

Prevalence of Underweight Among Adults Aged 20 and Over: United States, 1960-1962 Through 2007-2010

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Poor nutrition or underlying health conditions in adults can result in underweight. Results from the 2007–2010 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights, indicate that an estimated 1.7% of U.S. adults aged 20 and over are underweight ([Table 1](#)). Body mass index (BMI)—expressed as weight in kilograms divided by height in meters squared (kg/m^2)—is commonly used to classify underweight (defined as BMI less than 18.5) among adults aged 20 and over.

Within the age group 20 and over, a statistically significant decrease in the prevalence of underweight between 1988–1994 and 2007–2010 was found only among persons aged 60 and over. The prevalence in this age group was 2.3% in 1988–1994 and 1.2% in 2007–2010 ([Table 1](#)). Because surveys before 1988 did not include persons over age 74, [Table 2](#) shows age-adjusted prevalence estimates for adults aged 20–74 for all survey periods dating to 1960. The prevalence of adults aged 20–74 who were underweight has decreased significantly over the past decades, from an estimated 4.0% in the early 1960s to 1.7% in 2007–2010; the decrease in underweight prevalence was significant for all age groups among those aged 20–74.

For age groups 20 and over and 20–74, no significant changes were observed in the prevalence of underweight between 2003–2006 and 2007–2010.

Significant gender differences were seen in underweight prevalence among U.S. adults. Women were more likely to be underweight than men at all survey time periods ([Figure 1](#), ages 20 and over; [Figure 2](#), ages 20–74). Nonetheless, between 1960–1962 and 2007–2010, significant decreasing trends in the prevalence of underweight were observed among both men (2.2% to 1.0%) and women (5.7% to 2.5%) aged 20–74 ([Figure 2](#), [Table 2](#)).

NHANES uses a stratified, multistage probability sample of the civilian U.S. 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 measures are taken by trained health technicians, using standardized measuring procedures and equipment. Observations for pregnant women and for persons missing a valid height or weight measurement are not included in the data analysis.

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

- “Prevalence of Underweight Among Adults Aged 20 Years and Over: United States, 2007–2008.” Available from:
http://www.cdc.gov/nchs/data/hestat/underweight_adult_07_08/underweight_adult_07_08.htm.



Figures

Figure 1. Prevalence of underweight among adults aged 20 and over, by sex: United States, 1988–1994 through 2007–2010

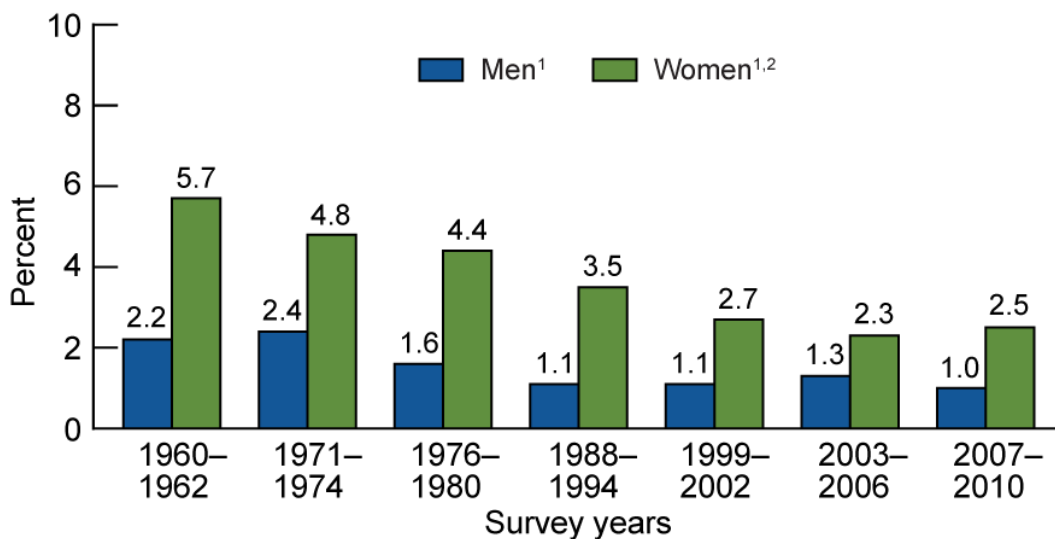


¹Statistically different from men.

NOTES: Underweight is body mass index less than 18.5 kg/m². Pregnant women are excluded. Data are age adjusted by the direct method to year 2000 U.S. census population estimates using age groups 20–39, 40–59, and 60 and over.

SOURCES: CDC/NCHS, National Health and Nutrition Examination Survey (NHANES) III, 1988–1994; and NHANES, 1999–2002, 2003–2006, and 2007–2010.

Figure 2. Prevalence of underweight among adults aged 20–74, by sex: United States, 1960–1962 through 2007–2010



¹Statistically significant decreasing linear trend between 1960–1962 and 2007–2010.

²Statistically different from men.

NOTES: Underweight is body mass index less than 18.5. Pregnant women are excluded. Data are age adjusted by the direct method to year 2000 U.S. census population estimates using age groups 20–39, 40–59, and 60–74.

SOURCES: CDC/NCHS, National Health Examination Survey I, 1960–1962, and National Health and Nutrition Examination Survey (NHANES) I, 1971–1974; NHANES II, 1976–1980; NHANES III, 1988–1994; and NHANES, 1999–2002, 2003–2006, and 2007–2010.

Tables

Table 1. Prevalence of underweight among adults aged 20 and over, by age and sex: United States, selected years 1988–1994 through 2007–2010

| Characteristic | NHANES III 1988-1994 | NHANES 1999-2002 | NHANES 2003-2006 | NHANES 2007-2010 |
|--------------------------|-------------------------|---------------------|---------------------|---------------------|
| Sample (n) | 16,235 | 8,530 | 8,787 | 11,476 |
| Total ¹ | 2.4 | 1.9 | 1.8 | 1.7 |
| Age (years) | | | | |
| 20-39 | 3.0 | 2.8 | 2.6 | 1.9 |
| 40-59 | 1.7 | 1.1 | 1.2 | 1.8 |
| 60 and over ² | 2.3 | 1.6 | 1.2 | 1.2 |
| Sex ¹ | | | | |
| Male | 1.2 | 1.1 | 1.3 | 1.0 |
| Female ^{2, 3} | 3.5 | 2.7 | 2.2 | 2.4 |

¹ Age adjusted by direct method to year 2000 U.S. census population using age groups 20–39, 40–59, and 60 and over.

² Statistically different between 1988–1994 and 2007–2010.

³ Statistically different from males.

NOTES: Underweight is body mass index less than 18.5 kg/m². Pregnant women were excluded from the data analysis. NHANES is National Health and Nutrition Examination Survey.

SOURCES: CDC/NCHS, NHANES.

Table 2. Prevalence of underweight among adults aged 20–74, by age and sex: United States, selected years 1960–1962 through 2007–2010

| Characteristic | NHES I 1960-1962 | NHANES I 1971-1974 | NHANES II 1976-1980 | NHANES III 1988-1994 | NHANES 1999-2002 | NHANES 2003-2006 | NHANES 2007-2010 |
|------------------------|---------------------|-----------------------|------------------------|-------------------------|---------------------|---------------------|---------------------|
| Sample (n) | 6,126 | 12,911 | 11,765 | 14,319 | 7,519 | 7,591 | 10,155 |
| Total ¹ | 4.0 | 3.6 | 3.0 | 2.3 | 1.9 | 1.8 | 1.7 |
| Age (years) | | | | | | | |
| 20-39 ² | 5.7 | 4.9 | 4.2 | 3.0 | 2.8 | 2.6 | 1.9 |
| 40-59 ² | 2.3 | 2.2 | 1.9 | 1.7 | 1.1 | 1.2 | 1.8 |
| 60-74 ² | 3.7 | 3.8 | 2.7 | 1.9 | 1.3 | 0.9 | 1.1 |
| Sex ¹ | | | | | | | |
| Male ² | 2.2 | 2.4 | 1.6 | 1.1 | 1.1 | 1.3 | 1.0 |
| Female ^{2, 3} | 5.7 | 4.8 | 4.4 | 3.5 | 2.7 | 2.3 | 2.5 |

¹ Age adjusted by direct method to year 2000 U.S. census population using age groups 20–39, 40–59, and 60–74.

² Statistically significant decreasing linear trend between 1960–1962 and 2007–2010.

³ Statistically different from males.

NOTES: Underweight is defined as body mass index (BMI) less than 18.5 kg/m². Pregnant women were excluded from analysis. NHES I and NHANES I and II did not include individuals over age 74 years, thus trend estimates are based on ages 20-74.

SOURCES: CDC/NCHS, NHES and NHANES.