

Prevalence of Underweight Among Children and Adolescents Aged 2–19 Years: United States, 1963–1965 Through 2007–2010

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Underlying health conditions in children and adolescents can result in underweight. In addition, underweight can reflect malnutrition. Results from the 2007–2010 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights, indicate that an estimated 3.5% of children and adolescents aged 2–19 years are underweight ([Table 1](#)). Trends from 1971–1974 to 2007–2010 show an overall significant decrease in underweight among children and adolescents, from 5.1% to 3.5%. Underweight significantly decreased from 5.8% to 3.4% among those aged 2–5 years, and from 5.3% to 3.6% among those aged 6–11 years, during this period. Among adolescents aged 12–19, no significant change was observed during the same time period. No significant changes were seen between 2003–2006 and 2007–2010 for any of the age groups, and no significant gender differences occurred in the prevalence of underweight for any of the survey time periods.

[Table 2](#) shows the estimates of underweight prevalence for girls and boys aged 2–19 years. [The National Health Examination Survey (NHES) Cycle II, 1963–1965, and Cycle III, 1966–1970, did not include children aged 2–5 years.] Trends in the prevalence of underweight among boys and girls decreased significantly between 1971–1974 and 2007–2010, from 5.0% to 3.6% and 5.3% to 3.5%, respectively ([Figure](#)).

Body mass index (BMI), expressed as weight in kilograms divided by height in meters squared (kg/m^2), is commonly used to classify weight status among children. Cutoff criteria are based on the Centers for Disease Control and Prevention’s sex-specific 2000 BMI-for-age growth charts for the United States. Based on current recommendations of expert committees, children with BMI values below the 5th percentile of the sex-specific BMI-for-age growth charts are categorized as underweight.

NHANES uses a stratified, multistage probability sample of the U.S. civilian noninstitutionalized population. A household interview and a physical examination are conducted for each survey participant. During the physical examination, conducted in mobile examination centers, 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 pregnant females are not included in the data analysis.

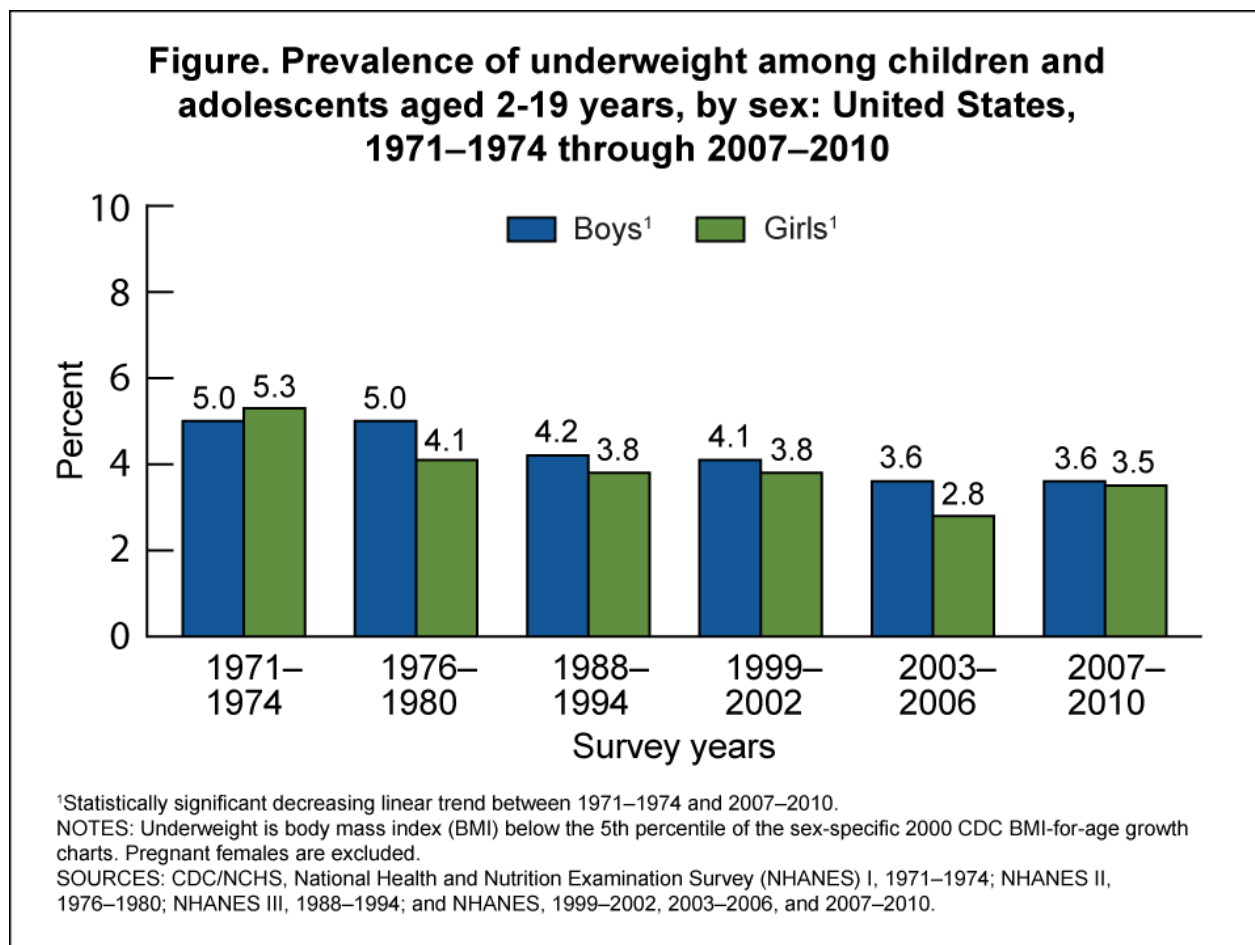
This *Health E-Stat* from NHANES supersedes the earlier version below.

■ “Prevalence of Underweight Among Children and Adolescents: United States, 2007-2008.”
Available from:

http://www.cdc.gov/nchs/data/hestat/underweight_child_07_08/underweight_child_07_08.htm.



Figure



Tables

Table 1. Prevalence of underweight among children and adolescents aged 2–19 years: United States, selected years 1963–1965 through 2007–2010

| Age (years) | NHES ¹ | NHANES I 1971-1974 | NHANES II 1976-1980 | NHANES III 1988-1994 | NHANES 1999-2002 | NHANES 2003-2006 | NHANES 2007-2010 |
|--------------------|------------------------|-----------------------|------------------------|-------------------------|---------------------|---------------------|---------------------|
| | 1963-1965 1966-1970 | | | | | | |
| Total ² | --- | 5.1 | 4.5 | 4.0 | 3.7 | 3.3 | 3.5 |
| 2-5 ² | --- | 5.8 | 5.3 | 4.3 | 3.8 | 2.8 | 3.4 |
| 6-11 ² | 5.8 | 5.3 | 4.2 | 3.9 | 3.8 | 2.7 | 3.6 |
| 12-19 | 4.6 | 4.7 | 4.4 | 3.9 | 3.7 | 3.8 | 6.5 |

--- Data not available. Children aged 2-5 years were not included in the surveys undertaken in the 1960s.

¹Data for 1963-1965 are for children aged 6-11 years; data for 1966-1970 are for adolescents aged 12-17 years (not 12-19 years).

² Statistically significant decreasing linear trend since 1971–1974.

NOTES: Underweight is body mass index (BMI) below the 5th percentile of the 2000 CDC BMI-for-age growth charts. Pregnant females were excluded from the data analysis beginning with 1971–1974; pregnancy status was not available for 1963–1965 and 1966–1970. NHES is National Health Examination Survey; NHANES is National Health and Nutrition Examination Survey.

SOURCES: CDC/NCHS, NHES and NHANES.

Table 2. Prevalence of underweight among children and adolescents aged 2–19 years, by sex: United States, selected years 1971–1974 through 2007–2010

| Sex | NHANES I 1971-1974 | NHANES II 1976-1980 | NHANES III 1988-1994 | NHANES 1999-2002 | NHANES 2003-2006 | NHANES 2007-2010 |
|--------------------|-----------------------|------------------------|-------------------------|---------------------|---------------------|---------------------|
| Total ¹ | 5.1 | 4.5 | 4.0 | 3.7 | 3.3 | 3.5 |
| Boys ¹ | 5.0 | 5.0 | 4.2 | 4.1 | 3.6 | 3.6 |
| Girls ¹ | 5.3 | 4.1 | 3.8 | 3.8 | 2.8 | 3.5 |

¹Statistically significant decreasing linear trend.

NOTES: Underweight is body mass index (BMI) below the 5th percentile of the sex-specific 2000 CDC BMI-for-age growth charts. Pregnant females were excluded from the data analysis. NHANES is National Health and Nutrition Examination Survey.

SOURCE: CDC/NCHS, NHANES.