

Health E-Stat 119: Prevalence of Underweight Among Children, Adolescents, and Adults: United States, 1960–1962 Through August 2021–August 2023

by Nicholas Ansai, M.P.H., Cheryl D. Fryar, M.S.P.H., and Joseph Afful, M.S.

Poor nutrition and underlying health conditions can result in underweight among youth and adults. This report presents historical trends in the prevalence of underweight by age and sex using measured height and weight from the National Health and Nutrition Examination Survey (NHANES) for both youth and adults.

[Table 1](#) shows the prevalence of underweight among children and adolescents ages 2–19 years from 1963–1965 through August 2021–August 2023. [Table 2](#) shows the age-adjusted prevalence of underweight among adults age 20 and older from 1988–1994 through August 2021–August 2023. Before 1988, NHANES did not include people older than 74. Therefore, [Table 3](#) shows the age-adjusted prevalence of underweight among adults ages 20–74 from 1960–1962 through August 2021–August 2023.

Results from August 2021–August 2023 indicate that 4.4% of children and adolescents ages 2–19 years and 1.6% (age adjusted) of adults age 20 and older were underweight.

Data source and methods

NHANES, conducted by the National Center for Health Statistics, is a stratified, multistage probability sample of the U.S. civilian noninstitutionalized population. NHANES data collection was suspended in March 2020 due to the COVID-19 pandemic. Data collection resumed in August 2021 using a new sample design (1). The unweighted examination response rate for all participants was 25.6% in August 2021–August 2023. For information on historical response rates, visit [NHANES Response Rates and Population Totals](#).

A household interview and a health examination are conducted for each survey participant. During the health examination, which is conducted in a mobile examination center, height and weight are measured as part of a comprehensive set of body measurements. These measurements are taken by trained health technicians using standardized procedures and equipment. Data for pregnant women and for persons missing a valid height or weight measurement were excluded.



Body mass index (BMI), expressed as weight in kilograms divided by height in meters squared (kg/m^2), is used to classify weight. For youth, cutoff criteria are based on the sex-specific BMI-for-age [2000 CDC Growth Charts](#) for the United States. Based on recommendations from expert committees, children and adolescents with BMI values below the 5th percentile are categorized as underweight (2). For adults, underweight is categorized as BMI less than $18.5 \text{ kg}/\text{m}^2$ (3).

NHANES examination sample weights, which account for differential probabilities of selection, nonresponse, and noncoverage, were incorporated into the estimation process. Analyses were performed using the statistical packages SAS version 9.4 (SAS Institute, Cary, N.C.) and SAS-callable SUDAAN version 11.0 (RTI International, Research Triangle Park, N.C.).

For additional information about methods used, visit [NHANES Survey Methods and Analytic Guidelines](#).

This *Health E-Stat* supersedes earlier versions:

- [Prevalence of Underweight Among Children and Adolescents Aged 2–19 Years: United States, 1963–1965 Through 2017–2018](#)
- [Prevalence of Underweight Among Adults Aged 20 and Over: United States, 1960–1962 Through 2017–2018](#)

References

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Table 1. Prevalence of underweight among children and adolescents ages 2–19 years, by sex and age: United States, 1963–1965 through August 2021–August 2023

Survey period	Sample size (n)	Total	Boys	Girls	Percent (standard error)		
					2–5	6–11	12–19
1963–1965	7,047	---	---	---	---	5.8 (0.6)	---
1966–1970*	6,768	---	---	---	---	---	4.6 (0.3)
1971–1974	7,041	5.1 (0.3)	5.0 (0.3)	5.3 (0.5)	5.8 (0.5)	5.3 (0.5)	4.7 (0.5)
1976–1980	7,351	4.5 (0.3)	5.0 (0.4)	4.1 (0.3)	5.3 (0.4)	4.2 (0.4)	4.4 (0.4)
1988–1994	10,777	4.0 (0.3)	4.2 (0.5)	3.8 (0.5)	4.3 (0.4)	3.9 (0.6)	3.9 (0.6)
1999–2000	4,039	4.2 (0.4)	4.9 (0.9)	3.5 (0.7)	5.1 (1.3)	4.3 (0.9)	3.7 (0.6)
2001–2002	4,261	3.4 (0.3)	3.7 (0.5)	3.1 (0.4)	2.8 (0.8)	3.4 (0.3)	3.7 (0.6)
2003–2004	3,961	3.2 (0.3)	3.6 (0.4)	2.9 (0.5)	3.7 (1.0)	3.0 (0.7)	3.2 (0.7)
2005–2006	4,207	3.2 (0.4)	3.7 (0.7)	2.7 (0.4)	1.9 (0.4)	2.3 (0.7)	4.5 (0.7)
2007–2008	3,249	3.7 (0.4)	3.8 (0.8)	3.6 (0.4)	3.8 (0.9)	3.0 (0.7)	4.2 (0.6)
2009–2010	3,408	3.3 (0.4)	3.3 (0.5)	3.4 (0.5)	3.1 (0.5)	4.2 (0.7)	2.8 (0.6)
2011–2012	3,355	3.5 (0.5)	4.2 (1.1)	2.8 (0.5)	3.2 (0.7)	3.6 (0.8)	3.6 (0.7)
2013–2014	3,523	3.8 (0.4)	3.6 (0.6)	4.0 (0.5)	3.4 (0.8)	4.8 (1.1)	3.2 (0.8)
2015–2016	3,340	3.0 (0.6)	3.6 (1.0)	2.5 (0.6)	2.3 (0.9)	2.5 (0.6)	3.7 (1.0)
2017–2018	2,824	4.1 (0.5)	5.0 (0.7)	3.1 (0.6)	3.4 (0.9)	3.6 (0.7)	4.7 (0.8)
August 2021							
–August 2023	2,492	4.4 (0.5)	5.1 (0.7)	3.8 (0.6)	3.5 (0.8)	3.7 (1.0)	5.3 (1.0)

--- Data not available. The 1963–1965 National Health Examination Survey (NHES) did not include boys and girls ages 2–5 and 12–19. NHES 1966–1970 did not include boys and girls ages 2–5 and 6–11.

* Data are for adolescents ages 12–17, not 12–19.

NOTES: Underweight is body mass index (BMI) less than the 5th percentile from the sex-specific BMI-for-age 2000 CDC Growth Charts. Pregnant females are excluded from analysis beginning with the 1971–1974 survey period. Pregnancy status was not available for the 1963–1965 and 1966–1970 survey periods.

SOURCES: National Center for Health Statistics, National Health Examination Survey, 1963–1965 and 1966–1970; and National Health and Nutrition Examination Survey, 1971–1974, 1976–1980, 1988–1994, and 1999–August 2023.

Table 2. Age-adjusted prevalence of underweight among adults age 20 and older, by sex and age: United States, 1988–1994 through August 2021–August 2023

Survey period	Sample size (n)	Total*	Men*	Women*	20–39	40–59	60 and older
Percent (standard error)							
1988–1994.	16,235	2.3 (0.2)	1.1 (0.2)	3.5 (0.3)	3.0 (0.4)	1.7 (0.3)	2.3 (0.2)
1999–2000.	4,117	2.0 (0.2)	1.1 (0.2)	2.7 (0.5)	2.9 (0.4)	1.3 (0.2)	1.4 (0.4)
2001–2002.	4,413	1.9 (0.2)	1.0 (0.3)	2.7 (0.3)	2.9 (0.5)	0.9 (0.2)	1.6 (0.3)
2003–2004.	4,431	1.7 (0.2)	1.4 (0.3)	2.0 (0.4)	2.8 (0.3)	1.0 (0.4)	0.8 (0.2)
2005–2006.	4,356	1.9 (0.3)	1.2 (0.4)	2.5 (0.4)	2.4 (0.6)	1.4 (0.4)	1.6 (0.3)
2007–2008.	5,550	1.6 (0.3)	1.0 (0.3)	2.2 (0.4)	1.9 (0.5)	1.5 (0.5)	1.1 (0.2)
2009–2010.	5,926	1.8 (0.3)	1.0 (0.2)	2.6 (0.5)	2.0 (0.3)	2.1 (0.5)	1.3 (0.2)
2011–2012.	5,181	1.7 (0.2)	0.7 (0.1)	2.6 (0.4)	2.5 (0.3)	0.9 (0.2)	1.6 (0.4)
2013–2014.	5,455	1.4 (0.2)	1.3 (0.3)	1.6 (0.2)	1.9 (0.4)	0.8 (0.3)	1.6 (0.4)
2015–2016.	5,337	1.5 (0.2)	1.2 (0.2)	1.8 (0.4)	2.5 (0.4)	0.8 (0.3)	0.9 (0.3)
2017–2018.	5,120	1.6 (0.2)	1.3 (0.3)	2.0 (0.4)	2.4 (0.5)	1.6 (0.4)	0.5 (0.2)
August 2021 –August 2023	5,929	1.6 (0.2)	1.1 (0.3)	2.1 (0.2)	2.5 (0.6)	1.0 (0.2)	1.2 (0.1)

* Age adjusted by the direct method to U.S. Census 2000 estimates using the age groups 20–39, 40–59, and 60 and older. Crude estimates (not age adjusted) for August 2021–August 2023 are 1.6% for total, 1.1% for men, and 2.0% for women.

NOTES: Underweight is body mass index less than 18.5 kg/m². Pregnant women are excluded from the analysis.

SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey, 1988–1994 and 1999–August 2023.

Table 3. Age-adjusted prevalence of underweight among adults ages 20–74, by sex and age: United States, 1960–1962 through August 2021–August 2023

Survey period	Sample size (n)	Total*	Men*	Women*	Percent (standard error)		
					20–39	40–59	60 and older
1960–1962	6,126	4.0 (0.2)	2.2 (0.2)	5.7 (0.4)	5.7 (0.4)	2.3 (0.3)	3.7 (0.6)
1971–1974	12,911	3.6 (0.2)	2.4 (0.3)	4.8 (0.3)	4.9 (0.3)	2.2 (0.3)	3.8 (0.4)
1976–1980	11,765	3.0 (0.1)	1.6 (0.2)	4.4 (0.3)	4.2 (0.3)	1.9 (0.3)	2.7 (0.4)
1988–1994	14,319	2.3 (0.2)	1.1 (0.2)	3.5 (0.3)	3.0 (0.4)	1.7 (0.3)	1.9 (0.3)
1999–2000	3,603	2.0 (0.2)	1.2 (0.2)	2.7 (0.5)	2.9 (0.4)	1.3 (0.2)	1.1 (0.2)
2001–2002	3,916	1.8 (0.2)	1.0 (0.3)	2.6 (0.4)	2.9 (0.5)	0.9 (0.2)	1.4 (0.4)
2003–2004	3,756	1.7 (0.2)	1.4 (0.3)	2.1 (0.4)	2.8 (0.3)	1.0 (0.4)	0.7 (0.3)
2005–2006	3,835	1.8 (0.3)	1.3 (0.4)	2.4 (0.5)	2.4 (0.6)	1.4 (0.4)	1.1 (0.5)
2007–2008	4,876	1.6 (0.3)	0.9 (0.3)	2.3 (0.4)	1.9 (0.5)	1.5 (0.5)	0.9 (0.2)
2009–2010	5,279	1.9 (0.3)	1.0 (0.3)	2.7 (0.5)	2.0 (0.3)	2.1 (0.5)	1.2 (0.3)
2011–2012	4,674	1.7 (0.2)	0.7 (0.1)	2.6 (0.4)	2.5 (0.3)	0.9 (0.2)	1.2 (0.5)
2013–2014	4,940	1.4 (0.2)	1.4 (0.3)	1.5 (0.3)	1.9 (0.4)	0.8 (0.3)	1.7 (0.5)
2015–2016	4,778	1.5 (0.2)	1.2 (0.3)	1.9 (0.4)	2.5 (0.4)	0.8 (0.3)	0.8 (0.3)
2017–2018	4,536	1.7 (0.3)	1.4 (0.3)	2.1 (0.4)	2.4 (0.5)	1.6 (0.4)	0.4 (0.2)
August 2021 –August 2023	5,249	1.7 (0.3)	1.2 (0.4)	2.2 (0.3)	2.5 (0.6)	1.0 (0.2)	1.2 (0.1)

* Age adjusted by the direct method to U.S. Census 2000 estimates using the age groups 20–39, 40–59, and 60–74. The 1960–1962 National Health Examination Survey included adults ages 18–79, and the 1971–1974 and 1976–1980 National Health and Nutrition Examination Surveys did not include adults older than 74. Crude estimates (not age adjusted) for August 2021–August 2023 are 1.6% for total, 1.1% for men, and 2.1% for women.

NOTES: Underweight is body mass index less than 18.5 kg/m². Pregnant women are excluded from the analysis.

SOURCES: National Center for Health Statistics, National Health Examination Survey, 1960–1962; and National Health and Nutrition Examination Survey, 1971–1974, 1976–1980, 1988–1994, and 1999–August 2023.