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Anthropometric Reference Data for Children and Adults: United States, 1988–1994



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

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

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

Hyattsville, Maryland
April 2009
DHHS Publication No. (PHS) 2009-1699

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Objective

This report presents national anthropometric reference data for the U.S. population aged 3 months and older in 1988–1994.

Methods

Data in this report are from the Third National Health and Nutrition Examination Survey (NHANES III), which was conducted on a complex, stratified, multistage probability sample of the civilian, noninstitutionalized U.S. population. A total of 31,241 persons were examined. The anthropometric measurements taken included weight, height, recumbent length, circumferences, limb lengths, joint breadths, and skinfold thicknesses. Body mass index values were computed from measured height and weight values.

Results

The tables in this report include weighted population means, standard errors of the means, and selected percentiles of body measurement values. Because measurements varied by sex and age (and by race and ethnicity in adults), results are reported by these subgroups.

Conclusions

These data add to the knowledge about trends in child growth and development and are useful in monitoring overweight and obesity in the U.S. population.

Keywords: anthropometry • body measurements • nutrition surveys • National Health and Nutrition Examination Surveys (NHANES)

Anthropometric Reference Data for Children and Adults: United States, 1988–1994

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

Introduction

The field of anthropometry encompasses human body measurements such as weight, height, and size, including skinfold thicknesses, circumferences, lengths, and breadths. Such measurements are a key component of nutritional status assessment in children and adults (1). Anthropometric data for children reflect general health status, dietary adequacy, and growth and development over time. In adults, body measurement data are used to evaluate health and dietary status, disease risk, and body composition changes that occur over the adult lifespan. This report provides anthropometric reference data for U.S. children and adults aged 3 months and older in 1988–1994.

Methods

The National Health and Nutrition Examination Surveys (NHANES) are conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS). NHANES data are the primary source of body measurement and related health and nutrition data for the civilian, noninstitutionalized U.S. population. The surveys were conducted periodically from 1960 to 1994 (2). Data from the third survey (NHANES III), conducted from 1988 to 1994, were used for this report.

The NHANES data consist of household interview data and health

examination data. During NHANES III, the majority of the health examinations were conducted in mobile examination centers (MECs); however, individuals aged 2–11 months or aged 20 years and older who were unable to come to the MECs had the option of having an abbreviated health examination in their homes that included a subset of the anthropometric measurements. This report is based on anthropometric data from both the MEC- and home-examined samples.

The anthropometry examinations in the MECs and in respondents' homes were performed by NHANES health technicians (3) who had completed a comprehensive anthropometry training program that utilized videotape, demonstration, and practice exercises with an expert examiner. A recorder assisted the health technician during the examination. Health technician and recorder performance was monitored by direct observation, data review, and expert examiner evaluations (3). Examinations in the MEC were conducted in a room equipped with a digital floor scale, a wall-mounted stadiometer, a bench, a wall mirror, an infantometer, a computer workstation, and specialized measurement devices. Survey participants were asked to wear socks and disposable examination gowns. The recorder assisted the examining technician with positioning and performed all data entry tasks. In respondents' homes, the health technicians used portable equipment to perform the anthropometry measurements, and participants wore lightweight clothing during the

examination. Because similar data collection methods were used in previous NHANES, trends in anthropometric measurements over time can be examined in the U.S. population.

Sample Description

NHANES is a complex, multistage probability sample of the noninstitutionalized U.S. population. The NHANES III sample included participants aged 2 months and older. Infants and children aged 2 months to 6 years, adults aged 60 years and older, Mexican American persons, and black persons were oversampled to improve the precision of the statistical estimates for these population subgroups (4). Additional information on the NHANES III survey design and methodology, along with public-use data, is available elsewhere (5).

The analytic sample for this report was based on 31,241 examined persons aged 3 months and older. Of these, 30,750 persons were examined in MECs and 491 were examined in their homes. Seventy infants aged 2 months were excluded from the analyses because of the small sample size for this group. Pregnant females were excluded from the tabulations of weight; body mass index (BMI); skinfold thickness; waist, limb, and buttocks circumference; and wrist breadth.

Anthropometry Examination Component

The *NHANES III Body Measurements (Anthropometry)* manual (3) and the “NHANES III Anthropometric Procedures” video (6) describe the anthropometry protocol, equipment, and quality control methods. Brief descriptions of the anthropometric measurements are given below. Weight was measured to the nearest 0.1 kg. Height, length, breadth, and circumference were measured to the nearest 1.0 mm. All skinfold thickness measurements were to the nearest 0.1 mm.

NHANES III body measurements

- *Weight* was measured by using a digital floor scale.
- *Recumbent length* for infants and young children was measured with an infantometer.
- *Standing and sitting heights* were measured with a wall-mounted stadiometer; respondents were seated on a wooden box for sitting height measurements.
- *Knee height* was measured with a large sliding caliper.
- *Head circumference* measurements were made by using a plastic head-circumference measurement tape.
- *Upper arm and upper leg lengths* were measured with a steel tape measure. The upper arm length midpoint was marked, and the mid-upper arm circumference was also measured.
- *Triceps, subscapular, suprailiac, and thigh skinfold thicknesses*, which are used to gauge fat tissue distribution, were measured with a skinfold caliper.
- *Waist, thigh, and buttocks circumferences*, which serve as indices of body fat distribution and lower-body fatness (buttocks measurement), were measured with a tape measure.
- *Biacromial and biiliac breadths*, two indices of frame size, were measured with a large sliding caliper.
- *Elbow and wrist breadths*, which are indicators of skeletal mass and frame size, were measured with a small sliding caliper.
- *BMI* was calculated by taking the measured weight (in kilograms) and dividing it by the measured height (in meters squared).

In the MEC, weight, recumbent length, and standing height values were recorded automatically; no manual data keying was required to capture the values. The other body measurement data were input manually by the recorder, using computer-assisted data entry. With the exception of the skinfold

thickness measurements, all anthropometry results were based on a single body measurement examination.

Skinfold thickness measurements

Two or more skinfold thickness measurements were made at each of four anatomic sites. Independent measurements were taken at each site by two technicians. If the difference between the first two measurements was within a prespecified tolerance limit, no further measurements were taken at that site. The first measurement represented the base measurement, and the tolerance limits increased by 2 mm for every 10 mm of measured thickness, as follows. If the base was greater than zero and less than or equal to 10 mm, the tolerance was 2 mm; if the base was greater than 10 mm and less than or equal to 20 mm, the tolerance was 4 mm; if the base was greater than 20 mm and less than or equal to 30 mm, the tolerance was 6 mm; if the base was greater than 30 mm and less than or equal to 40 mm, the tolerance was 8 mm; and if the base was greater than 40 mm, the tolerance was 10 mm.

If the difference between the two measurements at a given site exceeded the tolerance limit, each technician repeated and recorded a second measurement, for a total of four measurements at that skinfold site. When a third and fourth measurement were taken, the third measurement represented the base.

A summary skinfold value was computed for each site, as follows. If data were available for third and fourth measurements and the difference between those measurements was within the specified tolerance limit, then the summary value was the mean of the third and fourth measurements. In all other cases, the summary value was the mean of all available skinfold measurements at that site. A single skinfold thickness value was reported for each anatomic site in the final analytic data set, and this value was used to produce the skinfold thickness tabulations for this report.

Statistical Analysis

Population means, standard errors of the means, and percentiles were weighted by using either the final MEC sample weights or the combined final MEC+home examination sample weights, to produce national estimates. The combined MEC+home examination sample weights were used for tabulations of weight, height, recumbent length, mid-upper arm circumference, triceps skinfold, and head circumference. The sample weights incorporate the differential probabilities of selection and include adjustments for oversampling of selected populations, noncoverage, and nonresponse. Standard errors were estimated by Taylor series linearization in SUDAAN because the survey had a complex sample design (7). During the tabulation of variance estimates, a smoothing process was applied by using an average design effect model, as described by Kovar and Johnson (8).

The reliability of the estimates was evaluated on the basis of relative standard error (RSE)—calculated as the standard error divided by the estimate and multiplied by 100—and on a minimum sample size criterion. An estimate with an RSE greater than 30% was considered unreliable (4). The recommended minimum sample sizes were based on a combination of the average design effects and specified proportions (or percentiles) (4). The average design effects reflect the impact of the complex sample design on variance estimates and were calculated as the ratio of the variance of a statistic accounting for the complex sample design to the variance of the same statistic based on a hypothetical simple random sample of the same size. Average design effects were calculated for each anthropometry variable by sex for children and adolescents and by sex and race and ethnicity for adults aged 20 years and older. The minimum sample sizes for a specified design effect and percentile were obtained from published tables (4).

Results

Tables 1–64, which are described in Table A, give the number of examined persons, mean, standard error of the mean, and selected percentiles by sex and age in the United States in 1988–1994 for selected anthropometric measurements. Percentile estimates that did not meet the standards for either RSE or minimum sample size are replaced with asterisks. The age categories used for adults aged 20 years and older were based on the survey sample domains recommended in the NHANES III analytic guidelines (4). The results for participants younger than 20 years are given by single years of age or, in the case of infants younger than 1 year, by single months of age. Results for children are reported by sex and age, and results for adults aged 20 years and older are reported by sex, race or ethnic group, and age. Results from previous surveys for most anthropometric measurements have been reported for National Health Examination Surveys (NHES) and NHANES that were conducted from 1960 to 1984 (9–30).

References

1. Simko MD, Cowell C, Gilbride JA. Nutrition assessment: A comprehensive guide for planning intervention. 2nd ed. Gaithersburg, MD: Aspen Publishers. 1995.
2. National Center for Health Statistics. National Health and Nutrition Examination Survey: Data sets and related documentation. Available from: <http://www.cdc.gov/nchs/about/major/nhanes/datalink.htm>. Accessed June 2008.
3. National Center for Health Statistics. Third National Health and Nutrition Examination Survey (NHANES III, 1988–94): Reference manuals. Available from: <http://www.cdc.gov/nchs/about/major/nhanes/nh3rrm.htm#refman>. Accessed June 2008.
4. National Center for Health Statistics. Third National Health and Nutrition Examination Survey (NHANES III, 1988–94): Analytic and reporting guidelines. Appendix B. Joint policy on variance estimation and statistical reporting standards on NHANES III and CSFII reports: HNIS/NCHS Analytic Working Group recommendations (1993). 1996. Available from: <http://www.cdc.gov/nchs/data/nhanes/nhanes3/nh3gui.pdf>.
5. National Center for Health Statistics. NHANES III data files, documentation, and SAS code. Series 11, data file 1A. Interview and exam components. 1997. Available from: <http://www.cdc.gov/nchs/about/major/nhanes/nh3data.htm#NHANES%20III%20Series%2011,%20No.%201a>.
6. National Center for Health Statistics. Third National Health and Nutrition Examination Survey: NHANES III anthropometric procedures [video]. Available upon request from National Center for Health Statistics, Hyattsville, MD and from: http://www.cdc.gov/nchs/products/elec_prods/subject/video.htm.
7. Wolter KM. Introduction to variance estimation. New York, NY: Springer-Verlag. 1990.
8. Kovar MG, Johnson C. Design effects from the Mexican American portion of the Hispanic Health and Nutrition Examination Survey: A strategy for analysts. In: Proceedings of the Survey Research Methods Section, American Statistical Association (ASA). Washington, DC: ASA, 396–9. 1986.
9. Stoudt HW, Damon A, McFarland R. Weight, height, and selected body dimensions of adults: United States, 1960–1962. Vital Health Stat 11(8). 1965. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_008.pdf.
10. Roberts J. Weight by height and age of adults: United States, 1960–1962. Vital Health Stat 11(14). 1966. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_014acc.pdf.
11. Stoudt HW, Damon A, McFarland R, Roberts J. Skinfolds, body girths, biacromial diameter, and selected anthropometric indices of adults: United States, 1960–1962. Vital Health Stat 11(35). 1970. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_035acc.pdf.

Table A. List of detailed anthropometry data tables provided in this report, based on data from the Third National Health and Nutrition Examination Survey (NHANES III), 1988–1994

Table number	Measurement	Sex and age group
1	Weight (lb)	Males and females aged 3 months to 19 years
2	Weight (lb)	Males aged 20 years and older
3	Weight (lb)	Females aged 20 years and older
4	Weight (kg)	Males and females aged 3 months to 19 years
5	Weight (kg)	Males aged 20 years and older
6	Weight (kg)	Females aged 20 years and older
7	Body mass index ¹	Males and females aged 2 to 19 years
8	Body mass index ¹	Males aged 20 years and older
9	Body mass index ¹	Females aged 20 years and older
10	Height (in)	Males and females aged 2 to 19 years
11	Height (in)	Males aged 20 years and older
12	Height (in)	Females aged 20 years and older
13	Height (cm)	Males and females aged 2 to 19 years
14	Height (cm)	Males aged 20 years and older
15	Height (cm)	Females aged 20 years and older
16	Recumbent length (cm)	Males and females aged 3 months to 3 years
17	Sitting height (cm)	Males and females aged 2 to 19 years
18	Sitting height (cm)	Males aged 20 years and older
19	Sitting height (cm)	Females aged 20 years and older
20	Upper arm length (cm)	Males and females aged 3 months to 19 years
21	Upper arm length (cm)	Males aged 20 years and older
22	Upper arm length (cm)	Females aged 20 years and older
23	Upper leg length (cm)	Males and females aged 2 to 19 years
24	Upper leg length (cm)	Males aged 20 years and older
25	Upper leg length (cm)	Females aged 20 years and older
26	Knee height (cm)	Males aged 60 years and older
27	Knee height (cm)	Females aged 60 years and older
28	Triceps skinfold thickness (mm)	Males and females aged 3 months to 19 years
29	Triceps skinfold thickness (mm)	Males aged 20 years and older
30	Triceps skinfold thickness (mm)	Females aged 20 years and older
31	Subscapular skinfold thickness (mm)	Males and females aged 3 months to 19 years
32	Subscapular skinfold thickness (mm)	Males aged 20 years and older
33	Subscapular skinfold thickness (mm)	Females aged 20 years and older
34	Suprailiac skinfold thickness (mm)	Males and females aged 2 to 19 years
35	Suprailiac skinfold thickness (mm)	Males aged 20 years and older
36	Suprailiac skinfold thickness (mm)	Females aged 20 years and older
37	Thigh skinfold thickness (mm)	Males and females aged 2 to 19 years
38	Thigh skinfold thickness (mm)	Males aged 20 years and older
39	Thigh skinfold thickness (mm)	Females aged 20 years and older
40	Head circumference (cm)	Males and females aged 3 months to 7 years
41	Mid-upper arm circumference (cm)	Males and females aged 3 months to 19 years
42	Mid-upper arm circumference (cm)	Males aged 20 years and older
43	Mid-upper arm circumference (cm)	Females aged 20 years and older
44	Thigh circumference (cm)	Males and females aged 2 to 19 years
45	Thigh circumference (cm)	Males aged 20 years and older
46	Thigh circumference (cm)	Females aged 20 years and older
47	Waist circumference (cm)	Males and females aged 2 to 19 years
48	Waist circumference (cm)	Males aged 20 years and older
49	Waist circumference (cm)	Females aged 20 years and older
50	Wrist breadth (cm)	Males and females aged 2 to 19 years
51	Wrist breadth (cm)	Males aged 20 years and older
52	Wrist breadth (cm)	Females aged 20 years and older
53	Biacromial breadth (cm)	Males and females aged 3 to 19 years
54	Biacromial breadth (cm)	Males aged 20 years and older
55	Biacromial breadth (cm)	Females aged 20 years and older
56	Biiliac breadth (cm)	Males and females aged 2 to 19 years
57	Biiliac breadth (cm)	Males aged 20 years and older
58	Biiliac breadth (cm)	Females aged 20 years and older
59	Buttocks circumference (cm)	Males and females aged 2 to 19 years
60	Buttocks circumference (cm)	Males aged 20 years and older
61	Buttocks circumference (cm)	Females aged 20 years and older
62	Elbow breadth (cm)	Males and females aged 2 to 19 years
63	Elbow breadth (cm)	Males aged 20 years and older
64	Elbow breadth (cm)	Females aged 20 years and older

¹Weight in kilograms divided by height in meters squared.

12. Hamill PVV, Johnston FE, Grams W. Height and weight of children: United States. *Vital Health Stat* 11(104). 1970. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_104acc.pdf.
13. Hamill PVV, Johnston FE, Lemeshow S. Height and weight of children: Socioeconomic status United States. *Vital Health Stat* 11(119). 1972. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_119acc.pdf.
14. Johnston FE, Hamill PVV, Lemeshow S. Skinfold thickness of children 6–11 years: United States. *Vital Health Stat* 11(120). 1972. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_120acc.pdf.
15. Malina RM, Hamill PVV, Lemeshow S. Selected body measurements of children 6–11 years: United States. *Vital Health Stat* 11(123). 1973. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_123acc.pdf.
16. Hamill PVV, Johnston FE, Lemeshow S. Height and weight of youths 12–17 years: United States. *Vital Health Stat* 11(124). 1973. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_124.pdf.
17. Hamill PVV, Johnston FE, Lemeshow S. Body weight, stature, and sitting height: White and Negro youths 12–17 years: United States. *Vital Health Stat* 11(126). 1973. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_126.pdf.
18. Johnston FE, Hamill PVV, Lemeshow S. Skinfold thickness of youths 12–17 years: United States. *Vital Health Stat* 11(132). 1974. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_132.pdf.
19. Malina RM, Hamill PVV, Lemeshow S. Body dimensions and proportions, white and Negro children 6–11 years: United States. *Vital Health Stat* 11(143). 1974. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_143acc.pdf.
20. Hamill PVV, Drizd TA, Johnson CL, Reed RB, Roche AF. NCHS growth curves for children, birth–18 years: United States. *Vital Health Stat* 11(165). 1977. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_165.pdf.
21. Abraham S, Johnson CL, Najjar MF. Weight by height and age for adults 18–74 years: United States, 1971–74. *Vital Health Stat* 11(208). 1979. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_208.pdf.
22. Abraham S, Johnson CL, Najjar MF. Weight and height of adults 18–74 years of age: United States, 1971–74. *Vital Health Stat* 11(211). 1979. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_211.pdf.
23. Johnson CL, Fulwood R, Abraham S, Bryner JD. Basic data on anthropometric measurements and angular measurements of the hip and knee joints for selected age groups 1–74 years of age: United States, 1971–1975. *Vital Health Stat* 11(219). 1981. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_219.pdf.
24. Fulwood R, Abraham S, Johnson C. Height and weight of adults ages 18–74 years by socioeconomic and geographic variables: United States. *Vital Health Stat* 11(224). 1981. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_224.pdf.
25. Abraham S, Carroll MD, Najjar MF, Fulwood R. Obese and overweight adults in the United States. *Vital Health Stat* 11(230). 1983. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_230acc.pdf.
26. Najjar MF, Rowland M. Anthropometric reference data and prevalence of overweight: United States, 1976–80. *Vital Health Stat* 11(238). 1987. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_238.pdf.
27. Najjar MF, Kuczumarski RJ. Anthropometric data and prevalence of overweight for Hispanics: 1982–84. *Vital Health Stat* 11(239). 1989. Available from: http://www.cdc.gov/nchs/data/series/sr_11/sr11_239.pdf.
28. Ogden CL, Carroll MD, Flegal KM. Epidemiologic trends in overweight and obesity. *Endocrinol Metab Clin North Am* 32(4):741–60, vii. 2003.
29. Ogden CL, Troiano RP, Briefel RR, Kuczumarski RJ, Flegal KM, Johnson CL. Prevalence of overweight among preschool children in the United States, 1971 through 1994. *Pediatrics* 99(4):e1. 1997.
30. Kuczumarski RJ, Flegal KM, Campbell SM, Johnson CL. Increasing prevalence of overweight among US adults. The National Health and Nutrition Examination Surveys, 1960 to 1991. *JAMA* 272(3):205–11. 1994.

Table 1. Weight in pounds for persons aged 3 months to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3–5 months	290	16.1	0.21	*	13.9	14.3	14.7	16.1	17.3	18.0	18.8	*
6–8 months	320	19.3	0.24	*	16.3	16.8	17.5	19.1	20.8	22.0	22.8	*
9–11 months	277	21.1	0.23	*	18.2	18.6	19.4	21.1	22.6	23.3	24.0	*
1 year	663	25.4	0.23	20.5	21.2	21.9	23.2	25.3	27.2	28.3	29.7	31.2
2 years	645	29.9	0.24	24.9	25.9	26.6	27.5	29.7	31.8	33.1	34.7	35.9
3 years	516	34.7	0.45	28.2	29.2	30.1	31.7	34.0	37.3	38.5	39.5	41.1
4 years	549	38.8	0.41	31.6	33.1	33.9	35.2	38.2	41.5	43.3	45.2	48.0
5 years	497	44.1	0.55	34.8	36.2	37.8	39.5	43.8	47.6	50.1	52.0	56.3
6 years	283	51.1	1.25	*	40.3	41.4	43.3	48.2	54.5	59.4	65.3	*
7 years	269	57.8	1.24	*	46.3	47.2	49.8	56.0	65.5	68.5	69.6	*
8 years	266	66.5	1.82	*	51.0	52.7	55.1	61.4	72.9	81.7	93.0	*
9 years	281	75.7	1.92	*	57.6	59.6	61.8	70.4	88.1	97.1	99.7	*
10 years	297	82.1	1.92	*	61.3	62.7	69.6	79.5	91.1	107.0	109.0	*
11 years	281	93.5	2.60	*	70.2	73.5	77.1	87.3	102.2	118.5	123.6	*
12 years	203	108.0	3.15	*	*	83.4	90.1	105.7	123.1	132.2	*	*
13 years	187	118.9	3.79	*	*	90.5	98.2	115.2	134.4	145.7	*	*
14 years	188	141.0	6.00	*	*	110.9	118.7	133.4	147.1	163.4	*	*
15 years	187	147.2	4.47	*	*	114.3	121.1	139.8	170.4	184.0	*	*
16 years	194	151.2	4.90	*	*	120.2	128.9	145.0	163.1	172.6	*	*
17 years	196	160.3	3.85	*	*	132.1	137.7	153.9	173.7	186.5	*	*
18 years	176	156.9	4.59	*	*	126.7	132.3	148.6	170.2	192.1	*	*
19 years	168	160.6	4.00	*	*	133.2	139.8	157.1	169.0	191.1	*	*
Female												
3–5 months	308	14.8	0.20	*	12.4	12.9	13.3	14.6	16.2	16.9	17.4	*
6–8 months	264	17.9	0.28	*	*	15.8	16.4	17.4	19.0	19.9	*	*
9–11 months	315	19.8	0.21	*	17.1	17.5	18.0	19.6	21.2	22.2	22.9	*
1 year	647	23.9	0.21	19.6	20.1	20.8	21.7	23.4	25.9	27.3	28.2	29.4
2 years	624	29.0	0.27	23.7	24.5	25.0	26.3	28.7	31.2	32.7	33.9	35.8
3 years	587	33.9	0.35	27.3	28.7	29.5	30.8	33.3	36.1	38.1	39.1	41.9
4 years	537	39.3	0.59	*	31.9	33.1	34.8	38.1	41.8	44.1	45.4	*
5 years	554	44.3	0.59	*	35.2	36.4	38.6	43.3	47.7	51.8	54.1	*
6 years	272	49.7	1.22	*	*	40.7	42.4	46.2	53.4	60.4	*	*
7 years	274	58.1	1.51	*	*	45.1	47.3	52.7	67.1	71.5	*	*
8 years	248	65.7	1.77	*	*	51.5	53.8	62.7	72.8	77.8	*	*
9 years	280	75.6	2.27	*	54.8	57.6	61.6	69.5	82.0	97.7	104.2	*
10 years	258	83.4	2.31	*	*	64.1	66.9	79.1	96.0	108.1	*	*
11 years	275	97.1	2.37	*	*	73.1	79.9	95.0	110.1	120.2	*	*
12 years	236	107.8	2.86	*	*	80.0	91.0	102.5	123.3	132.8	*	*
13 years	220	122.8	3.36	*	*	93.5	100.3	117.9	141.9	153.8	*	*
14 years	218	128.6	3.20	*	*	104.2	110.3	118.9	148.1	155.4	*	*
15 years	191	127.8	2.75	*	*	104.9	112.1	121.9	139.0	154.6	*	*
16 years	208	134.9	3.93	*	*	111.6	115.6	123.8	145.9	157.1	*	*
17 years	201	137.3	3.40	*	*	112.2	117.0	134.0	149.0	164.1	*	*
18 years	175	134.7	4.13	*	*	*	112.3	127.7	149.5	*	*	*
19 years	177	138.9	4.31	*	*	*	117.7	133.5	145.0	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 2. Weight in pounds for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,942	180.7	0.83	131.3	140.1	145.5	155.9	175.9	199.2	214.3	226.1	243.8
20–29 years	1,630	172.1	1.37	126.9	134.0	138.7	147.5	164.9	187.6	205.2	217.7	236.8
30–39 years	1,481	182.5	1.49	136.1	142.1	148.1	158.2	175.9	200.9	217.4	226.4	247.9
40–49 years	1,226	187.3	1.67	135.4	145.1	150.9	163.6	180.7	206.5	223.3	232.5	256.4
50–59 years	855	189.2	1.76	139.6	150.1	158.4	166.7	184.7	206.8	221.6	231.5	251.3
60–69 years	1,175	182.8	1.44	134.5	141.9	148.8	160.1	181.1	203.3	216.4	224.4	236.2
70–79 years	875	173.6	1.57	128.7	136.3	141.2	151.4	171.3	191.2	205.7	211.4	227.1
80 years and older	700	157.8	1.63	114.3	123.5	128.5	140.1	155.8	173.1	185.2	193.4	204.7
Non-Hispanic white												
20 years and older	3,287	183.1	0.97	135.1	142.9	149.1	159.1	178.0	201.9	216.5	227.2	245.6
20–29 years	393	173.7	1.99	130.6	137.3	142.8	149.6	166.2	188.5	206.2	219.5	234.6
30–39 years	454	185.6	1.96	138.7	145.3	152.2	162.1	179.6	204.5	220.4	226.6	250.9
40–49 years	428	189.5	2.04	139.9	148.6	155.0	166.2	181.9	206.8	224.6	233.1	259.4
50–59 years	418	191.5	1.80	145.3	155.1	161.7	169.5	187.3	209.5	224.6	232.9	252.8
60–69 years	510	185.4	1.56	137.6	143.7	151.9	163.6	183.9	205.3	217.4	225.7	236.7
70–79 years	524	175.1	1.45	132.0	139.0	144.1	153.6	172.5	192.6	206.0	211.6	227.3
80 years and older	560	159.0	1.31	114.6	124.6	131.7	141.2	157.1	173.8	185.7	193.5	205.3
Non-Hispanic black												
20 years and older	2,113	181.5	1.09	129.3	136.7	143.0	153.0	176.0	201.1	217.7	231.1	255.1
20–29 years	488	181.6	2.14	130.1	136.2	140.7	151.9	173.9	197.5	219.6	238.6	269.1
30–39 years	497	182.4	2.00	131.7	141.1	146.4	153.1	176.6	199.4	215.7	230.0	261.6
40–49 years	370	185.4	2.11	131.7	139.9	145.6	156.3	179.1	207.7	222.2	234.7	254.1
50–59 years	217	186.0	3.09	128.9	135.2	144.8	158.4	182.3	207.8	223.6	232.4	265.9
60–69 years	295	176.9	2.25	124.2	133.6	141.3	152.6	172.0	199.1	216.4	226.1	241.1
70–79 years	187	169.9	2.63	*	130.1	132.1	144.0	167.7	190.6	202.1	213.1	*
80 years and older	59	155.4	4.48	*	*	*	133.1	157.9	173.4	*	*	*
Mexican American												
20 years and older	2,256	170.5	1.01	125.8	134.4	139.9	148.1	166.4	188.1	202.6	212.2	228.3
20–29 years	674	162.3	1.46	123.4	129.1	134.9	141.7	157.5	175.9	191.6	201.0	220.1
30–39 years	474	173.0	1.83	126.8	136.7	143.1	153.0	169.3	189.9	204.1	210.2	234.5
40–49 years	381	181.4	2.13	139.5	144.4	149.9	160.2	175.1	202.5	214.3	223.5	240.8
50–59 years	178	182.2	3.08	*	144.6	150.2	158.5	179.2	199.4	213.4	221.2	*
60–69 years	337	172.3	1.91	134.8	139.2	142.2	150.2	170.1	191.6	202.2	213.1	223.5
70–79 years	149	160.7	2.89	*	126.9	131.9	139.9	164.5	178.7	186.8	193.6	*
80 years and older	63	145.7	3.56	*	*	*	129.6	146.8	154.5	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 3. Weight in pounds for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,764	152.3	0.81	105.5	112.0	117.1	125.5	144.4	171.3	190.5	202.7	225.6
20–29 years	1,665	141.7	1.25	102.9	108.0	111.2	118.3	133.2	157.3	175.2	188.9	216.5
30–39 years	1,775	154.2	1.46	106.2	112.5	117.4	125.4	144.0	172.7	195.7	211.9	232.9
40–49 years	1,368	157.4	1.58	109.2	116.9	122.6	130.0	150.6	175.6	193.8	209.4	230.3
50–59 years	1,006	163.7	1.85	114.0	120.2	125.7	135.1	157.2	185.8	201.6	213.3	239.9
60–69 years	1,172	155.9	1.57	109.0	115.6	121.9	130.3	151.4	174.7	191.1	202.2	220.7
70–79 years	988	148.2	1.66	100.5	110.5	116.3	125.0	142.4	166.8	180.6	189.5	213.8
80 years and older	790	133.2	1.50	92.0	100.0	105.4	114.1	131.4	149.4	159.1	168.7	186.3
Non-Hispanic white												
20 years and older	3,758	150.7	0.91	105.6	112.1	117.0	125.0	143.0	169.3	187.5	200.2	221.2
20–29 years	452	140.1	1.92	102.9	108.7	111.2	118.1	130.4	153.0	171.1	185.6	218.8
30–39 years	579	151.4	2.06	105.4	112.1	116.6	123.6	141.6	170.0	192.6	207.5	227.7
40–49 years	477	155.1	2.10	109.7	117.2	122.8	129.2	147.7	172.1	191.6	202.7	227.1
50–59 years	484	163.5	2.17	115.0	120.6	125.8	135.2	157.1	185.4	200.2	211.2	239.8
60–69 years	501	155.4	1.91	110.0	115.9	122.1	130.9	151.5	172.7	190.9	201.2	219.5
70–79 years	644	147.0	1.64	100.8	111.1	116.3	124.4	141.6	164.5	178.1	187.3	206.2
80 years and older	621	132.9	1.39	92.1	100.1	105.5	114.2	131.3	149.1	158.9	167.1	185.9
Non-Hispanic black												
20 years and older	2,495	168.2	1.07	110.7	118.9	125.6	137.4	161.1	191.1	211.8	226.8	250.8
20–29 years	563	155.6	1.83	106.7	112.1	118.1	128.0	146.9	177.4	193.1	208.1	224.0
30–39 years	626	169.0	2.03	114.8	120.7	127.0	136.6	159.9	192.1	215.1	230.7	251.7
40–49 years	456	180.2	2.53	116.5	124.0	134.4	146.4	171.7	204.7	227.5	245.7	276.4
50–59 years	275	177.6	2.94	112.6	123.8	137.4	148.1	174.4	203.7	220.2	236.0	250.2
60–69 years	300	173.4	2.84	114.0	125.6	135.2	145.0	168.1	193.3	209.1	219.9	253.1
70–79 years	182	166.0	3.45	*	124.1	127.5	138.1	159.7	185.2	205.4	228.6	*
80 years and older	93	138.7	3.65	*	*	111.0	117.0	136.1	151.0	176.5	*	*
Mexican American												
20 years and older	2,135	151.6	1.12	105.6	112.9	118.3	127.1	145.4	171.2	185.9	196.6	217.1
20–29 years	575	142.5	1.68	101.4	105.7	110.5	119.0	136.9	157.3	177.6	188.3	205.7
30–39 years	493	154.6	2.05	107.1	114.6	120.1	129.9	145.7	174.2	191.2	208.0	229.6
40–49 years	367	163.0	2.13	117.1	125.4	130.9	139.7	157.8	180.0	194.0	204.6	225.9
50–59 years	193	156.0	2.64	*	121.5	123.2	134.8	153.8	175.7	182.7	192.2	*
60–69 years	321	154.4	2.19	114.5	118.6	125.1	133.2	148.3	171.1	181.1	193.4	214.2
70–79 years	127	140.2	3.04	*	*	113.7	121.7	135.5	153.2	163.8	*	*
80 years and older	59	118.4	3.83	*	*	*	96.7	116.0	135.2	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 4. Weight in kilograms for persons aged 3 months to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3–5 months	290	7.4	0.10	*	6.3	6.5	6.7	7.3	7.9	8.2	8.6	*
6–8 months	320	8.8	0.11	*	7.4	7.7	8.0	8.7	9.5	10.0	10.4	*
9–11 months	277	9.6	0.11	*	8.3	8.5	8.8	9.6	10.3	10.6	10.9	*
1 year	663	11.6	0.10	9.3	9.7	10.0	10.6	11.5	12.4	12.9	13.5	14.2
2 years	645	13.6	0.11	11.3	11.8	12.1	12.5	13.5	14.5	15.1	15.8	16.3
3 years	516	15.8	0.20	12.8	13.3	13.7	14.4	15.5	17.0	17.5	18.0	18.7
4 years	549	17.7	0.18	14.4	15.1	15.4	16.0	17.4	18.9	19.7	20.6	21.8
5 years	497	20.1	0.25	15.8	16.5	17.2	18.0	19.9	21.7	22.8	23.7	25.6
6 years	283	23.3	0.57	*	18.3	18.8	19.7	21.9	24.8	27.0	29.7	*
7 years	269	26.3	0.56	*	21.1	21.5	22.7	25.5	29.8	31.2	31.6	*
8 years	266	30.2	0.83	*	23.2	24.0	25.1	27.9	33.2	37.2	42.3	*
9 years	281	34.4	0.87	*	26.2	27.1	28.1	32.0	40.1	44.2	45.3	*
10 years	297	37.3	0.87	*	27.9	28.5	31.7	36.1	41.4	48.7	49.6	*
11 years	281	42.5	1.18	*	31.9	33.4	35.0	39.7	46.5	53.8	56.2	*
12 years	203	49.1	1.43	*	*	37.9	41.0	48.1	56.0	60.1	*	*
13 years	187	54.0	1.72	*	*	41.2	44.7	52.4	61.1	66.2	*	*
14 years	188	64.1	2.73	*	*	50.4	54.0	60.7	66.8	74.3	*	*
15 years	187	66.9	2.03	*	*	52.0	55.0	63.6	77.4	83.6	*	*
16 years	194	68.8	2.23	*	*	54.7	58.6	65.9	74.2	78.4	*	*
17 years	196	72.9	1.75	*	*	60.0	62.6	70.1	79.0	84.8	*	*
18 years	176	71.3	2.09	*	*	57.6	60.2	67.6	77.3	87.3	*	*
19 years	168	73.0	1.82	*	*	60.6	63.6	71.4	76.9	86.9	*	*
Female												
3–5 months	308	6.8	0.09	*	5.7	5.9	6.1	6.7	7.4	7.7	7.9	*
6–8 months	264	8.2	0.13	*	*	7.2	7.5	7.9	8.7	9.1	*	*
9–11 months	315	9.0	0.10	*	7.8	8.0	8.2	8.9	9.7	10.1	10.4	*
1 year	647	10.9	0.09	8.9	9.2	9.5	9.9	10.7	11.8	12.4	12.8	13.4
2 years	624	13.2	0.12	10.8	11.2	11.4	12.0	13.1	14.2	14.9	15.4	16.3
3 years	587	15.4	0.16	12.4	13.1	13.4	14.0	15.2	16.4	17.3	17.8	19.1
4 years	537	17.9	0.27	*	14.5	15.1	15.8	17.3	19.0	20.1	20.7	*
5 years	554	20.2	0.27	*	16.0	16.6	17.6	19.7	21.7	23.6	24.6	*
6 years	272	22.6	0.55	*	*	18.5	19.3	21.0	24.3	27.5	*	*
7 years	274	26.4	0.69	*	*	20.5	21.5	24.0	30.5	32.6	*	*
8 years	248	29.9	0.80	*	*	23.4	24.5	28.5	33.1	35.4	*	*
9 years	280	34.4	1.03	*	24.9	26.2	28.0	31.6	37.3	44.4	47.4	*
10 years	258	37.9	1.05	*	*	29.1	30.4	36.0	43.6	49.2	*	*
11 years	275	44.2	1.08	*	*	33.2	36.3	43.2	50.1	54.7	*	*
12 years	236	49.0	1.30	*	*	36.3	41.4	46.6	56.1	60.4	*	*
13 years	220	55.8	1.53	*	*	42.6	45.6	53.6	64.6	70.0	*	*
14 years	218	58.5	1.45	*	*	47.4	50.2	54.1	67.3	70.6	*	*
15 years	191	58.1	1.25	*	*	47.7	50.9	55.4	63.1	70.3	*	*
16 years	208	61.3	1.79	*	*	50.7	52.5	56.3	66.3	71.6	*	*
17 years	201	62.4	1.55	*	*	51.0	53.2	61.0	67.8	74.6	*	*
18 years	175	61.2	1.88	*	*	*	51.1	58.1	68.0	*	*	*
19 years	177	63.2	1.96	*	*	*	53.5	60.7	66.0	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 5. Weight in kilograms for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,942	82.1	0.38	59.7	63.7	66.1	70.9	80.0	90.6	97.5	102.8	110.8
20–29 years	1,630	78.3	0.62	57.7	60.9	63.1	67.1	75.0	85.3	93.2	99.1	107.7
30–39 years	1,481	83.0	0.68	61.8	64.6	67.4	72.0	79.9	91.3	98.8	102.9	112.7
40–49 years	1,226	85.1	0.76	61.5	66.0	68.6	74.4	82.2	93.9	101.6	105.7	116.6
50–59 years	855	86.0	0.80	63.4	68.2	72.0	75.7	84.1	94.0	100.7	105.3	114.3
60–69 years	1,175	83.1	0.65	61.1	64.5	67.7	72.8	82.4	92.5	98.4	102.0	107.3
70–79 years	875	79.0	0.71	58.5	62.0	64.2	68.8	77.9	87.0	93.5	96.1	103.3
80 years and older	700	71.8	0.74	52.0	56.2	58.4	63.6	70.8	78.7	84.1	88.0	93.1
Non-Hispanic white												
20 years and older	3,287	83.2	0.44	61.4	65.0	67.8	72.3	81.0	91.8	98.4	103.3	111.7
20–29 years	393	79.0	0.90	59.4	62.4	65.0	68.0	75.6	85.6	93.7	99.7	106.7
30–39 years	454	84.4	0.89	63.0	66.0	69.2	73.7	81.6	93.0	100.2	103.1	114.1
40–49 years	428	86.2	0.93	63.6	67.5	70.5	75.6	82.7	94.1	102.0	106.0	117.8
50–59 years	418	87.1	0.82	66.0	70.5	73.6	77.0	85.1	95.3	102.1	105.9	114.9
60–69 years	510	84.3	0.71	62.6	65.3	69.0	74.4	83.6	93.3	98.8	102.6	107.6
70–79 years	524	79.6	0.66	60.1	63.2	65.5	69.8	78.5	87.6	93.6	96.2	103.3
80 years and older	560	72.3	0.59	52.1	56.6	59.8	64.1	71.5	79.0	84.5	88.0	93.3
Non-Hispanic black												
20 years and older	2,113	82.5	0.49	58.8	62.2	65.1	69.6	80.0	91.4	99.1	105.0	115.9
20–29 years	488	82.6	0.97	59.2	61.9	64.0	69.1	79.1	89.7	99.8	108.5	122.3
30–39 years	497	82.9	0.91	59.9	64.2	66.6	69.6	80.3	90.6	98.1	104.5	119.0
40–49 years	370	84.3	0.96	59.8	63.6	66.2	71.0	81.4	94.4	101.1	106.7	115.5
50–59 years	217	84.6	1.41	58.6	61.4	65.8	72.1	82.9	94.5	101.6	105.6	121.0
60–69 years	295	80.4	1.02	56.5	60.7	64.3	69.4	78.3	90.5	98.3	102.8	109.5
70–79 years	187	77.2	1.19	*	59.2	60.0	65.5	76.2	86.6	91.9	96.8	*
80 years and older	59	70.7	2.04	*	*	*	60.5	71.8	78.8	*	*	*
Mexican American												
20 years and older	2,256	77.5	0.46	57.2	61.1	63.6	67.3	75.6	85.5	92.1	96.5	103.8
20–29 years	674	73.8	0.66	56.1	58.7	61.3	64.5	71.6	80.0	87.1	91.4	100.0
30–39 years	474	78.7	0.83	57.7	62.1	65.0	69.6	77.0	86.3	92.8	95.6	106.6
40–49 years	381	82.5	0.97	63.3	65.6	68.1	72.8	79.6	92.0	97.4	101.5	109.5
50–59 years	178	82.8	1.40	*	65.8	68.2	72.0	81.5	90.6	97.1	100.6	*
60–69 years	337	78.3	0.87	61.3	63.3	64.6	68.3	77.3	87.1	92.0	96.9	101.6
70–79 years	149	73.1	1.31	*	57.7	59.9	63.6	74.7	81.2	84.9	88.0	*
80 years and older	63	66.3	1.62	*	*	*	58.9	66.8	70.2	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 6. Weight in kilograms for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,764	69.2	0.37	47.9	50.9	53.2	57.1	65.6	77.9	86.6	92.1	102.5
20–29 years	1,665	64.5	0.57	46.8	49.1	50.6	53.8	60.6	71.5	79.6	85.9	98.5
30–39 years	1,775	70.1	0.66	48.3	51.2	53.3	57.0	65.5	78.6	89.0	96.3	105.9
40–49 years	1,368	71.6	0.72	49.7	53.1	55.8	59.1	68.5	79.9	88.2	95.2	104.7
50–59 years	1,006	74.4	0.84	51.8	54.7	57.2	61.4	71.5	84.5	91.6	97.0	109.1
60–69 years	1,172	70.9	0.71	49.6	52.6	55.4	59.3	68.8	79.5	86.9	92.0	100.4
70–79 years	988	67.4	0.75	45.7	50.3	52.9	56.8	64.7	75.9	82.1	86.1	97.1
80 years and older	790	60.5	0.68	41.8	45.4	47.9	51.9	59.7	67.9	72.3	76.6	84.7
Non-Hispanic white												
20 years and older	3,758	68.5	0.41	48.1	50.9	53.2	56.8	65.0	77.0	85.3	91.1	100.6
20–29 years	452	63.7	0.87	46.8	49.4	50.6	53.7	59.3	69.5	77.8	84.4	99.5
30–39 years	579	68.9	0.94	47.9	50.9	53.0	56.2	64.3	77.2	87.6	94.4	103.6
40–49 years	477	70.5	0.96	49.9	53.3	55.8	58.7	67.1	78.3	87.2	92.1	103.3
50–59 years	484	74.3	0.99	52.3	54.8	57.2	61.5	71.4	84.3	91.1	96.1	109.0
60–69 years	501	70.7	0.87	50.0	52.7	55.5	59.5	68.9	78.6	86.8	91.5	99.8
70–79 years	644	66.8	0.74	45.8	50.5	52.9	56.6	64.4	74.8	81.1	85.2	93.7
80 years and older	621	60.4	0.63	41.8	45.5	47.9	51.9	59.7	67.8	72.2	76.1	84.6
Non-Hispanic black												
20 years and older	2,495	76.5	0.49	50.3	54.1	57.1	62.5	73.2	86.9	96.3	103.2	114.0
20–29 years	563	70.8	0.83	48.6	51.0	53.7	58.2	66.8	80.7	87.8	94.5	101.9
30–39 years	626	76.8	0.92	52.2	54.9	57.8	62.2	72.7	87.3	97.8	104.9	114.3
40–49 years	456	81.9	1.15	53.0	56.4	61.1	66.5	78.1	93.1	103.5	111.6	125.7
50–59 years	275	80.8	1.34	51.2	56.3	62.5	67.4	79.3	92.6	100.1	107.4	113.7
60–69 years	300	78.8	1.29	51.9	57.1	61.5	66.0	76.4	87.9	95.1	100.1	115.1
70–79 years	182	75.5	1.57	*	56.4	58.0	62.8	72.6	84.2	93.3	103.9	*
80 years and older	93	63.1	1.66	*	*	50.4	53.2	61.8	68.6	80.2	*	*
Mexican American												
20 years and older	2,135	68.9	0.51	48.1	51.3	53.8	57.8	66.1	77.8	84.5	89.4	98.7
20–29 years	575	64.8	0.76	46.1	48.1	50.2	54.1	62.2	71.5	80.7	85.5	93.6
30–39 years	493	70.3	0.93	48.7	52.1	54.6	59.0	66.2	79.2	87.0	94.5	104.4
40–49 years	367	74.1	0.97	53.2	57.0	59.5	63.5	71.8	81.8	88.1	93.0	102.7
50–59 years	193	70.9	1.20	*	55.2	56.1	61.3	70.0	80.0	83.1	87.3	*
60–69 years	321	70.2	0.99	52.1	53.9	56.8	60.6	67.5	77.8	82.3	87.9	97.5
70–79 years	127	63.7	1.38	*	*	51.7	55.3	61.6	69.6	74.5	*	*
80 years and older	59	53.8	1.74	*	*	*	44.0	52.7	61.4	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 7. Body mass index for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	588	16.5	0.09	14.7	15.0	15.3	15.6	16.3	17.2	17.7	18.1	18.6
3 years	512	16.1	0.16	14.1	14.4	14.7	15.1	15.9	16.7	17.2	17.7	18.5
4 years	547	15.9	0.10	13.9	14.4	14.6	15.0	15.8	16.5	17.1	17.3	18.0
5 years	495	15.9	0.13	13.7	14.3	14.5	14.8	15.5	16.4	17.1	17.3	18.5
6 years	282	16.3	0.26	*	14.1	14.3	14.8	15.7	16.4	17.8	19.9	*
7 years	269	16.5	0.24	*	14.4	14.7	15.1	15.8	17.3	18.5	19.0	*
8 years	266	17.3	0.34	*	14.5	14.9	15.3	16.3	18.6	19.9	22.1	*
9 years	279	18.0	0.33	*	15.0	15.2	15.7	17.0	19.8	21.5	22.9	*
10 years	297	18.4	0.30	*	15.2	15.5	16.0	17.7	20.2	22.0	22.8	*
11 years	280	19.4	0.40	*	15.7	16.0	16.4	18.3	21.0	23.3	24.8	*
12 years	203	20.1	0.44	*	*	16.7	17.9	19.0	21.8	23.0	*	*
13 years	187	20.5	0.49	*	*	16.9	18.0	19.5	22.5	24.8	*	*
14 years	188	22.3	0.84	*	*	17.7	18.8	20.8	23.6	24.6	*	*
15 years	187	22.3	0.56	*	*	18.7	19.5	20.9	24.3	25.4	*	*
16 years	194	22.3	0.56	*	*	19.0	19.4	21.2	23.4	26.3	*	*
17 years	196	23.4	0.53	*	*	19.8	25.0	21.8	25.2	28.5	*	*
18 years	176	22.6	0.56	*	*	19.2	19.4	21.8	24.6	26.8	*	*
19 years	168	23.7	0.53	*	*	20.4	20.8	22.7	25.1	27.2	*	*
Female												
2 years	562	16.4	0.13	14.4	14.9	15.1	15.6	16.2	17.2	17.7	17.9	18.7
3 years	582	15.9	0.14	13.7	14.2	14.5	14.9	15.8	16.6	17.2	17.6	18.4
4 years	533	16.0	0.21	*	14.1	14.4	14.8	15.7	16.6	17.2	18.2	*
5 years	554	15.9	0.17	*	13.9	14.1	14.6	15.4	16.8	17.6	18.9	*
6 years	272	16.1	0.32	*	*	14.1	14.7	15.3	16.7	18.1	*	*
7 years	274	16.9	0.35	*	*	14.3	14.7	15.8	18.5	20.0	*	*
8 years	247	17.3	0.42	*	*	14.7	15.2	16.6	18.4	20.2	*	*
9 years	280	18.2	0.47	*	14.5	14.8	15.6	16.6	19.6	21.8	24.2	*
10 years	258	18.4	0.46	*	*	14.9	15.5	17.3	20.1	22.3	*	*
11 years	275	19.4	0.45	*	*	15.8	16.5	18.5	21.5	23.7	*	*
12 years	236	20.2	0.57	*	*	16.0	16.9	19.4	22.0	24.2	*	*
13 years	220	21.8	0.63	*	*	17.3	18.5	20.5	23.8	27.5	*	*
14 years	218	22.4	0.59	*	*	18.4	19.4	21.1	24.5	26.2	*	*
15 years	191	21.9	0.53	*	*	18.4	19.1	21.0	23.3	26.2	*	*
16 years	208	23.0	0.72	*	*	19.7	20.1	21.2	24.8	26.9	*	*
17 years	201	23.3	0.66	*	*	19.3	20.2	22.2	25.2	27.2	*	*
18 years	175	22.9	0.74	*	*	*	19.3	21.8	24.5	*	*	*
19 years	177	23.7	0.89	*	*	*	19.9	22.4	25.3	*	*	*

* Figure does not meet standards of reliability or precision.

NOTES: Pregnant women are excluded. Body mass index is weight in kilograms divided by height in meters squared.

Table 8. Body mass index for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,941	26.6	0.11	20.3	21.3	22.1	23.4	25.9	29.0	30.9	32.4	35.1
20–29 years	1,630	25.2	0.17	19.4	20.3	20.9	22.0	24.3	27.4	29.3	30.8	33.6
30–39 years	1,481	26.5	0.18	20.5	21.6	22.2	23.5	25.8	28.4	30.6	32.1	35.5
40–49 years	1,226	27.3	0.22	21.2	22.2	22.7	24.1	26.4	29.6	32.0	33.4	36.2
50–59 years	855	27.8	0.23	21.4	22.6	23.5	24.7	27.2	30.7	32.1	33.5	35.8
60–69 years	1,175	27.3	0.18	20.6	21.9	23.1	24.4	27.1	30.0	31.7	32.8	34.2
70–79 years	875	26.7	0.21	20.4	21.5	22.3	23.8	26.1	29.3	30.7	31.7	34.9
80 years and older	699	25.0	0.22	18.5	19.8	21.1	22.4	25.0	27.1	28.7	29.5	31.7
Non-Hispanic white												
20 years and older	3,286	26.7	0.15	20.4	21.5	22.3	23.6	25.9	29.0	30.9	32.4	35.1
20–29 years	393	25.0	0.27	19.4	20.4	20.9	21.9	24.2	27.0	29.1	30.6	33.6
30–39 years	454	26.6	0.25	20.7	21.6	22.5	23.6	26.0	28.4	30.6	32.1	35.1
40–49 years	428	27.4	0.28	21.5	22.4	22.7	24.2	26.4	29.5	32.0	33.3	36.5
50–59 years	418	27.9	0.25	21.6	22.6	23.6	24.7	27.1	30.8	32.3	33.7	36.7
60–69 years	510	27.5	0.21	20.7	21.9	23.3	24.7	27.3	30.0	31.7	32.7	33.9
70–79 years	524	26.8	0.20	20.6	21.7	22.6	24.0	26.2	29.3	30.7	32.0	35.0
80 years and older	559	25.0	0.18	18.6	19.9	21.1	22.7	25.1	27.1	28.7	29.5	31.7
Non-Hispanic black												
20 years and older	2,113	26.5	0.16	19.5	20.6	21.5	22.9	25.8	29.1	31.2	33.1	36.2
20–29 years	488	26.2	0.28	19.7	20.6	21.3	22.4	25.0	28.8	30.9	33.0	37.0
30–39 years	497	26.4	0.27	19.4	20.5	21.5	22.7	25.4	28.8	31.2	33.3	36.7
40–49 years	370	26.9	0.27	19.7	21.0	22.0	23.7	26.4	29.7	31.5	33.4	35.3
50–59 years	217	27.4	0.42	19.3	20.6	21.8	23.9	27.1	29.7	31.5	33.5	38.3
60–69 years	295	26.7	0.31	18.5	20.4	22.0	23.2	26.4	30.0	31.8	33.1	35.2
70–79 years	187	25.9	0.38	*	20.0	20.9	22.4	25.4	28.8	31.1	31.5	*
80 years and older	59	24.9	0.78	*	*	*	21.5	24.7	27.7	*	*	*
Mexican American												
20 years and older	2,256	26.8	0.15	20.5	21.7	22.4	23.8	26.4	29.3	31.1	32.7	34.8
20–29 years	674	25.5	0.20	20.1	20.8	21.6	22.6	24.9	27.7	29.6	30.5	33.1
30–39 years	474	27.0	0.25	20.6	21.8	22.8	24.3	26.7	28.9	30.6	32.1	35.3
40–49 years	381	28.5	0.28	22.6	23.9	24.3	25.3	27.8	31.5	33.3	34.2	36.3
50–59 years	178	28.8	0.41	*	23.6	24.1	25.7	28.5	31.1	33.5	34.1	*
60–69 years	337	27.6	0.27	21.7	22.7	23.3	24.7	27.4	30.1	32.2	32.9	34.1
70–79 years	149	26.5	0.40	*	20.9	22.9	23.8	26.6	29.4	30.3	31.9	*
80 years and older	63	25.0	0.51	*	*	*	23.9	25.2	26.5	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Body mass index is weight in kilograms divided by height in meters squared.

Table 9. Body mass index for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,758	26.5	0.14	18.8	19.8	20.5	21.8	25.0	29.9	32.8	35.3	38.8
20–29 years	1,665	24.3	0.20	18.4	19.0	19.5	20.5	22.8	26.3	29.8	32.0	35.8
30–39 years	1,775	26.3	0.24	18.7	19.4	20.0	21.3	24.3	30.2	33.3	35.9	39.6
40–49 years	1,367	27.0	0.27	19.2	20.4	21.0	22.4	25.5	30.2	33.2	36.0	39.9
50–59 years	1,006	28.4	0.31	19.9	21.0	22.2	23.6	27.2	32.1	35.1	37.1	40.6
60–69 years	1,172	27.6	0.27	19.7	20.9	21.8	23.5	26.6	30.8	33.6	35.7	38.6
70–79 years	985	26.9	0.28	19.5	20.7	21.4	22.6	25.9	29.9	32.1	34.5	38.8
80 years and older	788	25.2	0.26	17.7	19.3	20.3	21.7	25.0	28.4	30.0	31.4	33.6
Non-Hispanic white												
20 years and older	3,757	26.0	0.18	18.8	19.6	20.4	21.6	24.6	29.4	32.1	34.6	38.1
20–29 years	452	23.8	0.30	18.4	19.0	19.4	20.2	22.2	25.6	28.3	31.5	35.5
30–39 years	579	25.5	0.33	18.5	19.2	19.6	20.6	23.5	28.7	32.0	34.9	38.7
40–49 years	477	26.4	0.36	19.2	20.4	21.0	22.1	24.8	29.3	32.4	34.4	39.4
50–59 years	484	28.2	0.36	19.9	21.0	22.0	23.3	26.9	31.8	35.0	37.0	40.6
60–69 years	501	27.3	0.32	19.5	20.7	21.7	23.4	26.4	30.4	33.3	35.5	38.3
70–79 years	643	26.7	0.28	19.5	20.9	21.4	22.6	25.8	29.7	31.7	33.4	37.3
80 years and older	621	25.1	0.24	17.7	19.2	20.3	21.7	24.9	28.2	29.9	31.0	33.5
Non-Hispanic black												
20 years and older	2,493	28.8	0.20	19.3	20.6	21.7	23.5	27.6	32.7	35.8	38.4	42.3
20–29 years	563	26.3	0.30	18.7	19.5	20.6	22.0	24.9	29.5	32.9	35.3	38.3
30–39 years	626	28.7	0.34	19.6	20.5	21.5	23.2	27.3	32.8	36.1	38.2	42.5
40–49 years	456	30.4	0.42	20.4	21.5	22.7	25.0	28.9	34.7	38.6	40.8	46.2
50–59 years	275	30.5	0.50	19.9	21.7	23.0	25.6	29.9	34.6	38.3	40.0	42.4
60–69 years	300	30.3	0.49	20.4	22.1	24.0	25.5	29.5	33.7	36.4	38.6	43.9
70–79 years	181	29.4	0.59	*	21.9	22.9	25.0	28.3	32.9	36.0	39.2	*
80 years and older	92	25.9	0.66	*	*	20.4	22.1	25.2	29.1	31.3	*	*
Mexican American												
20 years and older	2,132	28.1	0.22	19.7	20.8	22.0	23.7	27.3	31.3	34.1	36.3	39.5
20–29 years	575	26.1	0.30	18.7	19.7	20.5	22.0	25.2	29.2	31.5	33.0	36.7
30–39 years	493	28.5	0.36	20.1	20.9	22.2	23.8	27.3	32.1	35.0	37.1	40.8
40–49 years	366	29.9	0.41	22.1	23.3	24.1	25.3	29.3	33.2	35.7	37.4	42.3
50–59 years	193	29.2	0.49	*	22.6	23.6	25.2	29.1	32.6	34.1	35.7	*
60–69 years	321	29.5	0.42	21.7	22.5	23.6	25.2	28.7	32.3	35.9	37.8	41.4
70–79 years	126	27.4	0.60	*	*	21.9	23.3	26.8	29.9	33.6	*	*
80 years and older	58	25.1	0.72	*	*	*	21.3	25.0	28.3	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTES: Pregnant women are excluded. Body mass index is weight in kilograms divided by height in meters squared.

Table 10. Height in inches for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	589	35.8	0.11	33.3	33.9	34.4	34.8	35.8	36.9	37.5	37.8	38.6
3 years	513	38.9	0.13	36.2	36.6	36.9	37.5	39.1	40.2	40.6	41.1	41.6
4 years	551	41.4	0.13	38.6	39.3	39.6	40.4	41.4	42.5	43.3	43.8	44.6
5 years	497	44.2	0.15	41.0	41.9	42.3	42.8	44.2	45.4	46.4	47.0	47.8
6 years	283	46.8	0.26	*	43.9	44.1	45.1	46.8	48.5	49.3	50.0	*
7 years	270	49.6	0.27	*	46.5	47.3	47.8	49.6	51.6	52.6	53.1	*
8 years	269	51.7	0.24	*	48.7	49.3	49.8	51.7	53.3	54.0	55.0	*
9 years	280	54.2	0.26	*	51.0	51.6	52.4	54.1	55.9	57.5	57.9	*
10 years	297	55.9	0.33	*	52.9	53.3	54.4	56.3	57.6	58.7	59.9	*
11 years	285	58.0	0.30	*	54.6	55.1	56.5	58.0	59.6	60.9	62.0	*
12 years	207	61.2	0.35	*	*	58.2	59.1	60.8	63.9	65.1	*	*
13 years	190	63.6	0.42	*	*	60.1	61.1	63.7	66.3	67.3	*	*
14 years	191	66.5	0.36	*	*	64.0	64.8	66.6	68.5	69.4	*	*
15 years	188	68.0	0.39	*	*	64.8	66.0	67.8	70.8	71.7	*	*
16 years	197	68.9	0.36	*	*	65.9	67.1	69.0	70.7	72.5	*	*
17 years	196	69.5	0.41	*	*	66.3	68.0	69.5	71.8	73.5	*	*
18 years	176	69.8	0.39	*	*	66.3	68.0	69.3	71.8	73.3	*	*
19 years	169	69.1	0.27	*	*	67.0	67.6	69.1	70.5	71.4	*	*
Female												
2 years	564	35.3	0.13	32.6	33.1	33.6	34.2	35.1	36.6	37.2	37.7	38.2
3 years	590	38.7	0.13	35.9	36.5	36.9	37.4	38.7	39.9	40.6	41.0	41.7
4 years	535	41.4	0.14	*	38.7	39.3	40.2	41.3	42.7	43.4	43.9	*
5 years	557	44.2	0.16	*	41.4	41.9	42.5	44.1	45.4	46.4	47.1	*
6 years	274	46.4	0.24	*	*	43.9	45.1	46.5	48.1	48.9	*	*
7 years	275	49.0	0.26	*	*	46.7	47.4	48.6	50.4	51.5	*	*
8 years	247	51.6	0.28	*	*	49.3	50.2	51.7	53.3	54.1	*	*
9 years	282	53.8	0.27	*	50.6	50.9	52.2	53.7	55.0	56.1	56.6	*
10 years	262	56.2	0.29	*	*	53.3	54.1	56.1	58.2	59.3	*	*
11 years	275	59.1	0.30	*	*	56.4	56.8	59.5	61.0	61.8	*	*
12 years	239	61.2	0.35	*	*	58.1	59.3	61.2	63.4	64.6	*	*
13 years	225	63.0	0.33	*	*	59.8	61.1	62.9	64.8	66.0	*	*
14 years	226	63.5	0.33	*	*	60.9	61.5	63.6	65.6	66.5	*	*
15 years	201	64.1	0.27	*	*	62.1	62.7	64.1	65.7	66.5	*	*
16 years	221	64.2	0.29	*	*	62.0	62.6	64.1	65.5	66.4	*	*
17 years	217	64.3	0.31	*	*	61.3	62.6	64.3	65.8	67.3	*	*
18 years	193	64.2	0.35	*	*	61.0	62.2	64.4	66.0	67.0	*	*
19 years	194	64.5	0.32	*	*	61.4	62.4	64.8	66.4	66.9	*	*

* Figure does not meet standards of reliability or precision.

Table 11. Height in inches for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,943	69.1	0.06	64.4	65.5	66.1	67.2	69.1	71.0	72.1	73.0	74.0
20–29 years	1,631	69.3	0.11	64.4	65.6	66.4	67.4	69.2	71.5	72.6	73.1	74.0
30–39 years	1,481	69.5	0.11	64.9	66.0	66.6	67.6	69.5	71.5	72.6	73.6	74.4
40–49 years	1,226	69.4	0.12	64.7	65.6	66.3	67.5	69.4	71.4	72.2	73.0	74.1
50–59 years	855	69.2	0.13	64.7	65.7	66.4	67.4	69.3	71.0	71.9	72.5	73.5
60–69 years	1,176	68.5	0.12	63.9	65.1	65.9	66.8	68.6	70.5	71.5	72.0	72.9
70–79 years	875	67.7	0.13	63.5	64.3	64.8	65.8	67.7	69.5	70.5	71.1	72.2
80 years and older	699	66.7	0.16	62.0	63.1	63.9	64.8	66.7	68.6	69.6	70.4	71.1
Non-Hispanic white												
20 years and older	3,286	69.5	0.07	65.1	66.1	66.6	67.6	69.4	71.4	72.3	73.1	74.1
20–29 years	393	69.9	0.13	65.8	66.6	67.3	68.0	69.8	71.7	72.9	73.3	74.1
30–39 years	454	70.0	0.13	66.0	66.7	67.2	68.1	69.8	71.7	73.1	73.9	74.5
40–49 years	428	69.8	0.13	65.4	66.3	67.0	68.1	69.6	71.6	72.4	73.1	74.1
50–59 years	418	69.6	0.12	65.6	66.4	67.0	67.8	69.6	71.1	72.1	72.6	73.8
60–69 years	510	68.9	0.11	65.0	65.9	66.3	67.1	68.9	70.6	71.5	72.2	73.1
70–79 years	524	67.8	0.12	63.7	64.4	64.9	65.9	67.8	69.6	70.6	71.1	72.2
80 years and older	559	66.9	0.12	62.4	63.3	64.1	65.0	66.8	68.6	69.8	70.5	71.1
Non-Hispanic black												
20 years and older	2,113	69.3	0.08	64.8	65.8	66.4	67.5	69.4	71.2	72.3	73.1	74.1
20–29 years	488	69.7	0.14	65.2	66.1	66.8	67.8	69.5	71.6	72.8	73.6	74.4
30–39 years	497	69.8	0.12	65.3	66.4	67.1	68.1	69.6	71.4	72.4	73.3	74.4
40–49 years	370	69.6	0.16	65.0	65.8	66.4	67.6	69.5	71.6	72.9	73.5	74.2
50–59 years	217	69.0	0.19	64.8	66.1	66.3	67.2	69.1	70.7	72.0	72.4	73.0
60–69 years	295	68.3	0.17	63.8	64.9	65.4	66.4	68.2	70.2	71.0	72.0	72.7
70–79 years	187	67.9	0.21	*	64.5	64.8	66.0	68.0	70.1	70.7	71.5	*
80 years and older	59	66.5	0.48	*	*	*	65.1	67.1	68.6	*	*	*
Mexican American												
20 years and older	2,258	66.8	0.07	62.6	63.5	64.2	65.1	66.7	68.5	69.5	70.2	71.3
20–29 years	675	66.8	0.12	62.8	63.6	64.3	65.1	66.9	68.5	69.5	70.1	71.1
30–39 years	474	67.2	0.15	62.8	63.7	64.3	65.6	67.1	68.9	70.0	70.6	71.9
40–49 years	381	66.8	0.15	63.1	63.7	64.4	65.1	66.6	68.4	69.5	70.2	71.6
50–59 years	178	66.6	0.21	*	63.7	64.1	65.0	66.7	68.1	69.0	69.8	*
60–69 years	338	66.3	0.15	62.1	63.2	63.8	64.6	66.3	68.1	69.0	69.4	70.1
70–79 years	149	65.2	0.22	*	62.4	63.0	63.9	65.0	66.6	67.9	68.2	*
80 years and older	63	64.0	0.36	*	*	*	62.1	64.2	65.3	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 12. Height in inches for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	9,067	63.7	0.06	59.2	60.3	60.9	61.9	63.7	65.5	66.6	67.2	68.1
20–29 years	1,867	64.1	0.10	59.7	60.8	61.3	62.2	64.0	66.0	67.0	67.6	68.6
30–39 years	1,863	64.3	0.10	59.9	60.9	61.6	62.5	64.4	66.2	67.1	67.8	68.9
40–49 years	1,371	64.1	0.11	59.8	60.9	61.6	62.4	64.0	65.8	66.8	67.2	68.1
50–59 years	1,009	63.7	0.13	59.6	60.6	61.2	62.0	63.8	65.4	66.3	67.1	67.8
60–69 years	1,177	63.1	0.12	59.1	60.0	60.7	61.4	63.1	64.9	65.6	66.3	67.5
70–79 years	988	62.2	0.14	58.0	59.0	59.9	60.6	62.2	64.0	64.9	65.4	66.1
80 years and older	792	61.0	0.15	56.6	57.6	58.3	59.4	61.1	62.8	63.7	64.4	65.2
Non-Hispanic white												
20 years and older	3,831	63.9	0.07	59.6	60.6	61.3	62.1	63.9	65.6	66.7	67.4	68.3
20–29 years	499	64.4	0.16	60.1	61.2	61.7	62.7	64.3	66.2	67.3	67.8	69.0
30–39 years	600	64.7	0.14	60.6	61.6	62.1	63.0	64.7	66.5	67.4	68.1	69.1
40–49 years	478	64.4	0.14	60.6	61.6	62.0	62.9	64.3	66.0	67.0	67.3	68.2
50–59 years	485	63.9	0.14	60.2	61.1	61.6	62.2	64.0	65.6	66.5	67.1	67.9
60–69 years	501	63.3	0.14	59.3	60.3	60.9	61.7	63.2	65.0	65.6	66.4	67.5
70–79 years	644	62.3	0.14	58.0	59.1	60.0	60.7	62.3	64.1	64.9	65.4	66.1
80 years and older	624	61.0	0.14	56.7	57.9	58.5	59.4	61.1	62.8	63.7	64.4	65.3
Non-Hispanic black												
20 years and older	2,585	64.2	0.06	60.0	61.0	61.6	62.4	64.2	65.9	66.7	67.5	68.3
20–29 years	624	64.5	0.11	60.4	61.4	61.9	62.8	64.5	66.1	66.9	67.6	68.4
30–39 years	654	64.4	0.12	60.2	61.2	61.7	62.4	64.5	66.1	67.2	68.0	68.9
40–49 years	457	64.6	0.13	60.7	61.6	62.0	62.9	64.5	66.3	67.0	67.7	68.6
50–59 years	275	64.1	0.16	60.2	61.1	61.7	62.5	64.1	65.7	66.7	67.1	67.7
60–69 years	301	63.5	0.17	59.2	60.4	60.9	61.8	63.4	65.1	66.0	66.8	67.8
70–79 years	182	62.9	0.20	*	59.8	60.4	61.3	63.1	64.6	65.5	66.0	*
80 years and older	92	61.5	0.30	*	*	59.1	60.1	61.6	63.1	64.1	*	*
Mexican American												
20 years and older	2,267	61.7	0.07	57.8	58.7	59.3	60.1	61.7	63.2	64.1	64.7	65.9
20–29 years	663	62.0	0.12	58.2	59.0	59.5	60.3	62.1	63.4	64.5	65.1	66.1
30–39 years	530	61.9	0.14	58.1	58.7	59.4	60.3	61.8	63.4	64.1	64.9	66.4
40–49 years	368	62.0	0.15	58.5	59.3	59.8	60.4	61.9	63.5	64.1	65.0	66.0
50–59 years	195	61.3	0.20	*	58.6	59.1	59.8	61.2	62.8	63.9	64.1	*
60–69 years	325	60.7	0.16	57.0	57.8	58.4	59.1	60.7	62.2	63.1	63.5	64.3
70–79 years	127	60.1	0.30	*	*	57.9	58.6	60.2	61.9	62.5	*	*
80 years and older	59	57.6	0.41	*	*	*	56.3	57.3	59.3	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 13. Height in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	589	90.9	0.27	84.5	86.0	87.3	88.3	90.9	93.5	95.2	95.9	97.9
3 years	513	98.8	0.32	91.9	92.8	93.8	95.3	99.4	102.1	103.1	104.3	105.6
4 years	551	105.2	0.33	98.0	99.9	100.6	102.5	105.1	108.0	110.1	111.3	113.3
5 years	497	112.3	0.38	104.2	106.4	107.4	108.9	112.3	115.3	117.9	119.3	121.4
6 years	283	118.9	0.65	*	111.4	112.0	114.6	118.9	123.2	125.4	126.9	*
7 years	270	125.9	0.68	*	118.1	120.1	121.3	126.0	131.1	133.5	134.8	*
8 years	269	131.3	0.60	*	123.8	125.2	126.5	131.3	135.4	137.1	139.6	*
9 years	280	137.7	0.65	*	129.6	131.0	133.2	137.5	142.0	146.1	147.2	*
10 years	297	142.0	0.83	*	134.3	135.5	138.2	143.1	146.4	149.2	152.1	*
11 years	285	147.4	0.76	*	138.7	140.0	143.6	147.1	151.5	154.9	157.5	*
12 years	207	155.5	0.89	*	*	147.8	150.0	154.5	162.3	165.5	*	*
13 years	190	161.6	1.06	*	*	152.7	155.0	161.8	168.3	170.9	*	*
14 years	191	169.0	0.91	*	*	162.6	164.6	168.9	174.3	176.3	*	*
15 years	188	172.8	0.99	*	*	164.6	167.6	172.3	179.9	182.2	*	*
16 years	197	175.0	0.92	*	*	167.3	170.5	175.4	179.6	184.1	*	*
17 years	196	176.5	1.03	*	*	168.3	172.6	176.8	182.5	187.0	*	*
18 years	176	177.3	0.99	*	*	168.4	172.4	176.0	182.3	186.1	*	*
19 years	169	175.5	0.69	*	*	170.1	171.6	175.4	179.0	181.2	*	*
Female												
2 years	564	89.7	0.33	82.6	84.0	85.1	86.9	89.2	92.7	94.3	95.3	96.9
3 years	590	98.2	0.33	91.3	92.8	93.8	95.0	98.2	101.4	103.2	104.1	106.0
4 years	535	105.1	0.36	*	98.3	100.2	102.2	105.0	108.5	110.4	111.5	*
5 years	557	112.2	0.41	*	105.2	106.3	108.0	112.0	115.5	117.8	119.5	*
6 years	274	117.9	0.61	*	*	111.5	114.5	118.2	122.1	124.1	*	*
7 years	275	124.3	0.67	*	*	118.6	120.5	123.4	128.0	130.8	*	*
8 years	247	131.1	0.70	*	*	125.3	127.4	131.1	135.5	137.5	*	*
9 years	282	136.6	0.70	*	128.6	129.4	132.6	136.5	139.9	142.7	143.6	*
10 years	262	142.7	0.74	*	*	135.4	137.2	142.5	147.8	150.6	*	*
11 years	275	150.2	0.75	*	*	143.1	144.3	151.1	155.1	157.1	*	*
12 years	239	155.5	0.88	*	*	147.5	150.6	155.6	161.2	164.2	*	*
13 years	225	159.9	0.83	*	*	152.0	155.3	159.5	164.6	167.6	*	*
14 years	226	161.2	0.83	*	*	154.5	156.1	161.5	166.4	169.1	*	*
15 years	201	162.8	0.70	*	*	157.8	159.3	162.9	166.8	168.7	*	*
16 years	221	163.1	0.74	*	*	157.4	159.1	162.7	166.3	168.7	*	*
17 years	217	163.4	0.78	*	*	155.8	158.9	163.4	167.1	171.0	*	*
18 years	193	163.2	0.88	*	*	155.0	158.0	163.6	167.6	170.1	*	*
19 years	194	163.8	0.81	*	*	156.1	158.5	164.7	168.6	169.9	*	*

* Figure does not meet standards of reliability or precision.

Table 14. Height in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,943	175.6	0.16	163.5	166.4	168.1	170.7	175.5	180.5	183.2	185.3	187.7
20–29 years	1,631	176.1	0.27	163.6	166.7	168.6	171.1	175.8	181.6	184.3	185.8	187.7
30–39 years	1,481	176.7	0.28	165.1	167.7	169.2	171.9	176.5	181.5	184.7	186.8	189.1
40–49 years	1,226	176.3	0.30	164.4	166.7	168.4	171.6	176.3	181.3	183.6	185.5	188.1
50–59 years	855	175.7	0.34	164.5	167.1	168.5	171.1	176.0	180.2	182.5	184.0	186.8
60–69 years	1,176	174.1	0.30	162.1	165.2	167.3	169.6	174.3	179.0	181.4	183.0	185.1
70–79 years	875	171.9	0.33	161.3	163.4	164.6	167.1	171.9	176.4	179.1	180.4	183.5
80 years and older	699	169.4	0.40	157.5	160.1	162.3	164.7	169.6	174.3	176.8	178.6	180.6
Non-Hispanic white												
20 years and older	3,286	176.5	0.18	165.2	167.8	169.3	171.8	176.3	181.2	183.7	185.7	188.1
20–29 years	393	177.4	0.34	167.1	169.1	170.8	172.7	177.2	182.1	185.1	186.2	188.2
30–39 years	454	177.9	0.33	167.6	169.5	170.6	173.1	177.5	182.3	185.6	187.6	189.3
40–49 years	428	177.2	0.34	166.0	168.3	169.9	173.1	177.0	181.8	183.9	185.7	188.2
50–59 years	418	176.7	0.31	166.7	168.5	170.1	172.3	176.8	180.7	183.2	184.5	187.3
60–69 years	510	175.0	0.29	165.0	167.2	168.5	170.6	174.7	179.4	181.6	183.4	185.8
70–79 years	524	172.2	0.29	161.8	163.5	164.9	167.4	172.2	176.7	179.2	180.5	183.6
80 years and older	559	169.8	0.30	158.3	160.9	162.9	165.1	169.7	174.3	177.2	178.9	180.7
Non-Hispanic black												
20 years and older	2,113	176.1	0.20	164.7	167.1	168.7	171.5	176.1	180.8	183.7	185.6	188.2
20–29 years	488	177.0	0.35	165.6	167.9	169.7	172.4	176.5	182.0	184.9	187.1	188.9
30–39 years	497	177.2	0.32	165.9	168.6	170.7	173.1	177.0	181.2	184.0	186.1	188.9
40–49 years	370	176.7	0.40	165.0	167.1	168.5	171.6	176.6	181.8	185.1	186.6	188.6
50–59 years	217	175.4	0.48	164.6	167.7	168.5	170.6	175.7	179.6	182.7	183.8	185.2
60–69 years	295	173.5	0.42	162.2	164.7	166.0	168.7	173.3	178.3	180.4	182.9	184.7
70–79 years	187	172.4	0.54	*	163.8	164.6	167.8	172.7	177.9	179.7	181.5	*
80 years and older	59	168.8	1.22	*	*	*	165.2	170.2	174.4	*	*	*
Mexican American												
20 years and older	2,258	169.7	0.19	159.2	161.4	163.2	165.4	169.6	174.0	176.6	178.3	181.1
20–29 years	675	169.8	0.30	159.3	161.4	163.4	165.5	169.7	174.0	176.6	178.2	180.6
30–39 years	474	170.6	0.38	159.7	162.0	163.4	166.6	170.3	174.9	177.7	179.3	182.6
40–49 years	381	169.8	0.39	160.3	161.9	163.6	165.5	169.3	173.9	176.6	178.2	181.7
50–59 years	178	169.3	0.53	*	161.8	163.0	165.0	169.4	173.0	175.2	177.3	*
60–69 years	338	168.4	0.39	158.0	160.7	162.1	164.1	168.4	172.7	175.2	176.2	178.1
70–79 years	149	165.7	0.56	*	158.5	159.9	162.4	165.1	169.2	172.6	173.5	*
80 years and older	63	162.6	0.90	*	*	*	157.6	163.2	165.9	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 15. Height in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	9,067	161.8	0.15	150.4	153.1	154.9	157.2	161.7	166.4	169.1	170.8	173.1
20–29 years	1,867	162.7	0.26	151.7	154.5	155.7	158.0	162.6	167.7	170.2	171.7	174.3
30–39 years	1,863	163.4	0.26	152.1	154.7	156.3	158.8	163.5	168.2	170.4	172.2	174.9
40–49 years	1,371	162.8	0.28	152.0	154.9	156.6	158.6	162.6	167.1	169.6	170.9	172.9
50–59 years	1,009	161.8	0.32	151.5	154.0	155.6	157.5	162.1	166.1	168.4	170.3	172.2
60–69 years	1,177	160.2	0.30	150.0	152.3	154.1	156.1	160.1	164.7	166.5	168.5	171.2
70–79 years	988	158.0	0.34	147.2	149.8	152.1	154.0	158.2	162.6	164.8	166.1	167.9
80 years and older	792	154.9	0.39	143.8	146.2	148.2	150.9	155.1	159.4	161.8	163.5	165.7
Non-Hispanic white												
20 years and older	3,831	162.3	0.17	151.2	153.9	155.7	157.8	162.3	166.8	169.5	171.1	173.6
20–29 years	499	163.6	0.40	152.7	155.5	156.7	159.3	163.2	168.1	170.9	172.3	175.1
30–39 years	600	164.5	0.35	153.9	156.3	157.8	160.0	164.5	168.7	171.0	172.7	175.4
40–49 years	478	163.5	0.37	153.8	156.3	157.5	159.7	163.3	167.7	170.0	171.0	173.2
50–59 years	485	162.4	0.36	152.8	155.2	156.5	158.1	162.6	166.6	168.8	170.7	172.6
60–69 years	501	160.7	0.36	150.7	153.2	154.7	156.7	160.6	165.0	166.7	168.7	171.4
70–79 years	644	158.1	0.35	147.3	150.1	152.4	154.3	158.4	162.7	164.8	166.1	168.0
80 years and older	624	155.0	0.36	143.9	147.0	148.5	151.1	155.1	159.5	161.9	163.5	165.8
Non-Hispanic black												
20 years and older	2,585	163.0	0.16	152.5	154.9	156.3	158.4	163.1	167.4	169.6	171.3	173.5
20–29 years	624	163.7	0.29	153.4	155.9	157.1	159.6	163.9	167.9	169.9	171.7	173.5
30–39 years	654	163.6	0.31	153.0	155.5	156.8	158.6	163.9	168.1	170.9	172.5	175.0
40–49 years	457	164.1	0.33	154.3	156.3	157.6	159.7	163.9	168.3	170.2	171.9	174.5
50–59 years	275	162.8	0.42	153.0	155.1	156.8	158.6	162.8	167.1	169.5	170.2	172.2
60–69 years	301	161.3	0.42	150.5	153.3	154.8	157.0	161.1	165.4	167.7	169.7	172.1
70–79 years	182	159.8	0.51	*	152.0	153.4	155.7	160.2	164.2	166.3	167.5	*
80 years and older	92	156.1	0.77	*	*	150.1	152.7	156.3	160.3	162.9	*	*
Mexican American												
20 years and older	2,267	156.7	0.18	146.9	149.0	150.6	152.6	156.7	160.6	162.7	164.4	167.1
20–29 years	663	157.4	0.29	147.9	149.9	151.2	153.2	157.6	161.1	163.7	165.4	167.9
30–39 years	530	157.1	0.35	147.4	149.1	150.8	153.1	156.9	161.1	163.0	164.7	168.6
40–49 years	368	157.4	0.36	148.7	150.7	151.8	153.5	157.1	161.1	162.9	164.7	167.2
50–59 years	195	155.7	0.50	*	148.7	150.2	151.8	155.5	159.6	162.1	162.9	*
60–69 years	325	154.2	0.40	144.7	146.8	148.4	150.1	154.3	158.0	160.2	161.4	163.3
70–79 years	127	152.6	0.75	*	*	147.0	149.0	153.1	157.1	158.8	*	*
80 years and older	59	146.3	1.04	*	*	*	143.2	145.7	150.5	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 16. Recumbent length in centimeters for persons aged 3 months to 3 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3–5 months	291	64.4	0.29	*	60.4	61.2	62.0	64.2	66.5	67.3	68.0	*
6–8 months	321	70.0	0.26	*	66.1	67.1	67.9	69.8	71.7	72.5	73.6	*
9–11 months	277	73.8	0.29	*	70.0	70.9	71.8	73.6	75.6	76.6	78.0	*
1 year	657	82.2	0.28	74.5	75.6	76.8	78.4	82.1	85.5	87.1	88.1	90.0
2 years	616	91.7	0.23	85.0	86.2	87.5	88.8	91.6	94.5	96.1	97.1	99.2
3 years	508	100.0	0.27	93.4	94.2	95.1	96.7	100.1	103.0	104.1	105.7	106.9
Female												
3–5 months	309	62.4	0.24	*	58.5	59.6	60.9	62.8	64.5	65.5	66.1	*
6–8 months	264	68.1	0.23	*	*	65.1	66.3	67.8	69.7	70.6	*	*
9–11 months	316	72.0	0.23	*	68.6	69.0	70.0	72.0	73.6	74.6	75.5	*
1 year	636	80.7	0.22	73.6	75.0	76.0	77.5	80.6	83.8	86.0	87.0	88.4
2 years	598	90.6	0.22	83.8	85.1	85.9	87.7	90.1	93.9	95.6	96.5	97.8
3 years	585	99.4	0.23	92.0	93.7	95.2	96.4	99.4	102.5	104.1	105.1	107.0

* Figure does not meet standards of reliability or precision.

Table 17. Sitting height in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	581	52.1	0.19	48.5	49.2	49.8	50.8	52.3	53.6	54.4	55.2	55.9
3 years	508	54.7	0.20	50.5	51.3	51.9	53.2	54.7	56.2	57.3	57.8	59.1
4 years	551	57.4	0.20	53.1	54.2	54.8	55.8	57.4	59.1	60.2	60.6	61.6
5 years	497	60.6	0.23	55.7	56.8	57.6	58.7	60.5	62.6	63.3	63.9	65.3
6 years	282	63.3	0.37	*	58.6	60.0	61.2	63.0	65.5	66.6	67.9	*
7 years	270	66.0	0.38	*	61.6	62.3	63.9	65.6	68.5	70.1	70.7	*
8 years	269	68.7	0.36	*	64.3	64.8	66.5	68.6	70.7	72.6	73.6	*
9 years	277	71.1	0.36	*	66.9	67.6	68.5	71.1	73.7	74.6	75.5	*
10 years	294	73.1	0.38	*	69.1	70.0	70.9	73.1	75.6	76.6	78.1	*
11 years	282	75.5	0.38	*	71.1	71.9	73.1	75.7	77.9	79.1	79.8	*
12 years	203	79.1	0.51	*	*	74.9	76.0	79.0	82.3	84.2	*	*
13 years	186	82.4	0.64	*	*	76.6	79.1	82.4	85.2	87.6	*	*
14 years	189	86.9	0.57	*	*	82.5	84.6	86.9	90.3	91.1	*	*
15 years	187	88.8	0.55	*	*	84.4	86.2	89.0	91.6	93.4	*	*
16 years	194	90.4	0.58	*	*	85.7	86.9	90.4	93.0	95.4	*	*
17 years	192	91.7	0.54	*	*	87.5	88.6	91.8	94.7	96.3	*	*
18 years	173	91.9	0.50	*	*	88.3	89.1	91.9	94.6	96.5	*	*
19 years	165	91.8	0.45	*	*	88.6	89.9	92.0	94.3	94.8	*	*
Female												
2 years	548	51.3	0.20	*	48.1	48.8	49.8	51.4	52.8	53.8	54.7	*
3 years	584	54.4	0.19	50.5	51.1	51.9	52.5	54.5	56.1	56.9	57.6	58.4
4 years	530	57.3	0.22	*	53.9	54.3	55.2	57.3	59.0	60.3	61.2	*
5 years	556	60.2	0.24	*	56.1	56.8	58.2	60.0	62.3	63.4	64.3	*
6 years	272	62.6	0.33	*	*	59.8	60.6	62.8	64.4	66.0	*	*
7 years	275	65.6	0.34	*	*	62.6	63.3	65.4	67.9	69.0	*	*
8 years	245	68.3	0.38	*	*	65.3	66.2	68.4	70.1	70.7	*	*
9 years	278	70.7	0.39	*	*	67.1	68.2	70.4	72.8	74.4	*	*
10 years	261	73.6	0.42	*	*	69.8	70.8	73.7	76.2	78.1	*	*
11 years	275	77.4	0.43	*	*	73.1	74.1	77.8	80.6	81.6	*	*
12 years	237	80.4	0.51	*	*	75.9	76.9	80.2	83.4	85.3	*	*
13 years	219	83.1	0.52	*	*	78.2	79.5	83.2	86.2	87.2	*	*
14 years	218	84.3	0.45	*	*	80.6	81.5	84.9	87.2	88.0	*	*
15 years	196	85.5	0.47	*	*	82.4	83.3	85.2	87.7	89.3	*	*
16 years	217	85.7	0.39	*	*	82.3	83.6	86.0	88.1	89.0	*	*
17 years	215	86.0	0.41	*	*	82.7	83.5	85.7	88.6	89.8	*	*
18 years	190	85.6	0.52	*	*	81.3	82.4	85.7	88.8	89.4	*	*
19 years	192	86.6	0.44	*	*	82.8	84.3	86.5	89.2	90.6	*	*

* Figure does not meet standards of reliability or precision.

Table 18. Sitting height in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,603	91.9	0.09	85.3	86.8	87.7	89.2	92.1	94.6	96.1	97.0	98.5
20–29 years	1,611	92.2	0.15	85.6	87.0	87.8	89.5	92.2	94.9	96.5	97.3	98.5
30–39 years	1,463	92.7	0.17	86.3	87.6	88.5	90.0	92.6	95.4	96.8	97.9	99.6
40–49 years	1,200	92.5	0.18	86.5	87.3	88.5	90.0	92.8	95.0	96.4	97.3	98.9
50–59 years	831	92.2	0.20	86.1	87.5	88.5	89.8	92.3	94.8	96.0	96.8	97.5
60–69 years	1,125	90.8	0.17	85.0	86.3	87.1	88.4	91.1	93.1	94.5	95.2	96.6
70–79 years	804	89.3	0.21	82.6	84.6	85.6	87.0	89.4	91.5	93.2	94.1	95.6
80 years and older	569	87.3	0.26	81.1	82.5	83.5	84.9	87.3	90.2	91.3	92.5	93.6
Non-Hispanic white												
20 years and older	3,094	92.6	0.10	86.5	87.7	88.7	90.1	92.7	95.1	96.6	97.5	98.9
20–29 years	389	93.1	0.21	87.1	88.1	89.5	90.9	93.2	95.5	97.1	97.6	98.8
30–39 years	453	93.6	0.21	87.5	89.0	89.7	91.1	93.4	96.0	97.6	98.6	100.2
40–49 years	421	93.3	0.20	87.0	88.5	89.5	91.1	93.4	95.3	96.9	97.6	99.5
50–59 years	409	92.9	0.19	87.1	88.7	89.5	90.5	93.1	95.2	96.3	97.0	97.7
60–69 years	487	91.4	0.17	86.2	87.2	87.9	89.1	91.5	93.4	94.9	95.6	96.9
70–79 years	483	89.7	0.19	83.6	85.2	86.0	87.2	89.6	92.0	93.5	94.5	95.8
80 years and older	452	87.7	0.21	81.5	82.9	84.0	85.4	87.6	90.4	91.6	92.8	93.6
Non-Hispanic black												
20 years and older	2,048	89.6	0.09	83.2	84.7	85.7	87.1	89.5	92.1	93.5	94.5	95.8
20–29 years	482	90.2	0.19	84.3	85.4	86.5	87.6	90.2	92.7	94.0	95.1	96.9
30–39 years	491	90.1	0.18	84.0	85.5	86.3	87.6	90.0	92.6	94.0	94.9	95.6
40–49 years	357	90.1	0.22	83.8	85.4	86.5	87.6	90.1	92.6	93.9	94.5	96.1
50–59 years	212	89.0	0.27	83.5	84.6	85.4	86.7	88.9	91.0	92.6	93.6	95.6
60–69 years	281	88.0	0.24	81.9	83.1	84.7	85.9	88.0	90.5	91.9	92.9	94.1
70–79 years	175	86.6	0.34	*	81.0	82.5	83.9	86.9	89.4	91.0	91.7	*
80 years and older	50	85.2	0.59	*	*	*	83.7	85.1	87.4	*	*	*
Mexican American												
20 years and older	2,180	89.6	0.10	83.8	85.1	86.0	87.2	89.6	92.0	93.3	94.4	95.6
20–29 years	665	89.5	0.18	84.0	85.0	85.8	87.1	89.5	92.0	93.1	94.0	95.3
30–39 years	463	90.3	0.22	84.3	85.5	86.6	87.7	90.4	92.6	93.7	95.0	96.5
40–49 years	375	89.9	0.23	84.2	85.7	86.5	87.8	89.9	91.9	93.6	94.7	95.7
50–59 years	168	89.4	0.31	*	85.7	86.4	87.5	89.6	91.1	92.8	93.6	*
60–69 years	324	88.5	0.23	83.4	85.0	85.6	86.4	88.2	90.6	91.9	93.0	94.5
70–79 years	134	86.5	0.38	*	81.6	82.2	84.7	86.6	88.6	90.3	91.0	*
80 years and older	51	84.1	0.60	*	*	*	81.3	85.0	86.0	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 19. Sitting height in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,598	85.5	0.09	78.8	80.5	81.6	83.0	85.6	88.1	89.5	90.4	91.7
20–29 years	1,837	86.1	0.13	80.2	81.5	82.5	83.6	86.1	88.5	90.0	90.9	92.0
30–39 years	1,837	86.7	0.13	80.6	82.0	82.9	84.4	86.0	89.1	90.3	91.3	92.5
40–49 years	1,338	86.5	0.15	80.8	82.1	82.9	84.1	86.6	88.9	90.1	90.9	92.5
50–59 years	981	85.5	0.17	79.5	80.8	82.1	83.4	85.6	88.0	89.1	89.8	91.1
60–69 years	1,107	84.0	0.15	78.6	79.9	80.9	82.0	84.0	86.2	87.4	88.4	89.5
70–79 years	894	82.4	0.20	76.0	77.6	78.7	80.2	82.8	84.9	86.2	86.8	88.0
80 years and older	604	79.6	0.24	72.9	74.5	75.6	77.1	79.6	82.4	83.6	84.6	85.8
Non-Hispanic white												
20 years and older	3,558	86.0	0.10	79.5	81.1	82.2	83.6	86.1	88.6	89.9	90.8	92.1
20–29 years	489	86.9	0.19	81.5	82.6	83.2	84.7	86.9	89.2	90.6	91.4	92.3
30–39 years	595	87.5	0.17	81.9	83.1	84.2	85.4	87.4	89.8	91.0	91.9	93.0
40–49 years	467	87.1	0.18	81.9	83.0	83.6	84.9	87.1	89.4	90.5	91.4	92.7
50–59 years	476	86.1	0.19	80.4	81.9	82.8	84.1	86.1	88.5	89.5	90.1	91.4
60–69 years	472	84.5	0.17	79.2	80.7	81.5	82.5	84.4	86.6	87.8	88.7	89.6
70–79 years	584	82.6	0.20	76.1	78.0	79.0	80.4	83.1	85.1	86.5	87.0	88.1
80 years and older	475	79.9	0.22	73.8	75.1	76.1	77.4	79.9	82.5	83.9	84.7	86.2
Non-Hispanic black												
20 years and older	2,480	84.0	0.08	78.2	79.5	80.3	81.7	84.1	86.6	87.7	88.6	89.6
20–29 years	615	84.3	0.15	78.9	79.8	80.9	82.1	84.3	86.6	87.6	88.5	89.6
30–39 years	644	84.8	0.15	79.3	80.3	81.1	82.3	85.0	87.2	88.4	89.3	90.3
40–49 years	446	84.9	0.16	79.7	80.7	81.5	82.7	85.0	87.1	88.2	88.9	89.8
50–59 years	263	83.9	0.22	78.3	79.6	80.6	81.8	83.7	85.9	87.3	88.4	90.0
60–69 years	280	82.6	0.22	76.9	78.5	79.2	80.2	82.6	84.8	86.1	87.0	87.9
70–79 years	165	80.9	0.27	*	76.9	77.2	78.6	81.0	83.3	84.2	85.3	*
80 years and older	67	78.1	0.47	*	*	*	75.8	78.5	80.5	*	*	*
Mexican American												
20 years and older	2,193	83.5	0.10	78.0	79.3	80.2	81.4	83.6	85.6	86.8	87.7	89.0
20–29 years	654	83.9	0.16	78.8	79.9	80.6	81.8	83.9	86.0	87.2	88.3	89.1
30–39 years	520	84.0	0.19	78.6	79.9	80.6	81.7	84.1	85.8	87.0	88.1	89.5
40–49 years	357	84.1	0.20	79.7	80.5	81.2	82.1	84.0	86.0	87.0	87.9	89.2
50–59 years	189	82.9	0.27	*	78.6	80.1	80.6	83.2	85.1	85.7	86.1	*
60–69 years	307	81.6	0.23	76.5	77.6	78.4	79.4	82.1	83.7	84.9	85.4	86.5
70–79 years	117	79.7	0.45	*	*	76.0	77.1	80.5	82.4	83.1	*	*
80 years and older	49	74.2	0.67	*	*	*	*	74.0	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 20. Upper arm length in centimeters for persons aged 3 months to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3–5 months	282	12.3	0.11	*	11.0	11.1	11.5	12.1	13.0	13.2	13.5	*
6–8 months	314	13.5	0.11	*	12.0	12.3	12.8	13.5	14.2	14.6	15.0	*
9–11 months	269	14.3	0.11	*	12.8	13.0	13.6	14.3	15.0	15.5	16.0	*
1 year	651	16.0	0.09	14.0	14.4	14.8	15.0	16.0	16.8	17.2	17.6	18.0
2 years	571	17.9	0.08	16.0	16.4	16.7	17.0	17.8	18.6	19.2	19.5	20.0
3 years	484	19.4	0.10	17.2	17.9	18.0	18.5	19.5	20.2	20.7	21.0	21.3
4 years	541	20.9	0.10	19.0	19.3	19.5	20.0	20.8	21.7	22.1	22.5	23.0
5 years	494	22.4	0.11	20.0	20.4	20.6	21.5	22.2	23.5	24.0	24.3	24.6
6 years	279	23.8	0.18	*	21.6	22.0	22.7	23.8	24.7	25.5	26.0	*
7 years	268	25.4	0.18	*	23.2	23.6	24.0	25.2	26.5	27.2	27.6	*
8 years	263	26.6	0.18	*	24.5	25.0	25.5	26.2	27.7	28.9	29.2	*
9 years	276	28.3	0.20	*	26.0	26.2	26.8	28.0	29.6	30.5	30.7	*
10 years	294	29.1	0.25	*	26.5	27.0	27.8	29.2	30.7	31.4	31.8	*
11 years	282	30.3	0.20	*	28.0	28.5	29.1	30.2	31.5	32.4	33.0	*
12 years	202	32.3	0.28	*	*	30.1	30.9	32.2	33.6	34.3	*	*
13 years	181	33.6	0.31	*	*	31.0	32.0	33.5	35.4	36.6	*	*
14 years	185	35.3	0.31	*	*	33.0	34.0	35.2	36.4	37.1	*	*
15 years	183	36.2	0.31	*	*	33.4	34.6	36.0	38.1	39.0	*	*
16 years	192	36.8	0.28	*	*	34.4	35.3	36.8	38.4	39.0	*	*
17 years	193	37.1	0.24	*	*	35.1	36.0	37.0	38.7	39.3	*	*
18 years	169	37.2	0.27	*	*	34.6	35.6	37.1	38.8	39.4	*	*
19 years	162	37.1	0.27	*	*	35.1	36.0	37.4	38.6	39.3	*	*
Female												
3–5 months	306	11.8	0.11	*	10.5	11.0	11.2	12.0	12.5	13.0	13.0	*
6–8 months	257	13.0	0.11	*	*	12.0	12.2	13.0	13.7	14.0	*	*
9–11 months	309	13.8	0.11	*	12.5	13.0	13.0	13.8	14.5	15.0	15.2	*
1 year	629	15.6	0.09	13.6	14.0	14.2	14.6	15.5	16.5	17.0	17.4	18.0
2 years	556	17.5	0.10	*	15.9	16.0	16.8	17.5	18.4	18.9	19.0	*
3 years	562	19.2	0.09	17.1	17.6	18.0	18.5	19.2	20.0	20.5	21.0	21.4
4 years	527	20.8	0.11	*	19.0	19.4	19.9	20.8	22.0	22.5	23.0	*
5 years	556	22.4	0.11	*	20.5	20.7	21.2	22.3	23.4	24.0	24.2	*
6 years	274	23.7	0.18	*	*	21.5	22.4	23.8	24.8	25.5	*	*
7 years	270	24.9	0.20	*	*	22.5	23.8	24.8	26.0	27.0	*	*
8 years	245	26.5	0.19	*	*	24.7	25.4	26.5	27.6	28.2	*	*
9 years	271	28.1	0.22	*	*	26.0	26.5	28.0	29.5	30.2	*	*
10 years	255	29.1	0.21	*	*	27.0	27.8	29.0	30.5	31.3	*	*
11 years	268	31.0	0.23	*	*	28.8	29.7	31.0	32.5	33.0	*	*
12 years	233	32.1	0.25	*	*	29.4	30.4	32.5	34.0	34.2	*	*
13 years	218	33.1	0.27	*	*	30.9	31.4	33.0	34.7	35.3	*	*
14 years	220	33.8	0.24	*	*	32.0	32.5	33.6	34.9	36.0	*	*
15 years	195	33.9	0.26	*	*	31.8	32.7	34.0	35.2	35.7	*	*
16 years	211	34.1	0.26	*	*	32.3	32.8	34.1	35.2	35.8	*	*
17 years	210	34.2	0.23	*	*	32.0	33.0	34.2	35.7	36.0	*	*
18 years	186	34.0	0.29	*	*	*	32.4	33.9	35.5	*	*	*
19 years	185	34.0	0.26	*	*	*	32.8	34.0	35.2	*	*	*

* Figure does not meet standards of reliability or precision.

Table 21. Upper arm length in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,467	37.8	0.05	34.2	35.0	35.5	36.3	37.9	39.2	40.1	40.6	41.4
20–29 years	1,585	37.4	0.08	33.6	34.5	35.0	35.8	37.4	39.0	40.0	40.5	41.1
30–39 years	1,435	37.8	0.08	34.2	35.0	35.6	36.3	37.8	39.2	40.0	40.6	41.4
40–49 years	1,176	38.0	0.09	34.6	35.2	35.7	36.5	38.0	39.4	40.2	40.7	41.6
50–59 years	820	38.1	0.11	34.4	35.2	35.9	37.0	38.1	39.5	40.2	40.6	41.8
60–69 years	1,112	38.1	0.09	34.8	35.4	36.0	36.6	38.0	39.5	40.1	40.8	41.4
70–79 years	788	37.7	0.11	34.6	35.1	35.5	36.3	37.7	39.1	40.0	40.5	41.2
80 years and older	551	37.6	0.13	34.1	35.0	35.4	36.1	37.6	39.3	40.0	40.2	41.1
Non-Hispanic white												
20 years and older	3,044	38.0	0.05	34.6	35.2	35.8	36.6	38.0	39.4	40.1	40.6	41.4
20–29 years	386	37.6	0.11	34.0	34.6	35.2	36.0	37.6	39.1	40.0	40.5	41.1
30–39 years	446	38.0	0.10	34.6	35.5	36.0	36.7	38.0	39.3	40.1	40.8	41.5
40–49 years	416	38.1	0.11	35.0	35.3	35.8	36.6	38.1	39.5	40.3	40.7	41.6
50–59 years	402	38.3	0.10	34.7	35.8	36.2	37.1	38.2	39.6	40.2	40.7	41.8
60–69 years	482	38.2	0.09	35.0	35.6	36.0	36.7	38.0	39.5	40.1	40.8	41.3
70–79 years	474	37.8	0.10	34.8	35.2	35.6	36.4	37.8	39.2	40.0	40.5	41.3
80 years and older	438	37.7	0.10	34.4	35.1	35.5	36.2	37.7	39.3	40.0	40.2	41.1
Non-Hispanic black												
20 years and older	1,990	38.3	0.07	34.8	35.6	36.0	37.0	38.2	39.8	40.6	41.1	42.0
20–29 years	473	38.3	0.12	34.4	35.4	35.8	36.7	38.1	39.8	40.7	41.3	42.4
30–39 years	479	38.2	0.10	35.0	35.7	36.2	37.0	38.2	39.6	40.4	41.0	41.5
40–49 years	343	38.6	0.14	34.9	35.9	36.5	37.0	38.5	40.0	41.0	41.2	42.5
50–59 years	207	38.4	0.16	35.2	35.8	36.3	36.8	38.1	40.0	40.7	41.2	42.1
60–69 years	277	38.5	0.15	34.8	35.6	36.1	37.0	38.5	39.8	41.0	41.4	42.3
70–79 years	165	38.0	0.19	*	35.0	35.5	36.5	38.0	39.5	40.2	41.0	*
80 years and older	46	38.3	0.36	*	*	*	36.5	38.8	40.0	*	*	*
Mexican American												
20 years and older	2,158	36.5	0.07	33.2	34.0	34.4	35.1	36.5	38.0	38.8	39.3	40.0
20–29 years	654	36.3	0.09	33.0	33.8	34.2	35.0	36.2	37.6	38.4	39.0	39.7
30–39 years	456	36.6	0.11	33.3	34.0	34.5	35.2	36.6	38.0	39.0	39.5	40.0
40–49 years	371	36.8	0.12	33.5	34.4	34.7	35.4	36.7	38.1	39.0	39.5	40.2
50–59 years	169	36.7	0.18	*	34.0	34.5	35.2	37.0	38.2	39.0	39.2	*
60–69 years	321	36.6	0.14	33.0	33.5	34.2	35.1	36.5	38.1	39.2	40.0	40.3
70–79 years	136	36.2	0.16	*	34.0	34.6	35.1	36.1	37.5	38.1	38.3	*
80 years and older	51	36.4	0.28	*	*	*	35.0	36.2	37.2	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 22. Upper arm length in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,393	34.6	0.04	31.3	32.0	32.5	33.2	34.5	36.0	36.7	37.2	38.0
20–29 years	1,807	34.3	0.07	31.0	31.6	32.1	33.0	34.3	35.7	36.5	37.1	38.0
30–39 years	1,791	34.6	0.06	31.5	32.1	32.7	33.3	34.6	36.0	36.6	37.1	38.0
40–49 years	1,302	34.6	0.07	31.5	32.1	32.6	33.4	34.5	36.0	36.7	37.2	37.8
50–59 years	964	34.8	0.09	31.5	32.2	32.5	33.3	34.7	36.1	37.1	37.6	38.2
60–69 years	1,089	34.6	0.09	31.4	32.1	32.5	33.2	34.5	36.0	37.0	37.5	38.1
70–79 years	864	34.5	0.10	31.2	32.0	32.4	33.1	34.5	36.0	36.7	37.0	38.0
80 years and older	576	34.4	0.11	31.4	32.0	32.3	33.0	34.4	35.6	36.3	36.9	38.0
Non-Hispanic white												
20 years and older	3,486	34.6	0.04	31.5	32.1	32.6	33.2	34.5	36.0	36.6	37.1	37.8
20–29 years	485	34.3	0.11	31.2	31.7	32.2	33.0	34.2	35.5	36.4	37.0	38.1
30–39 years	580	34.7	0.09	31.8	32.4	32.9	33.5	34.6	36.0	36.6	37.0	37.6
40–49 years	459	34.6	0.09	31.5	32.2	32.6	33.5	34.5	35.9	36.5	37.0	37.6
50–59 years	470	34.8	0.10	32.0	32.3	32.7	33.4	34.8	36.1	37.1	37.6	38.1
60–69 years	469	34.6	0.10	31.6	32.2	32.6	33.2	34.5	36.0	36.8	37.4	37.8
70–79 years	571	34.5	0.09	31.3	32.0	32.4	33.1	34.5	35.9	36.6	37.0	37.6
80 years and older	452	34.3	0.10	31.4	32.0	32.3	33.0	34.4	35.6	36.2	36.8	37.8
Non-Hispanic black												
20 years and older	2,398	35.7	0.06	32.3	33.0	33.5	34.2	35.6	37.1	38.0	38.5	39.2
20–29 years	603	35.3	0.10	32.1	32.6	33.1	33.8	35.3	36.6	37.5	38.0	38.5
30–39 years	622	35.6	0.11	32.0	33.0	33.5	34.0	35.5	37.0	38.0	38.5	39.1
40–49 years	426	35.9	0.12	32.7	33.5	34.0	34.5	36.0	37.4	38.0	38.5	39.7
50–59 years	257	36.0	0.17	33.0	33.3	33.8	34.5	35.9	37.5	38.4	39.0	39.7
60–69 years	270	36.1	0.18	33.0	33.5	33.7	34.5	36.0	37.8	38.7	39.2	40.0
70–79 years	153	35.7	0.22	*	33.0	33.5	34.3	35.6	37.1	38.0	38.5	*
80 years and older	67	35.5	0.27	*	*	*	34.2	35.2	36.7	*	*	*
Mexican American												
20 years and older	2,149	33.6	0.06	30.6	31.2	31.6	32.3	33.6	35.0	35.6	36.1	37.0
20–29 years	640	33.5	0.09	30.5	31.0	31.4	32.1	33.3	34.8	35.6	36.0	37.0
30–39 years	515	33.6	0.10	30.3	31.2	31.6	32.3	33.6	35.0	35.6	36.3	37.1
40–49 years	350	33.9	0.12	30.8	31.6	32.0	32.8	34.0	35.1	35.7	36.2	37.0
50–59 years	185	33.8	0.16	*	31.3	32.1	32.6	33.8	35.2	35.7	36.0	*
60–69 years	302	33.7	0.13	30.8	31.2	31.9	32.5	33.8	34.9	35.6	36.2	37.1
70–79 years	112	33.6	0.22	*	*	31.5	32.1	33.7	34.9	35.6	*	*
80 years and older	45	32.3	0.28	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 23. Upper leg length in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and the selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	530	18.5	0.14	16.0	16.5	17.0	17.5	18.4	19.6	20.2	20.8	21.5
3 years	490	21.2	0.17	18.0	19.0	19.4	20.1	21.0	22.2	23.0	23.8	24.6
4 years	541	23.2	0.16	20.2	20.9	21.1	21.7	23.0	24.5	25.3	25.7	26.7
5 years	488	25.2	0.19	21.7	22.5	22.8	23.7	25.1	26.7	27.6	28.2	29.0
6 years	279	27.5	0.29	*	24.5	25.0	25.9	27.2	29.4	30.5	31.1	*
7 years	268	29.5	0.31	*	26.1	27.1	28.0	29.6	31.1	31.9	33.0	*
8 years	262	31.1	0.30	*	27.7	28.4	29.5	31.0	32.6	33.9	34.5	*
9 years	275	33.0	0.32	*	29.3	30.0	31.0	32.8	34.9	36.0	36.7	*
10 years	293	34.4	0.38	*	31.0	32.1	33.0	34.6	36.4	37.6	38.2	*
11 years	279	35.9	0.34	*	32.1	32.7	33.5	35.7	37.7	39.5	40.0	*
12 years	202	38.6	0.43	*	*	35.3	36.1	38.6	41.2	41.9	*	*
13 years	182	39.8	0.42	*	*	36.8	37.8	39.4	41.8	42.6	*	*
14 years	186	42.0	0.41	*	*	39.3	40.1	41.8	43.5	45.3	*	*
15 years	181	43.2	0.45	*	*	40.0	40.9	43.2	45.5	46.7	*	*
16 years	192	43.6	0.41	*	*	40.4	41.7	43.4	45.6	47.0	*	*
17 years	191	44.7	0.38	*	*	41.8	42.4	45.2	46.7	47.2	*	*
18 years	168	44.5	0.46	*	*	41.1	42.6	44.4	47.2	47.8	*	*
19 years	162	43.5	0.38	*	*	41.0	41.6	43.0	45.1	46.5	*	*
Female												
2 years	518	18.8	0.18	*	16.5	17.0	17.5	18.6	20.0	20.7	21.3	*
3 years	567	21.5	0.17	18.5	19.2	19.7	20.2	21.5	22.7	23.4	24.0	24.5
4 years	528	23.4	0.18	*	21.0	21.5	22.1	23.4	24.6	25.5	26.1	*
5 years	556	25.6	0.19	*	23.2	23.7	24.3	25.4	27.1	27.8	28.3	*
6 years	274	27.4	0.29	*	*	25.0	25.7	27.4	29.0	29.8	*	*
7 years	270	28.9	0.33	*	*	26.6	27.2	28.8	30.2	31.2	*	*
8 years	245	31.4	0.38	*	*	28.8	29.8	30.9	33.3	34.2	*	*
9 years	273	32.8	0.32	*	*	30.5	31.1	32.6	34.1	35.2	*	*
10 years	255	34.9	0.35	*	*	32.5	33.2	34.4	36.5	37.8	*	*
11 years	267	36.7	0.36	*	*	34.1	35.1	36.6	38.2	39.5	*	*
12 years	233	38.5	0.48	*	*	35.3	36.1	38.3	40.8	41.8	*	*
13 years	217	39.8	0.43	*	*	37.1	38.1	39.6	41.8	43.2	*	*
14 years	219	39.9	0.44	*	*	37.4	37.8	39.5	41.6	43.6	*	*
15 years	193	40.1	0.44	*	*	37.0	38.4	40.0	42.0	43.4	*	*
16 years	208	40.2	0.42	*	*	37.4	38.4	40.3	41.7	42.7	*	*
17 years	209	40.5	0.39	*	*	37.1	38.5	40.9	42.0	43.2	*	*
18 years	185	40.1	0.49	*	*	*	38.1	39.7	42.1	*	*	*
19 years	185	40.4	0.54	*	*	*	38.6	40.8	42.0	*	*	*

* Figure does not meet standards of reliability or precision.

Table 24. Upper leg length in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,405	42.3	0.08	37.0	38.1	39.0	40.1	42.2	44.5	45.6	46.6	47.8
20–29 years	1,579	43.2	0.15	38.1	39.2	40.0	41.0	43.1	45.5	46.6	47.4	48.6
30–39 years	1,434	43.1	0.16	38.1	39.0	39.8	41.0	43.0	45.1	46.2	47.0	48.4
40–49 years	1,170	42.2	0.17	37.1	38.1	39.0	40.1	42.2	44.2	45.4	46.4	47.5
50–59 years	816	41.7	0.20	36.2	37.7	39.0	40.0	41.7	43.6	44.6	45.6	46.8
60–69 years	1,101	41.0	0.19	35.5	36.7	37.5	38.8	41.0	43.2	44.5	45.2	46.2
70–79 years	774	40.6	0.22	35.4	36.6	37.3	38.4	40.6	42.7	44.1	44.8	46.0
80 years and older	531	40.1	0.26	34.6	36.1	37.2	38.0	40.1	42.1	43.2	44.3	45.6
Non-Hispanic white												
20 years and older	3,016	42.4	0.18	37.2	38.4	39.2	40.3	42.4	44.5	45.6	46.5	47.6
20–29 years	385	43.4	0.22	38.9	39.6	40.2	41.2	43.4	45.6	46.6	47.2	48.4
30–39 years	446	43.3	0.20	38.6	39.6	40.3	41.2	43.3	45.2	46.3	47.0	48.2
40–49 years	413	42.3	0.21	37.9	38.2	39.1	40.2	42.3	44.2	45.4	46.4	47.5
50–59 years	401	42.0	0.21	36.3	38.6	39.1	40.3	42.0	43.8	44.6	45.6	47.1
60–69 years	479	41.0	0.21	35.6	37.0	37.8	39.0	41.1	43.2	44.5	45.2	46.1
70–79 years	471	40.6	0.21	35.3	36.6	37.4	38.5	40.6	42.7	44.0	44.7	45.6
80 years and older	421	40.2	0.22	35.3	36.8	37.5	38.2	40.1	42.0	43.2	44.5	45.7
Non-Hispanic black												
20 years and older	1,965	44.0	0.14	39.0	40.0	40.7	41.8	44.0	46.1	47.4	48.2	49.5
20–29 years	470	45.0	0.17	40.4	41.2	41.8	42.6	44.7	47.1	48.1	49.0	50.4
30–39 years	478	44.5	0.16	40.0	40.8	41.5	42.4	44.4	46.5	48.1	48.8	49.8
40–49 years	341	43.6	0.19	38.6	39.7	40.3	41.5	43.5	45.7	47.1	47.8	48.7
50–59 years	204	43.0	0.24	37.7	39.1	39.8	40.6	43.1	45.1	46.0	46.2	48.0
60–69 years	270	42.6	0.22	37.8	38.9	39.5	40.6	42.3	44.5	45.8	46.4	47.5
70–79 years	158	42.3	0.28	*	38.4	39.5	40.2	42.3	44.0	45.4	46.5	*
80 years and older	44	41.2	0.50	*	*	*	40.0	41.5	42.6	*	*	*
Mexican American												
20 years and older	2,151	40.6	0.16	35.7	36.8	37.5	38.5	40.5	42.6	43.6	44.4	45.5
20–29 years	653	41.3	0.14	36.8	37.7	38.3	39.6	41.1	43.1	44.2	45.0	45.9
30–39 years	456	40.9	0.18	36.1	37.0	37.8	38.9	40.8	43.1	44.0	44.8	45.7
40–49 years	370	40.0	0.19	35.5	36.5	37.3	38.2	40.0	42.1	43.0	43.5	44.4
50–59 years	169	39.5	0.29	*	35.6	36.3	37.5	39.9	41.1	42.5	43.2	*
60–69 years	321	39.2	0.23	35.0	35.8	36.3	37.1	39.1	41.3	42.2	43.0	44.0
70–79 years	132	38.3	0.32	*	34.5	35.1	36.4	38.1	40.1	41.4	42.4	*
80 years and older	50	37.0	0.54	*	*	*	*	37.2	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 25. Upper leg length in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,337	38.6	0.07	33.0	34.4	35.4	36.6	38.7	40.9	42.0	42.6	43.9
20–29 years	1,802	39.6	0.14	34.5	35.9	36.5	37.5	39.7	41.8	42.9	43.7	44.7
30–39 years	1,783	39.4	0.13	34.7	35.9	36.6	37.6	39.4	41.2	42.4	43.1	44.4
40–49 years	1,295	38.8	0.17	33.5	35.1	36.0	37.1	39.0	41.0	41.8	42.4	43.6
50–59 years	958	38.0	0.20	32.3	34.1	34.7	36.0	38.0	40.1	41.2	42.0	42.9
60–69 years	1,078	37.3	0.19	32.0	33.0	34.0	35.3	37.4	39.4	40.5	41.2	42.3
70–79 years	857	36.8	0.22	31.5	32.4	33.3	34.6	37.0	39.1	40.2	41.0	42.0
80 years and older	564	36.9	0.27	31.5	32.8	33.6	34.6	36.8	38.7	40.1	40.9	42.5
Non-Hispanic white												
20 years and older	3,460	38.7	0.16	33.2	34.6	35.5	36.7	38.7	40.9	41.9	42.5	43.6
20–29 years	484	39.7	0.20	35.1	36.2	36.8	37.6	39.8	41.7	42.6	43.5	44.4
30–39 years	576	39.6	0.17	35.2	36.2	37.0	37.8	39.5	41.3	42.4	43.1	44.4
40–49 years	458	38.9	0.21	33.7	35.4	36.2	37.3	39.1	41.0	41.8	42.4	43.5
50–59 years	470	38.0	0.20	32.9	34.2	35.0	36.1	38.1	40.1	41.1	41.9	42.6
60–69 years	464	37.4	0.21	32.1	33.3	34.2	35.6	37.5	39.4	40.2	41.2	42.2
70–79 years	565	36.9	0.20	31.5	32.6	33.3	34.6	37.0	39.1	40.2	41.0	41.9
80 years and older	443	36.8	0.22	31.5	32.9	33.6	35.0	36.8	38.7	40.1	40.6	42.3
Non-Hispanic black												
20 years and older	2,378	40.4	0.13	35.0	36.2	37.1	38.2	40.3	42.5	43.6	44.4	45.6
20–29 years	602	41.7	0.16	37.0	38.2	39.1	39.8	41.7	43.4	44.9	45.5	46.5
30–39 years	620	40.7	0.16	36.0	37.1	38.0	38.9	40.5	42.8	43.6	44.3	45.7
40–49 years	422	40.2	0.21	35.1	36.4	37.0	38.0	40.2	42.2	43.7	44.4	45.4
50–59 years	253	39.3	0.29	34.0	34.7	35.8	37.1	39.4	41.3	42.6	43.5	44.5
60–69 years	265	38.5	0.28	32.4	34.1	35.2	36.2	38.6	40.8	42.0	42.5	44.2
70–79 years	152	38.5	0.33	*	35.2	35.6	36.6	38.2	40.4	41.1	42.4	*
80 years and older	64	38.3	0.63	*	*	*	36.0	38.2	39.9	*	*	*
Mexican American												
20 years and older	2,138	36.7	0.17	31.4	32.7	33.5	34.8	37.0	38.8	40.0	40.5	41.8
20–29 years	637	37.6	0.16	33.0	34.1	34.8	35.8	37.7	39.3	40.2	41.1	42.3
30–39 years	513	37.2	0.19	32.3	33.5	34.2	35.2	37.4	39.1	40.2	40.7	42.0
40–49 years	348	36.6	0.23	31.3	32.9	33.2	34.7	36.8	38.5	39.8	40.4	41.6
50–59 years	183	35.7	0.31	*	31.6	32.4	34.1	35.9	37.5	38.7	39.5	*
60–69 years	301	34.3	0.29	28.8	29.7	30.5	31.8	34.6	36.6	37.6	38.4	39.6
70–79 years	111	34.2	0.47	*	*	31.2	32.2	34.0	37.3	37.6	*	*
80 years and older	45	32.4	0.64	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 26. Knee height in centimeters for males aged 60 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
60 years and older	2,419	54.1	0.12	49.4	50.4	51.1	52.2	54.3	56.1	57.1	57.8	58.8
60–69 years	1,096	54.4	0.11	49.7	50.4	51.4	52.6	54.6	56.4	57.4	58.0	58.9
70–79 years	781	53.8	0.13	49.2	50.3	51.1	51.9	53.9	55.6	56.7	57.7	58.8
80 years and older	542	53.5	0.14	49.2	50.1	50.5	51.8	53.6	55.2	56.2	56.8	58.3
Non-Hispanic white												
60 years and older	1,378	54.2	0.10	49.8	50.6	51.4	52.4	54.4	56.1	57.1	57.8	58.8
60–69 years	476	54.6	0.13	50.2	51.0	51.9	52.8	54.8	56.4	57.4	58.0	58.9
70–79 years	473	53.8	0.13	49.5	50.4	51.1	52.0	53.8	55.5	56.7	57.6	58.7
80 years and older	429	53.6	0.13	49.4	50.2	50.6	52.0	53.6	55.2	56.2	56.7	58.3
Non-Hispanic black												
60 years and older	478	55.5	0.15	50.3	51.7	52.7	53.7	55.5	57.4	58.5	59.2	60.0
60–69 years	271	55.6	0.21	50.8	52.3	53.1	53.8	55.7	57.4	58.6	59.2	59.9
70–79 years	161	55.4	0.27	*	51.5	52.3	53.4	55.6	57.4	58.3	59.1	*
80 years and older	46	54.7	0.44	*	*	*	53.3	54.4	56.4	*	*	*
Mexican American												
60 years and older	503	52.2	0.17	48.4	49.3	49.9	50.5	52.1	54.0	54.9	55.6	56.3
60–69 years	318	52.5	0.18	48.8	49.4	50.0	50.7	52.3	54.2	55.5	56.1	56.8
70–79 years	134	51.7	0.25	*	49.4	49.9	50.5	51.4	53.4	54.1	54.9	*
80 years and older	51	51.2	0.48	*	*	*	49.7	51.4	53.1	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 27. Knee height in centimeters for females aged 60 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
60 years and older	2,519	49.5	0.11	45.1	46.1	46.8	47.7	49.4	51.3	52.4	53.0	54.1
60–69 years	1,081	49.7	0.12	45.0	46.1	46.8	47.9	49.7	51.3	52.4	53.0	54.2
70–79 years	863	49.4	0.13	45.4	46.2	46.8	47.6	49.1	51.3	52.4	53.1	53.9
80 years and older	575	49.2	0.16	44.8	45.9	46.6	47.6	49.2	50.9	52.0	52.7	53.9
Non-Hispanic white												
60 years and older	1,480	49.5	0.09	45.3	46.3	46.9	47.8	49.4	51.2	52.3	52.9	53.8
60–69 years	462	49.7	0.15	45.4	46.5	47.2	48.1	49.7	51.2	52.3	52.9	53.9
70–79 years	569	49.3	0.14	45.4	46.2	46.8	47.6	49.1	51.2	52.3	53.0	53.6
80 years and older	449	49.1	0.16	44.8	45.9	46.6	47.6	49.1	50.7	51.8	52.6	53.6
Non-Hispanic black												
60 years and older	490	51.3	0.14	46.8	47.7	48.4	49.4	51.3	53.1	54.4	55.1	56.3
60–69 years	269	51.5	0.20	46.8	47.7	48.7	49.6	51.4	53.2	54.6	55.1	56.7
70–79 years	154	51.3	0.26	*	47.7	48.2	49.3	51.7	53.1	54.2	55.4	*
80 years and older	67	50.8	0.35	*	*	*	49.2	50.3	52.1	*	*	*
Mexican American												
60 years and older	460	47.6	0.17	43.5	44.5	45.3	46.1	47.7	49.2	50.1	50.7	51.9
60–69 years	302	47.7	0.20	43.5	44.6	45.3	46.1	47.8	49.4	50.4	51.0	51.9
70–79 years	111	47.7	0.30	*	*	45.5	46.4	47.4	49.1	49.8	*	*
80 years and older	47	46.9	0.43	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 28. Triceps skinfold thickness in millimeters for persons aged 3 months to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3–5 months	290	10.5	0.22	*	7.9	8.3	9.2	10.7	11.7	12.5	13.2	*
6–8 months	320	10.2	0.23	*	7.3	7.9	8.5	9.9	11.6	12.5	13.3	*
9–11 months	275	9.5	0.20	*	7.1	7.4	8.1	9.2	10.7	11.1	11.8	*
1 year	647	9.4	0.15	6.4	6.9	7.2	7.9	9.1	10.7	11.7	12.1	13.1
2 years	555	9.1	0.13	6.4	6.7	7.3	7.9	8.9	10.4	11.1	11.5	12.4
3 years	479	8.9	0.20	*	6.4	6.8	7.3	8.6	10.0	10.8	11.6	*
4 years	538	9.0	0.18	6.0	6.6	6.8	7.3	8.6	10.0	11.4	12.0	12.9
5 years	493	8.7	0.20	6.0	6.3	6.8	7.2	8.1	9.5	10.3	11.3	13.0
6 years	278	9.8	0.46	*	6.0	6.4	7.1	8.5	10.8	12.9	14.9	*
7 years	268	9.7	0.45	*	6.1	6.4	7.1	8.7	10.7	13.3	16.8	*
8 years	262	10.8	0.59	*	6.3	6.4	7.3	8.8	12.3	15.7	20.1	*
9 years	276	12.4	0.69	*	6.6	6.8	7.4	9.7	15.4	21.3	23.9	*
10 years	293	12.5	0.63	*	6.0	6.9	8.2	10.4	15.5	20.8	22.3	*
11 years	282	13.6	0.70	*	6.7	7.2	8.6	11.3	18.2	19.5	22.3	*
12 years	200	13.5	0.77	*	*	7.6	8.6	12.9	17.4	19.2	*	*
13 years	182	12.4	0.89	*	*	6.4	7.1	10.5	15.7	19.7	*	*
14 years	183	11.0	0.82	*	*	6.2	6.7	8.3	13.4	17.0	*	*
15 years	182	12.1	1.00	*	*	6.0	6.7	9.5	13.8	19.2	*	*
16 years	191	11.1	0.86	*	*	6.6	7.1	8.6	13.6	17.0	*	*
17 years	191	11.3	0.82	*	*	5.8	7.2	8.9	12.8	19.2	*	*
18 years	168	10.9	0.90	*	*	5.7	6.3	8.3	12.6	16.8	*	*
19 years	160	12.1	1.05	*	*	6.3	7.5	9.5	12.2	21.9	*	*
Female												
3–5 months	309	10.4	0.21	*	7.9	8.2	8.7	10.3	11.8	12.3	12.6	*
6–8 months	261	9.9	0.28	*	*	7.6	8.2	9.4	11.3	12.2	*	*
9–11 months	316	9.6	0.24	*	7.1	7.4	8.0	9.2	10.9	11.9	12.7	*
1 year	626	9.7	0.16	6.5	7.1	7.4	8.1	9.6	11.0	11.9	12.4	13.5
2 years	545	9.5	0.17	*	7.1	7.4	7.9	9.2	10.9	11.6	12.3	*
3 years	554	9.7	0.21	*	7.1	7.4	8.1	9.1	10.9	11.6	12.4	*
4 years	529	10.3	0.29	*	7.3	7.7	8.4	9.6	11.6	12.8	13.4	*
5 years	554	10.3	0.27	*	7.3	7.6	8.2	9.6	11.4	12.8	14.4	*
6 years	273	10.3	0.48	*	*	7.1	7.5	9.3	11.1	13.6	*	*
7 years	269	11.9	0.59	*	*	7.4	7.9	10.6	14.5	18.0	*	*
8 years	244	12.4	0.64	*	*	7.8	8.5	10.7	14.2	17.6	*	*
9 years	270	14.4	0.84	*	*	8.2	8.9	12.1	16.5	23.9	*	*
10 years	255	15.0	0.81	*	*	8.7	10.1	12.9	18.1	21.7	*	*
11 years	268	15.1	0.78	*	*	8.9	9.9	12.9	19.8	21.2	*	*
12 years	233	15.2	0.90	*	*	8.2	9.6	13.2	19.4	23.4	*	*
13 years	218	17.5	0.89	*	*	10.4	11.7	15.9	22.3	24.4	*	*
14 years	216	18.7	0.90	*	*	11.6	12.4	17.5	22.5	25.4	*	*
15 years	188	17.8	0.98	*	*	11.1	12.4	16.7	20.7	25.7	*	*
16 years	202	18.6	0.89	*	*	12.0	14.0	16.8	21.8	25.4	*	*
17 years	191	20.0	0.98	*	*	12.4	14.2	19.6	24.8	27.3	*	*
18 years	165	19.4	1.07	*	*	*	13.8	17.9	24.2	*	*	*
19 years	167	19.6	1.18	*	*	*	14.0	18.5	24.1	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 29. Triceps skinfold thickness in millimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,540	13.1	0.14	5.7	6.6	7.4	8.7	11.9	15.7	18.5	21.3	25.3
20–29 years	1,556	12.0	0.22	5.2	5.8	6.2	7.6	10.5	15.3	17.8	20.0	24.1
30–39 years	1,419	13.0	0.23	5.6	6.6	7.3	8.8	11.6	15.5	18.1	20.8	26.7
40–49 years	1,164	13.5	0.25	5.9	6.9	7.7	9.3	12.3	16.1	19.8	21.9	25.0
50–59 years	813	13.7	0.29	6.6	7.5	8.0	9.4	12.6	16.0	18.7	21.8	25.2
60–69 years	1,122	14.2	0.25	6.9	7.7	8.5	10.1	12.7	17.1	20.2	23.1	25.6
70–79 years	825	13.4	0.28	6.3	7.3	7.9	9.0	12.4	16.0	18.8	20.6	24.4
80 years and older	641	12.0	0.28	5.4	6.6	7.6	8.7	11.2	13.8	16.2	18.0	22.3
Non-Hispanic white												
20 years and older	3,135	13.4	0.16	5.9	7.0	7.7	9.1	12.3	16.0	18.8	21.7	25.5
20–29 years	382	12.3	0.35	5.3	5.9	6.5	7.9	10.7	15.4	18.0	20.3	24.2
30–39 years	440	13.3	0.34	5.9	7.1	7.5	9.0	11.8	15.7	18.3	21.0	27.0
40–49 years	410	13.8	0.33	6.3	7.1	8.1	9.8	12.5	16.4	20.2	22.0	25.0
50–59 years	402	13.8	0.33	6.8	7.6	8.3	9.4	12.9	16.2	18.7	21.8	25.1
60–69 years	486	14.6	0.31	7.5	8.1	9.0	10.5	13.1	17.4	21.4	23.3	26.0
70–79 years	500	13.5	0.29	6.4	7.4	8.0	9.3	12.4	16.4	18.8	20.6	24.7
80 years and older	515	12.0	0.25	5.4	6.8	7.6	8.8	11.3	13.9	16.2	18.0	22.2
Non-Hispanic black												
20 years and older	1,965	12.1	0.20	4.4	5.2	5.8	7.1	10.3	15.0	18.7	21.4	26.4
20–29 years	456	11.8	0.35	4.4	5.1	5.6	6.4	9.8	15.0	18.9	21.7	26.2
30–39 years	471	11.8	0.31	4.4	5.0	5.6	6.9	10.4	14.9	17.9	20.3	25.9
40–49 years	341	12.5	0.39	4.2	5.2	5.9	7.7	10.7	15.4	19.4	22.8	26.2
50–59 years	200	12.5	0.48	5.0	5.9	6.6	7.9	10.9	14.8	18.3	22.5	25.7
60–69 years	279	12.6	0.44	4.8	5.4	6.1	7.5	10.7	15.6	19.3	24.0	29.4
70–79 years	168	12.5	0.54	*	6.1	6.9	7.8	10.7	14.9	19.2	20.7	*
80 years and older	50	11.6	0.87	*	*	*	7.6	10.7	13.4	*	*	*
Mexican American												
20 years and older	2,164	12.3	0.17	5.6	6.4	7.2	8.4	11.1	14.6	17.4	19.7	23.8
20–29 years	646	11.7	0.26	5.2	6.0	6.7	7.7	10.8	14.0	16.6	18.7	21.9
30–39 years	455	12.8	0.35	5.4	6.5	7.5	8.8	10.9	15.3	18.2	20.5	25.4
40–49 years	368	12.5	0.35	6.1	7.0	7.6	8.5	11.5	14.7	18.0	20.1	23.8
50–59 years	169	13.6	0.61	*	7.2	8.3	9.3	12.3	16.1	18.6	22.6	*
60–69 years	325	12.2	0.34	6.6	7.1	8.2	9.2	11.4	13.7	15.8	17.9	22.1
70–79 years	143	10.7	0.40	*	6.4	7.1	8.0	10.3	12.9	14.4	15.3	*
80 years and older	58	11.2	0.58	*	*	*	8.8	10.3	13.2	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 30. Triceps skinfold thickness in millimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,065	23.5	0.19	10.8	12.7	14.2	16.8	22.9	29.9	33.2	35.3	38.1
20–29 years	1,579	20.9	0.33	9.9	11.4	12.5	14.3	19.4	26.0	31.2	33.4	37.0
30–39 years	1,623	23.6	0.35	10.4	12.4	14.1	16.2	22.3	31.0	34.6	36.4	38.9
40–49 years	1,237	25.3	0.35	12.0	14.3	16.6	19.5	25.3	31.2	34.1	35.8	38.8
50–59 years	929	26.7	0.40	14.1	16.4	18.3	20.6	26.7	32.1	35.2	37.0	39.8
60–69 years	1,090	24.2	0.37	12.4	14.5	15.9	18.2	24.1	29.7	32.9	34.9	37.8
70–79 years	902	22.3	0.39	11.0	12.5	14.0	16.4	21.8	27.7	30.6	32.1	35.8
80 years and older	705	18.6	0.42	7.6	9.3	11.1	13.1	18.1	23.3	26.4	28.9	31.7
Non-Hispanic white												
20 years and older	3,527	23.3	0.21	10.8	12.7	14.2	16.7	22.6	29.7	33.1	35.0	37.9
20–29 years	438	20.6	0.50	10.1	11.0	12.2	13.9	18.8	25.8	31.6	33.4	37.0
30–39 years	549	22.9	0.48	10.2	12.3	13.5	15.6	21.5	30.6	33.9	36.2	38.6
40–49 years	445	25.1	0.46	12.0	14.3	16.3	19.4	25.1	30.7	33.8	35.5	38.4
50–59 years	460	26.7	0.44	14.5	16.4	18.4	20.6	26.7	32.0	35.1	37.0	39.5
60–69 years	473	24.3	0.44	12.5	14.8	16.3	18.3	24.3	29.6	32.8	34.8	37.9
70–79 years	601	22.2	0.38	11.2	12.5	14.0	16.4	21.6	27.5	30.2	31.8	35.4
80 years and older	561	18.7	0.37	7.6	10.0	11.2	13.4	18.4	23.4	26.3	28.9	31.7
Non-Hispanic black												
20 years and older	2,191	24.8	0.26	9.8	12.2	13.8	17.3	24.7	32.5	35.9	37.7	39.9
20–29 years	517	21.9	0.46	9.0	10.8	12.3	14.1	20.6	28.6	33.2	35.9	38.1
30–39 years	546	25.4	0.48	10.2	11.7	14.4	17.7	25.2	33.9	37.1	38.6	40.6
40–49 years	389	27.3	0.53	11.3	14.6	17.7	20.8	28.1	34.4	37.4	39.0	41.1
50–59 years	240	27.5	0.67	11.0	13.9	16.6	21.8	29.2	33.6	36.5	37.9	39.9
60–69 years	268	26.0	0.61	11.8	13.8	15.9	19.4	26.8	32.9	35.4	36.7	38.6
70–79 years	154	23.9	0.80	*	12.6	14.0	18.8	24.1	28.9	33.8	36.5	*
80 years and older	77	17.1	0.98	*	*	9.2	11.3	16.2	22.8	26.2	*	*
Mexican American												
20 years and older	2,000	24.7	0.24	12.1	14.3	15.9	18.6	24.4	30.8	34.1	35.9	38.0
20–29 years	553	22.8	0.42	10.7	12.8	14.2	16.6	22.2	28.6	32.3	34.3	36.6
30–39 years	460	25.5	0.49	12.6	14.6	16.2	18.7	25.0	32.2	36.0	37.8	39.1
40–49 years	338	27.5	0.47	15.8	18.1	19.3	22.5	27.7	33.2	35.1	36.4	37.9
50–59 years	179	26.1	0.67	*	16.6	18.2	20.8	25.6	30.7	35.0	36.1	*
60–69 years	301	24.8	0.49	14.2	16.4	17.5	20.1	24.7	30.0	32.6	33.9	35.6
70–79 years	117	21.0	0.87	*	*	14.7	15.6	19.6	26.4	29.5	*	*
80 years and older	52	16.1	1.02	*	*	*	11.8	14.4	20.2	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 31. Subscapular skinfold thickness in millimeters for persons aged 3 months to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3–5 months	283	7.8	0.18	*	5.8	6.2	6.5	7.6	8.7	9.4	10.1	*
6–8 months	313	7.6	0.19	*	5.4	5.7	6.2	7.4	8.6	9.6	10.0	*
9–11 months	269	7.2	0.16	*	5.5	5.9	6.2	7.0	8.0	8.6	9.4	*
1 year	644	6.9	0.11	4.6	5.0	5.3	5.7	6.7	7.9	8.7	9.0	9.6
2 years	549	6.4	0.11	4.4	4.8	5.0	5.4	6.2	7.3	8.0	8.6	9.1
3 years	479	6.2	0.22	*	4.5	4.6	5.0	5.7	6.5	7.2	7.9	*
4 years	537	6.0	0.15	4.1	4.4	4.5	5.0	5.6	6.4	7.3	8.0	9.2
5 years	491	5.8	0.18	4.0	4.3	4.4	4.7	5.3	6.0	6.6	7.4	9.3
6 years	278	6.9	0.45	*	4.5	4.7	4.8	5.5	6.5	8.2	13.6	*
7 years	267	6.7	0.52	*	4.3	4.5	4.6	5.4	6.5	7.8	9.6	*
8 years	261	7.6	0.50	*	4.4	4.6	4.8	5.8	8.4	9.5	15.0	*
9 years	271	8.6	0.58	*	4.5	4.7	5.0	6.3	10.0	13.1	18.2	*
10 years	292	9.1	0.53	*	4.7	4.9	5.4	6.4	12.4	14.8	17.2	*
11 years	280	10.5	0.75	*	5.0	5.2	5.7	7.2	11.9	18.6	26.0	*
12 years	199	10.8	0.82	*	*	5.6	6.0	8.3	13.5	18.5	*	*
13 years	180	10.2	0.90	*	*	5.3	5.9	7.2	11.5	16.0	*	*
14 years	182	11.0	1.04	*	*	6.1	6.8	8.1	11.9	14.7	*	*
15 years	181	11.7	0.97	*	*	6.4	6.9	8.5	14.4	21.5	*	*
16 years	187	10.9	0.82	*	*	6.7	7.4	8.4	11.3	15.5	*	*
17 years	190	12.7	0.93	*	*	7.3	8.0	10.1	13.6	17.7	*	*
18 years	168	12.3	0.87	*	*	7.3	8.0	9.8	13.3	17.1	*	*
19 years	159	13.9	0.98	*	*	*	9.2	11.7	15.3	*	*	*
Female												
3–5 months	307	8.1	0.22	*	6.0	6.3	6.8	7.8	9.4	10.0	10.6	*
6–8 months	255	7.9	0.29	*	*	5.7	6.3	7.4	9.0	10.0	*	*
9–11 months	312	7.6	0.19	*	5.7	5.9	6.5	7.5	8.7	9.3	9.7	*
1 year	624	7.1	0.15	4.9	5.3	5.5	5.9	6.8	7.9	8.6	9.5	10.8
2 years	541	6.9	0.17	*	5.2	5.3	5.6	6.6	7.7	8.4	9.0	*
3 years	553	6.9	0.23	*	4.9	5.1	5.5	6.3	7.6	8.3	9.0	*
4 years	526	7.3	0.35	*	5.0	5.2	5.4	6.2	7.7	8.9	9.8	*
5 years	555	7.4	0.36	*	4.8	4.9	5.3	6.3	7.8	9.4	10.5	*
6 years	273	7.6	0.61	*	*	4.9	5.1	6.1	7.6	10.4	*	*
7 years	265	9.1	0.81	*	*	5.0	5.3	6.2	10.3	14.4	*	*
8 years	243	9.0	0.75	*	*	5.0	5.6	6.7	10.7	12.8	*	*
9 years	269	11.0	1.00	*	*	5.5	6.1	7.9	12.0	17.6	*	*
10 years	253	11.5	0.99	*	*	5.8	6.5	8.5	14.9	19.9	*	*
11 years	263	11.9	0.98	*	*	6.2	6.9	8.8	15.0	20.5	*	*
12 years	231	12.6	1.05	*	*	6.1	6.9	9.9	15.0	18.9	*	*
13 years	215	13.9	1.10	*	*	7.2	8.4	10.7	18.0	22.3	*	*
14 years	214	15.3	1.15	*	*	8.4	9.1	13.6	17.8	22.1	*	*
15 years	183	14.9	1.17	*	*	*	9.4	12.3	18.5	*	*	*
16 years	199	16.0	1.10	*	*	10.1	10.5	13.0	18.9	22.7	*	*
17 years	184	17.8	1.14	*	*	*	11.2	16.7	21.5	*	*	*
18 years	160	16.4	1.20	*	*	*	11.0	13.2	22.3	*	*	*
19 years	162	16.3	1.30	*	*	*	10.9	13.8	18.4	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 32. Subscapular skinfold thickness in millimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,148	19.0	0.18	8.6	9.9	11.0	13.2	18.2	23.7	27.1	29.5	33.1
20–29 years	1,541	16.2	0.28	7.9	8.7	9.1	10.6	14.3	20.3	24.1	26.8	31.8
30–39 years	1,377	19.0	0.29	8.8	10.0	11.1	13.5	18.3	23.7	26.8	29.2	32.7
40–49 years	1,103	20.1	0.33	9.4	11.0	12.5	14.6	19.3	24.4	28.2	30.2	34.1
50–59 years	770	20.8	0.40	10.4	11.7	13.0	15.1	20.0	26.0	29.0	30.8	34.2
60–69 years	1,059	21.2	0.34	10.2	11.9	13.2	15.4	20.6	25.9	29.4	32.0	35.0
70–79 years	761	19.5	0.37	9.1	11.2	12.3	14.4	18.8	24.1	26.6	28.3	32.0
80 years and older	537	16.7	0.38	7.7	8.9	10.2	12.2	16.6	20.2	22.5	23.8	27.2
Non-Hispanic white												
20 years and older	2,955	19.0	0.24	8.7	10.0	11.1	13.3	18.2	23.6	26.9	29.4	33.0
20–29 years	381	15.9	0.44	7.9	8.6	9.0	10.3	13.8	19.3	23.5	26.8	31.9
30–39 years	440	18.9	0.39	8.9	10.2	11.4	13.5	18.3	23.5	26.5	28.9	32.6
40–49 years	400	20.2	0.41	9.6	11.2	12.7	14.8	19.5	24.4	28.2	30.4	33.7
50–59 years	382	20.5	0.44	10.4	11.5	12.8	14.7	19.5	26.0	28.5	30.6	33.6
60–69 years	461	21.3	0.40	10.5	12.0	13.5	15.7	20.7	25.9	29.3	32.1	35.1
70–79 years	462	19.4	0.36	9.1	11.2	12.3	14.2	18.7	24.1	26.3	28.2	31.8
80 years and older	429	16.7	0.33	7.6	8.9	10.2	12.5	16.7	20.1	22.4	23.6	26.9
Non-Hispanic black												
20 years and older	1,855	18.9	0.26	7.7	8.8	9.7	11.7	17.6	24.7	28.9	31.9	35.1
20–29 years	450	17.2	0.39	7.6	8.5	9.1	10.5	14.4	22.8	26.6	30.1	33.1
30–39 years	443	18.2	0.42	7.7	8.7	9.4	11.1	16.4	23.6	27.7	31.2	37.0
40–49 years	320	20.1	0.48	8.1	9.6	10.7	13.7	18.9	25.8	30.0	33.1	35.3
50–59 years	187	20.8	0.63	*	9.7	11.9	14.0	20.1	26.3	30.6	33.9	*
60–69 years	257	20.8	0.56	7.5	8.9	10.9	13.5	20.2	27.0	31.1	33.2	37.2
70–79 years	154	20.5	0.66	*	9.7	11.1	13.5	20.2	26.9	29.2	32.1	*
80 years and older	44	17.6	1.03	*	*	*	12.3	16.3	23.0	*	*	*
Mexican American												
20 years and older	2,077	19.5	0.22	8.9	10.2	11.5	14.0	18.9	24.2	27.4	29.8	33.1
20–29 years	639	17.5	0.34	8.4	9.5	10.2	11.8	16.5	21.5	24.8	27.1	31.4
30–39 years	442	20.2	0.42	8.9	10.4	11.8	14.8	19.7	25.2	28.3	30.5	33.0
40–49 years	342	21.5	0.47	10.1	13.4	14.6	16.0	20.2	26.0	29.3	30.7	35.9
50–59 years	159	22.6	0.66	*	14.5	16.1	17.7	21.7	27.4	29.7	32.9	*
60–69 years	313	21.9	0.51	11.5	13.2	14.5	16.8	20.8	26.6	29.5	32.3	36.3
70–79 years	133	18.5	0.63	*	10.9	12.9	14.6	18.3	21.9	24.0	25.6	*
80 years and older	49	16.7	0.86	*	*	*	*	17.4	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 33. Subscapular skinfold thickness in millimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,520	21.3	0.22	8.5	9.8	11.1	13.4	20.4	28.2	32.3	35.1	38.3
20–29 years	1,509	18.5	0.36	8.1	9.1	9.9	11.4	16.0	24.4	29.0	33.1	36.6
30–39 years	1,544	21.3	0.39	8.3	9.4	10.4	12.7	19.8	28.7	33.7	35.9	39.3
40–49 years	1,164	23.1	0.41	9.3	11.4	12.6	15.6	22.7	30.0	33.4	35.6	39.6
50–59 years	876	24.5	0.47	10.0	12.7	14.3	17.7	24.3	31.0	35.3	37.1	39.8
60–69 years	1,029	22.5	0.42	9.2	10.8	12.8	15.9	22.0	28.7	32.1	34.6	38.6
70–79 years	836	19.8	0.44	8.4	9.5	11.0	13.0	19.3	25.1	29.2	30.9	34.6
80 years and older	562	16.3	0.48	6.5	7.8	8.8	10.8	15.2	21.5	24.3	26.5	30.2
Non-Hispanic white												
20 years and older	3,302	20.5	0.29	8.2	9.5	10.8	12.6	19.2	27.0	31.3	33.9	37.7
20–29 years	424	17.4	0.52	8.0	8.7	9.5	11.0	14.2	22.4	28.0	31.5	36.6
30–39 years	533	20.0	0.51	7.8	9.2	9.8	11.5	18.1	26.8	31.8	34.6	38.2
40–49 years	428	21.9	0.52	8.9	10.8	12.0	14.7	21.1	28.9	32.4	34.1	38.0
50–59 years	450	24.1	0.52	10.0	12.2	14.0	17.3	23.4	30.4	35.0	37.0	39.9
60–69 years	464	22.1	0.49	8.9	10.2	12.2	15.3	21.4	28.4	32.0	33.8	38.2
70–79 years	558	19.3	0.40	8.4	9.5	11.0	12.7	18.9	24.4	28.3	30.4	33.5
80 years and older	445	16.1	0.40	6.6	7.8	8.8	10.7	14.5	21.2	23.8	26.1	29.7
Non-Hispanic black												
20 years and older	2,004	24.8	0.29	9.2	11.7	13.4	16.8	24.6	32.7	36.3	38.5	40.4
20–29 years	493	21.6	0.47	9.0	10.1	11.5	13.9	19.8	28.8	33.1	35.1	38.1
30–39 years	505	25.0	0.51	9.4	12.0	13.4	17.5	23.6	33.2	37.4	39.4	41.9
40–49 years	350	27.6	0.55	12.2	14.7	16.2	20.9	28.1	35.2	38.2	39.7	40.7
50–59 years	212	27.6	0.74	*	13.6	15.5	21.2	29.4	35.1	37.7	38.7	*
60–69 years	239	26.7	0.64	11.7	15.1	16.7	20.4	27.2	32.5	37.1	39.1	40.1
70–79 years	143	24.3	0.87	*	11.4	14.4	18.8	24.1	30.3	34.4	37.9	*
80 years and older	62	18.9	1.28	*	*	*	12.9	17.2	24.9	*	*	*
Mexican American												
20 years and older	1,892	24.5	0.27	10.6	12.9	14.7	17.7	24.4	30.8	34.3	36.3	38.5
20–29 years	522	22.2	0.45	9.9	11.1	12.8	14.9	21.2	28.5	32.6	35.1	37.9
30–39 years	442	25.2	0.51	11.0	13.1	15.0	18.2	25.3	32.9	36.2	37.4	39.4
40–49 years	321	27.3	0.47	15.3	18.4	19.7	22.5	27.5	32.2	35.6	37.2	39.0
50–59 years	173	25.9	0.68	*	15.8	16.8	20.4	26.9	30.9	33.7	36.2	*
60–69 years	282	25.1	0.57	10.8	14.0	16.5	19.5	24.9	31.8	34.0	35.0	38.1
70–79 years	108	20.5	0.90	*	*	12.6	15.0	19.3	25.4	29.2	*	*
80 years and older	44	15.2	1.16	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 34. Suprailiac skinfold thickness in millimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	500	5.3	0.11	3.3	3.7	4.0	4.2	5.0	6.1	6.7	7.3	8.2
3 years	478	5.3	0.19	*	3.7	3.9	4.2	4.9	5.7	6.2	6.6	*
4 years	537	5.4	0.19	3.4	3.7	3.9	4.2	4.8	5.6	6.5	7.4	9.2
5 years	488	5.4	0.23	3.4	3.7	3.8	4.1	4.8	5.8	6.2	6.8	9.8
6 years	277	6.9	0.60	*	3.5	3.7	4.2	5.2	6.4	8.5	11.5	*
7 years	266	7.6	0.69	*	3.7	3.9	4.3	5.0	7.2	10.0	17.0	*
8 years	257	8.5	0.72	*	4.0	4.2	4.6	5.8	8.5	14.3	21.3	*
9 years	271	10.8	0.97	*	4.3	4.5	4.8	6.0	13.3	22.0	26.9	*
10 years	289	11.7	0.90	*	4.1	4.3	4.9	8.2	17.2	24.4	26.1	*
11 years	275	13.2	1.03	*	4.4	5.1	5.7	8.0	20.2	26.5	31.1	*
12 years	199	15.2	1.24	*	*	5.6	6.2	12.2	23.6	29.0	*	*
13 years	181	13.5	1.28	*	*	5.7	6.2	8.0	21.4	26.0	*	*
14 years	178	11.9	1.04	*	*	6.1	6.5	8.7	15.3	18.4	*	*
15 years	178	14.5	1.38	*	*	5.5	6.3	10.0	21.5	28.6	*	*
16 years	186	12.9	1.22	*	*	6.1	6.8	8.6	16.5	23.5	*	*
17 years	185	15.3	1.34	*	*	6.7	7.4	10.5	20.2	26.8	*	*
18 years	164	13.6	1.25	*	*	5.5	6.3	10.3	17.0	21.4	*	*
19 years	159	16.4	1.55	*	*	*	7.7	12.0	21.2	*	*	*
Female												
2 years	492	5.9	0.20	*	4.2	4.4	4.7	5.4	6.6	7.4	8.2	*
3 years	553	6.4	0.29	*	4.3	4.4	4.8	5.6	6.8	8.2	9.0	*
4 years	526	6.7	0.39	*	4.0	4.3	4.6	5.7	7.2	8.3	10.2	*
5 years	552	6.9	0.35	*	4.0	4.3	4.6	5.9	7.3	9.1	11.0	*
6 years	273	7.6	0.73	*	*	4.0	4.6	5.5	7.8	11.0	*	*
7 years	266	9.8	0.99	*	*	4.4	5.1	6.4	11.5	17.1	*	*
8 years	242	9.7	0.93	*	*	4.6	5.2	6.8	10.6	16.1	*	*
9 years	270	12.7	1.18	*	*	4.9	5.6	8.8	16.8	24.6	*	*
10 years	254	13.5	1.20	*	*	6.0	6.7	9.6	18.5	23.3	*	*
11 years	267	14.3	1.15	*	*	5.4	6.7	11.9	20.3	25.3	*	*
12 years	227	14.9	1.29	*	*	6.1	6.5	12.1	21.1	25.8	*	*
13 years	215	16.3	1.34	*	*	7.0	9.0	13.8	24.1	28.0	*	*
14 years	210	18.2	1.32	*	*	8.3	10.6	16.0	25.4	28.4	*	*
15 years	184	16.8	1.38	*	*	*	9.1	14.3	24.1	*	*	*
16 years	197	17.0	1.26	*	*	8.9	10.8	14.1	20.8	25.5	*	*
17 years	183	18.7	1.31	*	*	*	11.2	18.7	25.1	*	*	*
18 years	163	17.4	1.37	*	*	*	10.7	15.1	24.5	*	*	*
19 years	163	17.0	1.43	*	*	*	9.7	16.2	21.9	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 35. Suprailiac skinfold thickness in millimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,258	22.3	0.23	7.0	9.0	10.9	14.2	22.0	29.7	33.5	36.0	38.7
20–29 years	1,538	20.3	0.42	5.9	7.2	8.2	11.1	18.7	29.0	33.5	35.5	38.9
30–39 years	1,385	23.5	0.41	7.1	9.5	11.7	15.9	23.6	31.3	34.6	36.7	38.7
40–49 years	1,144	24.4	0.44	8.4	11.6	13.9	16.7	24.3	31.2	35.8	37.7	40.2
50–59 years	794	23.6	0.50	9.0	10.9	12.9	17.0	23.7	30.3	33.1	36.1	38.2
60–69 years	1,087	21.9	0.40	9.2	10.8	12.9	15.3	21.6	27.4	31.4	33.4	36.2
70–79 years	770	18.5	0.46	6.2	8.7	9.8	12.3	17.7	24.1	27.4	29.9	32.7
80 years and older	540	15.4	0.46	5.9	7.3	8.4	10.0	14.7	19.5	22.3	23.9	27.9
Non-Hispanic white												
20 years and older	2,991	22.5	0.29	7.6	9.6	11.5	14.7	22.4	29.7	33.4	35.9	38.7
20–29 years	378	20.6	0.68	6.0	7.6	8.6	11.4	19.6	29.6	33.6	35.6	38.9
30–39 years	439	24.0	0.57	7.4	10.1	12.4	17.4	24.8	31.3	34.7	36.7	38.6
40–49 years	403	24.9	0.57	10.3	12.6	14.1	17.8	24.6	31.2	36.0	38.3	40.5
50–59 years	396	23.4	0.56	9.1	10.7	12.6	16.6	23.5	29.9	32.8	35.4	38.2
60–69 years	476	22.0	0.47	9.6	11.1	13.5	15.5	21.5	27.6	31.2	33.4	36.2
70–79 years	469	18.5	0.46	6.2	8.8	10.0	12.4	17.7	23.9	27.5	30.0	32.5
80 years and older	430	15.3	0.40	5.9	7.3	8.5	10.0	14.7	19.0	22.3	23.9	27.9
Non-Hispanic black												
20 years and older	1,898	19.9	0.38	5.0	5.9	7.1	9.6	18.5	29.1	34.0	36.6	39.6
20–29 years	451	18.3	0.57	4.9	5.7	6.1	7.7	14.9	28.0	34.1	37.1	39.6
30–39 years	452	19.6	0.56	4.8	5.8	6.6	9.3	18.4	29.1	33.4	36.5	39.9
40–49 years	336	21.9	0.65	4.9	6.4	8.1	11.8	22.0	31.6	35.8	37.6	40.4
50–59 years	192	21.4	0.76	5.6	7.1	9.8	13.5	20.4	29.4	33.7	36.6	37.3
60–69 years	262	20.2	0.67	5.0	6.9	8.3	11.4	19.5	28.0	32.1	35.5	38.2
70–79 years	160	18.8	0.81	*	6.7	7.9	10.2	17.8	25.1	29.4	33.3	*
80 years and older	45	16.2	1.17	*	*	*	10.9	15.0	20.5	*	*	*
Mexican American												
20 years and older	2,100	23.2	0.37	8.1	10.5	12.5	15.6	23.1	30.4	34.1	35.9	38.6
20–29 years	638	21.8	0.57	7.3	8.8	10.6	13.4	21.0	29.3	33.6	35.3	38.0
30–39 years	443	24.9	0.67	8.8	11.0	13.0	18.0	25.3	32.4	35.4	36.9	39.0
40–49 years	361	24.5	0.66	10.1	13.7	14.9	17.7	25.2	30.6	34.3	35.7	38.4
50–59 years	164	24.1	0.93	*	14.5	15.6	18.1	23.7	29.1	33.8	35.4	*
60–69 years	317	22.6	0.72	9.8	12.0	13.5	15.8	21.5	28.4	32.6	34.0	38.1
70–79 years	128	18.2	0.98	*	6.6	9.6	13.7	19.1	23.4	25.1	25.7	*
80 years and older	49	16.5	1.18	*	*	*	*	15.4	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 36. Suprailiac skinfold thickness in millimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,602	20.2	0.24	5.9	7.3	8.5	11.2	19.3	28.3	32.9	35.0	38.0
20–29 years	1,552	17.7	0.38	5.9	6.9	7.6	9.5	15.4	24.7	29.8	33.5	37.1
30–39 years	1,580	19.8	0.41	5.7	6.4	7.6	9.5	18.2	28.4	33.3	36.3	38.9
40–49 years	1,205	22.0	0.46	6.0	8.0	9.3	12.6	21.9	31.2	34.5	36.1	38.4
50–59 years	890	24.0	0.50	7.2	9.7	11.8	17.2	24.5	31.9	34.8	37.3	38.8
60–69 years	1,005	21.1	0.44	6.3	8.4	10.2	13.6	21.0	27.8	31.4	34.3	36.7
70–79 years	816	18.7	0.48	5.3	7.4	9.0	11.1	17.9	25.7	29.2	31.7	34.6
80 years and older	554	15.7	0.48	5.3	6.8	7.8	10.1	14.2	20.9	24.2	26.7	29.4
Non-Hispanic white												
20 years and older	3,280	19.3	0.30	5.8	7.0	8.1	10.4	18.0	27.2	31.7	34.3	37.4
20–29 years	431	16.7	0.56	5.8	6.6	7.4	9.0	13.5	22.3	29.1	33.0	37.2
30–39 years	530	18.3	0.55	5.3	6.4	7.0	8.5	15.4	26.6	31.7	34.6	38.5
40–49 years	443	20.7	0.58	5.7	7.4	9.1	11.4	20.2	29.5	33.6	35.2	37.3
50–59 years	442	23.5	0.56	7.1	9.5	11.1	16.5	23.2	31.1	34.4	36.8	38.7
60–69 years	446	20.5	0.52	6.2	7.9	9.5	13.0	20.1	27.1	30.6	34.1	36.4
70–79 years	548	18.3	0.45	5.3	7.4	9.0	11.0	17.1	25.0	28.6	30.7	34.2
80 years and older	440	15.5	0.41	5.4	6.8	7.8	9.9	14.2	20.6	23.7	26.3	28.3
Non-Hispanic black												
20 years and older	2,083	23.1	0.35	6.1	7.9	9.6	13.8	23.8	32.1	35.8	37.7	40.0
20–29 years	516	19.9	0.53	5.5	6.7	7.9	10.3	18.3	28.6	33.1	36.1	38.5
30–39 years	531	22.8	0.54	5.8	7.7	9.5	13.6	22.3	32.7	35.9	38.2	40.1
40–49 years	372	26.4	0.59	7.7	11.0	13.7	19.3	27.3	34.8	38.0	39.1	41.2
50–59 years	225	26.3	0.78	6.3	10.0	13.3	18.9	28.5	34.6	36.9	38.4	40.9
60–69 years	238	24.7	0.68	8.0	11.0	12.7	17.6	26.4	31.5	34.5	36.3	38.2
70–79 years	139	22.3	0.93	*	8.2	10.1	14.7	23.1	30.3	33.5	35.7	*
80 years and older	62	17.0	1.36	*	*	*	10.3	14.0	22.4	*	*	*
Mexican American												
20 years and older	1,910	24.4	0.39	8.4	10.7	12.8	16.8	25.1	32.1	35.2	36.9	38.9
20–29 years	536	21.8	0.54	7.6	8.9	10.5	13.6	22.1	29.6	32.4	34.5	36.8
30–39 years	451	24.4	0.63	8.4	10.0	11.4	15.3	25.4	32.6	35.8	37.2	38.9
40–49 years	326	27.8	0.62	13.2	16.2	18.3	21.9	28.6	34.5	36.8	38.2	40.1
50–59 years	176	27.3	0.88	*	14.2	18.1	21.1	27.9	34.4	37.3	38.3	*
60–69 years	275	26.2	0.72	10.4	13.3	15.7	20.4	26.4	32.4	36.1	38.3	40.2
70–79 years	104	21.7	1.18	*	*	12.7	14.1	20.6	28.5	32.5	*	*
80 years and older	42	16.5	1.64	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 37. Thigh skinfold thickness in millimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	505	12.2	0.22	8.2	8.8	9.2	10.2	11.8	14.0	15.3	16.0	17.7
3 years	478	11.2	0.22	*	7.9	8.6	9.2	10.8	12.7	14.0	15.0	*
4 years	536	11.5	0.26	6.9	7.5	8.1	9.2	10.7	13.1	14.7	15.5	17.7
5 years	485	11.3	0.29	6.9	7.7	8.1	8.8	10.4	12.9	14.3	15.4	17.1
6 years	278	12.8	0.72	*	7.2	7.4	8.3	10.9	13.5	17.3	22.1	*
7 years	264	12.3	0.55	*	7.3	7.7	8.8	11.0	14.3	16.3	19.8	*
8 years	254	13.6	0.73	*	7.5	7.9	8.7	10.9	16.7	19.6	23.6	*
9 years	263	15.1	0.89	*	7.2	8.1	9.3	12.2	16.6	24.6	32.8	*
10 years	281	16.5	0.87	*	7.1	7.9	10.0	13.8	20.2	27.7	29.7	*
11 years	259	15.9	0.75	*	7.8	8.4	10.5	13.9	20.6	23.8	27.5	*
12 years	192	16.2	0.89	*	*	8.4	10.4	14.7	20.6	23.2	*	*
13 years	171	14.4	0.98	*	*	7.0	9.0	11.8	17.7	24.9	*	*
14 years	171	13.2	0.98	*	*	7.1	7.8	10.3	15.0	22.0	*	*
15 years	170	12.4	0.95	*	*	6.4	7.7	9.7	13.9	20.0	*	*
16 years	181	11.7	0.70	*	*	6.9	7.8	10.2	13.6	16.8	*	*
17 years	181	11.6	0.74	*	*	5.8	7.7	10.0	14.5	17.1	*	*
18 years	162	11.5	0.78	*	*	6.5	7.6	9.4	14.2	17.5	*	*
19 years	149	13.4	1.15	*	*	*	8.0	10.0	16.7	*	*	*
Female												
2 years	494	14.2	0.29	*	10.3	10.9	11.8	13.5	16.0	17.2	18.5	*
3 years	555	13.8	0.31	*	9.5	10.2	11.1	12.9	15.5	17.4	18.0	*
4 years	525	14.2	0.34	*	9.5	10.3	11.6	13.1	16.2	18.5	19.1	*
5 years	554	14.6	0.40	*	9.5	10.2	11.3	13.5	16.4	18.5	20.9	*
6 years	269	14.4	0.57	*	*	9.7	10.8	12.9	17.2	19.7	*	*
7 years	262	16.5	0.76	*	*	10.3	11.7	14.5	19.5	23.9	*	*
8 years	233	16.8	0.71	*	*	10.9	12.1	15.3	20.3	22.2	*	*
9 years	265	19.1	0.77	*	*	11.5	13.3	17.2	23.6	27.2	*	*
10 years	238	18.4	0.84	*	*	11.6	12.8	16.6	22.3	27.2	*	*
11 years	243	19.3	0.80	*	*	11.8	13.8	17.7	24.4	27.2	*	*
12 years	200	18.9	0.95	*	*	11.1	13.6	16.5	24.1	28.3	*	*
13 years	190	21.6	0.98	*	*	13.7	15.4	19.4	27.0	30.6	*	*
14 years	190	23.9	0.99	*	*	15.1	17.3	23.4	28.4	34.0	*	*
15 years	164	23.4	1.10	*	*	*	17.2	22.5	29.1	*	*	*
16 years	179	25.2	1.03	*	*	*	19.5	24.7	30.2	*	*	*
17 years	152	25.8	1.08	*	*	*	19.5	25.1	32.2	*	*	*
18 years	147	25.3	1.12	*	*	*	19.4	25.3	32.4	*	*	*
19 years	139	25.1	1.28	*	*	*	18.5	22.4	33.6	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 38. High skinfold thickness in millimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,145	14.6	0.18	5.9	7.0	7.8	9.3	12.9	18.0	21.7	24.3	30.5
20–29 years	1,493	13.6	0.29	5.6	6.4	7.2	8.2	11.9	17.1	20.3	22.6	29.2
30–39 years	1,375	14.7	0.32	5.9	7.0	8.1	9.5	12.9	18.0	21.7	24.3	30.5
40–49 years	1,128	15.1	0.36	6.5	7.5	8.2	9.7	13.7	18.0	21.7	24.1	32.1
50–59 years	796	15.5	0.42	6.3	7.6	8.5	10.0	13.9	18.7	23.1	25.8	31.7
60–69 years	1,079	15.0	0.37	6.5	7.2	8.0	9.5	13.0	18.5	22.1	24.5	31.5
70–79 years	752	14.6	0.44	6.0	7.1	7.9	8.9	12.5	18.4	21.8	26.2	30.8
80 years and older	522	14.3	0.49	5.5	6.7	7.5	9.2	12.5	18.3	21.6	24.8	28.4
Non-Hispanic white												
20 years and older	2,933	15.3	0.18	6.3	7.4	8.3	9.7	13.5	18.6	22.3	25.8	31.5
20–29 years	371	14.2	0.45	5.8	6.8	7.3	8.6	12.8	17.8	21.4	24.5	29.6
30–39 years	430	15.4	0.44	6.2	7.4	8.8	9.8	13.5	18.7	22.8	26.4	30.9
40–49 years	395	15.8	0.47	7.2	8.0	8.8	10.4	14.3	18.4	22.3	26.4	34.9
50–59 years	390	16.0	0.47	6.6	7.9	8.9	10.2	14.3	20.0	24.0	26.5	32.3
60–69 years	470	15.5	0.43	7.0	7.7	8.4	10.0	13.4	18.9	22.6	25.5	32.9
70–79 years	461	14.7	0.42	6.0	7.3	8.0	9.0	12.5	18.8	21.8	26.2	30.8
80 years and older	416	14.4	0.42	5.6	6.7	7.6	9.2	12.6	18.8	21.9	25.1	28.4
Non-Hispanic black												
20 years and older	1,869	12.3	0.20	4.5	5.4	6.0	7.1	10.4	15.5	18.8	21.6	26.5
20–29 years	438	11.6	0.34	4.7	5.2	5.7	6.7	9.6	14.9	17.9	20.7	25.0
30–39 years	453	12.3	0.33	4.5	5.4	6.1	7.0	10.5	15.9	19.2	21.7	25.9
40–49 years	327	12.6	0.41	4.4	5.2	6.1	7.6	11.0	16.0	18.6	21.7	26.0
50–59 years	197	12.5	0.55	4.4	5.5	6.1	7.6	10.4	14.9	18.5	21.7	27.7
60–69 years	262	12.3	0.46	5.1	5.6	5.9	7.1	10.1	15.7	20.2	22.4	26.1
70–79 years	150	13.4	0.68	*	6.0	6.7	7.9	11.2	16.3	20.6	24.6	*
80 years and older	42	13.5	1.16	*	*	*	7.5	13.1	16.5	*	*	*
Mexican American												
20 years and older	2,084	12.3	0.16	5.8	6.5	7.1	8.3	11.0	14.7	17.7	19.6	24.0
20–29 years	617	12.2	0.28	5.6	6.2	6.9	8.0	11.0	14.7	17.3	19.4	23.2
30–39 years	443	12.8	0.33	5.9	6.9	7.6	9.0	11.4	15.8	18.0	20.3	24.9
40–49 years	362	12.0	0.35	6.0	6.5	7.0	8.1	10.7	14.1	17.0	20.2	23.6
50–59 years	168	12.8	0.59	*	6.9	7.6	8.5	10.5	15.2	18.0	22.8	*
60–69 years	318	11.9	0.38	6.1	6.6	7.2	8.1	10.4	13.7	16.4	18.7	23.7
70–79 years	128	10.8	0.49	*	5.4	6.4	7.6	10.5	12.8	14.5	16.5	*
80 years and older	48	11.7	0.96	*	*	*	*	10.0	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 39. High skinfold thickness in millimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	6,412	29.3	0.22	13.9	17.0	19.1	22.5	30.0	36.7	39.1	40.6	42.3
20–29 years	1,336	26.7	0.34	13.8	15.5	17.1	19.7	26.4	33.4	36.8	38.5	41.1
30–39 years	1,261	29.0	0.36	14.8	17.6	19.5	22.1	28.7	36.4	39.2	40.6	42.2
40–49 years	955	31.6	0.40	15.8	19.3	21.6	26.1	33.0	38.3	40.1	41.4	43.2
50–59 years	701	31.3	0.47	15.3	19.1	21.4	25.4	32.6	38.4	40.8	41.6	42.6
60–69 years	906	30.2	0.44	12.3	16.8	20.4	24.2	31.6	37.5	39.7	40.8	42.8
70–79 years	740	29.1	0.47	13.8	16.9	18.4	22.5	29.8	36.1	39.0	40.4	42.1
80 years and older	513	27.4	0.54	12.6	15.2	18.1	21.3	27.8	33.7	37.1	38.5	40.2
Non-Hispanic white												
20 years and older	2,820	29.8	0.21	14.5	17.6	19.8	23.4	30.7	37.2	39.4	40.8	42.4
20–29 years	387	27.1	0.52	14.1	15.9	17.5	20.2	26.8	33.6	37.1	38.7	41.2
30–39 years	435	29.2	0.51	15.2	17.8	19.6	22.3	28.8	36.9	39.3	40.8	42.2
40–49 years	355	32.4	0.53	16.7	20.2	23.4	27.7	34.0	38.6	40.4	41.6	43.8
50–59 years	350	31.8	0.54	17.1	20.4	22.3	26.1	32.9	38.9	40.9	41.7	42.6
60–69 years	393	30.8	0.54	13.0	18.3	21.6	25.5	32.2	37.6	39.9	41.1	43.0
70–79 years	493	29.5	0.47	14.7	17.5	19.1	23.4	30.2	36.1	39.2	40.4	42.1
80 years and older	407	27.8	0.50	13.5	16.0	18.8	21.9	28.0	34.2	37.2	38.6	40.3
Non-Hispanic black												
20 years and older	1,648	28.5	0.30	12.5	15.2	17.9	21.1	29.3	36.5	39.2	40.6	42.2
20–29 years	425	26.2	0.50	12.8	14.4	16.1	19.0	25.4	33.7	37.5	38.9	41.2
30–39 years	401	28.8	0.55	13.0	15.1	18.0	21.3	29.8	36.9	39.6	41.0	42.4
40–49 years	276	30.7	0.63	13.6	18.7	21.0	23.8	32.6	38.7	40.5	41.1	42.6
50–59 years	170	29.4	0.88	*	15.0	17.7	21.7	42.4	37.8	39.6	41.2	*
60–69 years	200	29.8	0.78	*	16.5	19.3	23.7	31.1	37.6	39.3	40.4	*
70–79 years	121	28.4	0.92	*	15.8	18.2	20.7	28.7	35.2	38.8	40.3	*
80 years and older	55	25.8	1.39	*	*	*	18.8	25.4	31.9	*	*	*
Mexican American												
20 years and older	1,669	27.2	0.28	13.0	15.0	17.0	20.2	27.2	34.4	37.5	38.9	41.2
20–29 years	458	25.7	0.47	12.2	14.5	16.1	19.0	25.3	32.3	35.8	37.6	40.8
30–39 years	373	27.6	0.51	14.1	15.7	17.7	21.1	27.0	34.5	37.4	39.0	41.2
40–49 years	276	29.7	0.61	13.7	17.3	20.0	22.9	30.1	37.3	38.7	40.8	42.2
50–59 years	146	28.2	0.81	*	16.2	18.2	21.7	29.3	35.4	37.6	38.5	*
60–69 years	270	27.3	0.65	13.2	14.6	16.5	19.9	27.9	35.3	38.4	39.1	40.2
70–79 years	103	24.0	0.95	*	*	14.7	16.8	23.2	30.5	33.1	*	*
80 years and older	43	18.7	1.51	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnic groups not listed separately.

NOTE: Pregnant women are excluded.

Table 40. Head circumference in centimeters for persons aged 3 months to 7 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3–5 months	291	42.4	0.14	*	40.7	41.1	41.5	42.2	43.1	43.8	44.2	*
6–8 months	317	44.8	0.14	*	42.9	43.2	43.8	44.8	45.9	46.3	46.5	*
9–11 months	275	46.0	0.13	*	44.3	44.8	45.2	46.0	46.8	47.3	47.6	*
1 year	656	47.9	0.10	45.6	46.0	46.4	46.8	47.8	48.8	49.5	49.9	50.3
2 years	599	49.5	0.10	47.3	47.8	48.1	48.5	49.5	50.5	51.0	51.2	51.8
3 years	495	50.3	0.10	48.2	48.7	49.0	49.4	50.1	51.2	51.7	52.1	52.3
4 years	549	50.8	0.10	48.6	49.1	49.5	50.0	50.8	51.7	52.2	52.5	53.5
5 years	491	51.5	0.10	49.4	49.8	50.2	50.7	51.6	52.3	52.8	53.1	53.9
6 years	275	52.0	0.16	*	50.0	50.3	50.8	52.1	53.2	54.1	54.2	*
7 years	261	52.5	0.14	*	50.7	51.0	51.5	52.6	53.3	53.7	54.0	*
Female												
3–5 months	307	41.2	0.12	*	39.5	39.7	40.1	41.2	42.2	42.6	43.0	*
6–8 months	263	43.5	0.12	*	*	42.1	42.6	43.4	44.4	44.9	*	*
9–11 months	315	44.9	0.09	*	43.2	43.6	44.1	44.9	45.8	46.2	46.5	*
1 year	631	46.7	0.09	44.4	44.9	45.2	45.7	46.7	47.7	48.2	48.7	49.1
2 years	582	48.4	0.08	45.9	46.6	46.9	47.4	48.4	49.3	49.8	50.1	50.7
3 years	574	49.5	0.07	47.2	47.8	48.1	48.6	49.4	50.4	50.7	51.1	51.7
4 years	528	49.9	0.08	*	48.1	48.5	49.1	50.1	50.9	51.5	51.7	*
5 years	553	50.7	0.08	*	49.1	49.3	49.7	50.6	51.7	52.2	52.6	*
6 years	269	51.0	0.11	*	*	49.7	50.1	50.8	52.0	52.4	*	*
7 years	267	51.3	0.13	*	*	49.6	50.3	51.3	52.6	53.0	*	*

* Figure does not meet standards of reliability or precision.

Table 41. Mid-upper arm circumference in centimeters for persons aged 3 months to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3–5 months	289	14.6	0.12	*	13.2	13.5	13.9	14.5	15.4	15.7	16.0	*
6–8 months	319	15.3	0.12	*	13.8	14.0	14.4	15.2	16.1	16.6	17.0	*
9–11 months	275	15.6	0.12	*	14.1	14.5	14.8	15.7	16.4	16.8	17.1	*
1 year	651	16.1	0.08	14.4	14.8	15.0	15.4	16.0	16.9	17.3	17.7	18.3
2 years	574	16.5	0.08	14.8	15.1	15.4	15.6	16.3	17.2	17.8	18.0	18.5
3 years	483	16.9	0.13	15.0	15.4	15.7	15.9	16.8	17.7	18.2	18.6	19.0
4 years	542	17.3	0.11	15.3	15.6	16.0	16.4	17.1	18.0	18.4	19.0	19.5
5 years	495	17.9	0.13	15.5	16.0	16.2	16.8	17.7	18.6	19.3	19.6	20.7
6 years	279	18.9	0.28	*	16.4	16.8	17.1	18.4	19.6	20.5	22.7	*
7 years	268	19.3	0.24	*	17.1	17.6	17.9	18.9	20.3	21.3	21.7	*
8 years	261	20.4	0.31	*	17.5	18.0	18.4	19.6	21.8	23.4	24.7	*
9 years	276	21.7	0.34	*	18.3	18.6	19.2	20.7	24.2	25.3	27.0	*
10 years	294	22.6	0.34	*	18.7	19.2	20.1	22.0	25.0	26.6	27.5	*
11 years	281	23.6	0.38	*	19.7	20.0	21.1	22.7	25.5	27.4	28.1	*
12 years	202	25.2	0.45	*	*	21.6	23.1	24.1	27.3	28.5	*	*
13 years	181	25.7	0.49	*	*	22.0	23.6	24.6	27.8	28.6	*	*
14 years	185	28.1	0.78	*	*	23.9	24.3	27.0	29.8	30.6	*	*
15 years	183	28.5	0.51	*	*	24.9	25.9	27.5	31.1	33.3	*	*
16 years	191	29.2	0.50	*	*	25.6	26.6	28.4	31.2	32.6	*	*
17 years	193	30.7	0.51	*	*	26.7	27.7	30.0	33.1	35.3	*	*
18 years	168	30.1	0.55	*	*	25.9	27.4	29.6	31.8	34.5	*	*
19 years	161	31.5	0.52	*	*	27.8	28.6	30.8	33.7	35.8	*	*
Female												
3–5 months	309	14.0	0.13	*	12.7	12.9	13.3	14.0	14.8	15.2	15.6	*
6–8 months	262	14.8	0.14	*	*	13.6	13.9	14.7	15.4	16.1	*	*
9–11 months	315	15.2	0.12	*	13.8	14.0	14.4	15.2	15.9	16.4	16.7	*
1 year	627	15.9	0.09	14.0	14.4	14.7	15.0	15.9	16.7	17.0	17.5	17.9
2 years	556	16.3	0.09	*	15.0	15.2	15.5	16.2	17.0	17.4	17.9	*
3 years	561	17.0	0.11	15.1	15.5	15.8	16.1	16.8	17.6	18.1	18.5	19.3
4 years	527	17.6	0.17	*	15.6	15.9	16.4	17.3	18.2	19.0	19.6	*
5 years	555	18.1	0.15	*	16.1	16.3	16.8	17.8	19.0	19.7	20.6	*
6 years	273	18.7	0.28	*	*	16.7	17.2	18.1	19.5	21.1	*	*
7 years	270	19.9	0.34	*	*	17.1	17.6	19.3	21.4	23.5	*	*
8 years	245	20.6	0.35	*	*	17.9	18.6	20.0	21.5	23.3	*	*
9 years	272	22.1	0.47	*	*	18.4	19.3	20.9	24.0	26.5	*	*
10 years	255	22.6	0.42	*	*	19.0	19.8	21.8	24.6	26.5	*	*
11 years	268	23.7	0.40	*	*	20.1	21.2	23.5	25.7	27.4	*	*
12 years	233	24.5	0.48	*	*	20.0	21.5	23.8	27.1	28.3	*	*
13 years	217	26.3	0.53	*	*	22.1	23.0	25.4	29.1	31.1	*	*
14 years	218	26.9	0.49	*	*	23.0	24.0	25.9	29.5	31.1	*	*
15 years	189	26.7	0.49	*	*	23.8	24.2	25.9	28.1	30.1	*	*
16 years	204	27.3	0.47	*	*	23.5	24.7	26.4	29.5	31.3	*	*
17 years	195	27.7	0.50	*	*	24.2	25.2	27.0	29.3	31.2	*	*
18 years	170	27.4	0.59	*	*	*	24.4	26.5	29.8	*	*	*
19 years	168	28.2	0.63	*	*	*	25.2	27.2	29.6	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 42. Mid-upper arm circumference in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,622	33.0	0.09	27.3	28.5	29.2	30.4	32.8	35.3	36.7	37.6	39.5
20–29 years	1,585	32.4	0.14	27.0	27.9	28.7	29.6	32.3	34.6	36.2	37.4	38.9
30–39 years	1,435	33.4	0.15	27.9	29.0	29.7	31.0	33.3	35.6	37.0	38.2	39.9
40–49 years	1,178	33.7	0.15	28.3	29.5	30.2	31.2	33.3	35.7	37.5	38.4	40.8
50–59 years	824	33.7	0.18	27.9	29.2	30.0	31.1	33.7	35.6	37.2	37.9	39.3
60–69 years	1,126	32.8	0.15	26.8	28.4	29.2	30.6	32.7	35.2	36.2	37.0	37.8
70–79 years	832	31.5	0.17	26.5	27.5	28.2	29.3	31.3	33.4	35.1	36.1	37.3
80 years and older	642	29.5	0.19	23.5	25.5	26.2	27.3	29.5	31.5	32.6	33.3	35.3
Non-Hispanic white												
20 years and older	3,159	33.1	0.11	27.5	28.6	29.4	30.6	33.0	35.3	36.7	37.6	39.3
20–29 years	386	32.5	0.20	27.2	28.2	28.8	29.7	32.6	34.6	36.1	37.1	38.7
30–39 years	444	33.6	0.19	27.9	29.1	29.9	31.2	33.5	35.7	37.1	38.2	39.9
40–49 years	417	33.9	0.19	29.0	29.8	30.5	31.4	33.3	35.7	37.5	38.2	41.1
50–59 years	406	33.7	0.19	27.9	29.4	30.1	31.1	33.7	35.8	37.2	38.0	39.3
60–69 years	487	32.9	0.16	27.1	28.6	29.4	30.9	33.0	35.2	36.2	37.0	37.8
70–79 years	502	31.6	0.16	26.5	27.5	28.3	29.4	31.3	33.5	35.2	36.1	37.2
80 years and older	517	29.5	0.16	23.6	25.5	26.3	27.3	29.5	31.5	32.6	33.2	35.1
Non-Hispanic black												
20 years and older	2,008	33.6	0.12	26.9	28.5	29.4	30.6	33.2	36.2	37.9	39.2	41.5
20–29 years	473	33.7	0.23	27.5	28.4	29.4	30.4	33.0	36.5	38.3	39.8	41.9
30–39 years	480	33.9	0.21	27.9	29.1	29.8	30.8	33.3	36.4	38.1	39.9	42.0
40–49 years	344	33.9	0.23	27.2	29.1	30.0	31.2	33.8	36.2	37.6	39.2	40.9
50–59 years	207	33.9	0.35	26.5	28.0	29.2	31.0	33.8	36.4	38.0	39.2	41.3
60–69 years	282	32.9	0.28	25.9	26.7	28.6	30.2	32.8	35.8	37.8	38.6	39.9
70–79 years	172	31.9	0.33	*	26.8	27.9	29.3	31.6	34.2	36.0	36.8	*
80 years and older	50	30.0	0.65	*	*	*	27.6	30.0	32.2	*	*	*
Mexican American												
20 years and older	2,180	32.5	0.12	27.0	28.1	29.0	30.2	32.3	34.6	36.1	37.1	38.5
20–29 years	655	31.7	0.16	26.7	27.5	28.3	29.4	31.4	33.7	35.1	36.2	38.0
30–39 years	457	33.0	0.20	27.3	28.6	29.5	30.6	33.1	35.1	36.5	37.5	39.4
40–49 years	371	33.7	0.21	28.7	29.9	30.4	31.3	33.5	36.1	37.1	37.8	39.2
50–59 years	169	33.5	0.30	*	29.9	30.0	31.2	33.3	35.1	36.6	37.4	*
60–69 years	325	31.9	0.21	27.4	27.7	28.4	29.4	31.9	34.0	35.4	36.4	37.2
70–79 years	145	30.3	0.32	*	26.0	27.4	28.0	30.5	32.7	33.9	34.4	*
80 years and older	58	28.4	0.43	*	*	*	27.3	28.3	30.0	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 43. Mid-upper arm circumference in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,348	30.7	0.11	24.0	25.0	25.9	27.1	30.0	33.6	35.8	37.4	40.0
20–29 years	1,623	28.9	0.17	23.4	24.2	24.7	25.8	27.9	31.1	33.4	35.1	37.8
30–39 years	1,707	30.7	0.19	24.1	24.9	25.7	26.9	29.5	33.9	36.4	38.2	40.4
40–49 years	1,300	31.4	0.20	24.8	25.8	26.7	28.0	30.7	34.0	36.0	37.7	40.3
60–59 years	970	32.5	0.25	25.4	26.6	27.5	28.7	32.0	35.3	37.5	39.2	42.6
60–69 years	1,122	31.7	0.21	24.7	26.2	26.9	28.3	31.2	34.3	36.5	38.3	40.4
70–79 years	914	30.5	0.23	24.0	25.4	26.1	27.4	30.1	33.1	35.1	36.7	39.2
80 years and older	712	28.5	0.25	21.5	23.0	23.8	25.5	28.4	31.5	33.2	34.0	35.8
Non-Hispanic white												
20 years and older	3,595	30.4	0.13	24.0	25.0	25.7	27.0	29.6	33.3	35.4	37.0	39.5
20–29 years	442	28.6	0.25	23.4	24.2	24.8	25.6	27.5	30.7	33.3	34.8	37.4
30–39 years	561	30.2	0.27	24.0	24.7	25.4	26.6	28.9	33.0	35.8	37.0	39.6
40–49 years	459	31.0	0.27	24.8	25.7	26.5	27.9	30.4	33.6	35.4	37.0	39.7
60–59 years	472	32.4	0.28	25.5	26.6	27.5	28.6	31.9	35.0	37.3	38.8	42.4
60–69 years	485	31.5	0.26	24.3	26.0	26.8	28.3	31.0	34.1	36.0	37.7	40.2
70–79 years	608	30.4	0.22	24.1	25.4	26.2	27.4	29.9	32.6	34.9	36.2	38.6
80 years and older	568	28.5	0.23	21.5	23.0	23.9	25.6	28.4	31.5	33.0	34.0	35.7
Non-Hispanic black												
20 years and older	2,347	32.5	0.14	24.4	25.6	26.7	28.2	31.8	35.8	38.4	40.1	42.6
20–29 years	548	30.3	0.24	23.4	24.5	25.2	26.8	29.5	33.1	35.2	37.3	39.8
30–39 years	593	32.4	0.26	24.7	25.8	26.7	28.2	31.6	35.8	38.4	40.1	42.2
40–49 years	426	34.0	0.33	26.0	27.1	27.9	29.8	33.1	37.5	39.6	42.1	44.4
60–59 years	261	34.1	0.41	25.2	26.3	27.8	30.1	34.2	37.9	40.0	41.1	44.3
60–69 years	280	34.0	0.39	25.4	27.5	28.7	30.1	33.6	37.1	39.5	41.0	42.9
70–79 years	161	32.8	0.51	*	26.3	27.5	29.4	32.1	36.2	37.8	40.7	*
80 years and older	78	28.9	0.63	*	*	23.5	24.9	29.1	32.9	34.1	*	*
Mexican American												
20 years and older	2,048	31.5	0.17	24.3	25.8	26.6	28.0	31.0	34.4	36.2	37.8	40.5
20–29 years	559	29.7	0.24	23.6	24.3	25.2	26.5	29.0	32.4	34.7	35.8	37.9
30–39 years	481	31.9	0.27	25.2	26.3	26.9	28.5	31.2	35.1	36.8	38.5	41.4
40–49 years	348	33.1	0.29	27.0	27.9	28.9	29.9	32.9	35.5	37.2	38.8	41.3
60–59 years	185	32.9	0.41	*	28.0	28.5	30.0	32.5	35.5	36.7	38.3	*
60–69 years	309	32.8	0.34	26.2	27.8	28.1	29.4	32.3	35.4	37.0	38.6	43.4
70–79 years	115	30.5	0.62	*	*	25.5	26.2	29.9	33.4	37.2	*	*
80 years and older	51	27.2	0.75	*	*	*	23.1	27.2	30.1	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 44. Thigh circumference in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	522	28.1	0.15	25.0	25.5	25.8	26.8	27.8	29.4	30.3	30.8	31.8
3 years	482	29.2	0.21	25.7	26.3	27.0	27.6	28.9	30.6	31.3	31.7	32.5
4 years	539	30.2	0.18	26.6	27.2	27.8	28.5	30.0	31.5	32.2	33.0	35.0
5 years	489	31.6	0.22	27.5	28.0	28.6	29.5	31.1	33.0	34.1	34.7	37.3
6 years	279	33.7	0.44	*	29.0	30.0	30.8	32.8	35.5	37.0	39.5	*
7 years	268	34.9	0.40	*	30.4	31.3	32.1	34.0	37.0	38.4	39.9	*
8 years	260	36.7	0.48	*	31.7	32.4	33.5	35.7	39.0	41.4	43.1	*
9 years	273	39.4	0.53	*	33.9	34.4	35.3	38.1	43.0	44.7	46.9	*
10 years	293	40.5	0.47	*	34.2	35.6	37.0	39.7	43.8	46.5	46.6	*
11 years	279	42.9	0.61	*	36.5	37.5	38.5	41.4	46.2	49.0	51.2	*
12 years	201	44.9	0.65	*	*	39.7	40.9	43.6	48.8	50.7	*	*
13 years	181	45.9	0.72	*	*	40.0	41.8	45.8	49.7	52.5	*	*
14 years	185	49.5	1.05	*	*	43.0	44.7	47.9	50.6	54.8	*	*
15 years	180	50.7	0.74	*	*	45.3	46.3	49.6	54.5	56.0	*	*
16 years	191	50.5	0.76	*	*	45.4	46.2	49.5	52.9	56.3	*	*
17 years	191	51.7	0.62	*	*	46.7	47.6	51.3	55.2	56.3	*	*
18 years	169	50.7	0.79	*	*	43.8	45.7	50.2	53.7	55.7	*	*
19 years	161	51.7	0.66	*	*	47.0	47.8	50.8	54.6	56.9	*	*
Female												
2 years	508	28.4	0.17	*	25.7	26.3	26.9	28.2	29.6	30.6	31.1	*
3 years	560	29.5	0.19	25.8	26.5	27.3	27.9	29.2	30.9	32.0	32.3	33.6
4 years	527	31.1	0.28	*	27.7	28.3	29.0	30.5	32.4	33.6	34.8	*
5 years	556	32.1	0.25	*	28.4	28.9	29.7	31.5	33.6	35.3	36.8	*
6 years	274	33.4	0.45	*	*	29.9	30.5	32.3	35.2	37.7	*	*
7 years	268	35.3	0.50	*	*	31.0	31.8	34.2	37.4	41.0	*	*
8 years	245	37.4	0.51	*	*	32.8	34.2	37.1	39.0	41.5	*	*
9 years	271	39.4	0.64	*	*	34.5	35.3	37.6	42.0	44.5	*	*
10 years	255	40.6	0.61	*	*	34.9	36.1	39.6	43.6	47.4	*	*
11 years	268	43.1	0.57	*	*	37.8	38.9	43.0	45.6	47.7	*	*
12 years	231	44.8	0.70	*	*	39.0	40.1	43.7	48.0	51.2	*	*
13 years	218	47.9	0.71	*	*	42.3	43.3	47.0	52.0	54.6	*	*
14 years	217	48.8	0.71	*	*	43.1	44.8	47.3	53.0	55.5	*	*
15 years	187	48.7	0.64	*	*	43.7	45.2	48.3	50.9	54.6	*	*
16 years	202	49.5	0.65	*	*	44.1	45.4	48.2	52.8	54.7	*	*
17 years	192	49.9	0.73	*	*	44.8	46.3	49.0	53.6	55.0	*	*
18 years	169	49.6	0.88	*	*	*	45.2	48.5	52.3	*	*	*
19 years	168	51.0	0.92	*	*	*	46.3	49.9	53.2	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 45. High circumference in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,369	51.7	0.12	44.0	45.6	46.7	48.2	51.3	54.7	56.8	58.3	61.2
20–29 years	1,574	52.4	0.18	44.8	46.3	47.1	48.4	51.7	55.4	57.9	59.6	61.8
30–39 years	1,430	53.0	0.19	45.7	47.2	48.1	49.5	52.4	56.0	57.8	59.2	63.3
40–49 years	1,170	52.3	0.20	45.0	46.1	47.5	49.1	51.7	55.0	57.1	58.7	61.9
50–59 years	815	51.6	0.22	44.1	46.1	47.1	48.6	51.6	54.2	56.2	57.3	59.1
60–69 years	1,091	49.8	0.18	42.5	44.8	45.6	46.8	49.6	52.6	54.2	55.3	57.1
70–79 years	764	48.1	0.24	41.7	42.8	43.6	45.0	47.7	50.8	52.7	53.8	56.1
80 years and older	525	46.1	0.25	39.4	40.9	42.2	43.6	46.0	48.6	50.4	51.4	52.9
Non-Hispanic white												
20 years and older	3,004	51.7	0.14	44.1	45.7	46.8	48.3	51.3	54.6	56.7	58.0	61.0
20–29 years	384	52.2	0.27	45.1	46.3	47.1	48.4	51.5	55.3	57.7	59.0	61.2
30–39 years	444	53.2	0.26	45.7	47.3	48.4	49.7	52.7	56.1	57.6	58.9	63.3
40–49 years	413	52.4	0.25	45.4	46.6	48.0	49.4	51.8	55.0	57.0	58.7	61.6
50–59 years	401	51.7	0.23	44.4	46.6	47.4	48.8	51.7	54.2	56.2	57.4	59.1
60–69 years	476	49.9	0.21	42.8	45.0	45.9	47.0	49.7	52.5	54.2	55.3	57.0
70–79 years	468	48.1	0.23	41.9	42.8	43.6	45.2	47.7	50.8	52.5	53.6	55.5
80 years and older	418	46.1	0.21	39.3	40.8	42.0	43.7	46.1	48.5	50.3	51.4	52.8
Non-Hispanic black												
20 years and older	1,956	53.5	0.16	43.8	45.9	47.3	49.4	53.0	57.1	59.6	61.5	64.8
20–29 years	470	55.4	0.33	45.9	47.4	48.9	50.8	54.2	59.3	61.6	64.6	68.2
30–39 years	477	54.3	0.30	44.8	47.7	48.6	50.3	53.6	57.7	59.7	62.6	65.2
40–49 years	342	53.3	0.32	44.5	46.4	47.7	49.7	53.1	56.7	58.9	60.5	62.9
50–59 years	203	51.9	0.44	42.4	44.1	45.3	48.1	52.2	55.5	58.1	58.8	60.9
60–69 years	265	50.7	0.38	41.2	42.4	45.0	47.1	50.8	54.8	56.8	58.1	60.3
70–79 years	156	49.2	0.48	*	41.8	43.1	45.4	49.2	53.3	55.1	56.3	*
80 years and older	43	48.2	0.66	*	*	*	45.5	48.0	50.8	*	*	*
Mexican American												
20 years and older	2,138	50.8	0.17	43.4	45.0	46.1	47.8	50.6	53.6	55.5	56.9	58.9
20–29 years	650	51.0	0.22	44.1	45.2	46.6	47.9	50.7	53.7	55.6	57.0	58.6
30–39 years	455	51.4	0.27	44.5	45.8	46.8	48.4	51.4	54.1	55.5	56.9	59.4
40–49 years	369	51.3	0.30	43.8	45.6	46.5	48.1	51.4	54.4	56.4	57.6	59.3
50–59 years	169	50.5	0.42	*	45.0	46.2	47.6	50.2	52.8	54.3	56.8	*
60–69 years	319	48.0	0.30	40.5	42.1	43.3	45.3	48.3	50.7	52.9	53.6	55.2
70–79 years	128	46.4	0.46	*	40.8	42.4	43.6	46.6	49.6	50.8	51.6	*
80 years and older	48	44.5	0.70	*	*	*	*	44.2	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 46. Thigh circumference in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,022	51.1	0.15	41.9	43.6	44.6	46.3	50.1	55.0	57.9	60.4	64.1
20–29 years	1,615	50.7	0.23	42.7	44.0	45.0	46.2	49.7	54.1	57.4	60.0	63.1
30–39 years	1,690	52.4	0.26	43.2	44.3	45.5	46.9	51.2	56.5	60.2	62.4	66.4
40–49 years	1,289	52.1	0.29	42.6	44.6	45.9	47.5	51.1	55.6	58.4	60.8	64.5
50–59 years	957	52.0	0.34	42.2	44.2	45.1	47.2	51.4	56.1	58.6	61.3	65.1
60–69 years	1,071	49.8	0.30	40.3	42.2	43.6	45.4	49.5	53.4	56.1	57.9	61.1
70–79 years	848	48.6	0.33	40.2	41.5	42.7	44.3	47.8	51.9	54.9	56.7	59.9
80 years and older	552	46.8	0.37	37.9	40.0	41.1	43.1	46.3	50.1	52.3	54.3	57.6
Non-Hispanic white												
20 years and older	3,375	50.7	0.17	41.9	43.5	44.6	46.2	49.8	54.2	57.2	59.3	62.8
20–29 years	440	50.2	0.34	42.7	44.0	44.8	46.1	49.0	53.2	56.1	59.0	61.5
30–39 years	553	51.7	0.36	43.1	44.2	45.2	46.6	50.5	55.7	59.1	60.9	65.9
40–49 years	456	51.8	0.38	42.8	45.0	46.1	47.5	50.8	55.3	57.8	59.7	62.9
50–59 years	469	51.8	0.39	42.2	44.2	45.1	47.1	51.3	55.7	58.1	60.5	63.8
60–69 years	463	49.6	0.35	40.4	42.3	43.6	45.5	49.4	53.2	55.8	57.5	60.6
70–79 years	559	48.4	0.32	40.4	41.7	42.7	44.3	47.6	51.5	54.3	56.0	59.4
80 years and older	435	46.7	0.33	37.9	40.1	41.2	43.1	46.3	50.0	51.8	53.3	57.1
Non-Hispanic black												
20 years and older	2,281	55.0	0.19	43.9	45.5	47.0	49.3	54.1	59.7	63.1	65.8	69.3
20–29 years	546	54.4	0.35	43.5	45.3	46.8	49.1	53.3	59.0	62.4	65.0	68.2
30–39 years	589	55.8	0.37	44.2	46.1	47.4	50.0	54.9	60.5	64.6	66.8	70.1
40–49 years	421	56.3	0.44	44.9	46.0	47.7	50.3	55.6	60.8	64.5	67.5	71.4
50–59 years	253	55.0	0.54	41.3	45.9	47.2	49.3	55.0	60.0	62.7	65.3	68.4
60–69 years	260	54.4	0.57	43.8	45.6	46.6	48.6	53.4	59.5	62.3	65.6	69.6
70–79 years	151	52.6	0.71	*	44.2	45.5	47.6	51.4	57.3	59.6	61.4	*
80 years and older	61	49.4	0.94	*	*	*	44.6	48.5	55.3	*	*	*
Mexican American												
20 years and older	2,013	50.6	0.23	41.3	43.2	44.4	46.2	50.0	54.1	56.8	59.1	63.0
20–29 years	555	50.3	0.31	42.0	43.4	44.4	46.0	49.6	53.9	56.5	58.4	60.7
30–39 years	476	51.6	0.37	42.1	44.2	45.4	47.2	50.4	55.2	57.8	60.8	63.7
40–49 years	345	51.9	0.40	42.2	44.4	45.7	47.9	51.5	55.2	58.0	60.3	64.6
50–59 years	183	50.1	0.53	*	42.6	44.3	45.8	50.0	53.7	55.7	57.0	*
60–69 years	300	48.5	0.42	40.4	41.8	42.7	44.2	47.6	52.0	54.0	56.3	60.0
70–79 years	110	46.2	0.69	*	*	40.3	41.7	45.9	49.1	51.3	*	*
80 years and older	44	42.0	0.88	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 47. Waist circumference in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	524	47.9	0.20	43.5	44.4	45.0	46.0	47.7	49.5	50.8	51.8	53.1
3 years	485	49.8	0.31	45.1	46.0	46.6	47.5	49.3	51.2	52.5	53.2	55.5
4 years	542	51.4	0.25	46.4	47.2	47.8	48.9	51.4	52.9	54.4	55.3	57.2
5 years	492	53.0	0.31	47.6	48.4	48.8	50.1	52.5	54.9	56.0	57.3	61.2
6 years	279	55.7	0.64	*	49.6	50.5	51.5	54.1	57.8	59.7	66.5	*
7 years	268	57.4	0.63	*	51.4	52.1	53.0	55.7	59.4	62.7	64.2	*
8 years	262	60.0	0.72	*	52.7	53.6	54.6	58.0	63.7	67.2	72.0	*
9 years	273	63.3	0.91	*	54.1	55.0	56.7	59.6	68.8	75.0	78.1	*
10 years	293	65.1	0.83	*	55.1	56.1	57.9	62.9	69.5	76.7	77.5	*
11 years	281	68.7	1.02	*	58.2	59.0	61.0	65.1	74.1	81.1	84.4	*
12 years	202	72.2	1.20	*	*	61.1	64.5	69.1	80.2	84.5	*	*
13 years	181	73.0	1.35	*	*	61.7	65.0	69.6	80.4	85.5	*	*
14 years	185	77.4	1.91	*	*	66.6	67.5	73.1	79.5	85.5	*	*
15 years	182	78.7	1.54	*	*	66.8	69.6	75.4	85.4	92.1	*	*
16 years	191	78.3	1.25	*	*	70.1	71.4	75.0	82.0	85.8	*	*
17 years	190	81.0	1.26	*	*	70.9	73.0	77.6	84.5	94.7	*	*
18 years	169	80.2	1.35	*	*	71.0	71.9	77.0	84.9	91.0	*	*
19 years	162	82.1	1.33	*	*	73.1	75.1	79.2	86.2	94.6	*	*
Female												
2 years	507	48.0	0.28	*	44.2	44.8	45.9	48.0	49.8	50.8	52.0	*
3 years	562	49.8	0.35	43.6	45.5	46.1	47.1	49.3	51.6	53.3	54.5	57.2
4 years	527	52.1	0.46	*	47.2	47.8	49.0	51.1	53.7	55.6	56.8	*
5 years	554	53.3	0.41	*	47.9	48.6	49.6	52.6	55.4	57.4	59.8	*
6 years	273	54.6	0.78	*	*	49.1	50.4	53.0	56.5	60.1	*	*
7 years	268	57.6	0.92	*	*	50.7	52.2	55.4	60.4	64.6	*	*
8 years	244	59.4	0.94	*	*	53.1	54.1	58.2	62.1	65.4	*	*
9 years	273	62.9	1.14	*	*	53.5	55.9	59.8	66.6	73.0	*	*
10 years	254	64.7	1.22	*	*	56.0	57.1	61.3	69.5	76.1	*	*
11 years	266	67.4	1.05	*	*	58.7	60.5	65.8	72.6	77.6	*	*
12 years	233	69.9	1.36	*	*	59.8	61.7	67.8	77.1	79.5	*	*
13 years	216	74.0	1.49	*	*	62.9	66.4	71.6	80.3	85.6	*	*
14 years	217	76.4	1.40	*	*	65.6	69.2	74.0	82.9	89.3	*	*
15 years	188	74.1	1.43	*	*	65.3	68.1	71.6	77.6	81.3	*	*
16 years	204	76.5	1.69	*	*	67.1	68.7	72.2	81.3	86.8	*	*
17 years	191	78.5	1.50	*	*	69.1	70.1	76.5	81.6	91.3	*	*
18 years	169	76.5	1.72	*	*	*	69.0	74.6	81.1	*	*	*
19 years	170	78.6	1.88	*	*	*	69.6	75.2	82.5	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 48. Waist circumference in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,410	95.2	0.30	75.9	79.1	81.6	86.1	94.3	102.9	108.1	111.7	118.6
20–29 years	1,579	87.6	0.43	72.3	74.5	76.2	79.1	85.6	94.0	99.6	103.4	111.5
30–39 years	1,428	93.6	0.46	76.4	79.3	81.7	85.7	92.5	100.0	103.5	108.1	115.1
40–49 years	1,173	97.7	0.54	79.1	83.1	85.2	89.5	96.5	104.2	109.6	112.7	121.1
50–59 years	816	100.5	0.58	83.4	86.0	88.6	92.3	99.4	107.2	111.9	116.7	121.5
60–69 years	1,101	101.6	0.49	82.8	87.2	90.3	94.3	101.9	109.0	112.2	116.1	120.7
70–79 years	773	100.1	0.57	80.8	86.0	89.1	93.0	100.3	107.2	110.8	114.0	120.2
80 years and older	540	97.6	0.67	79.2	84.2	86.4	91.5	97.5	103.6	108.5	111.1	115.0
Non-Hispanic white												
20 years and older	3,024	96.3	0.37	77.4	80.3	83.1	87.5	95.3	103.6	108.8	112.3	119.4
20–29 years	383	88.1	0.63	73.6	76.0	77.5	79.5	86.1	94.3	100.0	103.7	111.6
30–39 years	445	94.6	0.61	77.7	81.2	83.2	87.0	93.2	100.5	103.6	108.5	117.3
40–49 years	416	98.4	0.66	80.5	84.3	87.1	91.0	97.1	104.6	110.0	112.7	121.6
50–59 years	402	100.9	0.61	84.4	86.4	89.2	92.5	100.1	107.1	113.4	117.9	121.6
60–69 years	479	102.3	0.55	84.1	88.3	91.0	95.3	102.5	109.5	112.5	116.7	121.0
70–79 years	469	100.7	0.52	81.9	88.3	90.0	93.5	100.6	107.5	111.2	114.5	121.0
80 years and older	430	98.2	0.55	80.0	85.4	87.8	91.9	97.9	104.5	108.6	111.3	115.1
Non-Hispanic black												
20 years and older	1,969	91.8	0.45	72.0	74.6	77.2	80.5	90.6	100.3	105.9	110.5	118.2
20–29 years	473	87.1	0.72	70.4	72.0	73.4	76.6	84.0	94.7	100.6	104.7	113.9
30–39 years	473	90.3	0.69	71.5	74.2	76.8	80.2	88.5	96.8	103.7	108.9	119.0
40–49 years	341	93.9	0.77	74.2	78.3	79.6	84.0	92.4	102.2	106.3	111.6	118.5
50–59 years	203	97.1	1.08	75.0	79.0	83.3	88.0	96.2	103.1	109.9	114.0	125.6
60–69 years	271	97.7	0.85	75.6	80.2	83.3	88.9	96.8	106.7	111.5	115.1	117.7
70–79 years	162	96.7	1.05	*	80.1	82.6	87.1	97.7	104.5	108.0	110.7	*
80 years and older	46	94.0	1.74	*	*	*	86.1	93.6	102.1	*	*	*
Mexican American												
20 years and older	2,144	93.5	0.43	75.4	78.5	81.0	85.1	92.3	101.0	105.6	109.4	114.6
20–29 years	652	87.8	0.52	73.1	75.5	77.2	80.0	86.8	93.6	98.4	102.2	107.8
30–39 years	456	93.7	0.62	77.8	80.5	83.2	86.6	93.0	99.1	103.6	106.8	112.6
40–49 years	370	99.0	0.75	83.5	86.7	88.3	91.0	97.6	106.0	110.6	113.3	120.2
50–59 years	169	101.9	1.10	*	87.5	89.5	93.5	102.5	108.7	113.0	116.5	*
60–69 years	319	100.9	0.67	84.0	88.6	90.6	95.1	100.1	108.0	111.5	113.6	117.2
70–79 years	130	98.3	1.24	*	83.6	84.3	91.4	99.8	104.5	106.8	111.1	*
80 years and older	48	95.4	1.47	*	*	*	*	95.6	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 49. Waist circumference in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity, age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,061	88.6	0.34	68.0	70.6	72.8	76.6	86.5	98.5	105.1	109.3	116.5
20–29 years	1,616	80.5	0.51	65.6	67.2	69.0	70.9	76.6	87.1	94.0	99.4	107.0
30–39 years	1,702	86.4	0.59	67.1	69.1	71.5	74.8	83.5	94.6	103.6	108.9	116.3
40–49 years	1,295	89.7	0.66	69.6	72.6	75.1	78.2	86.6	98.8	105.6	109.6	116.7
50–59 years	962	94.4	0.75	72.6	76.7	79.1	83.6	92.6	104.3	109.8	113.6	121.4
60–69 years	1,074	94.5	0.67	72.8	76.1	79.5	84.9	94.0	102.8	109.3	112.1	119.1
70–79 years	852	93.6	0.73	73.9	76.4	79.5	83.5	93.0	102.3	106.5	109.8	118.1
80 years and older	560	91.7	0.73	73.6	77.1	80.6	84.3	91.1	100.0	103.6	105.6	109.0
Non-Hispanic white												
20 years and older	3,395	88.0	0.42	67.8	70.3	72.3	76.1	85.7	98.0	104.7	108.7	115.5
20–29 years	440	79.4	0.76	65.6	67.1	68.7	70.5	75.2	85.1	92.5	98.7	106.9
30–39 years	558	84.8	0.79	66.8	68.5	70.2	74.1	81.8	91.6	101.9	107.1	114.5
40–49 years	457	88.4	0.85	69.5	72.1	73.8	77.7	85.1	96.9	105.0	108.6	116.0
50–59 years	469	94.0	0.86	72.6	76.4	78.5	82.5	92.0	104.1	109.8	113.1	120.7
60–69 years	466	94.0	0.79	72.1	75.7	78.7	84.3	93.6	101.9	108.2	111.8	119.0
70–79 years	564	93.3	0.70	74.0	76.4	79.2	83.3	92.2	102.1	106.1	108.8	116.8
80 years and older	441	91.8	0.63	74.0	78.1	81.1	85.0	91.1	99.8	103.2	105.5	108.2
Non-Hispanic black												
20 years and older	2,296	92.8	0.47	69.5	72.7	75.1	80.2	91.1	103.1	110.3	115.5	122.6
20–29 years	547	84.6	0.71	65.7	68.9	70.2	73.9	81.9	93.7	99.3	103.1	112.2
30–39 years	593	91.4	0.80	69.8	72.4	74.5	79.9	88.2	101.7	109.7	114.9	123.4
40–49 years	424	96.7	0.98	72.5	76.2	79.1	85.0	94.4	106.2	115.2	119.2	125.8
50–59 years	257	99.3	1.12	73.5	79.1	84.3	89.5	98.5	108.6	115.0	118.9	126.8
60–69 years	261	100.6	1.09	78.8	83.3	86.5	89.6	100.0	110.0	114.0	118.9	129.0
70–79 years	151	97.9	1.29	*	80.5	85.0	88.6	96.7	107.2	112.8	117.1	*
80 years and older	63	91.2	1.95	*	*	*	82.7	90.6	102.1	*	*	*
Mexican American												
20 years and older	2,019	91.1	0.52	69.8	73.1	75.6	80.5	90.2	100.0	105.2	110.0	115.9
20–29 years	555	84.7	0.70	67.1	69.5	71.1	74.2	83.5	92.6	97.4	102.5	110.0
30–39 years	479	90.6	0.82	70.4	73.4	75.6	80.1	89.9	99.2	104.6	110.2	116.3
40–49 years	347	95.8	0.85	77.4	80.7	83.0	86.9	95.5	103.1	107.8	112.5	117.6
50–59 years	185	96.3	1.13	*	79.3	83.3	88.2	96.8	104.3	108.0	109.8	*
60–69 years	299	99.2	1.00	78.5	82.8	85.3	88.8	97.6	108.2	113.1	117.4	124.6
70–79 years	110	96.7	1.57	*	82.1	88.6	96.5	105.9	111.4	*	*	*
80 years and older	44	90.3	2.02	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 50. Wrist breadth in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	528	3.6	0.02	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.8	4.0
3 years	487	3.8	0.02	3.4	3.5	3.5	3.6	3.8	3.9	4.0	4.1	4.2
4 years	544	3.9	0.02	3.5	3.6	3.6	3.7	3.9	4.0	4.1	4.2	4.3
5 years	495	4.1	0.02	3.6	3.7	3.7	3.9	4.1	4.3	4.4	4.4	4.5
6 years	279	4.2	0.03	*	3.9	4.0	4.0	4.3	4.5	4.5	4.6	*
7 years	269	4.4	0.03	*	4.0	4.1	4.2	4.3	4.5	4.6	4.7	*
8 years	261	4.5	0.04	*	4.0	4.0	4.2	4.4	4.6	4.8	4.9	*
9 years	276	4.7	0.03	*	4.2	4.4	4.5	4.7	5.0	5.1	5.1	*
10 years	294	4.8	0.03	*	4.5	4.5	4.6	4.8	5.0	5.2	5.2	*
11 years	282	5.0	0.04	*	4.6	4.7	4.8	5.0	5.2	5.4	5.5	*
12 years	202	5.3	0.05	*	*	4.9	5.0	5.2	5.5	5.8	*	*
13 years	182	5.5	0.06	*	*	5.0	5.2	5.5	5.8	5.9	*	*
14 years	187	5.7	0.04	*	*	5.3	5.4	5.7	6.0	6.1	*	*
15 years	185	5.7	0.04	*	*	5.4	5.5	5.7	5.8	6.0	*	*
16 years	192	5.7	0.04	*	*	5.5	5.6	5.7	6.0	6.1	*	*
17 years	193	5.8	0.04	*	*	5.5	5.6	5.8	6.0	6.2	*	*
18 years	169	5.8	0.05	*	*	5.5	5.6	5.8	6.1	6.2	*	*
19 years	164	5.8	0.03	*	*	5.4	5.6	5.7	5.9	6.0	*	*
Female												
2 years	508	3.5	0.02	*	3.2	3.2	3.3	3.5	3.6	3.7	3.7	*
3 years	567	3.6	0.02	3.2	3.3	3.4	3.5	3.6	3.8	3.9	3.9	4.0
4 years	528	3.8	0.02	*	3.5	3.5	3.6	3.8	4.0	4.0	4.2	*
5 years	555	3.9	0.02	*	3.6	3.7	3.7	3.9	4.1	4.2	4.3	*
6 years	274	4.1	0.03	*	*	3.8	3.9	4.1	4.2	4.4	*	*
7 years	269	4.2	0.04	*	*	3.9	4.0	4.2	4.4	4.5	*	*
8 years	245	4.4	0.03	*	*	4.1	4.2	4.4	4.6	4.7	*	*
9 years	271	4.6	0.03	*	*	4.3	4.4	4.5	4.8	4.9	*	*
10 years	257	4.7	0.04	*	*	4.4	4.5	4.7	4.9	5.0	*	*
11 years	270	4.9	0.04	*	*	4.5	4.6	4.8	5.1	5.2	*	*
12 years	233	5.0	0.04	*	*	4.5	4.7	5.0	5.2	5.2	*	*
13 years	218	5.0	0.04	*	*	4.7	4.8	5.0	5.2	5.3	*	*
14 years	217	5.0	0.04	*	*	4.7	4.8	5.0	5.2	5.3	*	*
15 years	189	5.0	0.04	*	*	4.7	4.9	5.0	5.2	5.3	*	*
16 years	203	5.1	0.04	*	*	4.7	4.8	5.1	5.3	5.4	*	*
17 years	197	5.0	0.04	*	*	4.8	4.9	5.1	5.3	5.3	*	*
18 years	170	5.0	0.04	*	*	*	4.8	5.0	5.2	*	*	*
19 years	171	5.0	0.04	*	*	*	4.8	5.0	5.2	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 51. Wrist breadth in centimeters for males aged 20 years and older and number of examined persons, mean standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,501	5.9	0.01	5.3	5.5	5.5	5.7	5.9	6.2	6.3	6.4	6.5
20–29 years	1,588	5.8	0.01	5.2	5.4	5.5	5.6	5.8	6.0	6.1	6.2	6.3
30–39 years	1,435	5.9	0.01	5.3	5.4	5.5	5.6	5.9	6.1	6.2	6.3	6.5
40–49 years	1,180	5.9	0.02	5.4	5.5	5.6	5.7	5.9	6.2	6.3	6.4	6.5
50–59 years	819	6.0	0.02	5.4	5.5	5.6	5.7	6.0	6.2	6.4	6.5	6.6
60–69 years	1,117	6.1	0.02	5.4	5.5	5.7	5.8	6.1	6.3	6.4	6.5	6.6
70–79 years	799	6.1	0.02	5.5	5.6	5.7	5.9	6.1	6.3	6.5	6.5	6.7
80 years and older	563	6.1	0.03	5.5	5.6	5.7	5.8	6.1	6.4	6.5	6.5	6.7
Non-Hispanic white												
20 years and older	3,058	5.9	0.01	5.4	5.5	5.6	5.7	6.0	6.2	6.3	6.4	6.5
20–29 years	386	5.8	0.02	5.3	5.4	5.5	5.6	5.9	6.0	6.1	6.2	6.3
30–39 years	445	5.9	0.02	5.3	5.4	5.5	5.6	5.9	6.1	6.2	6.4	6.5
40–49 years	418	5.9	0.02	5.4	5.5	5.6	5.7	5.9	6.2	6.3	6.4	6.5
50–59 years	403	6.0	0.02	5.5	5.6	5.7	5.7	6.0	6.3	6.4	6.5	6.6
60–69 years	483	6.1	0.02	5.5	5.6	5.7	5.9	6.1	6.3	6.4	6.5	6.6
70–79 years	477	6.1	0.02	5.6	5.7	5.7	5.9	6.1	6.3	6.5	6.5	6.7
80 years and older	446	6.1	0.02	5.5	5.6	5.7	5.8	6.1	6.4	6.5	6.5	6.8
Non-Hispanic black												
20 years and older	2,009	5.9	0.01	5.3	5.5	5.6	5.7	5.9	6.2	6.3	6.4	6.6
20–29 years	476	5.8	0.02	5.3	5.4	5.5	5.6	5.8	6.1	6.2	6.3	6.4
30–39 years	479	5.9	0.02	5.4	5.5	5.5	5.7	5.9	6.1	6.3	6.4	6.5
40–49 years	346	6.0	0.02	5.3	5.5	5.6	5.7	6.0	6.2	6.4	6.4	6.6
50–59 years	206	6.0	0.03	5.5	5.6	5.6	5.7	6.0	6.3	6.5	6.5	6.6
60–69 years	281	6.1	0.03	5.5	5.7	5.8	5.9	6.1	6.4	6.5	6.6	6.7
70–79 years	171	6.2	0.04	*	5.6	5.7	5.9	6.2	6.4	6.6	6.7	*
80 years and older	50	6.2	0.05	*	*	*	6.0	6.2	6.4	*	*	*
Mexican American												
20 years and older	2,159	5.8	0.01	5.3	5.4	5.5	5.6	5.8	6.0	6.1	6.2	6.3
20–29 years	654	5.7	0.02	5.2	5.3	5.4	5.5	5.7	6.0	6.1	6.1	6.2
30–39 years	457	5.8	0.02	5.3	5.4	5.5	5.6	5.8	6.0	6.1	6.2	6.3
40–49 years	370	5.8	0.02	5.4	5.5	5.5	5.7	5.8	6.0	6.2	6.2	6.3
50–59 years	168	5.9	0.03	*	5.5	5.5	5.7	5.8	6.1	6.2	6.3	*
60–69 years	321	6.0	0.02	5.5	5.5	5.6	5.7	6.0	6.2	6.4	6.4	6.5
70–79 years	138	5.9	0.04	*	5.5	5.6	5.7	5.9	6.1	6.2	6.4	*
80 years and older	51	5.9	0.06	*	*	*	5.7	5.8	6.1	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 52. Wrist breadth in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,162	5.2	0.01	4.7	4.8	4.8	5.0	5.2	5.4	5.5	5.6	5.7
20–29 years	1,619	5.0	0.01	4.5	4.7	4.7	4.8	5.0	5.2	5.4	5.4	5.5
30–39 years	1,713	5.1	0.01	4.7	4.8	4.8	4.9	5.1	5.3	5.4	5.5	5.6
40–49 years	1,305	5.2	0.01	4.6	4.7	4.8	5.0	5.2	5.4	5.5	5.6	5.7
50–59 years	965	5.3	0.02	4.7	4.9	4.9	5.0	5.2	5.5	5.6	5.7	5.8
60–69 years	1,091	5.3	0.02	4.7	4.9	5.0	5.0	5.3	5.5	5.6	5.7	5.9
70–79 years	873	5.3	0.02	4.8	4.9	5.0	5.1	5.3	5.5	5.7	5.7	5.9
80 years and older	596	5.4	0.02	4.8	4.9	5.0	5.1	5.4	5.6	5.7	5.7	5.9
Non-Hispanic white												
20 years and older	3,432	5.2	0.01	4.7	4.8	4.9	5.0	5.2	5.4	5.5	5.6	5.7
20–29 years	440	5.0	0.02	4.6	4.7	4.7	4.8	5.0	5.2	5.4	5.4	5.5
30–39 years	559	5.1	0.01	4.7	4.8	4.8	4.9	5.1	5.3	5.4	5.5	5.6
40–49 years	461	5.2	0.02	4.6	4.7	4.8	5.0	5.2	5.4	5.5	5.6	5.7
50–59 years	470	5.3	0.02	4.8	4.9	5.0	5.0	5.2	5.5	5.6	5.7	5.8
60–69 years	468	5.3	0.02	4.7	4.9	5.0	5.0	5.3	5.5	5.6	5.7	5.8
70–79 years	571	5.3	0.02	4.8	4.9	5.0	5.1	5.3	5.5	5.7	5.7	5.9
80 years and older	463	5.3	0.02	4.8	4.9	5.0	5.1	5.4	5.5	5.7	5.7	5.8
Non-Hispanic black												
20 years and older	2,342	5.3	0.01	4.7	4.8	4.9	5.0	5.2	5.5	5.6	5.7	5.9
20–29 years	548	5.1	0.02	4.6	4.7	4.8	5.0	5.1	5.3	5.5	5.5	5.6
30–39 years	601	5.2	0.02	4.6	4.8	4.8	5.0	5.2	5.4	5.5	5.6	5.7
40–49 years	430	5.3	0.02	4.8	4.9	5.0	5.1	5.3	5.5	5.6	5.7	5.8
50–59 years	258	5.4	0.03	4.9	4.9	5.0	5.2	5.4	5.6	5.7	5.8	6.0
60–69 years	273	5.5	0.03	4.9	5.0	5.1	5.2	5.4	5.7	5.8	5.9	6.0
70–79 years	160	5.5	0.04	*	5.0	5.1	5.2	5.5	5.7	5.8	5.9	*
80 years and older	72	5.5	0.06	*	*	*	5.3	5.5	5.8	*	*	*
Mexican American												
20 years and older	2,035	5.1	0.01	4.6	4.7	4.8	4.9	5.1	5.3	5.5	5.5	5.6
20–29 years	557	5.0	0.02	4.5	4.7	4.7	4.8	5.0	5.2	5.3	5.4	5.5
30–39 years	481	5.1	0.02	4.6	4.7	4.8	4.9	5.1	5.3	5.4	5.5	5.6
40–49 years	347	5.2	0.02	4.7	4.8	4.9	5.0	5.2	5.4	5.5	5.5	5.7
50–59 years	185	5.2	0.03	*	4.9	4.9	5.0	5.2	5.4	5.5	5.6	*
60–69 years	303	5.2	0.02	4.7	4.8	4.9	5.0	5.2	5.5	5.5	5.6	5.7
70–79 years	113	5.3	0.04	*	*	5.0	5.0	5.3	5.5	5.6	*	*
80 years and older	49	5.2	0.06	*	*	*	*	5.3	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 53. Biacromial breadth in centimeters for persons aged 3 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
3 years	452	22.4	0.12	*	20.5	21.1	21.5	22.3	23.2	23.6	24.0	*
4 years	542	23.7	0.12	21.3	21.9	22.2	22.8	23.7	24.5	25.2	25.4	26.0
5 years	492	25.0	0.14	22.4	23.2	23.4	23.8	25.1	26.0	26.5	26.8	27.3
6 years	279	26.3	0.21	*	24.3	24.4	25.0	26.2	27.4	28.1	28.8	*
7 years	268	27.6	0.19	*	25.6	25.9	26.5	27.3	28.8	29.2	29.8	*
8 years	262	29.0	0.25	*	26.9	27.0	27.3	28.9	29.9	30.9	31.7	*
9 years	274	30.5	0.23	*	28.2	28.6	29.3	30.4	31.8	32.4	33.2	*
10 years	292	31.2	0.21	*	28.8	29.5	30.1	31.1	32.2	33.1	33.4	*
11 years	281	32.6	0.21	*	30.5	30.9	31.6	32.7	33.6	34.3	35.2	*
12 years	202	34.4	0.30	*	*	32.0	32.9	34.4	35.8	36.5	*	*
13 years	181	35.9	0.36	*	*	33.2	34.1	35.8	37.7	38.5	*	*
14 years	187	37.7	0.34	*	*	35.5	36.4	37.5	38.9	40.6	*	*
15 years	183	38.8	0.31	*	*	36.3	37.5	38.9	40.3	40.7	*	*
16 years	193	39.9	0.34	*	*	37.8	38.5	39.7	41.1	42.2	*	*
17 years	193	40.8	0.30	*	*	38.5	39.4	40.7	42.4	43.2	*	*
18 years	169	41.0	0.30	*	*	38.5	39.6	41.2	42.5	43.0	*	*
19 years	162	40.8	0.37	*	*	38.2	39.7	41.3	42.6	43.3	*	*
Female												
3 years	529	22.2	0.12	*	20.4	20.8	21.3	22.1	23.1	23.4	23.8	*
4 years	526	23.8	0.18	*	21.9	22.1	22.7	23.6	24.6	25.2	25.9	*
5 years	556	24.9	0.14	*	22.9	23.1	23.7	24.8	26.0	26.5	27.3	*
6 years	274	26.1	0.19	*	*	24.8	25.2	26.0	26.9	27.7	*	*
7 years	271	27.2	0.24	*	*	25.5	26.2	27.2	28.5	29.3	*	*
8 years	245	28.8	0.25	*	*	26.5	27.3	28.8	30.2	30.5	*	*
9 years	274	30.2	0.24	*	*	28.4	28.7	30.0	31.4	32.1	*	*
10 years	255	31.1	0.21	*	*	29.6	30.1	30.7	32.2	32.9	*	*
11 years	269	33.0	0.26	*	*	30.6	31.6	33.0	34.5	35.1	*	*
12 years	233	34.1	0.26	*	*	31.9	32.8	34.2	35.5	36.2	*	*
13 years	218	35.5	0.31	*	*	33.1	33.9	35.0	36.9	38.1	*	*
14 years	219	36.0	0.26	*	*	34.2	34.5	35.9	37.4	37.8	*	*
15 years	195	36.3	0.30	*	*	34.0	34.6	36.3	37.8	38.8	*	*
16 years	211	36.7	0.24	*	*	34.7	35.3	36.8	38.2	38.5	*	*
17 years	212	36.7	0.24	*	*	34.8	35.8	36.6	37.9	38.6	*	*
18 years	185	36.6	0.28	*	*	*	35.1	36.7	37.7	*	*	*
19 years	186	36.4	0.26	*	*	*	35.2	36.4	37.7	*	*	*

* Figure does not meet standards of reliability or precision.

Table 54. Biacromial breadth in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,476	41.1	0.05	37.3	38.2	38.7	39.6	41.1	42.6	43.5	44.1	45.0
20–29 years	1,587	41.5	0.10	37.7	38.6	39.2	39.9	41.4	43.0	43.9	44.6	45.3
30–39 years	1,434	41.5	0.10	38.2	38.9	39.4	40.1	41.3	42.8	43.6	44.1	45.1
40–49 years	1,177	41.3	0.11	37.6	38.5	39.0	39.9	41.3	42.7	43.7	44.2	45.2
50–59 years	817	41.0	0.14	37.3	38.2	38.7	39.5	41.0	42.6	43.4	44.0	44.6
60–69 years	1,114	40.5	0.13	36.6	37.6	38.2	39.0	40.5	42.1	43.1	43.7	44.4
70–79 years	793	39.7	0.15	35.9	36.5	37.2	38.1	39.8	41.3	42.0	42.7	43.7
80 years and older	554	39.0	0.16	35.5	36.4	36.9	37.6	38.9	40.4	41.1	41.7	42.2
Non-Hispanic white												
20 years and older	3,047	41.1	0.10	37.3	38.2	38.7	39.6	41.1	42.6	43.5	44.0	45.0
20–29 years	385	41.6	0.15	37.9	38.7	39.3	40.1	41.6	43.1	43.9	44.6	45.3
30–39 years	444	41.5	0.14	38.2	39.0	39.5	40.2	41.3	42.8	43.6	44.0	45.1
40–49 years	418	41.4	0.14	37.6	38.6	39.1	40.0	41.3	42.8	43.7	44.1	45.2
50–59 years	401	41.1	0.15	37.2	38.2	38.7	39.6	41.2	42.7	43.4	44.1	44.6
60–69 years	482	40.6	0.14	36.8	37.7	38.3	39.1	40.5	42.2	43.1	43.8	44.4
70–79 years	476	39.7	0.14	36.0	36.5	37.2	38.1	39.7	41.3	42.0	42.8	43.7
80 years and older	441	38.9	0.13	35.4	36.4	36.9	37.5	38.9	40.3	41.0	41.5	42.2
Non-Hispanic black												
20 years and older	1,994	41.8	0.10	38.1	38.9	39.4	40.2	41.6	43.3	44.2	44.8	45.8
20–29 years	475	42.0	0.13	38.4	39.1	39.6	40.3	41.9	43.5	44.4	45.1	46.3
30–39 years	480	42.2	0.13	38.5	39.6	40.0	40.6	42.1	43.6	44.5	45.1	46.2
40–49 years	342	41.8	0.13	38.3	39.1	39.5	40.3	41.8	43.3	44.2	44.8	45.3
50–59 years	205	41.6	0.19	37.9	38.6	39.4	39.9	41.4	43.0	44.2	44.6	45.4
60–69 years	279	41.1	0.18	37.4	38.0	38.7	39.3	40.8	42.5	43.7	44.3	45.3
70–79 years	167	40.3	0.21	*	37.0	38.2	38.9	40.4	41.9	42.7	43.1	*
80 years and older	46	39.9	0.34	*	*	*	38.6	40.0	41.5	*	*	*
Mexican American												
20 years and older	2,160	41.0	0.07	37.6	38.3	38.8	39.5	40.9	42.4	43.2	43.7	44.4
20–29 years	655	41.0	0.10	37.8	38.4	38.9	39.5	41.0	42.4	43.1	43.7	44.3
30–39 years	456	41.1	0.13	37.4	38.5	38.9	39.7	41.1	42.6	43.3	44.1	44.7
40–49 years	371	41.1	0.14	37.9	38.6	39.2	39.8	41.0	42.4	43.3	43.7	44.4
50–59 years	169	41.1	0.20	*	38.6	39.0	39.6	41.2	42.5	43.4	43.8	*
60–69 years	321	40.4	0.15	36.9	37.6	38.4	39.1	40.4	41.9	42.2	42.8	43.6
70–79 years	137	39.3	0.24	*	36.6	36.7	37.7	39.5	40.6	41.5	42.2	*
80 years and older	51	38.6	0.32	*	*	*	37.6	38.9	40.2	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 55. Biacromial breadth in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,411	36.7	0.05	33.4	34.2	34.6	35.3	36.6	38.1	38.8	39.4	40.3
20–29 years	1,805	36.9	0.09	33.7	34.5	34.9	35.6	36.7	38.1	38.8	39.4	40.3
30–39 years	1,795	37.0	0.09	33.8	34.5	35.0	35.7	36.9	38.3	38.9	39.7	40.7
40–49 years	1,305	36.9	0.11	33.9	34.4	34.9	35.6	36.9	38.2	38.9	39.6	40.4
50–59 years	966	36.9	0.13	33.7	34.4	34.8	35.4	36.8	38.3	39.2	39.7	40.5
60–69 years	1,091	36.4	0.12	32.9	33.9	34.4	35.1	36.4	37.6	38.5	38.9	39.8
70–79 years	866	35.7	0.13	32.3	33.3	33.7	34.5	35.7	37.0	37.6	38.2	38.8
80 years and older	583	34.8	0.15	31.5	32.3	32.8	33.5	34.9	36.0	36.8	37.3	37.9
Non-Hispanic white												
20 years and older	3,489	36.6	0.08	33.3	34.2	34.6	35.3	36.6	37.9	38.6	39.2	40.1
20–29 years	484	36.8	0.10	33.8	34.5	34.9	35.6	36.7	38.1	38.8	39.3	40.3
30–39 years	581	36.9	0.10	33.7	34.5	35.0	35.7	36.8	38.2	38.8	39.4	40.4
40–49 years	458	36.8	0.11	33.7	34.4	34.9	35.5	36.7	38.2	38.8	39.4	40.3
50–59 years	471	36.9	0.11	33.8	34.5	34.8	35.5	36.8	38.2	39.1	39.6	40.5
60–69 years	468	36.3	0.11	32.8	34.0	34.4	35.1	36.4	37.6	38.4	38.8	39.4
70–79 years	570	35.6	0.09	32.3	33.1	33.6	34.5	35.7	36.9	37.5	37.8	38.5
80 years and older	457	34.7	0.10	31.5	32.3	32.7	33.4	34.8	36.0	36.8	37.2	37.9
Non-Hispanic black												
20 years and older	2,411	37.7	0.09	34.2	35.0	35.5	36.2	37.6	39.2	40.0	40.6	41.7
20–29 years	604	37.4	0.11	34.2	34.8	35.4	36.2	37.3	38.6	39.5	40.1	41.2
30–39 years	625	37.8	0.12	34.2	35.1	35.6	36.2	37.7	39.3	40.3	40.9	41.8
40–49 years	429	38.2	0.14	35.1	35.5	36.1	36.8	38.1	39.5	40.2	40.9	42.0
50–59 years	258	38.1	0.18	34.8	35.2	35.8	36.5	38.2	39.5	40.3	40.7	41.6
60–69 years	272	37.8	0.20	34.0	34.7	35.6	36.4	37.8	39.2	39.9	40.6	42.1
70–79 years	155	37.1	0.23	*	34.3	34.6	35.5	37.0	38.9	39.4	39.9	*
80 years and older	68	35.9	0.29	*	*	*	34.6	35.8	37.1	*	*	*
Mexican American												
20 years and older	2,150	36.8	0.07	33.6	34.2	34.6	35.4	36.7	38.0	38.8	39.4	40.2
20–29 years	638	36.7	0.10	33.4	34.2	34.6	35.3	36.6	38.0	38.7	39.4	40.1
30–39 years	515	37.0	0.12	33.7	34.3	34.8	35.5	36.9	38.2	39.0	39.5	41.0
40–49 years	351	37.2	0.13	34.3	34.7	35.4	36.1	37.0	38.3	39.2	39.6	40.4
50–59 years	185	36.7	0.17	*	34.2	34.6	35.5	36.6	37.9	38.4	39.2	*
60–69 years	303	36.5	0.14	33.7	34.2	34.6	35.3	36.4	37.4	38.4	38.9	39.9
70–79 years	112	35.5	0.21	*	*	33.7	34.3	35.4	36.2	37.5	*	*
80 years and older	46	34.2	0.34	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 56. Biliac breadth in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	532	15.3	0.10	13.6	14.0	14.2	14.6	15.3	15.8	16.2	16.4	16.9
3 years	487	16.2	0.09	14.4	14.8	15.1	15.4	16.3	16.8	17.1	17.4	17.8
4 years	543	16.8	0.09	15.2	15.4	15.7	16.1	16.8	17.5	18.0	18.3	18.6
5 years	491	17.7	0.11	15.7	16.0	16.4	16.8	17.7	18.4	18.9	19.2	19.6
6 years	277	18.4	0.19	*	16.5	16.8	17.2	18.2	18.9	19.8	20.6	*
7 years	268	19.6	0.19	*	17.4	18.0	18.5	19.5	20.6	21.2	21.6	*
8 years	261	20.0	0.21	*	18.2	18.4	18.9	20.0	21.0	21.7	22.2	*
9 years	272	21.3	0.25	*	18.9	19.3	19.9	21.0	22.8	23.1	23.9	*
10 years	292	21.7	0.23	*	19.4	19.5	20.1	21.7	22.8	23.5	24.9	*
11 years	281	22.8	0.25	*	20.3	20.9	21.4	22.4	24.0	25.1	25.8	*
12 years	202	24.3	0.33	*	*	22.0	22.4	24.1	26.0	26.8	*	*
13 years	181	25.3	0.37	*	*	22.4	23.2	25.2	26.9	27.4	*	*
14 years	185	26.6	0.53	*	*	24.1	25.0	26.0	27.3	28.5	*	*
15 years	183	27.0	0.38	*	*	24.3	25.2	26.6	28.6	30.0	*	*
16 years	192	27.4	0.41	*	*	24.9	25.5	27.2	28.9	29.4	*	*
17 years	192	27.7	0.43	*	*	24.7	26.3	27.6	28.9	29.6	*	*
18 years	169	27.6	0.37	*	*	25.3	25.9	27.5	29.3	30.3	*	*
19 years	161	27.9	0.40	*	*	25.5	26.2	27.4	29.4	30.6	*	*
Female												
2 years	511	15.1	0.11	*	13.7	13.9	14.3	15.0	15.7	16.2	16.5	*
3 years	564	16.0	0.11	14.2	14.6	14.8	15.2	16.0	16.7	17.1	17.3	17.9
4 years	528	17.1	0.13	*	15.3	15.8	16.1	16.9	17.8	18.2	18.7	*
5 years	555	17.7	0.12	*	16.0	16.4	16.7	17.5	18.4	19.0	19.5	*
6 years	273	18.4	0.19	*	*	16.8	17.4	18.0	19.3	20.0	*	*
7 years	269	19.4	0.27	*	*	17.1	18.0	19.3	20.7	22.2	*	*
8 years	243	20.4	0.27	*	*	18.4	19.0	20.2	21.2	22.2	*	*
9 years	274	21.4	0.30	*	*	19.3	20.3	21.0	22.2	23.7	*	*
10 years	255	22.4	0.28	*	*	20.2	21.0	21.9	23.8	24.7	*	*
11 years	267	23.5	0.29	*	*	20.9	22.2	23.4	25.2	25.8	*	*
12 years	233	24.4	0.37	*	*	22.2	22.6	24.0	26.2	26.9	*	*
13 years	217	26.1	0.35	*	*	23.3	24.2	26.3	27.3	28.8	*	*
14 years	219	26.5	0.34	*	*	24.5	25.0	26.4	28.0	28.9	*	*
15 years	195	26.8	0.41	*	*	24.0	24.7	26.6	28.4	29.1	*	*
16 years	211	27.1	0.41	*	*	24.6	25.3	27.3	28.5	29.3	*	*
17 years	211	27.2	0.36	*	*	24.6	25.4	27.3	29.0	29.1	*	*
18 years	186	26.8	0.39	*	*	*	25.0	26.9	27.9	*	*	*
19 years	187	28.0	0.49	*	*	25.1	25.9	27.5	29.1	29.9	*	*

* Figure does not meet standards of reliability or precision.

Table 57. Biliac breadth in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,429	29.6	0.07	25.3	26.2	26.8	27.7	29.4	31.3	32.3	33.1	34.5
20–29 years	1,583	28.5	0.12	24.6	25.4	26.1	26.7	28.2	29.8	31.0	32.0	33.4
30–39 years	1,434	29.1	0.13	25.1	25.9	26.5	27.5	29.1	30.3	31.4	32.2	33.7
40–49 years	1,174	29.9	0.14	25.5	26.5	27.0	28.0	29.7	31.4	32.6	33.6	35.1
50–59 years	816	30.5	0.15	26.2	27.3	27.9	28.9	30.5	32.1	32.8	33.4	34.6
60–69 years	1,100	30.8	0.13	26.9	27.6	28.3	29.1	30.8	32.3	33.2	33.9	35.1
70–79 years	780	30.7	0.15	26.9	27.9	28.3	29.2	30.7	32.2	33.0	33.3	34.4
80 years and older	542	30.6	0.17	26.4	27.4	28.4	29.3	30.6	32.1	32.9	33.4	34.3
Non-Hispanic white												
20 years and older	3,029	30.0	0.10	25.9	26.7	27.3	28.2	29.8	31.5	32.6	33.3	34.6
20–29 years	385	28.8	0.16	25.2	26.0	26.3	27.1	28.4	30.0	31.4	32.2	33.6
30–39 years	447	29.5	0.16	25.7	26.5	27.2	28.0	29.3	30.6	31.7	32.4	34.0
40–49 years	415	30.1	0.17	26.0	26.9	27.4	28.3	29.9	31.7	32.7	34.0	35.3
50–59 years	401	30.8	0.15	26.8	27.8	28.5	29.3	30.8	32.3	33.0	33.7	34.7
60–69 years	479	31.1	0.14	27.4	28.2	28.7	29.5	31.1	32.5	33.4	34.1	35.2
70–79 years	472	30.9	0.13	27.4	28.2	28.6	29.3	30.8	32.4	33.0	33.7	34.4
80 years and older	430	30.8	0.13	26.7	27.8	28.6	29.6	30.8	32.2	33.0	33.5	34.5
Non-Hispanic black												
20 years and older	1,978	28.2	0.11	24.1	24.9	25.3	26.2	27.8	29.9	31.1	32.1	33.5
20–29 years	474	27.5	0.17	23.7	24.4	24.8	25.5	26.9	28.9	30.2	31.7	33.2
30–39 years	477	27.9	0.16	24.1	24.7	25.2	25.9	27.5	29.0	30.7	31.6	33.6
40–49 years	343	28.3	0.17	24.3	25.0	25.5	26.3	27.9	30.1	31.2	32.0	33.4
50–59 years	204	29.0	0.26	24.8	25.3	26.1	26.8	28.8	30.5	31.6	32.7	33.8
60–69 years	270	29.2	0.19	25.5	26.4	26.8	27.5	28.9	30.7	32.0	32.9	34.1
70–79 years	164	29.3	0.24	*	25.8	26.4	27.4	29.3	31.0	32.2	32.6	*
80 years and older	46	29.5	0.35	*	*	*	28.3	29.1	30.8	*	*	*
Mexican American												
20 years and older	2,151	29.1	0.10	25.5	26.2	26.7	27.5	28.9	30.4	31.5	32.3	33.7
20–29 years	653	28.3	0.12	25.1	25.8	26.1	26.8	28.2	29.7	30.4	31.1	32.1
30–39 years	456	29.0	0.15	25.7	26.4	26.8	27.6	28.8	30.2	31.1	31.9	33.3
40–49 years	371	29.9	0.19	26.0	26.8	27.2	28.0	29.6	31.4	32.4	33.2	34.8
50–59 years	169	30.6	0.24	*	27.7	28.2	28.9	30.3	31.9	33.4	33.8	*
60–69 years	320	30.5	0.16	27.4	28.0	28.3	29.0	30.2	32.0	32.8	33.2	34.1
70–79 years	132	30.2	0.26	*	27.5	28.2	28.9	30.0	31.8	32.5	33.1	*
80 years and older	50	30.3	0.32	*	*	*	*	30.5	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 58. Iliac breadth in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,356	29.1	0.07	23.9	25.1	25.8	26.9	28.9	31.1	32.4	33.3	34.9
20–29 years	1,806	27.7	0.12	22.8	23.9	24.7	25.7	27.5	29.3	30.4	31.6	33.4
30–39 years	1,786	28.8	0.14	23.4	24.8	25.5	26.6	28.5	30.7	32.0	33.2	35.3
40–49 years	1,302	29.4	0.15	24.9	25.8	26.4	27.4	29.0	31.0	32.4	33.3	35.1
50–59 years	964	30.1	0.18	24.7	26.0	26.8	27.9	29.8	32.3	33.9	34.7	35.6
60–69 years	1,077	30.1	0.16	25.0	26.3	27.1	28.2	30.0	32.1	33.1	33.9	35.7
70–79 years	854	30.0	0.17	24.9	26.4	26.9	28.2	30.1	31.7	32.7	33.7	34.8
80 years and older	567	29.9	0.19	25.0	26.4	27.0	28.1	30.1	31.8	32.6	33.2	34.0
Non-Hispanic white												
20 years and older	3,466	29.3	0.11	24.1	25.3	26.1	27.2	29.1	31.2	32.6	33.4	34.9
20–29 years	484	27.8	0.19	22.8	23.9	24.9	25.8	27.6	29.3	30.4	31.6	33.6
30–39 years	578	28.9	0.19	23.9	24.9	25.5	26.8	28.6	30.6	32.1	33.2	34.9
40–49 years	459	29.4	0.19	25.3	26.1	26.5	27.5	29.0	31.0	32.4	33.2	34.9
50–59 years	470	30.3	0.20	24.8	26.4	27.1	28.1	30.0	32.6	34.2	34.7	35.6
60–69 years	465	30.3	0.19	25.2	26.6	27.2	28.3	30.2	32.2	33.2	34.0	35.8
70–79 years	563	30.0	0.16	25.1	26.5	27.1	28.3	30.1	31.7	32.7	33.6	34.5
80 years and older	447	30.0	0.17	25.4	26.6	27.4	28.3	30.3	32.1	32.7	33.3	34.0
Non-Hispanic black												
20 years and older	2,389	28.7	0.12	23.6	24.5	25.2	26.2	28.3	31.0	32.4	33.6	35.8
20–29 years	603	27.4	0.16	23.3	24.1	24.5	25.2	26.9	29.2	30.9	31.8	33.8
30–39 years	622	28.4	0.18	23.2	24.4	25.0	26.0	27.8	30.7	32.2	33.6	35.8
40–49 years	425	29.6	0.23	23.5	25.2	26.0	27.0	29.0	31.8	33.4	35.0	37.3
50–59 years	257	29.9	0.26	24.6	25.8	26.5	27.2	29.4	32.2	33.3	34.5	36.5
60–69 years	265	29.9	0.27	24.7	25.5	26.1	27.3	29.7	32.0	33.1	34.1	36.0
70–79 years	152	29.8	0.32	*	25.4	26.5	27.6	29.8	32.0	33.4	34.2	*
80 years and older	65	28.9	0.49	*	*	*	26.8	28.4	30.7	*	*	*
Mexican American												
20 years and older	2,143	29.2	0.14	24.2	25.3	26.0	27.0	29.0	31.2	32.2	33.1	34.6
20–29 years	640	28.1	0.16	23.2	24.7	25.3	26.2	28.0	29.9	31.1	31.8	33.4
30–39 years	513	29.4	0.19	24.2	25.4	26.0	27.1	29.0	31.2	32.6	33.4	35.5
40–49 years	351	29.9	0.21	25.4	26.3	26.8	27.9	29.8	31.6	32.6	33.5	35.1
50–59 years	185	30.0	0.28	*	25.8	27.1	28.4	30.1	31.8	32.9	33.4	*
60–69 years	300	30.4	0.22	25.1	26.6	27.6	28.8	30.5	31.9	33.2	34.0	35.5
70–79 years	111	30.1	0.34	*	*	27.1	28.9	30.2	31.8	33.1	*	*
80 years and older	43	29.4	0.56	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 59. Buttocks circumference in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	524	51.0	0.23	45.7	46.7	47.9	49.0	50.8	53.0	54.2	55.2	57.0
3 years	484	52.4	0.32	47.0	48.1	49.0	50.0	52.0	54.2	55.5	56.2	57.8
4 years	540	54.6	0.27	49.2	50.5	51.1	52.0	54.2	56.3	58.3	59.1	61.5
5 years	491	57.3	0.33	51.0	52.1	53.1	54.5	56.7	59.6	61.0	62.2	65.1
6 years	278	61.0	0.68	*	53.5	54.8	56.5	59.5	64.0	66.3	69.7	*
7 years	268	64.1	0.64	*	57.2	58.1	59.4	63.1	68.6	70.7	71.1	*
8 years	260	67.8	0.76	*	60.2	61.2	62.6	66.0	71.5	76.2	80.5	*
9 years	273	72.3	0.82	*	63.5	63.6	66.1	70.1	78.4	82.8	84.3	*
10 years	293	74.5	0.75	*	65.1	66.8	68.5	73.0	79.7	84.3	85.7	*
11 years	280	78.2	0.94	*	68.1	68.7	72.1	76.0	83.1	86.8	89.2	*
12 years	202	82.6	1.03	*	*	74.2	76.2	81.4	88.4	90.1	*	*
13 years	181	85.3	1.15	*	*	75.3	79.0	84.6	90.1	94.1	*	*
14 years	185	90.8	1.74	*	*	80.5	82.6	88.1	93.5	98.5	*	*
15 years	181	92.5	1.21	*	*	82.5	85.1	91.0	99.0	100.7	*	*
16 years	191	93.2	1.06	*	*	85.1	87.4	91.1	95.8	101.3	*	*
17 years	191	95.0	0.96	*	*	87.9	89.5	93.4	100.4	103.1	*	*
18 years	169	94.7	1.18	*	*	87.1	87.7	93.1	98.1	105.0	*	*
19 years	161	96.0	1.20	*	*	87.8	89.6	93.4	99.9	103.1	*	*
Female												
2 years	508	50.8	0.28	*	46.6	47.2	48.0	50.5	53.1	54.5	55.2	*
3 years	560	52.7	0.28	46.9	48.6	49.5	50.3	52.4	54.6	56.1	57.0	58.7
4 years	525	55.8	0.40	*	50.4	51.3	52.9	55.2	57.8	59.6	60.6	*
5 years	556	58.4	0.39	*	52.6	53.4	54.7	57.7	60.6	62.8	65.0	*
6 years	273	60.9	0.67	*	*	55.2	57.0	59.5	63.3	67.2	*	*
7 years	268	65.2	0.79	*	*	58.1	59.5	62.9	68.9	74.4	*	*
8 years	244	69.4	0.85	*	*	61.5	63.6	68.2	72.4	77.0	*	*
9 years	272	72.8	0.97	*	*	64.1	66.1	71.2	76.1	83.6	*	*
10 years	255	75.8	0.92	*	*	68.1	69.5	74.0	80.2	86.6	*	*
11 years	267	81.2	0.90	*	*	71.6	75.5	79.6	87.1	90.5	*	*
12 years	233	85.5	1.11	*	*	76.0	78.3	85.0	92.1	95.6	*	*
13 years	218	91.0	1.13	*	*	81.8	83.1	89.5	97.1	102.2	*	*
14 years	217	93.9	1.12	*	*	85.4	87.4	91.5	100.1	102.6	*	*
15 years	188	93.4	1.14	*	*	85.3	88.5	92.3	96.0	101.5	*	*
16 years	204	95.6	1.27	*	*	87.3	89.5	92.4	99.0	105.7	*	*
17 years	193	97.6	1.25	*	*	88.1	90.2	96.1	102.9	107.1	*	*
18 years	169	95.8	1.35	*	*	*	87.1	95.1	100.5	*	*	*
19 years	170	97.6	1.48	*	*	*	90.1	95.9	101.6	*	*	*

* Figure does not meet standards of reliability or precision.

NOTE: Pregnant women are excluded.

Table 60. Buttocks circumference in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,411	99.6	0.21	86.8	89.4	91.1	93.6	98.6	104.2	107.6	110.2	115.7
20–29 years	1,578	97.4	0.32	85.1	87.1	88.7	91.1	96.1	101.9	106.1	109.3	114.3
30–39 years	1,428	99.6	0.34	87.8	90.1	91.5	93.6	98.2	103.9	107.1	110.5	116.6
40–49 years	1,174	100.7	0.43	86.7	90.4	92.0	94.5	99.6	105.3	109.0	111.3	118.0
50–59 years	817	101.1	0.40	88.7	91.6	93.1	96.1	100.4	105.2	107.6	110.6	116.2
60–69 years	1,103	100.6	0.36	88.3	90.6	92.6	95.2	100.2	105.5	108.4	110.5	114.0
70–79 years	772	99.6	0.43	87.4	90.1	92.1	93.7	98.6	104.1	107.3	109.6	115.1
80 years and older	539	97.5	0.46	86.5	88.5	89.6	92.2	97.1	101.9	103.9	107.1	111.5
Non-Hispanic white												
20 years and older	3,020	100.1	0.23	87.7	90.4	92.1	94.2	99.2	104.6	108.0	110.5	115.7
20–29 years	385	97.7	0.45	85.5	87.6	89.5	92.0	96.3	102.0	106.5	109.4	114.2
30–39 years	442	100.1	0.43	88.9	90.6	92.1	94.2	99.1	104.1	108.1	110.5	116.6
40–49 years	415	101.3	0.53	88.1	91.6	92.9	95.2	100.0	105.6	109.0	111.9	119.4
50–59 years	402	101.5	0.40	90.1	92.7	94.2	97.0	100.7	105.5	107.7	110.7	117.6
60–69 years	480	101.3	0.39	89.3	92.0	93.7	95.8	100.8	105.7	108.6	110.6	114.2
70–79 years	468	99.9	0.39	88.6	91.2	92.5	94.1	99.0	104.3	107.3	109.4	114.1
80 years and older	428	97.8	0.37	87.1	89.0	90.5	93.0	97.5	102.2	104.5	107.3	111.5
Non-Hispanic black												
20 years and older	1,973	99.3	0.31	85.2	87.4	89.0	92.1	98.2	104.7	109.0	112.0	117.9
20–29 years	472	99.6	0.58	85.1	87.0	88.4	90.7	97.6	105.3	110.2	115.0	121.5
30–39 years	476	99.4	0.51	85.5	88.1	89.6	92.4	98.3	104.5	108.7	111.8	117.8
40–49 years	343	99.5	0.55	85.3	87.0	89.3	93.5	99.1	105.2	108.2	111.0	115.8
50–59 years	204	99.5	0.82	85.0	86.9	89.4	92.1	98.7	104.6	108.0	110.1	121.5
60–69 years	271	98.6	0.64	84.3	86.6	89.3	92.2	97.1	104.7	108.3	112.0	115.0
70–79 years	161	98.6	0.81	*	87.1	88.4	91.1	98.1	104.5	107.6	110.3	*
80 years and older	46	97.3	1.36	*	*	*	92.1	95.7	100.6	*	*	*
Mexican American												
20 years and older	2,145	97.3	0.30	85.6	88.1	89.6	91.8	96.4	101.6	105.1	107.2	112.3
20–29 years	650	95.5	0.38	84.6	86.6	88.3	90.5	94.8	99.8	102.5	105.0	108.6
30–39 years	456	97.7	0.47	85.6	88.6	90.6	92.5	97.0	101.5	104.8	106.5	113.0
40–49 years	370	99.4	0.59	87.8	90.3	91.5	93.7	97.8	104.5	107.6	109.6	115.2
50–59 years	169	100.3	0.91	*	90.6	92.3	95.0	99.0	104.0	108.5	111.4	*
60–69 years	320	98.2	0.54	87.9	89.5	90.9	92.8	96.8	102.5	106.3	107.6	110.9
70–79 years	131	96.7	1.16	*	85.9	87.3	90.6	95.0	100.3	105.1	110.1	*
80 years and older	49	94.8	1.16	*	*	*	*	95.5	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 61. Buttocks circumference in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,068	102.2	0.28	86.4	88.9	90.5	93.3	99.9	108.5	114.5	119.5	126.4
20–29 years	1,616	98.2	0.41	84.2	87.0	88.2	90.4	96.0	103.3	109.4	114.2	120.3
30–39 years	1,699	102.7	0.47	86.3	89.0	90.4	93.5	100.0	109.1	116.6	121.0	128.5
40–49 years	1,299	104.0	0.53	87.6	90.6	93.0	95.3	101.9	110.1	115.1	120.2	128.5
50–59 years	962	105.4	0.63	88.4	91.1	92.8	96.0	103.6	112.5	118.5	122.6	132.4
60–69 years	1,076	103.1	0.56	87.2	90.2	91.3	94.6	101.0	109.3	115.0	120.2	126.0
70–79 years	854	101.4	0.58	86.7	88.6	90.5	93.1	99.7	107.5	112.0	115.8	123.1
80 years and older	562	99.4	0.62	85.2	88.0	89.8	92.5	97.9	105.2	110.3	112.6	118.3
Non-Hispanic white												
20 years and older	3,394	101.9	0.30	86.6	89.0	90.6	93.2	99.5	108.0	114.0	118.6	125.1
20–29 years	440	97.7	0.63	84.6	87.1	88.3	90.4	95.2	102.7	108.8	114.1	120.3
30–39 years	556	101.9	0.67	86.3	88.6	90.0	92.9	99.0	108.4	115.4	119.7	127.6
40–49 years	458	103.5	0.71	87.7	91.0	93.1	95.3	101.4	109.5	114.6	118.9	126.8
50–59 years	469	105.4	0.73	88.8	91.3	92.8	96.0	103.6	112.6	118.5	122.6	132.4
60–69 years	464	102.9	0.68	87.7	90.4	91.5	94.7	101.1	108.4	114.2	119.8	125.4
70–79 years	564	101.1	0.58	86.9	88.6	90.6	93.1	99.5	107.0	111.4	114.2	122.2
80 years and older	443	99.4	0.57	86.1	88.2	90.1	92.8	97.9	105.2	110.1	112.1	116.3
Non-Hispanic black												
20 years and older	2,299	106.3	0.39	86.6	90.1	92.5	96.1	104.2	113.5	120.1	125.3	133.5
20–29 years	547	102.4	0.61	84.5	87.5	89.7	93.3	101.0	109.7	115.1	117.7	126.6
30–39 years	593	106.4	0.66	87.6	90.5	92.8	96.9	104.1	113.5	120.6	125.9	134.5
40–49 years	426	109.6	0.83	89.5	93.2	95.4	99.3	106.7	116.1	125.1	130.9	140.2
50–59 years	256	108.4	1.03	85.8	92.0	95.2	98.9	106.6	116.7	121.5	128.7	137.5
60–69 years	262	108.3	1.09	89.6	91.5	94.2	97.5	106.3	115.4	121.5	125.1	136.1
70–79 years	152	106.0	1.22	*	92.2	93.6	97.1	104.6	113.0	119.7	124.9	*
80 years and older	63	100.2	1.70	*	*	*	91.0	99.4	106.0	*	*	*
Mexican American												
20 years and older	2,022	102.6	0.47	86.5	88.8	90.5	94.0	100.6	109.0	115.0	118.9	126.0
20–29 years	555	99.2	0.62	84.7	86.6	88.2	91.0	97.6	105.0	109.9	114.1	120.0
30–39 years	478	103.7	0.78	87.0	89.7	91.1	95.1	101.0	111.0	116.8	121.8	129.1
40–49 years	348	106.3	0.86	89.9	93.0	94.1	98.0	103.6	112.5	117.4	123.0	129.5
50–59 years	185	103.7	1.06	*	90.6	92.0	95.2	103.3	109.5	115.0	119.5	*
60–69 years	302	104.6	1.01	88.0	90.0	91.8	95.5	101.4	111.3	116.3	123.6	133.7
70–79 years	110	100.2	1.42	*	*	88.5	91.2	99.0	106.0	113.2	*	*
80 years and older	44	93.6	1.71	*	*	*	*	*	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

NOTE: Pregnant women are excluded.

Table 62. Elbow breadth in centimeters for persons aged 2 to 19 years and number of examined persons, mean, standard error of the mean, and selected percentiles, by sex and age: United States, 1988–1994

Sex and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
Male												
2 years	529	4.4	0.02	4.0	4.0	4.1	4.2	4.4	4.5	4.6	4.7	4.8
3 years	486	4.6	0.02	4.1	4.2	4.3	4.4	4.5	4.7	4.8	4.9	5.0
4 years	544	4.7	0.02	4.3	4.4	4.4	4.5	4.7	4.9	5.0	5.1	5.2
5 years	496	4.9	0.02	4.4	4.5	4.6	4.7	4.9	5.1	5.2	5.3	5.4
6 years	280	5.1	0.04	*	4.7	4.7	4.9	5.1	5.4	5.5	5.6	*
7 years	269	5.3	0.04	*	4.8	4.9	5.0	5.4	5.6	5.7	5.8	*
8 years	262	5.6	0.05	*	5.1	5.2	5.3	5.5	5.8	6.0	6.1	*
9 years	276	5.8	0.04	*	5.3	5.4	5.5	5.8	6.1	6.2	6.4	*
10 years	294	5.9	0.04	*	5.5	5.5	5.6	5.9	6.2	6.4	6.5	*
11 years	282	6.2	0.05	*	5.6	5.7	5.8	6.1	6.4	6.6	6.7	*
12 years	202	6.6	0.05	*	*	6.1	6.2	6.5	6.9	7.0	*	*
13 years	182	6.8	0.06	*	*	6.3	6.5	6.8	7.1	7.3	*	*
14 years	187	7.0	0.07	*	*	6.7	6.7	7.0	7.3	7.5	*	*
15 years	185	7.2	0.06	*	*	6.8	6.9	7.1	7.5	7.7	*	*
16 years	192	7.2	0.05	*	*	6.7	7.0	7.1	7.4	7.5	*	*
17 years	193	7.3	0.05	*	*	6.8	7.0	7.2	7.5	7.7	*	*
18 years	170	7.2	0.06	*	*	6.8	6.9	7.2	7.5	7.7	*	*
19 years	164	7.1	0.05	*	*	6.7	6.9	7.1	7.4	7.5	*	*
Female												
2 years	508	4.2	0.02	*	3.9	4.0	4.0	4.2	4.4	4.5	4.5	*
3 years	566	4.4	0.02	3.9	4.0	4.1	4.2	4.4	4.5	4.6	4.7	4.9
4 years	526	4.6	0.03	*	4.2	4.2	4.3	4.5	4.7	4.8	5.0	*
5 years	555	4.8	0.03	*	4.3	4.4	4.5	4.7	5.0	5.2	5.3	*
6 years	274	4.9	0.04	*	*	4.5	4.6	4.9	5.1	5.2	*	*
7 years	271	5.1	0.04	*	*	4.7	4.8	5.1	5.4	5.5	*	*
8 years	245	5.3	0.04	*	*	5.0	5.1	5.3	5.5	5.7	*	*
9 years	272	5.6	0.05	*	*	5.2	5.3	5.5	5.7	6.0	*	*
10 years	257	5.7	0.05	*	*	5.4	5.5	5.7	6.0	6.1	*	*
11 years	270	5.9	0.04	*	*	5.6	5.7	5.9	6.2	6.3	*	*
12 years	233	6.1	0.05	*	*	5.6	5.8	6.1	6.4	6.5	*	*
13 years	218	6.2	0.05	*	*	5.8	5.9	6.2	6.5	6.6	*	*
14 years	220	6.2	0.05	*	*	5.9	6.0	6.1	6.5	6.6	*	*
15 years	196	6.2	0.06	*	*	5.8	6.0	6.2	6.5	6.6	*	*
16 years	210	6.2	0.05	*	*	5.8	6.0	6.2	6.5	6.5	*	*
17 years	212	6.2	0.05	*	*	5.8	6.0	6.2	6.5	6.6	*	*
18 years	188	6.1	0.06	*	*	5.7	5.9	6.0	6.4	6.6	*	*
19 years	187	6.3	0.06	*	*	5.9	6.0	6.2	6.6	6.7	*	*

* Figure does not meet standards of reliability or precision.

Table 63. Elbow breadth in centimeters for males aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	7,497	7.4	0.01	6.6	6.8	6.9	7.0	7.4	7.7	7.9	8.0	8.2
20–29 years	1,586	7.2	0.02	6.5	6.7	6.8	7.0	7.2	7.5	7.6	7.8	8.0
30–39 years	1,437	7.3	0.02	6.6	6.7	6.8	7.0	7.3	7.6	7.8	8.0	8.1
40–49 years	1,181	7.4	0.02	6.7	6.8	7.0	7.1	7.4	7.7	7.9	8.0	8.2
50–59 years	820	7.5	0.03	6.7	6.9	7.0	7.2	7.5	7.8	8.0	8.1	8.3
60–69 years	1,116	7.5	0.02	6.7	6.9	7.0	7.2	7.5	7.8	8.0	8.1	8.3
70–79 years	797	7.5	0.03	6.7	6.9	7.0	7.2	7.5	7.8	8.0	8.1	8.3
80 years and older	560	7.5	0.03	6.7	6.8	7.0	7.1	7.5	7.8	7.9	8.0	8.2
Non-Hispanic white												
20 years and older	3,059	7.4	0.02	6.7	6.9	7.0	7.1	7.4	7.7	7.9	8.0	8.2
20–29 years	385	7.3	0.02	6.7	6.8	6.9	7.0	7.3	7.5	7.7	7.8	8.1
30–39 years	447	7.4	0.03	6.7	6.8	6.9	7.1	7.3	7.7	7.9	8.0	8.2
40–49 years	418	7.4	0.03	6.7	6.9	7.0	7.1	7.5	7.7	7.9	8.1	8.2
50–59 years	403	7.6	0.03	6.8	7.0	7.0	7.3	7.5	7.9	8.0	8.1	8.4
60–69 years	484	7.6	0.02	6.8	7.0	7.1	7.3	7.5	7.8	8.0	8.1	8.3
70–79 years	477	7.5	0.03	6.8	6.9	7.0	7.2	7.5	7.8	8.0	8.1	8.3
80 years and older	445	7.5	0.03	6.7	6.9	7.0	7.1	7.5	7.8	8.0	8.0	8.2
Non-Hispanic black												
20 years and older	2,007	7.4	0.02	6.7	6.8	6.9	7.1	7.4	7.7	7.9	8.0	8.2
20–29 years	476	7.3	0.02	6.5	6.7	6.8	7.0	7.3	7.6	7.8	8.0	8.2
30–39 years	480	7.4	0.02	6.7	6.8	6.9	7.0	7.3	7.6	7.8	8.0	8.1
40–49 years	346	7.4	0.03	6.7	6.9	7.0	7.1	7.4	7.7	7.9	8.0	8.1
50–59 years	207	7.6	0.03	6.9	7.1	7.1	7.2	7.6	7.9	8.0	8.1	8.3
60–69 years	279	7.5	0.03	6.7	7.0	7.1	7.2	7.5	7.9	8.0	8.1	8.3
70–79 years	170	7.6	0.04	*	7.0	7.1	7.2	7.6	7.9	8.1	8.2	*
80 years and older	49	7.5	0.06	*	*	*	7.3	7.4	7.8	*	*	*
Mexican American												
20 years and older	2,156	7.1	0.02	6.4	6.6	6.7	6.8	7.1	7.4	7.5	7.7	7.8
20–29 years	653	7.0	0.02	6.4	6.5	6.6	6.7	7.0	7.2	7.4	7.5	7.6
30–39 years	456	7.1	0.02	6.4	6.6	6.7	6.8	7.0	7.3	7.5	7.6	7.8
40–49 years	371	7.2	0.03	6.5	6.6	6.8	6.9	7.2	7.5	7.7	7.8	8.0
50–59 years	168	7.3	0.04	*	6.7	6.8	7.0	7.3	7.6	7.7	7.8	*
60–69 years	321	7.3	0.03	6.7	6.8	6.9	7.0	7.4	7.6	7.8	7.9	8.0
70–79 years	137	7.3	0.05	*	6.6	6.7	7.0	7.2	7.6	7.8	7.8	*
80 years and older	50	7.2	0.08	*	*	*	*	7.2	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

Table 64. Elbow breadth in centimeters for females aged 20 years and older and number of examined persons, mean, standard error of the mean, and selected percentiles, by race and ethnicity and age: United States, 1988–1994

Race and ethnicity and age	Number of examined persons	Mean	Standard error of the mean	Percentile								
				5th	10th	15th	25th	50th	75th	85th	90th	95th
All race and ethnicity groups ¹												
20 years and older	8,443	6.5	0.01	5.7	5.9	6.0	6.1	6.4	6.8	7.0	7.2	7.4
20–29 years	1,805	6.2	0.02	5.6	5.7	5.8	6.0	6.2	6.5	6.7	6.8	7.1
30–39 years	1,798	6.4	0.02	5.7	5.8	6.0	6.1	6.4	6.7	6.9	7.0	7.4
40–49 years	1,312	6.5	0.02	5.8	5.9	6.0	6.2	6.5	6.7	7.0	7.2	7.4
50–59 years	968	6.7	0.03	5.9	6.0	6.1	6.2	6.6	7.0	7.3	7.4	7.7
60–69 years	1,092	6.6	0.02	6.0	6.1	6.1	6.3	6.6	6.9	7.1	7.3	7.5
70–79 years	873	6.6	0.03	5.9	6.0	6.1	6.2	6.6	7.0	7.2	7.3	7.7
80 years and older	595	6.5	0.03	5.8	6.0	6.1	6.2	6.5	6.9	7.0	7.1	7.3
Non-Hispanic white												
20 years and older	3,502	6.5	0.02	5.7	5.9	6.0	6.1	6.4	6.8	7.0	7.2	7.4
20–29 years	485	6.3	0.02	5.6	5.7	5.8	6.0	6.2	6.5	6.7	6.8	7.0
30–39 years	581	6.4	0.03	5.7	5.9	6.0	6.1	6.4	6.7	6.9	7.0	7.3
40–49 years	462	6.5	0.03	5.8	5.9	6.0	6.2	6.5	6.7	7.0	7.1	7.4
50–59 years	472	6.7	0.03	6.0	6.0	6.1	6.3	6.6	7.0	7.2	7.4	7.6
60–69 years	469	6.6	0.03	6.0	6.1	6.1	6.3	6.6	6.9	7.1	7.2	7.5
70–79 years	571	6.6	0.03	5.9	6.0	6.1	6.2	6.6	6.9	7.2	7.3	7.7
80 years and older	462	6.5	0.03	5.8	6.0	6.1	6.2	6.5	6.9	7.0	7.1	7.3
Non-Hispanic black												
20 years and older	2,427	6.6	0.02	5.8	6.0	6.1	6.2	6.5	7.0	7.2	7.4	7.7
20–29 years	603	6.4	0.02	5.7	5.9	6.0	6.1	6.4	6.7	6.9	7.1	7.3
30–39 years	628	6.5	0.03	5.9	6.0	6.0	6.2	6.5	6.8	7.1	7.3	7.5
40–49 years	432	6.8	0.04	5.9	6.1	6.1	6.3	6.7	7.2	7.4	7.6	7.8
50–59 years	259	6.9	0.05	6.0	6.1	6.2	6.5	6.8	7.2	7.5	7.6	7.9
60–69 years	273	6.9	0.05	6.0	6.2	6.3	6.5	6.9	7.2	7.5	7.7	8.0
70–79 years	160	6.8	0.06	*	6.2	6.3	6.5	6.8	7.2	7.4	7.5	*
80 years and older	72	6.7	0.07	*	*	*	6.5	6.7	7.1	*	*	*
Mexican American												
20 years and older	2,153	6.3	0.02	5.6	5.7	5.8	6.0	6.3	6.7	6.9	7.0	7.3
20–29 years	638	6.1	0.02	5.5	5.6	5.7	5.8	6.1	6.4	6.6	6.7	7.0
30–39 years	515	6.4	0.03	5.6	5.8	5.9	6.0	6.3	6.7	6.9	7.0	7.3
40–49 years	351	6.5	0.04	5.7	5.9	6.0	6.2	6.5	6.8	7.0	7.1	7.4
50–59 years	185	6.6	0.05	*	6.0	6.0	6.2	6.6	6.8	7.1	7.2	*
60–69 years	302	6.6	0.04	5.9	6.0	6.1	6.3	6.6	6.9	7.2	7.3	7.6
70–79 years	113	6.5	0.05	*	*	6.0	6.2	6.5	6.8	6.9	*	*
80 years and older	49	6.3	0.07	*	*	*	*	6.2	*	*	*	*

* Figure does not meet standards of reliability or precision.

¹Includes all other race and ethnicity groups not listed separately.

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For answers to questions about this report or for a list of reports published in these series, contact:

Information Dissemination Staff
National Center for Health Statistics
Centers for Disease Control and Prevention
3311 Toledo Road, Room 5412
Hyattsville, MD 20782
1-800-232-4636
E-mail: cdcinfo@cdc.gov
Internet: www.cdc.gov/nchs

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Centers for Disease Control and Prevention
National Center for Health Statistics
3311 Toledo Road
Hyattsville, MD 20782

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