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Total Body Bone Area, Bone Mineral Content, and Bone Mineral Density for Individuals Aged 8 Years and Over: United States, 1999–2006



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

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Total Body Bone Area, Bone Mineral Content, and Bone Mineral Density for Individuals Aged 8 Years and Over: United States, 1999–2006

Data From the National Health and Nutrition Examination Survey (NHANES)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

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Abstract

Objectives

This report presents bone measurement data from total body dual energy x-ray absorptiometry scans for 28,454 persons aged 8 years and over who participated in the 1999–2006 National Health and Nutrition Examination Survey. The sample consisted of 22,667 respondents with valid data, and 5,787 with missing data that were successfully multiply imputed (i.e., not highly variable). Bone area, bone mineral content, and bone mineral density (BMD) are presented for the total body, the total body minus the head (e.g., subtotal), and 10 subregions of the body.

Methods

Means, standard deviations, and selected percentiles were calculated for the total body, total body minus head (subtotal), and 10 body subregions by sex, race and ethnicity, and age. Smoothed mean total body BMD was plotted by age, sex, and race and ethnicity. Multiple regression was used to evaluate differences in mean total body BMD by age, sex, and race and ethnicity.

Results

After adjusting for race and ethnicity, total body BMD among those under age 20 was significantly higher in respondents aged 12–19 than in those aged 8–11 in both sexes. Among adults of both sexes, total body BMD in persons aged 20–49 was significantly higher than in those aged 50–79, and significantly lower in persons aged 80 and over than in those aged 50–79, after adjusting for race and ethnicity. After adjusting for age, total body BMD was significantly higher in non-Hispanic black persons than in non-Hispanic white persons, regardless of age or sex. However, the pattern differed by age when Mexican-American persons were compared with non-Hispanic white persons: Age-adjusted total body BMD was significantly lower among Mexican-American males aged 8–19, was similar in Mexican-American females aged 8–19, and was significantly lower in Mexican-American men and women aged 20 and over.

Keywords: U.S. population • dual energy x-ray absorptiometry

Total Body Bone Area, Bone Mineral Content, and Bone Mineral Density for Individuals Aged 8 Years and Over: United States, 1999–2006

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Introduction

Dual energy x-ray absorptiometry (DXA) has long been accepted as the primary method for measuring bone mineral content (BMC) and bone mineral density (BMD) because of its high precision, accuracy, and low radiation exposure (1–5). More recently, whole body DXA also has become one of the most widely accepted methods of measuring body composition due to its speed, ease of use, and strong correlation with criterion methods of assessing body composition (6). In addition, DXA has shown to be comparable in reliability and accuracy to computed tomography and magnetic resonance imaging in assessing body composition in defined regions such as the arms, legs, and trunk (7–9).

In 1999, the National Health and Nutrition Examination Survey (NHANES) implemented whole body DXA scans of survey participants aged 8 years and over to provide nationally representative body composition data for the U.S. population. This report presents bone measurement data from whole body DXA scans for persons aged 8 and over who participated in the 1999–2006 NHANES. This report expands on

previous publications of NHANES total body DXA data (10–12) by providing detailed data on bone area, BMC, and BMD for all body subregions. In addition, this report incorporates data from the 2005–2006 NHANES that were not available at the time of the previous reports.

Methods

Data Source

NHANES is conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) to assess the health and nutritional status of a large representative cross-sectional sample of the noninstitutionalized civilian U.S. population (13). All procedures in NHANES 1999–2006 were approved by the NCHS Institutional Review Board. Parental permission was obtained for minors under age 18. Children aged 7–17 were also asked to provide documented assent. Consent was obtained for all adults aged 18 and over. Data were collected in NHANES 1999–2006 through household interviews and direct standardized

physical examinations that were conducted in specially equipped mobile examination centers (MECs) (13). NHANES 1999–2006 was designed to provide reliable estimates for three racial and ethnic groups: non-Hispanic white, non-Hispanic black, and Mexican American. Race and ethnicity were self-reported by the participants.

Dual Energy X-ray Absorptiometry Component

Survey participants aged 8 and over in 1999–2004 and aged 8–69 in 2005–2006 were eligible to receive a total body DXA scan, unless they were pregnant; reported exposure to radiographic contrast material (barium) use in the past 72 hours or exposure to nuclear medicine studies in the past 3 days; or exceeded the weight or height limits of the DXA table (i.e., weighed more than 300 pounds or were taller than 6 feet and 5 inches). Additionally, females aged 8–17 were excluded from the DXA component in 1999 so that concerns about reporting pregnancy test results for minors could be resolved. See “Analytic Sample” for a description of how individuals with missing data were handled in the analyses used in this report.

The DXA scans were acquired with a Hologic QDR 4500A fan-beam densitometer (Hologic, Inc., Bedford, M.A.) and with Hologic software, version 8.26:a3*. All scans were administered by certified radiology technologists. Details of the DXA examination protocol are documented in the *Body Composition Procedures Manual* on the NHANES website (14). A high level of quality control was maintained throughout the DXA data collection and scan analysis.

Technologist performance was monitored through in-person observations in the field and scan review, with feedback provided as needed. Retraining sessions were conducted annually, and as needed, to reinforce correct techniques and appropriate protocol. Each participant scan was reviewed and analyzed by the NHANES quality control center at the

University of California, San Francisco (UCSF), Department of Radiology, using standard radiologic techniques and study-specific protocols developed for NHANES. All participant scans were reviewed by a second technologist, and differences were adjudicated by a supervisor. Hologic Discovery software, version 12.1, was used to analyze the scans. Codes to indicate invalidity were applied by UCSF to regions of the body that could not be analyzed accurately. Reasons for invalid regions included:

1. Jewelry and other objects not removed
2. Nonremovable objects (e.g., prostheses, implants, or casts)
3. Excessive x-ray “noise” due to truncal adiposity
4. Arm and leg overlap
5. Body parts out of the scan field
6. Positioning problems
7. Participant motion
8. Scanner failed
9. Other (e.g., missing limbs, unknown artifacts, or fracture)

During the 1999–2006 DXA data collection, quality-control phantoms specific to each MEC, and phantoms that circulated among the MECs, were scanned according to a rigorous schedule to provide cross-calibration and longitudinal monitoring. Spine phantoms specific to each MEC were scanned daily, as required by the manufacturer, to ensure accurate calibration of the densitometer. MEC-specific whole body and tissue-step phantoms were scanned one to three times weekly. Phantoms simulating tissue or bone were used to quantify the accuracy and precision of DXA densitometers in order to detect drift or changes in measurement accuracy over time. A set of phantoms that included a spine phantom, block phantom, and whole body phantom circulated among the MECs and were scanned at the start of operations at each survey site. Air scans, which are phantomless scans of the scan field using the whole body scan mode, were used to monitor radiographic uniformity across the entire scan field. The phantom scanning schedule is described in the *Body Composition Procedures Manual* (14).

UCSF used the cumulative statistics method (CUSUM) and the MEC-specific phantom data to determine breaks in the calibration of the densitometers over the course of the survey (15). NCHS evaluated the effect of adjustment factors developed by UCSF from cross-calibration data collected before the start of data collection in 1999 and from the longitudinal monitoring data on the participant data. The magnitude of the adjustment was determined to be insignificant, and correction of the participant data was not required.

The DXA scans provided bone measures for both arms and both legs, left and right ribs, pelvis, thoracic spine, lumbar spine, and head. Values for the total body and body subregions include bone area (cm^2), BMC (g), and BMD (g/cm^2). Total values were calculated by summing measurements for all body subregions. Total body minus head (subtotal) values were calculated by summing measurements for all body subregions except the head.

Analytic Sample

Respondents with missing total body DXA data were not a random subset of the eligible sample. Details about characteristics of respondents with missing total body DXA data have been published elsewhere (12). Specifically, the percentage of eligible participants with valid data decreased with increasing age (primarily due to an increase in implants such as pacemakers, stents, and hip replacements) and with increasing body mass index (primarily due to truncal adiposity, which interfered with the ability to obtain valid measurements) (12). To address this potential bias, multiple imputation of missing data for the total body and body subregions was performed using a sequential regression multivariate imputation procedure, which is described in detail elsewhere (16,17). The regression models used to impute the data used a large number of predictor variables, including DXA data for any nonmissing total body subregions, as well as demographic, socioeconomic, and geographic variables; anthropometric measurements;

health indicators; dietary intake and medication use; blood test results; and variables related to the design of the NHANES sample.

Data were multiply imputed for all sample persons in the eligible age range for this examination, except pregnant women and those with limb amputations other than fingers or toes. Specifically, in addition to persons with invalid DXA scan data, results were imputed for females aged 8–17 from 1999, persons with exposure to radiographic contrast or nuclear medicine materials, and persons who exceeded the DXA table size limitations. The imputed data for these individuals are included in this report. However, the imputed values of 438 respondents were found to vary greatly among the different imputed data sets. Review of the data for these participants showed that values were missing for all DXA measurements, as well as measured height and weight (important predictor variables in the imputation models). Because of the extreme variability of their imputed DXA data values, the data for these 438 respondents were not included in this report.

This report uses the total body DXA measurements for 28,479 respondents aged 8 and over (those aged 8–69 for 2005–2006) with complete total body DXA data, including 5,787 with imputed values that were not highly variable between the imputed data sets (e.g., values that did not lack measurements of height, weight, and all DXA data, as described above). These data represent 87% of the participants aged 8 and over who were interviewed ($n = 32,819$) and 92% of those who were interviewed and examined ($n = 31,085$).

Statistical Analysis

Means, standard deviations, and percentiles for bone area, BMC, and BMD are presented by sex and age for all racial and ethnic groups combined, and for Mexican-American, non-Hispanic white, and non-Hispanic black population subgroups separately. The analytic age groups used were: 8–11, 12–15, 16–19, 20–29, 30–39, 40–49,

50–59, 60–69, 70–79, and 80 and over.

Data analyses were performed using the statistical packages SAS, version 9.3 (SAS Institute, Cary, N.C.); and SUDAAN, version 11.0 (RTI International, Research Triangle Park, N.C.); or with the R survey package (University of Washington, Seattle W.A.) (18). The SUDAAN MI-COUNT option was used to accommodate the multiply imputed data. Standard errors and standard deviations of the means were estimated by Taylor Series Linearization (19), a method that incorporates the sample weights and accounts for the NHANES complex sample design. Eight-year MEC weights were applied to the data to account for differential probabilities of selection, nonresponse, and noncoverage. Estimates were considered statistically reliable if their relative standard error (RSE) was less than 30% and they were based on 12 or more degrees of freedom. The RSE is defined as the ratio of the standard error of the estimate divided by the estimate multiplied by 100. In the tables, estimates that do not meet criteria for statistical reliability are identified with an asterisk. Estimates whose standard errors were not calculable using SUDAAN due to small cell sizes were omitted from the tables. Means for adults aged 20 and over shown in the tables were age-adjusted to the U.S. 2000 standard population to facilitate comparisons between the sex and race and ethnicity subgroups (20). The age groups used to age-adjust these means were 20–29, 30–39, 40–49, 50–59, 60–69, 70–79, and 80 years and over.

Total body BMD data were plotted by age, sex, and race and ethnicity using “Svysmooth,” a smoothing procedure available in the R survey package that is designed for use with surveys with a complex design (18). Multiple regression (SUDAAN PROC REGRESS) was used to assess whether significant interactions in total BMD existed between age and sex, age and race and ethnicity, or sex and race and ethnicity. Results indicated that significant interactions existed when all ages and both sexes were analyzed together, but not when ages 8–19 and 20 and over were analyzed separately by

sex. As a result, comparisons of total body BMD by detailed age group or by race and ethnicity were made by sex within these two broad age categories. Multiple regression was used to compare mean total body BMD by detailed age group while adjusting for race and ethnicity and to compare mean total body BMD by race and ethnicity while adjusting for detailed age group.

Key Findings

Means; standard deviations; and percentiles for BMD, BMC, and bone area of the total body, total body minus head (subtotal), and 10 body subregions are shown in [Tables 1–36](#) for persons aged 8 and over. Patterns in total body BMD by age, sex, and race and ethnicity are summarized in [Figures 1–3](#).

- Smoothed mean total body BMD increased until early adulthood and then remained relatively stable in males and females in the three racial and ethnic groups examined until approximately age 50, after which it declined with age in both sexes in the three groups ([Figure 1](#)).
- Total body BMD was significantly higher (after adjusting for race and ethnicity) in respondents aged 12–19 years than in those aged 8–11 years in both sexes ([Figure 2](#)).
- Total body BMD was significantly higher (after adjusting for age) in non-Hispanic black persons aged 8–19 years than in non-Hispanic white persons of this age group in both sexes. But the pattern differed by sex when Mexican-American persons were compared with non-Hispanic white persons: Age-adjusted total body BMD was significantly lower among Mexican-American males compared with non-Hispanic white males, but total body BMD was similar among Mexican-American and non-Hispanic white females ([Figure 2](#)).
- Among adults aged 20 and over, total body BMD was significantly lower in each of the three succeeding age groups tested in both sexes, after adjusting for race and

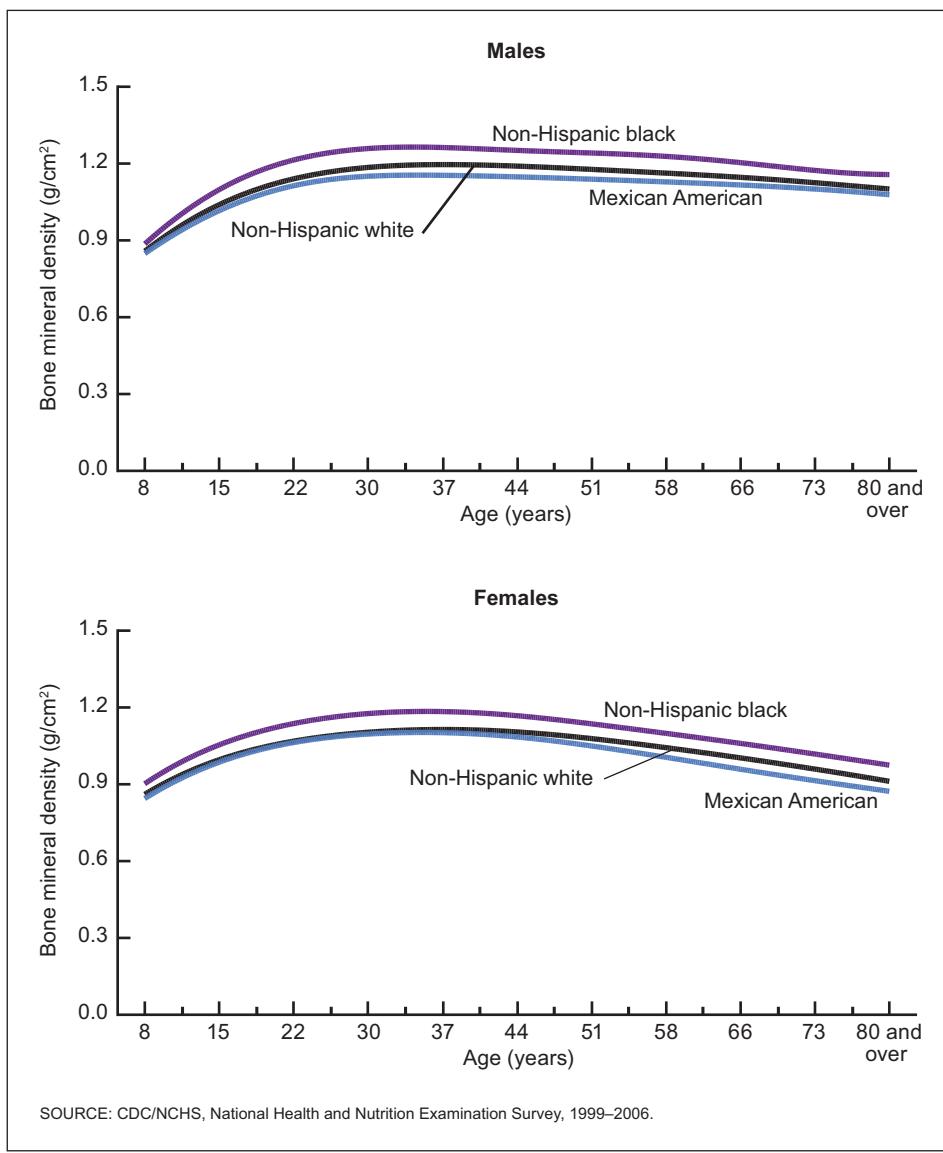


Figure 1. Smoothed mean total body bone mineral density of males and females aged 8 years and over, by age and race and ethnicity: United States 1999–2006

ethnicity (Figure 3). When compared with non-Hispanic white persons and after adjusting for age, total body BMD was significantly higher in non-Hispanic black persons and significantly lower in Mexican-American persons in both sexes (Figure 3).

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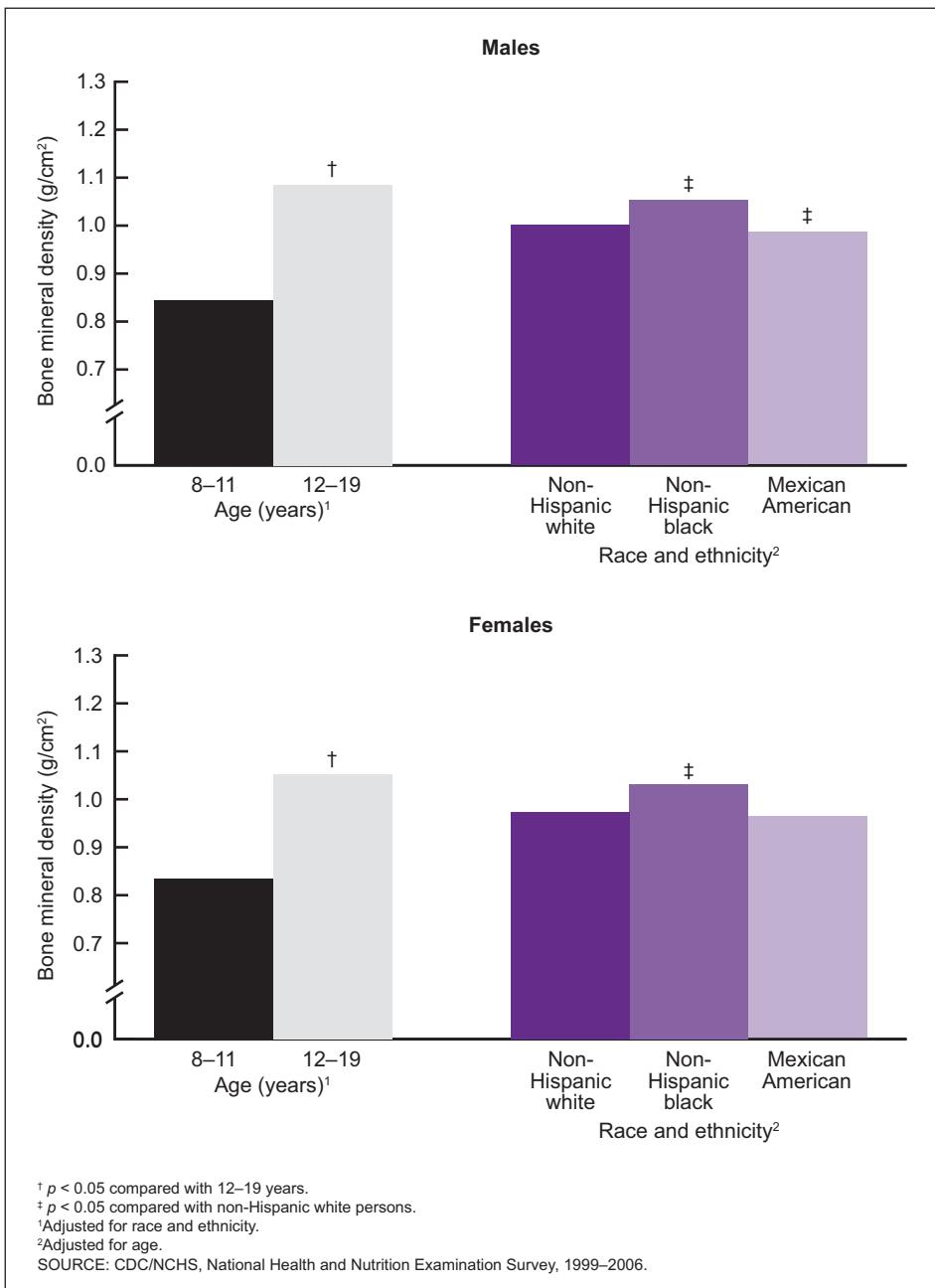


Figure 2. Mean total body bone mineral density of males and females aged 8–19 years, by age and race and ethnicity: United States 1999–2006

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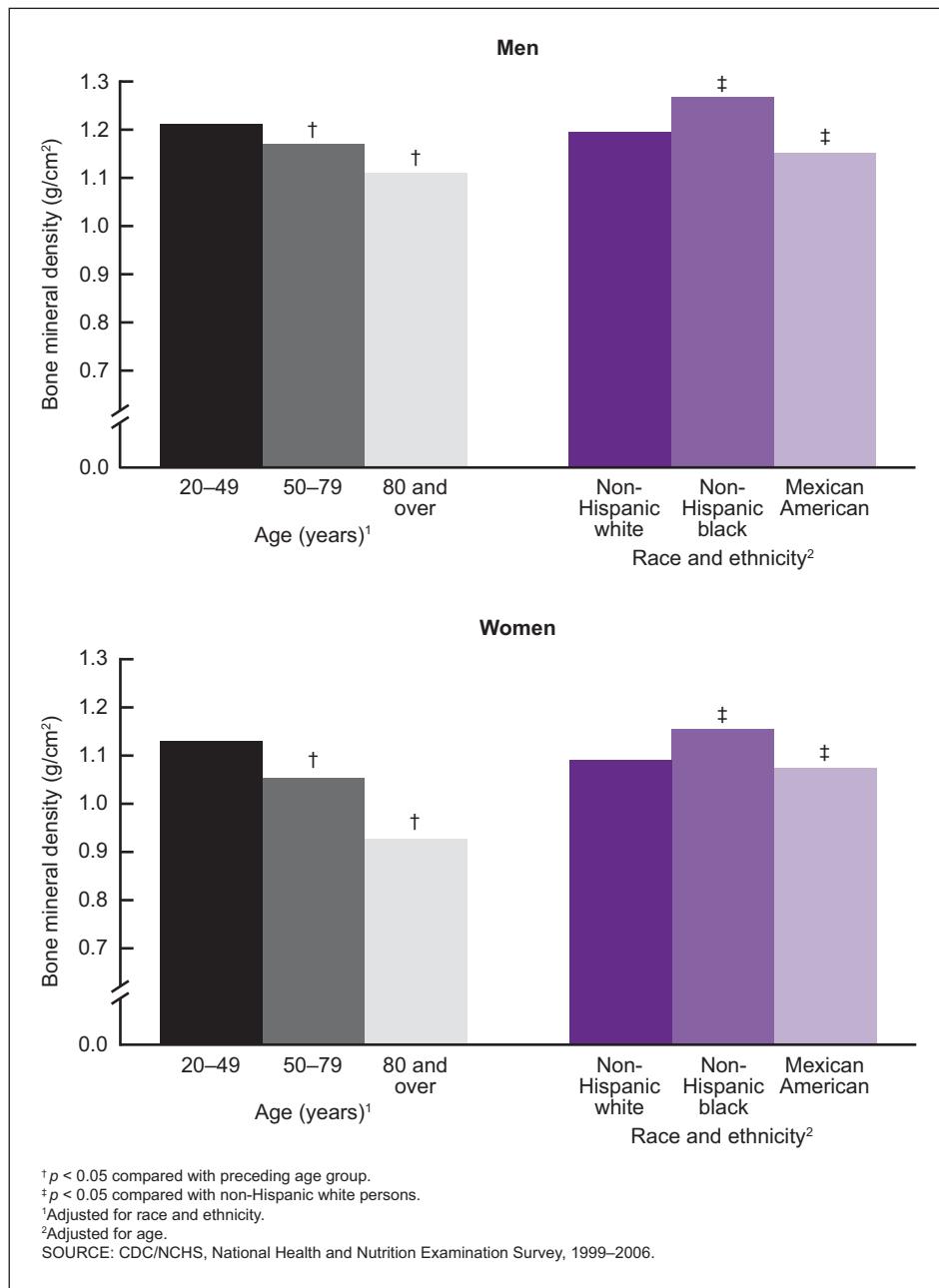


Figure 3. Mean total body bone mineral density of men and women aged 20 and over, by age and race and ethnicity: United States 1999–2006

Table 1. Total body bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	1,385.43	173.29	1,155.16	1,208.16	1,238.26	1,273.35	1,359.44	1,465.73	1,540.98	1,621.58	1,728.37
12–15 years	2,264	1,892.79	303.75	1,432.46	1,488.17	1,541.90	1,651.57	1,896.80	2,121.18	2,228.47	2,284.43	2,356.98
16–19 years	2,309	2,237.82	218.98	1,889.06	1,962.90	2,012.50	2,091.39	2,231.77	2,377.84	2,453.66	2,516.29	2,603.75
20–29 years	1,530	2,287.04	213.77	1,948.13	2,024.37	2,075.21	2,149.05	2,280.41	2,416.98	2,500.66	2,557.67	2,648.46
30–39 years	1,450	2,282.97	211.36	1,948.62	2,014.39	2,070.83	2,139.93	2,277.48	2,414.79	2,493.62	2,549.49	2,631.06
40–49 years	1,549	2,302.50	192.79	1,985.67	2,060.67	2,113.18	2,175.26	2,293.65	2,430.76	2,497.68	2,543.60	2,617.29
50–59 years	1,187	2,278.18	197.45	1,955.56	2,025.60	2,074.71	2,148.33	2,281.49	2,403.59	2,477.35	2,532.82	2,594.46
60–69 years	1,350	2,266.41	200.14	1,933.90	2,014.00	2,061.57	2,138.66	2,267.98	2,400.50	2,470.28	2,512.87	2,585.41
70–79 years	825	2,213.22	200.92	1,875.21	1,955.21	2,003.67	2,081.56	2,218.15	2,360.55	2,419.96	2,468.03	2,520.43
80 years and over	501	2,128.00	195.85	1,789.13	1,877.64	1,925.61	2,003.98	2,129.79	2,256.90	2,324.73	2,373.93	2,457.52
20 years and over (age-adjusted)	8,392	2,272.49	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	1,395.64	176.15	1,184.93	1,217.75	1,236.19	1,276.95	1,352.63	1,485.23	1,576.48	1,653.67	1,742.76
12–15 years	777	1,872.15	286.67	1,398.35	1,469.47	1,536.94	1,666.46	1,875.68	2,062.59	2,180.89	2,249.25	2,345.05
16–19 years	783	2,146.98	211.21	1,836.46	1,897.34	1,946.98	2,003.62	2,129.24	2,278.38	2,345.66	2,421.15	2,510.61
20–29 years	444	2,158.78	193.19	1,865.89	1,923.75	1,960.70	2,018.85	2,151.29	2,280.24	2,349.88	2,393.35	2,482.55
30–39 years	337	2,142.19	173.94	1,868.94	1,920.90	1,970.95	2,021.59	2,143.35	2,248.70	2,309.67	2,353.58	2,433.20
40–49 years	381	2,146.79	178.91	1,896.93	1,946.92	1,973.40	2,023.83	2,134.67	2,268.11	2,309.76	2,376.38	2,455.43
50–59 years	174	2,136.82	157.42	1,897.05	1,947.00	1,980.99	2,027.10	2,142.37	2,238.26	2,302.23	2,343.35	2,397.99
60–69 years	348	2,146.69	171.25	1,856.96	1,915.92	1,959.50	2,023.62	2,158.11	2,262.85	2,315.65	2,367.44	2,429.68
70–79 years	164	*2,066.46	178.73	*1,746.73	*1,846.66	*1,909.72	*1,966.44	*2,088.26	*2,171.78	*2,219.11	*2,266.96	*2,326.63
80 years and over	48	*2,017.35	188.41	*1,667.36	*1,772.87	*1,819.64	*1,888.39	*2,057.55	*2,107.33	*2,134.64	*2,235.24	†
20 years and over (age-adjusted)	1,896	2,133.77	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	1,373.71	169.99	1,138.82	1,198.26	1,232.13	1,267.15	1,352.92	1,454.62	1,520.66	1,596.29	1,721.72
12–15 years	578	1,897.87	308.84	1,429.73	1,490.68	1,542.32	1,644.79	1,907.26	2,137.30	2,240.27	2,290.53	2,364.08
16–19 years	591	2,250.47	210.72	1,903.87	1,978.40	2,032.71	2,115.22	2,242.94	2,388.88	2,454.81	2,517.34	2,601.24
20–29 years	617	2,306.68	198.59	1,989.07	2,069.15	2,114.91	2,182.76	2,294.16	2,427.54	2,506.18	2,552.57	2,641.03
30–39 years	647	2,309.81	201.19	1,989.79	2,069.28	2,110.35	2,175.37	2,311.47	2,431.29	2,503.31	2,554.64	2,635.92
40–49 years	700	2,328.63	180.43	2,044.40	2,112.44	2,153.07	2,210.90	2,320.05	2,445.69	2,510.14	2,555.21	2,633.08
50–59 years	683	2,296.87	189.39	1,978.17	2,065.50	2,107.22	2,173.33	2,302.16	2,411.17	2,485.31	2,536.20	2,596.14
60–69 years	623	2,287.35	188.23	1,987.47	2,049.98	2,093.03	2,167.40	2,286.87	2,416.06	2,481.13	2,520.44	2,590.39
70–79 years	496	2,230.94	195.67	1,903.23	1,973.42	2,018.75	2,101.99	2,231.18	2,374.89	2,430.64	2,477.87	2,529.14
80 years and over	398	2,131.25	188.80	1,809.65	1,887.31	1,935.35	2,007.95	2,131.59	2,257.99	2,321.89	2,365.85	2,442.56
20 years and over (age-adjusted)	4,164	2,294.13	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	1,438.78	184.68	1,193.75	1,242.83	1,280.70	1,318.26	1,402.43	1,508.18	1,627.45	1,696.53	1,802.60
12–15 years	745	1,954.93	307.33	1,470.70	1,543.36	1,598.46	1,742.44	1,958.98	2,161.57	2,263.58	2,327.58	2,438.23
16–19 years	757	2,295.14	237.98	1,926.14	2,008.39	2,064.59	2,139.51	2,282.39	2,429.20	2,515.10	2,590.60	2,700.59
20–29 years	325	2,373.82	227.71	2,057.28	2,110.80	2,146.94	2,212.31	2,365.25	2,505.90	2,587.34	2,649.40	2,761.00
30–39 years	310	2,368.06	222.99	2,046.95	2,100.55	2,134.77	2,202.29	2,348.01	2,521.42	2,591.67	2,640.50	2,758.67
40–49 years	366	2,332.08	195.45	2,020.70	2,091.64	2,131.17	2,201.15	2,322.41	2,459.21	2,524.59	2,572.22	2,653.83
50–59 years	240	2,323.07	209.04	2,004.26	2,051.61	2,091.75	2,177.41	2,297.25	2,447.02	2,533.19	2,598.27	2,686.30
60–69 years	303	2,306.83	189.05	2,014.58	2,066.50	2,127.58	2,188.86	2,296.17	2,419.75	2,512.34	2,557.02	2,612.24
70–79 years	114	2,222.81	202.79	1,901.83	1,952.13	2,007.29	2,101.55	2,238.70	2,353.92	2,424.86	2,461.05	2,517.55
80 years and over	36	*2,185.04	238.02	†	*1,845.54	*1,926.68	*2,012.18	*2,180.16	*2,322.34	*2,464.67	†	†
20 years and over (age-adjusted)	1,694	2,327.53	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 1. Total body bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	1,399.15	188.77	1,138.88	1,189.29	1,222.07	1,268.93	1,371.80	1,508.31	1,594.79	1,673.47	1,756.97
12–15 years	2,318	1,794.10	191.98	1,474.44	1,546.28	1,597.82	1,665.83	1,799.67	1,921.50	1,988.26	2,038.11	2,104.28
16–19 years	2,027	1,910.93	181.04	1,642.69	1,688.50	1,729.59	1,794.06	1,902.08	2,015.61	2,083.19	2,122.84	2,202.69
20–29 years	1,378	1,939.51	168.01	1,666.17	1,728.72	1,764.17	1,822.55	1,934.27	2,049.31	2,112.01	2,153.98	2,223.64
30–39 years	1,372	1,949.93	165.25	1,697.54	1,749.25	1,784.62	1,837.12	1,934.88	2,056.36	2,111.22	2,164.17	2,247.41
40–49 years	1,570	1,955.81	166.15	1,690.92	1,744.32	1,783.81	1,840.68	1,949.81	2,052.94	2,127.44	2,169.05	2,227.48
50–59 years	1,200	1,924.12	166.41	1,660.36	1,713.55	1,750.39	1,810.63	1,927.00	2,025.79	2,088.54	2,133.64	2,192.27
60–69 years	1,419	1,897.05	177.87	1,610.87	1,669.05	1,719.43	1,774.38	1,900.83	2,014.14	2,070.98	2,113.83	2,177.12
70–79 years	750	1,823.07	177.64	1,540.15	1,598.58	1,651.69	1,713.19	1,829.35	1,939.84	1,999.47	2,046.33	2,102.13
80 years and over	594	1,711.52	184.73	1,398.80	1,459.84	1,524.61	1,589.75	1,719.63	1,832.80	1,886.33	1,942.48	2,009.52
20 years and over (age-adjusted)	8,283	1,918.24	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	1,384.30	182.39	1,140.06	1,184.13	1,209.65	1,256.68	1,362.55	1,483.58	1,574.35	1,633.84	1,727.55
12–15 years	821	1,767.35	176.21	1,481.38	1,546.05	1,584.36	1,653.07	1,763.67	1,892.26	1,938.73	1,978.80	2,053.41
16–19 years	692	1,837.88	172.55	1,557.93	1,633.30	1,663.75	1,720.52	1,827.53	1,947.21	2,010.41	2,049.63	2,130.72
20–29 years	364	1,873.05	152.32	1,620.86	1,662.82	1,711.03	1,785.10	1,866.41	1,963.29	2,028.47	2,066.58	2,134.81
30–39 years	298	1,868.25	148.49	1,647.59	1,710.42	1,727.33	1,758.18	1,855.04	1,951.78	2,015.90	2,060.25	2,114.64
40–49 years	372	1,876.80	143.95	1,638.87	1,697.03	1,735.32	1,776.41	1,877.07	1,970.90	2,021.33	2,056.53	2,137.35
50–59 years	194	1,832.83	168.79	1,565.34	1,602.27	1,655.59	1,705.72	1,840.95	1,945.22	2,003.87	2,060.05	2,120.38
60–69 years	375	1,775.99	166.46	1,492.68	1,556.42	1,613.82	1,661.19	1,780.84	1,894.23	1,945.38	1,973.04	2,016.97
70–79 years	154	*1,708.49	182.10	*1,373.18	*1,491.34	*1,533.76	*1,615.47	*1,712.54	*1,841.90	*1,877.55	*1,919.26	*1,979.56
80 years and over	47	*1,579.75	189.14		† *1,320.68	*1,371.02	*1,464.55	*1,578.15	*1,698.89	*1,768.29	*1,798.29	*1,842.83
20 years and over (age-adjusted)	1,804	1,829.35	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	1,389.65	181.88	1,131.88	1,176.35	1,211.24	1,262.36	1,368.18	1,491.49	1,575.12	1,651.94	1,727.12
12–15 years	576	1,785.21	190.62	1,460.87	1,529.28	1,584.72	1,656.10	1,795.99	1,919.95	1,978.65	2,024.09	2,075.38
16–19 years	543	1,920.68	170.72	1,655.02	1,716.23	1,753.13	1,820.04	1,913.78	2,018.53	2,081.02	2,111.83	2,181.68
20–29 years	583	1,950.77	158.19	1,684.72	1,745.39	1,779.90	1,837.10	1,950.65	2,055.80	2,114.21	2,152.38	2,208.92
30–39 years	612	1,956.54	158.14	1,710.82	1,770.12	1,802.05	1,846.14	1,941.13	2,057.29	2,105.19	2,158.74	2,240.72
40–49 years	668	1,964.22	163.06	1,707.76	1,759.67	1,792.63	1,852.99	1,962.70	2,063.39	2,135.27	2,174.56	2,231.86
50–59 years	639	1,934.56	153.80	1,693.65	1,742.63	1,769.97	1,827.43	1,937.26	2,025.18	2,081.46	2,128.56	2,192.08
60–69 years	644	1,905.06	167.76	1,629.04	1,693.77	1,738.79	1,794.47	1,909.92	2,014.54	2,066.93	2,107.56	2,160.15
70–79 years	429	1,831.36	170.43	1,561.34	1,625.04	1,671.38	1,727.04	1,838.66	1,942.53	2,000.81	2,046.06	2,095.81
80 years and over	457	1,718.40	176.26	1,419.23	1,474.21	1,544.98	1,604.24	1,725.07	1,831.80	1,882.19	1,937.59	2,006.42
20 years and over (age-adjusted)	4,032	1,926.98	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	1,450.50	214.81	1,161.24	1,219.19	1,252.77	1,298.69	1,405.88	1,570.48	1,703.87	1,755.59	1,826.40
12–15 years	737	1,880.72	197.93	1,566.58	1,643.36	1,686.51	1,745.76	1,866.15	2,009.42	2,090.08	2,137.36	2,218.17
16–19 years	609	1,974.71	201.98	1,676.63	1,741.39	1,779.23	1,840.38	1,954.52	2,090.93	2,167.70	2,222.76	2,313.13
20–29 years	297	1,999.63	176.48	1,713.90	1,794.59	1,827.03	1,883.97	1,989.32	2,099.49	2,186.38	2,241.87	2,295.73
30–39 years	333	2,030.33	176.05	1,759.00	1,812.71	1,849.93	1,898.97	2,022.93	2,141.46	2,221.03	2,265.37	2,325.10
40–49 years	398	2,017.41	163.80	1,761.81	1,822.11	1,853.30	1,912.52	2,007.33	2,112.49	2,173.22	2,217.24	2,298.78
50–59 years	250	1,986.15	171.03	1,672.16	1,774.00	1,812.26	1,878.01	1,980.00	2,101.58	2,147.28	2,178.28	2,282.45
60–69 years	306	1,991.13	180.95	1,682.57	1,759.26	1,802.02	1,875.30	1,992.25	2,121.06	2,177.03	2,220.57	2,258.70
70–79 years	124	1,895.89	198.61	1,564.76	1,634.37	1,680.21	1,775.78	1,888.96	2,021.20	2,087.45	2,146.03	†
80 years and over	58	*1,794.54	183.34	*1,465.86	*1,535.90	*1,578.61	*1,677.36	*1,806.94	*1,900.00	*1,989.72	*2,016.37	*2,043.34
20 years and over (age-adjusted)	1,766	1,988.89	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 2. Total body bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	1,177.39	226.15	874.35	927.12	964.62	1,018.96	1,144.73	1,296.09	1,392.22	1,461.56	1,627.12
12–15 years	2,264	1,921.44	495.21	1,223.83	1,310.07	1,380.46	1,525.23	1,885.99	2,260.40	2,470.32	2,591.59	2,757.37
16–19 years	2,309	2,641.98	446.38	1,962.99	2,094.12	2,187.43	2,330.34	2,603.82	2,924.40	3,091.09	3,206.33	3,362.10
20–29 years	1,530	2,789.47	461.76	2,102.17	2,247.12	2,333.01	2,497.93	2,744.04	3,038.82	3,228.09	3,389.10	3,579.33
30–39 years	1,450	2,781.15	461.88	2,115.61	2,243.64	2,318.69	2,468.37	2,742.78	3,043.04	3,223.94	3,368.59	3,576.54
40–49 years	1,549	2,787.27	426.08	2,133.19	2,268.93	2,350.15	2,490.34	2,769.83	3,035.73	3,211.56	3,345.46	3,514.63
50–59 years	1,187	2,707.98	439.69	2,013.71	2,157.32	2,262.12	2,411.43	2,696.20	2,965.82	3,113.81	3,254.16	3,468.84
60–69 years	1,350	2,662.58	438.41	1,984.54	2,123.17	2,222.15	2,359.51	2,651.88	2,922.96	3,138.95	3,236.15	3,401.72
70–79 years	825	2,521.47	417.60	1,876.94	2,022.24	2,091.44	2,207.09	2,513.03	2,788.74	2,968.88	3,076.64	3,198.62
80 years and over	501	2,374.86	420.70	1,730.53	1,864.00	1,963.63	2,092.49	2,338.02	2,637.50	2,826.06	2,917.57	3,097.50
20 years and over (age-adjusted)	8,392	2,720.04	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	1,172.22	233.67	857.77	907.18	954.57	1,005.70	1,134.42	1,291.78	1,415.76	1,510.18	1,656.60
12–15 years	777	1,890.02	489.10	1,162.13	1,273.49	1,371.26	1,528.46	1,850.30	2,191.18	2,403.71	2,524.11	2,775.35
16–19 years	783	2,465.13	418.31	1,867.08	1,979.64	2,058.73	2,196.82	2,417.19	2,707.24	2,890.31	2,998.12	3,163.75
20–29 years	444	2,542.87	385.20	1,971.49	2,078.90	2,140.12	2,258.83	2,507.68	2,761.33	2,914.13	3,057.66	3,222.07
30–39 years	337	2,499.32	353.78	1,993.99	2,099.77	2,162.97	2,255.33	2,478.13	2,695.15	2,816.82	2,916.32	3,163.67
40–49 years	381	2,489.46	377.69	1,948.66	2,055.98	2,121.28	2,230.40	2,454.43	2,703.75	2,870.77	2,956.97	3,182.57
50–59 years	174	2,451.14	365.28	1,858.72	1,978.81	2,053.93	2,166.71	2,436.76	2,713.66	2,863.35	2,924.85	3,054.61
60–69 years	348	2,447.83	363.81	1,888.15	1,983.84	2,064.81	2,157.46	2,451.78	2,675.93	2,808.04	2,898.75	3,024.01
70–79 years	164	*2,297.08	361.48	*1,696.37	*1,804.62	*1,910.27	*2,049.93	*2,318.77	*2,515.92	*2,644.70	*2,764.67	*2,816.48
80 years and over	48	*2,179.87	361.63	*1,577.82	*1,733.47	*1,840.98	*1,964.76	*2,139.62	*2,315.54	*2,535.78	*2,706.36	†
20 years and over (age-adjusted)	1,896	2,460.80	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	1,160.63	217.87	865.72	923.08	959.56	1,008.70	1,132.71	1,275.79	1,352.05	1,439.01	1,611.25
12–15 years	578	1,916.45	494.95	1,225.22	1,308.66	1,370.44	1,506.10	1,887.87	2,265.20	2,475.86	2,593.26	2,755.88
16–19 years	591	2,647.47	421.49	1,967.04	2,109.48	2,206.59	2,361.70	2,630.68	2,920.67	3,074.09	3,191.44	3,324.29
20–29 years	617	2,803.06	424.17	2,189.02	2,292.18	2,384.14	2,541.55	2,765.14	3,023.79	3,202.88	3,364.55	3,542.71
30–39 years	647	2,815.95	439.77	2,167.57	2,290.34	2,380.77	2,520.49	2,777.38	3,056.66	3,234.12	3,353.04	3,564.69
40–49 years	700	2,819.98	401.25	2,209.03	2,331.28	2,394.29	2,562.08	2,799.33	3,051.61	3,217.41	3,356.35	3,513.50
50–59 years	683	2,725.42	420.65	2,077.46	2,201.33	2,294.50	2,446.24	2,715.01	2,968.86	3,106.56	3,247.77	3,452.92
60–69 years	623	2,681.59	422.48	2,012.10	2,165.80	2,256.20	2,398.55	2,664.71	2,927.23	3,143.19	3,236.97	3,402.30
70–79 years	496	2,544.65	414.39	1,918.28	2,032.65	2,101.54	2,216.31	2,548.30	2,803.69	2,991.92	3,091.21	3,210.59
80 years and over	398	2,372.01	403.99	1,735.79	1,873.26	1,975.14	2,094.26	2,338.20	2,632.82	2,818.94	2,891.89	3,054.59
20 years and over (age-adjusted)	4,164	2,743.45	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	1,280.06	247.85	939.12	1,000.90	1,043.15	1,116.30	1,246.16	1,409.07	1,503.41	1,585.11	1,719.65
12–15 years	745	2,067.00	515.18	1,338.44	1,445.70	1,513.80	1,656.69	2,032.96	2,401.61	2,609.01	2,718.48	2,906.94
16–19 years	757	2,846.38	506.46	2,127.89	2,255.38	2,364.12	2,517.75	2,789.55	3,110.88	3,309.83	3,472.70	3,672.25
20–29 years	325	3,111.40	528.09	2,379.32	2,526.54	2,608.26	2,752.97	3,054.93	3,378.98	3,559.52	3,735.18	4,097.73
30–39 years	310	3,075.01	504.72	2,361.70	2,492.85	2,579.43	2,707.56	3,037.99	3,376.50	3,565.64	3,692.00	4,002.88
40–49 years	366	2,948.59	487.56	2,229.19	2,359.49	2,460.03	2,640.28	2,905.84	3,235.43	3,393.50	3,567.98	3,788.76
50–59 years	240	2,932.53	485.95	2,194.48	2,337.71	2,437.87	2,576.01	2,901.76	3,234.80	3,411.10	3,573.94	3,736.65
60–69 years	303	2,870.37	421.73	2,218.90	2,342.62	2,453.74	2,620.15	2,838.42	3,139.00	3,308.66	3,395.65	3,586.19
70–79 years	114	2,608.13	428.40	1,925.41	2,077.33	2,174.71	2,301.25	2,596.09	2,924.69	3,047.34	3,121.43	3,264.66
80 years and over	36	*2,592.35	544.18	†	*1,908.17	*2,034.60	*2,189.83	*2,518.75	*2,821.76	*3,097.58	*3,305.14	†
20 years and over (age-adjusted)	1,694	2,950.18	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 2. Total body bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	1,179.36	270.66	817.09	873.27	909.11	979.45	1,137.84	1,325.93	1,468.32	1,542.12	1,679.05
12–15 years	2,318	1,829.51	334.85	1,305.33	1,413.91	1,484.98	1,587.00	1,822.24	2,048.43	2,171.28	2,264.21	2,398.36
16–19 years	2,027	2,095.41	320.77	1,593.44	1,703.84	1,771.60	1,886.47	2,073.46	2,300.92	2,412.04	2,491.11	2,669.16
20–29 years	1,378	2,177.48	307.49	1,704.49	1,792.50	1,855.52	1,961.07	2,163.75	2,367.99	2,487.38	2,571.77	2,691.63
30–39 years	1,372	2,227.18	319.44	1,737.95	1,832.22	1,909.86	1,999.38	2,200.58	2,431.50	2,559.11	2,644.44	2,780.62
40–49 years	1,570	2,223.11	328.86	1,718.65	1,830.39	1,898.92	1,999.02	2,188.48	2,420.00	2,559.08	2,650.01	2,811.85
50–59 years	1,200	2,106.70	329.99	1,587.14	1,699.09	1,768.70	1,880.75	2,097.14	2,312.35	2,453.39	2,545.80	2,665.41
60–69 years	1,419	1,984.01	343.74	1,456.96	1,562.55	1,631.86	1,744.02	1,979.67	2,197.72	2,325.45	2,415.80	2,550.93
70–79 years	750	1,794.42	321.86	1,299.67	1,419.08	1,469.93	1,576.76	1,775.59	1,992.06	2,114.01	2,203.21	2,373.30
80 years and over	594	1,596.55	318.42	1,081.32	1,194.09	1,271.92	1,375.97	1,570.65	1,811.14	1,913.71	2,007.26	2,122.05
20 years and over (age-adjusted)	8,283	2,108.32	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	1,148.82	267.87	797.74	838.49	879.85	952.25	1,105.83	1,298.38	1,428.44	1,513.06	1,669.11
12–15 years	821	1,788.78	305.57	1,297.58	1,416.33	1,484.19	1,588.24	1,789.57	1,988.73	2,079.27	2,153.27	2,293.59
16–19 years	692	1,982.35	302.43	1,542.39	1,609.28	1,673.79	1,777.18	1,974.37	2,153.15	2,258.95	2,353.98	2,495.86
20–29 years	364	2,072.16	282.61	1,615.40	1,725.95	1,776.37	1,866.93	2,050.09	2,259.21	2,379.35	2,456.14	2,577.74
30–39 years	298	2,101.06	294.95	1,685.91	1,765.37	1,812.85	1,906.12	2,082.11	2,260.22	2,366.41	2,474.45	2,626.91
40–49 years	372	2,110.27	280.54	1,661.95	1,765.96	1,824.86	1,946.88	2,089.35	2,306.24	2,405.12	2,461.86	2,566.11
50–59 years	194	1,953.47	358.51	1,393.40	1,487.30	1,556.86	1,698.95	1,948.45	2,191.24	2,305.26	2,358.49	2,457.12
60–69 years	375	1,783.27	324.32	1,251.97	1,359.98	1,446.30	1,543.20	1,780.00	1,992.46	2,097.65	2,231.46	2,334.03
70–79 years	154	*1,614.39	313.23	*1,078.70	*1,203.86	*1,290.21	*1,450.73	*1,616.50	*1,782.70	*1,921.38	*1,991.30	*2,090.90
80 years and over	47	*1,412.87	295.88	†	*1,104.03	*1,149.45	*1,235.33	*1,373.01	*1,599.04	*1,712.40	*1,736.62	†
20 years and over (age-adjusted)	1,804	1,969.89	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	1,162.18	254.76	808.09	869.61	904.08	972.86	1,133.02	1,301.84	1,439.96	1,517.38	1,605.77
12–15 years	576	1,803.14	326.97	1,291.35	1,383.50	1,458.53	1,562.66	1,800.38	2,026.76	2,151.00	2,237.14	2,347.60
16–19 years	543	2,096.82	300.47	1,603.30	1,718.12	1,800.36	1,901.55	2,081.46	2,293.54	2,396.02	2,459.79	2,649.33
20–29 years	583	2,170.16	281.20	1,721.85	1,808.30	1,861.05	1,964.78	2,162.68	2,354.05	2,463.24	2,530.11	2,630.62
30–39 years	612	2,220.34	301.31	1,745.65	1,846.13	1,925.75	2,003.05	2,204.17	2,425.51	2,529.28	2,609.27	2,744.89
40–49 years	668	2,222.34	319.86	1,733.20	1,839.72	1,907.98	1,997.89	2,191.94	2,416.75	2,552.62	2,637.23	2,793.82
50–59 years	639	2,119.14	305.82	1,653.70	1,740.43	1,803.52	1,910.31	2,105.57	2,307.60	2,444.76	2,529.04	2,639.69
60–69 years	644	1,990.90	329.15	1,477.54	1,576.88	1,650.90	1,760.00	1,997.90	2,193.40	2,308.29	2,397.51	2,531.25
70–79 years	429	1,799.11	313.74	1,323.29	1,431.43	1,478.11	1,589.51	1,786.61	1,989.29	2,109.59	2,186.83	2,364.67
80 years and over	457	1,600.06	307.51	1,082.40	1,207.89	1,288.26	1,390.82	1,576.04	1,810.51	1,898.41	1,995.42	2,110.25
20 years and over (age-adjusted)	4,032	2,108.55	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	1,278.36	309.48	876.57	936.12	981.12	1,062.97	1,206.69	1,454.32	1,594.31	1,687.42	1,831.14
12–15 years	737	2,027.48	355.30	1,475.00	1,584.49	1,665.43	1,784.53	2,004.71	2,258.19	2,419.50	2,526.48	2,619.63
16–19 years	609	2,285.89	355.63	1,757.08	1,866.22	1,923.22	2,024.48	2,264.04	2,495.91	2,633.21	2,727.24	2,906.05
20–29 years	297	2,379.67	338.09	1,853.29	1,965.88	2,022.09	2,160.13	2,354.25	2,592.61	2,731.23	2,815.89	2,972.27
30–39 years	333	2,437.26	343.48	1,925.37	2,017.17	2,089.64	2,185.15	2,401.34	2,665.83	2,779.77	2,869.86	2,984.25
40–49 years	398	2,411.55	339.68	1,910.21	2,012.10	2,072.72	2,172.69	2,380.83	2,623.16	2,735.39	2,834.68	2,981.82
50–59 years	250	2,265.57	357.01	1,688.71	1,811.04	1,903.94	2,019.63	2,266.18	2,489.01	2,631.71	2,711.34	2,877.79
60–69 years	306	2,191.75	354.44	1,602.82	1,782.48	1,830.92	1,932.43	2,180.87	2,413.99	2,550.80	2,642.77	2,796.89
70–79 years	124	1,972.93	350.67	1,417.60	1,524.37	1,598.41	1,711.24	1,975.13	2,194.36	2,322.06	2,384.22	†
80 years and over	58	*1,770.19	366.47	*1,190.85	*1,311.85	*1,375.00	*1,497.22	*1,751.47	*2,015.90	*2,153.62	*2,232.55	*2,330.85
20 years and over (age-adjusted)	1,766	2,299.75	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 3. Total body bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.844	0.072	0.736	0.753	0.770	0.792	0.842	0.890	0.917	0.938	0.966
12–15 years	2,264	1.001	0.114	0.830	0.862	0.881	0.920	0.988	1.074	1.124	1.153	1.198
16–19 years	2,309	1.174	0.110	1.003	1.034	1.060	1.097	1.171	1.245	1.286	1.315	1.358
20–29 years	1,530	1.213	0.109	1.045	1.082	1.101	1.142	1.202	1.280	1.324	1.356	1.403
30–39 years	1,450	1.212	0.110	1.045	1.078	1.095	1.133	1.204	1.279	1.325	1.354	1.406
40–49 years	1,549	1.205	0.108	1.033	1.073	1.094	1.131	1.200	1.277	1.312	1.338	1.381
50–59 years	1,187	1.183	0.115	1.001	1.033	1.060	1.106	1.182	1.250	1.301	1.328	1.375
60–69 years	1,350	1.169	0.117	0.980	1.026	1.050	1.088	1.162	1.241	1.291	1.329	1.369
70–79 years	825	1.133	0.114	0.952	0.990	1.014	1.054	1.131	1.211	1.252	1.277	1.323
80 years and over	501	1.109	0.119	0.918	0.964	0.993	1.025	1.108	1.181	1.229	1.263	1.312
20 years and over (age-adjusted)	8,392	1.190	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.833	0.075	0.713	0.739	0.757	0.781	0.830	0.879	0.914	0.936	0.960
12–15 years	777	0.995	0.120	0.817	0.852	0.872	0.906	0.983	1.067	1.118	1.152	1.221
16–19 years	783	1.142	0.103	0.979	1.009	1.037	1.073	1.135	1.207	1.246	1.279	1.327
20–29 years	444	1.173	0.096	1.021	1.056	1.073	1.107	1.170	1.226	1.264	1.298	1.352
30–39 years	337	1.162	0.094	1.015	1.051	1.071	1.096	1.153	1.221	1.256	1.285	1.333
40–49 years	381	1.155	0.101	1.001	1.024	1.050	1.089	1.151	1.215	1.253	1.289	1.326
50–59 years	174	1.142	0.109	0.947	0.994	1.021	1.061	1.142	1.218	1.248	1.291	1.320
60–69 years	348	1.136	0.104	0.973	1.004	1.024	1.059	1.137	1.195	1.238	1.259	1.298
70–79 years	164	*1.106	0.107	*0.902	*0.950	*0.983	*1.027	*1.125	*1.184	*1.211	*1.226	*1.250
80 years and over	48	*1.075	0.098	*0.926	*0.932	*0.967	*1.011	*1.069	*1.123	*1.186	*1.222	*1.263
20 years and over (age-adjusted)	1,896	1.148	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.839	0.069	0.737	0.752	0.769	0.791	0.836	0.883	0.909	0.927	0.956
12–15 years	578	0.995	0.111	0.830	0.860	0.878	0.917	0.980	1.065	1.119	1.145	1.194
16–19 years	591	1.171	0.107	0.997	1.034	1.058	1.095	1.172	1.241	1.277	1.305	1.344
20–29 years	617	1.210	0.099	1.052	1.086	1.105	1.145	1.199	1.271	1.317	1.337	1.378
30–39 years	647	1.213	0.106	1.048	1.083	1.104	1.141	1.207	1.278	1.323	1.348	1.388
40–49 years	700	1.206	0.102	1.041	1.078	1.101	1.137	1.203	1.274	1.308	1.336	1.373
50–59 years	683	1.181	0.110	1.006	1.034	1.063	1.109	1.182	1.245	1.291	1.320	1.364
60–69 years	623	1.167	0.114	0.986	1.028	1.052	1.088	1.159	1.235	1.283	1.321	1.365
70–79 years	496	1.135	0.114	0.955	0.989	1.013	1.053	1.132	1.214	1.255	1.281	1.325
80 years and over	398	1.107	0.115	0.918	0.966	0.995	1.023	1.107	1.177	1.220	1.255	1.307
20 years and over (age-adjusted)	4,164	1.190	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.884	0.077	0.760	0.785	0.806	0.834	0.881	0.940	0.962	0.975	0.999
12–15 years	745	1.044	0.118	0.871	0.903	0.925	0.955	1.034	1.120	1.162	1.194	1.260
16–19 years	757	1.233	0.116	1.044	1.094	1.118	1.154	1.231	1.306	1.347	1.373	1.425
20–29 years	325	1.304	0.120	1.111	1.165	1.183	1.216	1.292	1.372	1.422	1.459	1.513
30–39 years	310	1.292	0.114	1.099	1.150	1.177	1.211	1.286	1.363	1.410	1.434	1.481
40–49 years	366	1.258	0.131	1.061	1.096	1.128	1.169	1.250	1.334	1.380	1.419	1.475
50–59 years	240	1.256	0.122	1.046	1.108	1.133	1.169	1.250	1.335	1.379	1.405	1.454
60–69 years	303	1.240	0.115	1.060	1.095	1.119	1.160	1.231	1.324	1.356	1.388	1.426
70–79 years	114	1.167	0.119	0.967	1.014	1.044	1.085	1.166	1.245	1.293	1.315	1.371
80 years and over	36	*1.178	0.156	†	*0.979	*1.028	*1.084	*1.167	*1.263	*1.285	*1.330	†
20 years and over (age-adjusted)	1,694	1.260	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 3. Total body bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.834	0.087	0.698	0.723	0.740	0.771	0.830	0.890	0.924	0.946	0.981
12–15 years	2,318	1.012	0.095	0.851	0.887	0.915	0.949	1.010	1.073	1.111	1.138	1.169
16–19 years	2,027	1.092	0.090	0.945	0.981	1.002	1.033	1.088	1.145	1.183	1.211	1.252
20–29 years	1,378	1.119	0.087	0.983	1.010	1.029	1.060	1.114	1.171	1.207	1.230	1.268
30–39 years	1,372	1.138	0.094	0.989	1.021	1.041	1.075	1.138	1.195	1.232	1.261	1.292
40–49 years	1,570	1.132	0.099	0.973	1.011	1.034	1.068	1.129	1.187	1.232	1.261	1.304
50–59 years	1,200	1.090	0.105	0.920	0.956	0.982	1.020	1.086	1.160	1.199	1.222	1.266
60–69 years	1,419	1.040	0.110	0.869	0.899	0.926	0.966	1.035	1.115	1.154	1.184	1.226
70–79 years	750	0.978	0.105	0.811	0.846	0.872	0.903	0.970	1.050	1.098	1.130	1.166
80 years and over	594	0.925	0.107	0.757	0.797	0.815	0.848	0.921	0.999	1.035	1.059	1.101
20 years and over (age-adjusted)	8,283	1.093	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.820	0.091	0.684	0.702	0.721	0.757	0.812	0.878	0.918	0.947	0.980
12–15 years	821	1.006	0.092	0.849	0.889	0.917	0.949	1.006	1.065	1.092	1.121	1.161
16–19 years	692	1.074	0.089	0.933	0.962	0.984	1.015	1.069	1.126	1.158	1.182	1.226
20–29 years	364	1.102	0.084	0.976	1.001	1.016	1.039	1.094	1.155	1.195	1.220	1.251
30–39 years	298	1.121	0.097	0.984	1.015	1.028	1.055	1.116	1.177	1.210	1.236	1.277
40–49 years	372	1.121	0.092	0.972	1.001	1.024	1.057	1.120	1.181	1.212	1.236	1.265
50–59 years	194	1.059	0.125	0.875	0.906	0.930	0.967	1.055	1.142	1.175	1.198	1.220
60–69 years	375	0.997	0.113	0.821	0.848	0.876	0.911	0.996	1.072	1.106	1.139	1.196
70–79 years	154	*0.937	0.105	*0.765	*0.800	*0.827	*0.867	*0.940	*1.002	*1.043	*1.061	*1.099
80 years and over	47	*0.885	0.098	†	*0.769	*0.798	*0.822	*0.870	*0.935	*0.982	*1.027	†
20 years and over (age-adjusted)	1,804	1.069	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.828	0.082	0.698	0.721	0.739	0.768	0.824	0.882	0.913	0.932	0.958
12–15 years	576	1.003	0.092	0.848	0.879	0.905	0.938	1.003	1.064	1.102	1.128	1.155
16–19 years	543	1.087	0.084	0.948	0.983	1.003	1.031	1.086	1.138	1.175	1.199	1.235
20–29 years	583	1.109	0.079	0.984	1.007	1.026	1.055	1.106	1.158	1.189	1.207	1.245
30–39 years	612	1.131	0.089	0.985	1.016	1.035	1.073	1.133	1.190	1.222	1.247	1.284
40–49 years	668	1.127	0.096	0.971	1.010	1.032	1.065	1.123	1.180	1.226	1.254	1.296
50–59 years	639	1.091	0.099	0.932	0.963	0.988	1.023	1.087	1.157	1.197	1.221	1.259
60–69 years	644	1.040	0.107	0.871	0.902	0.927	0.968	1.035	1.116	1.150	1.179	1.221
70–79 years	429	0.977	0.104	0.809	0.845	0.872	0.903	0.970	1.046	1.095	1.129	1.164
80 years and over	457	0.924	0.105	0.752	0.797	0.815	0.848	0.923	0.996	1.034	1.057	1.091
20 years and over (age-adjusted)	4,032	1.088	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.871	0.090	0.727	0.755	0.776	0.809	0.864	0.930	0.968	0.989	1.023
12–15 years	737	1.071	0.097	0.910	0.943	0.968	1.006	1.073	1.135	1.170	1.193	1.237
16–19 years	609	1.153	0.091	0.997	1.035	1.060	1.090	1.156	1.214	1.248	1.270	1.298
20–29 years	297	1.186	0.092	1.035	1.063	1.084	1.119	1.186	1.247	1.280	1.300	1.346
30–39 years	333	1.196	0.095	1.051	1.075	1.091	1.131	1.194	1.252	1.291	1.317	1.356
40–49 years	398	1.191	0.098	1.032	1.071	1.090	1.125	1.189	1.248	1.289	1.322	1.362
50–59 years	250	1.136	0.114	0.950	0.997	1.022	1.061	1.134	1.204	1.243	1.276	1.328
60–69 years	306	1.096	0.113	0.915	0.949	0.974	1.018	1.094	1.173	1.204	1.241	1.276
70–79 years	124	1.035	0.105	0.854	0.911	0.935	0.954	1.031	1.106	1.142	1.173	1.199
80 years and over	58	*0.979	0.129	*0.781	*0.812	*0.845	*0.869	*0.982	*1.048	*1.102	*1.119	†
20 years and over (age-adjusted)	1,766	1.150	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 4. Total minus head (subtotal) bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	1,163.80	168.87	947.33	985.99	1,018.96	1,053.72	1,134.88	1,239.17	1,311.97	1,392.53	1,502.00
12–15 years	2,264	1,660.56	297.32	1,208.32	1,263.22	1,315.73	1,427.10	1,663.72	1,880.48	1,984.57	2,045.21	2,117.60
16–19 years	2,309	1,997.36	213.81	1,658.06	1,729.86	1,778.28	1,853.01	1,990.10	2,132.23	2,212.23	2,267.14	2,355.97
20–29 years	1,530	2,047.54	208.88	1,712.17	1,794.55	1,841.66	1,911.46	2,038.87	2,170.79	2,253.60	2,312.77	2,399.69
30–39 years	1,450	2,046.30	205.62	1,725.98	1,787.79	1,838.74	1,908.00	2,036.54	2,175.17	2,247.59	2,311.95	2,380.63
40–49 years	1,549	2,068.45	187.23	1,760.12	1,838.54	1,880.08	1,946.96	2,063.25	2,194.31	2,260.24	2,303.73	2,375.01
50–59 years	1,187	2,046.63	191.56	1,735.33	1,804.15	1,849.68	1,920.03	2,051.10	2,169.40	2,235.13	2,294.27	2,355.27
60–69 years	1,350	2,037.15	194.85	1,702.39	1,794.62	1,837.24	1,913.96	2,042.18	2,168.84	2,239.34	2,276.87	2,346.17
70–79 years	825	1,987.77	196.23	1,658.32	1,737.52	1,781.99	1,855.57	1,995.52	2,131.38	2,192.18	2,234.15	2,292.95
80 years and over	501	1,904.58	191.35	1,577.96	1,657.86	1,706.72	1,783.71	1,904.64	2,028.27	2,092.83	2,148.87	2,225.72
20 years and over (age-adjusted)	8,392	2,038.97	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	1,174.22	173.42	969.92	1,001.00	1,020.85	1,057.68	1,135.06	1,261.03	1,351.22	1,420.93	1,521.42
12–15 years	777	1,640.62	279.06	1,173.52	1,251.87	1,319.09	1,438.11	1,646.79	1,819.59	1,936.70	2,012.09	2,105.88
16–19 years	783	1,909.29	205.59	1,601.77	1,669.18	1,714.33	1,769.38	1,892.26	2,036.16	2,105.42	2,174.04	2,263.46
20–29 years	444	1,922.77	187.76	1,633.76	1,695.93	1,726.09	1,788.71	1,916.55	2,039.97	2,111.79	2,155.46	2,240.94
30–39 years	337	1,909.19	167.69	1,647.01	1,695.78	1,745.59	1,794.51	1,909.18	2,012.04	2,071.74	2,112.60	2,193.05
40–49 years	381	1,918.20	173.80	1,672.38	1,720.56	1,747.01	1,799.56	1,908.56	2,034.30	2,080.80	2,137.86	2,214.77
50–59 years	174	1,909.89	152.82	1,676.13	1,735.24	1,753.81	1,799.99	1,919.26	2,009.90	2,076.83	2,108.11	2,147.74
60–69 years	348	1,920.44	165.63	1,637.90	1,700.55	1,740.82	1,810.52	1,926.03	2,030.53	2,074.82	2,130.40	2,203.66
70–79 years	164	*1,842.79	174.12	*1,539.34	*1,621.68	*1,683.13	*1,744.83	*1,852.76	*1,947.42	*1,999.01	*2,032.07	*2,097.50
80 years and over	48	*1,796.06	182.25	*1,459.64	*1,555.18	*1,600.02	*1,671.05	*1,839.89	*1,889.50	*1,910.16	*2,005.17	†
20 years and over (age-adjusted)	1,896	1,904.13	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	1,152.37	165.36	928.81	974.08	1,011.23	1,048.25	1,129.69	1,233.33	1,292.58	1,371.19	1,480.69
12–15 years	578	1,665.49	302.27	1,206.28	1,264.43	1,315.16	1,422.15	1,671.12	1,901.07	2,001.04	2,052.78	2,121.43
16–19 years	591	2,009.51	205.58	1,667.36	1,747.68	1,794.66	1,877.37	2,003.99	2,145.49	2,213.87	2,266.40	2,341.26
20–29 years	617	2,066.69	193.69	1,757.80	1,838.91	1,882.99	1,947.09	2,051.85	2,180.71	2,256.23	2,309.38	2,390.84
30–39 years	647	2,072.47	195.02	1,761.32	1,837.14	1,880.04	1,941.20	2,074.70	2,189.47	2,259.82	2,313.35	2,383.56
40–49 years	700	2,093.70	174.64	1,821.72	1,877.86	1,924.80	1,974.41	2,081.74	2,207.20	2,271.20	2,312.78	2,389.49
50–59 years	683	2,064.59	183.69	1,758.85	1,844.40	1,881.98	1,945.62	2,070.33	2,179.78	2,250.82	2,299.46	2,356.60
60–69 years	623	2,058.26	182.01	1,772.72	1,825.60	1,873.08	1,941.38	2,055.72	2,179.73	2,247.37	2,283.77	2,354.11
70–79 years	496	2,005.50	190.29	1,687.78	1,757.71	1,802.55	1,878.59	2,007.91	2,144.29	2,205.77	2,240.64	2,297.80
80 years and over	398	1,907.82	184.38	1,593.29	1,672.68	1,716.42	1,788.06	1,907.34	2,028.70	2,090.54	2,141.84	2,212.01
20 years and over (age-adjusted)	4,164	2,060.09	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	1,215.81	180.82	973.83	1,027.41	1,056.63	1,099.70	1,178.97	1,283.54	1,406.54	1,467.26	1,586.48
12–15 years	745	1,722.56	301.00	1,246.76	1,320.78	1,375.92	1,506.28	1,731.61	1,934.12	2,018.05	2,086.48	2,194.75
16–19 years	757	2,055.83	232.60	1,698.93	1,777.62	1,831.32	1,906.48	2,043.94	2,188.64	2,272.99	2,338.71	2,450.54
20–29 years	325	2,134.16	221.75	1,824.87	1,872.86	1,919.14	1,979.82	2,122.52	2,261.11	2,339.10	2,402.27	2,516.11
30–39 years	310	2,135.21	216.76	1,825.93	1,868.96	1,903.48	1,978.23	2,122.93	2,293.02	2,354.81	2,402.74	2,503.41
40–49 years	366	2,099.81	190.94	1,793.92	1,859.18	1,904.26	1,969.22	2,091.26	2,224.53	2,292.85	2,333.44	2,405.52
50–59 years	240	2,092.18	202.71	1,787.16	1,816.66	1,868.56	1,949.61	2,076.26	2,217.12	2,292.85	2,363.16	2,430.27
60–69 years	303	2,076.66	185.10	1,786.66	1,840.10	1,896.70	1,961.79	2,065.64	2,191.86	2,264.08	2,315.43	2,380.46
70–79 years	114	1,996.99	200.68	1,675.44	1,721.39	1,789.21	1,874.76	2,020.26	2,125.42	2,194.73	2,235.28	2,298.17
80 years and over	36	*1,961.61	232.46	†	*1,631.99	*1,718.04	*1,790.53	*1,961.33	*2,087.26	*2,237.69	†	†
20 years and over (age-adjusted)	1,694	2,095.16	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 4. Total minus head (subtotal) bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	1,189.20	184.41	934.22	985.51	1,016.98	1,061.93	1,160.81	1,293.84	1,381.00	1,457.00	1,547.72
12–15 years	2,318	1,575.77	187.05	1,264.40	1,331.48	1,381.50	1,451.35	1,575.98	1,699.24	1,767.39	1,814.80	1,876.99
16–19 years	2,027	1,690.36	177.40	1,421.93	1,478.01	1,511.47	1,575.34	1,681.97	1,792.44	1,856.97	1,899.15	1,980.19
20–29 years	1,378	1,719.52	165.67	1,449.49	1,506.97	1,545.32	1,607.91	1,715.87	1,823.58	1,890.98	1,931.27	1,997.62
30–39 years	1,372	1,731.56	162.27	1,482.15	1,534.24	1,572.54	1,619.90	1,716.02	1,837.85	1,891.87	1,942.34	2,028.06
40–49 years	1,570	1,740.26	163.10	1,482.83	1,539.30	1,570.62	1,630.48	1,736.53	1,839.52	1,907.20	1,950.34	2,009.58
50–59 years	1,200	1,710.20	162.75	1,452.29	1,502.78	1,538.12	1,600.51	1,714.41	1,808.44	1,874.90	1,914.24	1,973.94
60–69 years	1,419	1,685.26	173.94	1,410.36	1,462.65	1,506.02	1,562.76	1,688.39	1,800.20	1,859.19	1,895.15	1,959.26
70–79 years	750	1,616.99	173.74	1,333.33	1,400.30	1,450.22	1,507.66	1,619.67	1,727.84	1,790.16	1,837.35	1,892.66
80 years and over	594	1,507.20	180.29	1,200.42	1,264.69	1,320.89	1,392.73	1,515.38	1,628.39	1,680.25	1,730.65	1,794.58
20 years and over (age-adjusted)	8,283	1,703.22	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	1,174.52	177.97	935.11	978.32	1,004.28	1,048.13	1,152.80	1,276.55	1,358.57	1,421.76	1,511.40
12–15 years	821	1,547.93	171.99	1,263.22	1,325.29	1,369.38	1,435.27	1,543.83	1,666.67	1,716.32	1,747.52	1,825.54
16–19 years	692	1,616.97	169.18	1,341.84	1,414.54	1,444.84	1,502.07	1,606.46	1,718.97	1,787.85	1,827.89	1,902.63
20–29 years	364	1,652.80	149.78	1,407.60	1,445.06	1,486.17	1,560.11	1,650.71	1,741.92	1,799.04	1,846.40	1,917.82
30–39 years	298	1,649.43	144.13	1,436.42	1,499.34	1,512.96	1,546.97	1,639.52	1,734.70	1,791.59	1,828.73	1,904.56
40–49 years	372	1,662.28	140.76	1,429.82	1,487.01	1,524.81	1,560.77	1,660.63	1,753.95	1,800.78	1,834.28	1,910.67
50–59 years	194	1,622.09	163.87	1,358.05	1,404.02	1,446.20	1,504.65	1,634.72	1,730.84	1,790.89	1,834.07	1,895.93
60–69 years	375	1,566.88	161.33	1,288.45	1,360.28	1,410.10	1,454.32	1,573.99	1,679.77	1,733.63	1,761.99	1,798.71
70–79 years	154	*1,503.01	174.43	*1,182.29	*1,292.93	*1,333.91	*1,413.66	*1,506.17	*1,617.51	*1,665.50	*1,706.10	*1,762.87
80 years and over	47	*1,381.36	185.80		† 1,122.18	*1,179.65	*1,258.09	*1,381.05	*1,504.62	*1,569.02	*1,595.17	*1,641.11
20 years and over (age-adjusted)	1,804	1,615.50	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	1,180.47	178.00	927.04	976.88	1,006.90	1,056.37	1,158.02	1,282.78	1,360.87	1,442.95	1,509.97
12–15 years	576	1,567.88	185.47	1,253.56	1,319.24	1,372.27	1,442.89	1,576.26	1,698.50	1,757.54	1,797.53	1,846.41
16–19 years	543	1,701.23	166.45	1,450.82	1,502.39	1,540.97	1,602.47	1,693.98	1,793.50	1,852.37	1,887.59	1,962.35
20–29 years	583	1,732.03	155.53	1,469.11	1,532.35	1,569.37	1,626.57	1,728.76	1,829.59	1,893.81	1,927.60	1,981.43
30–39 years	612	1,738.96	154.77	1,504.38	1,557.65	1,587.82	1,632.71	1,724.09	1,841.26	1,886.93	1,936.59	2,020.36
40–49 years	668	1,748.98	159.91	1,495.75	1,549.25	1,579.67	1,639.29	1,745.98	1,842.29	1,912.59	1,956.56	2,012.62
50–59 years	639	1,720.61	149.90	1,482.42	1,529.24	1,561.09	1,615.09	1,723.93	1,808.04	1,864.27	1,909.43	1,972.53
60–69 years	644	1,693.35	163.88	1,432.88	1,487.88	1,532.17	1,581.80	1,697.24	1,802.26	1,854.72	1,888.39	1,944.90
70–79 years	429	1,625.63	166.62	1,363.07	1,420.88	1,467.95	1,526.02	1,631.19	1,728.75	1,790.92	1,837.82	1,884.33
80 years and over	457	1,514.49	172.03	1,223.23	1,278.72	1,338.34	1,406.22	1,521.41	1,626.44	1,676.42	1,725.90	1,796.38
20 years and over (age-adjusted)	4,032	1,712.48	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	1,239.45	209.39	959.11	1,016.97	1,043.48	1,096.66	1,195.93	1,357.12	1,483.29	1,532.36	1,605.34
12–15 years	737	1,659.35	193.14	1,361.80	1,422.66	1,471.08	1,526.87	1,643.11	1,786.54	1,860.90	1,917.17	1,988.29
16–19 years	609	1,751.63	199.65	1,451.62	1,525.44	1,559.98	1,621.27	1,732.72	1,863.28	1,938.20	1,998.26	2,089.74
20–29 years	297	1,777.65	173.69	1,492.28	1,581.68	1,608.55	1,666.49	1,767.86	1,873.81	1,955.52	2,014.03	2,065.00
30–39 years	333	1,810.41	173.50	1,541.07	1,591.54	1,635.63	1,688.02	1,797.98	1,922.17	1,999.64	2,051.64	2,102.20
40–49 years	398	1,800.35	160.41	1,559.13	1,605.48	1,640.09	1,693.56	1,791.81	1,894.98	1,948.65	1,994.48	2,074.88
50–59 years	250	1,771.93	167.98	1,466.47	1,553.71	1,610.99	1,663.15	1,761.09	1,882.19	1,933.85	1,966.29	2,063.62
60–69 years	306	1,776.56	179.09	1,470.84	1,545.66	1,591.53	1,660.07	1,777.47	1,897.04	1,959.90	2,000.82	2,045.30
70–79 years	124	1,685.11	193.55	1,358.72	1,427.30	1,479.97	1,566.28	1,680.71	1,805.48	1,884.19	1,932.56	†
80 years and over	58	*1,584.19	173.60	*1,263.88	*1,335.09	*1,380.34	*1,479.30	*1,591.68	*1,688.35	*1,767.41	*1,789.70	*1,816.26
20 years and over (age-adjusted)	1,766	1,771.85	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 5. Total minus head (subtotal) bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	856.17	204.56	590.56	629.87	661.99	714.39	826.74	961.16	1,049.14	1,118.44	1,249.26
12–15 years	2,264	1,552.50	455.19	904.60	974.94	1,052.68	1,187.98	1,515.81	1,866.79	2,045.89	2,163.37	2,317.20
16–19 years	2,309	2,176.08	402.70	1,568.52	1,670.00	1,769.86	1,898.84	2,142.28	2,435.43	2,598.96	2,690.53	2,831.75
20–29 years	1,530	2,284.74	417.97	1,660.29	1,797.10	1,881.41	2,010.38	2,248.38	2,512.55	2,681.53	2,829.87	3,008.30
30–39 years	1,450	2,265.15	411.77	1,685.10	1,780.71	1,856.86	1,979.20	2,224.88	2,493.57	2,667.60	2,786.36	2,976.95
40–49 years	1,549	2,274.40	371.28	1,715.26	1,835.03	1,904.31	2,013.40	2,258.07	2,493.43	2,629.63	2,749.85	2,918.67
50–59 years	1,187	2,210.25	382.38	1,627.34	1,753.07	1,823.69	1,953.19	2,189.50	2,435.71	2,587.50	2,691.32	2,852.79
60–69 years	1,350	2,179.33	382.30	1,592.10	1,699.96	1,785.92	1,923.90	2,168.26	2,403.78	2,578.51	2,681.02	2,840.21
70–79 years	825	2,053.85	367.32	1,501.14	1,608.79	1,665.42	1,785.34	2,046.28	2,284.51	2,429.53	2,531.16	2,663.55
80 years and over	501	1,909.87	365.69	1,363.72	1,466.10	1,544.67	1,663.30	1,885.76	2,132.57	2,293.98	2,403.17	2,572.64
20 years and over (age-adjusted)	8,392	2,219.37	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	862.40	218.06	586.02	622.31	658.27	713.16	817.39	970.48	1,083.56	1,197.60	1,307.66
12–15 years	777	1,529.82	441.28	867.67	969.31	1,058.38	1,216.90	1,507.32	1,804.22	1,974.47	2,115.88	2,320.21
16–19 years	783	2,014.44	372.80	1,477.25	1,577.73	1,654.08	1,771.75	1,974.81	2,218.65	2,392.70	2,494.94	2,641.91
20–29 years	444	2,066.25	344.99	1,576.79	1,658.09	1,707.63	1,818.44	2,022.04	2,270.27	2,402.53	2,503.32	2,662.92
30–39 years	337	2,019.64	304.07	1,589.59	1,672.93	1,728.78	1,805.25	2,000.22	2,202.65	2,285.37	2,383.65	2,602.61
40–49 years	381	2,018.32	328.01	1,549.89	1,642.55	1,706.32	1,798.65	1,979.48	2,189.97	2,343.56	2,433.37	2,621.00
50–59 years	174	1,994.30	312.64	1,519.18	1,599.10	1,630.78	1,737.89	2,000.04	2,222.75	2,307.73	2,388.63	2,508.38
60–69 years	348	1,984.26	310.45	1,517.75	1,593.86	1,645.30	1,763.24	1,965.73	2,176.53	2,292.75	2,391.45	2,494.54
70–79 years	164	*1,842.92	315.22	*1,315.52	*1,415.67	*1,521.85	*1,628.98	*1,861.78	*2,045.31	*2,160.28	*2,232.58	*2,315.96
80 years and over	48	*1,728.72	316.29	*1,214.50	*1,331.75	*1,411.55	*1,531.65	*1,681.48	*1,849.17	*1,951.90	*2,162.65	†
20 years and over (age-adjusted)	1,896	1,992.17	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	841.06	194.50	581.38	625.06	653.94	706.64	817.42	943.45	1,034.75	1,091.01	1,233.60
12–15 years	578	1,548.81	455.99	904.02	971.58	1,041.85	1,180.88	1,512.15	1,876.69	2,046.52	2,167.24	2,306.38
16–19 years	591	2,183.51	378.92	1,575.18	1,684.25	1,782.89	1,926.21	2,159.55	2,440.28	2,587.24	2,665.08	2,800.36
20–29 years	617	2,299.44	386.71	1,734.46	1,861.31	1,924.14	2,072.29	2,261.56	2,505.86	2,648.29	2,810.74	2,969.89
30–39 years	647	2,299.44	393.99	1,751.52	1,837.78	1,914.52	2,029.91	2,259.03	2,518.25	2,680.04	2,787.53	2,968.43
40–49 years	700	2,305.84	349.08	1,779.02	1,895.11	1,940.61	2,065.54	2,282.95	2,513.87	2,640.36	2,758.31	2,926.67
50–59 years	683	2,227.29	365.88	1,692.94	1,788.91	1,867.41	1,981.77	2,207.00	2,439.86	2,584.37	2,690.56	2,845.83
60–69 years	623	2,202.17	366.54	1,638.21	1,739.53	1,830.66	1,959.99	2,188.92	2,415.96	2,593.21	2,687.63	2,846.84
70–79 years	496	2,078.32	363.53	1,531.41	1,628.29	1,682.41	1,807.49	2,069.52	2,301.97	2,450.81	2,553.20	2,684.03
80 years and over	398	1,908.85	350.77	1,373.71	1,476.41	1,553.98	1,674.06	1,887.72	2,129.58	2,279.25	2,386.22	2,530.08
20 years and over (age-adjusted)	4,164	2,243.12	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	939.76	227.34	646.89	688.23	722.36	791.88	900.41	1,041.68	1,158.26	1,226.21	1,370.58
12–15 years	745	1,679.29	475.97	971.78	1,086.28	1,163.85	1,302.69	1,651.98	1,979.65	2,182.55	2,288.18	2,437.25
16–19 years	757	2,357.05	463.72	1,708.55	1,818.94	1,912.33	2,040.40	2,317.01	2,618.39	2,774.96	2,915.55	3,134.22
20–29 years	325	2,559.34	479.28	1,879.09	2,027.76	2,103.71	2,251.91	2,494.82	2,806.31	2,992.19	3,132.79	3,452.83
30–39 years	310	2,517.74	455.29	1,857.11	1,971.70	2,066.09	2,198.24	2,486.33	2,766.04	2,957.79	3,097.98	3,351.35
40–49 years	366	2,402.95	425.30	1,793.65	1,881.76	1,977.24	2,124.85	2,352.32	2,647.76	2,801.21	2,917.20	3,155.71
50–59 years	240	2,394.04	429.07	1,768.32	1,895.27	1,948.00	2,071.17	2,379.92	2,653.62	2,805.92	2,911.95	3,134.25
60–69 years	303	2,330.38	371.43	1,746.81	1,903.16	1,974.97	2,104.99	2,293.53	2,535.82	2,695.62	2,781.58	2,982.10
70–79 years	114	2,109.21	371.99	1,521.74	1,627.84	1,739.21	1,868.53	2,100.15	2,363.23	2,458.11	2,527.52	2,720.32
80 years and over	36	*2,090.32	473.68	†	*1,461.78	*1,580.06	*1,686.53	*2,017.52	*2,340.74	*2,587.66	*2,740.81	†
20 years and over (age-adjusted)	1,694	2,408.46	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 5. Total minus head (subtotal) bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	885.53	245.33	559.16	609.81	646.79	706.33	838.85	1,027.12	1,150.16	1,231.32	1,349.24
12–15 years	2,318	1,446.87	288.01	1,001.00	1,090.69	1,148.41	1,246.60	1,439.32	1,633.07	1,743.27	1,813.96	1,936.01
16–19 years	2,027	1,640.09	281.36	1,194.93	1,297.43	1,354.60	1,453.16	1,621.23	1,814.31	1,925.72	1,995.73	2,137.79
20–29 years	1,378	1,680.56	265.54	1,285.98	1,346.45	1,403.24	1,490.47	1,672.97	1,850.95	1,944.65	2,013.39	2,116.07
30–39 years	1,372	1,700.81	268.78	1,298.54	1,378.33	1,433.49	1,511.42	1,669.63	1,873.64	1,968.97	2,054.52	2,173.96
40–49 years	1,570	1,701.27	275.08	1,287.78	1,373.43	1,420.93	1,515.43	1,681.05	1,864.82	1,980.10	2,059.24	2,178.45
50–59 years	1,200	1,609.08	269.09	1,191.40	1,280.30	1,334.09	1,424.55	1,597.94	1,770.89	1,882.94	1,963.04	2,077.46
60–69 years	1,419	1,516.09	278.33	1,088.89	1,180.99	1,233.03	1,321.67	1,502.15	1,703.86	1,798.60	1,869.48	1,962.94
70–79 years	750	1,364.51	260.06	959.38	1,046.29	1,096.12	1,205.96	1,350.17	1,517.11	1,624.84	1,694.93	1,811.79
80 years and over	594	1,189.39	257.03	765.23	855.95	921.70	1,020.47	1,175.23	1,354.71	1,466.56	1,537.27	1,612.38
20 years and over (age-adjusted)	8,283	1,612.33	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	860.75	241.43	547.71	590.02	617.18	687.04	814.50	1,000.50	1,108.76	1,197.38	1,350.77
12–15 years	821	1,406.39	262.08	993.30	1,083.60	1,147.02	1,227.81	1,403.27	1,583.11	1,657.39	1,709.93	1,828.23
16–19 years	692	1,528.38	261.79	1,148.69	1,211.89	1,266.56	1,344.15	1,521.43	1,667.65	1,768.54	1,852.96	1,986.57
20–29 years	364	1,574.22	240.98	1,182.74	1,279.36	1,332.86	1,391.65	1,562.78	1,727.34	1,843.09	1,902.31	2,002.52
30–39 years	298	1,581.66	240.36	1,239.19	1,315.63	1,353.34	1,413.92	1,556.60	1,708.20	1,809.74	1,891.87	2,030.98
40–49 years	372	1,590.06	226.08	1,229.40	1,312.85	1,361.96	1,448.03	1,572.32	1,734.24	1,813.83	1,871.47	1,979.73
50–59 years	194	1,484.01	282.11	1,034.65	1,125.51	1,185.38	1,271.04	1,471.17	1,656.65	1,789.08	1,814.69	1,906.29
60–69 years	375	1,336.27	249.37	942.97	1,018.66	1,063.15	1,165.11	1,329.02	1,506.91	1,601.30	1,667.34	1,730.79
70–79 years	154	*1,206.65	244.75	*770.42	*912.36	*976.90	*1,075.28	*1,211.16	*1,324.25	*1,441.48	*1,493.83	*1,578.59
80 years and over	47	*1,042.94	246.37	†	*721.07	*795.83	*890.24	*1,028.67	*1,172.99	*1,294.97	*1,323.22	†
20 years and over (age-adjusted)	1,804	1,485.64	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	872.38	232.43	555.53	602.80	641.53	697.86	830.53	1,016.39	1,113.32	1,214.59	1,315.94
12–15 years	576	1,429.76	282.01	981.54	1,083.04	1,135.78	1,231.95	1,428.81	1,618.80	1,723.62	1,793.50	1,891.02
16–19 years	543	1,653.78	262.35	1,227.20	1,328.16	1,402.63	1,484.17	1,643.00	1,815.52	1,923.70	1,981.28	2,121.96
20–29 years	583	1,688.86	243.56	1,309.66	1,370.61	1,427.07	1,507.96	1,686.81	1,853.03	1,935.43	1,986.95	2,088.14
30–39 years	612	1,704.11	252.93	1,328.60	1,398.20	1,455.87	1,520.72	1,686.92	1,868.76	1,957.41	2,025.62	2,152.86
40–49 years	668	1,705.06	267.52	1,302.26	1,379.16	1,427.04	1,523.99	1,687.12	1,859.29	1,977.43	2,049.81	2,177.76
50–59 years	639	1,620.74	249.68	1,253.62	1,319.75	1,363.65	1,453.65	1,605.91	1,765.95	1,867.81	1,955.65	2,052.66
60–69 years	644	1,523.10	265.89	1,116.85	1,197.58	1,246.71	1,337.67	1,511.89	1,700.31	1,789.77	1,848.36	1,943.67
70–79 years	429	1,371.84	253.71	990.74	1,054.36	1,112.02	1,213.21	1,361.63	1,516.91	1,619.99	1,689.78	1,805.89
80 years and over	457	1,195.38	249.14	796.80	877.77	934.46	1,030.69	1,184.03	1,353.73	1,463.90	1,522.07	1,605.56
20 years and over (age-adjusted)	4,032	1,618.80	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	969.41	280.60	622.99	670.52	704.39	764.79	901.62	1,144.74	1,253.14	1,366.08	1,481.58
12–15 years	737	1,605.97	303.17	1,143.49	1,248.90	1,293.10	1,394.35	1,579.24	1,796.39	1,923.54	2,016.23	2,126.83
16–19 years	609	1,783.61	320.04	1,334.73	1,408.45	1,463.56	1,548.68	1,759.44	1,966.49	2,106.72	2,186.51	2,356.22
20–29 years	297	1,827.45	294.94	1,367.47	1,464.77	1,527.24	1,633.06	1,807.47	1,989.62	2,117.47	2,249.70	2,352.71
30–39 years	333	1,861.59	294.47	1,411.89	1,499.48	1,563.41	1,645.41	1,841.71	2,063.39	2,147.27	2,218.77	2,354.37
40–49 years	398	1,849.51	283.76	1,431.08	1,506.11	1,561.18	1,658.98	1,824.28	2,022.57	2,125.28	2,185.92	2,343.65
50–59 years	250	1,734.80	290.40	1,266.03	1,373.30	1,455.50	1,525.38	1,707.80	1,925.11	2,055.54	2,113.78	2,213.89
60–69 years	306	1,679.24	294.61	1,189.34	1,312.20	1,389.10	1,486.20	1,670.47	1,869.48	1,965.20	2,042.91	2,145.82
70–79 years	124	1,484.66	286.59	1,010.71	1,127.45	1,188.05	1,290.53	1,484.23	1,678.25	1,777.74	1,853.89	†
80 years and over	58	*1,305.58	274.76	*844.45	*938.48	*1,024.83	*1,093.46	*1,301.59	*1,498.49	*1,601.03	*1,650.04	*1,744.46
20 years and over (age-adjusted)	1,766	1,757.20	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 6. Total minus head (subtotal) bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.727	0.077	0.604	0.626	0.644	0.673	0.726	0.778	0.804	0.825	0.864
12–15 years	2,264	0.917	0.120	0.733	0.765	0.789	0.828	0.906	1.000	1.046	1.072	1.124
16–19 years	2,309	1.082	0.108	0.911	0.949	0.970	1.008	1.077	1.150	1.192	1.223	1.261
20–29 years	1,530	1.108	0.107	0.941	0.980	1.001	1.038	1.098	1.171	1.221	1.248	1.296
30–39 years	1,450	1.100	0.107	0.948	0.970	0.989	1.023	1.090	1.164	1.208	1.240	1.291
40–49 years	1,549	1.094	0.100	0.934	0.969	0.992	1.027	1.091	1.155	1.190	1.217	1.259
50–59 years	1,187	1.073	0.107	0.903	0.941	0.963	1.001	1.070	1.138	1.183	1.207	1.253
60–69 years	1,350	1.063	0.109	0.888	0.929	0.957	0.991	1.061	1.131	1.176	1.206	1.253
70–79 years	825	1.027	0.108	0.858	0.893	0.918	0.946	1.027	1.097	1.143	1.172	1.202
80 years and over	501	0.995	0.112	0.823	0.861	0.884	0.916	0.991	1.063	1.110	1.140	1.178
20 years and over (age-adjusted)	8,392	1.081	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.725	0.083	0.597	0.617	0.636	0.667	0.719	0.778	0.813	0.840	0.874
12–15 years	777	0.915	0.123	0.726	0.765	0.786	0.827	0.907	0.989	1.042	1.080	1.139
16–19 years	783	1.048	0.099	0.891	0.920	0.947	0.982	1.039	1.109	1.146	1.177	1.225
20–29 years	444	1.069	0.092	0.924	0.955	0.976	1.005	1.064	1.121	1.154	1.182	1.241
30–39 years	337	1.053	0.085	0.917	0.949	0.964	0.993	1.051	1.109	1.136	1.156	1.199
40–49 years	381	1.047	0.094	0.897	0.931	0.948	0.981	1.045	1.107	1.138	1.162	1.215
50–59 years	174	1.039	0.100	0.870	0.903	0.916	0.958	1.046	1.110	1.138	1.163	1.195
60–69 years	348	1.028	0.095	0.883	0.905	0.929	0.964	1.024	1.081	1.122	1.150	1.185
70–79 years	164	*0.994	0.100	*0.819	*0.848	*0.876	*0.930	*1.006	*1.071	*1.095	*1.106	*1.126
80 years and over	48	*0.956	0.091	*0.821	*0.841	*0.861	*0.891	*0.941	*1.002	*1.044	*1.094	*1.151
20 years and over (age-adjusted)	1,896	1.040	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.722	0.073	0.605	0.626	0.643	0.673	0.722	0.769	0.792	0.810	0.838
12–15 years	578	0.912	0.118	0.730	0.762	0.786	0.823	0.900	0.995	1.041	1.064	1.120
16–19 years	591	1.080	0.104	0.906	0.948	0.971	1.009	1.080	1.148	1.184	1.215	1.253
20–29 years	617	1.106	0.099	0.954	0.985	1.005	1.044	1.098	1.163	1.211	1.236	1.275
30–39 years	647	1.103	0.104	0.953	0.977	0.996	1.031	1.094	1.167	1.207	1.237	1.282
40–49 years	700	1.096	0.094	0.944	0.976	0.998	1.033	1.096	1.156	1.189	1.211	1.251
50–59 years	683	1.073	0.103	0.908	0.943	0.965	1.003	1.070	1.136	1.176	1.201	1.244
60–69 years	623	1.064	0.106	0.896	0.935	0.960	0.992	1.061	1.129	1.170	1.205	1.248
70–79 years	496	1.030	0.108	0.861	0.898	0.919	0.948	1.030	1.102	1.148	1.174	1.204
80 years and over	398	0.994	0.108	0.824	0.865	0.885	0.918	0.989	1.059	1.102	1.132	1.168
20 years and over (age-adjusted)	4,164	1.082	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.764	0.081	0.631	0.658	0.671	0.713	0.764	0.819	0.846	0.863	0.886
12–15 years	745	0.958	0.124	0.771	0.804	0.826	0.865	0.952	1.041	1.081	1.115	1.175
16–19 years	757	1.138	0.116	0.957	0.999	1.021	1.056	1.135	1.215	1.255	1.282	1.320
20–29 years	325	1.191	0.119	1.011	1.052	1.075	1.112	1.177	1.265	1.305	1.349	1.396
30–39 years	310	1.172	0.112	0.982	1.027	1.064	1.097	1.163	1.243	1.289	1.318	1.362
40–49 years	366	1.137	0.121	0.947	0.998	1.023	1.057	1.128	1.209	1.251	1.286	1.346
50–59 years	240	1.137	0.114	0.952	0.993	1.021	1.060	1.125	1.211	1.254	1.279	1.320
60–69 years	303	1.117	0.107	0.940	0.981	1.013	1.042	1.114	1.188	1.221	1.251	1.277
70–79 years	114	1.050	0.110	0.857	0.915	0.938	0.983	1.044	1.124	1.162	1.184	1.237
80 years and over	36	*1.056	0.142	†	*0.867	*0.893	*0.946	*1.036	*1.135	*1.194	*1.223	†
20 years and over (age-adjusted)	1,694	1.141	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 6. Total minus head (subtotal) bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.732	0.094	0.583	0.612	0.633	0.664	0.727	0.793	0.835	0.861	0.889
12–15 years	2,318	0.910	0.087	0.764	0.799	0.822	0.852	0.909	0.967	1.000	1.023	1.053
16–19 years	2,027	0.965	0.086	0.824	0.859	0.880	0.909	0.960	1.017	1.048	1.079	1.118
20–29 years	1,378	0.973	0.079	0.846	0.876	0.894	0.918	0.969	1.022	1.049	1.074	1.112
30–39 years	1,372	0.977	0.081	0.847	0.879	0.894	0.919	0.974	1.030	1.057	1.078	1.115
40–49 years	1,570	0.973	0.085	0.841	0.868	0.892	0.915	0.965	1.025	1.058	1.085	1.126
50–59 years	1,200	0.936	0.087	0.796	0.826	0.845	0.875	0.931	0.991	1.028	1.052	1.082
60–69 years	1,419	0.893	0.091	0.746	0.777	0.800	0.830	0.890	0.952	0.987	1.011	1.051
70–79 years	750	0.837	0.088	0.693	0.724	0.748	0.780	0.830	0.894	0.931	0.955	0.985
80 years and over	594	0.781	0.092	0.633	0.664	0.692	0.716	0.774	0.839	0.875	0.897	0.940
20 years and over (age-adjusted)	8,283	0.940	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.720	0.098	0.571	0.594	0.613	0.650	0.713	0.783	0.826	0.857	0.888
12–15 years	821	0.901	0.084	0.759	0.793	0.819	0.850	0.902	0.958	0.979	1.003	1.038
16–19 years	692	0.940	0.081	0.816	0.841	0.859	0.885	0.937	0.987	1.017	1.037	1.084
20–29 years	364	0.948	0.076	0.834	0.852	0.867	0.893	0.939	0.997	1.036	1.054	1.086
30–39 years	298	0.955	0.082	0.833	0.860	0.880	0.900	0.943	1.003	1.034	1.058	1.092
40–49 years	372	0.953	0.074	0.826	0.860	0.880	0.898	0.953	1.003	1.026	1.039	1.070
50–59 years	194	0.908	0.101	0.750	0.783	0.806	0.840	0.910	0.969	0.998	1.020	1.054
60–69 years	375	0.846	0.090	0.697	0.730	0.748	0.778	0.850	0.908	0.938	0.962	0.990
70–79 years	154	*0.795	0.089	*0.640	*0.700	*0.716	*0.742	*0.795	*0.844	*0.883	*0.911	*0.938
80 years and over	47	*0.745	0.090	†	*0.627	*0.654	*0.691	*0.745	*0.791	*0.818	*0.857	†
20 years and over (age-adjusted)	1,804	0.912	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.728	0.090	0.582	0.615	0.632	0.663	0.723	0.787	0.824	0.846	0.884
12–15 years	576	0.904	0.086	0.757	0.796	0.817	0.846	0.904	0.959	0.995	1.018	1.041
16–19 years	543	0.967	0.081	0.836	0.867	0.887	0.911	0.963	1.017	1.044	1.075	1.111
20–29 years	583	0.971	0.072	0.851	0.883	0.897	0.920	0.968	1.017	1.042	1.057	1.098
30–39 years	612	0.976	0.077	0.848	0.881	0.897	0.921	0.973	1.028	1.054	1.073	1.101
40–49 years	668	0.970	0.083	0.841	0.866	0.893	0.914	0.962	1.021	1.051	1.079	1.119
50–59 years	639	0.938	0.082	0.808	0.834	0.850	0.880	0.932	0.990	1.026	1.047	1.080
60–69 years	644	0.894	0.089	0.752	0.779	0.802	0.832	0.891	0.948	0.986	1.010	1.050
70–79 years	429	0.838	0.088	0.691	0.724	0.748	0.782	0.831	0.896	0.929	0.954	0.984
80 years and over	457	0.782	0.091	0.633	0.666	0.695	0.720	0.775	0.840	0.875	0.896	0.939
20 years and over (age-adjusted)	4,032	0.939	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.768	0.097	0.610	0.652	0.669	0.699	0.761	0.835	0.873	0.895	0.933
12–15 years	737	0.960	0.086	0.818	0.848	0.873	0.902	0.959	1.017	1.052	1.071	1.106
16–19 years	609	1.012	0.087	0.872	0.901	0.920	0.950	1.012	1.068	1.104	1.128	1.157
20–29 years	297	1.023	0.085	0.890	0.911	0.931	0.958	1.022	1.081	1.111	1.135	1.167
30–39 years	333	1.023	0.085	0.883	0.912	0.937	0.968	1.020	1.075	1.108	1.128	1.170
40–49 years	398	1.023	0.084	0.900	0.919	0.933	0.962	1.017	1.075	1.113	1.133	1.158
50–59 years	250	0.974	0.095	0.818	0.854	0.878	0.917	0.967	1.033	1.069	1.093	1.124
60–69 years	306	0.940	0.096	0.783	0.813	0.840	0.872	0.940	0.998	1.038	1.059	1.098
70–79 years	124	0.874	0.090	0.708	0.769	0.791	0.808	0.875	0.938	0.963	0.988	1.026
80 years and over	58	*0.817	0.104	*0.656	*0.689	*0.703	*0.741	*0.809	*0.885	*0.908	*0.931	†
20 years and over (age-adjusted)	1,766	0.985	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 7. Body trunk bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	419.10	52.69	341.65	361.07	370.11	385.47	412.65	448.76	471.22	484.79	509.32
12–15 years	2,264	576.40	103.89	418.35	440.14	459.39	492.82	577.24	653.73	686.39	711.72	748.60
16–19 years	2,309	705.52	76.00	583.55	611.72	629.89	653.07	705.47	752.23	782.81	799.00	827.14
20–29 years	1,530	718.17	78.46	596.24	623.85	641.73	665.87	713.24	762.72	793.28	815.06	853.92
30–39 years	1,450	711.14	78.29	594.63	617.05	631.63	658.40	708.50	758.10	781.92	804.23	846.15
40–49 years	1,549	709.95	75.69	594.50	619.07	634.33	658.04	707.08	753.50	787.76	804.03	837.08
50–59 years	1,187	696.94	76.39	573.23	602.27	621.06	644.46	692.74	746.14	777.61	792.69	824.34
60–69 years	1,350	691.61	78.05	571.78	596.26	612.77	637.64	692.65	740.21	768.60	787.99	822.96
70–79 years	825	665.80	76.50	540.26	567.46	585.70	612.30	664.91	717.67	743.46	761.59	794.72
80 years and over	501	631.20	73.31	513.34	538.97	553.43	578.90	630.22	679.72	708.69	723.09	752.54
20 years and over (age-adjusted) . . .	8,392	700.49	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	420.33	55.63	349.08	361.07	369.72	384.58	409.53	443.47	476.42	504.19	529.20
12–15 years	777	572.53	97.80	412.69	439.69	463.05	498.84	575.52	639.58	671.75	699.53	736.67
16–19 years	783	673.42	72.97	566.84	588.20	602.57	625.88	666.50	711.77	742.98	767.29	793.23
20–29 years	444	678.57	67.66	575.66	594.40	609.26	630.30	675.13	719.16	742.38	763.25	791.26
30–39 years	337	674.91	65.48	573.01	596.41	612.86	633.34	670.14	710.91	741.04	758.85	786.71
40–49 years	381	670.58	69.30	562.86	587.06	602.15	626.65	665.45	714.17	735.66	749.50	776.71
50–59 years	174	661.29	63.07	570.19	582.50	600.59	614.92	657.69	696.74	728.89	742.49	764.48
60–69 years	348	664.45	67.25	552.21	578.01	592.39	622.58	662.22	703.43	728.19	746.53	786.68
70–79 years	164	*631.38	64.80	*509.39	*541.95	*563.46	*590.54	*629.49	*676.87	*696.35	*709.58	*732.54
80 years and over	48	*612.58	77.77	*466.71	*481.97	*517.80	*556.09	*613.57	*668.36	*688.36	*700.02	†
20 years and over (age-adjusted) . . .	1,896	664.95	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	421.65	52.70	337.53	363.26	373.64	388.14	418.81	452.34	472.86	483.57	505.45
12–15 years	578	583.31	106.46	426.90	447.07	463.93	493.67	582.19	664.01	699.14	721.84	754.57
16–19 years	591	715.42	73.63	593.88	625.76	642.14	668.37	712.99	760.72	790.04	805.05	835.60
20–29 years	617	727.41	74.76	610.49	642.49	655.95	677.33	723.28	768.73	802.13	818.93	852.46
30–39 years	647	720.72	78.27	609.05	626.45	643.38	669.30	718.09	766.95	789.55	816.80	856.92
40–49 years	700	720.11	74.22	609.12	631.92	645.51	670.56	714.66	762.99	793.97	812.62	848.51
50–59 years	683	703.81	75.40	582.39	607.81	630.47	653.02	700.31	755.53	783.25	798.35	826.69
60–69 years	623	699.95	75.50	584.19	606.48	621.62	646.86	699.67	745.66	775.04	794.36	827.55
70–79 years	496	672.53	75.51	551.01	576.28	591.51	618.90	672.24	723.07	749.10	766.47	797.07
80 years and over	398	632.47	72.14	520.33	541.52	556.72	582.54	631.47	679.13	709.07	721.74	750.94
20 years and over (age-adjusted) . . .	4,164	708.96	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	414.95	53.36	340.40	357.37	365.48	378.49	409.90	441.00	466.76	486.96	512.89
12–15 years	745	572.79	101.41	412.96	434.77	462.90	496.86	571.80	641.88	681.10	695.08	737.72
16–19 years	757	697.21	80.46	574.34	604.50	620.28	644.23	691.96	742.87	772.14	797.33	840.11
20–29 years	325	722.19	83.72	606.10	621.01	639.18	663.59	716.70	771.93	799.92	824.42	854.81
30–39 years	310	717.78	79.30	602.25	620.86	633.74	660.28	713.46	764.52	787.51	812.12	850.74
40–49 years	366	696.81	74.56	585.64	601.65	620.37	640.30	690.23	742.55	771.73	791.92	819.64
50–59 years	240	690.96	77.97	566.31	588.45	613.93	637.60	689.01	737.53	766.20	781.46	822.85
60–69 years	303	679.63	78.82	559.96	585.05	600.79	624.44	675.84	725.24	756.47	781.46	811.70
70–79 years	114	647.22	70.40	529.53	544.68	568.73	599.23	646.82	696.54	718.97	742.12	766.74
80 years and over	36	*626.63	75.39	†	*517.10	*535.83	*572.45	*619.93	*673.57	*705.53	*727.16	†
20 years and over (age-adjusted) . . .	1,694	695.90	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 7. Body trunk bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile										
				5th	10th	15th	25th	50th	75th	85th	90th	95th		
Female														
All races and ethnicities														
8–11 years	1,465	421.28	66.04	329.92	344.44	358.27	375.69	411.27	459.94	488.37	514.10	546.04		
12–15 years	2,318	571.19	70.46	455.11	481.54	497.48	524.48	570.35	617.93	643.80	659.98	686.33		
16–19 years	2,027	615.73	62.88	519.27	538.45	551.32	571.08	615.33	653.88	676.98	692.41	723.07		
20–29 years	1,378	625.48	64.67	525.96	546.27	560.40	582.15	621.38	665.68	689.82	706.65	733.23		
30–39 years	1,372	626.05	67.03	524.39	544.86	560.35	579.86	620.90	664.32	691.28	710.24	744.84		
40–49 years	1,570	624.34	67.21	524.44	544.59	558.07	579.38	618.36	664.95	693.01	708.52	740.43		
50–59 years	1,200	609.59	66.15	507.37	528.00	543.74	567.40	605.19	649.77	672.46	690.14	722.58		
60–69 years	1,419	591.82	68.82	485.33	507.31	523.15	543.81	589.14	637.04	657.66	672.56	700.97		
70–79 years	750	563.81	63.37	455.60	485.13	497.01	524.70	563.39	604.92	626.41	643.59	666.25		
80 years and over	594	521.99	60.87	426.07	444.23	459.21	481.71	520.38	558.00	585.56	600.86	626.62		
20 years and over (age-adjusted) . . .	8,283	609.51	...	...	...	...	...	...	...	...	...	...
Mexican American														
8–11 years	471	416.06	65.49	323.09	341.44	352.55	371.51	406.76	455.49	483.98	501.35	542.76		
12–15 years	821	560.87	65.09	455.43	480.38	495.50	516.54	560.25	600.83	625.66	643.81	666.29		
16–19 years	692	593.13	63.17	502.10	518.43	529.31	548.19	586.42	630.17	653.56	671.71	701.33		
20–29 years	364	608.04	57.26	511.68	531.41	546.42	569.30	605.93	643.52	662.39	675.79	702.93		
30–39 years	298	602.77	59.66	512.65	531.61	545.51	563.88	598.79	635.68	657.09	675.29	701.22		
40–49 years	372	605.87	57.24	511.69	531.00	549.06	570.34	603.47	640.80	662.21	679.34	701.00		
50–59 years	194	590.47	59.80	497.03	517.04	521.59	547.38	590.54	633.06	656.27	671.74	680.31		
60–69 years	375	564.36	58.59	471.53	491.63	504.05	526.35	562.40	600.38	627.50	638.60	656.78		
70–79 years	154	*542.34	63.82	*438.52	*466.71	*486.52	*502.22	*539.02	*579.98	*601.95	*622.06	*656.39		
80 years and over	47	*493.86	54.06	*401.30	*418.86	*426.87	*446.13	*502.17	*528.42	*542.55	*552.35	*570.36		
20 years and over (age-adjusted) . . .	1,804	588.48	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white														
8–11 years	383	424.30	64.99	333.38	347.02	362.88	379.81	413.67	462.13	486.41	513.85	548.04		
12–15 years	576	574.17	71.42	450.30	478.31	499.56	525.90	576.28	622.06	646.90	660.78	685.13		
16–19 years	543	623.42	57.89	529.32	552.10	564.37	584.89	622.86	657.34	679.16	695.46	720.88		
20–29 years	583	633.60	61.87	540.62	559.16	571.62	591.01	628.26	671.58	693.44	709.56	741.71		
30–39 years	612	632.54	66.40	532.77	551.92	567.53	585.59	628.06	672.98	698.76	714.30	750.13		
40–49 years	668	630.00	67.01	528.09	549.94	563.54	583.97	624.06	669.64	698.89	715.81	744.28		
50–59 years	639	614.70	63.74	516.67	537.05	551.78	574.30	608.89	651.48	675.32	690.59	722.22		
60–69 years	644	596.24	67.80	489.40	513.61	529.94	549.25	593.26	640.17	659.10	672.44	701.79		
70–79 years	429	567.91	62.11	461.22	490.09	503.35	528.88	569.88	609.10	628.06	645.13	668.45		
80 years and over	457	525.07	59.51	433.67	448.96	462.69	484.64	523.68	559.04	587.27	605.13	628.73		
20 years and over (age-adjusted) . . .	4,032	615.33	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black														
8–11 years	490	416.21	72.11	322.46	335.92	346.62	364.06	401.96	460.47	491.84	514.35	546.34		
12–15 years	737	571.26	72.39	462.87	486.46	497.98	522.55	563.45	618.90	649.04	670.37	698.82		
16–19 years	609	612.44	75.46	510.56	524.39	538.83	557.93	604.38	652.94	684.09	704.87	751.57		
20–29 years	297	622.37	71.39	514.01	543.30	557.63	574.00	614.32	665.70	690.11	710.17	751.48		
30–39 years	333	632.21	73.55	527.21	546.18	558.85	579.97	625.72	673.54	705.58	728.10	764.52		
40–49 years	398	623.18	69.50	519.48	538.27	552.41	579.32	617.22	659.01	685.11	699.41	748.58		
50–59 years	250	610.22	69.23	500.96	523.48	540.91	560.88	606.70	651.70	682.45	703.69	723.90		
60–69 years	306	601.33	73.39	489.60	511.06	527.59	548.60	595.14	653.20	677.43	690.69	722.29		
70–79 years	124	563.27	69.15	460.70	483.01	489.61	508.98	556.65	611.50	637.71	652.78	681.04		
80 years and over	58	*520.54	62.77	*414.07	*433.64	*451.91	*475.60	*514.72	*563.87	*583.64	*593.58	*618.85		
20 years and over (age-adjusted) . . .	1,766	610.96	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 8. Body trunk bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	276.81	57.47	193.88	214.73	222.79	236.46	270.43	307.03	330.15	346.44	385.51
12–15 years	2,264	490.33	157.04	275.57	301.72	323.43	364.37	476.37	591.87	663.47	702.21	762.11
16–19 years	2,309	715.23	146.48	500.77	541.87	569.96	613.28	702.94	802.18	863.67	903.01	959.36
20–29 years	1,530	731.32	148.69	523.23	563.42	588.82	631.79	716.52	810.37	868.87	929.38	994.34
30–39 years	1,450	713.02	148.03	508.05	547.87	573.39	611.41	692.20	792.72	849.42	899.48	967.45
40–49 years	1,549	706.91	140.87	500.73	546.25	573.12	608.77	692.78	789.81	841.07	883.71	956.40
50–59 years	1,187	678.84	141.82	475.12	514.55	537.64	578.54	665.19	765.71	817.87	854.72	915.46
60–69 years	1,350	671.61	142.51	459.82	498.78	531.67	575.16	662.35	756.18	810.08	861.37	938.42
70–79 years	825	623.29	136.00	422.09	457.58	479.54	524.02	611.96	712.16	766.58	798.23	849.85
80 years and over	501	571.87	135.05	373.78	411.90	436.21	474.73	558.07	648.98	707.35	755.00	824.65
20 years and over (age-adjusted)	8,392	691.50	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	275.43	62.04	196.18	213.49	220.62	232.59	262.77	304.77	332.69	362.06	399.16
12–15 years	777	484.00	153.39	259.25	297.99	324.02	370.74	464.73	578.72	639.55	688.21	761.20
16–19 years	783	653.34	133.05	469.38	501.15	528.78	565.34	634.72	724.39	783.05	830.97	886.77
20–29 years	444	662.86	119.15	488.48	527.21	551.06	576.18	650.35	735.60	776.26	816.76	877.57
30–39 years	337	644.44	113.26	483.53	511.72	535.29	570.83	637.30	703.30	756.82	780.67	843.92
40–49 years	381	638.08	123.74	456.00	493.40	517.61	557.75	622.11	706.14	761.71	797.46	862.75
50–59 years	174	623.79	120.55	441.67	475.80	505.00	543.34	609.57	700.92	747.01	769.51	822.43
60–69 years	348	623.33	123.00	457.12	482.17	502.74	535.70	605.03	690.54	738.35	774.89	837.36
70–79 years	164	575.26	118.27	*367.99	*423.39	*460.01	*491.02	*577.26	*658.47	*684.31	*729.21	*769.97
80 years and over	48	529.07	123.37	*330.21	*367.20	*408.65	*431.58	*509.38	*596.26	*653.82	*696.14	†
20 years and over (age-adjusted)	1,896	629.97	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	277.61	56.48	188.27	215.97	225.41	237.21	273.02	310.56	331.27	344.07	384.49
12–15 years	578	495.39	159.32	279.02	304.12	324.20	363.32	481.55	601.09	673.34	710.37	769.96
16–19 years	591	724.50	141.06	511.03	549.28	581.34	624.42	717.90	813.28	869.35	904.66	961.93
20–29 years	617	736.45	139.37	536.62	579.85	605.09	643.87	723.69	811.46	861.00	917.37	982.87
30–39 years	647	722.72	146.27	515.99	558.09	585.01	627.94	701.72	807.13	851.21	900.43	962.67
40–49 years	700	716.59	137.69	512.69	562.67	584.02	620.11	703.93	798.91	846.79	886.16	961.51
50–59 years	683	682.69	137.98	481.77	520.40	546.05	590.29	668.15	768.73	817.85	854.29	910.61
60–69 years	623	678.08	138.80	470.43	507.25	541.88	583.92	669.07	758.77	810.98	862.55	941.65
70–79 years	496	630.99	136.04	430.96	461.80	481.90	531.15	619.71	723.23	776.68	805.82	855.65
80 years and over	398	570.62	131.12	376.21	414.73	438.22	477.85	556.49	647.27	699.33	748.06	802.50
20 years and over (age-adjusted)	4,164	698.43	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	285.38	61.86	202.34	216.44	229.11	244.56	275.20	314.57	339.24	358.54	395.66
12–15 years	745	506.26	161.96	286.70	312.61	336.54	381.08	491.34	608.26	673.88	713.55	781.15
16–19 years	757	746.80	168.76	514.82	561.82	593.25	632.88	725.73	834.07	902.75	936.62	1027.88
20–29 years	325	806.16	179.98	557.17	609.10	640.97	682.14	783.31	908.02	980.69	1014.26	1133.05
30–39 years	310	780.45	163.34	558.05	593.65	613.20	668.59	757.09	868.19	939.10	994.99	1072.70
40–49 years	366	732.60	160.15	519.35	551.75	577.16	618.99	707.04	818.41	893.43	943.01	1000.70
50–59 years	240	729.87	162.66	501.35	540.94	564.94	617.24	714.65	821.92	884.56	936.06	1014.83
60–69 years	303	708.40	151.41	487.59	523.88	566.53	606.22	695.86	792.50	855.18	899.13	990.87
70–79 years	114	630.85	130.73	431.29	459.98	494.14	539.19	627.61	708.74	754.62	796.38	834.93
80 years and over	36	616.65	166.37	†	*413.76	*447.08	*471.86	*579.47	*699.66	*762.42	*864.33	†
20 years and over (age-adjusted)	1,694	739.59	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 8. Body trunk bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	285.59	80.31	182.48	202.03	211.18	227.76	266.78	326.01	366.46	398.36	440.93
12–15 years	2,318	493.68	107.63	327.28	359.72	381.36	418.86	489.73	561.83	605.69	633.83	677.83
16–19 years	2,027	571.01	103.83	411.68	442.43	468.34	498.37	561.18	634.75	675.91	709.73	749.80
20–29 years	1,378	583.20	101.41	435.36	461.88	483.16	510.55	574.47	644.14	683.26	714.78	754.81
30–39 years	1,372	588.59	107.44	433.16	461.23	480.10	513.86	578.45	650.16	699.14	726.32	770.80
40–49 years	1,570	581.20	112.82	422.79	452.23	472.94	502.54	566.62	647.51	694.02	726.90	779.68
50–59 years	1,200	540.99	109.30	381.70	417.87	434.42	463.22	530.16	605.76	647.16	681.58	734.88
60–69 years	1,419	500.99	109.69	344.29	372.35	391.13	425.26	489.86	566.51	608.30	639.07	698.03
70–79 years	750	450.87	94.14	309.24	336.88	356.21	385.45	448.20	504.95	541.83	569.96	612.69
80 years and over	594	392.26	88.07	259.52	281.57	301.17	332.29	381.80	443.19	479.73	504.86	543.55
20 years and over (age-adjusted)	8,283	549.08	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	277.71	80.01	178.01	191.42	200.76	222.46	261.07	318.95	356.80	377.28	445.57
12–15 years	821	478.39	97.95	321.39	357.48	382.07	413.82	476.02	539.95	570.38	595.07	640.71
16–19 years	692	533.27	97.64	393.56	417.72	439.83	465.39	525.91	586.04	622.04	654.47	707.69
20–29 years	364	552.16	91.61	414.32	443.96	459.85	483.00	545.00	613.24	651.19	670.12	699.98
30–39 years	298	553.38	100.07	420.25	442.47	463.45	488.72	544.16	605.17	639.76	669.15	724.09
40–49 years	372	552.79	91.83	411.65	435.35	457.33	492.09	549.56	611.74	641.58	666.72	708.28
50–59 years	194	510.00	108.37	355.81	377.68	400.08	426.27	501.37	579.09	605.43	634.74	698.63
60–69 years	375	453.46	93.79	307.00	337.70	358.45	389.20	447.59	514.00	546.33	570.40	614.38
70–79 years	154	*415.36	91.71	*268.63	*301.60	*329.92	*357.63	*412.38	*460.89	*494.28	*526.25	*574.87
80 years and over	47	*360.14	80.64	*226.14	*245.24	*273.68	*313.99	*353.62	*403.99	*429.91	*438.81	†
20 years and over (age-adjusted)	1,804	515.62	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	286.06	77.68	182.39	203.78	214.08	229.98	269.88	324.70	362.15	397.34	430.21
12–15 years	576	492.80	109.10	320.65	355.98	375.62	416.21	490.65	565.21	605.92	629.72	675.82
16–19 years	543	578.86	98.32	421.17	458.76	482.49	512.15	574.97	642.50	678.89	711.25	740.33
20–29 years	583	587.74	94.73	450.16	471.35	491.33	518.24	578.46	647.58	682.53	714.00	743.35
30–39 years	612	591.35	103.65	438.71	465.34	486.00	517.34	581.92	650.16	700.33	724.82	765.85
40–49 years	668	583.46	111.01	425.93	456.35	477.39	503.40	569.40	648.16	694.59	727.84	780.25
50–59 years	639	544.79	104.66	398.81	428.79	444.13	470.75	532.16	605.28	643.06	680.48	730.33
60–69 years	644	504.20	107.90	351.89	376.52	393.91	429.13	494.15	567.09	608.45	637.90	696.09
70–79 years	429	454.59	92.86	310.93	340.18	361.11	392.49	451.74	508.04	543.30	570.83	609.62
80 years and over	457	394.57	86.63	264.25	285.37	304.07	336.04	384.75	444.44	482.10	506.62	543.94
20 years and over (age-adjusted)	4,032	552.32	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	293.29	90.92	184.22	201.77	212.63	229.16	271.50	341.27	383.83	412.36	462.20
12–15 years	737	522.49	114.41	350.20	381.05	407.96	444.55	511.70	594.73	643.81	675.76	720.58
16–19 years	609	599.00	121.68	430.03	461.59	477.94	508.50	585.31	666.98	722.55	761.78	812.33
20–29 years	297	616.05	118.68	448.72	481.88	503.95	537.23	600.40	680.02	730.77	758.10	827.09
30–39 years	333	630.21	121.81	455.55	485.41	510.82	542.34	616.70	700.93	741.86	764.86	840.15
40–49 years	398	621.72	125.66	449.83	471.90	495.65	532.37	612.10	689.67	735.62	771.24	836.86
50–59 years	250	573.80	121.67	405.30	430.58	450.15	482.36	562.33	644.05	705.06	736.49	781.84
60–69 years	306	544.80	118.49	371.41	398.59	418.84	461.24	535.02	612.05	668.51	704.25	749.36
70–79 years	124	474.31	103.29	313.70	349.26	366.07	403.60	459.76	533.87	585.05	618.99	†
80 years and over	58	*415.78	98.84	*266.49	*295.71	*317.14	*343.27	*415.34	*463.02	*488.74	*521.71	†
20 years and over (age-adjusted)	1,766	585.35	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 9. Body trunk bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.655	0.064	0.556	0.574	0.586	0.609	0.651	0.692	0.719	0.738	0.772
12–15 years	2,264	0.831	0.130	0.642	0.670	0.694	0.732	0.819	0.919	0.970	1.007	1.060
16–19 years	2,309	1.006	0.123	0.820	0.861	0.883	0.916	0.995	1.083	1.132	1.165	1.226
20–29 years	1,530	1.011	0.119	0.835	0.872	0.893	0.929	1.001	1.078	1.131	1.166	1.214
30–39 years	1,450	0.995	0.122	0.819	0.852	0.872	0.907	0.980	1.066	1.112	1.145	1.217
40–49 years	1,549	0.989	0.118	0.813	0.844	0.869	0.908	0.980	1.062	1.103	1.134	1.194
50–59 years	1,187	0.967	0.125	0.776	0.807	0.840	0.881	0.958	1.045	1.093	1.120	1.182
60–69 years	1,350	0.963	0.128	0.765	0.804	0.832	0.875	0.959	1.039	1.093	1.135	1.185
70–79 years	825	0.928	0.128	0.729	0.769	0.799	0.838	0.917	1.011	1.067	1.099	1.152
80 years and over	501	0.896	0.130	0.708	0.748	0.765	0.798	0.887	0.969	1.023	1.065	1.133
20 years and over (age-adjusted)	8,392	0.979	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.649	0.068	0.551	0.567	0.580	0.599	0.640	0.691	0.720	0.742	0.770
12–15 years	777	0.826	0.133	0.634	0.660	0.688	0.731	0.813	0.905	0.963	1.004	1.067
16–19 years	783	0.962	0.111	0.793	0.827	0.851	0.885	0.954	1.022	1.077	1.109	1.164
20–29 years	444	0.971	0.103	0.809	0.845	0.871	0.901	0.964	1.031	1.065	1.099	1.159
30–39 years	337	0.950	0.099	0.801	0.828	0.849	0.877	0.941	1.013	1.048	1.084	1.128
40–49 years	381	0.946	0.112	0.773	0.808	0.835	0.869	0.935	1.017	1.058	1.087	1.136
50–59 years	174	0.937	0.118	0.758	0.784	0.807	0.850	0.930	1.013	1.054	1.082	1.137
60–69 years	348	0.932	0.117	0.768	0.792	0.812	0.855	0.916	0.998	1.039	1.081	1.146
70–79 years	164	*0.904	0.123	*0.703	*0.735	*0.768	*0.805	*0.915	*0.987	*1.030	*1.046	*1.097
80 years and over	48	*0.855	0.113	*0.701	*0.725	*0.755	*0.769	*0.821	*0.912	*0.981	*1.017	*1.069
20 years and over (age-adjusted)	1,896	0.941	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.653	0.061	0.553	0.574	0.586	0.610	0.650	0.689	0.715	0.733	0.761
12–15 years	578	0.829	0.128	0.644	0.668	0.690	0.729	0.819	0.914	0.970	1.007	1.054
16–19 years	591	1.005	0.120	0.819	0.863	0.883	0.918	0.996	1.081	1.127	1.156	1.215
20–29 years	617	1.006	0.107	0.845	0.876	0.895	0.931	0.999	1.065	1.122	1.151	1.192
30–39 years	647	0.996	0.117	0.822	0.856	0.875	0.913	0.980	1.064	1.108	1.135	1.198
40–49 years	700	0.989	0.112	0.816	0.850	0.872	0.910	0.984	1.060	1.099	1.126	1.187
50–59 years	683	0.963	0.120	0.774	0.806	0.840	0.884	0.957	1.038	1.084	1.112	1.158
60–69 years	623	0.962	0.124	0.771	0.808	0.836	0.876	0.959	1.035	1.087	1.125	1.179
70–79 years	496	0.931	0.127	0.733	0.769	0.804	0.840	0.918	1.013	1.073	1.103	1.152
80 years and over	398	0.893	0.125	0.709	0.750	0.766	0.799	0.883	0.966	1.016	1.057	1.120
20 years and over (age-adjusted)	4,164	0.977	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.681	0.070	0.574	0.598	0.614	0.635	0.677	0.725	0.750	0.774	0.794
12–15 years	745	0.864	0.138	0.675	0.699	0.718	0.757	0.850	0.951	1.000	1.048	1.112
16–19 years	757	1.061	0.136	0.858	0.901	0.926	0.967	1.052	1.144	1.198	1.241	1.290
20–29 years	325	1.106	0.142	0.892	0.940	0.974	1.010	1.089	1.178	1.254	1.294	1.372
30–39 years	310	1.079	0.135	0.861	0.919	0.942	0.984	1.069	1.161	1.221	1.253	1.307
40–49 years	366	1.043	0.144	0.839	0.879	0.904	0.945	1.026	1.123	1.179	1.219	1.298
50–59 years	240	1.047	0.139	0.841	0.871	0.905	0.949	1.023	1.133	1.197	1.233	1.293
60–69 years	303	1.034	0.134	0.823	0.879	0.910	0.939	1.020	1.124	1.171	1.203	1.266
70–79 years	114	0.968	0.134	0.764	0.805	0.827	0.867	0.959	1.045	1.090	1.142	1.204
80 years and over	36	*0.972	0.169	†	*0.773	*0.791	*0.827	*0.956	*1.066	*1.127	*1.189	†
20 years and over (age-adjusted)	1,694	1.052	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 9. Body trunk bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.667	0.085	0.544	0.568	0.583	0.606	0.653	0.717	0.758	0.785	0.822
12–15 years	2,318	0.855	0.100	0.694	0.728	0.753	0.786	0.854	0.920	0.955	0.984	1.028
16–19 years	2,027	0.922	0.098	0.769	0.804	0.821	0.851	0.919	0.985	1.021	1.046	1.098
20–29 years	1,378	0.928	0.092	0.784	0.815	0.836	0.866	0.921	0.983	1.015	1.040	1.094
30–39 years	1,372	0.935	0.098	0.782	0.813	0.833	0.864	0.931	0.998	1.035	1.061	1.097
40–49 years	1,570	0.925	0.106	0.764	0.800	0.819	0.852	0.915	0.989	1.036	1.061	1.106
50–59 years	1,200	0.881	0.107	0.717	0.749	0.773	0.806	0.873	0.950	0.996	1.027	1.068
60–69 years	1,419	0.839	0.109	0.673	0.707	0.725	0.759	0.831	0.906	0.953	0.986	1.033
70–79 years	750	0.793	0.100	0.643	0.672	0.691	0.721	0.783	0.854	0.894	0.924	0.967
80 years and over	594	0.744	0.102	0.590	0.625	0.643	0.676	0.736	0.807	0.843	0.864	0.925
20 years and over (age-adjusted) . . .	8,283	0.893	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.656	0.088	0.535	0.554	0.570	0.599	0.642	0.700	0.743	0.779	0.826
12–15 years	821	0.845	0.095	0.686	0.726	0.750	0.786	0.845	0.905	0.935	0.960	1.001
16–19 years	692	0.894	0.091	0.751	0.781	0.803	0.831	0.890	0.946	0.979	1.011	1.053
20–29 years	364	0.903	0.085	0.768	0.794	0.816	0.839	0.898	0.964	0.992	1.016	1.052
30–39 years	298	0.913	0.101	0.761	0.793	0.812	0.850	0.905	0.968	1.005	1.031	1.068
40–49 years	372	0.908	0.091	0.759	0.792	0.811	0.843	0.907	0.969	1.003	1.021	1.056
50–59 years	194	0.857	0.118	0.688	0.717	0.737	0.780	0.845	0.924	0.963	0.987	1.022
60–69 years	375	0.797	0.102	0.638	0.667	0.686	0.718	0.795	0.861	0.910	0.934	0.973
70–79 years	154	*0.758	0.100	*0.596	*0.633	*0.663	*0.698	*0.751	*0.816	*0.843	*0.880	*0.937
80 years and over	47	*0.722	0.099	†	*0.578	*0.624	*0.660	*0.719	*0.769	*0.809	*0.831	†
20 years and over (age-adjusted) . . .	1,804	0.868	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.664	0.082	0.547	0.569	0.582	0.605	0.649	0.711	0.748	0.780	0.807
12–15 years	576	0.849	0.100	0.685	0.722	0.747	0.778	0.847	0.917	0.951	0.975	1.016
16–19 years	543	0.923	0.093	0.776	0.810	0.825	0.853	0.920	0.987	1.017	1.041	1.090
20–29 years	583	0.924	0.085	0.790	0.820	0.837	0.866	0.918	0.975	1.006	1.026	1.081
30–39 years	612	0.930	0.093	0.783	0.813	0.831	0.863	0.927	0.991	1.026	1.053	1.081
40–49 years	668	0.920	0.102	0.764	0.799	0.820	0.850	0.910	0.982	1.030	1.054	1.098
50–59 years	639	0.881	0.100	0.727	0.756	0.778	0.809	0.873	0.948	0.988	1.020	1.065
60–69 years	644	0.839	0.107	0.678	0.708	0.726	0.759	0.831	0.905	0.950	0.984	1.029
70–79 years	429	0.794	0.099	0.646	0.674	0.693	0.726	0.782	0.855	0.895	0.921	0.965
80 years and over	457	0.745	0.099	0.592	0.626	0.644	0.678	0.737	0.806	0.843	0.864	0.926
20 years and over (age-adjusted) . . .	4,032	0.890	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.691	0.094	0.553	0.586	0.605	0.623	0.674	0.742	0.782	0.817	0.866
12–15 years	737	0.905	0.102	0.735	0.774	0.802	0.836	0.903	0.971	1.007	1.037	1.078
16–19 years	609	0.971	0.101	0.805	0.839	0.865	0.901	0.965	1.039	1.076	1.102	1.144
20–29 years	297	0.983	0.099	0.822	0.851	0.884	0.916	0.977	1.042	1.091	1.111	1.163
30–39 years	333	0.991	0.104	0.823	0.859	0.880	0.920	0.983	1.051	1.094	1.124	1.175
40–49 years	398	0.990	0.112	0.818	0.846	0.872	0.908	0.984	1.054	1.096	1.131	1.186
50–59 years	250	0.933	0.119	0.756	0.789	0.809	0.845	0.923	1.011	1.060	1.079	1.138
60–69 years	306	0.899	0.116	0.723	0.759	0.778	0.817	0.889	0.970	1.016	1.042	1.099
70–79 years	124	0.835	0.105	0.654	0.704	0.720	0.768	0.832	0.898	0.940	0.976	1.020
80 years and over	58	*0.791	0.124	*0.621	*0.651	*0.673	*0.712	*0.780	*0.844	*0.872	*0.894	†
20 years and over (age-adjusted) . . .	1,766	0.949	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 10. Thoracic spine bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	82.20	14.22	61.23	65.26	67.72	72.23	80.87	90.87	97.56	101.17	108.91
12–15 years	2,264	114.81	23.30	79.10	84.46	89.41	97.84	114.31	131.19	138.45	143.91	153.16
16–19 years	2,309	141.67	20.11	110.55	117.24	121.60	128.23	140.39	153.86	162.40	167.69	176.30
20–29 years	1,530	151.52	21.00	120.72	126.41	130.45	137.60	149.95	163.68	171.43	177.80	187.50
30–39 years	1,450	156.34	22.09	121.71	129.77	134.57	141.99	154.37	169.55	178.12	184.05	195.00
40–49 years	1,549	159.56	21.67	126.86	132.85	137.54	145.06	158.26	173.29	180.71	186.66	196.43
50–59 years	1,187	157.34	22.44	121.72	130.45	135.73	142.99	155.84	172.20	181.71	187.15	194.04
60–69 years	1,350	154.84	24.09	116.38	125.49	130.95	138.25	153.14	171.16	179.92	185.27	195.88
70–79 years	825	148.66	23.73	111.28	118.49	124.45	131.85	147.55	163.31	173.53	180.32	189.88
80 years and over	501	137.69	21.55	100.95	108.46	114.42	121.90	137.96	152.76	159.38	165.49	172.30
20 years and over (age-adjusted)	8,392	154.65	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	84.11	15.62	62.57	66.08	68.84	73.12	81.81	93.26	99.43	104.94	113.25
12–15 years	777	115.46	23.01	78.02	85.98	91.38	98.62	114.82	131.02	139.27	144.27	155.95
16–19 years	783	136.43	18.92	106.23	113.52	117.38	123.57	135.70	147.13	154.27	159.42	170.25
20–29 years	444	143.43	18.08	115.40	120.41	124.89	129.81	141.95	155.38	162.10	167.07	173.91
30–39 years	337	149.23	19.97	119.65	123.64	129.39	135.81	147.26	162.47	169.94	175.14	184.70
40–49 years	381	149.79	19.52	121.01	125.90	129.07	136.98	148.41	163.12	168.85	173.70	183.51
50–59 years	174	148.06	17.59	119.97	128.28	132.25	136.14	147.44	157.27	165.24	169.28	176.55
60–69 years	348	148.06	20.55	114.73	121.79	125.52	133.84	147.40	162.17	169.88	173.99	180.58
70–79 years	164	*138.45	20.60	*105.88	*111.81	*115.72	*124.33	*138.47	*152.89	*159.00	*163.42	*171.03
80 years and over	48	*134.20	22.08	†	*105.43	*108.00	*115.91	*136.44	*148.18	*158.90	*163.22	†
20 years and over (age-adjusted)	1,896	146.39	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	83.67	13.86	62.97	66.63	69.42	73.56	82.37	92.56	99.29	102.21	109.58
12–15 years	578	117.42	23.66	80.53	87.37	91.81	99.27	117.15	133.38	141.02	146.29	155.50
16–19 years	591	145.22	19.34	116.43	121.87	125.64	132.53	143.94	156.58	165.10	170.45	178.28
20–29 years	617	155.11	20.35	124.96	131.75	135.06	141.81	153.37	165.95	174.78	180.87	189.47
30–39 years	647	159.73	22.02	126.02	133.29	138.27	145.79	158.38	172.13	180.11	187.10	197.81
40–49 years	700	162.89	21.11	131.02	137.29	142.16	147.97	161.23	175.76	183.01	189.93	199.88
50–59 years	683	159.78	22.16	123.32	132.57	137.97	145.11	157.73	174.84	182.92	188.11	195.96
60–69 years	623	157.40	23.90	118.42	128.87	134.35	140.95	155.42	173.58	181.62	187.75	198.30
70–79 years	496	150.71	23.67	112.44	121.97	126.32	133.67	149.26	165.39	175.50	182.80	191.62
80 years and over	398	138.43	21.28	101.85	110.30	115.43	123.03	138.77	153.01	159.54	165.43	172.71
20 years and over (age-adjusted)	4,164	157.59	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	76.26	12.94	57.73	61.75	63.60	67.65	74.81	83.77	88.27	93.44	100.37
12–15 years	745	106.91	21.95	71.42	78.69	83.11	91.29	106.53	120.98	128.53	134.06	142.91
16–19 years	757	131.45	19.64	101.07	108.06	112.13	118.68	129.44	143.66	149.85	155.77	165.32
20–29 years	325	141.89	20.63	110.54	119.60	123.05	127.81	139.42	153.16	162.88	168.89	175.53
30–39 years	310	147.89	21.03	116.02	121.65	125.81	132.74	146.88	160.11	168.02	176.70	185.48
40–49 years	366	148.12	20.59	117.75	123.35	127.02	132.59	147.37	159.33	168.30	175.17	182.12
50–59 years	240	147.83	22.58	110.40	121.12	125.16	132.41	147.57	162.60	170.70	177.34	183.68
60–69 years	303	144.15	23.25	106.57	113.25	120.09	128.14	142.44	158.35	169.39	173.57	181.91
70–79 years	114	139.26	22.46	100.04	109.66	116.51	125.76	137.05	152.69	162.06	167.09	179.79
80 years and over	36	*127.27	21.28	†	*97.58	*102.74	*111.83	*125.05	*143.23	*147.58	*153.68	†
20 years and over (age-adjusted)	1,694	144.77	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 10. Thoracic spine bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	86.43	18.30	60.82	65.18	67.93	72.85	84.04	97.66	105.81	111.35	119.03
12–15 years	2,318	119.40	18.47	88.58	96.35	100.11	106.30	119.15	132.47	138.80	143.25	149.21
16–19 years	2,027	130.77	17.96	102.81	107.94	111.95	118.69	129.78	141.92	149.01	154.39	161.24
20–29 years	1,378	137.06	19.42	108.52	113.16	116.65	123.80	135.89	148.32	156.52	162.34	170.76
30–39 years	1,372	141.80	20.47	111.95	116.12	120.11	127.11	140.78	154.07	162.58	167.81	175.95
40–49 years	1,570	144.70	19.49	114.15	120.08	124.81	131.70	143.82	156.43	164.68	169.92	177.91
50–59 years	1,200	144.35	19.58	113.57	119.98	124.29	131.68	143.67	156.97	163.38	169.18	176.24
60–69 years	1,419	142.50	21.76	107.41	115.40	120.22	128.22	142.11	157.10	164.79	170.26	177.82
70–79 years	750	139.41	21.81	103.65	111.95	117.07	124.88	139.61	153.36	161.19	167.46	176.61
80 years and over	594	128.47	21.18	94.87	102.70	106.21	113.58	128.14	142.23	149.93	155.61	162.93
20 years and over (age-adjusted)	8,283	141.20	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	83.90	17.16	58.81	63.97	66.81	71.26	81.19	95.58	101.07	106.25	112.68
12–15 years	821	117.87	17.32	91.35	96.75	99.94	105.70	116.52	129.48	136.55	142.08	145.80
16–19 years	692	126.37	17.94	100.39	104.45	108.27	114.21	124.52	137.27	143.77	149.19	159.51
20–29 years	364	132.92	16.91	106.64	112.36	115.20	120.09	132.29	144.03	150.88	155.56	162.28
30–39 years	298	136.94	17.60	111.04	116.48	118.90	124.49	135.58	146.86	154.20	160.42	169.43
40–49 years	372	139.05	16.35	114.29	118.76	121.92	128.10	138.27	148.86	154.50	160.01	167.49
50–59 years	194	137.54	17.00	110.79	115.99	119.60	125.30	136.09	149.51	157.26	160.37	166.05
60–69 years	375	133.42	19.10	103.39	110.43	114.61	120.77	132.24	146.65	152.60	156.10	162.24
70–79 years	154	*127.91	16.61	*102.38	*108.76	*112.05	*116.16	*127.87	*138.25	*143.17	*147.38	*152.97
80 years and over	47	*120.13	17.71	*89.32	*95.40	*97.80	*107.03	*121.49	*133.50	*136.29	*139.13	*143.23
20 years and over (age-adjusted)	1,804	134.86	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	89.04	18.27	63.03	67.12	70.15	75.46	86.46	99.97	108.54	114.33	123.33
12–15 years	576	120.91	18.33	88.03	97.94	101.80	107.92	121.57	133.24	138.65	144.06	149.84
16–19 years	543	133.61	16.56	106.88	113.08	116.78	122.30	132.67	144.11	149.73	155.20	161.72
20–29 years	583	140.35	19.05	112.69	116.19	121.30	127.12	138.83	151.08	158.96	164.55	175.68
30–39 years	612	145.23	20.67	113.78	118.66	123.67	130.65	144.04	157.74	165.85	170.83	179.03
40–49 years	668	147.83	19.40	116.74	124.02	128.58	134.36	147.18	160.76	167.50	173.13	179.92
50–59 years	639	147.28	19.15	117.80	123.50	127.87	134.81	146.92	158.86	165.65	171.47	177.85
60–69 years	644	144.89	21.29	108.96	118.49	123.40	130.61	143.86	158.97	167.33	171.85	179.52
70–79 years	429	141.74	21.31	107.15	114.42	119.24	127.85	141.60	154.92	163.53	169.51	178.67
80 years and over	457	130.35	20.64	98.29	105.00	108.00	116.00	129.70	144.22	150.98	156.73	164.60
20 years and over (age-adjusted)	4,032	144.19	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	79.66	17.88	54.50	59.24	62.96	67.04	77.46	89.23	97.68	102.78	110.42
12–15 years	737	113.86	18.27	86.71	91.90	95.64	100.85	112.38	125.98	132.63	137.53	146.06
16–19 years	609	123.33	20.64	93.02	98.16	103.22	108.81	120.74	135.98	144.88	151.40	159.62
20–29 years	297	129.78	20.35	96.98	104.45	109.03	115.42	128.44	141.12	150.64	158.01	166.04
30–39 years	333	135.68	20.63	103.74	110.23	114.95	121.49	133.71	148.11	157.54	164.98	172.45
40–49 years	398	134.91	18.20	104.84	111.85	116.60	121.63	134.37	147.47	153.93	157.49	164.61
50–59 years	250	135.51	17.40	105.97	112.52	117.20	124.47	135.40	148.18	154.19	157.20	163.62
60–69 years	306	133.56	21.91	98.69	106.33	111.82	119.88	133.27	147.49	155.30	160.00	167.02
70–79 years	124	128.36	22.95	92.33	97.55	102.54	109.29	128.33	144.83	152.08	157.34	164.85
80 years and over	58	*118.14	20.45	*84.97	*90.84	*95.92	*103.12	*116.73	*132.76	*137.66	*141.51	*149.43
20 years and over (age-adjusted)	1,766	132.76	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 11. Thoracic spine bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	48.17	11.55	31.66	34.58	36.54	39.95	47.16	54.82	60.56	62.91	68.90
12–15 years	2,264	83.72	26.68	45.08	51.36	54.81	62.67	80.49	101.35	112.53	118.63	130.75
16–19 years	2,309	121.73	24.84	83.53	90.69	96.89	105.59	119.80	136.58	146.45	153.65	165.40
20–29 years	1,530	134.07	28.55	96.68	102.45	107.50	114.71	130.73	148.17	159.06	168.33	185.33
30–39 years	1,450	141.12	31.84	97.91	105.49	111.72	119.73	136.34	157.13	170.66	181.39	200.02
40–49 years	1,549	147.76	34.40	102.57	110.34	115.05	123.76	143.85	165.55	180.56	190.33	206.74
50–59 years	1,187	145.53	34.51	96.14	106.79	112.73	122.42	140.87	164.78	180.83	189.79	207.51
60–69 years	1,350	147.58	37.76	92.57	102.89	110.58	120.90	143.26	169.23	187.29	197.47	215.00
70–79 years	825	138.72	35.55	83.82	94.87	103.34	113.83	136.00	159.50	174.84	183.07	201.07
80 years and over	501	125.89	33.29	76.52	84.43	92.08	102.01	123.36	146.21	159.83	170.12	184.23
20 years and over (age-adjusted)	8,392	141.70	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	49.28	13.19	31.84	35.07	36.86	40.11	47.30	55.33	61.07	66.15	72.26
12–15 years	777	83.88	26.08	44.90	51.58	56.85	65.04	80.07	100.73	112.13	119.51	127.72
16–19 years	783	114.00	23.52	79.23	86.30	91.31	98.84	111.67	126.68	136.53	144.40	155.20
20–29 years	444	123.67	23.31	89.60	95.53	100.27	107.30	121.13	138.54	148.28	156.40	164.30
30–39 years	337	131.57	27.57	93.11	100.31	106.42	113.41	126.74	146.59	158.60	166.05	184.86
40–49 years	381	134.68	29.25	93.71	102.66	106.61	113.78	132.76	150.39	160.53	168.26	184.94
50–59 years	174	135.58	30.49	90.89	100.80	107.79	116.15	129.49	152.23	163.85	170.69	189.27
60–69 years	348	138.32	33.19	93.21	99.16	104.77	114.94	133.84	155.38	169.56	179.98	196.66
70–79 years	164	*127.22	32.01	*79.54	*87.40	*94.06	*103.84	*123.34	*149.13	*161.05	*168.58	*178.70
80 years and over	48	*120.36	31.20	*71.19	*78.73	*81.58	*102.10	*114.63	*137.70	*148.87	*155.86	*168.77
20 years and over (age-adjusted)	1,896	131.22	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	48.91	11.29	32.60	34.93	37.12	40.46	47.77	55.69	61.00	63.41	69.09
12–15 years	578	85.75	27.45	46.67	52.34	55.40	63.36	82.24	104.60	115.49	121.64	133.60
16–19 years	591	124.72	24.06	85.76	94.80	101.05	109.19	122.43	139.34	149.13	155.14	166.53
20–29 years	617	136.25	28.21	98.94	105.33	110.00	117.55	132.60	149.84	159.82	170.48	187.11
30–39 years	647	143.67	32.19	98.88	108.70	113.29	122.67	139.34	159.96	174.08	183.47	201.12
40–49 years	700	150.44	34.88	104.30	112.22	117.14	125.62	145.92	168.09	183.98	193.03	209.69
50–59 years	683	146.89	34.14	97.09	107.21	114.45	123.76	143.31	166.97	181.96	191.04	207.09
60–69 years	623	149.39	37.74	92.91	104.60	111.65	123.18	145.32	171.48	188.86	198.35	216.86
70–79 years	496	140.83	35.84	86.32	97.10	104.90	115.76	138.49	161.63	177.02	185.17	203.40
80 years and over	398	125.94	32.54	77.06	84.60	92.09	102.58	123.96	144.97	159.29	168.03	181.86
20 years and over (age-adjusted)	4,164	143.79	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	45.41	10.96	30.59	33.09	34.82	37.90	44.55	50.38	55.34	59.73	64.87
12–15 years	745	79.39	25.76	42.46	47.32	51.40	60.71	76.24	96.09	105.37	113.62	121.48
16–19 years	757	116.13	25.63	79.90	87.14	91.44	99.08	112.32	130.67	140.31	147.89	161.02
20–29 years	325	135.16	31.34	93.40	103.08	106.89	113.86	129.40	152.26	161.09	171.57	188.83
30–39 years	310	142.39	32.54	99.99	105.21	110.41	119.07	138.32	158.57	172.78	182.92	198.55
40–49 years	366	143.25	35.23	99.22	104.79	108.83	117.55	138.38	161.89	176.70	186.12	202.41
50–59 years	240	147.28	38.65	93.87	103.74	110.05	120.86	142.67	166.52	182.69	196.29	214.02
60–69 years	303	147.63	38.31	94.60	102.82	110.58	121.74	144.09	168.50	182.78	194.97	215.57
70–79 years	114	134.15	32.19	84.21	96.84	102.47	111.12	131.15	151.89	167.09	174.26	189.86
80 years and over	36	*124.55	39.11	†	*83.26	*91.52	*93.96	*109.26	*151.27	*168.26	*182.92	†
20 years and over (age-adjusted)	1,694	141.03	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 11. Thoracic spine bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	52.12	16.66	30.76	33.96	36.64	40.24	48.71	60.49	69.21	74.42	84.31
12–15 years	2,318	91.22	21.06	57.76	65.05	69.98	76.94	90.14	104.81	112.95	117.64	125.71
16–19 years	2,027	108.53	21.24	76.93	81.94	86.11	93.26	107.56	121.12	129.76	135.64	145.81
20–29 years	1,378	116.86	23.44	84.19	89.74	94.11	100.62	113.38	131.05	141.18	149.13	159.13
30–39 years	1,372	124.35	26.03	87.42	93.97	98.77	105.77	121.57	139.46	150.57	156.97	169.72
40–49 years	1,570	127.75	26.25	89.99	96.23	102.00	109.99	124.73	143.38	154.40	161.41	173.61
50–59 years	1,200	123.27	26.42	85.44	92.00	97.16	105.19	120.44	138.47	151.88	158.10	169.05
60–69 years	1,419	117.13	29.59	74.90	82.21	87.77	96.84	114.58	133.75	145.19	154.16	169.19
70–79 years	750	109.05	25.77	68.09	76.65	83.02	91.43	107.37	124.30	133.77	142.25	153.29
80 years and over	594	94.89	24.79	58.52	65.29	69.03	77.18	93.37	109.97	119.47	126.45	138.30
20 years and over (age-adjusted)	8,283	120.16	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	50.44	16.24	29.25	32.60	34.90	38.97	46.96	59.81	64.92	71.19	79.01
12–15 years	821	89.83	19.07	61.67	66.21	69.94	76.58	88.51	102.23	110.30	112.93	121.54
16–19 years	692	102.76	20.49	74.50	79.90	82.69	88.15	100.15	113.55	121.89	128.58	137.81
20–29 years	364	112.58	21.52	81.15	86.77	91.38	96.79	109.62	126.62	136.68	141.97	149.67
30–39 years	298	119.70	24.16	86.53	93.47	97.15	103.61	116.76	131.95	141.20	147.92	162.01
40–49 years	372	123.19	21.82	90.81	96.07	101.16	107.65	122.05	135.75	145.42	150.11	160.41
50–59 years	194	116.67	26.06	78.05	86.14	89.94	96.73	113.84	133.69	142.26	151.11	160.06
60–69 years	375	105.52	24.51	68.62	75.67	80.79	88.51	104.23	118.89	128.61	134.36	147.55
70–79 years	154	*97.14	21.89	*59.43	*69.07	*74.56	*81.28	*97.52	*111.17	*118.50	*125.85	*132.41
80 years and over	47	*88.06	21.96	†	*59.79	*63.80	*71.00	*88.73	*99.27	*104.21	*109.29	†
20 years and over (age-adjusted)	1,804	113.88	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	53.47	16.61	31.59	35.31	37.87	41.38	50.75	61.87	70.30	76.09	85.65
12–15 years	576	91.68	21.55	55.50	64.10	68.96	77.37	91.82	105.67	113.49	118.82	126.19
16–19 years	543	111.07	20.45	79.85	84.75	88.66	96.64	110.92	122.95	131.29	135.85	147.97
20–29 years	583	118.78	23.01	86.55	92.22	96.38	102.67	114.33	132.92	143.51	151.39	159.44
30–39 years	612	126.43	26.40	89.35	95.60	99.95	107.84	123.56	142.27	152.02	159.00	171.58
40–49 years	668	129.68	26.66	91.39	97.22	103.74	111.37	126.49	145.68	157.19	163.22	175.94
50–59 years	639	125.56	26.03	88.24	95.87	100.18	107.50	123.59	141.02	153.46	159.19	170.93
60–69 years	644	118.82	29.89	76.28	83.09	89.36	98.38	116.17	135.56	146.04	155.29	170.23
70–79 years	429	110.83	25.74	69.00	79.43	85.21	92.99	109.21	125.36	135.88	144.19	154.65
80 years and over	457	96.23	24.82	60.21	66.28	70.82	78.39	94.53	111.33	120.55	128.31	139.15
20 years and over (age-adjusted)	4,032	122.11	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	48.86	17.20	28.06	31.38	33.37	36.80	45.44	57.12	65.98	71.84	80.85
12–15 years	737	90.43	21.19	59.34	65.38	70.39	75.27	88.40	104.53	112.38	117.30	127.26
16–19 years	609	106.38	24.55	72.21	78.51	81.37	88.60	103.23	120.20	131.40	138.22	150.91
20–29 years	297	115.51	26.40	78.29	83.86	89.77	98.06	113.33	127.68	140.52	150.72	164.17
30–39 years	333	125.39	27.59	86.97	92.55	96.38	105.34	122.48	141.76	152.88	161.19	174.47
40–49 years	398	126.39	27.27	87.02	93.63	99.55	106.36	124.12	143.57	151.21	160.15	172.41
50–59 years	250	122.05	27.31	81.74	89.88	93.72	102.57	118.33	136.17	152.10	159.66	170.51
60–69 years	306	117.29	30.11	71.82	81.92	87.83	95.20	113.44	135.04	148.99	160.21	172.24
70–79 years	124	106.89	25.95	68.58	76.33	79.44	86.26	105.54	124.03	134.35	138.87	†
80 years and over	58	*92.30	22.95	*56.99	*62.53	*66.75	*74.48	*90.22	*107.80	*115.32	*120.17	*127.13
20 years and over (age-adjusted)	1,766	119.37	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 12. Thoracic spine bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.581	0.061	0.488	0.503	0.517	0.539	0.578	0.617	0.642	0.661	0.689
12–15 years	2,264	0.715	0.107	0.549	0.582	0.601	0.636	0.707	0.788	0.830	0.855	0.898
16–19 years	2,309	0.855	0.094	0.702	0.734	0.757	0.790	0.853	0.911	0.946	0.974	1.021
20–29 years	1,530	0.880	0.102	0.728	0.758	0.782	0.812	0.871	0.936	0.983	1.010	1.056
30–39 years	1,450	0.897	0.112	0.731	0.763	0.785	0.817	0.884	0.960	1.003	1.040	1.103
40–49 years	1,549	0.919	0.127	0.737	0.768	0.794	0.831	0.908	0.996	1.044	1.078	1.131
50–59 years	1,187	0.918	0.135	0.721	0.760	0.788	0.828	0.902	0.995	1.055	1.086	1.153
60–69 years	1,350	0.945	0.146	0.721	0.766	0.797	0.841	0.933	1.037	1.092	1.143	1.209
70–79 years	825	0.926	0.147	0.701	0.740	0.771	0.822	0.912	1.017	1.076	1.116	1.185
80 years and over	501	0.906	0.151	0.695	0.727	0.753	0.796	0.887	0.998	1.059	1.111	1.181
20 years and over (age-adjusted)	8,392	0.910	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.580	0.064	0.483	0.503	0.517	0.534	0.571	0.622	0.646	0.662	0.689
12–15 years	777	0.713	0.105	0.554	0.578	0.601	0.639	0.704	0.781	0.828	0.852	0.885
16–19 years	783	0.831	0.091	0.695	0.723	0.740	0.765	0.822	0.889	0.924	0.945	0.990
20–29 years	444	0.858	0.091	0.714	0.739	0.762	0.793	0.855	0.915	0.950	0.977	1.015
30–39 years	337	0.877	0.102	0.725	0.758	0.775	0.804	0.864	0.935	0.987	1.000	1.046
40–49 years	381	0.894	0.121	0.720	0.757	0.777	0.813	0.874	0.963	1.009	1.045	1.114
50–59 years	174	0.910	0.135	0.720	0.754	0.770	0.809	0.901	0.972	1.038	1.076	1.136
60–69 years	348	0.927	0.134	0.740	0.767	0.794	0.828	0.918	0.998	1.062	1.090	1.159
70–79 years	164	*0.912	0.147	*0.694	*0.734	*0.746	*0.796	*0.893	*1.010	*1.073	*1.116	*1.157
80 years and over	48	*0.890	0.143	*0.680	*0.733	*0.763	*0.790	*0.861	*0.957	*1.033	*1.102	*1.147
20 years and over (age-adjusted)	1,896	0.891	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.580	0.059	0.483	0.506	0.515	0.539	0.578	0.616	0.636	0.660	0.683
12–15 years	578	0.715	0.108	0.550	0.583	0.600	0.635	0.709	0.789	0.835	0.855	0.899
16–19 years	591	0.855	0.092	0.701	0.734	0.759	0.791	0.855	0.909	0.945	0.971	1.013
20–29 years	617	0.873	0.096	0.728	0.756	0.781	0.807	0.867	0.925	0.972	0.995	1.035
30–39 years	647	0.893	0.108	0.731	0.762	0.786	0.817	0.882	0.956	0.997	1.028	1.086
40–49 years	700	0.916	0.126	0.735	0.766	0.791	0.829	0.908	0.990	1.036	1.068	1.119
50–59 years	683	0.913	0.131	0.714	0.751	0.783	0.826	0.897	0.986	1.047	1.080	1.137
60–69 years	623	0.941	0.143	0.721	0.761	0.792	0.841	0.931	1.031	1.083	1.134	1.203
70–79 years	496	0.927	0.147	0.703	0.743	0.775	0.826	0.913	1.017	1.076	1.121	1.193
80 years and over	398	0.902	0.147	0.697	0.728	0.754	0.794	0.882	0.990	1.053	1.098	1.171
20 years and over (age-adjusted)	4,164	0.906	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.590	0.065	0.493	0.510	0.523	0.545	0.584	0.629	0.654	0.674	0.698
12–15 years	745	0.728	0.110	0.566	0.590	0.605	0.643	0.719	0.802	0.840	0.876	0.915
16–19 years	757	0.878	0.100	0.724	0.757	0.774	0.807	0.873	0.942	0.982	1.011	1.050
20–29 years	325	0.946	0.116	0.787	0.815	0.832	0.861	0.929	1.022	1.065	1.096	1.145
30–39 years	310	0.956	0.121	0.781	0.810	0.834	0.868	0.945	1.033	1.074	1.102	1.174
40–49 years	366	0.959	0.144	0.757	0.794	0.819	0.852	0.940	1.040	1.093	1.146	1.196
50–59 years	240	0.987	0.156	0.768	0.806	0.840	0.871	0.968	1.071	1.134	1.187	1.251
60–69 years	303	1.015	0.152	0.788	0.837	0.862	0.903	1.005	1.113	1.172	1.210	1.276
70–79 years	114	0.958	0.145	0.735	0.789	0.800	0.846	0.952	1.051	1.110	1.128	1.179
80 years and over	36	*0.965	0.184	†	*0.760	*0.794	*0.829	*0.942	*1.077	*1.128	*1.213	†
20 years and over (age-adjusted)	1,694	0.966	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 12. Thoracic spine bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.592	0.077	0.475	0.500	0.515	0.539	0.586	0.638	0.670	0.696	0.728
12–15 years	2,318	0.757	0.090	0.610	0.641	0.661	0.697	0.759	0.815	0.845	0.869	0.907
16–19 years	2,027	0.826	0.089	0.682	0.715	0.734	0.765	0.821	0.882	0.918	0.945	0.978
20–29 years	1,378	0.849	0.094	0.703	0.735	0.751	0.784	0.842	0.903	0.939	0.967	1.018
30–39 years	1,372	0.874	0.105	0.714	0.746	0.766	0.798	0.864	0.943	0.978	1.013	1.056
40–49 years	1,570	0.880	0.115	0.711	0.736	0.761	0.797	0.874	0.953	0.994	1.031	1.078
50–59 years	1,200	0.851	0.122	0.666	0.702	0.727	0.765	0.840	0.929	0.982	1.012	1.056
60–69 years	1,419	0.816	0.133	0.625	0.656	0.685	0.719	0.805	0.893	0.951	0.986	1.048
70–79 years	750	0.779	0.121	0.597	0.638	0.660	0.695	0.768	0.854	0.904	0.932	0.990
80 years and over	594	0.734	0.128	0.552	0.586	0.612	0.641	0.721	0.809	0.855	0.890	0.955
20 years and over (age-adjusted)	8,283	0.847	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.590	0.081	0.470	0.492	0.507	0.535	0.584	0.637	0.669	0.696	0.753
12–15 years	821	0.757	0.086	0.618	0.652	0.672	0.700	0.756	0.806	0.841	0.864	0.901
16–19 years	692	0.810	0.083	0.690	0.709	0.728	0.754	0.803	0.858	0.885	0.915	0.952
20–29 years	364	0.843	0.092	0.708	0.728	0.747	0.778	0.834	0.900	0.943	0.965	1.004
30–39 years	298	0.870	0.107	0.710	0.745	0.772	0.801	0.864	0.928	0.968	0.992	1.045
40–49 years	372	0.884	0.106	0.710	0.752	0.770	0.808	0.886	0.955	0.989	1.020	1.059
50–59 years	194	0.844	0.133	0.668	0.686	0.704	0.745	0.831	0.930	0.967	1.004	1.045
60–69 years	375	0.787	0.125	0.599	0.641	0.663	0.700	0.773	0.861	0.921	0.952	0.997
70–79 years	154	*0.754	0.116	*0.553	*0.605	*0.623	*0.669	*0.756	*0.820	*0.859	*0.890	*0.962
80 years and over	47	*0.728	0.127	*0.558	*0.583	*0.613	*0.654	*0.710	*0.776	*0.819	*0.837	†
20 years and over (age-adjusted)	1,804	0.839	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.590	0.074	0.474	0.499	0.517	0.539	0.586	0.633	0.662	0.690	0.720
12–15 years	576	0.750	0.091	0.596	0.631	0.654	0.686	0.756	0.809	0.839	0.860	0.898
16–19 years	543	0.828	0.086	0.688	0.716	0.736	0.768	0.821	0.884	0.920	0.945	0.974
20–29 years	583	0.843	0.089	0.702	0.734	0.747	0.780	0.837	0.898	0.931	0.954	0.995
30–39 years	612	0.867	0.103	0.710	0.741	0.759	0.790	0.859	0.936	0.971	0.995	1.041
40–49 years	668	0.874	0.113	0.706	0.733	0.757	0.792	0.867	0.945	0.985	1.022	1.071
50–59 years	639	0.849	0.117	0.676	0.706	0.728	0.765	0.840	0.925	0.976	1.007	1.048
60–69 years	644	0.814	0.132	0.624	0.655	0.685	0.716	0.799	0.891	0.949	0.982	1.036
70–79 years	429	0.778	0.119	0.599	0.639	0.661	0.697	0.766	0.850	0.900	0.932	0.985
80 years and over	457	0.733	0.126	0.552	0.587	0.612	0.641	0.721	0.809	0.853	0.887	0.953
20 years and over (age-adjusted)	4,032	0.842	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.600	0.084	0.470	0.497	0.512	0.543	0.594	0.652	0.684	0.709	0.754
12–15 years	737	0.788	0.093	0.636	0.670	0.691	0.724	0.787	0.845	0.882	0.908	0.944
16–19 years	609	0.857	0.094	0.705	0.740	0.759	0.789	0.855	0.916	0.956	0.979	1.014
20–29 years	297	0.884	0.102	0.735	0.757	0.779	0.812	0.875	0.947	0.990	1.026	1.068
30–39 years	333	0.919	0.112	0.753	0.780	0.803	0.837	0.922	0.986	1.031	1.060	1.108
40–49 years	398	0.932	0.125	0.739	0.774	0.798	0.844	0.925	1.004	1.053	1.080	1.147
50–59 years	250	0.896	0.140	0.704	0.728	0.748	0.789	0.876	0.982	1.045	1.089	1.159
60–69 years	306	0.873	0.143	0.662	0.698	0.728	0.772	0.855	0.956	1.023	1.071	1.128
70–79 years	124	0.832	0.134	0.643	0.678	0.699	0.727	0.822	0.912	0.966	1.007	1.077
80 years and over	58	*0.781	0.152	*0.561	*0.605	*0.626	*0.689	*0.760	*0.851	*0.904	*0.941	†
20 years and over (age-adjusted)	1,766	0.894	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 13. Lumbar spine bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	33.91	6.86	22.11	25.06	26.71	29.53	34.36	38.30	39.97	41.60	44.22
12–15 years	2,264	47.55	10.85	29.82	33.90	36.29	39.57	47.21	55.14	59.05	61.86	65.47
16–19 years	2,309	58.17	8.90	43.57	46.89	49.12	52.36	57.99	63.88	67.23	69.69	73.69
20–29 years	1,530	58.45	9.32	43.82	47.22	49.08	52.04	58.06	64.74	68.08	70.67	74.25
30–39 years	1,450	58.72	9.48	42.83	46.26	48.65	52.16	58.84	64.92	68.46	70.97	74.71
40–49 years	1,549	60.23	10.17	43.52	47.05	49.18	53.33	60.30	67.41	70.69	73.13	76.86
50–59 years	1,187	59.92	9.89	43.45	47.15	49.88	53.52	60.10	66.28	70.14	72.23	76.20
60–69 years	1,350	59.36	11.03	41.73	46.22	49.04	52.96	59.27	65.66	69.02	71.88	75.71
70–79 years	825	58.94	10.73	41.24	45.56	47.38	51.29	59.22	66.37	69.99	72.39	75.39
80 years and over	501	58.31	10.31	41.07	45.27	48.14	51.65	57.87	65.05	68.94	71.98	75.72
20 years and over (age-adjusted)	8,392	59.25	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	33.12	6.84	21.38	24.69	26.07	29.08	33.17	37.27	39.43	41.07	44.78
12–15 years	777	47.50	10.66	29.39	33.94	36.32	39.72	47.59	55.32	58.50	60.91	64.38
16–19 years	783	57.02	8.66	43.43	45.89	47.82	50.99	57.16	62.17	66.05	68.27	71.61
20–29 years	444	57.41	8.32	43.51	47.04	49.22	51.85	57.25	62.80	66.01	67.95	71.17
30–39 years	337	56.30	8.14	42.15	45.24	47.24	50.36	56.91	61.40	64.39	66.17	70.03
40–49 years	381	57.32	8.57	43.51	45.68	47.74	51.59	57.57	63.10	66.07	68.73	71.47
50–59 years	174	56.66	8.44	42.58	45.13	47.21	50.68	57.16	62.07	64.80	66.32	69.99
60–69 years	348	57.70	9.44	43.32	46.37	48.32	51.33	56.41	63.66	67.20	71.10	73.94
70–79 years	164	*59.32	9.72	*42.60	*46.38	*49.87	*52.71	*58.70	*65.08	*67.81	*72.46	*75.31
80 years and over	48	*59.07	10.86	*42.38	*45.81	*47.30	*51.34	*57.26	*63.92	*73.23	*76.27	†
20 years and over (age-adjusted)	1,896	57.30	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	34.29	6.92	22.72	25.19	26.87	29.64	34.80	38.67	40.42	42.24	44.33
12–15 years	578	48.10	11.10	30.01	33.97	36.60	39.89	47.56	55.63	60.23	62.99	66.76
16–19 years	591	59.08	8.89	44.05	47.70	49.88	53.48	58.74	64.55	68.31	70.90	74.38
20–29 years	617	59.38	9.20	45.12	48.16	49.74	52.61	58.88	65.51	69.07	71.60	75.21
30–39 years	647	59.75	9.65	43.71	47.25	49.29	53.17	59.77	66.35	69.30	72.12	76.07
40–49 years	700	61.30	10.27	44.55	47.76	49.71	54.31	61.37	68.60	71.95	74.25	78.10
50–59 years	683	60.73	9.95	43.70	48.63	51.03	54.29	60.90	67.04	70.71	72.91	76.84
60–69 years	623	60.14	11.14	42.26	47.04	49.86	53.69	59.98	66.51	69.73	72.48	76.55
70–79 years	496	59.65	10.81	41.50	45.97	48.04	52.03	59.94	67.18	70.83	72.92	75.73
80 years and over	398	58.57	10.33	41.19	45.57	48.64	51.76	58.17	65.28	69.24	72.21	75.76
20 years and over (age-adjusted)	4,164	60.15	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	34.33	6.72	22.71	26.02	27.42	29.88	34.32	38.76	40.70	42.16	45.16
12–15 years	745	47.02	10.04	30.84	33.85	35.91	40.14	46.97	53.77	57.72	60.04	63.80
16–19 years	757	56.43	9.09	42.19	44.83	47.28	49.96	56.21	62.44	65.68	67.67	72.18
20–29 years	325	57.48	9.78	41.64	45.76	47.86	50.71	57.32	63.02	68.16	70.23	73.09
30–39 years	310	57.05	9.85	39.96	43.91	46.63	50.83	57.22	63.50	66.70	69.68	72.98
40–49 years	366	57.08	9.54	41.42	45.01	47.16	50.49	56.72	63.39	67.53	69.44	72.52
50–59 years	240	58.27	9.68	40.88	45.07	48.00	51.82	58.51	64.50	67.75	71.23	74.14
60–69 years	303	57.29	9.47	42.37	45.48	47.76	50.53	56.61	63.46	66.66	69.85	73.72
70–79 years	114	55.68	9.62	39.77	43.95	46.14	48.90	55.30	62.64	66.00	67.24	70.14
80 years and over	36	*56.04	10.22	†	*41.92	*43.36	*47.96	*56.31	*62.57	*64.93	*66.17	†
20 years and over (age-adjusted)	1,694	57.19	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 13. Lumbar spine bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	34.82	7.08	24.46	26.58	28.02	29.88	34.32	39.08	42.38	44.70	47.50
12–15 years	2,318	47.37	7.53	35.46	37.67	39.34	42.13	47.17	52.25	55.30	57.12	59.93
16–19 years	2,027	50.34	7.43	38.74	41.20	42.58	45.15	50.28	55.15	57.78	59.81	62.42
20–29 years	1,378	50.87	7.65	38.49	41.54	43.29	45.80	50.65	56.10	59.07	60.59	63.21
30–39 years	1,372	50.84	7.91	37.51	41.21	42.96	45.83	50.48	56.10	59.32	61.05	63.63
40–49 years	1,570	51.62	8.16	38.33	40.81	42.83	45.88	51.61	56.95	59.92	62.23	64.82
50–59 years	1,200	50.44	8.00	37.15	39.91	41.91	45.14	50.52	55.59	58.64	60.43	63.91
60–69 years	1,419	48.51	8.50	34.93	37.44	39.45	42.68	48.35	54.56	57.65	59.46	62.16
70–79 years	750	47.70	8.37	33.73	36.79	39.01	41.83	48.02	53.26	56.30	58.22	60.98
80 years and over	594	45.26	8.63	31.39	34.10	36.04	39.31	44.83	51.04	53.94	56.35	59.90
20 years and over (age-adjusted)	8,283	50.19	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	33.66	6.79	22.75	25.17	26.29	28.94	33.26	37.80	40.52	42.81	45.11
12–15 years	821	46.40	6.94	35.42	38.09	39.46	41.74	46.10	51.08	53.56	55.20	57.66
16–19 years	692	48.72	6.55	37.68	40.26	41.85	44.30	48.75	53.25	55.39	56.74	58.94
20–29 years	364	49.63	7.03	37.83	40.54	42.42	45.11	49.78	54.41	56.64	58.33	60.98
30–39 years	298	49.62	6.79	39.13	40.92	42.46	44.72	49.35	54.06	56.50	58.55	61.00
40–49 years	372	49.08	7.56	36.90	39.40	41.13	43.91	48.67	54.05	57.32	58.52	61.41
50–59 years	194	47.85	8.77	35.24	37.61	38.91	42.46	47.81	52.38	54.89	56.86	59.62
60–69 years	375	45.90	7.99	32.20	35.32	38.11	40.66	46.23	50.75	53.85	55.56	58.50
70–79 years	154	*44.84	8.28	*30.73	*32.74	*35.34	*38.21	*45.77	*51.54	*53.73	*55.36	*57.35
80 years and over	47	*44.61	8.35	*29.61	*33.62	*36.23	*38.81	*44.88	*50.09	*52.86	*54.44	†
20 years and over (age-adjusted)	1,804	48.22	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	35.41	7.14	25.15	27.39	28.42	30.30	34.73	39.74	43.29	45.91	48.61
12–15 years	576	48.00	7.88	34.91	37.54	39.42	42.42	48.01	53.23	56.02	58.10	61.00
16–19 years	543	51.67	7.34	40.32	42.30	43.93	46.41	51.61	56.29	59.19	60.90	63.47
20–29 years	583	51.92	7.60	39.52	42.87	44.12	47.05	51.55	57.29	59.86	61.36	63.91
30–39 years	612	51.81	8.09	37.42	42.01	43.70	46.83	51.88	57.30	60.16	61.92	64.55
40–49 years	668	52.59	8.16	38.75	41.54	43.82	47.20	52.58	57.85	60.76	62.92	65.45
50–59 years	639	51.48	7.77	37.66	41.11	43.34	46.30	51.72	56.62	59.49	61.11	64.36
60–69 years	644	49.05	8.49	35.35	37.71	40.01	43.08	49.06	55.05	58.15	59.85	63.02
70–79 years	429	48.29	8.36	34.31	37.47	39.45	42.38	48.57	53.93	56.54	58.70	61.63
80 years and over	457	45.63	8.59	31.51	34.41	36.31	39.68	45.18	51.58	54.03	56.70	60.08
20 years and over (age-adjusted)	4,032	51.08	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	34.36	7.46	22.40	25.62	26.94	29.18	34.21	38.67	41.98	43.63	47.52
12–15 years	737	46.57	7.16	34.93	37.39	39.09	41.57	46.70	51.47	53.64	55.13	58.18
16–19 years	609	47.99	6.88	36.92	39.06	41.01	43.26	47.79	52.76	55.04	56.33	58.78
20–29 years	297	48.49	7.43	36.16	39.13	41.05	43.73	48.27	53.49	56.75	58.47	60.58
30–39 years	333	48.77	7.39	36.88	39.56	41.20	43.90	48.42	53.88	56.27	57.77	60.39
40–49 years	398	49.48	7.71	36.76	39.46	42.03	44.49	49.23	54.90	57.70	59.35	62.23
50–59 years	250	48.17	7.84	36.10	38.67	40.12	42.47	47.92	53.18	55.80	58.10	61.38
60–69 years	306	47.72	8.08	34.72	36.83	38.56	42.21	47.82	53.36	56.53	58.20	60.21
70–79 years	124	44.96	7.77	31.35	34.45	36.47	40.06	45.01	49.72	51.89	54.77	58.15
80 years and over	58	*44.25	9.07	*28.86	*32.73	*34.81	*39.02	*43.42	*48.94	*51.47	*54.58	*60.21
20 years and over (age-adjusted)	1,766	48.15	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 14. Lumbar spine bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	23.46	6.31	13.82	15.52	16.96	19.44	23.45	27.09	29.37	31.05	34.43
12–15 years	2,264	41.31	15.04	20.24	23.74	25.80	29.35	39.62	51.61	57.73	61.31	67.92
16–19 years	2,309	61.24	13.82	39.86	44.83	47.80	51.91	59.96	69.51	75.63	78.99	85.41
20–29 years	1,530	62.39	14.06	42.05	45.83	48.31	52.93	60.54	70.84	76.54	81.08	87.82
30–39 years	1,450	62.00	14.83	39.57	43.51	47.25	51.71	61.16	70.47	76.79	80.34	88.66
40–49 years	1,549	63.21	16.22	39.87	43.69	46.49	51.69	61.45	73.36	79.26	85.15	91.93
50–59 years	1,187	62.46	16.36	37.72	42.28	45.66	51.10	60.92	72.30	80.25	83.54	89.99
60–69 years	1,350	64.23	18.15	38.34	43.23	46.47	51.68	62.44	74.67	82.18	86.82	95.77
70–79 years	825	*64.21	19.39	37.59	42.04	44.68	50.24	60.72	76.23	84.72	90.22	98.06
80 years and over	501	*64.47	20.51	35.40	41.46	45.01	50.88	61.61	74.37	85.71	92.39	103.02
20 years and over (age-adjusted)	8,392	62.93	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	22.28	6.16	12.76	14.68	16.24	18.31	22.12	25.78	27.81	29.33	33.28
12–15 years	777	40.94	14.85	19.30	23.18	25.34	29.57	39.65	51.28	57.99	61.26	66.25
16–19 years	783	57.03	13.03	37.32	40.92	43.53	47.88	55.91	64.75	69.46	73.63	79.87
20–29 years	444	58.19	12.38	40.27	43.45	45.91	49.91	56.93	65.06	71.28	75.36	81.32
30–39 years	337	55.75	12.10	36.38	40.84	43.37	47.41	54.45	64.05	67.38	71.68	76.43
40–49 years	381	56.35	13.71	37.50	40.65	42.92	45.78	54.92	65.04	69.98	73.64	78.17
50–59 years	174	56.15	13.67	36.39	39.16	42.39	46.88	54.54	63.87	71.63	75.44	81.33
60–69 years	348	60.02	17.47	37.46	40.19	42.24	47.78	57.07	68.79	78.10	84.59	93.79
70–79 years	164	*63.19	20.37	*34.55	*41.90	*44.87	*49.29	*61.22	*72.09	*79.98	*85.96	*101.12
80 years and over	48	*63.63	23.48	*32.93	*40.28	*43.06	*44.56	*59.01	*72.54	*84.99	*98.70	†
20 years and over (age-adjusted)	1,896	57.81	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	23.56	6.23	14.10	15.51	16.92	19.58	23.81	27.27	29.37	30.97	33.76
12–15 years	578	41.59	15.36	20.73	23.95	25.85	28.99	39.79	52.15	58.49	62.62	68.81
16–19 years	591	61.77	13.72	40.15	45.77	48.42	52.15	60.34	70.06	76.23	79.56	85.52
20–29 years	617	62.88	13.24	43.32	46.65	49.43	54.14	61.01	71.44	76.68	80.76	87.08
30–39 years	647	63.02	14.90	39.88	44.53	48.22	52.54	62.45	71.35	77.80	81.11	89.84
40–49 years	700	64.13	16.19	40.50	44.20	47.62	53.03	62.35	73.96	80.61	86.86	92.53
50–59 years	683	62.90	16.05	37.65	42.50	46.28	52.22	61.80	72.35	80.26	83.34	89.07
60–69 years	623	64.96	18.06	39.32	44.23	47.19	52.53	63.18	75.05	82.56	87.03	96.01
70–79 years	496	65.16	19.45	38.06	42.41	45.11	51.32	61.62	77.81	86.18	92.02	99.09
80 years and over	398	*64.56	20.37	35.91	41.53	45.13	51.02	61.88	74.56	85.66	92.27	102.21
20 years and over (age-adjusted)	4,164	63.66	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	25.19	6.83	14.50	17.11	18.59	20.69	24.40	29.34	31.89	33.16	36.65
12–15 years	745	42.90	14.86	22.09	24.86	27.47	32.01	41.36	52.16	58.95	63.68	70.68
16–19 years	757	63.16	15.01	40.38	45.00	48.47	52.43	62.20	72.40	77.84	82.11	89.09
20–29 years	325	67.92	17.25	43.51	48.45	51.22	55.72	66.09	76.61	85.71	90.01	98.40
30–39 years	310	65.77	16.56	39.18	46.37	48.80	54.13	64.62	75.49	81.28	86.33	97.13
40–49 years	366	64.62	17.61	39.98	43.93	46.72	52.43	62.61	74.92	81.63	86.43	94.06
50–59 years	240	67.39	19.25	39.99	44.04	47.62	53.03	65.09	80.02	87.52	91.61	99.12
60–69 years	303	66.85	18.47	40.23	44.65	47.77	53.47	64.29	77.83	86.45	92.40	99.56
70–79 years	114	64.02	18.96	38.08	43.87	46.98	49.78	60.93	74.52	82.53	88.74	94.57
80 years and over	36	*67.09	22.87	†	*40.16	*44.28	*51.69	*62.22	*78.09	*90.04	*97.82	†
20 years and over (age-adjusted)	1,694	66.20	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 14. Lumbar spine bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	25.87	8.38	15.32	17.26	18.30	19.99	23.98	30.06	35.06	37.80	41.70
12–15 years	2,318	46.07	11.76	27.98	31.14	34.07	37.90	45.47	52.96	58.09	61.36	67.67
16–19 years	2,027	53.10	11.21	36.15	39.26	41.86	45.52	52.21	59.36	64.08	68.27	73.09
20–29 years	1,378	54.82	11.11	37.26	41.21	43.92	47.23	54.10	62.02	66.40	69.10	73.45
30–39 years	1,372	55.10	11.74	37.38	40.85	43.20	46.94	54.44	62.13	66.98	70.39	75.50
40–49 years	1,570	55.31	12.82	36.50	38.95	42.00	46.37	54.43	63.16	68.22	71.82	78.40
50–59 years	1,200	51.51	12.83	32.45	35.45	37.93	42.33	50.78	59.86	64.81	68.93	73.14
60–69 years	1,419	48.05	14.08	28.16	31.08	33.61	37.79	46.91	56.61	62.20	66.46	71.57
70–79 years	750	45.96	13.73	26.63	30.16	32.87	36.27	44.27	54.17	59.05	62.87	69.90
80 years and over	594	42.47	13.51	22.56	26.01	28.92	32.70	41.23	50.72	55.87	60.83	65.55
20 years and over (age-adjusted)	8,283	52.47	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	*24.62	7.87	14.21	16.09	17.14	18.96	23.33	28.31	32.38	35.75	39.72
12–15 years	821	44.29	10.26	26.96	31.43	34.16	37.76	43.27	50.81	54.43	56.80	61.61
16–19 years	692	49.72	9.88	34.71	37.75	39.80	42.86	49.14	55.31	59.61	62.86	67.12
20–29 years	364	51.52	10.30	36.02	39.31	41.75	44.75	50.75	57.76	61.86	64.46	68.29
30–39 years	298	51.85	11.65	33.92	37.91	39.96	43.96	50.92	58.95	63.38	66.22	70.47
40–49 years	372	50.65	11.67	32.19	36.90	39.01	42.14	49.99	57.75	63.06	66.09	69.87
50–59 years	194	47.15	14.40	27.07	31.16	34.25	37.83	44.60	55.04	60.83	62.80	71.03
60–69 years	375	42.17	12.29	23.87	27.46	30.28	33.30	41.83	49.11	53.09	58.61	62.88
70–79 years	154	*39.83	11.82	*20.08	*24.07	*27.42	*31.62	*39.46	*47.97	*52.60	*54.37	*58.52
80 years and over	47	*38.68	13.22	†	*22.32	*23.72	*29.90	*37.71	*46.48	*50.07	*52.52	†
20 years and over (age-adjusted)	1,804	48.20	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	25.99	8.28	15.66	17.57	18.56	20.02	23.90	30.57	35.30	37.66	41.54
12–15 years	576	46.26	12.33	27.58	30.49	33.14	37.67	45.59	53.86	59.15	61.90	68.72
16–19 years	543	54.36	11.16	37.74	41.26	43.45	46.82	53.29	60.23	64.72	69.53	74.20
20–29 years	583	55.76	10.73	39.13	42.66	45.05	48.66	55.07	62.46	66.88	70.01	73.69
30–39 years	612	55.87	11.72	37.28	41.35	43.94	48.11	55.37	62.93	67.61	70.98	75.74
40–49 years	668	56.07	12.72	37.64	39.58	42.57	46.87	55.53	63.78	68.74	72.43	79.24
50–59 years	639	52.55	12.40	32.88	36.64	39.17	43.84	51.99	60.60	65.50	69.03	73.10
60–69 years	644	48.52	13.98	28.46	31.69	34.17	38.28	47.38	56.92	62.90	66.77	71.55
70–79 years	429	46.59	13.87	27.49	30.69	33.16	36.83	44.98	54.68	59.39	63.92	70.31
80 years and over	457	42.87	13.40	22.89	26.43	29.46	33.15	41.48	51.17	55.91	61.09	65.76
20 years and over (age-adjusted)	4,032	53.25	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	27.16	9.41	14.69	16.87	18.45	20.66	25.73	31.41	36.39	39.94	45.11
12–15 years	737	48.34	11.68	29.46	33.84	36.21	40.42	48.02	55.49	59.72	64.37	69.14
16–19 years	609	53.50	11.07	36.08	39.09	41.68	45.60	53.17	60.75	65.39	68.69	72.78
20–29 years	297	55.27	11.83	36.60	40.23	43.58	46.75	54.64	64.18	68.73	70.49	74.68
30–39 years	333	56.31	11.74	39.09	41.91	43.88	48.30	55.35	63.90	69.14	72.16	75.46
40–49 years	398	57.03	13.75	37.05	39.97	43.81	47.47	55.72	65.31	70.89	74.37	82.00
50–59 years	250	52.29	13.57	33.43	36.68	38.58	42.53	51.03	59.96	66.83	69.98	76.07
60–69 years	306	51.54	14.96	30.20	32.73	35.51	40.52	50.64	60.34	66.18	71.91	77.34
70–79 years	124	46.51	13.61	27.22	31.40	34.08	36.86	44.63	52.61	58.48	65.24	†
80 years and over	58	*43.88	14.85	*20.59	*25.83	*29.48	*33.79	*42.02	*52.76	*58.47	*61.83	*71.93
20 years and over (age-adjusted)	1,766	53.77	...	...	...	...	...	...	...	...	...	...

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

. . . Category not applicable.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 15. Lumbar spine bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.685	0.075	0.568	0.592	0.607	0.632	0.682	0.729	0.761	0.779	0.816
12–15 years	2,264	0.845	0.147	0.635	0.671	0.693	0.732	0.829	0.942	1.005	1.041	1.105
16–19 years	2,309	1.047	0.137	0.836	0.877	0.910	0.954	1.035	1.131	1.188	1.224	1.288
20–29 years	1,530	1.064	0.143	0.858	0.902	0.924	0.965	1.049	1.146	1.208	1.249	1.314
30–39 years	1,450	1.050	0.151	0.827	0.870	0.896	0.944	1.044	1.133	1.191	1.240	1.315
40–49 years	1,549	1.042	0.156	0.817	0.859	0.892	0.934	1.020	1.134	1.195	1.248	1.312
50–59 years	1,187	1.034	0.167	0.791	0.832	0.867	0.918	1.015	1.126	1.201	1.258	1.338
60–69 years	1,350	1.073	0.187	0.793	0.847	0.885	0.942	1.057	1.192	1.275	1.325	1.402
70–79 years	825	1.078	0.199	0.786	0.843	0.878	0.932	1.057	1.193	1.290	1.345	1.440
80 years and over	501	1.092	0.229	0.781	0.833	0.861	0.922	1.062	1.213	1.329	1.395	1.515
20 years and over (age-adjusted)	8,392	1.055	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.665	0.071	0.558	0.576	0.594	0.617	0.661	0.707	0.731	0.756	0.793
12–15 years	777	0.838	0.147	0.620	0.655	0.684	0.725	0.822	0.930	1.002	1.049	1.104
16–19 years	783	0.994	0.126	0.800	0.843	0.870	0.902	0.989	1.064	1.117	1.156	1.212
20–29 years	444	1.009	0.121	0.823	0.859	0.882	0.925	1.003	1.080	1.127	1.163	1.221
30–39 years	337	0.985	0.130	0.771	0.833	0.863	0.900	0.973	1.063	1.110	1.156	1.211
40–49 years	381	0.977	0.147	0.768	0.796	0.828	0.866	0.958	1.067	1.127	1.169	1.213
50–59 years	174	0.983	0.147	0.770	0.803	0.827	0.874	0.968	1.064	1.141	1.184	1.243
60–69 years	348	1.028	0.182	0.778	0.822	0.854	0.894	0.997	1.137	1.219	1.287	1.344
70–79 years	164	*1.051	0.220	*0.748	*0.798	*0.846	*0.895	*1.009	*1.175	*1.246	*1.324	*1.424
80 years and over	48	*1.052	0.225	*0.746	*0.793	*0.811	*0.849	*1.017	*1.180	*1.253	*1.374	†
20 years and over (age-adjusted)	1,896	1.000	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.680	0.070	0.566	0.590	0.604	0.628	0.679	0.725	0.749	0.769	0.797
12–15 years	578	0.841	0.145	0.628	0.670	0.691	0.727	0.827	0.938	1.000	1.034	1.100
16–19 years	591	1.040	0.132	0.831	0.869	0.906	0.950	1.027	1.127	1.177	1.211	1.261
20–29 years	617	1.056	0.129	0.864	0.902	0.926	0.965	1.046	1.136	1.187	1.227	1.290
30–39 years	647	1.049	0.147	0.827	0.870	0.897	0.950	1.046	1.129	1.181	1.227	1.299
40–49 years	700	1.038	0.148	0.822	0.862	0.897	0.935	1.020	1.126	1.188	1.232	1.295
50–59 years	683	1.028	0.161	0.787	0.832	0.864	0.918	1.012	1.119	1.189	1.242	1.314
60–69 years	623	1.072	0.183	0.796	0.848	0.886	0.942	1.056	1.191	1.267	1.324	1.394
70–79 years	496	1.081	0.196	0.795	0.850	0.885	0.935	1.057	1.193	1.292	1.343	1.438
80 years and over	398	1.089	0.225	0.786	0.834	0.864	0.921	1.060	1.207	1.319	1.388	1.499
20 years and over (age-adjusted)	4,164	1.052	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.726	0.084	0.599	0.631	0.645	0.669	0.716	0.772	0.808	0.830	0.863
12–15 years	745	0.891	0.157	0.668	0.708	0.734	0.771	0.871	0.993	1.046	1.089	1.175
16–19 years	757	1.112	0.149	0.897	0.936	0.964	1.009	1.092	1.207	1.266	1.320	1.378
20–29 years	325	1.174	0.172	0.924	0.966	0.991	1.054	1.154	1.275	1.348	1.398	1.486
30–39 years	310	1.145	0.163	0.883	0.934	0.972	1.037	1.138	1.251	1.312	1.360	1.441
40–49 years	366	1.124	0.194	0.867	0.911	0.940	0.984	1.103	1.226	1.317	1.380	1.451
50–59 years	240	1.143	0.194	0.853	0.900	0.932	1.013	1.126	1.256	1.359	1.398	1.496
60–69 years	303	1.156	0.201	0.872	0.924	0.962	1.013	1.124	1.278	1.361	1.407	1.513
70–79 years	114	1.139	0.207	0.847	0.898	0.913	0.984	1.105	1.255	1.351	1.403	1.473
80 years and over	36	*1.182	0.287	†	*0.835	*0.888	*0.971	*1.146	*1.336	*1.459	*1.563	†
20 years and over (age-adjusted)	1,694	1.148	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 15. Lumbar spine bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.730	0.106	0.583	0.609	0.624	0.655	0.713	0.787	0.840	0.879	0.932
12–15 years	2,318	0.962	0.135	0.743	0.793	0.825	0.871	0.960	1.044	1.096	1.134	1.187
16–19 years	2,027	1.050	0.123	0.864	0.898	0.923	0.960	1.040	1.128	1.177	1.218	1.272
20–29 years	1,378	1.074	0.123	0.879	0.922	0.950	0.991	1.070	1.147	1.193	1.229	1.285
30–39 years	1,372	1.080	0.133	0.878	0.912	0.942	0.984	1.075	1.165	1.220	1.256	1.301
40–49 years	1,570	1.066	0.150	0.844	0.886	0.917	0.961	1.053	1.159	1.215	1.248	1.320
50–59 years	1,200	1.014	0.159	0.778	0.824	0.852	0.900	0.997	1.114	1.172	1.225	1.297
60–69 years	1,419	0.978	0.170	0.721	0.772	0.808	0.859	0.962	1.078	1.150	1.206	1.285
70–79 years	750	0.952	0.173	0.707	0.753	0.784	0.834	0.925	1.055	1.117	1.174	1.259
80 years and over	594	0.924	0.175	0.661	0.717	0.751	0.800	0.904	1.026	1.099	1.155	1.231
20 years and over (age-adjusted)	8,283	1.038	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.718	0.101	0.584	0.603	0.623	0.649	0.703	0.766	0.818	0.856	0.922
12–15 years	821	0.946	0.122	0.742	0.794	0.826	0.866	0.949	1.023	1.062	1.099	1.153
16–19 years	692	1.016	0.120	0.836	0.869	0.896	0.935	1.010	1.092	1.139	1.170	1.217
20–29 years	364	1.034	0.116	0.852	0.886	0.917	0.954	1.021	1.109	1.154	1.194	1.236
30–39 years	298	1.038	0.139	0.811	0.862	0.896	0.949	1.036	1.119	1.158	1.216	1.259
40–49 years	372	1.025	0.131	0.822	0.862	0.889	0.932	1.025	1.107	1.161	1.202	1.249
50–59 years	194	0.971	0.162	0.748	0.787	0.810	0.849	0.952	1.061	1.134	1.182	1.254
60–69 years	375	0.906	0.150	0.679	0.715	0.744	0.796	0.907	0.997	1.056	1.096	1.142
70–79 years	154	*0.875	0.151	*0.631	*0.684	*0.717	*0.767	*0.869	*0.975	*1.024	*1.056	*1.144
80 years and over	47	*0.849	0.166	†	*0.632	*0.675	*0.734	*0.841	*0.929	*0.992	*1.055	†
20 years and over (age-adjusted)	1,804	0.988	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.721	0.101	0.577	0.605	0.619	0.649	0.707	0.776	0.825	0.862	0.906
12–15 years	576	0.951	0.136	0.729	0.785	0.811	0.860	0.952	1.037	1.087	1.121	1.161
16–19 years	543	1.047	0.118	0.866	0.902	0.927	0.960	1.041	1.123	1.170	1.203	1.247
20–29 years	583	1.072	0.115	0.894	0.934	0.954	0.992	1.069	1.140	1.188	1.222	1.273
30–39 years	612	1.074	0.125	0.884	0.913	0.944	0.979	1.072	1.159	1.209	1.249	1.287
40–49 years	668	1.062	0.147	0.845	0.885	0.914	0.960	1.047	1.155	1.207	1.241	1.296
50–59 years	639	1.015	0.154	0.777	0.826	0.856	0.907	1.000	1.116	1.167	1.214	1.281
60–69 years	644	0.977	0.165	0.730	0.775	0.811	0.860	0.960	1.077	1.149	1.197	1.278
70–79 years	429	0.953	0.171	0.711	0.757	0.790	0.836	0.928	1.049	1.115	1.166	1.255
80 years and over	457	0.926	0.173	0.664	0.720	0.755	0.800	0.907	1.030	1.100	1.154	1.233
20 years and over (age-adjusted)	4,032	1.035	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.774	0.119	0.598	0.635	0.658	0.691	0.756	0.842	0.900	0.940	0.991
12–15 years	737	1.028	0.139	0.798	0.848	0.885	0.939	1.026	1.122	1.178	1.214	1.252
16–19 years	609	1.110	0.132	0.898	0.940	0.969	1.013	1.104	1.198	1.248	1.278	1.329
20–29 years	297	1.135	0.143	0.912	0.952	0.988	1.034	1.129	1.216	1.277	1.314	1.391
30–39 years	333	1.151	0.141	0.941	0.978	1.005	1.054	1.137	1.238	1.287	1.325	1.401
40–49 years	398	1.145	0.165	0.881	0.940	0.978	1.039	1.131	1.246	1.314	1.361	1.410
50–59 years	250	1.077	0.169	0.836	0.872	0.904	0.953	1.055	1.183	1.264	1.311	1.358
60–69 years	306	1.067	0.191	0.777	0.832	0.872	0.935	1.044	1.185	1.253	1.314	1.398
70–79 years	124	1.027	0.196	0.737	0.791	0.823	0.876	0.999	1.152	1.216	1.278	1.370
80 years and over	58	*0.975	0.207	*0.673	*0.722	*0.789	*0.842	*0.949	*1.061	*1.144	*1.211	†
20 years and over (age-adjusted)	1,766	1.108	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 16. Pelvis bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	129.70	23.79	90.61	98.03	104.41	114.27	130.78	145.05	152.58	157.44	166.82
12–15 years	2,264	194.17	46.96	124.90	135.24	143.21	155.87	192.56	227.25	246.97	255.87	273.17
16–19 years	2,309	247.53	37.96	187.98	200.78	209.22	220.63	245.98	273.37	286.85	296.35	311.17
20–29 years	1,530	236.62	36.88	180.70	192.15	198.77	210.92	234.65	260.92	275.32	286.15	300.81
30–39 years	1,450	222.10	35.79	167.77	178.31	185.90	196.18	219.97	245.16	259.87	269.35	284.67
40–49 years	1,549	215.81	32.65	164.98	176.46	183.09	192.06	213.76	235.38	249.29	259.93	276.43
50–59 years	1,187	208.19	32.51	160.32	168.97	174.09	184.77	207.40	228.18	239.90	247.03	264.09
60–69 years	1,350	207.89	30.65	157.36	169.22	176.83	188.34	208.05	226.93	238.60	246.67	259.17
70–79 years	825	203.97	30.91	155.56	164.79	171.01	182.64	203.51	224.39	237.11	244.07	253.33
80 years and over	501	199.57	32.93	148.21	158.60	165.96	177.11	199.06	218.24	230.64	242.51	253.20
20 years and over (age-adjusted)	8,392	217.24	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	125.61	24.44	88.11	94.71	98.92	108.36	124.48	141.94	149.73	154.07	161.65
12–15 years	777	188.65	43.87	115.57	132.18	140.81	154.66	189.35	218.45	235.67	247.22	262.35
16–19 years	783	228.90	35.07	174.45	187.26	193.46	205.82	226.11	249.46	265.63	273.87	288.30
20–29 years	444	216.83	31.00	167.98	178.80	186.16	196.36	213.96	236.59	248.13	257.22	270.02
30–39 years	337	198.82	28.41	154.74	164.81	170.42	179.50	195.77	215.93	228.88	236.14	250.01
40–49 years	381	197.33	28.42	155.53	164.34	169.26	178.03	194.00	213.52	225.06	233.43	246.99
50–59 years	174	193.57	27.92	149.07	158.91	163.66	173.65	191.43	211.73	223.31	230.21	241.63
60–69 years	348	194.47	27.31	154.90	163.06	167.24	174.09	192.15	211.45	222.86	231.99	238.70
70–79 years	164	*190.45	25.73	*148.88	*158.77	*160.50	*174.10	*190.78	*207.94	*215.69	*220.29	*229.14
80 years and over	48	*183.23	31.02	*132.50	*137.23	*144.44	*162.34	*183.14	*201.47	*212.63	*227.29	*236.86
20 years and over (age-adjusted)	1,896	199.12	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	131.95	24.41	89.40	97.23	105.73	117.37	133.28	147.88	154.27	160.63	167.94
12–15 years	578	197.73	48.56	126.51	136.96	144.22	156.59	195.95	232.53	251.57	262.65	275.73
16–19 years	591	252.43	37.84	191.48	206.23	213.16	224.34	250.88	279.25	291.60	300.36	314.23
20–29 years	617	240.23	35.90	184.34	195.96	204.20	213.96	237.65	264.47	278.59	288.36	302.32
30–39 years	647	226.93	35.88	171.08	182.88	189.69	202.72	225.62	249.12	264.80	275.10	287.47
40–49 years	700	219.37	31.89	168.88	181.05	187.59	196.40	217.62	238.35	251.75	262.06	278.32
50–59 years	683	210.19	32.23	162.17	170.84	176.85	187.04	209.54	229.79	240.53	248.22	265.42
60–69 years	623	209.89	30.04	159.94	171.94	180.65	190.43	209.00	228.65	239.88	247.16	259.76
70–79 years	496	206.60	29.75	158.60	168.23	174.74	185.87	205.55	226.58	238.12	245.37	254.65
80 years and over	398	200.30	32.23	151.88	160.35	167.47	178.31	199.21	218.16	230.68	242.13	253.36
20 years and over (age-adjusted)	4,164	220.47	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	129.42	21.65	96.13	104.43	109.20	115.28	128.04	141.83	150.04	154.28	167.95
12–15 years	745	194.48	44.66	127.76	139.33	146.26	158.68	193.07	224.91	240.76	252.30	271.38
16–19 years	757	248.08	37.09	188.69	200.51	211.87	223.49	246.86	271.01	283.47	292.90	309.84
20–29 years	325	246.98	37.43	190.81	197.76	203.89	221.04	246.51	268.84	281.77	292.20	310.67
30–39 years	310	231.79	33.83	178.27	190.75	199.62	209.49	231.43	254.29	266.97	277.51	289.78
40–49 years	366	218.72	34.32	168.09	177.45	183.32	193.89	214.41	239.28	256.24	266.64	282.99
50–59 years	240	215.27	34.95	164.10	172.61	179.71	190.83	214.03	238.46	246.55	259.44	270.31
60–69 years	303	211.53	30.31	162.94	172.59	181.81	191.94	210.60	228.93	241.20	250.16	267.10
70–79 years	114	201.00	32.11	154.75	162.62	165.72	175.81	199.58	219.90	230.46	242.20	259.08
80 years and over	36	*204.23	37.62	†	*144.80	*164.09	*180.57	*206.39	*221.56	*240.74	*249.86	†
20 years and over (age-adjusted)	1,694	223.28	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 16. Pelvis bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	125.19	25.13	86.84	93.81	99.54	107.15	123.40	141.37	149.98	157.29	171.04
12–15 years	2,318	179.46	29.54	131.39	140.88	148.92	159.63	178.10	199.45	210.93	218.62	228.02
16–19 years	2,027	195.96	29.52	150.50	158.82	165.97	175.28	194.61	215.08	227.00	234.34	246.71
20–29 years	1,378	192.31	29.71	146.10	155.14	160.30	170.21	191.34	212.24	224.10	231.20	241.86
30–39 years	1,372	185.29	29.42	141.43	150.45	155.90	164.08	182.49	203.59	215.79	224.52	238.49
40–49 years	1,570	181.64	30.94	137.63	144.22	150.07	158.88	178.32	200.47	212.84	222.29	238.42
50–59 years	1,200	169.61	29.15	127.95	134.70	141.17	149.02	166.51	186.37	198.88	208.01	222.02
60–69 years	1,419	164.34	28.73	122.47	130.86	136.31	145.56	162.53	180.72	190.27	197.61	213.38
70–79 years	750	156.19	25.99	117.90	124.48	128.70	136.83	154.07	171.85	183.77	191.53	201.28
80 years and over	594	148.37	25.09	107.26	116.86	123.09	130.57	147.56	164.47	173.39	180.83	190.20
20 years and over (age-adjusted) . . .	8,283	177.08	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	122.12	23.98	86.32	91.88	97.53	104.35	120.57	136.67	148.30	156.45	164.51
12–15 years	821	171.48	26.80	128.91	137.88	143.94	153.42	170.78	189.98	197.67	203.28	215.17
16–19 years	692	179.96	27.30	138.43	145.83	151.22	160.06	177.94	196.88	207.91	216.24	227.08
20–29 years	364	173.92	25.41	136.19	143.02	147.30	155.17	172.04	191.31	200.30	204.57	217.14
30–39 years	298	167.44	24.61	130.64	137.82	142.47	151.54	165.17	180.10	189.95	198.75	213.32
40–49 years	372	165.85	24.93	128.53	134.53	140.74	149.25	163.64	181.02	190.47	196.09	207.96
50–59 years	194	159.16	27.18	119.39	125.25	131.58	139.86	157.13	176.70	187.49	194.79	205.70
60–69 years	375	150.68	25.44	114.12	122.11	126.34	134.50	148.64	163.05	176.92	182.06	200.22
70–79 years	154	*148.50	24.76	*107.72	*116.15	*123.89	*132.46	*147.14	*165.70	*172.63	*178.03	*192.53
80 years and over	47	*136.29	24.79	*95.08	*101.81	*108.69	*119.61	*136.08	*151.28	*164.82	*169.37	†
20 years and over (age-adjusted) . . .	1,804	162.26	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	126.74	24.66	88.66	95.36	100.69	109.34	125.56	142.03	151.17	157.51	171.08
12–15 years	576	181.76	30.52	128.55	140.26	149.29	162.12	180.16	204.73	214.81	220.72	231.85
16–19 years	543	201.40	28.49	156.31	166.08	172.41	182.09	200.80	219.90	230.53	237.49	249.53
20–29 years	583	197.87	28.39	152.94	161.59	167.23	177.14	198.27	217.30	228.43	233.98	243.09
30–39 years	612	189.94	29.40	146.55	154.53	159.47	168.82	187.03	208.19	221.00	228.43	242.26
40–49 years	668	185.35	30.62	139.65	147.96	153.92	162.37	182.65	204.31	217.33	225.97	241.26
50–59 years	639	171.50	28.04	130.49	138.46	144.48	152.19	168.47	187.84	199.07	208.25	222.19
60–69 years	644	166.42	28.01	126.28	133.71	139.21	147.87	164.95	181.67	191.36	198.44	214.38
70–79 years	429	157.59	25.57	120.23	126.24	131.54	138.52	155.30	173.43	184.93	192.25	201.88
80 years and over	457	149.10	24.60	108.29	117.96	124.35	132.17	148.80	164.69	173.48	181.16	190.20
20 years and over (age-adjusted) . . .	4,032	180.55	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	121.82	26.25	82.32	89.79	96.63	104.40	119.66	136.25	148.21	155.80	167.32
12–15 years	737	179.98	30.04	131.87	142.82	150.83	159.50	178.85	199.41	210.95	219.60	230.79
16–19 years	609	193.43	28.29	152.82	159.51	165.13	173.09	192.08	210.98	220.37	227.94	240.08
20–29 years	297	190.40	28.88	149.32	156.04	161.40	168.62	188.02	209.25	218.15	227.86	239.64
30–39 years	333	185.95	27.41	143.65	151.84	157.23	166.41	185.53	202.90	212.80	219.92	230.25
40–49 years	398	181.82	31.06	139.86	145.99	151.49	158.87	178.21	200.16	210.02	219.93	233.98
50–59 years	250	171.81	32.51	126.86	136.52	140.13	148.93	166.57	189.82	205.62	214.53	225.75
60–69 years	306	169.66	31.24	125.23	133.42	137.68	148.53	167.73	186.38	196.09	206.48	226.83
70–79 years	124	159.26	28.20	113.32	123.27	128.62	138.84	159.76	174.90	186.65	196.58	†
80 years and over	58	*154.15	27.82	*116.23	*123.02	*128.97	*135.25	*148.23	*167.71	*181.90	*188.12	†
20 years and over (age-adjusted) . . .	1,766	178.32	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 17. Pelvis bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	112.97	28.10	73.51	81.04	86.44	93.68	110.18	127.87	137.99	146.75	160.40
12–15 years	2,264	224.12	85.05	112.35	124.92	136.85	155.02	212.62	278.24	316.49	340.40	376.71
16–19 years	2,309	337.90	86.46	216.75	237.69	252.68	277.25	328.48	390.77	425.38	448.91	490.67
20–29 years	1,530	329.62	82.30	213.18	234.77	249.33	273.18	321.01	373.52	408.06	434.95	483.78
30–39 years	1,450	308.40	78.71	201.75	219.51	231.67	252.02	298.21	350.78	385.25	408.84	449.05
40–49 years	1,549	296.85	71.24	192.84	214.19	228.30	247.38	289.38	337.79	364.93	388.62	421.70
50–59 years	1,187	277.80	71.35	177.60	193.29	206.13	228.13	272.58	319.58	344.72	364.12	401.60
60–69 years	1,350	269.22	69.86	162.61	183.79	200.79	222.69	262.43	309.34	341.42	359.79	396.87
70–79 years	825	247.84	66.02	152.89	168.35	183.71	201.06	241.07	285.85	318.39	336.78	367.32
80 years and over	501	225.48	66.26	133.56	148.33	162.19	178.24	216.16	262.54	287.37	316.11	347.25
20 years and over (age-adjusted)	8,392	292.15	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	109.28	29.37	71.37	79.36	84.00	89.19	105.50	122.03	134.23	144.54	164.87
12–15 years	777	218.09	83.71	104.06	121.81	134.06	153.43	207.78	266.58	303.71	327.18	375.51
16–19 years	783	298.69	75.58	195.64	211.35	228.33	247.75	286.37	341.85	375.53	396.91	438.37
20–29 years	444	289.96	67.29	195.65	214.09	226.75	246.74	280.21	323.77	355.56	379.62	409.04
30–39 years	337	263.41	57.03	183.61	197.55	206.51	223.16	257.75	296.56	317.47	334.68	367.70
40–49 years	381	258.87	62.27	175.01	185.99	197.80	216.15	250.13	291.24	319.02	339.96	371.00
50–59 years	174	247.53	59.42	161.13	173.93	184.69	207.24	240.60	284.36	307.94	327.58	353.44
60–69 years	348	242.24	60.27	166.33	176.23	186.18	199.49	230.75	277.99	303.29	314.29	342.62
70–79 years	164	*222.21	55.13	*132.21	*150.18	*163.24	*181.28	*225.10	*256.23	*274.19	*296.26	*312.49
80 years and over	48	*193.99	54.38	*123.56	*126.55	*131.76	*160.02	*180.58	*218.74	*256.35	*273.99	†
20 years and over (age-adjusted)	1,896	256.02	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	114.39	27.97	72.76	82.27	87.72	94.53	112.49	129.09	140.15	148.85	160.33
12–15 years	578	226.74	85.88	114.06	124.61	137.81	155.25	215.85	284.58	324.92	343.83	379.77
16–19 years	591	343.08	83.53	222.85	241.18	257.19	283.40	335.64	396.08	430.74	454.02	491.14
20–29 years	617	332.34	76.48	221.93	242.59	257.14	278.64	323.96	373.22	405.24	431.60	475.31
30–39 years	647	314.66	77.18	206.63	226.46	240.75	260.48	306.63	358.18	388.71	409.14	448.97
40–49 years	700	301.66	68.61	202.57	222.40	233.90	254.71	294.70	339.97	367.69	389.86	420.63
50–59 years	683	279.43	69.27	181.22	196.08	208.28	231.75	273.81	319.63	344.06	362.28	398.31
60–69 years	623	271.59	68.15	167.75	188.63	205.03	226.02	264.33	310.48	343.00	360.32	395.27
70–79 years	496	251.67	65.68	156.94	172.54	185.48	204.58	244.23	291.38	325.07	343.23	369.70
80 years and over	398	225.19	64.59	135.02	151.90	163.13	179.39	215.77	261.78	285.78	312.16	346.56
20 years and over (age-adjusted)	4,164	295.82	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	118.38	29.57	79.64	86.96	92.38	99.74	114.39	131.97	141.06	152.55	171.83
12–15 years	745	235.80	89.34	121.62	134.04	144.34	162.95	227.09	291.70	326.98	346.81	394.79
16–19 years	757	363.55	101.48	230.58	256.30	270.58	291.04	351.80	418.98	451.72	479.69	524.08
20–29 years	325	378.10	99.56	242.49	266.38	287.07	309.40	359.06	428.41	484.87	503.46	549.17
30–39 years	310	349.77	85.60	231.25	246.18	265.79	294.49	336.40	399.55	438.70	465.74	503.38
40–49 years	366	317.07	83.91	202.83	225.40	235.67	259.40	303.96	361.12	394.05	429.06	471.20
50–59 years	240	310.38	82.77	194.01	211.14	224.75	252.58	300.69	357.08	383.87	415.74	459.54
60–69 years	303	292.74	73.56	181.01	208.81	224.21	247.44	284.96	332.30	362.92	390.27	425.18
70–79 years	114	254.61	68.88	156.85	171.97	185.15	203.96	247.29	291.65	312.50	330.32	382.35
80 years and over	36	*253.86	83.16	†	*152.88	*167.42	*194.61	*243.89	*280.18	*323.87	*375.57	†
20 years and over (age-adjusted)	1,694	323.60	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 17. Pelvis bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	116.46	38.48	70.04	76.19	81.47	89.23	108.03	134.84	155.06	170.27	193.10
12–15 years	2,318	215.93	55.54	131.13	146.43	159.34	177.81	212.32	250.25	273.41	287.80	316.48
16–19 years	2,027	249.58	57.40	164.59	179.56	192.71	210.50	242.82	285.80	308.45	328.41	352.57
20–29 years	1,378	247.89	52.60	169.36	183.72	194.53	210.21	244.55	278.44	303.98	317.41	336.45
30–39 years	1,372	243.66	53.75	164.12	178.74	189.41	205.06	239.17	275.78	298.43	316.07	338.89
40–49 years	1,570	236.45	57.67	156.24	172.99	181.19	195.30	228.09	268.95	295.92	314.70	339.97
50–59 years	1,200	210.98	54.42	135.63	149.17	157.61	173.37	203.80	241.53	266.47	281.04	314.78
60–69 years	1,419	192.46	51.48	119.23	132.31	143.35	156.89	187.44	220.90	243.42	260.76	283.33
70–79 years	750	168.28	44.43	105.94	118.67	125.64	138.05	162.00	191.64	211.43	227.53	248.53
80 years and over	594	145.50	41.15	84.01	95.84	103.64	117.38	141.77	168.03	185.56	196.60	214.40
20 years and over (age-adjusted)	8,283	221.74	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	111.13	36.65	66.24	73.77	77.04	86.33	103.15	125.54	144.06	163.97	187.83
12–15 years	821	204.61	50.86	123.33	142.24	154.11	171.23	201.44	236.54	252.39	263.95	288.92
16–19 years	692	224.78	51.48	151.47	165.38	172.62	187.06	219.09	254.99	275.40	292.68	316.27
20–29 years	364	222.19	46.46	154.40	164.85	172.54	188.55	219.53	251.44	270.60	280.11	300.75
30–39 years	298	217.98	50.74	147.87	162.13	171.67	185.37	210.66	241.88	262.04	276.96	307.47
40–49 years	372	214.05	46.70	142.85	157.22	167.73	181.61	209.18	243.98	262.10	271.38	291.12
50–59 years	194	191.73	54.20	115.41	126.04	137.16	153.55	188.12	218.60	245.44	254.82	280.55
60–69 years	375	167.39	43.22	102.44	114.00	123.29	136.10	163.01	196.01	213.59	223.63	243.21
70–79 years	154	*152.72	42.64	*84.13	*102.12	*114.93	*123.93	*146.71	*177.73	*192.74	*202.47	*227.50
80 years and over	47	*128.83	36.79	†	*79.30	*88.62	*103.61	*125.68	*150.52	*162.21	*168.41	†
20 years and over (age-adjusted)	1,804	199.08	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	117.18	37.31	72.29	77.37	83.64	90.59	109.13	135.39	154.54	168.93	190.64
12–15 years	576	216.71	56.20	129.70	146.08	159.79	177.33	212.63	250.80	274.61	290.19	318.71
16–19 years	543	255.84	55.89	171.91	189.94	200.10	216.73	248.73	290.87	314.61	332.28	352.98
20–29 years	583	252.58	49.27	177.30	190.80	199.73	218.18	250.56	281.60	306.98	317.83	335.74
30–39 years	612	247.21	51.53	173.77	183.09	193.37	208.38	244.72	277.76	301.13	317.30	340.27
40–49 years	668	238.78	56.21	162.57	176.03	183.91	197.97	231.15	270.96	297.06	316.47	339.39
50–59 years	639	212.92	51.69	141.90	153.36	163.59	176.68	205.71	242.77	266.68	278.16	313.97
60–69 years	644	194.15	50.26	122.61	135.39	145.96	159.99	189.75	221.34	243.11	260.46	283.17
70–79 years	429	169.94	43.97	108.59	121.36	128.58	139.98	163.59	192.71	211.52	228.18	248.56
80 years and over	457	146.23	39.86	83.85	96.59	104.22	117.96	143.17	168.68	186.64	197.34	212.88
20 years and over (age-adjusted)	4,032	224.50	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	119.55	43.62	67.47	74.64	82.55	90.77	109.32	139.66	160.72	174.87	205.50
12–15 years	737	231.50	59.23	141.92	160.20	171.82	191.59	223.84	267.64	293.39	313.93	339.36
16–19 years	609	263.11	61.40	175.42	192.08	202.39	218.32	256.83	299.51	323.46	346.84	374.63
20–29 years	297	263.68	57.96	183.42	198.78	208.98	223.68	254.25	299.80	321.63	336.79	358.37
30–39 years	333	261.93	58.27	176.90	192.91	202.84	220.32	258.30	296.22	315.26	333.00	360.03
40–49 years	398	257.50	64.89	172.81	185.66	193.48	209.97	245.33	295.03	318.58	339.98	368.90
50–59 years	250	227.27	62.62	141.53	158.73	169.54	181.09	219.12	257.78	292.66	314.38	347.35
60–69 years	306	213.39	57.43	133.54	146.79	153.68	167.93	211.55	247.14	267.33	284.55	317.97
70–79 years	124	179.23	49.27	102.27	122.70	129.27	142.21	174.53	213.80	227.28	239.71	271.09
80 years and over	58	*159.54	53.41	*92.38	*106.42	*115.23	*127.19	*155.21	*176.21	*191.12	*202.46	†
20 years and over (age-adjusted)	1,766	239.32	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 18. Pelvis bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.868	0.115	0.689	0.722	0.743	0.782	0.866	0.939	0.990	1.020	1.068
12–15 years	2,264	1.123	0.193	0.842	0.885	0.923	0.983	1.103	1.246	1.322	1.373	1.451
16–19 years	2,309	1.352	0.199	1.057	1.111	1.148	1.209	1.338	1.481	1.552	1.604	1.696
20–29 years	1,530	1.382	0.203	1.086	1.144	1.191	1.247	1.359	1.499	1.577	1.631	1.731
30–39 years	1,450	1.378	0.205	1.090	1.145	1.179	1.238	1.354	1.496	1.561	1.636	1.735
40–49 years	1,549	1.366	0.192	1.073	1.132	1.181	1.240	1.347	1.481	1.557	1.614	1.684
50–59 years	1,187	1.322	0.194	1.038	1.095	1.130	1.188	1.312	1.433	1.516	1.569	1.653
60–69 years	1,350	1.279	0.191	0.975	1.050	1.087	1.155	1.267	1.388	1.479	1.530	1.615
70–79 years	825	1.200	0.182	0.920	0.973	1.020	1.072	1.187	1.309	1.395	1.457	1.525
80 years and over	501	1.112	0.179	0.855	0.902	0.933	0.984	1.091	1.217	1.289	1.348	1.455
20 years and over (age-adjusted)	8,392	1.330	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.867	0.128	0.677	0.713	0.740	0.773	0.858	0.945	0.999	1.057	1.091
12–15 years	777	1.124	0.205	0.824	0.876	0.919	0.987	1.098	1.248	1.335	1.391	1.489
16–19 years	783	1.293	0.186	1.019	1.079	1.112	1.158	1.278	1.411	1.480	1.534	1.605
20–29 years	444	1.328	0.180	1.076	1.113	1.152	1.204	1.306	1.423	1.509	1.566	1.653
30–39 years	337	1.318	0.166	1.057	1.112	1.142	1.193	1.312	1.423	1.485	1.521	1.586
40–49 years	381	1.301	0.179	1.027	1.089	1.120	1.173	1.289	1.412	1.477	1.544	1.617
50–59 years	174	1.268	0.176	0.982	1.055	1.090	1.148	1.260	1.378	1.444	1.509	1.570
60–69 years	348	1.232	0.168	1.005	1.054	1.078	1.108	1.209	1.325	1.375	1.442	1.550
70–79 years	164	*1.154	0.178	*0.860	*0.938	*0.972	*1.040	*1.134	*1.271	*1.336	*1.376	*1.463
80 years and over	48	*1.043	0.140	*0.856	*0.890	*0.910	*0.939	*1.003	*1.109	*1.196	*1.244	*1.304
20 years and over (age-adjusted)	1,896	1.273	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.864	0.109	0.692	0.726	0.743	0.782	0.865	0.931	0.984	1.006	1.049
12–15 years	578	1.115	0.185	0.836	0.878	0.920	0.973	1.100	1.237	1.308	1.357	1.423
16–19 years	591	1.347	0.189	1.054	1.109	1.148	1.210	1.339	1.474	1.543	1.594	1.679
20–29 years	617	1.376	0.190	1.093	1.148	1.195	1.248	1.358	1.488	1.556	1.613	1.696
30–39 years	647	1.378	0.201	1.092	1.152	1.182	1.239	1.352	1.497	1.553	1.626	1.731
40–49 years	700	1.367	0.184	1.079	1.140	1.189	1.250	1.354	1.479	1.548	1.603	1.676
50–59 years	683	1.318	0.187	1.044	1.097	1.132	1.192	1.311	1.420	1.505	1.557	1.634
60–69 years	623	1.279	0.186	0.980	1.056	1.091	1.159	1.267	1.386	1.472	1.523	1.605
70–79 years	496	1.203	0.181	0.927	0.981	1.027	1.073	1.190	1.314	1.403	1.459	1.530
80 years and over	398	1.107	0.174	0.853	0.899	0.933	0.985	1.089	1.208	1.272	1.341	1.420
20 years and over (age-adjusted)	4,164	1.329	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.910	0.124	0.720	0.761	0.789	0.823	0.901	0.989	1.036	1.065	1.117
12–15 years	745	1.179	0.213	0.885	0.931	0.971	1.023	1.161	1.307	1.388	1.442	1.562
16–19 years	757	1.448	0.234	1.113	1.174	1.219	1.286	1.421	1.580	1.667	1.737	1.830
20–29 years	325	1.518	0.248	1.165	1.243	1.288	1.353	1.486	1.638	1.743	1.843	1.953
30–39 years	310	1.500	0.237	1.175	1.221	1.257	1.331	1.471	1.637	1.709	1.790	1.943
40–49 years	366	1.437	0.233	1.113	1.176	1.208	1.278	1.396	1.571	1.677	1.720	1.838
50–59 years	240	1.429	0.223	1.083	1.146	1.193	1.277	1.404	1.548	1.643	1.721	1.809
60–69 years	303	1.370	0.204	1.049	1.126	1.162	1.237	1.358	1.499	1.558	1.621	1.703
70–79 years	114	1.253	0.197	0.947	1.002	1.053	1.113	1.243	1.369	1.452	1.503	1.642
80 years and over	36	*1.223	0.226	†	*0.933	*0.953	*1.033	*1.171	*1.368	*1.465	*1.522	†
20 years and over (age-adjusted)	1,694	1.432	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 18. Pelvis bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.916	0.153	0.690	0.735	0.757	0.799	0.904	1.010	1.075	1.130	1.200
12–15 years	2,318	1.190	0.161	0.933	0.990	1.031	1.080	1.183	1.296	1.357	1.407	1.463
16–19 years	2,027	1.265	0.161	1.006	1.059	1.099	1.159	1.259	1.366	1.419	1.471	1.550
20–29 years	1,378	1.285	0.156	1.048	1.100	1.127	1.179	1.269	1.381	1.441	1.480	1.556
30–39 years	1,372	1.310	0.166	1.050	1.102	1.138	1.196	1.297	1.416	1.478	1.523	1.588
40–49 years	1,570	1.293	0.165	1.046	1.101	1.129	1.179	1.276	1.391	1.462	1.510	1.583
50–59 years	1,200	1.232	0.158	0.992	1.042	1.074	1.116	1.222	1.337	1.394	1.432	1.489
60–69 years	1,419	1.158	0.158	0.916	0.970	1.000	1.047	1.146	1.256	1.319	1.363	1.436
70–79 years	750	1.066	0.149	0.826	0.888	0.914	0.960	1.060	1.159	1.214	1.271	1.330
80 years and over	594	0.967	0.145	0.747	0.787	0.818	0.866	0.957	1.059	1.112	1.150	1.212
20 years and over (age-adjusted)	8,283	1.238	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.897	0.159	0.679	0.711	0.738	0.774	0.874	0.991	1.073	1.124	1.174
12–15 years	821	1.181	0.159	0.923	0.986	1.025	1.075	1.175	1.283	1.322	1.372	1.448
16–19 years	692	1.241	0.156	1.003	1.052	1.085	1.135	1.225	1.331	1.399	1.439	1.510
20–29 years	364	1.271	0.146	1.040	1.073	1.118	1.170	1.266	1.366	1.429	1.468	1.514
30–39 years	298	1.292	0.156	1.072	1.107	1.138	1.192	1.271	1.386	1.439	1.465	1.537
40–49 years	372	1.282	0.146	1.057	1.097	1.130	1.180	1.270	1.368	1.430	1.486	1.535
50–59 years	194	1.190	0.177	0.937	0.993	1.013	1.065	1.188	1.286	1.353	1.387	1.444
60–69 years	375	1.099	0.147	0.869	0.914	0.937	0.987	1.091	1.190	1.257	1.292	1.340
70–79 years	154	*1.013	0.153	*0.770	*0.835	*0.874	*0.913	*1.011	*1.111	*1.174	*1.207	*1.243
80 years and over	47	*0.932	0.140	†	*0.718	*0.775	*0.863	*0.939	*0.993	*1.040	*1.060	†
20 years and over (age-adjusted)	1,804	1.211	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.911	0.146	0.691	0.739	0.758	0.798	0.903	1.002	1.063	1.112	1.191
12–15 years	576	1.179	0.158	0.926	0.984	1.023	1.068	1.173	1.288	1.339	1.396	1.438
16–19 years	543	1.262	0.152	1.013	1.066	1.099	1.161	1.262	1.364	1.412	1.453	1.519
20–29 years	583	1.273	0.143	1.052	1.104	1.127	1.172	1.260	1.365	1.422	1.457	1.526
30–39 years	612	1.298	0.159	1.040	1.091	1.128	1.188	1.288	1.399	1.466	1.507	1.562
40–49 years	668	1.280	0.158	1.042	1.099	1.126	1.173	1.264	1.372	1.436	1.483	1.560
50–59 years	639	1.231	0.151	1.004	1.048	1.080	1.118	1.221	1.335	1.390	1.423	1.473
60–69 years	644	1.155	0.155	0.915	0.969	1.001	1.044	1.145	1.251	1.314	1.354	1.431
70–79 years	429	1.067	0.149	0.824	0.891	0.916	0.961	1.059	1.162	1.215	1.274	1.330
80 years and over	457	0.968	0.142	0.750	0.788	0.819	0.868	0.956	1.062	1.111	1.149	1.209
20 years and over (age-adjusted)	4,032	1.230	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.961	0.165	0.729	0.759	0.797	0.840	0.945	1.064	1.136	1.172	1.250
12–15 years	737	1.272	0.161	1.020	1.076	1.111	1.164	1.261	1.383	1.444	1.480	1.545
16–19 years	609	1.349	0.174	1.087	1.134	1.175	1.222	1.329	1.453	1.537	1.580	1.653
20–29 years	297	1.379	0.171	1.103	1.172	1.205	1.253	1.372	1.484	1.544	1.600	1.676
30–39 years	333	1.401	0.180	1.125	1.170	1.212	1.274	1.391	1.505	1.575	1.629	1.699
40–49 years	398	1.405	0.174	1.120	1.187	1.225	1.286	1.397	1.509	1.571	1.623	1.694
50–59 years	250	1.309	0.170	1.051	1.096	1.132	1.198	1.297	1.411	1.478	1.527	1.608
60–69 years	306	1.245	0.172	0.993	1.042	1.076	1.128	1.229	1.345	1.416	1.463	1.563
70–79 years	124	1.111	0.158	0.840	0.898	0.942	1.011	1.101	1.210	1.280	1.326	1.366
80 years and over	58	*1.018	0.175	*0.766	*0.826	*0.859	*0.912	*0.986	*1.100	*1.164	*1.204	†
20 years and over (age-adjusted)	1,766	1.325	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 19. Right arm bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	124.92	24.00	93.42	100.35	103.95	109.02	121.34	136.24	146.60	156.17	171.41
12–15 years	2,264	190.98	42.86	126.09	134.49	143.66	156.89	190.43	222.91	236.53	245.30	261.66
16–19 years	2,309	242.09	31.66	192.15	203.15	210.06	220.76	240.53	262.60	274.40	282.14	295.58
20–29 years	1,530	255.90	28.21	209.61	221.29	228.02	237.07	255.70	273.67	283.97	291.68	302.88
30–39 years	1,450	259.78	27.90	215.28	224.69	231.48	240.74	258.74	278.46	288.10	296.04	305.41
40–49 years	1,549	266.03	26.62	222.72	232.97	239.37	248.69	265.12	283.88	293.20	300.17	309.73
50–59 years	1,187	265.30	26.93	220.49	230.51	236.98	248.92	265.32	282.29	292.23	298.88	309.88
60–69 years	1,350	264.31	27.72	218.79	230.26	236.84	247.90	264.43	282.43	292.09	299.31	309.21
70–79 years	825	259.61	28.31	210.64	222.79	229.76	241.22	260.15	280.21	289.23	294.89	304.91
80 years and over	501	249.01	29.40	199.84	211.32	217.87	228.74	248.65	268.46	279.65	285.47	298.80
20 years and over (age-adjusted) . . .	8,392	261.22	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	126.16	23.71	98.42	103.04	105.32	110.17	120.87	135.77	151.49	158.88	170.33
12–15 years	777	188.53	40.11	125.83	133.51	142.74	157.31	188.97	217.17	232.29	242.05	254.73
16–19 years	783	231.26	28.55	187.63	196.40	202.19	210.88	230.07	248.21	259.77	267.73	279.51
20–29 years	444	240.56	25.83	199.62	206.65	214.22	222.74	240.11	257.02	268.38	274.06	281.27
30–39 years	337	241.31	23.98	203.83	210.54	215.90	226.40	240.14	255.43	266.90	273.52	281.02
40–49 years	381	244.34	24.67	206.54	214.97	220.13	227.74	242.12	260.55	269.66	277.61	286.68
50–59 years	174	246.64	23.35	208.95	218.99	223.29	230.35	245.00	264.17	271.16	274.79	286.17
60–69 years	348	247.95	23.95	210.38	215.89	221.64	228.63	247.52	264.83	273.64	277.19	286.02
70–79 years	164	*238.97	24.33	*200.36	*207.84	*213.95	*224.10	*240.03	*252.38	*261.04	*268.00	*277.61
80 years and over	48	*229.94	23.89	*189.65	*205.03	*209.94	*216.92	*226.89	*242.34	*255.08	*262.94	†
20 years and over (age-adjusted) . . .	1,896	242.61	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	122.37	23.06	90.73	98.48	102.65	106.75	118.97	133.09	142.76	149.84	170.73
12–15 years	578	190.24	42.72	125.95	133.89	142.29	154.12	190.59	221.86	235.93	243.45	260.71
16–19 years	591	242.12	30.42	193.67	203.95	211.34	221.29	240.54	262.39	273.07	280.29	293.42
20–29 years	617	257.73	26.07	216.93	226.67	231.54	241.12	257.98	274.19	284.63	291.07	299.54
30–39 years	647	263.04	25.55	223.74	232.09	237.40	245.04	262.04	280.01	288.51	296.46	304.71
40–49 years	700	268.97	24.67	229.45	238.79	244.44	252.61	267.73	285.37	294.47	301.28	310.28
50–59 years	683	267.37	25.24	223.46	235.26	241.51	251.89	267.57	282.98	292.72	298.77	308.45
60–69 years	623	266.57	25.01	226.41	235.54	241.13	250.55	266.01	282.64	291.98	298.79	308.20
70–79 years	496	261.17	27.18	214.00	226.03	232.68	243.68	262.00	281.05	289.21	294.41	304.44
80 years and over	398	248.93	28.01	202.75	212.71	219.32	229.33	248.95	267.96	277.84	283.95	294.79
20 years and over (age-adjusted) . . .	4,164	263.57	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	135.19	27.21	101.46	105.97	110.13	117.74	129.82	146.26	160.01	170.43	195.51
12–15 years	745	205.55	45.17	135.46	145.05	153.76	171.33	205.19	236.84	253.21	263.43	276.56
16–19 years	757	256.96	33.58	202.58	217.45	223.74	235.68	257.03	276.63	288.95	296.69	310.91
20–29 years	325	271.62	29.36	225.30	237.17	242.71	252.25	269.81	289.51	302.57	310.80	320.72
30–39 years	310	275.09	30.64	225.42	231.98	241.90	253.36	276.18	294.75	306.14	313.20	325.33
40–49 years	366	275.78	26.99	229.29	242.00	247.80	256.24	277.38	294.00	302.93	309.12	320.69
50–59 years	240	277.73	28.75	231.83	240.65	249.34	258.68	275.89	295.92	310.27	315.99	323.07
60–69 years	303	279.36	27.44	231.93	245.41	251.70	261.11	278.87	299.14	307.67	313.36	324.30
70–79 years	114	271.80	33.27	209.66	224.91	235.63	250.82	275.93	294.30	302.75	310.05	316.61
80 years and over	36	*268.24	37.93	†	*213.05	*223.07	*239.81	*264.95	*294.38	*308.34	*323.56	†
20 years and over (age-adjusted) . . .	1,694	274.86	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 19. Right arm bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	130.38	24.90	95.56	102.22	107.03	113.97	127.27	143.53	154.86	165.07	175.41
12–15 years	2,318	180.92	27.63	135.63	144.54	152.99	162.59	179.90	198.36	210.14	216.67	225.63
16–19 years	2,027	198.92	25.25	161.21	169.08	173.39	181.72	197.58	214.46	223.11	229.73	242.81
20–29 years	1,378	206.65	23.75	168.15	175.87	181.59	190.81	206.57	222.03	231.76	236.84	245.86
30–39 years	1,372	210.39	23.09	174.76	182.39	186.57	194.13	209.78	223.92	232.98	240.26	251.84
40–49 years	1,570	214.08	23.00	177.16	185.26	190.34	198.54	214.31	228.49	237.83	244.37	252.59
50–59 years	1,200	211.75	24.04	173.12	180.63	186.13	195.67	211.11	227.22	235.92	243.75	252.47
60–69 years	1,419	208.68	25.94	167.34	175.29	181.65	191.53	208.52	224.63	233.76	240.64	251.14
70–79 years	750	200.72	26.07	162.88	168.53	174.51	182.84	198.97	218.04	227.43	233.97	244.56
80 years and over	594	185.97	28.23	136.70	150.60	158.28	167.87	186.75	205.59	213.34	219.86	230.15
20 years and over (age-adjusted) . . .	8,283	208.60	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	128.92	23.81	95.96	102.81	106.56	112.95	126.08	143.34	151.61	160.77	175.10
12–15 years	821	178.49	25.14	137.05	145.45	151.72	162.20	178.71	193.64	203.01	209.98	219.63
16–19 years	692	190.02	23.32	153.78	161.83	165.15	173.90	189.46	204.98	214.56	220.20	228.45
20–29 years	364	199.59	21.75	163.35	171.62	176.43	185.44	198.08	214.72	223.06	228.19	234.98
30–39 years	298	202.08	20.92	171.31	176.99	181.64	188.73	199.77	215.31	221.77	229.69	240.30
40–49 years	372	205.81	20.54	170.92	180.58	186.78	192.47	204.85	219.84	226.18	232.10	237.73
50–59 years	194	199.94	23.72	158.58	169.21	173.93	182.76	200.89	217.31	223.96	226.97	236.61
60–69 years	375	193.90	24.29	152.17	163.33	168.63	177.47	193.71	209.71	218.31	224.12	236.07
70–79 years	154	*185.65	26.01	*139.29	*150.08	*157.20	*171.14	*183.39	*204.90	*214.34	*220.92	*228.29
80 years and over	47	*173.06	25.34	†	*135.48	*142.27	*160.36	*171.17	*193.00	*196.14	*198.26	†
20 years and over (age-adjusted) . . .	1,804	198.54	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	127.96	23.29	94.16	101.36	106.00	112.45	126.16	139.48	152.43	160.10	168.28
12–15 years	576	177.57	26.23	132.84	143.09	151.05	160.38	176.86	194.59	205.53	212.64	219.94
16–19 years	543	198.44	23.65	162.61	170.59	175.01	182.94	197.56	211.78	221.49	227.40	236.11
20–29 years	583	206.32	21.99	169.99	177.56	183.05	191.65	206.26	220.71	228.54	234.68	242.55
30–39 years	612	209.32	21.52	176.02	182.98	186.57	194.46	209.40	222.45	229.53	236.01	246.69
40–49 years	668	213.43	22.05	177.73	185.32	190.41	198.52	213.69	227.58	235.97	242.78	250.42
50–59 years	639	212.24	22.03	176.01	183.58	189.48	198.01	211.42	226.09	234.54	241.51	250.44
60–69 years	644	208.13	23.93	169.74	176.41	182.56	192.18	208.63	223.33	231.21	237.13	247.14
70–79 years	429	200.66	24.38	164.42	171.03	175.84	183.64	199.38	216.94	226.36	232.62	242.02
80 years and over	457	186.05	26.88	142.86	152.18	159.93	168.20	186.71	204.35	211.94	218.61	227.54
20 years and over (age-adjusted) . . .	4,032	208.19	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	141.11	29.31	101.86	108.69	114.15	121.02	136.19	157.34	171.85	179.38	192.86
12–15 years	737	200.37	28.36	154.03	165.02	171.99	181.87	198.92	218.88	230.24	238.27	249.23
16–19 years	609	215.29	26.92	173.56	182.45	188.17	197.02	215.02	231.14	242.30	248.87	260.63
20–29 years	297	222.35	24.17	181.68	191.69	197.79	208.03	221.39	237.60	246.10	255.19	261.72
30–39 years	333	227.44	24.29	188.28	195.69	200.56	211.31	226.20	244.05	253.50	257.81	265.54
40–49 years	398	229.91	22.64	193.20	201.11	207.44	215.82	229.17	244.88	252.97	257.33	264.77
50–59 years	250	227.88	24.45	186.08	195.51	202.13	210.97	227.82	244.73	252.74	259.31	265.87
60–69 years	306	231.73	27.70	184.24	195.57	203.57	214.80	231.52	246.89	258.71	266.54	280.55
70–79 years	124	221.64	29.93	169.94	183.07	189.63	198.35	221.97	239.19	251.14	260.95	270.13
80 years and over	58	*206.82	26.55	*158.65	*169.93	*178.49	*188.71	*208.64	*224.07	*233.48	*238.93	*248.92
20 years and over (age-adjusted) . . .	1,766	226.10	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 20. Right arm bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	74.46	20.25	48.22	52.15	55.47	59.94	71.26	85.48	93.48	101.27	112.37
12–15 years	2,264	142.55	45.94	76.09	85.82	92.65	106.07	138.26	176.21	192.13	202.20	220.96
16–19 years	2,309	210.19	39.80	147.86	160.69	168.48	182.73	207.16	235.82	252.59	262.38	278.46
20–29 years	1,530	231.14	39.93	169.47	183.03	192.03	203.60	227.78	254.66	270.29	282.21	297.39
30–39 years	1,450	236.65	40.18	177.39	187.08	196.85	208.51	232.65	261.99	276.14	286.99	307.19
40–49 years	1,549	240.85	38.33	180.45	193.14	202.00	214.61	239.05	264.13	281.05	290.60	305.22
50–59 years	1,187	236.44	39.17	173.17	188.31	197.52	210.27	234.40	261.53	276.89	287.73	301.38
60–69 years	1,350	231.62	39.76	169.78	181.58	192.01	205.23	230.18	256.01	271.55	282.88	300.22
70–79 years	825	219.50	38.92	156.91	170.60	178.62	192.73	219.23	245.55	260.00	271.44	286.92
80 years and over	501	201.72	39.57	140.69	154.31	162.57	174.62	198.56	225.49	244.53	255.60	270.48
20 years and over (age-adjusted)	8,392	232.95	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	74.09	20.59	48.84	52.59	55.19	59.25	69.69	84.19	95.23	102.11	114.75
12–15 years	777	139.56	44.00	74.39	83.56	92.39	106.18	137.35	169.17	186.35	197.02	215.22
16–19 years	783	196.06	35.84	143.99	152.65	160.87	169.93	193.14	216.93	233.46	243.56	257.76
20–29 years	444	211.60	34.27	162.58	170.90	176.09	186.57	207.96	231.12	248.23	258.28	271.51
30–39 years	337	212.39	31.41	166.38	175.58	180.78	189.88	210.26	229.99	242.47	254.55	269.59
40–49 years	381	213.52	33.19	162.05	176.84	182.15	191.53	211.10	233.25	247.81	256.95	266.01
50–59 years	174	214.30	34.20	158.39	170.47	178.93	189.03	215.85	233.88	248.75	258.69	266.91
60–69 years	348	211.79	32.00	164.91	170.84	175.66	189.25	212.23	232.26	242.90	250.78	267.08
70–79 years	164	*197.74	34.14	*138.33	*152.34	*162.44	*174.76	*198.73	*219.84	*232.68	*238.17	*250.46
80 years and over	48	*181.69	29.93	*131.01	*153.04	*155.91	*161.57	*175.54	*195.65	*208.11	*220.57	*243.72
20 years and over (age-adjusted)	1,896	210.08	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	72.92	19.36	47.39	51.40	53.99	58.79	70.33	83.92	90.53	97.00	110.19
12–15 years	578	141.94	45.78	75.99	84.41	91.61	104.64	138.19	176.46	191.79	201.12	219.76
16–19 years	591	210.43	37.85	149.02	162.40	169.40	185.11	208.77	235.29	252.12	261.07	275.81
20–29 years	617	233.57	37.88	174.48	187.50	196.93	208.97	230.62	255.74	271.08	282.47	295.96
30–39 years	647	241.09	37.57	182.66	197.58	204.18	216.05	238.28	263.83	276.53	287.35	308.00
40–49 years	700	244.12	35.76	189.36	201.00	207.95	219.55	242.56	266.18	282.55	291.28	304.90
50–59 years	683	238.36	37.09	179.97	194.32	201.11	213.19	236.81	262.20	276.39	287.21	299.52
60–69 years	623	233.73	37.09	177.83	189.32	195.49	208.94	231.28	255.85	269.97	281.93	298.03
70–79 years	496	220.90	37.97	158.97	172.65	182.27	193.89	221.14	246.60	260.66	271.63	286.90
80 years and over	398	200.70	37.23	141.88	155.10	164.16	175.47	198.43	222.28	242.22	251.22	265.59
20 years and over (age-adjusted)	4,164	235.63	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	83.51	22.96	54.08	58.81	61.57	67.86	79.24	94.82	105.38	113.37	125.85
12–15 years	745	156.74	48.26	87.20	96.46	104.52	118.78	152.75	187.84	207.95	218.51	238.37
16–19 years	757	228.11	44.08	163.08	175.94	185.48	198.93	224.60	252.72	269.61	283.83	301.92
20–29 years	325	253.53	43.79	193.69	204.64	211.77	223.47	249.95	275.06	292.27	306.57	333.59
30–39 years	310	258.84	44.70	191.36	200.54	215.73	229.11	256.80	285.95	301.25	314.16	338.09
40–49 years	366	256.63	43.34	187.83	202.96	213.82	228.65	255.44	282.86	299.85	308.37	328.77
50–59 years	240	258.97	42.48	191.52	203.23	214.34	229.33	256.40	285.24	299.76	312.88	327.49
60–69 years	303	255.69	39.58	189.48	206.83	215.22	228.99	257.39	280.68	294.27	303.52	319.21
70–79 years	114	236.80	45.54	155.66	177.34	187.07	207.78	237.75	265.09	283.01	291.95	304.91
80 years and over	36	*234.79	53.59	†	*160.76	*178.47	*188.12	*231.05	*263.65	*298.46	*317.63	†
20 years and over (age-adjusted)	1,694	254.14	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 20. Right arm bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	75.20	22.44	45.87	49.80	53.86	58.96	70.72	87.90	98.50	106.92	116.88
12–15 years	2,318	127.36	27.23	82.86	93.59	99.81	109.44	125.77	144.12	155.35	162.79	173.84
16–19 years	2,027	147.92	25.79	108.22	116.73	121.80	130.83	146.76	163.06	173.29	180.31	194.18
20–29 years	1,378	155.99	25.50	116.89	124.47	129.47	137.66	154.78	171.48	181.54	189.09	200.62
30–39 years	1,372	160.61	25.58	123.59	130.40	134.23	142.05	158.52	176.44	186.22	194.02	207.06
40–49 years	1,570	162.77	25.86	123.97	130.53	134.93	144.72	161.82	179.06	188.84	195.36	207.19
50–59 years	1,200	155.48	26.04	115.52	122.67	128.13	137.70	153.77	172.02	183.72	188.80	198.61
60–69 years	1,419	146.17	28.58	103.19	111.36	117.62	127.09	144.52	163.46	173.36	179.90	193.78
70–79 years	750	132.43	26.52	92.86	100.47	106.24	113.10	131.23	149.59	157.61	166.83	177.55
80 years and over	594	114.94	26.42	70.63	81.23	89.70	97.79	113.59	131.68	141.28	148.84	160.33
20 years and over (age-adjusted)	8,283	153.49	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	72.47	22.04	43.41	47.35	50.15	56.33	68.27	85.15	93.43	102.64	117.77
12–15 years	821	124.14	24.43	84.28	92.89	99.97	108.66	123.56	140.38	148.83	152.70	162.26
16–19 years	692	137.68	23.05	100.83	109.75	114.10	121.22	137.24	151.32	159.87	166.81	177.32
20–29 years	364	147.60	22.01	114.04	120.49	123.62	131.86	145.63	162.92	171.49	174.82	186.28
30–39 years	298	151.97	22.59	120.29	125.20	128.90	135.41	149.77	163.70	173.17	180.90	196.93
40–49 years	372	153.70	21.56	119.52	127.55	131.71	140.02	152.41	166.65	175.64	180.71	191.19
50–59 years	194	143.40	26.55	100.98	109.94	116.53	123.27	143.92	158.77	167.79	173.06	185.99
60–69 years	375	129.13	24.65	87.07	98.14	103.12	112.36	128.12	147.48	156.51	162.90	169.18
70–79 years	154	*115.96	25.47	*74.41	*82.18	*88.88	*101.57	*114.13	*129.83	*142.82	*151.29	*159.28
80 years and over	47	*101.67	24.81	†	*69.80	*77.78	*85.48	*100.49	*116.17	*125.19	*130.52	†
20 years and over (age-adjusted)	1,804	142.55	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	73.72	20.77	45.81	49.15	53.45	58.72	70.05	85.81	95.50	103.03	112.20
12–15 years	576	124.49	25.86	80.78	91.65	96.88	107.77	124.29	140.87	150.73	159.21	167.33
16–19 years	543	147.98	23.92	110.14	118.89	123.46	131.88	147.28	161.96	172.23	177.49	189.40
20–29 years	583	155.55	23.16	118.86	126.40	130.95	138.65	154.57	170.27	179.82	184.71	195.64
30–39 years	612	159.39	23.40	124.92	131.25	134.56	142.26	158.22	174.04	182.52	189.63	199.11
40–49 years	668	161.83	24.39	124.57	130.73	134.98	144.53	161.21	177.24	186.82	192.35	202.37
50–59 years	639	155.90	23.85	119.22	125.15	131.33	139.49	154.29	170.75	181.57	187.85	195.96
60–69 years	644	145.68	26.58	103.95	112.58	118.76	128.74	144.63	161.74	171.07	176.17	186.51
70–79 years	429	132.13	25.00	94.35	100.99	107.06	114.53	131.51	148.94	156.40	162.96	173.24
80 years and over	457	114.83	25.17	72.42	84.44	90.79	98.77	113.57	130.68	139.80	146.42	156.89
20 years and over (age-adjusted)	4,032	152.93	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	84.62	26.34	51.34	56.69	59.67	64.33	79.39	99.95	110.40	120.16	131.21
12–15 years	737	146.17	29.06	101.16	111.03	117.10	126.68	144.82	164.64	177.47	183.56	195.16
16–19 years	609	165.73	28.98	122.98	131.09	136.76	146.31	163.33	182.62	195.10	204.87	215.92
20–29 years	297	175.08	27.54	130.37	138.14	148.85	157.24	173.76	193.23	202.75	209.68	219.27
30–39 years	333	181.24	27.90	138.27	146.89	151.86	160.75	179.72	198.30	209.75	218.36	230.73
40–49 years	398	182.62	26.84	142.31	149.86	156.64	163.72	180.91	199.10	208.06	215.28	226.00
50–59 years	250	173.80	27.65	126.13	139.93	145.02	154.84	174.31	190.72	201.99	210.43	220.44
60–69 years	306	171.57	30.94	122.66	134.34	139.27	151.12	170.13	189.02	203.50	212.97	227.46
70–79 years	124	154.32	30.72	107.81	113.81	122.34	131.23	153.12	175.28	186.28	195.11	†
80 years and over	58	*135.27	28.31	*84.24	*100.16	*105.49	*113.15	*134.28	*155.10	*161.61	*169.01	†
20 years and over (age-adjusted)	1,766	173.89	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 21. Right arm bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.590	0.067	0.473	0.499	0.518	0.543	0.589	0.635	0.656	0.678	0.698
12–15 years	2,264	0.731	0.090	0.587	0.618	0.637	0.667	0.727	0.795	0.823	0.849	0.883
16–19 years	2,309	0.863	0.074	0.744	0.770	0.786	0.811	0.861	0.912	0.940	0.959	0.984
20–29 years	1,530	0.898	0.077	0.782	0.804	0.821	0.847	0.892	0.945	0.974	0.993	1.028
30–39 years	1,450	0.906	0.078	0.789	0.810	0.825	0.853	0.899	0.950	0.984	1.010	1.043
40–49 years	1,549	0.901	0.074	0.787	0.808	0.825	0.847	0.897	0.949	0.977	0.997	1.025
50–59 years	1,187	0.887	0.078	0.763	0.792	0.805	0.832	0.885	0.935	0.967	0.990	1.019
60–69 years	1,350	0.871	0.082	0.751	0.771	0.789	0.815	0.867	0.921	0.955	0.976	1.008
70–79 years	825	0.840	0.080	0.711	0.741	0.761	0.788	0.835	0.892	0.927	0.942	0.970
80 years and over	501	0.804	0.082	0.678	0.706	0.720	0.746	0.798	0.852	0.892	0.911	0.945
20 years and over (age-adjusted)	8,392	0.887	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.580	0.069	0.467	0.489	0.505	0.530	0.582	0.627	0.643	0.666	0.696
12–15 years	777	0.726	0.092	0.578	0.608	0.627	0.660	0.726	0.783	0.819	0.840	0.876
16–19 years	783	0.843	0.071	0.726	0.752	0.770	0.796	0.838	0.888	0.915	0.935	0.966
20–29 years	444	0.875	0.064	0.775	0.796	0.811	0.829	0.869	0.912	0.944	0.964	0.996
30–39 years	337	0.877	0.062	0.781	0.797	0.812	0.835	0.873	0.914	0.941	0.954	0.992
40–49 years	381	0.870	0.067	0.772	0.791	0.800	0.819	0.872	0.914	0.937	0.950	0.978
50–59 years	174	0.865	0.076	0.735	0.761	0.784	0.815	0.867	0.914	0.932	0.954	0.981
60–69 years	348	0.851	0.070	0.746	0.763	0.779	0.797	0.850	0.897	0.920	0.934	0.957
70–79 years	164	*0.823	0.084	*0.676	*0.719	*0.729	*0.768	*0.830	*0.877	*0.895	*0.920	*0.932
80 years and over	48	*0.786	0.063	*0.686	*0.706	*0.715	*0.734	*0.782	*0.830	*0.843	*0.875	*0.903
20 years and over (age-adjusted)	1,896	0.862	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.590	0.067	0.470	0.498	0.518	0.546	0.588	0.635	0.656	0.679	0.696
12–15 years	578	0.731	0.089	0.588	0.618	0.637	0.667	0.727	0.797	0.823	0.844	0.880
16–19 years	591	0.864	0.074	0.746	0.772	0.788	0.814	0.862	0.913	0.941	0.961	0.983
20–29 years	617	0.902	0.075	0.786	0.809	0.827	0.852	0.898	0.949	0.976	0.992	1.024
30–39 years	647	0.913	0.078	0.796	0.815	0.833	0.861	0.908	0.956	0.992	1.016	1.053
40–49 years	700	0.904	0.071	0.793	0.816	0.830	0.853	0.899	0.950	0.979	0.999	1.026
50–59 years	683	0.887	0.076	0.770	0.796	0.809	0.833	0.885	0.936	0.968	0.988	1.015
60–69 years	623	0.873	0.080	0.754	0.774	0.792	0.819	0.868	0.922	0.954	0.973	1.006
70–79 years	496	0.841	0.080	0.713	0.741	0.759	0.787	0.834	0.894	0.927	0.944	0.973
80 years and over	398	0.801	0.079	0.677	0.707	0.721	0.746	0.796	0.848	0.886	0.903	0.939
20 years and over (age-adjusted)	4,164	0.890	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.611	0.068	0.483	0.517	0.537	0.567	0.618	0.657	0.683	0.696	0.711
12–15 years	745	0.750	0.088	0.610	0.641	0.658	0.687	0.744	0.807	0.846	0.866	0.901
16–19 years	757	0.882	0.077	0.758	0.788	0.804	0.830	0.880	0.929	0.957	0.978	1.008
20–29 years	325	0.929	0.083	0.806	0.828	0.844	0.868	0.922	0.973	1.013	1.040	1.081
30–39 years	310	0.936	0.078	0.815	0.847	0.860	0.882	0.928	0.985	1.012	1.031	1.065
40–49 years	366	0.926	0.089	0.793	0.820	0.837	0.863	0.921	0.977	1.006	1.025	1.080
50–59 years	240	0.928	0.079	0.797	0.831	0.853	0.877	0.923	0.970	1.013	1.035	1.076
60–69 years	303	0.911	0.083	0.780	0.810	0.831	0.857	0.909	0.964	0.990	1.012	1.044
70–79 years	114	0.864	0.088	0.705	0.767	0.780	0.809	0.861	0.927	0.943	0.960	0.991
80 years and over	36	*0.867	0.099	†	*0.741	*0.766	*0.795	*0.857	*0.935	*0.955	*0.987	†
20 years and over (age-adjusted)	1,694	0.919	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 21. Right arm bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.567	0.074	0.442	0.467	0.486	0.518	0.569	0.617	0.646	0.663	0.686
12–15 years	2,318	0.698	0.059	0.597	0.621	0.638	0.660	0.699	0.737	0.758	0.771	0.793
16–19 years	2,027	0.740	0.056	0.647	0.668	0.684	0.705	0.737	0.775	0.796	0.811	0.837
20–29 years	1,378	0.751	0.055	0.664	0.679	0.693	0.713	0.752	0.787	0.807	0.821	0.840
30–39 years	1,372	0.760	0.056	0.673	0.690	0.703	0.719	0.757	0.795	0.816	0.835	0.858
40–49 years	1,570	0.757	0.059	0.668	0.687	0.698	0.716	0.753	0.793	0.817	0.835	0.864
50–59 years	1,200	0.731	0.063	0.635	0.653	0.664	0.688	0.728	0.767	0.790	0.809	0.839
60–69 years	1,419	0.696	0.074	0.589	0.608	0.624	0.651	0.693	0.737	0.760	0.781	0.804
70–79 years	750	0.655	0.065	0.548	0.569	0.585	0.612	0.652	0.698	0.724	0.739	0.769
80 years and over	594	0.612	0.072	0.500	0.527	0.542	0.562	0.609	0.656	0.678	0.702	0.725
20 years and over (age-adjusted)	8,283	0.731	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.552	0.078	0.424	0.443	0.464	0.495	0.556	0.605	0.634	0.656	0.676
12–15 years	821	0.690	0.058	0.595	0.616	0.632	0.656	0.691	0.728	0.747	0.764	0.787
16–19 years	692	0.721	0.051	0.641	0.656	0.669	0.687	0.720	0.753	0.769	0.782	0.807
20–29 years	364	0.737	0.049	0.658	0.676	0.686	0.701	0.735	0.768	0.788	0.804	0.826
30–39 years	298	0.749	0.055	0.663	0.685	0.696	0.713	0.741	0.784	0.801	0.812	0.839
40–49 years	372	0.745	0.054	0.658	0.677	0.689	0.706	0.745	0.779	0.800	0.814	0.831
50–59 years	194	0.713	0.071	0.602	0.629	0.642	0.666	0.712	0.756	0.774	0.782	0.818
60–69 years	375	0.662	0.065	0.557	0.579	0.590	0.613	0.660	0.711	0.734	0.746	0.763
70–79 years	154	*0.618	0.067	*0.507	*0.534	*0.551	*0.576	*0.615	*0.661	*0.681	*0.701	*0.726
80 years and over	47	*0.580	0.071	†	*0.484	*0.503	*0.541	*0.570	*0.616	*0.644	*0.659	†
20 years and over (age-adjusted)	1,804	0.713	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.568	0.071	0.445	0.473	0.490	0.522	0.569	0.615	0.641	0.658	0.684
12–15 years	576	0.695	0.059	0.594	0.616	0.633	0.657	0.697	0.733	0.757	0.768	0.789
16–19 years	543	0.743	0.053	0.652	0.674	0.689	0.711	0.739	0.776	0.796	0.810	0.838
20–29 years	583	0.751	0.051	0.667	0.680	0.693	0.715	0.754	0.786	0.805	0.814	0.831
30–39 years	612	0.759	0.053	0.673	0.692	0.705	0.719	0.756	0.793	0.813	0.831	0.850
40–49 years	668	0.755	0.057	0.669	0.687	0.698	0.715	0.751	0.791	0.813	0.828	0.856
50–59 years	639	0.732	0.060	0.642	0.656	0.670	0.690	0.729	0.767	0.789	0.807	0.838
60–69 years	644	0.696	0.075	0.590	0.609	0.626	0.654	0.693	0.735	0.757	0.778	0.802
70–79 years	429	0.654	0.064	0.547	0.568	0.586	0.612	0.652	0.697	0.722	0.733	0.760
80 years and over	457	0.612	0.071	0.500	0.528	0.543	0.564	0.610	0.655	0.678	0.701	0.724
20 years and over (age-adjusted)	4,032	0.731	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.590	0.073	0.462	0.493	0.510	0.543	0.592	0.641	0.664	0.681	0.703
12–15 years	737	0.724	0.059	0.627	0.650	0.664	0.683	0.726	0.762	0.782	0.799	0.816
16–19 years	609	0.766	0.056	0.679	0.696	0.708	0.727	0.763	0.800	0.819	0.838	0.857
20–29 years	297	0.784	0.059	0.686	0.706	0.721	0.742	0.782	0.822	0.844	0.860	0.890
30–39 years	333	0.794	0.059	0.701	0.721	0.731	0.754	0.789	0.827	0.856	0.871	0.899
40–49 years	398	0.792	0.061	0.700	0.717	0.730	0.749	0.786	0.828	0.851	0.873	0.902
50–59 years	250	0.760	0.070	0.643	0.668	0.691	0.716	0.756	0.796	0.820	0.849	0.878
60–69 years	306	0.736	0.069	0.629	0.643	0.663	0.691	0.734	0.778	0.803	0.825	0.864
70–79 years	124	0.691	0.067	0.569	0.605	0.627	0.643	0.691	0.739	0.757	0.779	0.809
80 years and over	58	*0.648	0.075	*0.526	*0.545	*0.567	*0.597	*0.650	*0.685	*0.716	*0.735	†
20 years and over (age-adjusted)	1,766	0.765	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 22. Left arm bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	122.50	23.69	92.44	98.95	102.05	107.19	118.95	132.58	142.98	152.80	167.36
12–15 years	2,264	186.44	42.46	122.73	131.05	138.57	152.81	184.94	217.41	231.95	241.75	257.25
16–19 years	2,309	237.49	32.13	187.01	197.01	204.27	215.66	236.05	259.05	269.28	277.74	292.07
20–29 years	1,530	250.52	29.05	202.67	214.55	221.68	231.46	250.06	269.26	279.71	286.07	297.56
30–39 years	1,450	255.71	28.51	209.50	220.39	226.74	237.29	255.73	272.95	283.85	292.50	304.07
40–49 years	1,549	261.87	26.92	217.32	226.90	233.93	243.84	262.27	280.21	289.66	296.26	305.78
50–59 years	1,187	261.42	27.28	214.22	224.99	234.52	243.46	261.94	278.63	288.55	295.18	305.28
60–69 years	1,350	260.89	28.69	213.37	225.10	232.82	243.05	261.85	279.24	289.26	297.55	307.55
70–79 years	825	256.97	28.97	208.59	220.77	228.18	237.83	257.41	275.59	287.26	293.81	303.35
80 years and over	501	245.67	29.14	199.93	210.33	216.69	226.15	244.20	263.54	274.23	283.25	296.39
20 years and over (age-adjusted) . . .	8,392	257.14	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	123.33	23.43	94.93	100.63	103.03	107.34	118.49	133.42	146.80	154.09	167.00
12–15 years	777	182.91	39.65	121.70	130.31	138.24	152.62	181.30	210.16	226.90	234.55	249.71
16–19 years	783	225.37	29.47	181.29	189.55	195.64	205.74	223.79	243.36	255.47	264.50	274.55
20–29 years	444	234.62	26.03	194.43	202.36	207.12	215.76	233.85	252.96	259.98	267.93	279.48
30–39 years	337	236.36	24.82	196.23	206.30	210.22	218.27	236.55	251.36	262.31	268.03	278.51
40–49 years	381	238.22	24.44	201.93	208.63	213.81	222.78	235.24	253.18	263.47	269.95	281.49
50–59 years	174	239.78	23.88	205.03	212.01	215.99	221.38	237.64	256.65	263.58	269.07	278.45
60–69 years	348	242.13	24.88	199.65	209.95	215.00	224.29	243.30	259.43	266.19	272.11	283.59
70–79 years	164	*234.13	24.62	*192.96	*201.46	*208.53	*219.28	*234.92	*248.84	*259.51	*264.08	*272.89
80 years and over	48	*225.45	25.82	*186.07	*190.08	*193.61	*208.30	*226.44	*238.48	*246.17	*249.65	†
20 years and over (age-adjusted) . . .	1,896	236.87	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	120.10	23.07	88.86	96.30	100.52	105.25	117.63	129.44	139.08	147.74	164.65
12–15 years	578	185.64	42.30	121.70	130.27	137.15	151.78	184.68	216.74	230.40	241.23	255.49
16–19 years	591	237.51	30.66	188.56	199.01	205.01	216.41	236.53	258.71	267.78	274.81	289.37
20–29 years	617	252.12	26.99	207.60	220.15	225.84	233.09	252.48	269.71	278.74	284.40	294.44
30–39 years	647	259.14	25.83	219.72	226.71	232.45	241.33	258.87	274.40	284.62	293.10	303.37
40–49 years	700	264.80	24.80	224.21	232.37	237.85	247.95	264.43	281.84	290.62	296.88	306.11
50–59 years	683	263.67	25.45	219.07	231.50	239.91	247.15	263.70	279.57	288.75	295.09	304.14
60–69 years	623	263.00	26.43	221.52	230.55	236.76	245.55	263.08	279.46	289.09	297.23	306.64
70–79 years	496	259.17	27.23	214.32	223.81	231.63	240.42	259.86	276.84	287.71	294.57	304.49
80 years and over	398	245.72	27.74	202.35	211.18	218.87	226.94	244.62	262.82	273.64	281.24	292.09
20 years and over (age-adjusted) . . .	4,164	259.55	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	133.53	26.14	100.56	106.79	109.98	116.72	128.22	143.82	155.54	167.07	191.79
12–15 years	745	201.45	44.72	133.46	142.08	150.23	167.40	200.46	232.54	247.53	259.40	274.67
16–19 years	757	253.53	34.51	199.67	212.39	220.19	231.14	253.90	274.57	286.25	294.80	307.18
20–29 years	325	268.00	30.10	221.90	232.60	237.95	246.31	263.41	285.72	300.26	307.07	316.98
30–39 years	310	273.26	30.14	227.96	235.41	242.55	251.66	271.57	292.33	304.90	311.96	326.37
40–49 years	366	272.53	27.68	225.68	236.32	242.21	253.94	273.97	289.95	300.03	306.42	317.34
50–59 years	240	273.80	29.32	226.80	234.16	244.14	252.49	272.62	293.53	305.37	313.72	321.99
60–69 years	303	276.80	27.03	233.88	241.86	250.00	259.79	275.48	294.29	305.44	311.71	319.18
70–79 years	114	267.58	33.24	214.53	225.32	234.31	248.57	269.81	289.87	298.77	303.34	309.52
80 years and over	36	*263.50	38.91	†	*211.15	*219.13	*229.97	*263.47	*288.06	*300.09	*317.96	†
20 years and over (age-adjusted) . . .	1,694	271.66	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 22. Left arm bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	128.25	24.59	94.85	101.31	105.32	112.50	125.21	141.26	153.18	161.45	174.97
12–15 years	2,318	176.95	27.91	131.64	141.89	149.26	158.68	176.19	194.69	206.04	213.09	222.60
16–19 years	2,027	194.80	25.98	154.25	162.36	169.30	177.36	193.29	209.99	219.93	227.76	239.51
20–29 years	1,378	202.29	24.34	162.42	171.15	176.17	186.01	201.87	218.64	226.90	233.12	243.83
30–39 years	1,372	205.38	22.99	169.41	175.78	181.65	189.69	204.37	219.39	228.39	235.36	245.95
40–49 years	1,570	208.93	23.43	171.42	180.30	184.33	192.60	208.90	223.25	233.40	238.53	247.82
50–59 years	1,200	206.79	24.11	168.22	174.67	181.61	191.04	206.67	222.66	232.24	237.32	245.50
60–69 years	1,419	203.82	25.68	162.60	171.55	177.08	186.28	202.92	220.42	228.27	234.08	246.77
70–79 years	750	196.06	26.22	156.47	163.33	170.03	178.89	194.11	212.16	222.90	229.41	240.85
80 years and over	594	181.92	27.98	135.28	147.93	154.22	162.28	181.42	201.99	210.62	217.37	225.16
20 years and over (age-adjusted) . . .	8,283	203.77	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	126.87	22.83	95.59	102.31	106.02	112.17	124.02	139.03	148.63	157.88	170.76
12–15 years	821	173.70	25.04	132.25	141.31	147.64	157.82	173.51	190.84	197.01	204.86	216.46
16–19 years	692	185.23	23.39	146.97	155.23	161.07	169.22	185.06	200.02	208.18	215.12	224.43
20–29 years	364	192.55	21.97	155.80	163.81	169.79	178.34	191.21	207.62	215.86	220.83	227.43
30–39 years	298	195.40	19.90	165.62	172.23	176.72	181.75	193.20	207.80	215.14	220.72	231.19
40–49 years	372	198.46	20.09	166.73	172.22	178.38	184.20	198.35	212.65	219.68	223.11	229.71
50–59 years	194	192.95	24.45	149.86	161.52	167.66	174.33	194.98	210.00	216.45	220.94	233.68
60–69 years	375	187.41	24.55	149.40	156.67	161.91	170.53	186.46	203.80	213.84	221.88	227.70
70–79 years	154	*179.33	25.47	*138.44	*147.13	*157.24	*163.60	*178.06	*197.08	*203.30	*211.98	*221.25
80 years and over	47	*166.12	23.37	†	*131.96	*140.67	*152.38	*164.60	*181.74	*187.31	*196.05	†
20 years and over (age-adjusted) . . .	1,804	191.64	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	125.81	23.01	92.92	100.06	103.95	110.78	123.94	137.95	149.10	155.80	166.80
12–15 years	576	173.59	26.48	127.41	138.82	147.01	155.30	173.92	190.83	200.56	208.06	216.16
16–19 years	543	194.31	24.32	154.77	164.07	171.33	178.71	193.60	207.58	217.24	224.62	235.65
20–29 years	583	202.12	22.45	165.12	172.45	177.20	187.47	201.83	217.30	224.89	230.00	240.11
30–39 years	612	204.46	21.45	170.67	175.99	182.51	189.92	204.24	217.12	225.10	230.68	241.52
40–49 years	668	208.64	22.56	173.95	180.40	184.91	192.76	208.52	222.27	232.29	237.25	246.65
50–59 years	639	207.46	21.88	171.54	178.58	185.40	193.02	206.95	221.79	231.07	236.15	242.79
60–69 years	644	203.53	23.68	165.16	173.53	178.47	187.37	203.00	218.55	226.86	231.15	240.86
70–79 years	429	196.12	24.82	158.13	165.17	172.04	179.81	193.90	211.19	221.04	228.17	240.02
80 years and over	457	182.01	26.45	139.09	150.32	155.03	162.81	181.37	201.01	208.86	214.32	223.23
20 years and over (age-adjusted) . . .	4,032	203.57	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	139.44	29.30	100.89	108.74	112.27	120.01	134.14	155.15	169.70	178.15	190.70
12–15 years	737	197.34	28.76	151.49	160.93	168.49	177.93	195.85	216.97	226.59	234.28	247.47
16–19 years	609	211.98	27.89	168.89	177.55	183.49	192.59	211.42	227.79	238.51	246.70	257.79
20–29 years	297	218.15	23.88	175.48	185.39	193.97	203.15	217.40	233.22	241.28	249.58	259.25
30–39 years	333	222.92	23.54	184.52	192.16	197.54	206.13	223.78	238.31	246.86	253.35	261.87
40–49 years	398	224.84	22.28	186.49	197.02	203.54	211.13	223.52	239.98	246.47	252.03	261.09
50–59 years	250	221.69	25.95	175.97	187.00	193.95	203.94	223.32	238.77	246.99	253.98	260.99
60–69 years	306	226.40	27.69	179.81	189.84	197.54	210.49	225.10	243.12	254.30	260.82	276.11
70–79 years	124	216.08	28.86	169.94	180.43	184.69	194.86	218.00	231.91	242.26	255.49	268.48
80 years and over	58	*204.23	27.30	*154.16	*167.77	*175.79	*184.87	*207.67	*223.01	*228.82	*235.45	*244.38
20 years and over (age-adjusted) . . .	1,766	221.19	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 23. Left arm bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	70.25	18.93	45.65	49.63	52.35	57.01	67.77	79.37	87.92	94.39	106.40
12–15 years	2,264	133.09	43.19	71.15	79.58	86.37	99.37	128.67	163.53	179.28	192.12	207.44
16–19 years	2,309	197.52	37.94	139.86	150.13	156.72	171.24	195.39	222.48	236.53	246.38	261.43
20–29 years	1,530	218.46	38.73	159.54	171.86	179.42	191.87	215.43	242.47	256.90	267.31	284.98
30–39 years	1,450	225.43	39.49	166.98	178.35	186.70	198.15	222.24	248.71	263.51	274.92	295.26
40–49 years	1,549	231.23	37.53	171.33	183.71	192.17	205.70	229.26	254.34	269.77	279.97	295.04
50–59 years	1,187	227.87	37.97	166.95	180.58	190.76	203.34	225.02	251.23	265.77	276.98	292.82
60–69 years	1,350	223.73	39.05	163.82	175.25	185.49	197.46	222.37	247.12	261.46	274.62	291.38
70–79 years	825	213.01	38.81	152.80	164.15	172.26	186.68	211.21	238.75	253.53	261.68	277.35
80 years and over	501	195.28	37.63	137.78	148.23	157.92	171.01	191.29	218.74	233.46	245.55	258.13
20 years and over (age-adjusted)	8,392	223.17	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	69.61	19.33	45.06	49.05	51.26	55.60	65.52	78.60	89.49	96.37	105.50
12–15 years	777	129.85	41.96	69.00	77.85	84.51	97.89	126.04	156.13	169.66	184.84	203.34
16–19 years	783	183.95	34.34	133.54	144.74	150.44	159.92	180.21	202.92	219.81	228.77	242.15
20–29 years	444	199.45	32.32	153.70	160.34	165.95	176.57	195.43	220.63	231.94	240.50	254.07
30–39 years	337	202.20	30.87	157.54	164.97	170.60	179.17	200.42	220.44	234.06	243.52	257.24
40–49 years	381	202.50	32.03	155.17	166.19	171.28	180.94	198.86	222.44	232.01	242.69	257.56
50–59 years	174	202.68	31.89	150.66	162.33	167.84	178.85	204.95	220.68	232.88	244.05	254.92
60–69 years	348	203.10	32.21	150.07	161.44	168.34	180.85	204.41	223.72	234.26	242.01	252.13
70–79 years	164	*189.12	31.99	*134.75	*147.73	*152.86	*164.37	*189.80	*211.82	*220.97	*227.41	*241.06
80 years and over	48	*174.51	31.72	*126.88	*141.00	*143.66	*152.29	*175.45	*184.36	*199.45	*210.15	†
20 years and over (age-adjusted)	1,896	199.55	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	68.66	18.00	43.80	48.17	51.78	56.50	66.59	76.81	85.57	90.84	105.24
12–15 years	578	132.15	42.78	70.93	78.22	85.08	97.32	127.21	162.97	177.59	190.20	206.09
16–19 years	591	197.58	35.70	141.91	150.47	157.45	172.10	196.51	222.22	235.63	243.84	256.65
20–29 years	617	220.31	36.42	163.87	177.02	184.76	194.95	217.90	243.07	256.84	266.28	280.16
30–39 years	647	229.62	37.01	174.77	185.82	193.34	204.19	227.74	250.97	264.56	275.30	296.15
40–49 years	700	234.38	34.78	180.21	190.62	198.93	210.55	232.35	255.82	271.14	280.49	294.24
50–59 years	683	230.05	35.72	172.62	188.07	195.26	206.40	227.36	251.88	265.41	276.07	291.10
60–69 years	623	225.65	36.70	170.74	182.21	190.88	200.60	224.04	247.07	260.63	272.78	290.80
70–79 years	496	215.18	37.81	156.30	167.42	173.89	188.61	214.39	240.21	254.06	261.52	277.98
80 years and over	398	194.46	35.32	139.09	150.72	158.90	172.03	191.12	217.40	231.03	242.77	254.67
20 years and over (age-adjusted)	4,164	225.76	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	79.82	21.49	52.04	55.97	59.54	65.56	76.38	90.38	100.57	105.61	121.49
12–15 years	745	147.86	45.79	82.75	90.49	98.53	111.89	144.82	178.34	196.39	207.13	224.60
16–19 years	757	216.26	42.79	155.27	167.27	175.46	187.35	213.85	240.63	256.92	268.68	285.49
20–29 years	325	242.78	43.16	184.50	194.29	200.40	210.95	238.15	265.61	283.13	293.42	318.71
30–39 years	310	249.64	43.04	186.60	198.45	208.09	218.76	245.85	274.18	290.70	305.90	326.32
40–49 years	366	248.31	42.77	182.53	196.63	205.03	219.53	246.78	272.39	289.06	301.94	320.09
50–59 years	240	249.03	41.57	185.70	196.83	205.96	218.50	244.62	274.09	291.29	301.90	318.27
60–69 years	303	248.21	38.25	182.31	201.31	211.30	223.92	247.18	274.98	284.74	292.06	306.09
70–79 years	114	227.80	43.25	153.03	176.82	182.63	200.45	227.54	258.46	269.70	279.68	288.27
80 years and over	36	*225.38	51.44	†	*154.00	*170.30	*182.68	*230.61	*251.88	*275.18	*302.05	†
20 years and over (age-adjusted)	1,694	244.91	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 23. Left arm bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	72.22	21.71	44.10	48.01	51.25	56.47	68.35	83.83	93.65	102.53	113.52
12–15 years	2,318	121.20	26.56	78.06	88.63	94.76	103.77	120.04	136.94	148.20	155.62	167.00
16–19 years	2,027	140.77	25.51	101.46	110.10	114.37	123.54	139.41	155.43	165.53	173.09	184.55
20–29 years	1,378	148.63	25.11	110.79	117.37	122.23	130.60	147.49	164.14	174.14	181.14	192.17
30–39 years	1,372	152.66	24.76	116.52	123.41	128.18	134.34	150.94	167.92	177.29	185.48	197.35
40–49 years	1,570	155.00	25.11	116.84	124.51	129.64	137.52	153.71	168.93	180.35	187.82	197.71
50–59 years	1,200	148.79	25.19	108.49	117.51	123.44	132.02	147.47	164.97	175.16	181.73	192.62
60–69 years	1,419	139.90	27.89	98.77	107.09	112.73	120.52	138.20	155.54	165.89	173.14	185.86
70–79 years	750	126.43	26.01	87.74	95.14	100.54	107.69	124.60	142.82	152.28	158.80	175.57
80 years and over	594	109.83	25.80	68.12	77.74	82.60	92.74	108.06	126.10	137.23	143.37	152.52
20 years and over (age-adjusted)	8,283	146.35	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	69.17	20.72	42.47	45.40	48.45	53.95	65.66	80.40	89.38	96.30	112.66
12–15 years	821	117.25	23.61	78.89	88.02	93.35	102.53	115.97	132.26	142.50	146.61	155.70
16–19 years	692	130.64	22.59	95.88	102.66	107.10	115.09	129.90	144.38	152.21	158.89	169.54
20–29 years	364	138.72	21.59	105.11	111.04	117.13	123.01	138.13	154.35	160.68	166.52	176.75
30–39 years	298	142.77	20.74	112.98	118.38	122.03	128.51	140.53	153.82	162.87	170.29	179.84
40–49 years	372	144.51	20.66	111.67	119.09	123.22	129.93	144.74	158.16	165.32	169.69	178.52
50–59 years	194	135.41	25.70	94.24	101.63	108.07	116.85	134.96	151.03	159.70	168.80	175.64
60–69 years	375	122.63	24.33	83.77	92.43	96.56	104.65	120.97	140.41	149.05	156.34	163.50
70–79 years	154	*110.17	24.09	*72.91	*77.96	*87.37	*95.95	*108.25	*125.27	*133.84	*141.56	*151.21
80 years and over	47	*94.94	21.56	†	*65.74	*74.19	*81.15	*93.70	*106.27	*116.59	*122.01	†
20 years and over (age-adjusted)	1,804	134.27	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	70.73	20.10	44.05	47.64	50.66	55.95	67.41	81.83	90.58	96.95	110.81
12–15 years	576	118.35	25.01	76.55	86.45	92.76	101.41	118.51	134.53	144.64	151.09	160.20
16–19 years	543	140.61	23.53	102.16	112.02	115.95	124.84	139.76	154.10	164.09	170.08	180.48
20–29 years	583	148.10	22.44	113.49	119.81	124.40	131.91	147.21	162.89	170.01	177.94	185.88
30–39 years	612	151.53	22.75	116.99	124.06	128.77	134.51	150.69	165.56	173.27	180.38	191.78
40–49 years	668	154.33	23.78	117.87	125.27	129.94	137.50	153.33	167.49	178.24	185.32	194.18
50–59 years	639	149.47	22.98	112.38	121.54	126.93	133.35	147.98	164.16	173.29	178.61	191.85
60–69 years	644	139.56	26.24	99.30	108.68	113.92	122.20	138.57	154.57	163.52	170.33	178.25
70–79 years	429	126.17	24.79	88.67	95.49	101.61	108.34	124.64	141.90	150.15	155.95	170.35
80 years and over	457	109.74	24.48	68.99	78.98	84.06	93.68	108.10	124.92	134.96	141.32	149.14
20 years and over (age-adjusted)	4,032	145.91	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	81.93	25.94	50.18	54.10	57.52	62.80	77.26	97.03	108.47	116.21	126.85
12–15 years	737	140.45	28.49	97.08	106.38	111.98	120.81	138.91	159.04	169.26	178.20	188.24
16–19 years	609	159.00	28.77	115.58	123.45	130.59	138.90	156.94	174.96	187.24	196.44	208.37
20–29 years	297	167.75	26.65	120.87	133.33	140.76	149.27	167.80	184.19	194.55	201.66	212.76
30–39 years	333	172.79	26.74	130.48	139.65	144.73	154.10	172.31	188.65	200.60	208.12	219.92
40–49 years	398	174.28	25.27	137.36	144.17	148.92	156.86	171.47	189.00	198.23	205.08	216.27
50–59 years	250	165.19	27.21	116.54	132.92	138.59	147.38	165.58	180.62	192.65	201.86	210.80
60–69 years	306	164.29	29.53	115.95	125.60	134.03	145.05	162.42	181.93	194.59	201.91	216.46
70–79 years	124	146.74	29.78	100.70	109.21	114.51	125.62	145.44	164.18	180.79	186.71	†
80 years and over	58	*130.03	28.64	*78.27	*93.36	*99.73	*108.54	*129.51	*150.67	*160.20	*163.05	*173.43
20 years and over (age-adjusted)	1,766	165.98	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 24. Left arm bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.567	0.063	0.458	0.483	0.500	0.524	0.570	0.611	0.633	0.647	0.664
12–15 years	2,264	0.699	0.085	0.566	0.588	0.609	0.639	0.696	0.758	0.790	0.811	0.841
16–19 years	2,309	0.827	0.069	0.720	0.740	0.754	0.779	0.824	0.870	0.897	0.915	0.940
20–29 years	1,530	0.867	0.072	0.759	0.781	0.796	0.818	0.860	0.909	0.941	0.962	0.993
30–39 years	1,450	0.877	0.074	0.768	0.788	0.800	0.825	0.872	0.918	0.950	0.971	1.008
40–49 years	1,549	0.879	0.072	0.764	0.788	0.807	0.827	0.872	0.921	0.953	0.970	1.006
50–59 years	1,187	0.867	0.075	0.753	0.775	0.791	0.812	0.865	0.912	0.941	0.963	0.997
60–69 years	1,350	0.853	0.078	0.736	0.759	0.772	0.799	0.850	0.898	0.932	0.953	0.990
70–79 years	825	0.824	0.081	0.689	0.728	0.742	0.769	0.819	0.876	0.905	0.924	0.949
80 years and over	501	0.789	0.081	0.662	0.689	0.707	0.740	0.783	0.842	0.872	0.899	0.924
20 years and over (age-adjusted)	8,392	0.863	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.557	0.065	0.450	0.467	0.484	0.512	0.557	0.600	0.625	0.642	0.667
12–15 years	777	0.695	0.089	0.556	0.583	0.601	0.633	0.690	0.753	0.785	0.809	0.839
16–19 years	783	0.811	0.064	0.706	0.729	0.744	0.768	0.810	0.853	0.877	0.893	0.919
20–29 years	444	0.846	0.059	0.757	0.771	0.783	0.806	0.842	0.884	0.902	0.918	0.953
30–39 years	337	0.852	0.060	0.760	0.780	0.792	0.809	0.848	0.884	0.908	0.933	0.961
40–49 years	381	0.846	0.066	0.746	0.768	0.784	0.804	0.841	0.884	0.906	0.923	0.959
50–59 years	174	0.841	0.069	0.722	0.748	0.763	0.792	0.845	0.895	0.912	0.917	0.937
60–69 years	348	0.835	0.070	0.722	0.750	0.769	0.787	0.831	0.872	0.895	0.915	0.953
70–79 years	164	*0.803	0.074	*0.679	*0.702	*0.719	*0.754	*0.807	*0.853	*0.877	*0.890	*0.908
80 years and over	48	*0.769	0.065	*0.679	*0.685	*0.698	*0.711	*0.766	*0.801	*0.831	*0.848	*0.895
20 years and over (age-adjusted)	1,896	0.838	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.566	0.060	0.458	0.485	0.501	0.525	0.569	0.608	0.630	0.641	0.658
12–15 years	578	0.697	0.084	0.567	0.588	0.609	0.638	0.691	0.759	0.788	0.805	0.839
16–19 years	591	0.828	0.069	0.721	0.741	0.754	0.779	0.827	0.871	0.899	0.914	0.939
20–29 years	617	0.869	0.070	0.761	0.784	0.799	0.820	0.863	0.912	0.942	0.960	0.989
30–39 years	647	0.882	0.074	0.771	0.793	0.806	0.831	0.878	0.922	0.953	0.974	1.010
40–49 years	700	0.881	0.069	0.770	0.795	0.814	0.833	0.876	0.923	0.950	0.970	1.005
50–59 years	683	0.869	0.074	0.761	0.780	0.794	0.814	0.866	0.912	0.942	0.962	0.996
60–69 years	623	0.854	0.077	0.741	0.761	0.774	0.801	0.850	0.897	0.931	0.951	0.987
70–79 years	496	0.825	0.082	0.692	0.728	0.741	0.769	0.822	0.878	0.910	0.926	0.951
80 years and over	398	0.786	0.077	0.667	0.691	0.707	0.739	0.782	0.836	0.864	0.885	0.917
20 years and over (age-adjusted)	4,164	0.865	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.592	0.065	0.470	0.502	0.522	0.550	0.596	0.639	0.653	0.665	0.687
12–15 years	745	0.721	0.083	0.592	0.618	0.636	0.664	0.717	0.777	0.809	0.831	0.858
16–19 years	757	0.847	0.074	0.732	0.759	0.774	0.799	0.842	0.892	0.920	0.940	0.968
20–29 years	325	0.901	0.078	0.789	0.807	0.821	0.844	0.886	0.950	0.983	1.005	1.040
30–39 years	310	0.909	0.075	0.793	0.820	0.832	0.856	0.900	0.957	0.978	1.001	1.041
40–49 years	366	0.906	0.086	0.782	0.807	0.823	0.846	0.896	0.960	0.985	1.004	1.045
50–59 years	240	0.905	0.077	0.782	0.808	0.830	0.862	0.896	0.946	0.983	1.006	1.042
60–69 years	303	0.893	0.078	0.758	0.792	0.815	0.842	0.892	0.943	0.972	0.984	1.013
70–79 years	114	0.845	0.082	0.683	0.751	0.773	0.797	0.842	0.897	0.924	0.934	0.976
80 years and over	36	*0.847	0.097	†	*0.727	*0.751	*0.774	*0.841	*0.917	*0.935	*0.964	†
20 years and over (age-adjusted)	1,694	0.896	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 24. Left arm bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.554	0.072	0.429	0.454	0.476	0.503	0.556	0.603	0.630	0.647	0.669
12–15 years	2,318	0.679	0.057	0.581	0.604	0.619	0.642	0.681	0.716	0.734	0.747	0.771
16–19 years	2,027	0.719	0.054	0.633	0.649	0.661	0.682	0.717	0.752	0.774	0.787	0.811
20–29 years	1,378	0.731	0.052	0.646	0.666	0.676	0.695	0.732	0.763	0.784	0.796	0.817
30–39 years	1,372	0.740	0.055	0.653	0.672	0.684	0.703	0.735	0.774	0.794	0.810	0.838
40–49 years	1,570	0.739	0.056	0.653	0.671	0.680	0.701	0.734	0.772	0.795	0.812	0.835
50–59 years	1,200	0.716	0.061	0.619	0.640	0.655	0.673	0.714	0.753	0.775	0.791	0.815
60–69 years	1,419	0.682	0.081	0.577	0.597	0.612	0.636	0.680	0.720	0.745	0.763	0.790
70–79 years	750	0.640	0.063	0.531	0.558	0.573	0.594	0.640	0.682	0.702	0.718	0.747
80 years and over	594	0.597	0.070	0.484	0.512	0.527	0.549	0.593	0.644	0.665	0.682	0.717
20 years and over (age-adjusted)	8,283	0.713	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.536	0.076	0.404	0.431	0.446	0.482	0.540	0.585	0.617	0.637	0.663
12–15 years	821	0.670	0.056	0.573	0.602	0.617	0.637	0.671	0.705	0.727	0.736	0.752
16–19 years	692	0.702	0.050	0.622	0.639	0.651	0.668	0.702	0.731	0.747	0.761	0.786
20–29 years	364	0.718	0.048	0.637	0.656	0.667	0.681	0.718	0.749	0.765	0.781	0.801
30–39 years	298	0.728	0.051	0.650	0.668	0.678	0.691	0.723	0.759	0.777	0.788	0.811
40–49 years	372	0.726	0.051	0.637	0.658	0.672	0.687	0.729	0.760	0.776	0.794	0.805
50–59 years	194	0.697	0.066	0.591	0.616	0.631	0.656	0.701	0.732	0.749	0.762	0.805
60–69 years	375	0.649	0.064	0.550	0.569	0.582	0.601	0.648	0.694	0.718	0.734	0.755
70–79 years	154	*0.608	0.066	*0.489	*0.523	*0.545	*0.569	*0.608	*0.648	*0.677	*0.693	*0.713
80 years and over	47	*0.565	0.060	†	*0.489	*0.502	*0.530	*0.564	*0.599	*0.627	*0.635	†
20 years and over (age-adjusted)	1,804	0.695	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.554	0.069	0.430	0.458	0.481	0.510	0.554	0.599	0.628	0.641	0.664
12–15 years	576	0.676	0.056	0.578	0.601	0.615	0.639	0.680	0.714	0.730	0.743	0.767
16–19 years	543	0.720	0.051	0.638	0.653	0.666	0.684	0.720	0.752	0.773	0.784	0.803
20–29 years	583	0.730	0.047	0.650	0.669	0.678	0.696	0.732	0.761	0.777	0.790	0.803
30–39 years	612	0.738	0.053	0.653	0.674	0.685	0.704	0.733	0.773	0.793	0.807	0.835
40–49 years	668	0.737	0.055	0.655	0.672	0.680	0.701	0.731	0.770	0.791	0.810	0.832
50–59 years	639	0.718	0.058	0.625	0.647	0.658	0.676	0.716	0.754	0.775	0.790	0.812
60–69 years	644	0.682	0.084	0.576	0.596	0.612	0.639	0.681	0.717	0.741	0.759	0.788
70–79 years	429	0.639	0.062	0.530	0.555	0.572	0.594	0.640	0.678	0.701	0.717	0.745
80 years and over	457	0.597	0.069	0.485	0.515	0.527	0.549	0.593	0.643	0.664	0.680	0.717
20 years and over (age-adjusted)	4,032	0.713	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.578	0.072	0.453	0.482	0.500	0.530	0.580	0.627	0.649	0.667	0.693
12–15 years	737	0.706	0.056	0.615	0.638	0.650	0.668	0.707	0.744	0.763	0.776	0.794
16–19 years	609	0.746	0.055	0.659	0.678	0.691	0.709	0.741	0.781	0.803	0.821	0.846
20–29 years	297	0.765	0.055	0.674	0.692	0.708	0.728	0.762	0.803	0.827	0.837	0.856
30–39 years	333	0.772	0.058	0.683	0.702	0.714	0.733	0.765	0.804	0.828	0.852	0.882
40–49 years	398	0.773	0.057	0.679	0.701	0.717	0.735	0.768	0.806	0.831	0.844	0.872
50–59 years	250	0.742	0.067	0.632	0.661	0.679	0.698	0.741	0.776	0.803	0.826	0.867
60–69 years	306	0.722	0.066	0.609	0.633	0.652	0.675	0.721	0.765	0.782	0.802	0.833
70–79 years	124	0.674	0.066	0.554	0.584	0.607	0.630	0.677	0.716	0.738	0.755	0.789
80 years and over	58	*0.630	0.074	*0.502	*0.526	*0.550	*0.577	*0.638	*0.678	*0.701	*0.715	*0.742
20 years and over (age-adjusted)	1,766	0.746	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 25. Right leg bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	249.20	40.56	196.82	207.21	213.00	221.81	243.64	269.58	285.75	305.32	327.93
12–15 years	2,264	353.38	60.15	259.38	274.66	284.55	306.99	353.80	398.29	418.96	431.36	447.87
16–19 years	2,309	405.58	46.44	331.77	347.16	358.25	373.18	404.66	434.53	455.00	467.14	481.05
20–29 years	1,530	410.48	46.58	337.43	353.26	364.78	380.00	408.11	438.94	453.83	469.93	488.93
30–39 years	1,450	408.67	45.74	336.77	352.03	362.23	376.67	406.44	438.36	454.76	467.60	484.85
40–49 years	1,549	413.76	41.48	347.64	362.11	371.92	385.92	413.93	440.52	454.91	466.35	482.67
50–59 years	1,187	410.08	42.53	342.15	358.48	367.03	381.20	409.42	437.89	452.95	464.77	480.81
60–69 years	1,350	408.23	42.61	334.89	355.70	365.25	380.27	407.89	436.16	453.11	462.40	478.81
70–79 years	825	400.54	44.08	331.99	345.47	357.08	371.65	400.13	430.93	446.79	457.21	469.16
80 years and over	501	386.14	42.18	318.19	332.78	343.46	357.84	385.88	414.46	426.61	438.78	454.58
20 years and over (age-adjusted)	8,392	408.55	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	252.66	40.72	200.46	209.68	214.86	224.92	244.93	274.90	294.73	306.27	334.96
12–15 years	777	348.37	56.72	253.98	270.37	283.22	308.20	349.73	386.12	408.12	424.12	441.74
16–19 years	783	388.93	45.61	320.29	335.74	344.32	359.31	383.39	415.98	438.42	450.96	469.66
20–29 years	444	383.68	42.86	317.68	332.16	340.50	354.16	381.52	411.06	427.77	436.83	452.78
30–39 years	337	376.73	37.92	314.93	326.06	335.84	352.45	375.83	401.35	414.09	423.06	440.24
40–49 years	381	381.25	38.96	325.63	337.01	346.18	357.13	377.64	403.77	421.50	429.33	451.72
50–59 years	174	380.04	34.26	322.79	337.10	343.97	358.72	376.76	403.84	416.32	424.21	436.06
60–69 years	348	380.38	35.34	324.80	334.40	342.62	354.90	380.77	403.73	418.38	428.81	437.49
70–79 years	164	*366.71	40.79	*294.20	*325.15	*333.10	*344.84	*371.90	*392.36	*401.70	*406.99	*422.27
80 years and over	48	*360.32	38.39	*286.47	*310.08	*317.94	*333.43	*363.04	*384.92	*394.12	*397.25	*415.41
20 years and over (age-adjusted)	1,896	378.28	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	244.73	39.06	193.00	204.15	210.73	219.79	239.07	265.56	280.44	295.07	323.60
12–15 years	578	353.36	61.01	256.81	271.80	281.94	304.21	354.64	399.66	422.16	432.27	447.21
16–19 years	591	406.88	44.36	331.25	350.64	360.74	377.24	406.88	434.46	454.55	466.43	478.71
20–29 years	617	413.80	43.05	346.64	363.14	371.63	385.23	411.39	440.54	453.84	468.86	485.45
30–39 years	647	413.68	42.65	343.84	361.12	369.02	385.08	413.02	441.50	455.87	467.69	481.93
40–49 years	700	418.28	38.63	356.89	371.01	379.76	391.90	417.02	443.12	457.72	468.77	484.37
50–59 years	683	413.22	41.21	347.22	364.21	372.26	386.78	413.49	439.77	453.76	466.56	481.25
60–69 years	623	412.49	40.16	349.10	363.02	370.63	384.54	409.81	439.01	454.84	463.46	480.50
70–79 years	496	404.23	42.99	337.72	349.42	359.56	374.14	402.91	434.49	451.16	459.51	470.55
80 years and over	398	387.09	40.65	320.51	337.40	345.23	358.78	386.57	414.69	426.45	437.20	452.65
20 years and over (age-adjusted)	4,164	412.48	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	265.80	43.10	207.81	218.08	226.73	235.94	258.17	283.53	311.62	325.62	346.48
12–15 years	745	370.83	60.58	274.95	291.54	303.07	329.59	371.22	409.48	426.61	441.33	468.35
16–19 years	757	423.01	51.00	344.79	360.70	373.47	387.59	420.87	451.74	474.03	485.66	508.50
20–29 years	325	434.89	49.51	366.78	376.86	384.91	400.30	429.65	460.24	482.84	502.88	523.31
30–39 years	310	433.19	49.86	357.80	372.56	384.84	396.77	429.29	466.49	484.30	496.72	524.13
40–49 years	366	426.15	42.96	356.16	371.00	382.38	401.28	424.45	452.43	466.98	477.88	493.99
50–59 years	240	424.07	43.91	362.06	368.46	375.63	389.79	420.52	455.43	469.38	479.94	494.88
60–69 years	303	418.64	41.34	350.51	367.90	377.11	394.08	417.79	445.71	460.20	468.83	483.16
70–79 years	114	401.82	46.30	319.37	347.39	360.31	373.77	404.36	432.12	438.12	447.49	463.64
80 years and over	36	*399.64	49.36	†	*325.63	*337.81	*368.66	*396.98	*426.89	*456.01	†	†
20 years and over (age-adjusted)	1,694	424.91	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 25. Right leg bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	255.44	40.01	197.16	208.58	216.85	228.72	251.23	280.85	295.46	308.30	326.78
12–15 years	2,318	324.17	38.98	261.72	274.90	284.86	297.93	323.33	350.65	365.09	374.20	387.14
16–19 years	2,027	340.82	39.93	281.94	294.02	302.98	314.44	337.74	363.87	377.91	388.38	404.36
20–29 years	1,378	343.13	36.20	285.32	297.38	306.82	318.19	342.02	366.42	379.04	388.43	403.83
30–39 years	1,372	345.24	35.04	292.04	302.35	309.84	321.14	341.56	368.27	381.60	392.07	407.81
40–49 years	1,570	346.78	35.69	289.60	302.25	310.41	322.54	345.98	370.00	382.30	392.47	407.31
50–59 years	1,200	341.08	35.96	283.41	296.58	304.28	317.35	341.96	364.28	377.01	386.21	398.68
60–69 years	1,419	340.40	38.53	279.07	292.65	302.22	314.77	341.62	366.71	378.36	387.89	400.17
70–79 years	750	327.50	41.56	257.75	279.43	288.48	304.39	329.13	354.05	367.19	376.75	391.47
80 years and over	594	308.27	43.41	234.00	253.54	264.75	281.93	310.48	340.26	349.61	359.67	370.49
20 years and over (age-adjusted) . . .	8,283	340.85	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	251.85	37.75	197.07	208.21	217.03	225.83	249.47	273.70	292.34	301.81	318.44
12–15 years	821	318.34	35.71	260.69	273.79	281.22	295.11	316.70	343.16	354.19	363.49	376.14
16–19 years	692	324.49	36.85	268.66	280.52	288.06	299.15	322.29	346.04	361.07	369.20	391.36
20–29 years	364	326.46	33.23	274.59	283.84	293.10	305.58	323.70	347.98	360.94	369.45	384.26
30–39 years	298	325.01	31.12	277.98	287.86	294.48	301.88	323.18	342.98	355.67	363.83	376.83
40–49 years	372	326.08	31.44	278.67	288.59	292.37	306.23	325.78	345.39	357.28	365.56	381.87
50–59 years	194	319.12	37.75	256.91	272.20	283.03	295.10	319.75	341.34	353.63	364.02	386.54
60–69 years	375	310.11	36.75	250.25	261.85	270.20	286.60	312.73	336.09	346.89	353.99	365.42
70–79 years	154	*296.83	41.95	*224.73	*241.44	*261.09	*273.81	*300.90	*322.17	*338.29	*345.65	*353.17
80 years and over	47	*274.45	51.17	†	*187.86	*220.30	*238.99	*284.73	*307.19	*325.89	*337.07	*345.57
20 years and over (age-adjusted) . . .	1,804	318.38	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	252.16	38.34	193.26	206.08	213.77	226.58	249.85	275.74	290.76	303.88	318.46
12–15 years	576	322.17	38.23	259.23	273.20	282.18	296.01	322.24	348.73	361.11	370.71	382.96
16–19 years	543	342.89	37.99	284.92	298.78	308.60	319.78	341.46	364.72	377.19	385.71	401.32
20–29 years	583	345.70	34.10	288.16	302.67	310.52	321.75	346.36	367.09	379.35	388.67	400.80
30–39 years	612	346.56	32.97	295.65	307.18	313.14	324.56	343.64	368.63	379.30	389.91	406.02
40–49 years	668	348.80	34.75	292.57	305.75	313.44	326.00	349.24	370.67	383.72	393.33	407.44
50–59 years	639	343.20	33.34	292.17	302.94	309.06	320.47	343.70	364.37	376.30	384.86	397.26
60–69 years	644	342.68	35.92	285.03	298.41	307.56	318.22	343.29	367.02	377.88	386.91	398.08
70–79 years	429	329.70	40.38	266.09	284.41	294.53	310.04	330.69	354.70	367.86	376.63	390.94
80 years and over	457	310.20	41.17	242.53	258.34	272.63	284.34	310.88	340.98	349.70	359.74	368.85
20 years and over (age-adjusted) . . .	4,032	342.87	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	271.40	44.44	209.85	222.71	230.62	240.49	264.40	299.41	322.70	334.94	349.35
12–15 years	737	345.48	39.52	286.46	298.09	307.09	316.43	343.59	370.69	385.87	396.51	412.57
16–19 years	609	356.33	43.66	294.42	307.42	315.80	328.39	352.33	379.92	396.37	407.20	428.70
20–29 years	297	357.99	37.85	299.78	315.80	321.93	331.65	354.78	378.94	396.45	406.83	425.17
30–39 years	333	364.28	37.59	305.96	317.94	326.06	336.99	361.93	388.03	403.91	412.89	434.20
40–49 years	398	361.51	34.22	312.01	320.92	326.39	336.66	358.70	383.02	396.47	406.01	419.95
50–59 years	250	355.93	36.86	293.80	304.63	318.64	331.48	354.65	380.64	392.02	399.43	417.76
60–69 years	306	359.02	37.45	291.11	312.81	320.72	333.13	360.10	383.28	398.24	405.44	418.30
70–79 years	124	341.45	45.22	258.82	285.47	297.58	317.02	343.05	368.88	387.16	397.50	412.71
80 years and over	58	*326.70	41.28	*247.94	*266.67	*282.39	*302.54	*326.96	*349.58	*362.71	*376.16	*390.92
20 years and over (age-adjusted) . . .	1,766	357.05	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 26. Right leg bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	218.85	58.29	143.09	156.40	164.03	179.24	207.50	250.17	277.44	298.62	333.98
12–15 years	2,264	394.79	110.22	232.78	253.07	273.35	309.38	387.85	472.76	515.71	541.80	575.88
16–19 years	2,309	527.41	99.42	375.29	404.83	426.30	459.00	518.95	593.54	634.03	659.15	696.79
20–29 years	1,530	551.91	106.42	397.42	429.59	447.44	479.17	541.46	610.79	653.93	686.54	736.72
30–39 years	1,450	544.97	103.54	398.84	421.11	439.62	472.81	536.54	606.48	644.97	677.49	726.24
40–49 years	1,549	547.18	91.22	406.73	435.43	456.58	484.66	544.39	600.80	636.62	665.72	705.30
50–59 years	1,187	533.04	94.34	385.27	420.36	441.89	469.39	528.75	586.00	627.28	657.59	694.84
60–69 years	1,350	525.15	95.40	376.71	410.20	430.14	462.90	520.87	583.59	619.62	646.86	686.06
70–79 years	825	497.58	91.32	353.55	386.67	405.74	434.08	499.10	558.44	587.48	609.02	646.96
80 years and over	501	467.26	90.77	330.77	358.29	374.83	408.04	456.79	520.33	559.46	590.24	626.00
20 years and over (age-adjusted)	8,392	535.29	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	222.87	61.81	144.87	154.54	163.39	180.47	208.61	255.31	287.38	318.30	343.67
12–15 years	777	389.90	106.79	225.01	251.26	274.52	313.61	385.87	451.19	500.23	534.91	579.87
16–19 years	783	491.87	94.19	357.47	383.49	400.80	428.18	483.04	539.63	589.94	616.06	659.64
20–29 years	444	495.76	89.47	372.22	391.85	405.61	433.43	484.52	550.60	588.64	616.99	645.07
30–39 years	337	480.69	76.90	360.75	390.06	406.78	429.58	480.08	525.02	544.67	574.15	614.95
40–49 years	381	481.00	80.98	359.59	389.80	407.70	430.87	473.03	526.90	559.58	583.01	624.25
50–59 years	174	476.54	76.70	361.62	372.17	387.27	408.36	478.98	532.68	549.44	571.18	594.31
60–69 years	348	470.52	72.99	355.06	382.33	396.07	414.06	466.42	517.79	547.53	569.33	603.84
70–79 years	164	*438.26	78.75	*310.26	*345.84	*365.85	*387.15	*443.66	*491.93	*513.04	*526.86	*556.52
80 years and over	48	*419.86	81.66	*294.02	*327.17	*331.35	*366.17	*421.66	*445.17	*479.35	*540.42	†
20 years and over (age-adjusted)	1,896	475.50	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	212.32	54.41	140.08	153.96	161.52	176.74	202.09	241.52	265.95	284.26	317.02
12–15 years	578	391.32	109.76	231.38	249.59	266.43	302.96	384.06	469.89	514.63	537.95	571.89
16–19 years	591	526.71	92.23	375.99	407.90	429.31	463.90	522.98	592.75	624.99	648.31	682.61
20–29 years	617	554.82	98.45	409.78	440.82	455.60	492.87	543.34	604.57	650.44	678.94	726.20
30–39 years	647	553.00	98.11	404.57	436.02	455.24	485.59	546.38	612.91	646.07	677.73	721.19
40–49 years	700	554.99	85.23	424.49	454.95	469.33	498.63	550.36	603.92	637.32	668.45	707.69
50–59 years	683	537.34	90.60	402.04	431.30	452.05	476.08	535.61	586.32	624.72	658.55	693.97
60–69 years	623	531.49	92.39	391.57	420.11	440.74	469.24	526.03	586.11	623.07	649.39	687.85
70–79 years	496	504.63	90.10	365.69	393.96	415.63	439.86	504.62	566.76	590.65	614.71	654.04
80 years and over	398	468.42	87.60	335.91	362.98	379.94	411.78	457.98	522.56	557.93	584.86	620.53
20 years and over (age-adjusted)	4,164	541.18	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	246.73	64.71	161.39	172.27	182.72	201.86	235.87	276.08	305.90	332.99	370.04
12–15 years	745	435.13	114.98	259.88	285.63	310.33	345.99	431.82	507.90	549.21	578.02	614.79
16–19 years	757	582.40	114.15	421.12	452.02	470.99	501.41	574.31	648.80	696.57	723.58	772.28
20–29 years	325	627.32	118.53	454.22	495.94	518.34	550.06	609.96	690.21	730.51	772.01	835.90
30–39 years	310	614.05	116.22	451.29	473.47	490.71	535.83	604.26	674.83	725.78	760.72	819.71
40–49 years	366	581.64	101.70	424.52	451.12	481.57	520.16	577.32	639.53	676.69	704.92	767.56
50–59 years	240	578.17	104.33	424.27	453.33	471.12	501.72	572.86	643.98	675.76	701.46	755.95
60–69 years	303	558.59	89.54	421.49	452.16	471.90	498.26	556.04	611.65	644.22	669.73	704.45
70–79 years	114	502.75	93.95	332.06	391.75	409.01	440.23	512.75	557.45	592.86	615.12	645.58
80 years and over	36	*502.58	113.67	†	*367.18	*382.90	*410.84	*490.43	*575.07	*639.23	*648.03	†
20 years and over (age-adjusted)	1,694	583.83	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 26. Right leg bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	227.95	63.91	139.42	154.22	163.08	179.74	217.65	267.12	294.25	319.63	346.86
12–15 years	2,318	355.10	69.91	243.56	270.81	284.18	305.90	352.50	401.31	428.62	444.25	475.99
16–19 years	2,027	392.70	70.07	283.79	306.23	322.91	346.57	387.23	432.85	461.23	480.04	523.01
20–29 years	1,378	399.31	66.23	295.50	319.56	330.72	353.39	396.04	440.60	465.06	483.91	514.14
30–39 years	1,372	402.04	64.58	304.76	325.75	335.49	357.71	396.82	441.71	469.13	484.08	519.24
40–49 years	1,570	403.35	65.16	304.88	323.25	337.91	358.69	401.57	442.95	466.63	486.97	515.60
50–59 years	1,200	383.99	65.41	283.50	305.01	318.12	339.99	381.36	424.08	447.03	472.80	497.99
60–69 years	1,419	365.67	66.34	261.13	285.66	297.32	319.11	365.48	409.11	434.00	448.01	471.82
70–79 years	750	327.79	67.03	220.41	246.58	264.40	285.65	325.47	370.59	394.94	411.99	435.44
80 years and over	594	287.05	67.26	180.55	199.21	216.17	240.83	286.93	330.85	360.30	373.29	394.48
20 years and over (age-adjusted)	8,283	383.78	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	222.45	62.66	137.70	149.79	158.37	174.71	212.45	261.73	286.09	308.24	340.10
12–15 years	821	346.52	64.30	244.85	268.60	282.14	303.58	343.75	388.29	407.42	426.09	455.53
16–19 years	692	365.81	66.01	269.48	287.36	298.83	320.98	361.74	402.98	429.11	446.28	477.24
20–29 years	364	370.46	60.49	275.70	297.99	307.94	328.17	365.87	407.22	434.93	450.97	479.06
30–39 years	298	369.40	57.04	284.04	299.98	312.58	327.47	364.27	402.29	431.23	442.98	473.72
40–49 years	372	371.94	55.50	287.44	303.95	319.17	337.09	368.73	404.26	431.57	445.09	468.48
50–59 years	194	348.98	70.24	238.43	261.46	278.12	301.55	343.30	393.99	423.44	438.15	454.91
60–69 years	375	316.01	60.90	212.66	236.02	249.30	273.76	316.62	363.20	381.12	392.92	409.02
70–79 years	154	*282.81	60.99	*177.04	*209.27	*226.92	*248.81	*283.04	*321.52	*345.33	*355.06	*372.94
80 years and over	47	*245.24	69.40	†	*156.68	*170.82	*195.46	*243.31	*293.63	*317.02	*327.00	†
20 years and over (age-adjusted)	1,804	348.55	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	222.63	59.92	138.37	152.87	160.74	176.16	214.29	261.82	289.38	306.08	331.51
12–15 years	576	349.68	67.05	242.05	269.28	279.08	301.06	348.90	395.85	418.27	436.83	458.77
16–19 years	543	395.45	65.29	289.62	315.23	330.56	354.16	392.81	432.12	458.79	476.77	520.84
20–29 years	583	401.74	61.56	300.59	324.40	336.81	357.99	399.49	440.48	464.63	480.06	506.76
30–39 years	612	403.50	60.85	311.04	332.12	339.48	361.39	398.53	439.85	466.24	480.63	509.84
40–49 years	668	404.86	63.27	308.22	325.47	340.79	362.41	403.07	444.33	466.18	485.63	514.74
50–59 years	639	387.40	60.15	297.37	314.55	326.39	346.03	384.65	423.60	444.99	470.46	495.16
60–69 years	644	368.10	63.12	267.84	291.26	302.03	323.96	367.13	408.95	433.08	444.47	466.75
70–79 years	429	329.89	65.95	220.10	251.37	268.30	289.05	327.97	371.50	394.33	410.45	434.01
80 years and over	457	289.03	65.07	183.48	207.40	221.27	245.44	287.67	332.10	359.87	372.55	392.26
20 years and over (age-adjusted)	4,032	385.91	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	256.05	72.63	163.24	175.55	186.42	200.97	242.83	303.63	337.42	360.82	386.17
12–15 years	737	401.03	72.05	295.83	315.08	327.15	351.01	392.96	448.55	477.85	499.57	523.10
16–19 years	609	432.86	77.79	321.34	343.44	354.91	378.30	427.97	477.48	507.81	533.75	568.30
20–29 years	297	437.18	71.61	329.02	352.02	366.69	388.19	428.79	476.76	517.65	534.25	562.11
30–39 years	333	441.03	68.65	333.16	348.93	367.30	393.56	436.43	483.51	516.25	530.82	552.27
40–49 years	398	437.74	64.62	346.56	358.42	367.42	389.31	434.00	478.98	503.01	520.45	551.54
50–59 years	250	412.24	67.53	307.86	329.05	342.37	365.68	407.02	454.74	485.68	501.43	532.57
60–69 years	306	400.17	68.00	284.90	310.98	329.79	360.28	399.69	441.50	464.32	484.29	512.90
70–79 years	124	354.48	74.10	223.82	253.83	279.49	302.71	351.86	405.12	425.61	438.98	†
80 years and over	58	*312.67	73.14	*196.13	*214.97	*233.48	*262.90	*303.57	*363.17	*389.27	*421.97	*441.93
20 years and over (age-adjusted)	1,766	417.80	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 27. Right leg bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.866	0.105	0.699	0.732	0.754	0.792	0.866	0.933	0.969	1.003	1.044
12–15 years	2,264	1.099	0.147	0.870	0.909	0.942	0.993	1.093	1.196	1.257	1.291	1.342
16–19 years	2,309	1.293	0.136	1.080	1.121	1.156	1.199	1.289	1.379	1.430	1.464	1.517
20–29 years	1,530	1.336	0.139	1.125	1.164	1.198	1.240	1.328	1.416	1.477	1.517	1.578
30–39 years	1,450	1.325	0.134	1.127	1.162	1.189	1.231	1.311	1.407	1.466	1.505	1.568
40–49 years	1,549	1.316	0.125	1.119	1.167	1.189	1.232	1.319	1.392	1.436	1.467	1.524
50–59 years	1,187	1.293	0.133	1.075	1.127	1.162	1.204	1.289	1.372	1.420	1.467	1.514
60–69 years	1,350	1.279	0.136	1.068	1.112	1.143	1.188	1.274	1.360	1.415	1.460	1.510
70–79 years	825	1.235	0.134	1.026	1.069	1.094	1.145	1.234	1.318	1.368	1.407	1.467
80 years and over	501	1.202	0.143	0.982	1.026	1.056	1.105	1.199	1.293	1.341	1.377	1.431
20 years and over (age-adjusted)	8,392	1.302	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.868	0.114	0.695	0.724	0.742	0.783	0.865	0.943	0.990	1.021	1.075
12–15 years	777	1.101	0.149	0.868	0.919	0.942	0.996	1.091	1.184	1.255	1.303	1.362
16–19 years	783	1.257	0.126	1.058	1.098	1.126	1.170	1.251	1.334	1.376	1.426	1.483
20–29 years	444	1.285	0.121	1.101	1.134	1.159	1.198	1.276	1.363	1.411	1.442	1.511
30–39 years	337	1.271	0.113	1.085	1.131	1.156	1.191	1.269	1.343	1.386	1.408	1.445
40–49 years	381	1.256	0.117	1.072	1.105	1.129	1.181	1.250	1.333	1.368	1.415	1.445
50–59 years	174	1.249	0.127	1.047	1.074	1.103	1.140	1.272	1.342	1.379	1.402	1.421
60–69 years	348	1.232	0.115	1.044	1.087	1.109	1.151	1.227	1.303	1.353	1.389	1.418
70–79 years	164	*1.187	0.124	*0.983	*1.022	*1.058	*1.110	*1.195	*1.279	*1.309	*1.329	*1.360
80 years and over	48	*1.157	0.129	*0.974	*1.002	*1.036	*1.079	*1.119	*1.213	*1.258	*1.302	†
20 years and over (age-adjusted)	1,896	1.251	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.857	0.099	0.695	0.733	0.752	0.786	0.853	0.921	0.953	0.977	1.031
12–15 years	578	1.089	0.143	0.868	0.905	0.939	0.982	1.080	1.185	1.248	1.280	1.326
16–19 years	591	1.288	0.130	1.072	1.120	1.163	1.202	1.287	1.371	1.420	1.446	1.496
20–29 years	617	1.333	0.131	1.131	1.173	1.208	1.246	1.328	1.409	1.459	1.501	1.554
30–39 years	647	1.329	0.132	1.132	1.164	1.196	1.238	1.319	1.411	1.468	1.505	1.565
40–49 years	700	1.322	0.119	1.134	1.180	1.199	1.242	1.325	1.394	1.434	1.463	1.523
50–59 years	683	1.294	0.129	1.089	1.135	1.168	1.209	1.291	1.370	1.414	1.465	1.506
60–69 years	623	1.282	0.134	1.083	1.120	1.151	1.191	1.277	1.361	1.413	1.459	1.508
70–79 years	496	1.242	0.134	1.030	1.076	1.101	1.150	1.238	1.326	1.377	1.416	1.474
80 years and over	398	1.203	0.140	0.995	1.031	1.063	1.106	1.203	1.289	1.338	1.376	1.428
20 years and over (age-adjusted)	4,164	1.305	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.916	0.109	0.733	0.771	0.800	0.846	0.920	0.995	1.022	1.045	1.083
12–15 years	745	1.158	0.156	0.917	0.954	0.996	1.044	1.149	1.260	1.317	1.351	1.416
16–19 years	757	1.368	0.144	1.128	1.190	1.221	1.267	1.363	1.461	1.514	1.551	1.603
20–29 years	325	1.434	0.148	1.199	1.261	1.288	1.336	1.420	1.516	1.590	1.628	1.690
30–39 years	310	1.409	0.141	1.190	1.217	1.261	1.305	1.412	1.500	1.551	1.580	1.643
40–49 years	366	1.358	0.145	1.130	1.180	1.216	1.262	1.353	1.444	1.496	1.538	1.605
50–59 years	240	1.356	0.144	1.122	1.169	1.207	1.254	1.348	1.451	1.502	1.540	1.589
60–69 years	303	1.330	0.135	1.101	1.164	1.193	1.240	1.326	1.425	1.465	1.487	1.543
70–79 years	114	1.243	0.139	0.983	1.085	1.123	1.153	1.238	1.330	1.383	1.413	1.467
80 years and over	36	*1.248	0.174	†	†	*1.044	*1.108	*1.239	*1.341	*1.406	*1.438	†
20 years and over (age-adjusted)	1,694	1.365	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 27. Right leg bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.878	0.122	0.681	0.718	0.749	0.788	0.875	0.960	1.011	1.042	1.083
12–15 years	2,318	1.087	0.109	0.901	0.954	0.980	1.013	1.085	1.158	1.199	1.229	1.266
16–19 years	2,027	1.147	0.111	0.967	1.008	1.037	1.076	1.141	1.211	1.259	1.290	1.341
20–29 years	1,378	1.159	0.107	0.983	1.027	1.054	1.089	1.153	1.224	1.267	1.297	1.348
30–39 years	1,372	1.160	0.104	0.999	1.032	1.055	1.086	1.155	1.228	1.267	1.289	1.326
40–49 years	1,570	1.158	0.103	0.998	1.032	1.053	1.088	1.153	1.222	1.264	1.293	1.337
50–59 years	1,200	1.120	0.110	0.942	0.986	1.008	1.046	1.120	1.187	1.228	1.261	1.299
60–69 years	1,419	1.068	0.111	0.877	0.922	0.953	0.996	1.067	1.143	1.184	1.208	1.251
70–79 years	750	0.993	0.113	0.800	0.849	0.875	0.916	0.988	1.072	1.113	1.140	1.173
80 years and over	594	0.921	0.116	0.736	0.776	0.800	0.836	0.916	1.003	1.045	1.074	1.119
20 years and over (age-adjusted)	8,283	1.119	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.869	0.129	0.666	0.698	0.725	0.770	0.865	0.958	1.004	1.038	1.089
12–15 years	821	1.081	0.105	0.908	0.944	0.973	1.016	1.085	1.145	1.186	1.209	1.248
16–19 years	692	1.121	0.106	0.957	0.989	1.013	1.051	1.111	1.186	1.227	1.247	1.298
20–29 years	364	1.130	0.105	0.971	0.996	1.023	1.053	1.120	1.197	1.253	1.275	1.319
30–39 years	298	1.133	0.106	0.970	1.005	1.033	1.063	1.119	1.197	1.240	1.274	1.322
40–49 years	372	1.137	0.094	0.976	1.018	1.043	1.069	1.141	1.201	1.226	1.247	1.301
50–59 years	194	1.085	0.125	0.871	0.928	0.962	1.011	1.092	1.154	1.199	1.227	1.276
60–69 years	375	1.012	0.111	0.823	0.863	0.888	0.936	1.018	1.090	1.123	1.150	1.190
70–79 years	154	*0.944	0.113	*0.755	*0.813	*0.838	*0.867	*0.943	*1.007	*1.056	*1.086	*1.134
80 years and over	47	*0.878	0.116	†	*0.714	*0.748	*0.785	*0.864	*0.945	*1.009	*1.051	†
20 years and over (age-adjusted)	1,804	1.086	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.870	0.117	0.678	0.716	0.746	0.783	0.866	0.950	0.998	1.020	1.070
12–15 years	576	1.077	0.106	0.894	0.950	0.975	1.003	1.077	1.147	1.188	1.215	1.245
16–19 years	543	1.149	0.105	0.981	1.015	1.044	1.080	1.143	1.207	1.255	1.286	1.336
20–29 years	583	1.158	0.100	0.984	1.035	1.061	1.093	1.152	1.218	1.258	1.281	1.338
30–39 years	612	1.160	0.099	1.003	1.040	1.060	1.089	1.157	1.228	1.264	1.285	1.313
40–49 years	668	1.156	0.102	0.998	1.032	1.053	1.090	1.150	1.218	1.260	1.289	1.331
50–59 years	639	1.125	0.102	0.962	0.997	1.014	1.055	1.125	1.188	1.227	1.255	1.294
60–69 years	644	1.069	0.108	0.883	0.926	0.958	0.999	1.068	1.140	1.182	1.205	1.247
70–79 years	429	0.993	0.113	0.799	0.848	0.873	0.915	0.988	1.074	1.113	1.140	1.168
80 years and over	457	0.922	0.114	0.736	0.779	0.800	0.839	0.916	1.003	1.043	1.071	1.117
20 years and over (age-adjusted)	4,032	1.119	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.928	0.126	0.732	0.772	0.792	0.839	0.921	1.016	1.062	1.099	1.139
12–15 years	737	1.154	0.110	0.974	1.010	1.037	1.081	1.152	1.228	1.266	1.290	1.336
16–19 years	609	1.209	0.114	1.029	1.061	1.086	1.129	1.211	1.283	1.329	1.355	1.395
20–29 years	297	1.217	0.115	1.035	1.076	1.094	1.131	1.210	1.299	1.343	1.371	1.417
30–39 years	333	1.207	0.109	1.032	1.069	1.089	1.131	1.207	1.275	1.316	1.339	1.394
40–49 years	398	1.207	0.104	1.045	1.075	1.100	1.131	1.205	1.275	1.315	1.346	1.380
50–59 years	250	1.154	0.115	0.958	1.010	1.033	1.075	1.155	1.223	1.271	1.304	1.349
60–69 years	306	1.110	0.121	0.899	0.950	0.982	1.025	1.111	1.194	1.230	1.261	1.319
70–79 years	124	1.030	0.117	0.819	0.898	0.923	0.947	1.036	1.115	1.147	1.175	1.214
80 years and over	58	*0.948	0.135	*0.740	*0.769	*0.804	*0.848	*0.933	*1.051	*1.089	*1.113	*1.155
20 years and over (age-adjusted)	1,766	1.164	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 28. Left leg bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	248.07	40.99	195.41	204.74	213.08	221.23	240.71	268.00	287.46	301.97	330.30
12–15 years	2,264	353.33	60.72	257.75	272.03	286.80	307.68	352.76	397.76	417.22	429.71	448.19
16–19 years	2,309	406.66	46.83	334.82	348.08	357.14	373.71	404.87	436.83	457.02	467.39	485.97
20–29 years	1,530	412.46	47.25	337.79	355.42	364.71	381.22	410.60	440.24	458.57	470.71	491.36
30–39 years	1,450	410.97	46.35	338.02	353.93	363.64	378.57	408.94	440.65	457.28	469.22	489.72
40–49 years	1,549	416.82	41.47	349.24	365.00	375.96	389.23	415.98	443.81	460.55	469.39	486.03
50–59 years	1,187	412.88	42.68	343.69	361.06	369.54	385.90	412.83	438.50	454.45	468.33	485.14
60–69 years	1,350	412.09	43.11	340.94	356.62	367.85	384.66	413.83	440.69	455.57	465.78	481.84
70–79 years	825	404.83	45.35	331.77	349.04	359.06	376.70	405.84	435.49	450.55	460.07	477.32
80 years and over	501	392.54	42.38	319.56	340.38	350.59	367.18	392.61	418.41	434.21	445.03	459.33
20 years and over (age-adjusted)	8,392	411.55	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	251.73	40.53	199.03	209.81	215.89	223.59	242.77	273.91	294.25	304.21	333.44
12–15 years	777	348.26	56.97	251.79	270.31	286.10	308.38	349.44	385.68	407.73	420.82	441.85
16–19 years	783	390.29	45.66	324.23	335.03	345.19	358.83	385.58	417.57	438.92	449.30	469.25
20–29 years	444	385.31	43.14	317.63	332.74	340.22	355.36	382.92	412.23	428.43	439.28	457.58
30–39 years	337	379.87	37.93	319.73	329.53	337.97	354.82	379.60	404.02	418.80	426.89	440.66
40–49 years	381	383.79	38.92	323.43	339.88	347.83	359.63	380.44	405.80	422.37	430.95	452.98
50–59 years	174	382.12	33.03	328.23	341.72	348.32	361.01	378.84	404.45	415.42	426.70	435.54
60–69 years	348	385.50	36.69	324.55	337.38	347.84	360.91	384.71	409.92	422.06	435.65	446.58
70–79 years	164	*371.59	41.43	*293.68	*327.50	*335.65	*349.07	*376.21	*396.17	*409.08	*414.56	*428.66
80 years and over	48	*367.76	40.98	†	*316.94	*328.73	*339.10	*367.45	*393.23	*401.38	*410.98	†
20 years and over (age-adjusted)	1,896	381.39	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	243.49	39.90	192.08	201.82	208.64	218.95	235.69	264.65	281.73	296.26	324.21
12–15 years	578	352.92	61.37	257.01	271.29	283.74	306.09	354.60	398.72	419.74	429.78	446.69
16–19 years	591	407.55	44.86	335.97	349.64	359.15	376.01	406.93	437.28	455.71	465.69	483.85
20–29 years	617	415.61	43.84	346.50	362.59	373.13	385.39	413.24	441.09	458.78	468.77	489.66
30–39 years	647	415.87	43.55	345.28	362.77	371.37	385.77	415.64	443.28	457.43	469.28	489.27
40–49 years	700	421.52	38.53	356.59	375.37	384.40	394.58	420.56	446.71	462.79	470.43	487.73
50–59 years	683	416.50	41.26	351.04	367.07	376.61	391.30	416.58	440.70	456.30	469.52	485.65
60–69 years	623	416.23	40.81	349.27	365.58	373.40	389.87	416.63	442.70	457.39	467.16	482.46
70–79 years	496	408.37	44.30	336.82	353.30	361.39	380.70	408.95	438.19	452.51	463.06	481.44
80 years and over	398	393.60	40.91	325.77	345.28	352.90	368.29	393.39	418.39	433.26	443.87	458.77
20 years and over (age-adjusted)	4,164	415.52	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	266.33	42.99	208.05	218.61	227.05	237.55	258.72	285.73	311.42	327.39	350.64
12–15 years	745	371.92	61.55	275.82	291.55	302.58	327.74	372.35	410.09	429.42	444.09	472.52
16–19 years	757	425.10	51.14	348.22	362.09	373.77	389.10	423.17	454.30	475.74	489.02	513.04
20–29 years	325	437.43	49.42	368.32	379.42	388.02	402.47	432.16	466.87	484.85	499.34	525.51
30–39 years	310	435.88	49.20	361.41	375.03	385.36	400.91	429.75	464.78	485.20	500.23	522.74
40–49 years	366	428.52	42.99	356.23	376.02	386.17	400.32	427.30	452.23	471.34	481.46	501.14
50–59 years	240	425.60	44.55	362.31	372.12	377.78	390.68	422.34	455.65	473.64	483.16	501.29
60–69 years	303	422.20	41.68	354.30	368.92	382.47	394.93	420.36	447.86	467.07	476.19	493.31
70–79 years	114	408.56	47.12	319.70	355.74	362.87	377.07	412.67	438.42	450.14	458.95	472.71
80 years and over	36	*403.57	51.38	†	*320.89	*331.64	*378.68	*402.25	*435.15	*452.23	†	†
20 years and over (age-adjusted)	1,694	427.81	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 28. Left leg bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	253.84	40.68	195.77	207.43	215.52	226.28	249.37	278.47	295.42	310.64	328.74
12–15 years	2,318	322.53	39.02	259.09	272.06	282.19	297.07	322.39	349.22	362.02	371.11	385.01
16–19 years	2,027	340.08	40.37	280.56	290.94	301.36	316.25	337.09	364.25	377.31	385.09	403.00
20–29 years	1,378	341.95	35.90	283.38	295.76	304.96	316.60	341.81	366.31	378.70	387.07	401.99
30–39 years	1,372	344.49	35.19	290.03	302.09	309.92	320.83	340.85	366.69	382.53	390.39	404.91
40–49 years	1,570	346.11	35.45	290.32	301.99	310.75	321.64	345.88	369.59	381.28	390.14	406.41
50–59 years	1,200	340.97	36.02	281.04	294.96	304.69	318.02	341.62	362.88	376.15	383.43	400.53
60–69 years	1,419	340.53	37.50	279.82	292.89	300.72	315.55	341.15	364.87	378.45	386.56	400.79
70–79 years	750	328.88	41.30	262.29	279.66	290.59	304.66	331.12	353.24	368.16	378.76	393.84
80 years and over	594	309.03	44.28	234.69	253.02	263.00	285.21	310.84	340.12	352.52	360.07	375.28
20 years and over (age-adjusted) . . .	8,283	340.47	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	250.81	38.35	198.23	206.42	214.25	224.39	248.69	272.67	292.34	303.44	317.43
12–15 years	821	316.52	35.74	258.57	271.03	280.41	292.30	316.42	339.64	350.11	358.82	374.25
16–19 years	692	324.07	37.23	267.74	278.95	285.30	298.23	322.01	346.83	359.91	371.74	388.94
20–29 years	364	326.14	32.80	270.70	283.98	295.55	306.13	323.74	346.42	359.75	369.87	380.21
30–39 years	298	324.15	31.48	276.69	285.51	292.17	302.51	323.70	344.46	353.58	362.49	372.39
40–49 years	372	326.05	31.08	276.94	287.97	294.78	305.40	324.81	345.33	354.17	365.25	380.83
50–59 years	194	319.58	37.34	254.38	276.75	284.00	294.16	318.93	344.42	352.60	364.49	386.16
60–69 years	375	311.08	36.97	253.29	262.24	271.09	288.05	312.76	338.36	346.05	354.05	364.81
70–79 years	154	*298.86	41.23	*219.67	*250.60	*264.70	*278.23	*300.26	*325.33	*337.58	*344.86	*358.36
80 years and over	47	*273.84	51.09	†	*195.60	*215.09	*242.45	*287.86	*308.21	*326.55	*329.02	*337.50
20 years and over (age-adjusted) . . .	1,804	318.44	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	250.22	39.03	190.56	204.04	212.23	223.42	246.68	275.41	289.29	301.80	319.96
12–15 years	576	320.36	38.15	256.49	269.99	279.42	295.06	321.50	347.46	359.30	368.63	378.69
16–19 years	543	342.14	38.44	283.82	297.22	308.26	318.85	338.82	364.74	376.51	382.78	400.40
20–29 years	583	344.27	33.96	288.54	301.35	309.42	320.86	344.69	367.22	378.75	387.28	400.81
30–39 years	612	346.07	33.17	293.43	305.56	313.72	323.03	342.56	366.69	382.38	388.97	402.78
40–49 years	668	348.09	34.45	292.68	306.42	312.66	324.84	348.08	370.47	382.02	389.52	406.84
50–59 years	639	342.99	32.93	290.55	302.62	310.76	322.07	342.90	362.30	375.20	382.19	397.00
60–69 years	644	342.76	35.01	287.79	297.00	305.82	319.01	342.48	365.19	378.21	384.72	399.27
70–79 years	429	331.23	39.67	266.44	286.43	295.44	309.17	333.36	354.37	368.50	378.63	393.45
80 years and over	457	311.14	42.05	241.57	257.38	269.53	288.88	311.21	341.03	353.07	359.87	374.12
20 years and over (age-adjusted) . . .	4,032	342.50	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	271.27	44.88	208.41	221.59	227.98	240.06	262.23	298.19	323.74	333.05	349.94
12–15 years	737	344.88	39.65	285.54	296.86	305.90	318.11	342.54	369.31	385.52	395.86	412.25
16–19 years	609	355.57	43.80	292.27	307.18	315.33	328.72	351.14	378.64	394.36	405.18	426.15
20–29 years	297	356.77	36.52	299.02	313.07	321.34	331.25	353.65	378.15	394.73	408.41	421.42
30–39 years	333	363.54	37.20	304.50	315.04	325.15	339.17	361.25	386.76	401.28	411.10	429.22
40–49 years	398	360.88	34.46	310.50	317.99	325.50	337.59	357.69	381.83	395.87	403.40	421.57
50–59 years	250	356.19	37.07	292.58	309.65	317.79	329.03	357.89	378.68	389.88	403.05	417.32
60–69 years	306	358.06	38.07	296.78	310.24	320.22	332.60	358.45	384.24	397.37	406.07	413.74
70–79 years	124	342.66	47.58	261.79	280.12	299.55	315.15	345.73	375.84	388.17	399.66	413.31
80 years and over	58	*325.90	43.66	*243.18	*260.73	*277.62	*303.62	*326.27	*346.63	*364.50	*379.13	*397.98
20 years and over (age-adjusted) . . .	1,766	356.53	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 29. Left leg bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	215.77	58.07	139.72	154.04	162.01	175.59	204.22	246.69	273.14	291.76	330.42
12–15 years	2,264	391.72	109.99	226.75	251.84	272.39	307.98	383.44	467.49	508.54	535.30	571.33
16–19 years	2,309	525.71	99.48	375.60	402.00	423.27	456.81	516.51	592.79	627.41	651.20	687.98
20–29 years	1,530	551.90	107.53	389.14	426.78	448.01	478.42	541.78	610.86	655.13	686.80	740.89
30–39 years	1,450	545.07	104.61	393.82	422.25	440.67	470.47	536.34	608.53	650.07	678.42	729.36
40–49 years	1,549	548.21	92.05	405.46	436.59	456.33	486.53	544.71	604.94	638.84	662.15	709.47
50–59 years	1,187	534.04	94.83	388.99	420.75	441.43	470.33	528.60	588.02	624.71	658.99	700.79
60–69 years	1,350	527.19	94.89	378.78	413.95	433.84	463.94	523.36	581.56	620.42	650.20	693.79
70–79 years	825	500.45	93.02	353.63	384.41	406.30	436.88	500.63	558.62	590.83	621.63	655.30
80 years and over	501	473.72	91.28	333.34	363.90	380.77	414.63	462.82	526.73	569.45	590.98	628.18
20 years and over (age-adjusted)	8,392	536.44	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	220.38	61.35	143.22	153.00	159.84	178.21	208.41	256.30	286.99	312.52	342.45
12–15 years	777	386.50	105.21	222.60	252.71	273.29	311.01	380.75	450.49	494.74	527.89	561.18
16–19 years	783	489.20	92.88	355.24	379.73	396.31	428.10	480.27	543.95	580.07	613.84	648.71
20–29 years	444	496.56	90.49	365.33	387.43	402.39	433.24	487.61	552.32	586.77	609.69	653.27
30–39 years	337	479.90	78.20	357.54	391.11	405.31	428.63	476.40	523.09	550.40	575.07	604.34
40–49 years	381	483.20	82.26	364.48	387.89	402.96	427.77	477.74	526.42	562.20	580.07	632.77
50–59 years	174	476.97	73.59	366.93	379.15	396.96	415.92	477.13	531.45	553.23	569.07	596.17
60–69 years	348	475.49	73.83	361.11	382.62	394.30	419.77	474.81	522.81	548.57	570.03	603.00
70–79 years	164	*442.51	78.65	*304.33	*331.66	*370.64	*396.58	*448.50	*494.17	*511.44	*533.46	*563.31
80 years and over	48	*423.57	74.35	*302.47	*331.71	*350.09	*371.37	*424.82	*439.56	*479.07	*543.82	†
20 years and over (age-adjusted)	1,896	477.05	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	209.54	54.50	136.80	151.25	160.03	173.00	197.77	238.26	263.17	282.92	319.52
12–15 years	578	387.99	109.06	226.44	248.50	268.20	301.62	381.50	463.73	506.05	531.39	565.71
16–19 years	591	524.26	92.55	376.66	404.80	425.63	460.23	517.64	589.66	621.75	644.78	677.29
20–29 years	617	554.27	99.46	406.71	440.52	459.41	491.57	545.49	607.45	645.26	679.44	728.16
30–39 years	647	552.99	99.72	402.55	431.58	453.36	481.25	549.82	613.63	652.04	678.49	723.02
40–49 years	700	555.73	85.86	423.99	452.31	470.37	499.05	549.42	606.77	640.11	663.95	711.81
50–59 years	683	538.81	90.89	398.04	436.08	451.94	479.69	533.12	589.89	625.57	658.64	698.97
60–69 years	623	533.21	91.48	397.52	425.08	441.86	470.39	528.43	583.58	622.01	654.78	695.57
70–79 years	496	506.60	92.10	364.40	389.19	411.24	441.36	506.24	563.64	595.74	629.12	656.89
80 years and over	398	474.63	88.27	339.72	368.55	387.61	417.07	464.72	527.51	568.85	588.85	623.38
20 years and over (age-adjusted)	4,164	542.09	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	244.30	64.37	161.34	171.40	181.53	197.80	232.73	277.56	306.10	330.48	367.43
12–15 years	745	433.27	115.80	257.26	285.26	310.52	344.60	433.36	506.19	549.36	574.51	617.70
16–19 years	757	583.46	114.95	419.65	451.99	470.68	504.63	574.94	646.99	693.34	722.56	782.85
20–29 years	325	629.54	118.99	463.98	499.64	519.51	549.02	613.28	685.55	738.15	784.37	842.16
30–39 years	310	614.75	115.14	452.80	473.40	492.98	527.65	604.79	675.70	724.75	763.95	810.02
40–49 years	366	583.75	105.82	418.24	457.13	481.09	518.20	574.18	645.03	676.60	703.81	776.77
50–59 years	240	577.99	105.80	421.91	456.71	475.32	500.84	567.36	645.18	682.33	709.82	753.72
60–69 years	303	559.47	90.19	414.22	453.60	471.06	503.11	559.31	610.07	649.45	662.04	709.08
70–79 years	114	511.01	93.85	337.76	386.35	428.01	453.03	511.85	569.52	602.52	627.80	651.21
80 years and over	36	*510.90	116.22	†	*364.05	*383.37	*421.86	*496.39	*570.68	*627.64	*652.34	†
20 years and over (age-adjusted)	1,694	585.97	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 29. Left leg bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	224.54	64.09	135.62	149.42	160.22	176.87	213.10	262.93	294.29	317.27	345.81
12–15 years	2,318	349.50	69.67	240.96	264.57	278.08	300.29	346.67	394.35	419.59	438.06	467.97
16–19 years	2,027	387.67	70.20	276.70	301.26	317.65	343.01	383.96	428.78	457.50	474.18	515.15
20–29 years	1,378	393.41	64.45	291.02	310.86	326.02	347.54	391.45	435.21	456.43	475.53	504.94
30–39 years	1,372	396.88	64.83	297.69	318.83	331.61	350.35	392.34	438.27	463.06	480.06	514.09
40–49 years	1,570	398.94	65.07	302.12	317.66	331.49	356.25	394.44	437.45	464.66	484.29	510.55
50–59 years	1,200	379.82	64.33	278.36	300.53	312.59	336.70	378.18	420.15	444.27	465.79	489.37
60–69 years	1,419	363.34	65.90	258.86	281.97	296.15	314.77	360.85	406.44	430.36	443.49	469.86
70–79 years	750	326.96	66.35	221.77	248.88	260.74	284.82	323.51	369.82	395.45	412.91	433.21
80 years and over	594	285.29	68.19	172.53	196.71	214.27	241.65	282.81	329.68	357.88	374.62	399.70
20 years and over (age-adjusted)	8,283	379.61	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	218.92	62.49	134.35	147.22	155.18	172.20	206.14	256.75	284.17	302.54	338.71
12–15 years	821	340.07	63.32	238.22	261.80	275.68	297.29	338.53	383.54	401.11	416.53	443.27
16–19 years	692	360.95	65.60	263.32	281.45	294.42	314.79	355.09	397.99	424.05	440.71	473.21
20–29 years	364	365.26	60.21	274.18	292.72	306.87	321.56	359.94	403.25	428.23	451.28	475.35
30–39 years	298	364.12	56.76	280.34	296.73	308.01	325.73	359.88	392.32	424.94	447.45	470.21
40–49 years	372	367.10	55.30	277.06	300.77	310.74	334.07	364.30	398.49	422.83	441.81	466.42
50–59 years	194	346.20	67.98	241.55	261.42	273.97	300.49	338.72	391.01	417.03	434.77	450.26
60–69 years	375	315.02	61.25	214.35	237.08	246.06	274.20	315.25	362.19	379.31	389.10	408.08
70–79 years	154	*282.32	59.75	*175.69	*209.75	*224.02	*249.58	*282.30	*313.25	*339.06	*351.59	*379.75
80 years and over	47	*240.93	67.09	†	*141.61	*174.09	*193.12	*240.14	*287.59	*309.59	*315.11	*341.12
20 years and over (age-adjusted)	1,804	344.65	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	219.23	60.29	133.06	146.55	156.36	174.39	209.16	256.54	282.52	307.78	331.65
12–15 years	576	344.43	67.14	239.61	261.82	274.32	295.87	343.53	390.33	414.49	429.50	454.59
16–19 years	543	390.86	65.35	284.84	311.83	327.48	349.89	386.69	429.72	453.92	470.14	510.88
20–29 years	583	395.71	59.55	297.23	318.97	335.49	354.96	393.65	434.03	454.79	470.44	496.29
30–39 years	612	398.32	61.20	305.29	323.22	337.69	353.61	394.60	436.59	460.38	472.97	510.10
40–49 years	668	400.57	63.22	304.39	320.49	333.44	359.68	395.87	437.35	464.65	483.26	510.16
50–59 years	639	383.15	59.50	294.89	310.09	320.85	341.22	381.07	419.97	442.19	462.81	484.77
60–69 years	644	365.54	62.53	268.71	290.68	301.38	320.22	362.16	406.19	428.29	439.60	464.99
70–79 years	429	329.04	64.76	224.99	249.86	265.48	289.16	325.88	369.74	393.96	410.99	432.30
80 years and over	457	287.19	65.86	175.34	203.26	222.06	243.44	284.85	330.34	357.04	372.54	395.77
20 years and over (age-adjusted)	4,032	381.70	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	253.49	72.27	158.59	172.35	183.21	199.00	238.74	301.44	333.62	357.94	381.87
12–15 years	737	395.82	71.34	288.33	311.38	325.60	346.28	389.39	442.76	467.59	492.77	517.82
16–19 years	609	427.00	77.37	314.63	335.22	351.95	374.21	418.61	470.98	504.81	523.46	569.14
20–29 years	297	431.37	68.98	325.52	351.15	366.45	382.67	421.00	473.08	505.66	530.85	552.19
30–39 years	333	436.30	69.14	324.32	346.30	364.60	390.76	431.03	478.24	508.83	523.84	550.15
40–49 years	398	433.14	64.90	338.14	352.46	367.66	388.34	427.34	471.22	497.07	511.90	549.56
50–59 years	250	409.75	67.77	299.27	316.85	340.15	365.62	405.81	452.23	484.32	503.87	518.58
60–69 years	306	398.40	69.45	281.65	308.10	327.35	355.56	398.20	446.61	463.42	484.00	506.95
70–79 years	124	354.79	75.82	218.74	259.21	274.79	302.13	357.36	410.26	426.03	444.27	469.54
80 years and over	58	*311.82	74.68	*189.71	*207.74	*224.04	*260.83	*300.12	*363.70	*390.40	*410.52	*431.06
20 years and over (age-adjusted)	1,766	414.15	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 30. Left leg bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.858	0.104	0.691	0.727	0.746	0.785	0.858	0.925	0.961	0.992	1.036
12–15 years	2,264	1.090	0.147	0.865	0.906	0.935	0.985	1.078	1.189	1.242	1.280	1.342
16–19 years	2,309	1.285	0.136	1.072	1.115	1.145	1.192	1.277	1.369	1.422	1.457	1.514
20–29 years	1,530	1.329	0.140	1.114	1.161	1.193	1.232	1.320	1.413	1.477	1.512	1.574
30–39 years	1,450	1.318	0.136	1.115	1.153	1.177	1.215	1.305	1.403	1.459	1.504	1.565
40–49 years	1,549	1.309	0.127	1.107	1.150	1.181	1.221	1.312	1.390	1.433	1.465	1.519
50–59 years	1,187	1.286	0.133	1.073	1.124	1.148	1.192	1.284	1.366	1.421	1.458	1.507
60–69 years	1,350	1.272	0.135	1.066	1.106	1.136	1.186	1.269	1.350	1.408	1.446	1.498
70–79 years	825	1.229	0.133	1.013	1.052	1.088	1.138	1.229	1.314	1.363	1.397	1.451
80 years and over	501	1.200	0.144	0.976	1.031	1.057	1.096	1.197	1.286	1.341	1.379	1.430
20 years and over (age-adjusted)	8,392	1.295	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.862	0.114	0.687	0.714	0.738	0.781	0.853	0.934	0.976	1.009	1.057
12–15 years	777	1.093	0.147	0.856	0.917	0.944	0.990	1.080	1.179	1.246	1.284	1.351
16–19 years	783	1.246	0.125	1.044	1.092	1.116	1.159	1.237	1.327	1.368	1.407	1.461
20–29 years	444	1.282	0.124	1.094	1.130	1.156	1.191	1.269	1.357	1.411	1.453	1.511
30–39 years	337	1.258	0.116	1.071	1.099	1.140	1.184	1.260	1.329	1.370	1.396	1.437
40–49 years	381	1.253	0.118	1.058	1.101	1.135	1.176	1.253	1.327	1.366	1.399	1.453
50–59 years	174	1.243	0.120	1.049	1.079	1.101	1.141	1.256	1.334	1.368	1.397	1.424
60–69 years	348	1.229	0.114	1.052	1.079	1.106	1.149	1.229	1.295	1.347	1.372	1.404
70–79 years	164	*1.184	0.123	*0.970	*1.005	*1.040	*1.105	*1.195	*1.272	*1.308	*1.332	*1.357
80 years and over	48	*1.146	0.100	*0.968	*1.028	*1.057	*1.089	*1.125	*1.198	*1.259	*1.295	†
20 years and over (age-adjusted)	1,896	1.245	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.850	0.099	0.690	0.724	0.739	0.780	0.854	0.915	0.942	0.969	1.026
12–15 years	578	1.081	0.143	0.869	0.905	0.931	0.980	1.067	1.181	1.234	1.265	1.324
16–19 years	591	1.280	0.132	1.065	1.112	1.148	1.192	1.273	1.362	1.413	1.446	1.490
20–29 years	617	1.326	0.131	1.117	1.178	1.201	1.237	1.318	1.405	1.461	1.499	1.541
30–39 years	647	1.322	0.134	1.121	1.155	1.181	1.221	1.316	1.405	1.463	1.503	1.557
40–49 years	700	1.313	0.121	1.117	1.166	1.193	1.230	1.317	1.391	1.430	1.460	1.513
50–59 years	683	1.288	0.130	1.080	1.133	1.152	1.197	1.285	1.365	1.419	1.451	1.500
60–69 years	623	1.275	0.131	1.068	1.112	1.145	1.190	1.272	1.349	1.406	1.445	1.493
70–79 years	496	1.234	0.133	1.020	1.056	1.092	1.140	1.233	1.316	1.371	1.401	1.456
80 years and over	398	1.199	0.142	0.980	1.034	1.060	1.096	1.198	1.282	1.334	1.376	1.426
20 years and over (age-adjusted)	4,164	1.298	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.905	0.110	0.731	0.768	0.787	0.831	0.903	0.977	1.014	1.038	1.084
12–15 years	745	1.149	0.156	0.916	0.952	0.984	1.033	1.143	1.246	1.302	1.346	1.416
16–19 years	757	1.364	0.145	1.127	1.180	1.214	1.262	1.361	1.458	1.516	1.541	1.606
20–29 years	325	1.431	0.149	1.203	1.243	1.281	1.332	1.422	1.511	1.584	1.636	1.690
30–39 years	310	1.402	0.140	1.172	1.211	1.253	1.302	1.396	1.490	1.552	1.590	1.634
40–49 years	366	1.355	0.153	1.113	1.162	1.209	1.251	1.350	1.448	1.504	1.534	1.628
50–59 years	240	1.351	0.144	1.114	1.178	1.207	1.245	1.341	1.452	1.498	1.526	1.583
60–69 years	303	1.320	0.134	1.091	1.162	1.192	1.228	1.314	1.414	1.448	1.475	1.529
70–79 years	114	1.244	0.138	0.994	1.091	1.108	1.153	1.238	1.347	1.385	1.423	1.462
80 years and over	36	*1.257	0.177	†	*1.012	*1.049	*1.131	*1.262	*1.362	*1.418	*1.479	†
20 years and over (age-adjusted)	1,694	1.361	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 30. Left leg bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.870	0.122	0.663	0.709	0.739	0.784	0.867	0.949	1.002	1.035	1.082
12–15 years	2,318	1.075	0.110	0.894	0.940	0.968	1.002	1.070	1.149	1.182	1.212	1.261
16–19 years	2,027	1.134	0.113	0.954	0.994	1.022	1.063	1.130	1.203	1.246	1.281	1.332
20–29 years	1,378	1.145	0.103	0.992	1.017	1.038	1.077	1.138	1.209	1.256	1.278	1.328
30–39 years	1,372	1.147	0.104	0.978	1.021	1.041	1.073	1.143	1.216	1.250	1.278	1.323
40–49 years	1,570	1.148	0.104	0.986	1.018	1.047	1.075	1.142	1.212	1.255	1.284	1.328
50–59 years	1,200	1.109	0.107	0.934	0.976	0.996	1.033	1.107	1.180	1.216	1.252	1.285
60–69 years	1,419	1.061	0.111	0.879	0.917	0.946	0.986	1.059	1.131	1.175	1.200	1.250
70–79 years	750	0.987	0.112	0.798	0.840	0.873	0.911	0.981	1.068	1.101	1.130	1.172
80 years and over	594	0.912	0.119	0.718	0.763	0.793	0.828	0.902	0.992	1.037	1.068	1.110
20 years and over (age-adjusted)	8,283	1.108	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.858	0.129	0.654	0.696	0.720	0.762	0.852	0.946	1.001	1.028	1.088
12–15 years	821	1.067	0.104	0.893	0.930	0.963	1.001	1.069	1.139	1.169	1.197	1.231
16–19 years	692	1.108	0.105	0.938	0.978	1.003	1.037	1.099	1.171	1.211	1.232	1.292
20–29 years	364	1.115	0.103	0.967	0.994	1.011	1.039	1.101	1.184	1.232	1.263	1.297
30–39 years	298	1.119	0.103	0.966	0.999	1.023	1.046	1.107	1.176	1.226	1.252	1.308
40–49 years	372	1.122	0.093	0.961	1.010	1.027	1.056	1.125	1.180	1.211	1.240	1.275
50–59 years	194	1.076	0.120	0.878	0.921	0.956	0.998	1.078	1.145	1.186	1.231	1.273
60–69 years	375	1.005	0.110	0.819	0.859	0.890	0.923	1.006	1.081	1.116	1.142	1.178
70–79 years	154	*0.936	0.110	*0.737	*0.801	*0.842	*0.868	*0.931	*0.997	*1.051	*1.075	*1.098
80 years and over	47	*0.866	0.119	†	*0.695	*0.716	*0.785	*0.874	*0.924	*0.976	*1.030	†
20 years and over (age-adjusted)	1,804	1.074	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.862	0.118	0.657	0.706	0.735	0.778	0.862	0.941	0.985	1.012	1.066
12–15 years	576	1.067	0.107	0.893	0.933	0.962	0.995	1.066	1.138	1.172	1.199	1.240
16–19 years	543	1.138	0.108	0.967	1.010	1.031	1.066	1.134	1.203	1.242	1.276	1.327
20–29 years	583	1.145	0.095	0.995	1.026	1.049	1.082	1.138	1.205	1.251	1.273	1.312
30–39 years	612	1.147	0.100	0.978	1.023	1.045	1.077	1.145	1.215	1.247	1.273	1.309
40–49 years	668	1.146	0.102	0.989	1.020	1.048	1.075	1.142	1.209	1.251	1.280	1.322
50–59 years	639	1.113	0.103	0.949	0.984	1.003	1.042	1.112	1.182	1.217	1.253	1.287
60–69 years	644	1.061	0.108	0.881	0.919	0.951	0.990	1.061	1.128	1.168	1.197	1.242
70–79 years	429	0.986	0.112	0.796	0.836	0.868	0.914	0.980	1.068	1.102	1.127	1.170
80 years and over	457	0.913	0.116	0.719	0.765	0.800	0.830	0.902	0.993	1.035	1.067	1.111
20 years and over (age-adjusted)	4,032	1.108	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.919	0.123	0.722	0.763	0.788	0.829	0.913	1.011	1.051	1.084	1.126
12–15 years	737	1.141	0.110	0.964	1.001	1.027	1.067	1.137	1.210	1.256	1.283	1.334
16–19 years	609	1.195	0.114	1.013	1.053	1.080	1.112	1.191	1.266	1.322	1.347	1.390
20–29 years	297	1.205	0.113	1.032	1.065	1.081	1.115	1.198	1.280	1.328	1.357	1.389
30–39 years	333	1.196	0.111	1.021	1.055	1.075	1.117	1.203	1.261	1.308	1.331	1.374
40–49 years	398	1.196	0.103	1.028	1.070	1.093	1.127	1.191	1.265	1.308	1.329	1.364
50–59 years	250	1.146	0.114	0.954	0.994	1.030	1.075	1.148	1.214	1.258	1.283	1.330
60–69 years	306	1.108	0.125	0.904	0.956	0.978	1.022	1.108	1.188	1.234	1.271	1.313
70–79 years	124	1.026	0.116	0.819	0.889	0.917	0.949	1.023	1.100	1.144	1.169	1.216
80 years and over	58	*0.947	0.135	*0.722	*0.769	*0.792	*0.832	*0.947	*1.043	*1.072	*1.089	*1.134
20 years and over (age-adjusted)	1,766	1.155	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 31. Right ribs bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	85.13	15.66	62.61	66.97	70.09	74.22	83.34	93.13	100.22	106.32	115.97
12–15 years	2,264	108.45	21.64	76.60	82.56	86.84	93.21	106.90	121.43	129.95	135.75	145.53
16–19 years	2,309	127.39	21.17	97.45	103.37	107.22	113.60	125.21	138.65	147.31	155.08	165.57
20–29 years	1,530	136.38	27.18	100.28	106.17	110.59	118.85	132.24	149.74	161.81	170.65	185.62
30–39 years	1,450	139.87	28.25	99.37	105.38	112.08	121.01	137.04	156.10	167.07	174.73	186.76
40–49 years	1,549	142.17	30.15	100.36	108.06	113.46	121.10	138.74	159.05	169.25	179.70	193.34
50–59 years	1,187	141.79	29.04	99.16	107.24	113.25	120.55	138.96	159.53	171.11	180.28	191.98
60–69 years	1,350	141.13	28.41	100.55	107.05	112.28	120.76	138.71	157.73	171.80	179.04	190.49
70–79 years	825	130.17	27.01	89.23	98.45	103.92	111.29	128.02	146.14	156.54	164.88	176.56
80 years and over	501	118.62	23.09	82.50	89.01	95.32	102.68	116.82	131.82	141.35	148.02	160.28
20 years and over (age-adjusted) . . .	8,392	138.36	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	86.85	18.11	61.54	64.99	69.68	74.75	83.09	97.99	106.02	113.17	119.90
12–15 years	777	108.46	20.89	77.46	83.85	87.06	93.84	106.95	121.47	128.69	134.09	146.26
16–19 years	783	124.19	21.13	92.54	99.99	104.37	110.23	121.83	135.19	144.80	150.65	159.83
20–29 years	444	131.07	24.28	95.55	104.40	107.80	114.65	128.36	143.34	153.81	161.85	174.76
30–39 years	337	137.66	25.27	100.42	106.42	111.78	119.51	135.50	153.21	162.97	171.69	180.59
40–49 years	381	136.87	26.88	95.69	105.82	110.12	117.22	134.69	152.32	161.45	170.88	185.24
50–59 years	174	136.72	26.22	100.76	106.52	111.64	117.86	134.70	149.37	159.43	169.79	179.97
60–69 years	348	136.94	25.44	98.76	104.81	111.79	120.29	134.24	151.62	162.21	169.74	183.71
70–79 years	164	*123.68	22.56	*91.24	*97.49	*101.61	*107.23	*120.87	*136.83	*147.69	*151.80	†
80 years and over	48	*116.42	25.36	*65.33	*81.10	*87.43	*97.61	*120.49	*132.71	*143.62	*148.98	*157.36
20 years and over (age-adjusted) . . .	1,896	133.91	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	84.55	14.79	62.86	67.05	69.95	74.16	83.07	91.74	98.79	104.21	113.39
12–15 years	578	108.72	21.73	75.83	82.85	87.29	93.57	107.11	121.46	129.99	136.02	144.35
16–19 years	591	127.73	21.07	98.04	103.62	107.87	114.09	125.67	138.34	147.01	155.06	166.75
20–29 years	617	136.94	27.26	100.66	106.49	110.57	119.17	132.70	150.41	162.98	170.84	186.80
30–39 years	647	140.23	28.92	98.83	104.43	111.75	120.80	137.23	157.09	168.44	176.21	187.43
40–49 years	700	143.65	30.85	101.70	108.58	114.19	122.05	139.77	160.30	172.30	182.38	196.17
50–59 years	683	143.04	29.28	99.93	107.38	114.08	121.62	140.57	161.18	173.34	181.53	193.57
60–69 years	623	143.06	28.27	102.93	109.37	113.83	122.32	141.30	159.93	173.83	179.93	192.31
70–79 years	496	130.97	27.32	89.13	99.07	104.60	112.17	128.81	146.72	158.24	166.21	178.41
80 years and over	398	118.47	22.83	82.83	89.48	95.27	102.68	116.56	131.69	140.89	147.57	158.52
20 years and over (age-adjusted) . . .	4,164	139.31	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	85.90	16.48	62.23	67.60	70.23	74.28	83.82	94.85	100.81	106.80	117.60
12–15 years	745	110.46	22.47	77.15	84.25	88.06	95.13	108.13	122.64	131.95	138.29	149.61
16–19 years	757	128.48	22.11	99.29	104.75	108.43	113.72	125.22	139.76	149.14	155.56	166.64
20–29 years	325	138.51	27.85	101.03	109.43	113.32	121.14	133.31	150.66	161.51	171.42	186.58
30–39 years	310	142.49	28.31	104.56	111.79	116.23	123.68	139.23	156.17	167.98	176.17	194.75
40–49 years	366	139.72	29.71	101.24	107.86	112.93	119.57	134.91	155.55	165.88	172.07	194.43
50–59 years	240	138.06	27.50	99.40	106.48	111.84	119.73	135.29	151.80	162.37	171.68	187.28
60–69 years	303	137.36	29.19	96.56	103.69	108.24	117.57	134.26	152.36	164.64	173.54	189.14
70–79 years	114	128.12	24.69	93.85	97.16	99.58	111.82	125.93	144.60	153.50	158.75	169.09
80 years and over	36	*121.87	24.74	†	*84.63	*92.06	*108.52	*119.03	*133.91	*144.85	*158.80	†
20 years and over (age-adjusted) . . .	1,694	137.80	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 31. Right ribs bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	86.38	17.77	59.97	65.29	69.18	73.80	84.31	97.30	104.63	109.74	117.98
12–15 years	2,318	111.83	19.16	84.20	89.12	92.91	98.90	109.90	122.36	130.45	136.27	146.75
16–19 years	2,027	119.45	20.23	92.34	96.95	99.94	105.66	116.24	130.53	139.20	146.54	157.00
20–29 years	1,378	123.84	22.42	93.02	98.29	102.29	107.87	120.65	136.10	147.35	153.77	163.81
30–39 years	1,372	127.20	25.34	92.27	97.81	101.43	108.33	124.79	143.09	151.90	160.06	172.84
40–49 years	1,570	128.34	25.00	90.57	96.27	100.54	109.27	127.68	144.52	154.10	160.77	171.46
50–59 years	1,200	128.96	24.74	91.21	97.40	102.29	111.00	128.64	145.48	154.36	160.82	169.80
60–69 years	1,419	124.71	24.81	84.65	93.54	98.08	107.00	125.08	140.80	150.27	156.69	165.33
70–79 years	750	115.24	24.70	74.65	83.46	89.31	98.93	113.79	131.90	140.20	146.15	155.09
80 years and over	594	101.28	23.69	65.94	72.73	76.19	83.32	99.46	117.58	126.20	132.68	141.96
20 years and over (age-adjusted) . . .	8,283	124.65	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	86.13	19.05	58.61	63.75	67.45	72.48	84.41	97.35	105.31	110.97	120.39
12–15 years	821	111.15	18.98	83.46	88.54	91.80	98.80	108.96	121.88	130.74	136.00	145.79
16–19 years	692	119.06	20.49	91.58	95.30	99.49	104.01	116.10	130.05	140.04	146.80	157.11
20–29 years	364	127.73	22.55	93.77	101.63	104.02	110.24	126.25	143.39	150.64	157.54	165.93
30–39 years	298	127.55	22.21	94.54	99.25	103.56	112.07	126.82	140.64	151.09	155.00	164.10
40–49 years	372	131.27	21.82	96.40	102.44	108.65	116.70	130.54	145.16	153.63	159.34	168.18
50–59 years	194	129.68	20.11	97.05	104.73	108.71	116.48	130.39	142.08	148.86	153.93	162.12
60–69 years	375	125.66	21.57	90.06	97.94	104.79	112.64	124.04	140.19	146.49	150.95	159.31
70–79 years	154	*114.94	24.42	*73.11	*81.68	*89.10	*101.31	*115.39	*130.13	*139.32	*145.09	*156.37
80 years and over	47	*95.22	21.71	*66.05	*72.03	*74.53	*80.55	*91.28	*106.34	*115.96	*121.77	†
20 years and over (age-adjusted) . . .	1,804	125.97	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	85.73	17.35	60.00	65.24	68.97	73.72	83.42	94.91	103.85	107.56	117.59
12–15 years	576	110.90	18.54	83.11	88.61	92.26	98.50	109.50	121.91	129.13	134.37	142.81
16–19 years	543	118.30	18.75	91.79	96.82	99.86	105.18	115.66	129.63	137.67	144.68	152.29
20–29 years	583	122.40	21.86	93.21	97.73	101.85	106.70	119.16	133.56	144.97	151.56	161.21
30–39 years	612	125.97	26.09	91.21	95.91	100.43	106.85	123.01	141.81	151.10	161.34	172.43
40–49 years	668	127.26	25.76	88.86	94.68	98.67	105.88	127.08	144.29	154.66	161.48	172.03
50–59 years	639	128.55	24.98	91.20	96.59	101.18	109.61	127.47	145.71	154.94	161.37	170.20
60–69 years	644	124.47	25.34	82.60	91.64	95.96	106.57	125.35	140.97	150.75	156.89	165.26
70–79 years	429	115.04	25.01	73.98	82.86	89.30	98.74	113.50	132.11	140.08	145.91	154.65
80 years and over	457	101.57	23.53	66.39	72.70	76.50	83.71	99.86	117.79	126.14	132.71	142.08
20 years and over (age-adjusted) . . .	4,032	123.80	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	89.33	18.89	60.92	65.93	70.19	75.53	87.82	100.80	108.90	114.43	122.09
12–15 years	737	115.82	19.79	87.96	92.80	96.05	102.30	113.15	127.23	136.21	142.03	152.39
16–19 years	609	124.75	24.19	94.69	98.79	102.90	108.92	119.99	136.57	144.91	153.55	166.55
20–29 years	297	129.07	23.21	95.37	99.93	105.36	112.06	127.17	143.46	153.20	158.74	167.67
30–39 years	333	134.09	25.65	96.47	102.19	107.89	115.50	132.68	148.61	157.25	169.31	179.65
40–49 years	398	133.64	23.67	97.20	105.77	109.77	117.22	132.04	148.75	155.85	163.65	172.19
50–59 years	250	132.29	23.24	95.56	102.22	108.07	115.78	131.23	146.88	155.07	162.09	172.19
60–69 years	306	131.51	23.60	96.15	101.15	106.43	115.44	129.93	147.37	156.56	162.39	171.43
70–79 years	124	118.62	23.81	81.64	87.10	91.56	103.13	115.96	132.68	142.18	150.33	156.63
80 years and over	58	*101.46	23.22	*64.14	*71.96	*76.74	*83.10	*98.39	*118.05	*128.23	*134.26	*139.72
20 years and over (age-adjusted) . . .	1,766	129.73	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 32. Right ribs bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	45.35	11.76	28.76	31.85	33.49	36.88	44.07	51.23	56.85	61.97	67.63
12–15 years	2,264	69.63	20.35	39.90	45.57	48.93	54.85	67.49	82.03	90.77	96.68	104.94
16–19 years	2,309	95.96	21.21	65.05	70.38	74.48	81.08	94.19	107.64	117.23	123.80	134.22
20–29 years	1,530	103.19	26.86	68.72	74.77	78.73	84.76	99.81	115.91	125.44	133.26	151.17
30–39 years	1,450	102.68	26.73	66.93	72.94	77.61	85.13	100.48	115.70	125.63	132.43	146.52
40–49 years	1,549	102.93	26.86	66.74	72.82	77.82	85.55	99.52	116.30	127.03	137.13	149.15
50–59 years	1,187	100.74	25.52	64.83	71.64	75.56	83.66	97.29	114.26	125.22	134.37	147.81
60–69 years	1,350	100.22	25.23	64.49	70.23	75.74	82.91	97.55	114.05	123.39	132.28	146.39
70–79 years	825	88.86	23.07	56.21	61.19	64.85	72.79	86.63	103.30	112.64	118.08	128.19
80 years and over	501	79.27	20.74	48.40	53.36	57.23	64.51	77.80	91.45	99.86	107.07	116.00
20 years and over (age-adjusted)	8,392	100.04	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	46.34	13.03	27.44	31.18	33.71	37.23	43.74	54.53	60.49	64.56	69.51
12–15 years	777	69.14	19.66	40.16	45.74	49.67	55.23	66.75	81.43	89.59	94.28	103.29
16–19 years	783	90.43	20.34	61.98	67.32	71.44	76.67	88.50	101.26	109.85	117.67	127.44
20–29 years	444	95.92	21.37	64.87	71.65	76.18	81.62	93.11	108.38	116.68	123.01	132.38
30–39 years	337	98.75	22.44	67.72	74.26	78.70	83.38	95.31	109.81	121.15	129.89	139.63
40–49 years	381	97.09	23.77	63.05	69.96	73.95	81.14	94.66	109.70	118.59	126.58	139.78
50–59 years	174	96.36	23.38	65.46	72.42	75.64	80.60	92.57	108.43	116.06	123.04	132.57
60–69 years	348	95.08	20.77	63.05	68.16	73.51	80.18	94.50	106.74	114.42	120.00	130.78
70–79 years	164	*82.87	19.81	*56.25	*59.33	*62.33	*68.78	*81.39	*94.46	*103.83	*111.99	†
80 years and over	48	*75.99	22.92	*37.47	*42.95	*47.44	*60.25	*73.11	*89.37	*99.27	*102.97	†
20 years and over (age-adjusted)	1,896	94.75	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	44.68	11.16	28.64	31.14	33.14	36.34	44.02	50.63	55.29	59.73	66.56
12–15 years	578	69.78	20.33	39.61	45.65	49.00	54.85	67.75	82.20	90.93	97.28	104.72
16–19 years	591	96.20	20.51	65.15	70.36	74.95	81.85	95.38	107.63	116.40	121.24	132.64
20–29 years	617	103.11	26.45	69.02	74.90	79.26	85.32	99.97	114.97	124.97	132.12	149.62
30–39 years	647	102.59	26.88	67.00	72.89	77.24	84.85	100.79	115.43	125.35	132.25	145.90
40–49 years	700	103.79	27.18	68.05	73.14	77.99	86.52	100.95	116.50	128.20	138.49	150.10
50–59 years	683	101.18	25.29	65.11	71.82	75.78	84.59	97.41	115.10	125.91	135.13	147.45
60–69 years	623	101.38	24.92	65.03	71.38	77.31	83.92	98.49	115.03	124.65	132.67	146.78
70–79 years	496	89.33	23.14	56.59	61.29	64.52	73.28	87.11	103.42	112.91	118.97	128.74
80 years and over	398	78.75	19.96	48.67	53.97	57.50	64.32	77.61	90.72	99.00	104.33	113.34
20 years and over (age-adjusted)	4,164	100.39	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	47.43	12.79	30.17	33.40	34.92	38.35	45.59	54.73	60.69	63.92	70.55
12–15 years	745	73.12	21.79	41.20	47.49	51.94	57.71	70.45	85.60	94.92	100.44	111.27
16–19 years	757	100.56	23.41	69.08	75.30	78.62	84.47	97.48	113.97	122.80	129.43	140.33
20–29 years	325	112.98	30.63	71.59	79.42	84.37	93.86	109.86	126.02	136.97	147.69	167.82
30–39 years	310	112.59	30.01	72.84	80.58	84.60	93.27	107.08	126.82	134.27	146.44	168.15
40–49 years	366	105.95	28.39	68.25	76.15	80.10	86.83	100.27	120.04	131.52	138.86	153.60
50–59 years	240	105.03	26.29	68.00	74.77	79.53	88.39	102.68	117.99	126.07	134.66	154.22
60–69 years	303	104.03	27.85	67.51	73.56	77.27	84.37	100.00	118.64	131.90	142.01	153.38
70–79 years	114	91.35	21.90	53.69	63.64	67.70	74.82	90.33	106.71	112.97	118.12	124.34
80 years and over	36	*87.60	24.83	†	*54.57	*61.46	*71.39	*81.84	*98.65	*109.93	*118.40	†
20 years and over (age-adjusted)	1,694	106.25	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 32. Right ribs bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	45.16	13.26	26.93	29.65	31.86	35.21	43.56	52.67	58.72	63.34	68.90
12–15 years	2,318	69.93	17.10	45.78	49.70	53.39	58.51	68.08	79.23	86.14	92.40	102.31
16–19 years	2,027	80.04	18.31	55.76	59.55	62.29	67.47	77.89	89.93	97.57	102.81	111.59
20–29 years	1,378	82.83	19.87	56.13	60.88	64.65	68.76	80.34	93.27	100.92	106.87	119.01
30–39 years	1,372	85.17	22.80	55.49	60.84	64.07	69.61	81.42	97.21	106.15	114.00	125.62
40–49 years	1,570	84.26	21.31	53.26	58.80	62.84	68.91	81.86	96.86	105.40	110.89	120.73
50–59 years	1,200	81.90	21.15	53.06	57.25	61.03	66.90	79.85	93.74	101.77	108.17	120.68
60–69 years	1,419	76.25	20.64	46.10	51.32	55.18	61.85	74.30	88.43	97.45	103.39	111.91
70–79 years	750	67.36	18.81	37.71	45.45	48.87	54.45	65.90	78.69	86.15	90.43	99.53
80 years and over	594	56.06	16.45	32.16	36.55	39.38	44.44	54.47	67.40	73.03	77.15	84.05
20 years and over (age-adjusted)	8,283	80.29	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	44.89	14.28	26.27	28.83	30.85	34.28	41.97	53.21	59.68	63.62	71.03
12–15 years	821	69.07	16.45	44.90	49.38	52.37	58.32	68.40	77.82	84.57	90.55	97.90
16–19 years	692	78.52	18.09	54.92	58.91	61.95	66.28	75.98	87.06	96.62	102.96	110.84
20–29 years	364	84.89	19.25	56.64	61.92	66.05	70.52	82.98	97.43	103.08	108.97	116.83
30–39 years	298	84.68	19.22	58.11	62.55	65.41	71.10	83.09	95.97	102.15	109.61	118.04
40–49 years	372	86.60	18.61	58.01	62.60	66.86	73.78	85.49	98.83	105.91	109.17	116.48
50–59 years	194	81.91	17.55	55.82	61.50	65.06	69.71	80.06	91.22	101.06	105.01	111.92
60–69 years	375	75.01	18.72	48.48	52.02	56.03	61.09	73.47	86.16	93.44	100.07	108.54
70–79 years	154	*66.10	19.25	*37.24	*43.26	*48.93	*53.33	*63.71	*75.60	*84.85	*90.90	†
80 years and over	47	*52.39	16.42	*29.16	*32.57	*35.59	*41.14	*49.34	*59.64	*66.78	*71.91	†
20 years and over (age-adjusted)	1,804	80.67	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	44.34	12.68	26.82	29.35	31.14	34.93	42.88	50.93	57.54	61.82	67.08
12–15 years	576	68.70	16.43	45.61	48.59	51.82	57.65	67.14	78.34	84.38	90.37	98.07
16–19 years	543	78.73	16.47	55.91	58.84	61.90	66.97	77.13	89.36	95.19	99.52	108.21
20–29 years	583	80.87	18.32	56.32	60.69	64.46	67.93	78.42	90.44	97.82	102.35	113.97
30–39 years	612	83.28	22.61	53.94	58.77	62.78	68.50	79.55	94.19	103.48	113.07	124.30
40–49 years	668	82.75	21.08	52.85	57.40	61.13	67.00	80.65	95.90	104.45	109.47	118.11
50–59 years	639	81.12	21.04	52.86	56.98	60.20	65.85	79.15	93.02	100.55	106.75	120.11
60–69 years	644	76.04	20.55	45.43	51.01	55.28	61.94	74.25	88.14	96.89	102.67	111.10
70–79 years	429	67.14	18.81	37.11	45.10	48.82	54.72	65.75	78.56	85.62	89.35	97.34
80 years and over	457	56.10	16.34	32.32	36.77	39.72	44.49	54.33	67.27	72.76	77.33	83.87
20 years and over (age-adjusted)	4,032	79.04	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	48.65	14.80	27.91	31.85	34.17	37.74	46.37	57.10	64.17	68.67	75.17
12–15 years	737	76.29	18.91	50.75	54.56	58.13	62.93	73.20	87.22	95.42	102.74	109.68
16–19 years	609	88.77	24.14	59.44	64.01	66.98	72.29	84.39	99.89	108.61	117.44	130.25
20–29 years	297	92.54	23.68	57.79	65.24	69.71	76.33	89.54	105.94	114.88	120.01	133.00
30–39 years	333	95.68	25.33	61.62	68.67	71.72	78.08	92.81	107.96	118.04	128.28	144.57
40–49 years	398	93.94	22.85	60.99	68.29	72.07	79.33	91.85	105.76	113.86	120.00	134.04
50–59 years	250	89.63	22.09	55.87	63.79	67.66	74.76	86.45	102.19	110.58	117.77	129.75
60–69 years	306	85.40	21.72	54.17	59.51	63.75	69.97	82.27	100.23	106.85	113.65	124.76
70–79 years	124	73.08	19.83	43.51	51.15	52.53	58.43	69.61	84.94	94.78	99.81	106.99
80 years and over	58	*60.25	16.98	*33.43	*36.90	*39.74	*48.02	*58.32	*72.41	*76.04	*79.32	*88.34
20 years and over (age-adjusted)	1,766	89.21	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 33. Right ribs bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.527	0.056	0.440	0.456	0.467	0.485	0.522	0.565	0.586	0.602	0.620
12–15 years	2,264	0.633	0.088	0.496	0.522	0.542	0.568	0.626	0.690	0.722	0.745	0.790
16–19 years	2,309	0.750	0.087	0.613	0.645	0.664	0.690	0.744	0.802	0.836	0.865	0.906
20–29 years	1,530	0.752	0.086	0.614	0.646	0.663	0.692	0.747	0.808	0.841	0.863	0.905
30–39 years	1,450	0.730	0.084	0.607	0.626	0.645	0.669	0.723	0.779	0.818	0.848	0.877
40–49 years	1,549	0.721	0.083	0.593	0.617	0.634	0.658	0.719	0.771	0.806	0.826	0.862
50–59 years	1,187	0.708	0.084	0.578	0.602	0.621	0.646	0.702	0.758	0.792	0.816	0.851
60–69 years	1,350	0.707	0.088	0.574	0.600	0.619	0.648	0.696	0.762	0.798	0.827	0.857
70–79 years	825	0.679	0.087	0.543	0.571	0.589	0.618	0.672	0.737	0.767	0.786	0.832
80 years and over	501	0.663	0.088	0.534	0.557	0.575	0.597	0.655	0.721	0.756	0.786	0.823
20 years and over (age-adjusted)	8,392	0.719	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.527	0.056	0.440	0.454	0.464	0.482	0.524	0.567	0.590	0.605	0.623
12–15 years	777	0.629	0.087	0.500	0.522	0.537	0.568	0.621	0.681	0.720	0.745	0.788
16–19 years	783	0.725	0.081	0.599	0.624	0.644	0.670	0.719	0.770	0.803	0.824	0.866
20–29 years	444	0.730	0.073	0.609	0.641	0.655	0.680	0.726	0.776	0.807	0.824	0.855
30–39 years	337	0.715	0.076	0.602	0.620	0.636	0.658	0.707	0.764	0.792	0.813	0.854
40–49 years	381	0.706	0.075	0.585	0.607	0.625	0.652	0.706	0.751	0.781	0.807	0.836
50–59 years	174	0.703	0.081	0.573	0.600	0.618	0.648	0.694	0.753	0.780	0.801	0.851
60–69 years	348	0.693	0.076	0.578	0.600	0.618	0.642	0.682	0.741	0.771	0.794	0.830
70–79 years	164	*0.666	0.081	*0.530	*0.552	*0.576	*0.606	*0.668	*0.722	*0.755	*0.771	*0.790
80 years and over	48	*0.643	0.084	*0.506	*0.528	*0.546	*0.591	*0.623	*0.693	*0.729	*0.760	*0.794
20 years and over (age-adjusted)	1,896	0.704	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.523	0.055	0.438	0.451	0.464	0.482	0.517	0.562	0.580	0.597	0.613
12–15 years	578	0.633	0.089	0.491	0.519	0.541	0.567	0.626	0.692	0.722	0.743	0.791
16–19 years	591	0.750	0.087	0.614	0.646	0.666	0.691	0.746	0.802	0.833	0.864	0.897
20–29 years	617	0.749	0.082	0.614	0.648	0.664	0.692	0.745	0.801	0.835	0.854	0.888
30–39 years	647	0.728	0.082	0.606	0.625	0.645	0.671	0.723	0.777	0.809	0.841	0.873
40–49 years	700	0.719	0.082	0.592	0.618	0.635	0.656	0.718	0.769	0.803	0.822	0.857
50–59 years	683	0.705	0.082	0.580	0.601	0.620	0.645	0.700	0.753	0.788	0.808	0.845
60–69 years	623	0.706	0.086	0.576	0.603	0.621	0.649	0.695	0.759	0.793	0.821	0.851
70–79 years	496	0.679	0.086	0.546	0.572	0.589	0.617	0.671	0.737	0.766	0.784	0.831
80 years and over	398	0.661	0.084	0.534	0.557	0.574	0.596	0.654	0.719	0.751	0.782	0.804
20 years and over (age-adjusted)	4,164	0.717	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.546	0.059	0.448	0.471	0.484	0.503	0.544	0.584	0.611	0.622	0.642
12–15 years	745	0.652	0.089	0.515	0.539	0.560	0.589	0.645	0.708	0.743	0.773	0.803
16–19 years	757	0.778	0.088	0.640	0.671	0.692	0.718	0.770	0.830	0.868	0.894	0.937
20–29 years	325	0.809	0.096	0.658	0.687	0.708	0.746	0.812	0.864	0.895	0.929	0.968
30–39 years	310	0.785	0.095	0.627	0.661	0.686	0.720	0.780	0.852	0.875	0.917	0.950
40–49 years	366	0.755	0.094	0.613	0.635	0.665	0.690	0.746	0.811	0.847	0.873	0.918
50–59 years	240	0.757	0.090	0.618	0.648	0.668	0.697	0.755	0.809	0.842	0.884	0.913
60–69 years	303	0.753	0.094	0.603	0.636	0.657	0.690	0.753	0.813	0.848	0.872	0.904
70–79 years	114	0.711	0.094	0.561	0.592	0.616	0.651	0.697	0.765	0.808	0.831	0.870
80 years and over	36	*0.714	0.107	†	*0.601	*0.604	*0.626	*0.695	*0.763	*0.828	*0.854	†
20 years and over (age-adjusted)	1,694	0.766	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 33. Right ribs bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.515	0.058	0.422	0.441	0.455	0.474	0.511	0.552	0.574	0.589	0.614
12–15 years	2,318	0.619	0.069	0.511	0.534	0.550	0.573	0.614	0.662	0.689	0.710	0.739
16–19 years	2,027	0.666	0.069	0.563	0.584	0.595	0.615	0.662	0.708	0.737	0.756	0.793
20–29 years	1,378	0.665	0.071	0.558	0.579	0.592	0.614	0.660	0.706	0.733	0.757	0.795
30–39 years	1,372	0.664	0.074	0.554	0.574	0.588	0.613	0.655	0.710	0.737	0.759	0.793
40–49 years	1,570	0.653	0.074	0.543	0.564	0.577	0.600	0.644	0.699	0.730	0.752	0.782
50–59 years	1,200	0.631	0.076	0.514	0.534	0.553	0.578	0.624	0.677	0.707	0.731	0.763
60–69 years	1,419	0.606	0.077	0.495	0.513	0.530	0.553	0.599	0.651	0.684	0.707	0.739
70–79 years	750	0.579	0.070	0.468	0.494	0.510	0.533	0.574	0.617	0.650	0.674	0.707
80 years and over	594	0.549	0.071	0.440	0.463	0.481	0.500	0.542	0.591	0.619	0.637	0.670
20 years and over (age-adjusted)	8,283	0.638	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.512	0.063	0.415	0.433	0.446	0.469	0.504	0.550	0.580	0.600	0.626
12–15 years	821	0.616	0.067	0.504	0.531	0.545	0.571	0.617	0.656	0.682	0.699	0.727
16–19 years	692	0.655	0.066	0.557	0.575	0.589	0.609	0.652	0.693	0.718	0.739	0.776
20–29 years	364	0.661	0.066	0.555	0.578	0.592	0.615	0.657	0.701	0.723	0.743	0.772
30–39 years	298	0.661	0.069	0.562	0.579	0.591	0.610	0.655	0.702	0.730	0.745	0.776
40–49 years	372	0.657	0.070	0.549	0.570	0.583	0.603	0.655	0.702	0.729	0.746	0.780
50–59 years	194	0.629	0.076	0.518	0.535	0.550	0.567	0.621	0.678	0.707	0.731	0.753
60–69 years	375	0.592	0.075	0.481	0.503	0.515	0.538	0.582	0.640	0.677	0.692	0.724
70–79 years	154	*0.568	0.069	*0.452	*0.480	*0.496	*0.516	*0.566	*0.613	*0.637	*0.650	*0.675
80 years and over	47	*0.543	0.079	*0.422	*0.438	*0.448	*0.485	*0.540	*0.593	*0.619	*0.635	†
20 years and over (age-adjusted)	1,804	0.635	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.510	0.055	0.421	0.436	0.452	0.470	0.508	0.545	0.565	0.577	0.598
12–15 years	576	0.614	0.068	0.506	0.530	0.544	0.565	0.611	0.658	0.684	0.701	0.733
16–19 years	543	0.662	0.064	0.564	0.586	0.595	0.614	0.657	0.701	0.726	0.745	0.775
20–29 years	583	0.658	0.065	0.556	0.576	0.588	0.611	0.656	0.699	0.722	0.741	0.772
30–39 years	612	0.656	0.072	0.548	0.566	0.582	0.606	0.650	0.702	0.731	0.745	0.777
40–49 years	668	0.646	0.071	0.538	0.558	0.573	0.598	0.640	0.690	0.721	0.742	0.771
50–59 years	639	0.627	0.072	0.515	0.534	0.553	0.578	0.622	0.671	0.697	0.720	0.750
60–69 years	644	0.606	0.075	0.497	0.516	0.531	0.554	0.599	0.650	0.683	0.705	0.733
70–79 years	429	0.579	0.070	0.465	0.494	0.511	0.533	0.572	0.615	0.650	0.674	0.707
80 years and over	457	0.548	0.069	0.441	0.468	0.482	0.500	0.542	0.588	0.614	0.631	0.663
20 years and over (age-adjusted)	4,032	0.633	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.536	0.062	0.442	0.459	0.474	0.494	0.532	0.576	0.602	0.617	0.634
12–15 years	737	0.652	0.073	0.536	0.558	0.575	0.597	0.648	0.704	0.731	0.750	0.774
16–19 years	609	0.705	0.076	0.583	0.604	0.627	0.652	0.699	0.750	0.784	0.807	0.833
20–29 years	297	0.710	0.082	0.586	0.606	0.626	0.653	0.706	0.758	0.792	0.817	0.847
30–39 years	333	0.707	0.080	0.588	0.610	0.625	0.649	0.698	0.748	0.788	0.812	0.840
40–49 years	398	0.698	0.078	0.584	0.601	0.615	0.640	0.688	0.753	0.781	0.799	0.834
50–59 years	250	0.672	0.082	0.553	0.569	0.583	0.606	0.675	0.726	0.758	0.775	0.808
60–69 years	306	0.643	0.080	0.523	0.549	0.562	0.588	0.633	0.690	0.725	0.753	0.783
70–79 years	124	0.610	0.072	0.491	0.510	0.526	0.559	0.604	0.656	0.686	0.707	0.732
80 years and over	58	*0.590	0.075	*0.457	*0.485	*0.506	*0.528	*0.589	*0.650	*0.665	*0.680	*0.692
20 years and over (age-adjusted)	1,766	0.680	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 34. Left ribs bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile										
				5th	10th	15th	25th	50th	75th	85th	90th	95th		
Male														
All races and ethnicities														
8–11 years	1,421	88.13	16.10	66.07	69.50	72.36	76.48	85.96	97.65	104.40	109.66	119.45		
12–15 years	2,264	111.39	21.99	78.20	84.21	88.96	95.46	110.14	124.11	132.73	139.07	149.34		
16–19 years	2,309	130.72	20.01	101.12	106.71	111.14	117.83	128.65	140.85	149.12	155.93	167.81		
20–29 years	1,530	135.17	22.43	102.80	109.91	113.63	120.08	132.36	147.00	155.78	163.19	176.50		
30–39 years	1,450	134.07	21.91	102.76	108.05	112.66	119.10	131.34	146.38	155.60	162.63	173.04		
40–49 years	1,549	132.15	21.39	100.52	106.27	111.02	117.01	129.80	145.28	153.65	158.91	168.80		
50–59 years	1,187	129.69	21.35	97.57	103.41	108.24	115.01	127.86	142.44	150.43	157.39	167.71		
60–69 years	1,350	128.38	20.89	96.17	103.39	107.39	113.73	126.61	142.16	149.93	155.35	163.88		
70–79 years	825	124.03	21.88	91.18	96.87	101.47	108.93	122.63	137.71	147.09	152.69	161.27		
80 years and over	501	116.99	19.21	87.94	93.15	97.52	102.67	116.83	130.17	136.62	141.43	148.92		
20 years and over (age-adjusted) . . .	8,392	130.97	...	...	...	...	...	...	...	...	...	...
Mexican American														
8–11 years	468	90.63	18.32	64.67	69.60	73.26	76.82	88.22	101.02	109.81	117.26	126.58		
12–15 years	777	112.44	21.80	79.44	84.88	89.20	97.24	111.39	124.84	134.61	141.00	152.93		
16–19 years	783	126.86	20.48	98.96	102.93	106.99	113.64	124.65	137.10	146.29	152.43	163.31		
20–29 years	444	129.82	20.30	99.96	105.98	109.86	116.06	127.04	141.97	150.21	155.48	163.58		
30–39 years	337	132.87	20.71	101.62	107.00	110.77	119.05	130.92	147.02	154.05	159.49	169.59		
40–49 years	381	129.26	20.30	96.61	105.34	109.77	115.81	128.22	140.75	148.79	153.48	163.31		
50–59 years	174	126.26	19.47	98.51	104.34	108.36	112.62	122.18	137.61	144.24	151.71	159.00		
60–69 years	348	127.27	19.96	97.28	102.97	106.07	112.89	125.23	140.74	147.71	153.83	161.60		
70–79 years	164	*119.46	18.29	*89.17	*95.26	*100.81	*103.75	*120.03	*132.12	*140.08	*143.30	*149.28		
80 years and over	48	*119.65	21.03	*84.06	*88.07	*94.92	*106.82	*118.19	*132.96	*138.70	*144.57	*156.18		
20 years and over (age-adjusted) . . .	1,896	128.20	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white														
8–11 years	369	87.16	15.31	65.61	69.03	71.47	76.20	85.15	96.58	103.04	108.26	113.50		
12–15 years	578	111.32	21.81	77.99	83.69	89.32	95.52	110.59	123.74	131.47	137.69	148.64		
16–19 years	591	130.95	19.36	102.25	107.26	111.92	118.93	128.97	140.74	148.54	155.42	169.54		
20–29 years	617	135.74	22.07	103.93	111.16	115.03	120.67	132.98	146.88	155.94	163.74	176.82		
30–39 years	647	134.06	21.88	103.10	108.32	113.18	118.96	131.06	146.02	156.11	162.78	173.20		
40–49 years	700	132.88	21.64	100.84	106.41	111.61	117.47	130.89	146.02	154.58	159.70	169.47		
50–59 years	683	130.06	21.42	97.58	103.84	108.71	115.25	128.01	142.92	151.07	157.82	167.71		
60–69 years	623	129.44	20.79	97.29	104.54	108.18	114.72	127.58	143.08	151.34	156.36	164.73		
70–79 years	496	124.57	22.20	91.03	96.06	101.14	109.22	123.34	138.92	148.44	152.94	161.62		
80 years and over	398	116.68	18.96	87.44	92.93	97.40	102.55	116.72	129.93	136.23	140.26	147.18		
20 years and over (age-adjusted) . . .	4,164	131.42	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black														
8–11 years	469	89.02	16.34	66.50	70.31	73.43	78.16	86.29	97.85	106.18	111.49	119.81		
12–15 years	745	113.90	21.76	81.12	87.82	91.94	99.19	112.05	126.68	135.46	141.19	150.93		
16–19 years	757	132.74	21.17	103.33	109.90	113.45	118.73	129.92	143.35	151.39	158.15	170.63		
20–29 years	325	137.31	21.93	106.45	112.42	115.77	123.16	135.96	148.07	155.53	160.27	175.33		
30–39 years	310	138.55	23.40	106.33	112.76	117.11	121.94	135.20	149.99	160.16	168.21	180.39		
40–49 years	366	133.15	20.88	103.66	109.50	113.02	118.42	129.93	146.75	153.68	158.32	169.64		
50–59 years	240	131.51	21.13	98.08	106.16	111.96	116.56	130.78	142.78	152.66	157.75	167.14		
60–69 years	303	129.27	20.74	98.39	105.19	108.22	115.79	127.54	141.70	147.19	152.87	164.63		
70–79 years	114	123.14	20.36	94.34	98.51	102.72	107.91	121.23	134.54	141.11	150.00	158.23		
80 years and over	36	*117.20	20.07	†	*93.56	*96.99	*100.68	*112.29	*128.36	*135.66	*142.74	†		
20 years and over (age-adjusted) . . .	1,694	132.84	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 34. Left ribs bone area (cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	88.44	16.80	63.36	68.10	71.10	76.45	87.25	99.52	105.40	110.27	117.15
12–15 years	2,318	113.12	17.63	86.70	91.34	95.75	101.94	112.46	123.62	130.50	134.99	144.18
16–19 years	2,027	119.19	17.72	94.15	98.66	101.93	106.85	117.16	129.43	137.24	141.44	151.59
20–29 years	1,378	121.38	19.26	94.56	99.28	103.15	108.66	119.01	131.71	140.38	145.40	155.19
30–39 years	1,372	120.90	20.06	92.26	97.03	101.15	106.96	117.90	132.56	142.01	147.69	156.97
40–49 years	1,570	118.02	19.17	90.50	94.45	99.19	104.66	116.04	128.91	137.11	143.40	152.07
50–59 years	1,200	116.21	18.89	87.36	93.21	97.46	103.86	114.32	127.66	134.80	140.08	149.73
60–69 years	1,419	111.74	18.62	82.78	88.57	92.78	98.62	110.83	123.97	129.96	135.18	143.09
70–79 years	750	105.25	18.03	77.26	83.38	87.86	92.94	104.63	115.99	122.72	128.83	137.14
80 years and over	594	98.60	16.95	71.46	76.43	80.49	87.81	97.87	109.51	115.50	120.23	128.65
20 years and over (age-adjusted) . . .	8,283	116.36	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	90.23	17.93	64.36	68.87	72.07	77.41	88.23	101.24	108.18	113.71	122.99
12–15 years	821	113.95	17.86	87.19	92.69	96.29	101.59	112.26	125.85	133.16	135.54	143.84
16–19 years	692	119.00	17.85	93.18	98.47	102.11	107.04	116.91	127.72	135.83	141.24	153.16
20–29 years	364	123.82	17.16	97.13	101.52	105.80	111.98	122.60	133.55	141.28	146.02	154.14
30–39 years	298	121.20	18.47	92.91	98.71	102.79	108.71	120.39	131.88	138.88	142.69	149.55
40–49 years	372	120.61	17.53	93.31	97.40	101.97	107.98	119.15	130.84	138.62	144.76	152.39
50–59 years	194	116.22	16.34	91.68	95.74	98.95	104.12	114.81	126.69	131.10	136.18	141.93
60–69 years	375	108.68	17.14	82.27	88.14	91.32	95.47	107.94	119.88	125.89	129.64	137.06
70–79 years	154	*106.13	17.21	*77.00	*83.25	*87.91	*93.62	*104.88	*119.22	*123.11	*128.83	*133.54
80 years and over	47	*97.59	13.99	*71.74	*78.73	*85.56	*88.90	*96.57	*106.59	*111.23	*112.49	†
20 years and over (age-adjusted) . . .	1,804	117.15	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	87.36	16.27	63.12	68.38	70.89	75.39	85.92	97.42	103.92	107.71	114.09
12–15 years	576	112.58	17.54	85.81	90.22	94.83	101.91	112.73	122.79	129.43	133.27	141.46
16–19 years	543	118.42	16.41	93.80	98.97	102.28	107.11	117.24	128.01	135.21	139.36	147.73
20–29 years	583	121.04	19.29	94.20	99.96	103.39	108.47	118.59	131.35	140.03	144.63	153.70
30–39 years	612	119.57	19.65	90.81	96.28	99.96	106.29	116.23	131.61	140.37	147.04	155.80
40–49 years	668	116.96	19.09	89.85	93.63	98.30	103.32	114.74	127.65	135.54	142.55	151.60
50–59 years	639	115.86	18.45	87.52	93.58	97.62	104.04	113.77	126.89	133.73	138.64	148.97
60–69 years	644	111.39	18.51	82.09	87.70	92.73	98.35	110.91	123.89	129.32	134.25	141.78
70–79 years	429	105.23	17.82	76.43	83.64	87.64	93.23	104.99	115.93	122.26	128.44	136.49
80 years and over	457	98.41	17.00	71.44	76.35	80.25	87.14	97.73	109.52	115.17	120.09	128.83
20 years and over (age-adjusted) . . .	4,032	115.69	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	91.02	17.91	64.53	69.00	72.83	78.57	89.11	101.88	109.60	115.65	122.77
12–15 years	737	115.01	17.77	89.50	94.17	97.71	102.90	112.52	125.74	132.91	139.65	147.88
16–19 years	609	122.92	21.88	92.80	99.41	102.37	107.55	119.56	133.78	144.06	150.79	164.19
20–29 years	297	124.62	21.00	95.34	99.99	105.11	111.37	121.70	136.08	144.47	152.23	160.20
30–39 years	333	127.70	21.84	96.98	102.28	105.74	112.33	125.16	140.69	149.38	154.84	166.20
40–49 years	398	123.32	20.33	94.17	99.63	103.98	109.55	121.70	134.76	141.87	147.13	157.08
50–59 years	250	122.41	19.55	94.13	98.02	102.43	108.75	121.18	134.93	141.51	146.97	157.34
60–69 years	306	118.86	19.46	90.63	96.19	99.81	104.65	117.15	131.99	139.79	145.13	154.62
70–79 years	124	112.04	20.38	84.99	89.25	92.17	95.87	109.50	123.54	133.54	139.40	146.65
80 years and over	58	*102.51	17.43	*71.01	*79.35	*82.92	*93.05	*101.86	*113.67	*118.67	*123.71	*129.25
20 years and over (age-adjusted) . . .	1,766	121.99	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: cm² is centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 35. Left ribs bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	46.84	11.67	31.08	33.58	35.15	38.24	45.07	53.13	59.58	62.67	68.42
12–15 years	2,264	71.54	20.51	41.74	45.86	49.97	56.34	70.30	84.39	92.90	98.23	107.80
16–19 years	2,309	98.39	20.16	68.42	74.60	78.14	84.52	96.49	110.86	118.60	124.35	134.31
20–29 years	1,530	102.03	21.96	71.29	77.66	81.28	86.44	100.18	113.05	121.77	129.32	140.63
30–39 years	1,450	98.80	21.84	67.84	74.57	78.47	84.28	96.19	110.67	118.53	125.41	136.36
40–49 years	1,549	96.14	19.72	65.98	72.40	77.25	82.68	94.25	108.39	115.91	121.00	129.43
50–59 years	1,187	92.29	19.44	64.56	69.12	71.89	78.59	90.39	104.58	112.38	117.78	126.40
60–69 years	1,350	90.34	19.46	60.91	66.87	70.94	76.44	89.11	102.42	109.52	115.54	123.53
70–79 years	825	83.64	19.36	54.97	59.71	63.82	70.07	81.08	96.43	103.75	108.94	117.13
80 years and over	501	76.74	18.10	50.90	54.17	57.70	63.38	75.45	87.76	96.18	101.33	108.62
20 years and over (age-adjusted)	8,392	94.66	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	48.23	13.02	30.38	33.68	35.51	38.87	45.66	55.98	62.05	67.74	73.82
12–15 years	777	71.93	19.80	42.07	47.16	50.48	57.55	70.23	83.50	92.06	97.04	106.45
16–19 years	783	93.16	19.27	65.62	71.56	75.45	80.53	90.60	103.48	111.84	118.14	126.87
20–29 years	444	95.09	17.56	69.16	74.17	78.21	82.13	93.68	105.85	111.03	115.64	123.49
30–39 years	337	94.94	18.48	67.52	74.68	78.03	83.37	92.48	105.74	112.20	118.24	126.51
40–49 years	381	91.07	17.39	63.58	70.66	74.53	79.93	89.22	101.57	108.65	112.62	120.04
50–59 years	174	88.15	17.23	64.03	67.39	69.73	75.74	87.27	96.83	102.49	108.03	118.29
60–69 years	348	87.66	17.39	62.89	67.28	69.92	75.15	86.25	98.93	105.42	109.26	116.76
70–79 years	164	*79.74	16.42	*52.77	*57.95	*62.61	*68.30	*78.45	*92.07	*97.49	*100.96	*105.12
80 years and over	48	*75.07	17.85	*44.31	*49.50	*53.93	*64.19	*73.12	*86.07	*96.28	*99.13	†
20 years and over (age-adjusted)	1,896	90.15	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	46.05	11.02	30.38	33.57	34.94	37.67	44.64	52.10	58.29	61.33	65.71
12–15 years	578	71.51	20.55	41.63	45.07	49.67	56.38	70.68	84.06	92.85	98.59	107.60
16–19 years	591	98.72	19.27	68.70	75.52	79.36	85.47	96.99	111.56	118.52	122.56	133.13
20–29 years	617	101.84	20.99	72.28	78.41	81.77	86.68	100.20	112.33	120.68	128.14	138.42
30–39 years	647	98.75	21.40	68.20	75.32	79.04	84.30	96.15	110.12	117.49	124.83	135.72
40–49 years	700	96.55	19.57	66.07	72.91	77.52	83.24	94.69	108.45	116.21	121.07	129.41
50–59 years	683	92.28	18.86	64.83	69.50	72.87	78.76	90.67	104.59	111.54	117.07	125.00
60–69 years	623	90.75	19.04	63.19	67.60	71.35	77.47	89.45	102.26	109.62	115.58	123.40
70–79 years	496	83.98	19.56	55.47	60.19	64.23	70.13	81.17	96.58	103.92	109.81	118.06
80 years and over	398	76.16	17.64	50.77	53.96	57.47	63.22	74.58	87.19	95.21	100.58	107.24
20 years and over (age-adjusted)	4,164	94.74	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	48.95	12.63	32.14	34.70	36.46	40.23	46.81	56.53	61.79	65.66	71.78
12–15 years	745	75.03	21.15	44.80	50.07	53.70	60.03	72.22	88.24	96.24	101.28	112.13
16–19 years	757	103.37	22.08	73.82	78.41	82.64	88.24	100.57	116.05	124.66	130.21	142.28
20–29 years	325	111.98	25.28	76.93	84.83	88.53	94.16	109.92	124.83	132.95	143.50	155.50
30–39 years	310	109.91	25.12	75.67	80.90	85.54	92.52	106.51	121.20	130.34	139.41	159.68
40–49 years	366	101.69	21.36	71.10	76.56	80.26	86.54	99.02	114.44	122.31	127.28	137.76
50–59 years	240	99.77	22.08	68.26	73.49	78.52	83.77	97.01	112.76	121.88	128.73	137.02
60–69 years	303	97.12	20.34	65.93	72.78	76.06	83.04	95.77	108.39	116.87	123.04	131.70
70–79 years	114	86.70	18.41	56.42	63.77	68.58	73.60	84.57	101.18	106.79	109.09	114.62
80 years and over	36	*83.52	18.92	†	*59.15	*60.82	*67.43	*80.84	*95.07	*104.49	†	†
20 years and over (age-adjusted)	1,694	102.48	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 35. Left ribs bone mineral content (g) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	45.96	12.70	28.79	31.28	33.10	36.71	44.48	53.40	58.16	62.94	68.94
12–15 years	2,318	70.52	15.85	46.15	51.37	55.10	59.88	69.63	80.24	85.95	90.38	98.33
16–19 years	2,027	79.74	16.56	56.14	60.78	64.21	68.27	77.64	89.13	95.82	100.07	108.36
20–29 years	1,378	80.79	17.01	58.04	61.29	64.39	69.12	79.03	90.37	96.86	101.23	108.98
30–39 years	1,372	80.29	17.92	56.38	60.12	63.08	67.79	78.03	89.54	97.25	103.46	114.13
40–49 years	1,570	77.40	17.41	53.10	57.37	60.75	65.56	75.64	86.55	93.22	100.12	108.85
50–59 years	1,200	73.31	16.56	50.10	54.11	57.61	62.25	71.34	82.50	89.07	94.24	102.20
60–69 years	1,419	67.07	15.69	44.89	48.97	51.91	55.99	65.59	75.46	82.03	87.09	95.20
70–79 years	750	60.21	14.06	39.71	43.58	46.43	50.47	59.14	68.24	74.41	78.30	83.62
80 years and over	594	53.32	12.75	33.71	37.58	39.97	44.71	52.58	60.21	66.10	70.71	76.29
20 years and over (age-adjusted)	8,283	74.40	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	46.60	13.68	28.93	31.11	33.41	36.75	44.07	54.07	60.67	65.01	72.96
12–15 years	821	70.57	15.34	46.79	51.92	54.56	60.58	69.41	80.34	86.86	89.60	95.97
16–19 years	692	77.47	15.21	56.15	59.81	63.05	66.76	76.20	85.78	90.30	94.53	105.27
20–29 years	364	80.95	14.89	59.58	62.92	65.90	69.65	79.17	91.02	96.83	99.74	105.62
30–39 years	298	79.15	15.67	56.19	59.76	63.15	68.81	78.03	88.55	93.41	98.66	103.51
40–49 years	372	78.29	14.98	56.28	60.50	63.19	68.42	76.08	87.06	92.91	97.08	104.68
50–59 years	194	72.52	14.00	51.46	56.51	58.34	62.58	71.18	80.25	85.18	88.62	95.69
60–69 years	375	63.35	13.81	43.16	46.19	49.55	53.82	61.54	71.63	77.37	81.39	87.44
70–79 years	154	*59.55	14.35	*37.88	*39.62	*44.10	*49.36	*59.41	*67.57	*73.96	*78.19	*86.13
80 years and over	47	*52.15	10.24	*33.87	*38.74	*40.25	*44.10	*53.25	*58.18	*62.05	*64.69	†
20 years and over (age-adjusted)	1,804	73.76	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	45.06	12.02	28.39	30.85	32.64	36.32	43.97	52.20	57.26	60.89	66.82
12–15 years	576	69.43	15.45	45.00	50.94	54.45	58.69	68.94	79.58	84.66	88.80	95.72
16–19 years	543	78.84	14.94	56.05	60.55	64.74	68.12	77.59	88.60	94.09	97.28	104.74
20–29 years	583	79.73	15.93	57.86	61.44	64.37	68.87	78.37	88.91	95.39	98.93	105.13
30–39 years	612	78.55	16.58	55.92	59.51	62.08	66.94	76.65	87.23	94.71	99.84	109.34
40–49 years	668	76.17	16.64	52.57	57.07	60.35	65.12	74.61	84.73	91.78	97.97	106.29
50–59 years	639	72.62	15.70	50.98	54.31	57.95	62.12	70.87	81.06	86.40	91.36	99.48
60–69 years	644	66.65	15.18	44.78	49.02	52.10	56.08	65.50	74.80	81.11	85.06	93.69
70–79 years	429	60.07	13.48	39.75	43.67	46.49	50.84	59.47	68.03	73.73	77.39	82.15
80 years and over	457	53.11	12.55	33.75	37.68	39.97	44.54	52.11	59.80	65.43	70.15	76.27
20 years and over (age-adjusted)	4,032	73.40	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	49.04	14.23	30.42	33.42	35.28	39.17	47.03	56.33	63.23	68.44	74.89
12–15 years	737	75.90	17.45	51.12	55.16	58.74	63.10	73.62	86.59	94.55	99.83	108.27
16–19 years	609	87.23	21.91	59.44	63.58	66.56	71.43	83.46	99.15	107.77	113.60	127.75
20–29 years	297	89.04	21.02	60.27	65.75	68.75	75.84	86.08	100.04	106.96	114.20	125.53
30–39 years	333	90.88	21.94	62.78	66.51	68.95	74.20	87.82	104.31	112.13	119.81	128.56
40–49 years	398	86.84	20.40	57.43	63.37	66.11	72.99	85.27	98.00	104.60	111.06	120.91
50–59 years	250	82.55	19.27	55.02	61.06	64.36	68.27	80.82	94.99	100.30	105.06	117.28
60–69 years	306	77.16	17.66	51.58	55.01	58.59	64.83	75.10	87.76	96.08	101.41	108.09
70–79 years	124	68.58	17.51	45.36	48.91	51.55	55.18	65.56	78.70	86.28	91.37	†
80 years and over	58	*59.79	14.71	*35.97	*39.28	*42.65	*50.15	*58.03	*70.17	*73.43	*76.02	*83.28
20 years and over (age-adjusted)	1,766	83.67	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g is grams.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Table 36. Left ribs bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
All races and ethnicities												
8–11 years	1,421	0.527	0.054	0.439	0.459	0.470	0.488	0.524	0.560	0.586	0.600	0.621
12–15 years	2,264	0.634	0.089	0.499	0.523	0.539	0.569	0.624	0.692	0.725	0.756	0.795
16–19 years	2,309	0.750	0.088	0.621	0.643	0.659	0.689	0.741	0.802	0.838	0.865	0.904
20–29 years	1,530	0.753	0.086	0.618	0.645	0.665	0.694	0.747	0.807	0.834	0.859	0.899
30–39 years	1,450	0.734	0.088	0.603	0.628	0.648	0.671	0.726	0.788	0.822	0.845	0.888
40–49 years	1,549	0.726	0.083	0.592	0.618	0.639	0.667	0.722	0.778	0.812	0.836	0.865
50–59 years	1,187	0.710	0.085	0.577	0.605	0.623	0.650	0.704	0.763	0.795	0.817	0.852
60–69 years	1,350	0.702	0.089	0.558	0.595	0.612	0.646	0.693	0.756	0.796	0.824	0.856
70–79 years	825	0.672	0.086	0.539	0.563	0.583	0.607	0.666	0.729	0.758	0.782	0.814
80 years and over	501	0.652	0.088	0.519	0.549	0.565	0.591	0.646	0.702	0.743	0.761	0.790
20 years and over (age-adjusted)	8,392	0.720	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	468	0.527	0.055	0.444	0.459	0.470	0.485	0.521	0.565	0.589	0.599	0.623
12–15 years	777	0.633	0.090	0.502	0.526	0.540	0.566	0.628	0.684	0.719	0.750	0.797
16–19 years	783	0.732	0.081	0.609	0.634	0.651	0.679	0.725	0.779	0.809	0.832	0.878
20–29 years	444	0.732	0.071	0.610	0.638	0.657	0.684	0.729	0.777	0.804	0.824	0.845
30–39 years	337	0.713	0.076	0.600	0.622	0.638	0.657	0.708	0.765	0.792	0.815	0.833
40–49 years	381	0.704	0.078	0.583	0.615	0.624	0.645	0.699	0.754	0.787	0.811	0.840
50–59 years	174	0.698	0.087	0.558	0.583	0.600	0.630	0.704	0.754	0.781	0.801	0.849
60–69 years	348	0.689	0.083	0.571	0.581	0.600	0.633	0.684	0.733	0.760	0.791	0.840
70–79 years	164	*0.665	0.073	*0.545	*0.557	*0.579	*0.611	*0.663	*0.723	*0.748	*0.762	*0.774
80 years and over	48	*0.624	0.079	†	*0.530	*0.536	*0.565	*0.621	*0.668	*0.699	*0.732	†
20 years and over (age-adjusted)	1,896	0.702	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	369	0.524	0.053	0.438	0.456	0.467	0.485	0.524	0.557	0.578	0.597	0.615
12–15 years	578	0.634	0.091	0.497	0.519	0.536	0.567	0.623	0.694	0.727	0.758	0.798
16–19 years	591	0.752	0.088	0.625	0.645	0.662	0.690	0.741	0.802	0.841	0.867	0.902
20–29 years	617	0.748	0.080	0.618	0.644	0.663	0.692	0.745	0.802	0.825	0.849	0.882
30–39 years	647	0.734	0.085	0.605	0.631	0.649	0.676	0.727	0.787	0.819	0.840	0.882
40–49 years	700	0.725	0.080	0.592	0.620	0.640	0.669	0.723	0.776	0.809	0.834	0.860
50–59 years	683	0.709	0.082	0.579	0.610	0.624	0.651	0.703	0.759	0.789	0.809	0.847
60–69 years	623	0.700	0.087	0.563	0.598	0.615	0.646	0.689	0.754	0.791	0.819	0.850
70–79 years	496	0.671	0.086	0.538	0.564	0.583	0.607	0.663	0.730	0.759	0.781	0.813
80 years and over	398	0.649	0.082	0.518	0.550	0.564	0.591	0.645	0.698	0.737	0.757	0.779
20 years and over (age-adjusted)	4,164	0.718	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	469	0.544	0.058	0.448	0.471	0.483	0.503	0.540	0.582	0.606	0.616	0.637
12–15 years	745	0.650	0.087	0.522	0.543	0.561	0.589	0.645	0.702	0.745	0.765	0.805
16–19 years	757	0.775	0.086	0.635	0.665	0.692	0.719	0.769	0.829	0.866	0.891	0.919
20–29 years	325	0.811	0.097	0.665	0.694	0.713	0.743	0.807	0.863	0.902	0.935	0.977
30–39 years	310	0.790	0.097	0.647	0.670	0.693	0.724	0.784	0.845	0.883	0.913	0.977
40–49 years	366	0.762	0.095	0.617	0.645	0.671	0.700	0.755	0.811	0.847	0.885	0.948
50–59 years	240	0.755	0.089	0.620	0.648	0.663	0.689	0.749	0.812	0.848	0.871	0.923
60–69 years	303	0.749	0.089	0.605	0.640	0.659	0.687	0.742	0.813	0.841	0.861	0.891
70–79 years	114	0.702	0.089	0.554	0.588	0.606	0.641	0.704	0.750	0.794	0.813	0.846
80 years and over	36	*0.713	0.114	†	*0.587	*0.602	*0.632	*0.682	*0.776	*0.804	*0.818	†
20 years and over (age-adjusted)	1,694	0.767	...	...	...	...	...	...	...	...	...	...

See footnotes at end of table.

Table 36. Left ribs bone mineral density (g/cm²) of persons aged 8 years and over, by sex, race and ethnicity, and age: United States, 1999–2006—Con.

Sex, race and ethnicity, and age	Sample size	Mean	Standard deviation	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Female												
All races and ethnicities												
8–11 years	1,465	0.513	0.059	0.420	0.441	0.455	0.471	0.509	0.549	0.572	0.585	0.610
12–15 years	2,318	0.619	0.070	0.508	0.529	0.546	0.568	0.617	0.662	0.690	0.710	0.738
16–19 years	2,027	0.665	0.069	0.559	0.581	0.596	0.617	0.658	0.710	0.736	0.758	0.789
20–29 years	1,378	0.663	0.069	0.557	0.578	0.590	0.613	0.661	0.703	0.733	0.753	0.779
30–39 years	1,372	0.661	0.070	0.554	0.573	0.588	0.609	0.655	0.705	0.731	0.752	0.778
40–49 years	1,570	0.652	0.075	0.539	0.563	0.578	0.601	0.647	0.698	0.730	0.748	0.779
50–59 years	1,200	0.628	0.075	0.511	0.534	0.550	0.576	0.625	0.671	0.699	0.721	0.757
60–69 years	1,419	0.597	0.073	0.490	0.508	0.523	0.545	0.590	0.641	0.673	0.694	0.728
70–79 years	750	0.569	0.068	0.464	0.486	0.500	0.521	0.562	0.611	0.642	0.659	0.695
80 years and over	594	0.537	0.066	0.432	0.454	0.465	0.491	0.535	0.580	0.608	0.622	0.649
20 years and over (age-adjusted)	8,283	0.634	...	...	...	...	...	...	...	...	...	...
Mexican American												
8–11 years	471	0.509	0.062	0.416	0.435	0.445	0.463	0.503	0.546	0.578	0.591	0.623
12–15 years	821	0.615	0.067	0.505	0.530	0.548	0.570	0.616	0.657	0.678	0.700	0.735
16–19 years	692	0.649	0.064	0.552	0.570	0.583	0.603	0.643	0.690	0.713	0.732	0.753
20–29 years	364	0.652	0.063	0.561	0.577	0.585	0.605	0.648	0.691	0.716	0.736	0.763
30–39 years	298	0.651	0.067	0.551	0.570	0.583	0.605	0.647	0.692	0.721	0.735	0.759
40–49 years	372	0.647	0.065	0.542	0.564	0.578	0.602	0.644	0.687	0.708	0.729	0.762
50–59 years	194	0.623	0.074	0.515	0.534	0.556	0.576	0.617	0.662	0.689	0.707	0.731
60–69 years	375	0.580	0.071	0.467	0.491	0.508	0.528	0.579	0.626	0.651	0.670	0.705
70–79 years	154	*0.556	0.069	*0.442	*0.469	*0.484	*0.508	*0.554	*0.596	*0.621	*0.640	*0.666
80 years and over	47	*0.532	0.061	*0.437	*0.451	*0.463	*0.485	*0.526	*0.573	*0.595	*0.618	†
20 years and over (age-adjusted)	1,804	0.625	...	...	...	...	...	...	...	...	...	...
Non-Hispanic white												
8–11 years	383	0.510	0.056	0.418	0.438	0.451	0.468	0.507	0.545	0.564	0.580	0.601
12–15 years	576	0.612	0.068	0.503	0.522	0.539	0.562	0.609	0.655	0.684	0.703	0.729
16–19 years	543	0.663	0.065	0.562	0.583	0.597	0.618	0.656	0.708	0.730	0.746	0.779
20–29 years	583	0.657	0.065	0.556	0.575	0.587	0.612	0.656	0.695	0.720	0.741	0.769
30–39 years	612	0.654	0.066	0.551	0.570	0.585	0.606	0.651	0.701	0.722	0.736	0.768
40–49 years	668	0.648	0.072	0.536	0.562	0.577	0.599	0.643	0.692	0.723	0.741	0.773
50–59 years	639	0.624	0.070	0.516	0.537	0.551	0.577	0.622	0.666	0.693	0.710	0.742
60–69 years	644	0.595	0.070	0.493	0.510	0.524	0.546	0.589	0.638	0.668	0.691	0.720
70–79 years	429	0.568	0.066	0.465	0.486	0.502	0.521	0.562	0.607	0.641	0.658	0.693
80 years and over	457	0.536	0.064	0.436	0.455	0.466	0.490	0.534	0.576	0.606	0.620	0.648
20 years and over (age-adjusted)	4,032	0.630	...	...	...	...	...	...	...	...	...	...
Non-Hispanic black												
8–11 years	490	0.531	0.062	0.433	0.457	0.469	0.487	0.526	0.569	0.592	0.608	0.635
12–15 years	737	0.654	0.074	0.537	0.559	0.579	0.603	0.650	0.704	0.735	0.750	0.773
16–19 years	609	0.703	0.077	0.584	0.605	0.620	0.649	0.699	0.753	0.782	0.806	0.840
20–29 years	297	0.709	0.075	0.586	0.612	0.633	0.656	0.706	0.759	0.780	0.799	0.834
30–39 years	333	0.706	0.078	0.592	0.607	0.622	0.649	0.700	0.753	0.787	0.812	0.846
40–49 years	398	0.699	0.079	0.581	0.596	0.611	0.640	0.695	0.746	0.774	0.795	0.838
50–59 years	250	0.669	0.083	0.525	0.559	0.583	0.618	0.668	0.721	0.753	0.772	0.806
60–69 years	306	0.645	0.077	0.524	0.554	0.567	0.590	0.637	0.694	0.726	0.745	0.768
70–79 years	124	0.608	0.078	0.477	0.503	0.519	0.555	0.602	0.652	0.687	0.708	0.742
80 years and over	58	*0.578	0.071	*0.454	*0.484	*0.504	*0.527	*0.583	*0.617	*0.637	*0.652	*0.694
20 years and over (age-adjusted)	1,766	0.679	...	...	...	...	...	...	...	...	...	...

... Category not applicable.

* Figure does not meet standards of reliability or precision; relative standard error (standard error divided by estimate times 100) is 30%–39% or estimate is based on less than 12 degrees of freedom.

† Standard error not calculated by SUDAAN software.

NOTE: g/cm² is grams per centimeter squared.

SOURCE: National Health and Nutrition Examination Survey, 1999–2006.

Vital and Health Statistics Series Descriptions

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