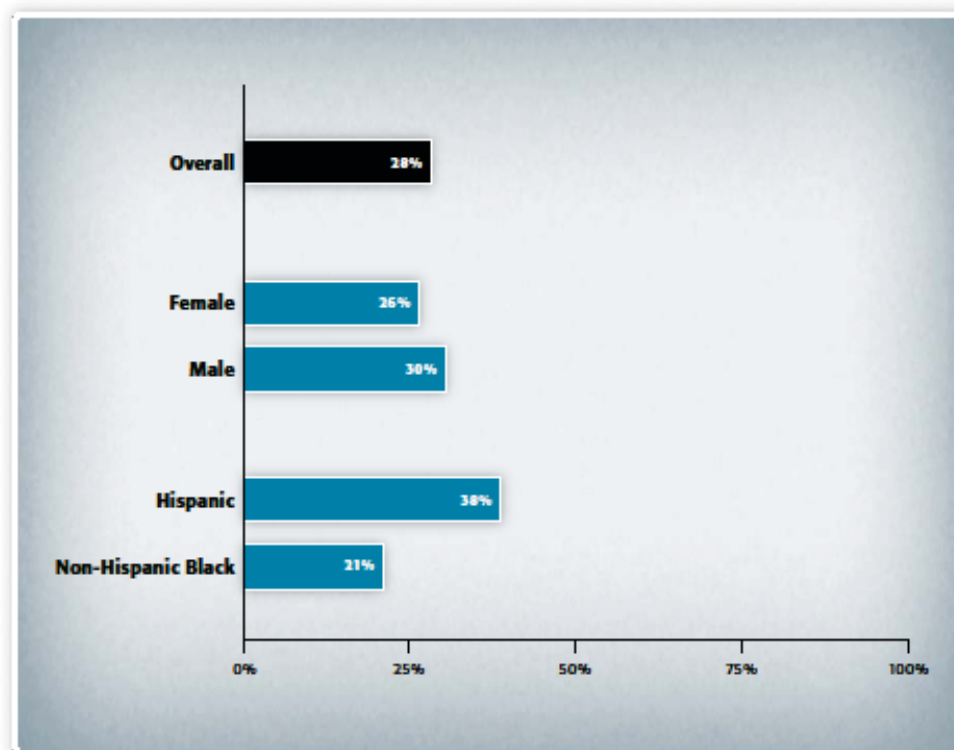
Percentage who have a special store for buying fruits and vegetables

- Overall, 24% of parents in New Brunswick with children ages 3–18 say that they buy most of their fresh fruits and vegetables somewhere other than at their main food store.



*Food Insecurity:
One-fourth of New
Brunswick families report
that they sometimes
or often do not have
enough food to eat*

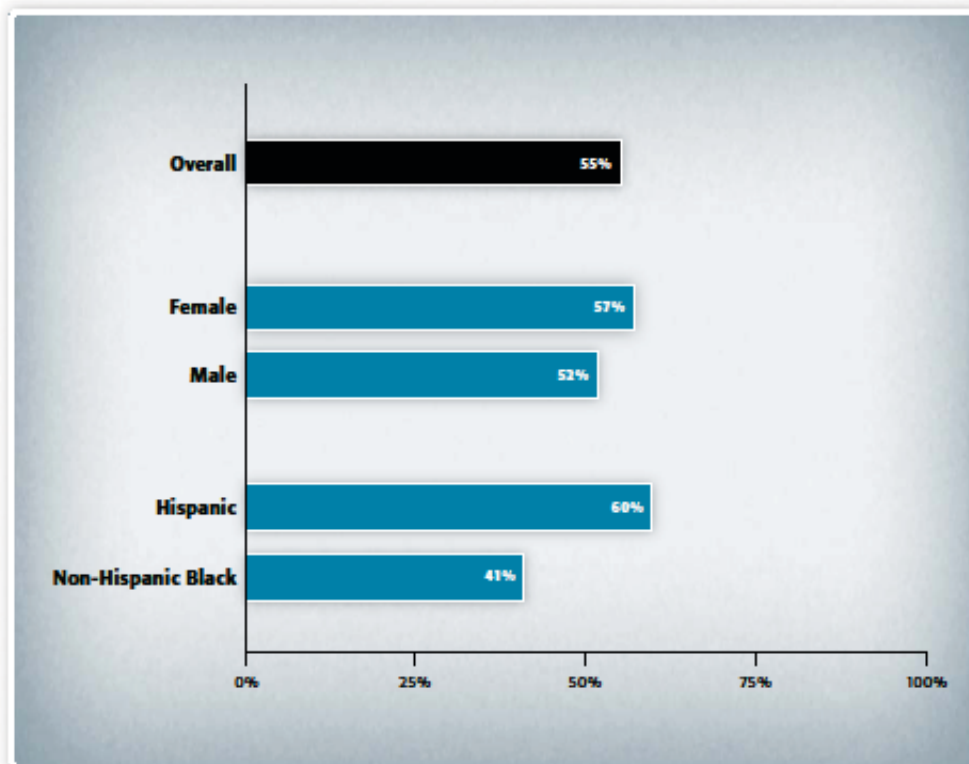
- Overall, 28% of New Brunswick parents with children ages 3–18 report that they sometimes or often do not have enough food at home to eat. According to US Department of Agriculture estimates, 15% of households in the country are food insecure.
- Parents of Hispanic children are nearly twice as likely as parents of non-Hispanic black children to report that they sometimes or often do not have enough food at home to eat (39% vs. 21%).



Percentage who get physical activity at school* 2 or fewer days per week

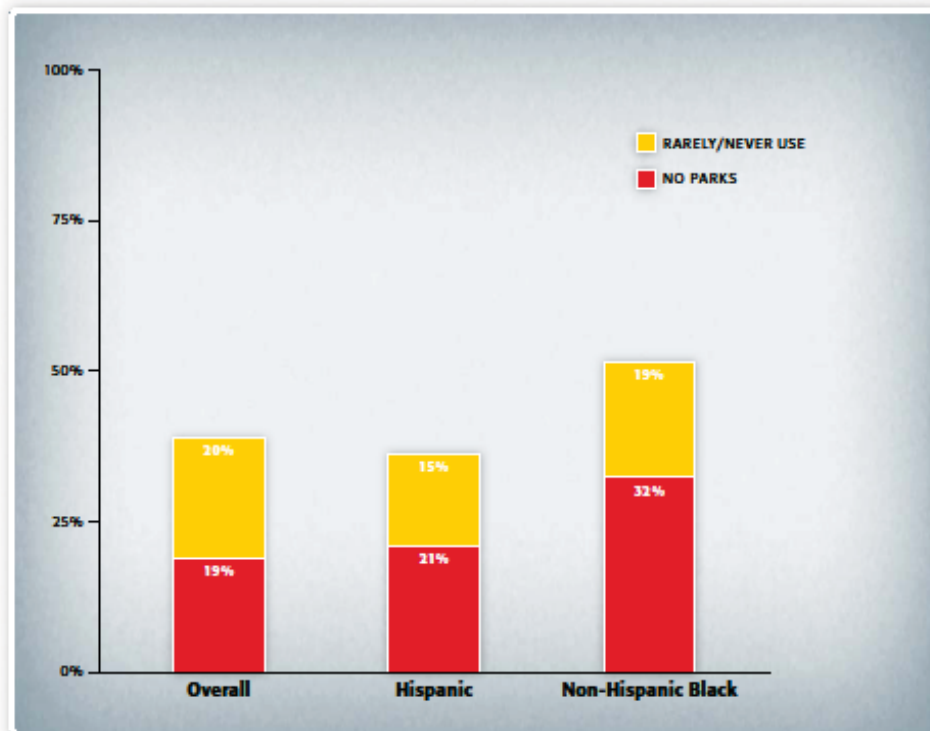
- Overall, 55% of 3–18 year old children in New Brunswick have only 2 or fewer days of some type of physical activity per week at school.
- Hispanic children get less physical activity at school than non-Hispanic black children (60% vs. 41%).
- Physical activity at school varies little by gender.

* Includes any type of physical activity or exercise at school (e.g., PE class, recess). School refers to school, kindergarten, pre-school, or day-care.



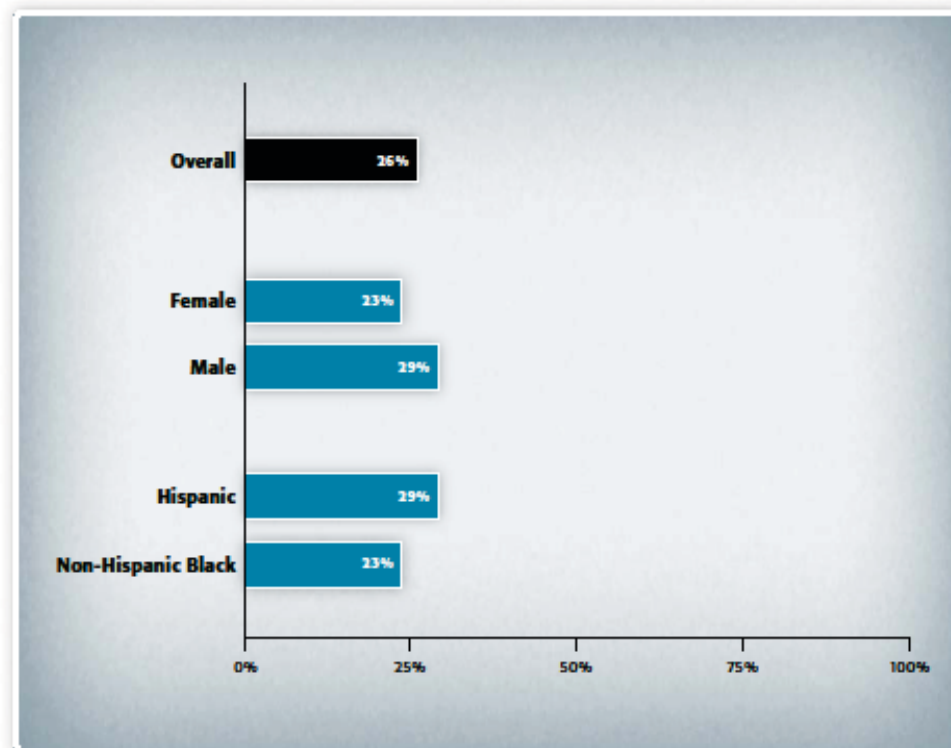
Percentage of children with no parks in neighborhood or who rarely/never use parks to walk, run, bike, or play

- 32% of non-Hispanic black children live in neighborhoods without parks, compared to 21% of Hispanic children.
- Use of parks varies little by race/ethnicity.



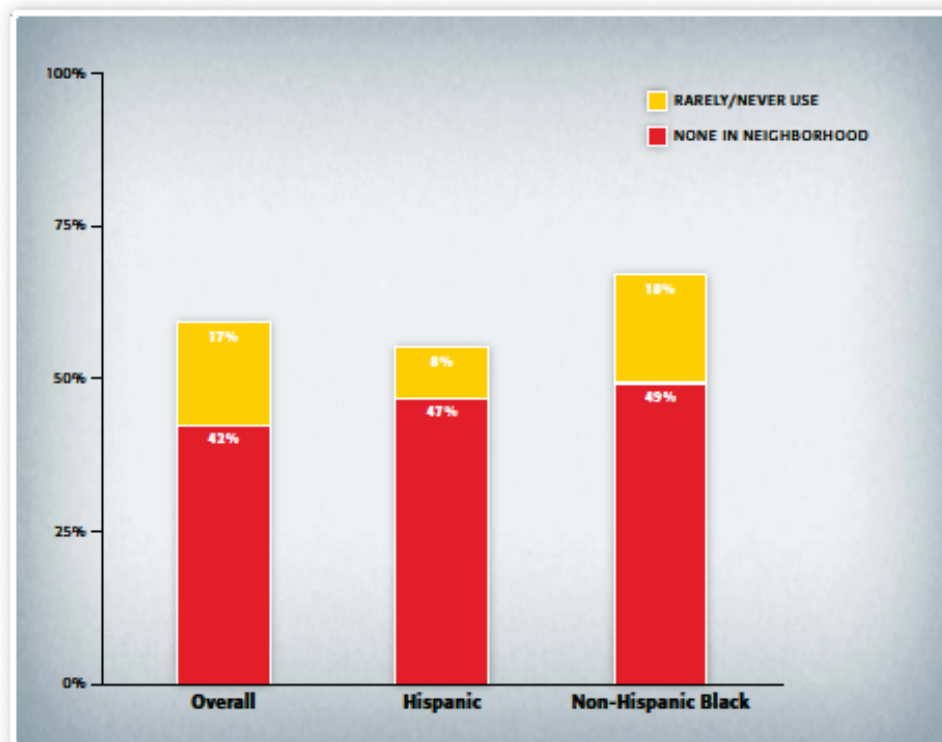
Percentage who report neighborhood parks are unsafe due to criminal activity

- Overall, 26% of New Brunswick parents of children ages 3–18 report that the parks in their neighborhood are unsafe due to criminal activity.
- There is little variation by gender or race/ethnicity.



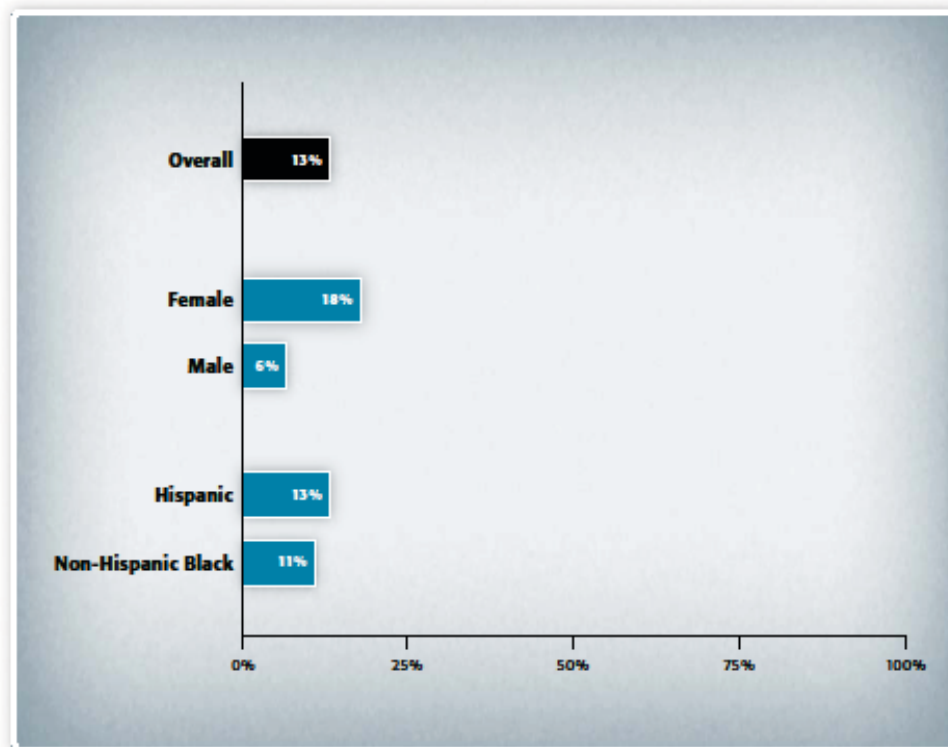
*Percentage of children with no **exercise facilities** in neighborhood or who rarely/never use exercise facilities*

- Almost half of Hispanic and non-Hispanic black 3–18 year old children in New Brunswick live in neighborhoods without indoor or outdoor exercise facilities.
- Non-Hispanic black children are less likely to use neighborhood exercise facilities than Hispanic children.



Percentage who report neighborhood exercise facilities are unsafe due to criminal activity

- Overall, 13% of New Brunswick parents of children ages 3–18 report that the indoor or outdoor exercise facilities in their neighborhood are unsafe due to criminal activity.
- Parents of girls in New Brunswick are more likely to report unsafe indoor or outdoor exercise facilities in their neighborhood (18%), compared to parents of boys (6%).
- This varies little by race/ethnicity.



Summary 1

Weight Status of New Brunswick Children & Adolescents

- New Brunswick has the second highest prevalence of overweight and obese children and adolescents among the five communities studied in the New Jersey Childhood Obesity Study. But as in other cities, most parents do not think their children are overweight.
- Rates of obesity are highest among those ages 3-5, males, and those reported as Hispanic or “Other” race/ethnicity.
- Accuracy of overweight/obese prevalence estimates by school is challenged by incomplete data and therefore, potentially unrepresentative samples.

Summary 2

Food and Physical Activity Environment around New Brunswick Schools

- Many schools are located in areas with a high density of convenience stores and limited service restaurants.
- Most schools are located in the central part of the city where there is a sparse concentration of physical activity centers and parks.

Summary 3

New Brunswick Survey Results – Compared to Other Cities

- Children are less likely to meet the recommendations for daily fruit consumption than in the other four cities studied.
- Like other cities, very few meet the recommendation of 3+ servings of vegetables per day.
- Though an overwhelming majority still shop at supermarkets or superstores, parents' main store is more likely to be a convenience store, corner store, or bodega in New Brunswick.
- Parents are slightly more likely to report difficulty getting to the main store to shop (although still not a common problem at 11%).
- At nearly 50%, New Brunswick has the highest reported cost barrier to purchasing fruits and vegetables at main food store.
- It also has one of lowest percentages of parents who go somewhere else to purchase fruits and vegetables.

Summary 4

New Brunswick Survey Results – Compared to Other Cities

- Children have the highest rate of physical inactivity at school
 - More than half say they get activity at school 2 or fewer days per week
- New Brunswick parents report the highest rate of food insecurity
 - Over 1 in 4 children sometimes or often do not have enough to eat
- City is on the lower end as far as frequency of visits to fast food restaurants by children and adolescents.
- Best availability and use of parks around homes, though still about 40% don't have access to or rarely use them.
- Even with 36% of parents reporting that their neighborhood is unsafe due to criminal activity, New Brunswick parents are less concerned about crime as a deterrent to use of parks and exercise facilities than in the other four cities.

Why Schools?

- Over 95% of the youth are enrolled in schools
- 1/3 of waking hours spent in school
- Consume up to 2 meals and 1 snack at school
- Avenue for physical education
- Health education at school will create educated consumers
- Teachers and school staff as effective adult role models

Resources

All charts and tables presented, along with comparable resources pertaining to the other cities in the New Jersey Childhood Obesity Study, can be found on our website at:

<http://cshp.rutgers.edu/childhoodobesity.htm>

Thank You!!

QUESTIONS



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