

Overweight and obesity rates among upstate New York adults, 2013-2014

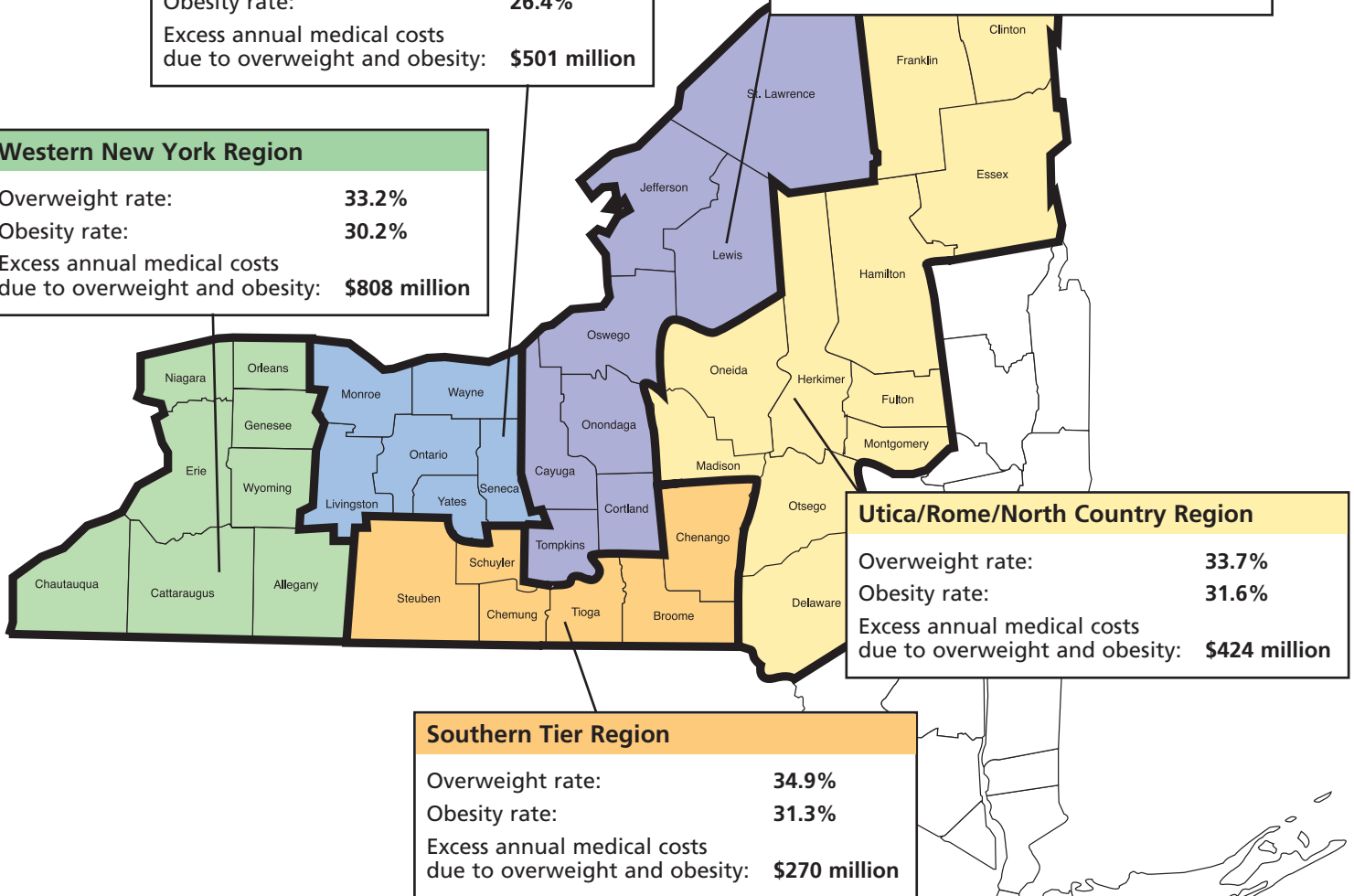
Upstate New York	
Overweight rate:	33.8%
Obesity rate:	29.5%
Excess annual medical costs due to overweight and obesity:	\$2.5 billion

New York State	
Overweight rate:	36.0%
Obesity rate:	24.9%
Excess annual medical costs due to overweight and obesity:	\$8.7 billion

Finger Lakes Region	
Overweight rate:	34.2%
Obesity rate:	26.4%
Excess annual medical costs due to overweight and obesity:	\$501 million

Central New York Region	
Overweight rate:	34.0%
Obesity rate:	29.4%
Excess annual medical costs due to overweight and obesity:	\$545 million

Western New York Region	
Overweight rate:	33.2%
Obesity rate:	30.2%
Excess annual medical costs due to overweight and obesity:	\$808 million



Note: Throughout this report, upstate New York refers to the New York counties highlighted in the map above.
 Sources: New York State Department of Health. Expanded Behavioral Risk Factor Surveillance System, 2013-2014.
<https://health.data.ny.gov/Health/Expanded-Behavioral-Risk-Factor-Surveillance-Survey/jy7-eb4n>

Costs are expressed in 2013 dollars. Cost estimates are calculated by applying published estimates of per-person direct medical costs of overweight and obesity to the number of overweight and obese people in each county reported in the eBRFSS dataset (see methodology section).

Overweight and obesity: A national pandemic

Almost two-thirds of American adults were either overweight or obese in 2013¹, a dramatic increase over the past three decades.² In 1980, no U.S. state's obesity rate was more than 15 percent. As of 2013, all U.S. states and the District of Columbia had obesity rates higher than 20 percent, and 41 states had obesity rates of at least 25 percent.³ If obesity rates continue to increase at the same pace, 50 percent of U.S. adults will be obese by 2030.⁴

Individuals who are overweight or obese are more likely to develop serious medical conditions that can affect their quality of life and also contribute to the rising cost of health care.⁵

On average, morbidly obese individuals die up to 10 years sooner, mostly because of an increased likelihood of developing chronic health conditions. In general, the greater an individual's weight becomes, the more likely that person is of dying from all causes, not just those related to chronic conditions.⁶

Causes of overweight and obesity

Many factors contribute to overweight and obesity, but generally excess weight appears when the number of calories consumed exceeds the number of calories used through exercise and normal daily activities. The human body then stores the excess calories as fat.⁷

Other causes include biological, genetic, behavioral, social, cultural and environmental factors, making obesity an extremely complex condition. The National Heart, Lung and Blood Institute identifies the most common causes of overweight and obesity as:⁸

- **Inactivity** – lack of exercise, reliance on cars rather than walking, spending more than two hours per day watching TV.
- **Environment** – desk jobs that limit or discourage physical activity; oversized food portions, especially from meals eaten outside of the home; increased sugar intake; limited access to healthy foods and lack of sidewalks, parks, trails, safe places for recreation and affordable gyms.
- **Genes and family history** – overweight and obesity tend to run in families.
- **Health conditions** – some medical conditions, such as hypothyroidism, Cushing's syndrome and polycystic ovarian syndrome, are linked to overweight and obesity.
- **Medications** – certain medications, including corticosteroids, antidepressants and seizure medicines, affect the rate at which calories are burned, leading to increased appetite, water retention and potential weight gain.
- **Pregnancy** – some women find it difficult to lose weight after the baby is born.
- **Lack of sleep** – results in a preference for high-calorie foods and carbohydrates and in hormonal changes that increase appetite.
- **Age** – muscle mass decreases with age, especially with inactivity. Muscle loss can hinder the rate at which the body burns calories and lead to weight gain.

About this report

The purpose of this fact sheet is to document the effect of the growing problem of obese and overweight adults in upstate New York and examine current scientific literature on the health and economic effects of obesity.

This report includes an analysis of current available data on overweight and obesity and describes the:

- Current prevalence among upstate New York adults by region, the state as a whole and the nation.
- Socio-demographic characteristics of upstate New York adults who are obese or overweight.
- Relationship of overweight and obesity to quality of life and chronic disease.
- Cost impact in upstate New York.

Key findings

Upstate New York's combined rate of overweight and obesity is close to two-thirds of the upstate New York adult population (63.3 percent) and is slightly higher than the New York state rate (60.9 percent).

- More than 2.3 million upstate New York adults reported being overweight or obese in 2013.
- Adult overweight and obesity rates vary across upstate New York regions, from 60.6 percent in the Finger Lakes to 66.2 percent in the Southern Tier.
- Adults who are obese report diminished quality of life across many measures.
- Adults who are obese have more serious chronic diseases, compared to those who are of normal weight.
- About 41 percent of men are overweight compared to 26.4 percent of women.
- Of those who are obese, 15.4 percent are morbidly obese and contribute to 27 percent of the total cost of obesity.
- Based on national estimates of the cost impact of being overweight or obese, approximately \$8.7 billion is spent annually in New York state in excess health care costs for adults who are overweight and obese, and \$2.5 billion of that amount is spent in upstate New York alone.

Defining overweight and obesity using body mass index

Calculating body mass index is a generally accepted method for classifying one's weight. It is irrespective of gender and incorporates both height and weight. Body mass index is determined by dividing weight in kilograms (kg) by height in meters squared or by using the following formula:

$$\text{BMI} = \frac{(\text{weight in pounds})}{(\text{height in inches}) \times (\text{height in inches})} \times 703$$

One limitation of using body mass index to determine an individual's weight status is that the measure does not take into account fat mass versus muscle mass, and therefore may misclassify some people. For example, body mass index may be overstated in athletes of muscular build or underestimated among people who are elderly or those who have lost muscle mass. Nonetheless, it remains the most commonly used method for weight classification.

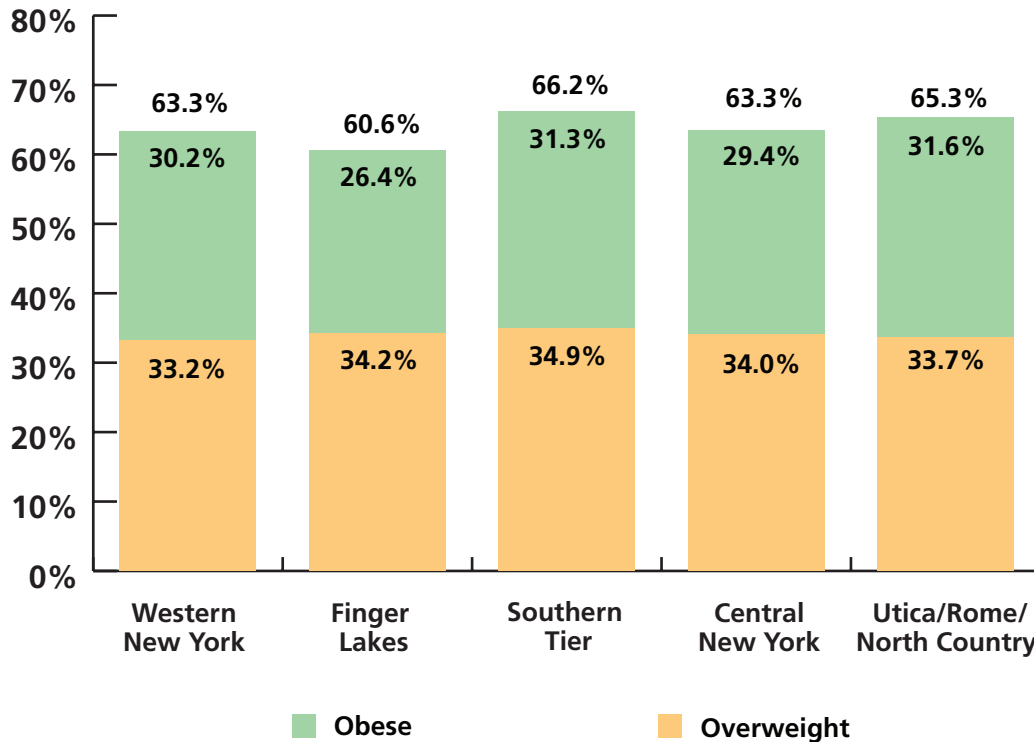
BMI Classification

BMI (kg/m ²)	Category
Below 18.5	Underweight
18.5-24.9	Normal weight
25-29.9	Overweight
30+	Obese
40+	Morbidly obese

Sources: Centers for Disease Control and Prevention. "Healthy Weight - it's not a diet, it's a lifestyle! About BMI for Adults." Last updated: July 11, 2014. http://www.cdc.gov/healthyweight/assessing/bmi/adult_BMI/index.html#Interpreted archived Dec. 24, 2014 <http://www.webcitation.org/6V4F06XJY>

Link to the National Heart, Lung, and Blood Institute's BMI calculator: <http://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm>

Adult overweight and obesity rates by upstate New York region, 2013-2014



Source: New York State Department of Health. Expanded Behavioral Risk Factor Surveillance System, 2013-2014.
To request access, go to <http://www.health.state.ny.us/nysdoh/brfss/>

Note: Sums may vary due to rounding.

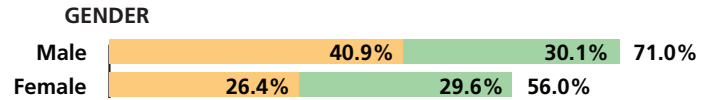
The percentage of adults who are obese and overweight varied slightly by region in 2013-2014:

- The rate of overweight/obesity among adults exceeded 60 percent in all regions and was highest in the Southern Tier (66.2 percent);
- In upstate New York, the Finger Lakes region had the lowest overweight/obesity prevalence (60.6 percent);
- The Utica/Rome/North Country region had the highest prevalence of obesity (31.6 percent), and the Finger Lakes region had the lowest obesity prevalence (26.4 percent);
- Overweight prevalence exceeded 33 percent in all regions, ranging from 33.2 percent in Western New York to 34.9 percent in the Southern Tier.

Adult overweight and obesity rates by socio-demographic factors, upstate New York, 2013

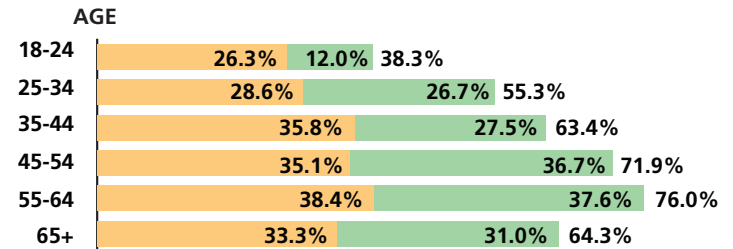
Gender

- About 41 percent of men are classified as overweight, compared to 26.4 percent of women.
- Almost three in four men in upstate New York are obese or overweight, compared to slightly more than half of women.



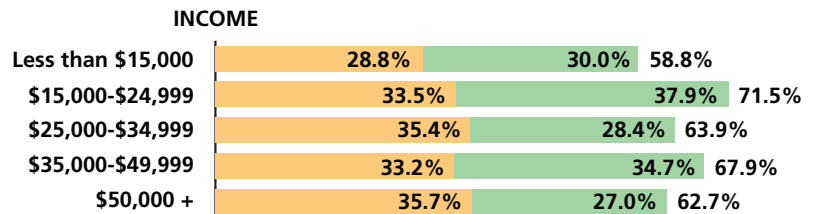
Age

- Among 18- to 24-year-olds, 38.3 percent are overweight or obese, compared to almost 76 percent of those ages 55 to 64.
- The highest rate of overweight and obesity in adults is in the 55 to 64 age group (76.0 percent). Among those age 65 and older, 64.3 percent are overweight or obese.
- In all but the 18 to 24 and 25 to 34 age groups, overweight prevalence exceeds 30 percent.



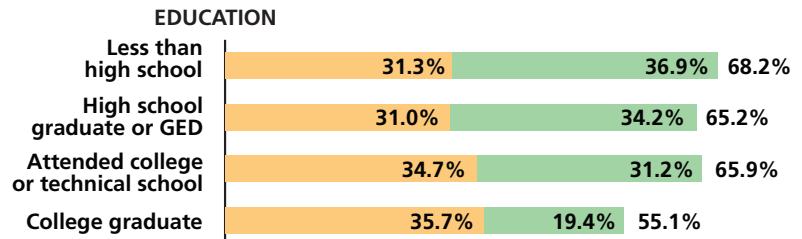
Income:

- Among those earning \$15,000-\$24,999 71.5 percent are overweight or obese.
- The overweight/obesity rate among those in the less than \$15,000 income bracket is 58.8 percent.



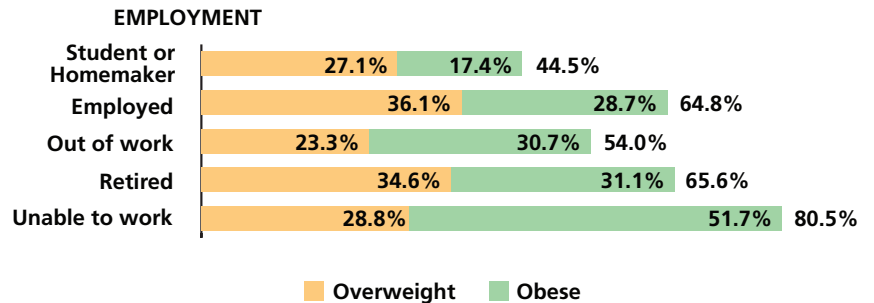
Education:

- The overweight/obesity rate among those who did not graduate from high school is 68.2 percent.
- Among college graduates, the rate of being overweight or obese is 55.1 percent



Employment:

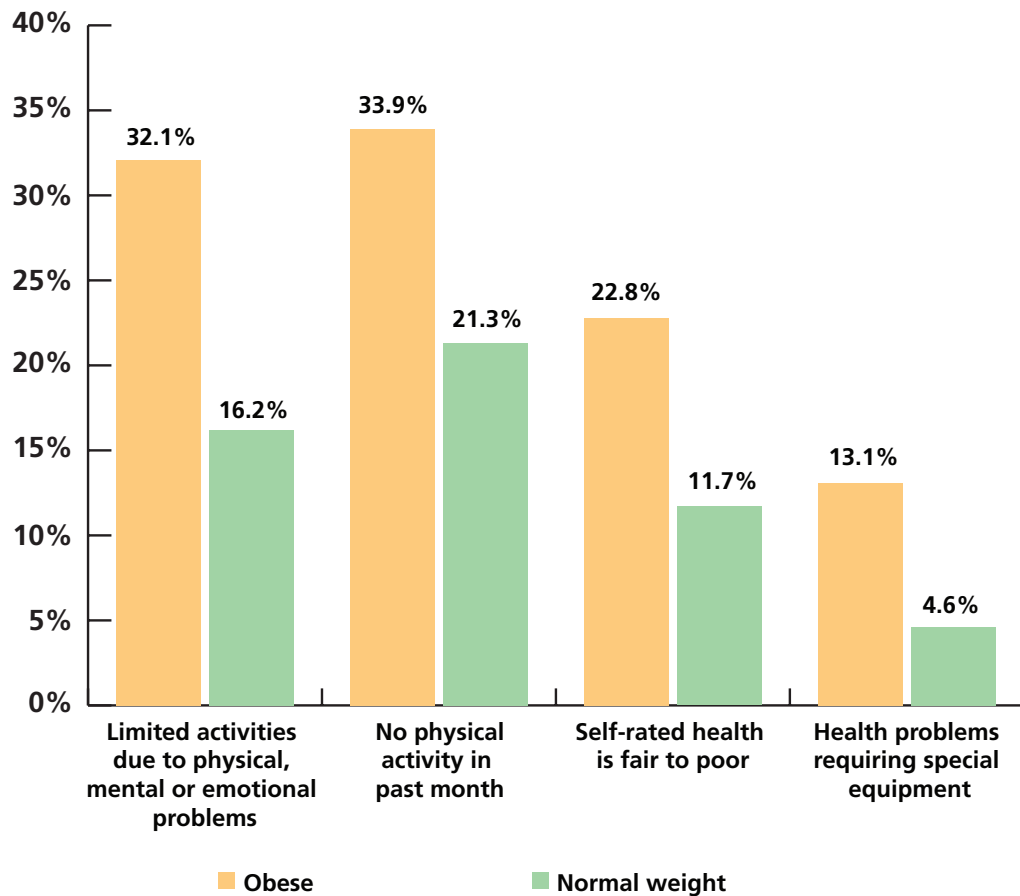
- Among students or homemakers, the rate of being overweight or obese is 44.5 percent.
- More of those who are unable to work are overweight or obese than in any other employment category. (80.5 percent).



Source: New York State Department of Health. Behavioral Risk Factor Surveillance System, 2013. To request access: <http://www.health.state.ny.us/nysdoh/brfss/>

Note: Sums may vary due to rounding.

Obesity affects quality of life of upstate New York adults, 2013



Source: The New York State Department of Health. Behavioral Risk Factor Surveillance System, 2013.
To request access, go to <http://www.health.state.ny.us/nysdoh/brfss/>

Upstate New York adults who are obese report diminished quality of life, compared to adults who are of normal weight:

- They are almost twice as likely (32.1 percent compared to 16.2 percent) as those with normal weight status to be limited in their activities due to physical, mental or emotional problems.
- Slightly more than one-third report no physical activity in the past month.
- They are almost twice as likely to report fair or poor health than those who are of normal weight.
- More than 13 percent require special equipment due to health problems, compared to 4.6 percent of those who are of normal weight.

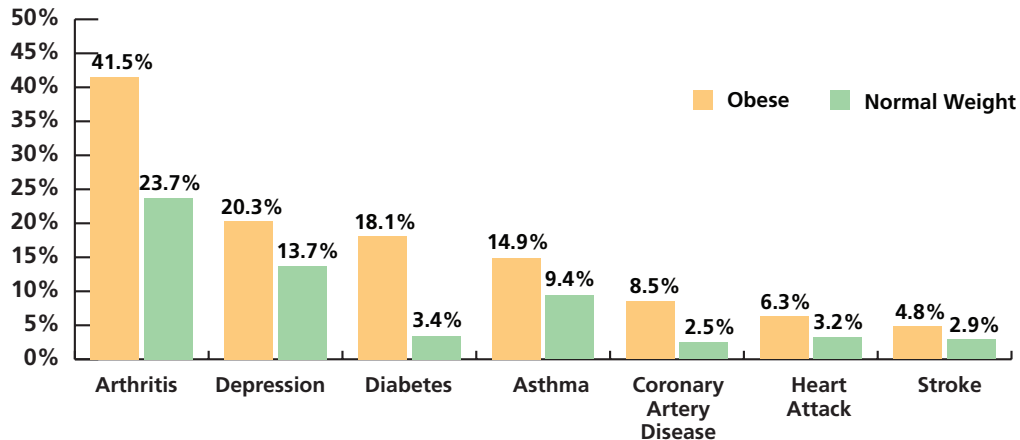
Chronic disease is a critical issue for obese adults in upstate New York

Being obese has a profound effect on health and well-being. Researchers conducting a comprehensive analysis of studies associating obesity with chronic diseases reported that “Statistically significant associations with obesity were found with the incidence of type II diabetes, all cancers except esophageal and prostate cancer, all cardiovascular diseases, asthma, gallbladder disease, osteoarthritis and chronic back pain.”⁹

Obesity affects the health of adults in the following ways:¹⁰

- Arthritis – osteoarthritis of the knee and hip are positively associated with obesity. Obese patients account for one-third of all joint replacement operations.
- Depression – new evidence shows that obesity increases the risk of depression, and depression also increases the risk of obesity.
- Diabetes – men with a body mass index of 30 or higher have a sevenfold higher risk of developing type 2 diabetes, and women with a body mass index of 30 or higher have a 12-fold higher risk.
- Asthma – obesity increases the risk of developing asthma in both men and women by 50 percent.
- Heart attack – women with a body mass index of 30 or higher have a 62 percent greater risk of dying early from coronary artery disease and also have a 53 percent higher risk of dying early from any type of cardiovascular disease, compared with women who had BMIs in the normal range (18.5 to 24.9). Men with BMIs of 30 or higher have similarly elevated risks.
- Stroke – obesity increases the risk of ischemic stroke by 64 percent.

Relationship of obesity to chronic health conditions, upstate New York adults, 2013



Source: New York State Department of Health. "Behavioral Risk Factor Surveillance System, 2013." To request access: <http://www.health.state.ny.us/nysdoh/brfss/>

A higher percentage of adults who are obese have chronic health conditions, compared to adults of normal weight:

- More than 40 percent of obese adults have a form of arthritis.
- More than one in five obese adults is depressed.
- Obese upstate New York adults are more than five times as likely to have diabetes than those of normal weight.
- Obese adults are more likely to have coronary artery disease (8.5 percent), heart attacks (6.3 percent) or strokes (4.8 percent).

Ranking obesity prevalence of upstate New York adults among U.S. states (2013)

If upstate New York were a state, its adult obesity rate (29.8 percent) would rank No. 22 among all U.S. states, Puerto Rico and the District of Columbia. New York state's adult obesity rate (25.4 percent) was tenth-lowest when compared to the other U.S. states, Puerto Rico and the District of Columbia.

Adult obesity rates among all U.S. states, Puerto Rico and the District of Columbia, ranked from highest to lowest, 2013

State	Adult Obesity Rate (percent of adult population)	Rank*
Mississippi	35.1	1
West Virginia	35.1	2
Arkansas	34.6	3
Tennessee	33.7	4
Kentucky	33.2	5
Louisiana	33.1	6
Oklahoma	32.5	7
Alabama	32.4	8
Indiana	31.8	9
South Carolina	31.7	10
Michigan	31.5	11
Iowa	31.3	12
Delaware	31.1	13
North Dakota	31	14
Texas	30.9	15
Missouri	30.4	16
Ohio	30.4	17
Georgia	30.3	18
Kansas	30	19
Pennsylvania	30	20
South Dakota	29.9	21
Upstate New York	29.8	22
Wisconsin	29.8	23
Idaho	29.6	24
Nebraska	29.6	25
Illinois	29.4	26
North Carolina	29.4	27

State	Adult Obesity Rate (percent of adult population)	Rank*
Maine	28.9	28
Alaska	28.4	29
Maryland	28.3	30
Puerto Rico	27.9	31
Wyoming	27.8	32
Rhode Island	27.3	33
Virginia	27.2	34
Washington	27.2	35
Arizona	26.8	36
New Hampshire	26.7	37
Oregon	26.5	38
Florida	26.4	39
New Mexico	26.4	40
New Jersey	26.3	41
Nevada	26.2	42
Minnesota	25.5	43
New York	25.4	44
Connecticut	25	45
Vermont	24.7	46
Montana	24.6	47
California	24.1	48
Utah	24.1	49
Massachusetts	23.6	50
District of Columbia	22.9	51
Hawaii	21.8	52
Colorado	21.3	53

*equal prevalence ranked alphabetically

Source: Centers for Disease Control and Prevention. Office of Surveillance, Epidemiology, and Laboratory Services. Behavioral Risk Factor Surveillance System, 2013. "Prevalence and Trends Data. Overweight and Obesity (BMI) - 2013. Weight classification by Body Mass Index (BMI)."
<http://www.cdc.gov/brfss/brfssprevalence/index.html>

Overweight- and obesity-related health care costs

In New York state, approximately \$8.7 billion is spent annually in excess health care costs for adults who are overweight and obese, and \$2.5 billion is spent in upstate New York.

The growing number of individuals who are overweight or obese leads to increasingly higher health care costs. According to a systematic review of national research, estimates of medical spending in the United States on individuals who are overweight or obese ranged from \$113.9 billion to \$170.2 billion in 2008.¹¹ If the U.S. adult obesity rate continues to increase at its current pace, the adult obesity rate will be at least 44 percent in each state and 50.9 percent in New York state by 2030.¹² The resulting national medical costs to treat obesity-related diseases are predicted to increase by \$48 billion to \$66 billion each year.¹³

Annual health care costs are estimated to be \$310 more for an overweight individual and \$2,005 more for an obese individual than for a normal weight individual (in 2013 dollars).¹⁴

Morbid obesity is defined as a body mass index greater than or equal to 40.¹⁵ In upstate New York, 15.4 percent of obese individuals were morbidly obese in 2013. The average incremental cost for morbid obesity in 2013 was \$3,505.¹⁶ The cost of morbid obesity contributes to 27 percent of the total cost of obesity (data not shown).

Region	Percent Overweight	Estimated number Overweight	Percent Obese	Estimated Number Obese	Cost of Overweight (millions of dollars)	Cost of Obesity (millions of dollars)	Cost of Overweight and Obesity (millions of dollars)
Central New York	34.0	267,000	29.4	231,000	\$83	\$462	\$545
Finger Lakes	34.2	270,000	26.4	208,000	\$84	\$417	\$501
Southern Tier	34.9	128,000	31.3	115,000	\$40	\$231	\$270
Utica/Rome/NC	33.7	194,000	31.6	182,000	\$60	\$364	\$424
Western New York	33.2	378,000	30.2	344,000	\$117	\$691	\$808
Upstate New York	33.8	1,237,000	29.5	1,080,000	\$384	\$2,165	\$2,548
New York state	36.0	5,104,000	24.9	3,527,000	\$1,580	\$7,072	\$8,652

Sources: New York State Department of Health. "Expanded Behavioral Risk Factor Surveillance System, 2013." <https://health.data.ny.gov/Health/Expanded-Behavioral-Risk-Factor-Surveillance-Surve/jsy7-eb4n>

Tsai, Adam; Williamson, David; and Glick, Henry. "Direct Medical Cost of Overweight and Obesity in the United States: A Quantitative Systematic Review." *Obesity Reviews*. Vol. 12, No. 1. Page 5. January 2011. Web. 11 July 2014. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2891924/> doi: 10.1111/j.1467-789X.2009.00708.x

Methodology

Overweight and obesity rates:

New York State Department of Health's Expanded Behavioral Risk Factor Surveillance System

The overweight and obesity rates in this report were obtained from the 2013-2014 New York State Department of Health's Expanded Behavioral Risk Factor Surveillance System. Data are collected biennially to supplement the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance Survey, which is conducted annually in New York state. Data were collected from April 15, 2013, to May 10, 2014 for the purpose of providing county-level data on 50 health indicators. The expanded survey is a state-based, random telephone and cellular telephone survey of the non-institutionalized civilian adult population ages 18 and older.

The questionnaire asks respondents:

1. About how much do you weigh without shoes?
2. About how tall are you without shoes?

Weight and height responses are used to determine body mass index, calculated as weight in kilograms divided by the square of height in meters. Respondents are classified as overweight if their body mass index is equal to or greater than 25.0, but less than 30.0. They are classified as obese if their body mass index is 30.0 or greater.

Chronic health conditions and quality of life indicators:

Cost of Obesity: Medical literature

Costs are expressed in 2013 dollars. Excess costs attributed to being overweight or obese are calculated by applying estimates of per-person direct medical costs of overweight and obesity to the population and survey-based prevalence rates of each region.

A systematic review of studies regarding the costs of overweight and obesity shows that the estimated 2008 per-person direct medical costs of overweight is \$266, and the incremental costs of obesity is \$1,723.¹⁷ Using the medical care line of the Consumer Price Index, costs were adjusted to 2013 dollars (\$310 for overweight and \$2,005 for obesity).¹⁸ Additionally, five studies reviewed included costs of morbid obesity. The average incremental cost of morbid obesity was \$3,012 in 2008 dollars or \$3,505 in 2013 dollars.

To determine how many extra health care dollars are spent annually in upstate New York to care for obese and overweight adults, the incremental costs were multiplied by the estimated number of adults who are obese or overweight in each upstate New York region.

To determine the percent of extra health care dollars spent annually in upstate New York attributable to morbid obesity, the incremental cost of morbidly obese individuals was multiplied by the estimated number of adults who are morbidly obese, then divided by the total cost of obesity in upstate New York. The prevalence of morbid obesity was found using the 2013 BRFSS dataset.

Endnotes

- ¹ Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. Prevalence and Trends Data. "Nationwide (States and DC) - 2013 Overweight and Obesity (BMI)." <http://www.cdc.gov/brfss/brfssprevalence/>
Archived at <http://www.webcitation.org/6biRjIDZ1>
- ² Levi, J., et al. "F as in Fat: How Obesity Threatens America's Future 2013." August 2013. Page 4. <http://healthyamericans.org/assets/files/TFAH2013FasInFatReportFinal%209.9.pdf>
Archived at <http://www.webcitation.org/6V4lpgPlk>
- ³ Ibid., p. 8.
- ⁴ Ibid., p. 23.
- ⁵ Centers for Disease Control and Prevention. "Overweight and Obesity. Causes and Consequences. "What causes overweight and obesity?" April 27, 2012. Web. 7 July 2014. <http://www.cdc.gov/obesity/adult/causes/index.html> Archived at <http://www.webcitation.org/6Vg5CYd73>
- ⁶ Prospective Studies Collaboration. "Body-mass index and cause-specific mortality in 900,000 adults: Collaborative analyses of 57 prospective studies." The Lancet, Vol. 373, Issue 9669. Page 1094. March 18, 2009. [http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(09\)60318-4.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(09)60318-4.pdf)
DOI:10.1016/S0140-6736(09)60318-4
- ⁷ Mayo Clinic. "Diseases and Conditions: Obesity Causes". May 13, 2014. <http://www.mayoclinic.org/diseases-conditions/obesity/basics/causes/con-20014834>
Archived at: <http://www.webcitation.org/6VVpkF7O2>
- ⁸ National Heart, Lung, and Blood Institute. "What Causes Overweight and Obesity?" National Institutes of Health. July 13, 2012. <http://www.nhlbi.nih.gov/health/health-topics/topics/obe/causes.html>
Archived at <http://www.webcitation.org/6VVq5qBXy>
- ⁹ Guh, D., et. al. "The incidence of co-morbidities related to obesity and overweight: A systematic review and meta-analysis." BMC Public Health. March 25, 2009. Page 1. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2667420/pdf/1471-2458-9-88.pdf>
DOI: 10.1186/1471-2458-9-88
- ¹⁰ Harvard School of Public Health. "Obesity Prevention Source. Health Risks: Weight Problems Take a Hefty Toll on Body and Mind." <http://www.hsph.harvard.edu/obesity-prevention-source/obesity-consequences/health-effects/#obesity-and-diabetes>
Archived at: <http://www.webcitation.org/6VZxiVz0l>
- ¹¹ Tsai, A.; Williamson, D.; and Glick, H. "Direct Medical Cost of Overweight and Obesity in the United States: A Quantitative Systematic Review." Obesity Reviews. Vol. 12, No. 1. January 2011. Page 5. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2891924/pdf/nihms166036.pdf>
doi: 10.1111/j.1467-789X.2009.00708.x
- ¹² Levi, J. et. al. Trust for America's Health and the Robert Wood Johnson Foundation. "F as in Fat: How Obesity Threatens America's Future 2012." August 2012. Page 25-26 <http://healthyamericans.org/report/100/> Archived at <http://www.webcitation.org/6VMXyK0fw>
- ¹³ Wang Y.C., et. al. "Health and economic burden of the projected obesity trends in the USA and the UK." The Lancet. Vol. 378, No. 9793. August 27, 2011. Page 821. <http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736%2811%2960814-3.pdf>
DOI: 10.1016/S0140-6736(11)60814-3
- ¹⁴ Tsai, p. 5.
- ¹⁵ Ibid.
- ¹⁶ Ibid.
- ¹⁷ Ibid.
- ¹⁸ United States Department of Labor, Bureau of Labor Statistics. "Consumer Price Index Detailed Report." Table 26. Historical Consumer Price Index for All Urban Consumers (CPI-U): U.S. city average, by commodity and service group and detailed expenditure categories. May 2014. Page 83. Web. 2 Sept. 2014. <http://www.bls.gov/cpi/cpid112.pdf>