



Epi Data Brief

New York City Department of Health and Mental Hygiene

October 2016, No. 78

Cycling in New York City, 2007 to 2014

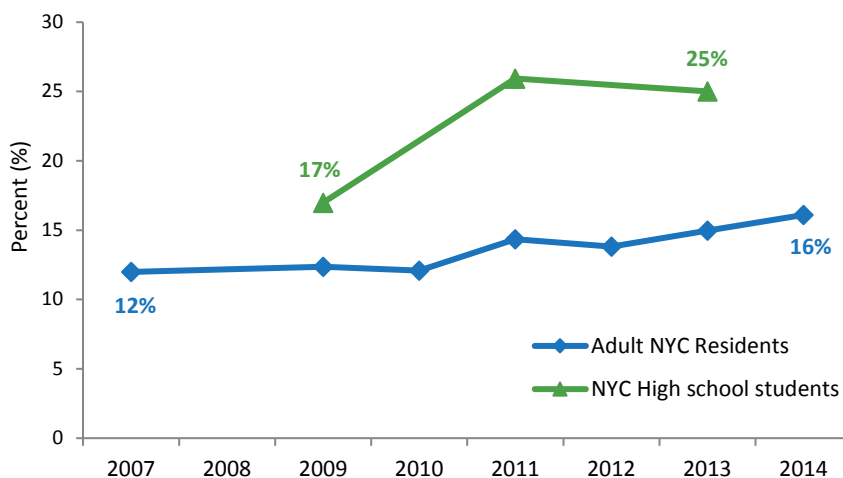
People who are physically active are more likely to live longer, healthier lives.¹ New Yorkers get more of their physical activity through active transportation, such as walking or cycling, than from recreational activities, such as exercise or sports participation.² New Yorkers are more likely to walk to work compared with the national average,³ and a recent New York City (NYC) Department of Transportation report shows that cycling is becoming more popular; the most recent annual 12-hour count of cyclists crossing the East River bridges increased from 2,041 cyclists in 2000 to 15,394 in 2015.⁴

The amount of cycling in a city may be influenced by many factors such as cost, secure bicycle storage, and neighborhood conditions, including access to bike lanes, parks, and safe streets.^{5,6} This report provides information about the characteristics of cyclists in NYC and how cycling has changed from 2007 to 2014, overall and by neighborhood.

More New York City residents report cycling once a month or more

- From 2007 to 2014 there was an increasing trend in the prevalence of NYC adults who cycled at least once a month (12% to 16%).
- The prevalence of students who cycled at least once a month also increased, to 25% in 2013 from 17% in 2009.

Prevalence of adults and students that cycled at least once a month in New York City, 2007–2014



Sources: NYC Community Health Survey 2007-2014, Youth Risk Behavior Survey 2009-2013

Definitions:

Cycling: NYC adult residents and high school students were asked “In the past 12 months, how often have you ridden a bicycle in one of the five boroughs of New York City?”

Neighborhood poverty is defined as the percentage of the population living below the Federal Poverty Line (FPL) based on American Community Survey data from 2007-2011 (for 2007 data) and from 2008-2012 (for 2014 data).

Neighborhoods (based on ZIP codes) are categorized into four groups as follows: “Low poverty” neighborhoods are those with <10% of the population living below the FPL; “Medium poverty” neighborhoods have 10- <20% of the population below FPL; “High Poverty” neighborhoods have 20- <30% of the population living below the FPL; “Very high poverty” neighborhoods have ≥30% of the population living below the FPL.

Household poverty is measured as the total income of the household and is categorized into four groups, relative to the Federal Poverty Line (FPL), as follows: Very high poverty (<100% FPL), High poverty (100%- <200% FPL), Medium poverty (200%- <400% FPL) and Low poverty (≥400% FPL).

Students: for the purposes of this report, the term “student” refers to adolescents attending grades 9-12 in New York City public high schools.

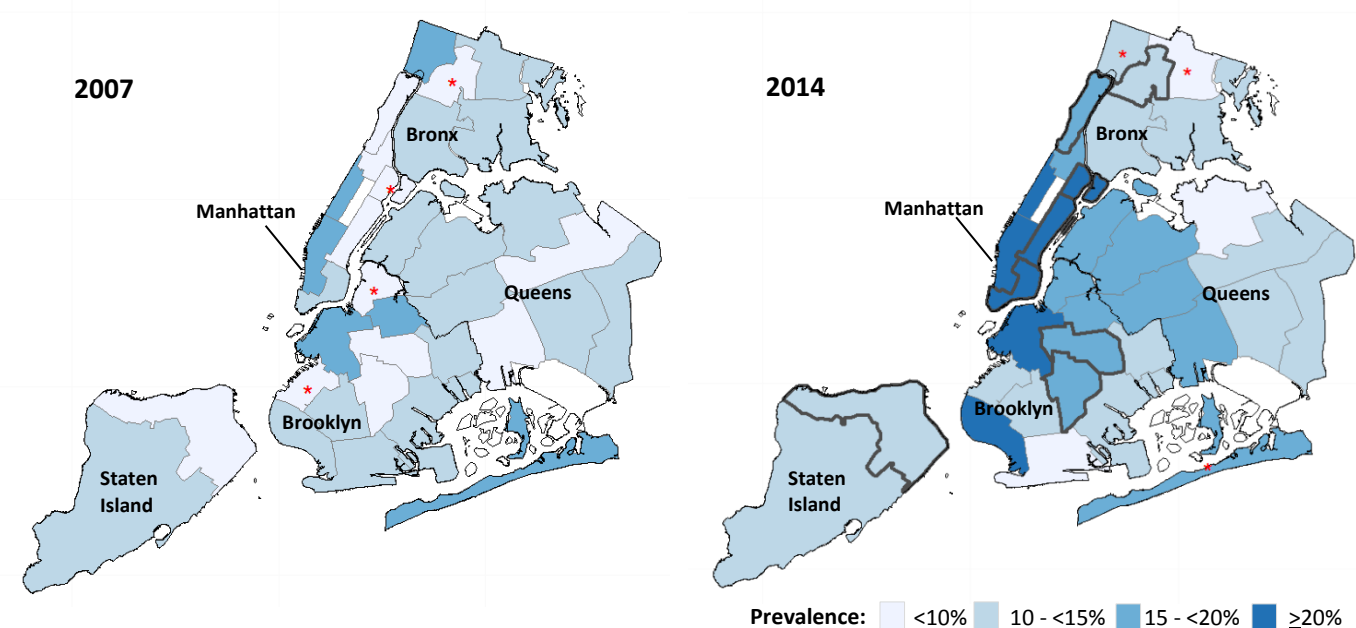
Race/ethnicity: White, Black, and Other race categories exclude Hispanic/Latino ethnicity. “Latino” ethnicity is defined as Hispanic or Latino of any race.

Neighborhood: The United Hospital Fund classifies NYC into 42 neighborhoods comprised of contiguous ZIP codes, several of which have been combined to create the 34 neighborhoods presented here.

Prevalence of cycling once a month or more increased in most boroughs

- From 2007 to 2014, there was an increase in the prevalence of adults who cycled once a month or more among residents of Manhattan (12% to 22%), Brooklyn (12% to 16%), Queens (12% to 15%), and Staten Island (10% to 13%). There was no change in the prevalence of adult residents who cycled once a month or more in the Bronx.
- The prevalence of adult residents who cycled once a month or more increased in eight NYC neighborhoods between 2007 and 2014: four neighborhoods in Manhattan (Washington Heights 8% to 19%; East Harlem 6% to 21%; Upper East Side-Gramercy 9% to 23%; Union Square-Lower Manhattan 15% to 26%), two in Brooklyn (Bedford Stuyvesant-Crown Heights 8% to 17%; Flatbush 8% to 15%) and one each in the Bronx (Fordham 8%* to 14%) and Staten Island (Northern Staten Island 9% to 14%). The prevalence in all other neighborhoods did not change during this period.
- The prevalence of cycling at least once a month or more increased among students living in each of the five boroughs from 2009 to 2013 (Brooklyn, 17% to 25%; the Bronx, 14% to 21%; Manhattan, 14% to 29%; Queens, 19% to 26%; Staten Island, 19% to 25%).

Prevalence of adult cycling once a month or more by neighborhood, New York City, 2007 and 2014



The United Hospital Fund classifies NYC into 42 neighborhoods comprised of contiguous ZIP codes, several of which have been combined to create the 34 neighborhoods presented here.

UHF's marked with a red asterisk (*) indicate the estimates should be interpreted with caution. Estimate's Relative Standard Error (a measure of estimate precision) is greater than 30% or the 95% Confidence Interval's half width is greater than 10 making the estimate potentially unreliable.

In the map for 2014, UHF's with a thicker outline are those with a statistically significant change in prevalence from 2007.

Source: NYC Community Health Survey, 2007 and 2014.

Data Sources: Community Health Survey (CHS) is conducted annually by the Health Department with approximately 9,000 non-institutionalized adults ages 18 and older. Data are age-adjusted to the US 2000 standard population. The CHS has included adults with landline phones since 2002 and, starting in 2009, has included adults who can be reached by cell-phone. Data in the brief are from 2007, 2009, 2011, 2013 and 2014. For more survey details, visit nyc.gov/health/survey.

Youth Risk Behavior Survey (YRBS) is a biennial self-administered, anonymous health survey of students in public high schools (including charter schools, but not parochial schools) in New York City conducted by the Health Department, the NYC Department of Education, and the CDC. Data in the brief are from 2009, 2011, and 2013. For more survey details, visit www1.nyc.gov/site/doh/data/data-sets/nyc-youth-risk-behavior-survey.page.

Trends: Trend results reported in this brief are statistically significant unless stated otherwise. All statistical testing was done at a significance level of $\alpha = 0.05$.

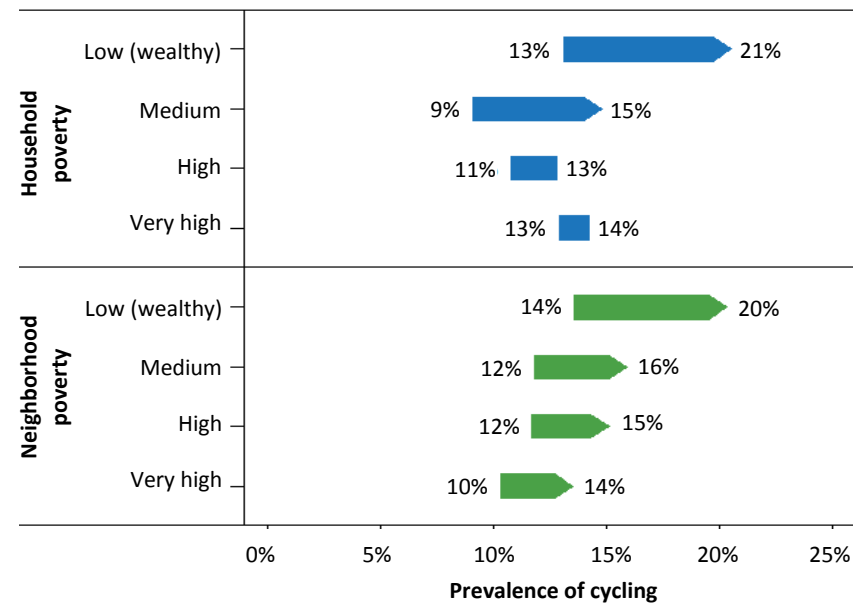
Cycling has increased in wealthier households

- Cycling once a month or more increased from 2007 through 2014 among adult residents with low (13% to 21%) and medium household poverty (9% to 15%), but not among those with high or very high household poverty.
- The difference, or gap, between prevalence of cycling once a month or more among adult residents of low poverty households compared with very high poverty households increased from 2007 to 2014.

Cycling has increased across all neighborhood poverty levels

- The prevalence of adult residents cycling once a month or more increased across all levels of neighborhood poverty (low poverty, 14% to 20%; medium, 12% to 16%; high 12% to 15%; and very high poverty 10% to 13%) from 2007 to 2014. The difference between these groups (on average 4.2% lower prevalence in low compared with very high poverty neighborhoods) is similar across the years.
- Cycling once a month or more increased among adults in two of three areas where the Health Department’s Center for Health Equity is establishing Neighborhood Health Action Centers (see note). The prevalence of cycling once a month or more increased between 2007 and 2014 among residents of East and Central Harlem (8% to 20%) and North and Central Brooklyn (12% to 16%); there was no change among residents of the South Bronx.

Increase in the prevalence of adults cycling once a month or more from 2007 to 2014, by household and neighborhood poverty, New York City



The arrows represent the change from 2007 (base of the arrow) to 2014 (end of the arrow) in the prevalence of adults cycling once a month or more. Arrows marked with a flattened point indicate a change that is not statistically different from 0.

Household poverty is measured as the total income of the household and is categorized into four groups, relative FPL: very high poverty (<100% FPL), high poverty (100%-<200% FPL), medium poverty (200%-<400% FPL) and low poverty (>=400% FPL).

Neighborhood poverty (based on ZIP code) is defined as the percentage of the population living below the Federal Poverty Line (FPL) based on American Community Survey (ACS 2007-2011 for 2007 data, ACS 2008-2012 for 2014 data), in four groups: low poverty neighborhoods, <10% below FPL; medium poverty, 10-<20% below FPL; high poverty, 20-<30% below FPL; very high poverty neighborhoods, ≥30% living below FPL.

Source: NYC Community Health Survey 2007 and 2014.

Note: To promote health equity and reduce health disparities at the neighborhood level, the Health Department established [Neighborhood Health Action Centers](#) (formerly District Public Health Offices) in the South Bronx, East and Central Harlem, and North and Central Brooklyn, neighborhoods with high rates of chronic disease and premature death. The Neighborhood Health Action Centers work with community partners to improve local conditions for good health, including increasing access to cycling and other opportunities for physical activity.

Cycling once a month or more increased among several groups of adult New Yorkers

- From 2007 to 2014, the prevalence of cycling once a month or more increased among White (13% to 19%), Black (10% to 13%) and Latino (13% to 17%) adults. The average difference between these groups (5.1% lower in Blacks compared with Whites and 2.2% lower in Latinos compared with Whites) was similar across the years.
- Although cycling once a month or more increased from 2007 to 2014 among adult men (18% to 23%) and women (7% to 10%), the prevalence was consistently 12% higher in adult men compared with females.
- The prevalence of adults who cycled once a month or more increased during the 2007 to 2014 period among 25 to 44 year olds (14% to 21%) and among 45 to 64 year olds (10% to 13%) but not among 18 to 24 year olds or those 65 years and older.

Students of both sexes, across racial/ethnic groups and age groups are cycling more frequently

- Cycling once a month or more increased from 24% in 2009 to 36% in 2013 among male students of public high schools and from 11% to 14% among female students.
- The difference between males and females in the prevalence of cycling once a month or more increased from 13% in 2009 to 22% in 2013.
- Cycling once a month or more increased among public high school students 14 years old and younger (21% to 29%), 15 to 17 year olds (15% to 24%), and those 18 years and older (15% to 25%).
- The prevalence of cycling once a month or more increased among White (20% to 30%), Black (16% to 24%), and Latino (18% to 26%) students. The average difference between these groups (6.9% lower among Blacks compared with Whites and 4.9% lower among Latinos compared with Whites) did not change from 2009 to 2013.

References:

1. Physical Activity and Health: The Benefits of Physical Activity. Centers for Disease Control Web site. www.cdc.gov/physicalactivity/basics/pa-health/index.htm. Accessed August 2, 2016.
2. Dowell D, Olson C, Corey C, Holder-Hayes E, Kheirbek I, Caffarelli A. Health Benefits of Active Transportation in New York City. NYC Vital Signs Special Report. 2011; 10(3):1-4.
3. McKenzie B. Modes less traveled: Bicycling and walking to work in the United States: 2008–2012. *American Community Survey Reports*. ACS-26. Washington, DC: U.S. Census Bureau, 2014
4. New York City Department of Transportation. Cycling in the city: Cycling trends in NYC. May, 2016.
5. Pucher J, Buehler R. Analysis of bicycling trends and policies in large North American cities: Lessons from New York. University Transportation Research Center Research Brief. Rutgers University, 2011
6. Taylor WC, D. L. Do all children have places to be active? Disparities in access to physical activity environments in racial and ethnic minority and lower-income communities. Robert Wood Johnson Foundation, 2011.

Authors: Aldo Crossa, Philip Noyes, Hilary Parton, Sungwoo Lim

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Epi Data Tables

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Data Tables

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- Table 2.** Prevalence of self-reported cycling activity in New Yorkers 18 years and older, by neighborhood, New York City, 2007-2014
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Data Sources

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Youth Risk Behavior Survey (YRBS) is a biennial health survey of students in public high schools in New York City conducted by the Health Department, the NYC Department of Education, and the CDC. Data in the brief are from 2009, 2011, and 2013. For more survey details, visit www1.nyc.gov/site/doh/data/data-sets/nyc-youth-risk-behavior-survey.page.

Table 1. Prevalence of self-reported cycling activity in New Yorkers 18 years and older, New York City, 2007-2014

Source: NYC Community Health Survey, 2007, 2009, 2011, 2013 and 2014.

CHS data are weighted to the adult residential population per the American Community Survey.

Data are age-adjusted to the U.S. 2000 Standard Population

	2007		2009		2010		2011		2012		2013		2014		p-value‡
	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	
Overall															
Once a month or more	12.0	11.1-12.9	12.4	11.3-13.5	12.1	11.0-13.3	14.3	13.0-15.8	13.8	12.6-15.1	15.0	14.0-16.0	16.1	15.0-17.3	0.000
Less than once a month	10.0	9.2-10.9	8.0	7.2-9.0	7.4	6.5-8.4	9.3	8.2-10.6	8.2	7.3-9.1	7.8	7.1-8.6	8.4	7.6-9.3	0.021
None/Unable	78.0	76.8-79.1	79.6	78.3-80.9	80.5 ^U	79.1-81.8	76.4	74.6-78.0	78.0	76.6-79.4	77.2	76.0-78.4	75.5 ^D	74.2-76.8	0.000
Sex															
Male															
Once a month or more	17.9	16.3-19.5	18.8	17.0-20.7	18.1	16.3-20.1	21.0	18.7-23.5	20.1	18.2-22.2	22.5	20.8-24.3	23.1	21.3-25.0	0.000
Less than once a month	12.8	11.4-14.3	9.9	8.5-11.4	8.9	7.5-10.5	11.4	9.6-13.4	9.6	8.3-11.1	8.9	7.7-10.2	10.8	9.5-12.3	0.027
None/Unable	69.3	67.5-71.2	71.3	69.2-73.3	73.0	70.7-75.1	67.6	64.9-70.2	70.3	68.1-72.5	68.6	66.6-70.5	66.1	64.1-68.1	0.002
Female															
Once a month or more	6.7	5.8-7.7	6.7	5.7-7.9	6.7	5.6-8.0	8.5 ^D	7.1-10.1	8.3	7.0-9.7	8.2	7.1-9.3	9.8	8.5-11.3	0.000
Less than once a month	7.5 ^U	6.6-8.6	6.4	5.4-7.6	6.1	5.0-7.4	7.5 ^U	6.2-9.2	7.0	5.9-8.2	6.9	5.9-8.0	6.3	5.3-7.3	0.345
None/Unable	85.8	84.4-87.0	86.9	85.4-88.3	87.2	85.6-88.7	84.0	81.9-85.9	84.8	83.0-86.4	85.0	83.5-86.3	83.9	82.3-85.5	0.005
Age group (years)															
18-24															
Once a month or more	21.7	17.8-26.1	21.6	17.0-27.0	20.4	15.7-26.0	24.9	19.6-31.1	21.8	17.3-27.1	23.9	20.3-28.0	25.5 ^D	21.5-29.9	0.142
Less than once a month	18.1	14.4-22.3	9.8	6.7-13.9	12.9	9.3-17.6	13.3	9.6-18.1	11.9	8.9-15.8	14.3	11.4-17.9	16.2	12.9-20.2	0.917
None/Unable	60.3	55.2-65.1	68.7	62.8-74.0	66.7	60.6-72.3	61.8	55.3-67.9	66.3	60.7-71.4	61.7	57.2-66.0	58.3	53.5-62.9	0.232
25-44															
Once a month or more	13.9	12.5-15.6	14.4	12.7-16.3	14.8	12.9-16.9	17.5 ^D	15.1-20.2	17.2	15.1-19.4	19.3	17.4-21.3	20.5 ^U	18.4-22.8	0.000
Less than once a month	11.8	10.4-13.3	10.2	8.8-11.8	9.4	7.8-11.3	12.5 ^U	10.4-15.0	11.4	9.7-13.2	9.1	7.9-10.6	10.8	9.4-12.5	0.356
None/Unable	74.3	72.3-76.2	75.4	73.1-77.5	75.8	73.2-78.1	70.0	66.8-73.0	71.5 ^D	68.9-73.9	71.6	69.3-73.7	68.7	66.2-71.0	0.000
45-64															
Once a month or more	9.7	8.6-10.9	10.4	9.0-11.9	9.8	8.5-11.3	11.3	9.5-13.4	10.8	9.3-12.5	11.2	9.8-12.7	13.1	11.6-14.9	0.001
Less than once a month	8.6	7.4-9.9	7.9	6.5-9.4	5.7	4.7-6.9	7.6	6.1-9.4	5.8	4.8-7.0	6.6	5.6-7.8	5.4	4.4-6.6	0.000
None/Unable	81.8	80.1-83.3	81.8	79.8-83.6	84.4	82.6-86.0	81.1	78.5-83.4	83.4	81.4-85.1	82.2	80.4-83.9	81.5 ^D	79.5-83.3	0.881
65+															
Once a month or more	4.2	3.2-5.4	4.0	3.2-5.0	3.3	2.5-4.4	4.2	3.0-5.9	5.1	3.8-7.0	4.7	3.6-6.0	3.8	2.9-5.0	0.517
Less than once a month	2.4	1.6-3.6	1.9	1.3-2.7	1.4	0.9-2.2	1.7	1.1-2.6	2.0	1.3-3.0	1.9	1.1-3.3	2.1	1.4-3.1	0.775
None/Unable	93.4	91.8-94.7	94.1	92.9-95.2	95.3	94.0-96.3	94.1	92.3-95.5	92.9	90.9-94.4	93.4	91.7-94.8	94.1	92.6-95.3	0.743

Confidence Intervals (CIs) are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

D When rounding to the nearest whole number, round down.

U When rounding to the nearest whole number, round up.

‡ p-value was calculated by constructing logistic regression model with the outcome of biking frequency (dichotomized to yes for for each category), including year as a dependent variable and testing that the regression coefficient be greater than 0

* Estimates should be interpreted with caution, potentially unreliable

^ Data are suppressed due to imprecise unreliable estimates

**Race/ethnicity: White, Black, Asian/Pacific Island, and Other race categories exclude Hispanic/Latino ethnicity. "Latino" ethnicity is defined as Hispanic or Latino of any race.

‡ Household poverty is measured as the total income of the household and is categorized into four groups, relative to the Federal Poverty Line (FPL), as follows: Very high poverty (<100% FPL), High poverty (100%-<200% FPL), Medium poverty (200%-<400% FPL) and Low poverty (>=400% FPL).

§ Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL, based on American Community Survey 5-year files), separated into four groups: low (<10% FPL), medium (10%-<20% FPL), high (20%-<30% FPL) and very high (>=30% FPL).

Table 1. Prevalence of self-reported cycling activity in New Yorkers 18 years and older, New York City, 2007-2014

Source: NYC Community Health Survey, 2007, 2009, 2011, 2013 and 2014.

CHS data are weighted to the adult residential population per the American Community Survey.

Data are age-adjusted to the U.S. 2000 Standard Population

Race/Ethnicity**	2007		2009		2010		2011		2012		2013		2014		p-value‡
	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	
White															
Once a month or more	13.4	11.8-15.3	14.6	12.8-16.7	15.1	13.2-17.2	17.2	14.6-20.1	17.0	14.6-19.6	17.7	15.7-19.8	18.7	16.4-21.2	0.000
Less than once a month	10.3	8.9-11.9	9.7	8.3-11.4	9.0	7.3-11.1	10.8	8.7-13.2	9.5 ^D	7.8-11.4	10.8	9.2-12.7	10.7	8.9-12.8	0.714
None/Unable	76.3	74.1-78.3	75.7	73.3-77.9	75.9	73.3-78.3	72.1	68.8-75.1	73.6	70.7-76.2	71.5 ^U	69.0-73.9	70.6	67.9-73.2	0.000
Black															
Once a month or more	9.7	8.3-11.5	10.0	8.0-12.3	7.0	5.6-8.8	13.1	10.5-16.4	12.4	10.2-15.1	12.9	10.9-15.2	12.8	10.8-15.0	0.000
Less than once a month	9.9	8.5-11.5	8.1	6.3-10.3	6.9	5.3-8.9	8.3	6.2-11.0	7.5 ^D	5.9-9.4	7.2	5.6-9.0	8.0	6.5-9.8	0.061
None/Unable	80.3	78.2-82.3	82.0	79.1-84.5	86.1	83.6-88.3	78.6	74.9-81.8	80.1	77.2-82.7	80.0	77.3-82.4	79.3	76.7-81.6	0.060
Latino															
Once a month or more	13.4	11.6-15.3	12.0	10.1-14.2	12.5 ^D	10.4-14.9	13.3	11.1-15.9	14.2	12.1-16.5	15.7	13.9-17.6	17.4	15.4-19.7	0.000
Less than once a month	10.5 ^U	8.9-12.4	6.1	4.8-7.8	5.6	4.4-7.2	9.1	7.2-11.4	7.4	5.9-9.1	5.9	4.9-7.1	6.7	5.5-8.0	0.003
None/Unable	76.1	73.8-78.3	81.9	79.4-84.1	81.9	79.3-84.3	77.6	74.5-80.4	78.5 ^D	75.9-80.8	78.4	76.4-80.4	75.9	73.6-78.1	0.102
Asian/Pacific Islander															
Once a month or more	8.4	6.1-11.5	10.2	7.5-13.7	9.7	6.8-13.6	10.2	7.1-14.5	8.1	5.5-11.6	9.3	7.3-11.7	11.2	8.9-14.0	0.400
Less than once a month	5.9	3.9-8.7	6.3	4.4-8.9	6.9	4.2-11.0	7.8	5.2-11.5	7.2	5.1-9.9	5.5 ^U	4.0-7.5	6.9	5.0-9.5	0.653
None/Unable	85.8	82.0-88.8	83.5 ^U	79.6-86.8	83.5 ^D	78.6-87.4	82.0	77.0-86.0	84.8	80.8-88.1	85.2	82.3-87.7	81.9	78.6-84.8	0.317
Other															
Once a month or more	12.4	7.7-19.4	9.9	5.5-17.2	15.7	9.4-25.1	19.1 [*]	10.5-32.1	15.3	8.4-26.2	15.9	9.5-25.5	18.4	11.7-27.7	0.243
Less than once a month	8.7	5.3-13.9	8.2 [*]	3.8-16.9	10.3 [*]	4.6-21.7	5.7 [^]	2.0-14.9	8.0 [*]	3.8-16.0	8.3 [*]	4.2-15.7	6.8	3.8-11.8	0.709
None/Unable	78.9	71.5-84.8	81.9	72.2-88.8	74.0	63.6-82.2	75.2 [*]	62.4-84.8	76.7	65.9-84.8	75.8	65.9-83.5	74.9	65.3-82.4	0.416
Borough															
The Bronx															
Once a month or more	12.3	10.1-14.8	9.3	7.3-11.7	10.1	8.1-12.5	13.0	9.9-16.8	10.0	7.6-12.9	11.5 ^U	9.6-13.8	11.7	9.6-14.1	0.788
Less than once a month	8.5 ^D	6.6-10.9	6.8	5.1-8.9	6.3	4.5-8.6	7.4	5.4-10.1	7.5 ^D	5.7-9.7	5.8	4.5-7.4	5.5 ^U	4.2-7.3	0.056
None/Unable	79.3	76.2-82.0	84.0	81.1-86.5	83.7	80.7-86.3	79.6	75.6-83.2	82.6	79.3-85.4	82.7	80.2-85.0	82.8	80.1-85.2	0.295
Brooklyn															
Once a month or more	12.3	10.9-13.9	12.8	11.0-14.9	11.7	10.0-13.7	16.2	13.7-19.1	15.7	13.5-18.1	15.2	13.3-17.2	15.9	14.0-18.0	0.000
Less than once a month	9.9	8.6-11.4	7.8	6.4-9.5	7.8	6.2-9.7	10.6	8.5-13.1	7.9	6.4-9.7	7.3	6.0-8.9	8.7	7.2-10.5	0.208
None/Unable	77.8	75.9-79.6	79.4	77.0-81.6	80.5 ^U	78.0-82.7	73.2	70.0-76.2	76.4	73.7-78.8	77.5 ^U	75.2-79.7	75.4	73.0-77.6	0.015
Manhattan															
Once a month or more	12.5 ^D	10.4-14.9	14.7	12.2-17.6	13.5 ^U	11.0-16.5	15.5 ^D	12.3-19.4	14.1	11.7-16.8	17.6	15.4-20.0	22.4	19.7-25.3	0.000
Less than once a month	10.7	8.7-13.1	8.1	6.2-10.4	8.1	6.2-10.6	10.9	8.0-14.5	9.5 ^D	7.5-12.0	9.4	7.7-11.5	11.1	9.1-13.4	0.378
None/Unable	76.9	74.0-79.6	77.3	73.9-80.3	78.4	75.0-81.5	73.7	69.2-77.7	76.4	73.2-79.4	73.0	70.2-75.7	66.6	63.5-69.5	0.000
Queens															
Once a month or more	11.7	10.0-13.6	12.3	10.3-14.5	12.6	10.3-15.2	13.9	11.6-16.4	13.5 ^D	11.3-16.0	14.4	12.4-16.7	14.7	12.5-17.2	0.008
Less than once a month	9.8	8.3-11.7	9.1	7.4-11.0	7.0	5.4-9.2	8.1	6.4-10.3	7.4	6.0-9.1	8.2	6.7-9.8	7.9	6.4-9.6	0.077
None/Unable	78.5 ^U	76.2-80.7	78.7	76.1-81.1	80.4	77.5-83.0	78.0	75.0-80.7	79.2	76.4-81.7	77.4	74.9-79.8	77.4	74.7-79.9	0.280
Staten Island															
Once a month or more	9.5 ^U	6.7-13.3	10.5 ^U	7.6-14.3	11.3	7.6-16.5	7.0	4.8-10.1	14.7	10.6-19.9	16.3	12.4-21.3	12.6	9.4-16.8	0.013
Less than once a month	14.5 ^U	11.1-18.8	7.6	5.3-10.9	7.6	5.1-11.0	8.0	4.6-13.7	10.2	6.8-14.9	8.6	6.1-11.9	7.4	5.0-10.7	0.021
None/Unable	76.0	71.3-80.1	81.9	77.4-85.6	81.1	75.6-85.7	85.0	79.2-89.4	75.2	69.4-80.2	75.1	70.0-79.6	80.0	75.3-84.0	0.746

Confidence Intervals (CIs) are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

^D When rounding to the nearest whole number, round down.^U When rounding to the nearest whole number, round up.[‡] p-value was calculated by constructing logistic regression model with the outcome of biking frequency (dichotomized to yes for for each category), including year as a dependent variable and testing that three regression coefficient be greater than 0^{*} Estimates should be interpreted with caution, potentially unreliable[^] Data are suppressed due to imprecise unreliable estimates^{**} Race/ethnicity: White, Black, Asian/Pacific Islander, and Other race categories exclude Hispanic/Latino ethnicity. "Latino" ethnicity is defined as Hispanic or Latino of any race.[§][‡] Household poverty is measured as the total income of the household and is categorized into four groups, relative to the Federal Poverty Line (FPL), as follows: Very high poverty (<100% FPL), High poverty (100%-<200% FPL), Medium poverty (200%-<400% FPL) and Low poverty (>=400% FPL).[§] Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL, based on American Community Survey 5-year files), separated into four groups: low (<10% FPL), medium (10%-<20% FPL), high (20%-<30% FPL) and very high (>=30% FPL).[¶] To promote health equity and reduce health disparities at the neighborhood level, the Health Department established Neighborhood Health Action Centers (formerly District Public Health Offices) in the South Bronx, East and Central Harlem, and North and Central Brooklyn, neighborhoods with high rates of chronic disease and premature death.

Table 3. Prevalence of self-reported cycling activity among New York City public high school students, 2009-2013

Source: NYC Youth Risk Behavior Survey, 2009, 2011, 2013

Data are weighted to the NYC public high school population

Biking Intensity	2009		2011		2013		p-value‡
	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	Prevalence	95% Confidence Intervals	
Overall							
Once a month or more	17.0	15.8-18.2	25.9	23.8-28.2	25.0	23.2-26.9	0.000
Less than once a month	27.5 ^U	26.0-29.1	23.8	22.5-25.1	23.2	21.4-25.0	0.000
None/Unable	55.5 ^U	53.6-57.4	50.3	48.3-52.2	51.8	50.0-53.7	0.009
Sex							
Male							
Once a month or more	24.4	22.6-26.3	38.0	35.3-40.8	35.9	33.4-38.5	0.000
Less than once a month	30.9	28.6-33.2	23.2	21.6-24.9	23.8	21.6-26.1	0.000
None/Unable	44.7	42.3-47.2	38.8	36.7-40.9	40.3	38.5-42.2	0.005
Female							
Once a month or more	10.9	9.7-12.3	15.0	13.4-16.8	14.3	12.7-16.1	0.002
Less than once a month	24.7	22.6-27.0	24.3	22.3-26.4	22.5 ^D	20.6-24.5	0.118
None/Unable	64.4	61.9-66.7	60.7	58.3-63.1	63.2	60.7-65.6	0.483
Age group (years)							
<=14							
Once a month or more	21.3	19.0-23.8	30.5 ^U	26.3-35.2	28.9	25.6-32.4	0.000
Less than once a month	30.2	28.2-32.3	24.4	21.9-27.2	25.8	22.9-28.8	0.040
None/Unable	48.5 ^D	45.5-51.4	45.0	41.5-48.6	45.4	42.2-48.6	0.220
15-17							
Once a month or more	15.4	14.2-16.7	24.5 ^D	22.9-26.1	23.7	21.5-26.0	0.000
Less than once a month	26.6	24.7-28.5	23.6	22.3-24.8	23.0	20.8-25.3	0.007
None/Unable	58.0	55.6-60.5	52.0	50.1-53.8	53.4	51.2-55.5	0.003
18+							
Once a month or more	15.5 ^D	12.0-19.7	21.6	15.4-29.3	25.5 ^D	19.8-32.2	0.000
Less than once a month	25.8	21.3-30.8	24.6	18.2-32.4	13.7	10.5-17.8	0.001
None/Unable	58.8	53.1-64.2	53.8	45.9-61.6	60.8	53.6-67.5	0.628
Race/Ethnicity**							
White							
Once a month or more	20.1	16.9-23.9	34.3	30.6-38.3	30.3	27.0-33.8	0.005
Less than once a month	31.1	28.2-34.0	23.1	20.2-26.2	29.1	24.7-33.8	0.537
None/Unable	48.8	44.5-53.1	42.6	39.1-46.1	40.7	37.1-44.4	0.014
Black							
Once a month or more	15.7	13.4-18.3	24.5 ^U	21.5-27.8	24.0	21.7-26.4	0.000
Less than once a month	24.9	22.0-28.0	22.2	20.3-24.1	20.3	17.3-23.8	0.023
None/Unable	59.4	56.8-62.0	53.3	50.4-56.2	55.7	52.2-59.2	0.097
Latino							
Once a month or more	17.6	15.6-19.7	26.1	23.7-28.6	26.3	23.9-28.9	0.000
Less than once a month	28.1	25.8-30.5	24.4	22.5-26.4	22.6	20.5-24.9	0.000
None/Unable	54.4	51.4-57.3	49.5 ^U	47.2-51.8	51.1	48.0-54.1	0.148
Asian							
Once a month or more	14.4	12.6-16.3	20.1	16.3-24.5	18.2	14.6-22.4	0.125
Less than once a month	28.4	24.9-32.2	26.8	23.1-30.9	25.4	21.2-30.2	0.269
None/Unable	57.2	52.5-61.8	53.1	49.1-57.1	56.4	53.6-59.1	0.745
Other							
Once a month or more	17.7	14.4-21.6	25.1	20.7-30.0	29.3	21.6-38.4	0.002
Less than once a month	26.3	21.4-31.9	28.0	23.6-32.9	19.9	15.9-24.6	0.119
None/Unable	55.9	50.1-61.6	46.9	42.5-51.3	50.8	42.6-59.0	0.250
Borough of residence							
The Bronx							
Once a month or more	13.5 ^U	11.3-16.1	23.6	20.5-27.0	20.7	18.1-23.6	0.000
Less than once a month	25.9	23.8-28.2	22.2	20.1-24.4	23.3	20.6-26.3	0.156
None/Unable	60.6	57.3-63.8	54.3	50.8-57.7	56.0	52.5-59.4	0.033
Brooklyn							
Once a month or more	17.2	14.9-19.8	26.2	22.3-30.5	25.2	22.4-28.3	0.000
Less than once a month	28.6	25.7-31.8	24.1	21.6-26.9	24.5 ^U	21.3-28.0	0.129
None/Unable	54.2	51.1-57.2	49.7	46.0-53.4	50.3	46.2-54.4	0.095
Manhattan							
Once a month or more	14.1	11.4-17.3	24.7	20.6-29.3	28.8	24.7-33.1	0.000
Less than once a month	28.1	23.3-33.5	25.5 ^U	23.1-28.2	20.1	16.5-24.1	0.020
None/Unable	57.8	52.2-63.2	49.8	45.0-54.7	51.2	46.8-55.5	0.064
Queens							
Once a month or more	19.3	16.9-21.9	27.7	23.1-32.8	26.3	23.0-29.8	0.001
Less than once a month	28.5 ^U	26.3-30.9	24.3	21.3-27.5	22.6	19.7-25.7	0.000
None/Unable	52.2	49.2-55.2	48.1	44.5-51.7	51.2	48.5-53.9	0.721
Staten Island							
Once a month or more	18.8	16.0-21.9	26.4	23.2-29.9	24.7	21.5-28.2	0.018
Less than once a month	22.9	20.3-25.7	22.8	20.4-25.4	23.9	21.2-26.8	0.658
None/Unable	58.4	54.8-61.9	50.8	47.0-54.5	51.4	47.6-55.1	0.011

Confidence Intervals (CIs) are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

D When rounding to the nearest whole number, round down.

U When rounding to the nearest whole number, round up.

‡p-value refers to the significance of the test for trend; p-values below the significance level (0.05) are indicated in bold

* Estimates should be interpreted with caution, potentially unreliable

**Race/ethnicity: White, Black, Asian, and Other race categories exclude Hispanic/Latino ethnicity. Latino ethnicity is defined as Hispanic or Latino of any race.☐

Table 4. Difference or gap in prevalence of cycling once a month or more in selected subgroups of New Yorkers. New York City, 2007-2014

Source: NYC Community Health Survey, 2007, 2009, 2011, 2013 and 2014. ; NYC Youth Risk Behavior Survey, 2009, 2011, 2013

CHS data are weighted to the adult residential population per the American Community Survey. YRBS data are weighted to the NYC public high school population

	2007		2009		2010		2011		2012		2013		2014		p-value†
	Diff*	95% Confidence Intervals	Diff*	95% Confidence Intervals	Diff*	95% Confidence Intervals	Diff*	95% Confidence Intervals	Diff*	95% Confidence Intervals	Diff*	95% Confidence Intervals	Diff*	95% Confidence Intervals	
Adults															
Sex															
Male - Female	11.2	9.3-13.0	12.1	10.0-14.3	11.5	^D 9.2-13.7	12.6	9.7-15.4	11.8	9.4-14.3	14.4	12.3-16.4	13.3	11.0-15.6	0.677
Race/Ethnicity**															
White - Black	3.7	1.3-6.0	4.7	1.8-7.6	8.1	5.5-10.7	4.0	0.0-8.0	4.6	1.1-8.1	4.8	1.8-7.7	5.9	2.7-9.1	0.409
White - Latino	0.1	-2.4-2.6	2.7	-0.1-5.5	2.6	-0.4-5.7	3.8	0.2-7.5	2.8	-0.5-6.1	2.0	-0.8-4.7	1.3	-1.9-4.5	0.759
Household Poverty‡															
Low - Very high	0.2	-2.7-3.1	2.5	^U -0.8-5.8	4.5	^D 0.7-8.3	5.2	1.4-8.9	3.2	-0.3-6.6	4.9	2.2-7.6	6.4	3.3-9.4	0.022
Neighborhood Poverty§															
Low - Very high	3.3	0.3-6.3	3.6	0.5-6.6	3.1	-0.2-6.3	5.7	1.4-10.1	4.0	0.6-7.5	2.9	-0.2-6.0	6.8	2.9-10.8	0.648
Youth															
Sex															
Male - Female			13.5	^D 11.4-15.6			23.0	20.3-25.8			21.6	18.8-24.3			<0.001
Race/Ethnicity**															
White - Black			4.4	-0.3-9.2			9.8	4.8-14.8			6.3	2.6-10.1			0.410
White - Hispanic			2.6	-1.9-7.1			8.3	3.8-12.7			4.0	0.4-7.6			0.263

Confidence Intervals (CIs) are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

^D When rounding to the nearest whole number, round down.

^U When rounding to the nearest whole number, round up.

* Diff = Difference or gap, calculated by subtracting two prevalences of cycling once a month or more

**Race/ethnicity: White, Black, Asian/Pacific Island, and Other race categories exclude Hispanic/Latino ethnicity. "Latino" ethnicity is defined as Hispanic or Latino of any race.¶

‡Household poverty is measured as the total income of the household and is categorized into four groups, relative to the Federal Poverty Line (FPL), as follows: Very high poverty (<100% FPL), High poverty (100%-<200% FPL), Medium poverty (200%-<400% FPL) and Low poverty (>=400% FPL).

§Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL, based on American Community Survey 5-year files), separated into four groups: low (<10% FPL), medium (10%-<20% FPL), high (20%-<30% FPL) and very high (>=30% FPL).

†p-value (calculated using logistic regression) tests whether the difference or gap changes over time

¶To promote health equity and reduce health disparities at the neighborhood level, the Health Department established Neighborhood Health Action Centers (formerly District Public Health Offices) in the South Bronx, East and Central Harlem, and North and Central Brooklyn, neighborhoods with high rates of chronic disease and premature death.