

Prevalence of Overweight, Obesity, and Severe Obesity Among Children and Adolescents Aged 2–19 Years: United States, 1963–1965 Through 2015–2016

by Cheryl D. Fryar, M.S.P.H., Margaret D. Carroll, M.S.P.H., and Cynthia L. Ogden, Ph.D., Division of Health and Nutrition Examination Surveys

Results from the 2015–2016 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights, indicate that an estimated 18.5% of U.S. children and adolescents aged 2–19 years have obesity, including 5.6% with severe obesity, and another 16.6% are overweight.

Body mass index (BMI), expressed as weight in kilograms divided by height in meters squared (kg/m^2), is commonly used to classify obesity among adults and is also recommended for use with children and adolescents. Cutoff criteria are based on the sex-specific BMI-for-age 2000 CDC Growth Charts for the United States (available from: https://www.cdc.gov/growthcharts/cdc_charts.htm). Based on current recommendations from expert committees, children and adolescents with BMI values at or above the 95th percentile of the growth charts are categorized as having obesity. This differs from previous years in which children and adolescents above this cutoff were categorized as overweight. This change in terminology reflects the category labels used by organizations such as the National Academy of Medicine and the American Academy of Pediatrics. For more information, see “Changes in Terminology for Childhood Overweight and Obesity,” available from: <https://www.cdc.gov/nchs/data/nhsr/nhsr025.pdf>. Severe obesity is BMI at or above 120% of the 95th percentile.

[Table 1](#) shows the prevalence of overweight, obesity, and severe obesity among youth aged 2–19 years from 1971–1974 through 2015–2016. The estimates for all children are shown by age in the [Figure](#).

Estimates of the prevalence of childhood obesity during the 1960s are available for certain age groups. [Table 2](#) shows the prevalence of obesity among youth aged 2–5, 6–11, and 12–19 years since 1963–1965, by sex and age. The [Figure](#) shows trends in obesity by age.

[Table 3](#) shows the prevalence of obesity by race and Hispanic origin among youth aged 2–19 years since 1988–1994.

Although BMI is widely used as a measure of body fat, at a given BMI level, body fat may vary by sex, age, and race and Hispanic origin. For example, some research suggests that Asian persons may have more body fat than white persons, especially at lower BMIs, and that health risks may begin at a lower BMI among Asian persons compared with others.

NHANES, conducted by the National Center for Health Statistics, is a stratified, multistage probability sample of the civilian noninstitutionalized population of the United States. A household interview and a physical examination are conducted for each survey participant. During the physical examination, conducted in a mobile examination center, height and weight are measured as part of a more comprehensive set of body measurements. These measurements are taken by trained health technicians, using standardized measuring procedures and equipment. Observations for persons missing a valid height or weight measurement and for pregnant females are not included in the data analysis.

For additional information on NHANES methods, visit:

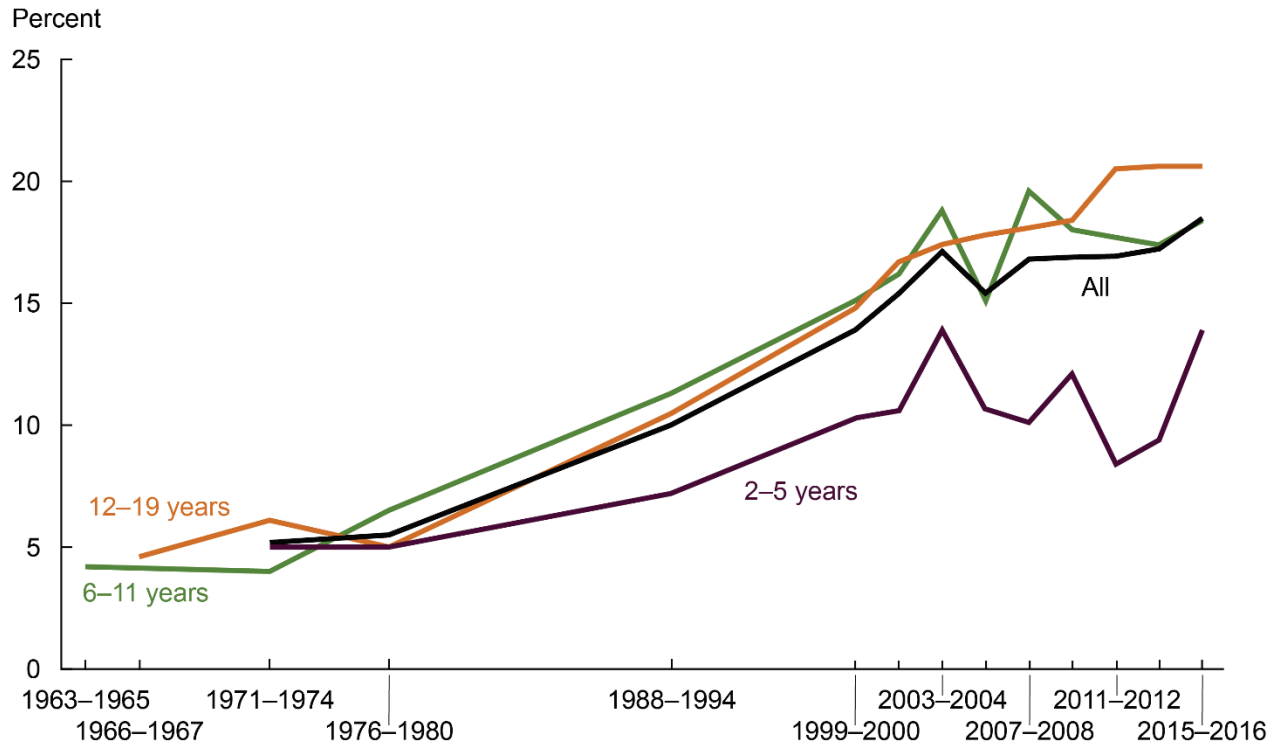
<https://www.cdc.gov/nchs/nhanes/analyticguidelines.aspx>.

For more detailed estimates, see:

- Ogden CL, Flegal KM, Carroll MD, Johnson CL. Prevalence and trends in overweight among US children and adolescents, 1999–2000. *JAMA* 288(14):1728–32. 2002.
- Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999–2004. *JAMA* 295(13):1549–55. 2006.
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- Ogden CL, Carroll MD, Curtin LR, Lamb MM, Flegal KM. Prevalence of high body mass index in US children and adolescents, 2007–2008. *JAMA* 303(3):242–9. 2010.
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- Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of childhood and adult obesity in the United States, 2011–2012. *JAMA* 311(8):806–14. 2014.
- Ogden CL, Carroll MD, Lawman HG, Fryar CD, Kruszon-Moran D, Kit BK, Flegal KM. Trends in obesity prevalence among children and adolescents in the United States, 1988–1994 through 2013–2014. *JAMA* 315(21):2292–9. 2016.
- Hales CM, Fryar CD, Carroll MD, Freedman DS, Ogden CL. Trends in obesity and severe obesity prevalence in US youth and adults by sex and age, 2007–2008 to 2015–2016. *JAMA* 319(16):1723–5. 2018.

This *Health E-Stat* supersedes the earlier version, “Prevalence of Overweight and Obesity Among Children and Adolescents Aged 2–19 Years: United States, 1963–1965 Through 2013–2014,” available from: https://www.cdc.gov/nchs/data/hestat/obesity_child_13_14/obesity_child_13_14.htm.

Figure. Trends in obesity among children and adolescents aged 2–19 years, by age: United States, 1963–1965 through 2015–2016



NOTE: Obesity is body mass index (BMI) at or above the 95th percentile from the sex-specific BMI-for-age 2000 CDC Growth Charts.
 SOURCES: NCHS, National Health Examination Surveys II (ages 6–11) and III (ages 12–17); National Health and Nutrition Examination Surveys (NHANES) I–III; and NHANES 1999–2000, 2001–2002, 2003–2004, 2005–2006, 2007–2008, 2009–2010, 2011–2012, 2013–2014, and 2015–2016.

Table 1. Prevalence of overweight, obesity, and severe obesity among children and adolescents aged 2–19 years, by sex: United States, 1971–1974 through 2015–2016

Survey period	Sample (n)	All ¹			Boys			Girls ¹		
		Overweight	Obesity	Severe obesity	Overweight	Obesity	Severe obesity	Overweight	Obesity	Severe obesity
Percent (standard error)										
1971–1974	7,041	10.2 (0.6)	5.2 (0.3)	1.0 (0.1)	10.3 (0.8)	5.3 (0.5)	1.0 (0.2)	10.1 (0.8)	5.1 (0.4)	1.0 (0.2)
1976–1980	7,351	9.2 (0.4)	5.5 (0.4)	1.3 (0.2)	9.4 (0.6)	5.4 (0.4)	1.2 (0.3)	9.0 (0.5)	5.6 (0.6)	1.3 (0.3)
1988–1994	10,777	13.0 (0.7)	10.0 (0.5)	2.6 (0.4)	12.6 (0.9)	10.2 (0.7)	2.7 (0.5)	13.4 (0.9)	9.8 (0.8)	2.6 (0.4)
1999–2000	4,039	14.2 (0.9)	13.9 (0.9)	3.6 (0.5)	15.0 (1.9)	14.0 (1.2)	3.7 (0.7)	13.4 (0.8)	13.8 (1.1)	3.6 (0.6)
2001–2002	4,261	14.6 (0.6)	15.4 (0.9)	5.2 (0.5)	14.2 (0.7)	16.4 (1.0)	6.1 (0.8)	15.0 (0.9)	14.3 (1.3)	4.2 (0.6)
2003–2004	3,961	16.5 (0.8)	17.1 (1.3)	5.1 (0.6)	16.6 (1.0)	18.2 (1.5)	5.4 (0.8)	16.3 (0.9)	16.0 (1.4)	4.7 (0.7)
2005–2006	4,207	14.6 (0.9)	15.4 (1.4)	4.7 (0.6)	14.7 (1.2)	15.9 (1.5)	4.9 (0.8)	14.6 (1.0)	14.9 (1.6)	4.5 (0.7)
2007–2008	3,249	14.8 (0.7)	16.8 (1.3)	4.9 (0.6)	14.3 (0.7)	17.7 (1.4)	5.5 (0.8)	15.4 (1.5)	15.9 (1.5)	4.3 (0.8)
2009–2010	3,408	14.9 (0.8)	16.9 (0.7)	5.6 (0.6)	14.4 (1.0)	18.6 (1.1)	6.4 (1.0)	15.4 (0.9)	15.0 (0.8)	4.7 (0.6)
2011–2012	3,355	14.9 (0.9)	16.9 (1.0)	5.6 (0.7)	15.4 (1.3)	16.7 (1.4)	5.7 (0.9)	14.5 (1.4)	17.2 (1.2)	5.5 (0.8)
2013–2014	3,523	16.2 (0.6)	17.2 (1.1)	6.0 (0.6)	16.4 (0.8)	17.2 (1.3)	5.6 (0.6)	16.0 (1.0)	17.1 (1.6)	6.3 (0.9)
2015–2016	3,340	16.6 (0.8)	18.5 (1.3)	5.6 (0.8)	15.7 (1.0)	19.1 (1.7)	6.3 (1.0)	17.6 (1.2)	17.8 (1.2)	4.9 (0.9)

¹Excludes pregnant females.

NOTES: Overweight is body mass index (BMI) at or above the 85th percentile and below the 95th percentile from the sex-specific BMI-for-age 2000 CDC Growth Charts. Obesity is BMI at or above the 95th percentile. Severe obesity is BMI at or above 120% of the 95th percentile.

SOURCE: NCHS, National Health and Nutrition Examination Survey.

Table 2. Prevalence of obesity among children and adolescents aged 2–19 years, by sex and age: United States, 1963–1965 through 2015–2016

Survey period	All ¹			Boys			Girls ¹		
	2–5 years	6–11 years	12–19 years	2–5 years	6–11 years	12–19 years	2–5 years	6–11 years	12–19 years
	Percent (standard error)								
1963–1965	---	4.2 (0.4)	---	---	4.0 (0.4)	---	---	4.5 (0.6)	---
1966–1970 ²	---	---	4.6 (0.3)	---	---	4.5 (0.4)	---	---	4.7 (0.3)
1971–1974	5.0 (0.6)	4.0 (0.5)	6.1 (0.6)	5.0 (0.8)	4.3 (0.8)	6.1 (0.8)	4.9 (0.8)	3.6 (0.6)	6.2 (0.8)
1976–1980	5.0 (0.6)	6.5 (0.6)	5.0 (0.5)	4.7 (0.6)	6.6 (0.8)	4.8 (0.5)	5.3 (1.0)	6.4 (1.0)	5.3 (0.8)
1988–1994	7.2 (0.7)	11.3 (1.0)	10.5 (0.9)	6.2 (0.8)	11.6 (1.3)	11.3 (1.3)	8.2 (1.0)	11.0 (1.4)	9.7 (1.1)
1999–2000	10.3 (1.7)	15.1 (1.4)	14.8 (0.9)	9.5 (2.3)	15.8 (1.8)	14.8 (1.3)	11.2 (2.5)	14.3 (2.1)	14.8 (1.0)
2001–2002	10.6 (1.8)	16.2 (1.6)	16.7 (1.1)	10.7 (2.4)	17.5 (1.9)	17.6 (1.3)	10.5 (1.8)	14.8 (2.3)	15.7 (1.9)
2003–2004	13.9 (1.6)	18.8 (1.3)	17.4 (1.7)	15.1 (1.7)	19.9 (2.0)	18.2 (1.9)	12.7 (2.5)	17.6 (1.3)	16.4 (2.3)
2005–2006	10.7 (1.1)	15.1 (2.1)	17.8 (1.8)	10.4 (1.7)	16.2 (2.5)	18.2 (2.4)	11.0 (1.2)	14.1 (2.4)	17.3 (2.1)
2007–2008	10.1 (1.2)	19.6 (1.2)	18.1 (1.7)	9.3 (1.5)	21.2 (1.6)	19.3 (2.2)	10.9 (2.1)	18.0 (2.1)	16.8 (2.0)
2009–2010	12.1 (1.2)	18.0 (0.8)	18.4 (1.3)	14.4 (1.8)	20.1 (1.0)	19.6 (2.3)	9.6 (1.7)	15.7 (1.0)	17.1 (1.3)
2011–2012	8.4 (1.3)	17.7 (1.6)	20.5 (1.7)	9.5 (1.9)	16.4 (1.8)	20.3 (2.4)	*7.2 (2.1)	19.1 (1.7)	20.7 (2.0)
2013–2014	9.4 (1.3)	17.4 (1.7)	20.6 (2.1)	8.8 (2.0)	18.8 (2.4)	19.8 (2.2)	10.0 (1.3)	15.9 (1.9)	21.4 (3.2)
2015–2016	13.9 (1.1)	18.4 (1.7)	20.6 (2.0)	14.3 (1.2)	20.4 (2.1)	20.2 (2.6)	13.5 (1.7)	16.3 (1.8)	20.9 (2.0)

--- Data not available. National Health and Nutrition Examination Surveys 1963–1965 and 1966–1970 did not include children aged 2–5 years.

* Estimate has a confidence interval width between 5 and 30 and a relative confidence interval width greater than 130% and does not meet standards of reliability or precision; see "National Center for Health Statistics Data Presentation Standards for Proportions," available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf.

¹Excludes pregnant females starting with 1971–1974. Pregnancy status not available for 1963–1965 and 1966–1970.

²Data are for adolescents aged 12–17 years, not 12–19 years.

NOTE: Obesity is body mass index (BMI) at or above the 95th percentile from the sex-specific BMI-for-age 2000 CDC Growth Charts.

SOURCE: NCHS, National Health and Nutrition Examination Survey.

Table 3. Prevalence of obesity among children and adolescents aged 2–19 years, by sex and race and Hispanic origin: United States, 1988–1994 through 2015–2016

Survey period	Boys					Girls ¹				
	Non-Hispanic				Mexican American	Non-Hispanic				Mexican American
	White	Black	Asian	Hispanic		White	Black	Asian	Hispanic	
Percent (standard error)										
1988–1994	9.7 (1.1)	10.6 (0.8)	--- ---	--- ---	14.8 (1.4)	8.6 (1.1)	14.5 (1.1)	--- ---	--- ---	13.8 (1.9)
1999–2000	10.9 (1.5)	16.4 (1.2)	--- ---	--- ---	23.5 (1.5)	11.1 (1.8)	21.4 (1.4)	--- ---	--- ---	16.8 (1.9)
2001–2002	15.0 (1.5)	15.5 (1.3)	--- ---	--- ---	22.0 (1.3)	12.7 (1.9)	19.5 (1.3)	--- ---	--- ---	17.0 (1.9)
2003–2004	17.8 (2.2)	16.4 (1.5)	--- ---	--- ---	22.0 (1.6)	14.9 (1.9)	23.8 (1.4)	--- ---	--- ---	16.1 (2.3)
2005–2006	13.4 (1.9)	18.3 (1.3)	--- ---	--- ---	24.3 (2.7)	12.2 (2.2)	24.4 (2.2)	--- ---	--- ---	20.6 (1.6)
2007–2008	15.6 (1.9)	17.3 (2.2)	--- ---	24.5 (1.7)	24.9 (2.3)	14.9 (2.5)	22.8 (2.4)	--- ---	17.3 (1.7)	16.6 (2.5)
2009–2010	16.1 (1.8)	24.3 (2.8)	--- ---	23.4 (1.4)	24.0 (1.7)	11.7 (1.1)	24.3 (2.6)	--- ---	18.9 (1.8)	18.2 (2.5)
2011–2012	12.6 (2.4)	19.9 (1.1)	11.5 (2.1)	24.1 (1.4)	24.2 (1.5)	15.6 (2.1)	20.5 (3.1)	*5.6 (2.4)	20.6 (1.5)	21.1 (1.7)
2013–2014	15.9 (2.0)	16.8 (1.9)	12.1 (3.0)	20.6 (2.0)	19.5 (2.1)	14.6 (2.8)	20.9 (1.6)	*5.0 (1.0)	22.1 (2.1)	24.2 (2.8)
2015–2016	14.6 (1.6)	19.0 (2.7)	11.7 (2.2)	28.0 (2.8)	29.2 (2.1)	13.5 (1.4)	25.1 (4.2)	10.1 (2.2)	23.6 (1.8)	24.3 (2.3)

--- Data not available.

* Estimate has a confidence interval width between 5 and 30 and a relative confidence interval width greater than 130% and does not meet standards of reliability or precision; see "National Center for Health Statistics Data Presentation Standards for Proportions," available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf.

¹Excludes pregnant females.

NOTE: Obesity is body mass index (BMI) at or above the 95th percentile from the sex-specific BMI-for-age 2000 CDC Growth Charts.

SOURCE: NCHS, National Health and Nutrition Examination Survey.