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CONSUMER PRODUCT SAFETY COMMISSION
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MEMORANDUM

DATE: April 27, 1998

TO : Ronald L. Medford
 Assistant Executive Director
 Office of Hazard Identification and Reduction

Through: *for* Andrew G. Stadnik, Associate Executive Director *NVM*
 Directorate for Engineering Sciences (ES)

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SUBJECT: Human Factors Staff Recommendation for Anthropometry Project

Issue: The U.S. Consumer Product Safety Commission (CPSC) is considering whether to support a full anthropometric study of children to replace the currently used data set that was developed during 1975-1977.

Background: In 1975 and 1977, CPSC completed major child measurement studies. The data from these studies have served to support mandatory regulations, voluntary standards, and product safety assessments. The data are now over 20 years old. The CPSC staff initiated an effort to determine whether there have been dimensional changes in children sufficient to justify the need for a new study. The major element of the review effort was an analysis by the National Center for Health Statistics (NCHS), Centers for Disease Control (CDC) of measurement data taken from several related surveys. These National Health Examination and Nutrition Surveys (NHANES), conducted over the period 1970 to 1993, consisted of three (NHANES I-III) comprehensive health assessments of a large statistical sample of the U.S. population. As part of those assessments, data was gathered on a small set of children's body dimensions. Comparison of the data for the same dimensions across the NHANES studies allowed analysis of secular growth trends.

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Coincident with this review, NCHS advised CPSC staff that a new study was about to commence (NHANES IV) and this study could incorporate measurements to update the CPSC database.

Discussion: The final NCHS report entitled "Change in the Physical Dimensions of Children in the United States" is attached. See attachment A.

NCHS examined six measures for growth trends spanning a period of approximately twenty years. Five measures (weight, height, head circumference, wrist breadth, and shoulder breadth) showed a statistically significant increase. The sixth (sitting height), showed a statistically significant decrease in ages up to seven years and no change beyond that age. The report statistically analyzed the median values from the appropriate studies.

CPSC staff analyzed the report as did as two outside experts in anthropometry who were retained by CPSC to examine the NCHS document. The analyses focused on the implications of the data with respect to the mission of the CPSC. In a conference call on February 12, 1998, the experts both expressed their opinions that the data, even though statistically significant, showed only small changes in those measurements taken and that such small changes would have a limited if even perceptible impact on the design of consumer products. The experts noted that somewhat larger changes took place in several of the measurements in the early teenage years, but this did not appear to be of real safety significance for products intended for this age group. In view of the small changes and their limited impact on consumer product design, one of the consultants stated he would find it difficult to justify a new study on just that basis. Both consultants suggested that the data in the 5th and 95th percentiles of the NCHS report be examined for trends since those are the bench marks that CPSC normally uses to develop safety specifications.

CPSC staff examined the data in the 5th and 95th percentiles for the six measurements. See attachment B. There are no distinct trends in the data that are markedly different from the trends in the mean values or other trends that would significantly influence product safety specifications. There has been approximately a 7 kilogram increase in the 95th percentile weight in the 6 to 17 year range and a smaller change in the 5th percentile. Height also shows a general increase of about 2 centimeters in the same age range. Shoulder breadth shows a nominal increase of one centimeter in the 11 to 17 year interval. The remaining measurements did not display a detectable pattern of change. In the opinion of Human Factors staff, none of these changes is of a magnitude sufficient to cause a change in the general application of the CPSC data for product safety evaluation or product design for the 6 to 17 year age group.

Recommendation: Human Factors staff recommends that participation in a full anthropometry study, such as envisioned with NHANES IV, not be pursued. This recommendation is based on the fact that the changes that have occurred in the body part dimensions are small, and do not have any practical significance for the evaluation of hazards and the design of safe products. Staff will monitor progress of the NHANES IV study to gather periodic data on changes in height, weight and other relevant data.

Attachments.

Attachment A

**Change in the Physical Dimensions of Children in the United States:
Results from the National Health and Nutrition Examination Surveys
from the National Center for Health Statistics**

**Report to the U.S. Consumer Product Safety Commission (CPSC)
From the National Center for Health Statistics (NCHS)
Division of Health Examination Statistics**

January 1998

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Summary

This report presents data analyses on body dimensions of U.S. children (up to and including 18 years old) using data from nationally representative surveys conducted by the National Center for Health Statistics (NCHS) over the last thirty years. In particular, we compare mean values from a baseline period in the mid 1970s with recent results for the Third National Health and Nutrition Examination Survey (NHANES III) conducted between 1988-94.

We find a significant increase in size over all age ranges and both genders for the following five measurements: weight, height, head circumference, wrist breadth, and biacromial breadth. For these measurements, we found a statistically significant increase in 65% of the age categories assessed.

Of the six measures investigated for this report, the only measurement that did not follow the pattern of increased size was sitting height, which showed a statistically significant decrease for young children (up to age 7 years) and no increase for older children. Possible explanations for this change include demographic changes in the population and measurement bias. We feel that the change is more likely due to differences in survey procedures over time.

Background

In order to assess safety issues related to consumer products, reliable information on the physical characteristics of U. S. children under the age of 18 years is essential. In the mid- 1970s, the Consumer Product Safety Commission (CPSC) contracted for two studies, each containing approximately 4000 children and at least 40 different body measurements.¹⁻² These studies continue to be used for the design and evaluation of consumer products. It has been almost a quarter century since these studies. Since then the U.S. population has grown and its demographic composition has changed. It is worthwhile knowing whether the size and shape of children are different from what they were in the mid-1970s. In this investigation, we examine the magnitude of any changes in six anthropometric variables: weight, height, sitting height, head circumference, wrist breadth, and biacromial breadth.

The only national surveys that directly measure body dimensions of sample respondents are those conducted by the National Center for Health Statistics (NCHS). NCHS has carried out a series of surveys that measure selected aspects of the health and nutritional status of the U.S. population, including certain body measurements. Table 1 shows the names and dates of six of these surveys. It also shows the age range of the population that was surveyed. The last three surveys also assessed nutritional status of the population and the survey name was changed from NHES to NHANES to reflect this broader purpose.³ All surveys have used complex, multistage, stratified clusters of defined population groups and have been limited to the civilian, non-institutionalized population of the United States, excluding Native Americans residing on reservation land and persons residing on military reservations. The first four of the surveys in

Table 1 were based on a target population of persons in the continental United States, while the last two NHANES included Alaska and Hawaii in the sample universe.

Table 1. NCHS Health Examination Surveys

Survey Name	Years	Ages covered
National Health Examination Survey I (NHES I)	1960-62	18 - 79 yrs.
National Health Examination Survey II (NHES II)	1963-65	6 - 11 yrs.
National Health Examination Survey III (NHES III)	1966-70	12 - 17 yrs.
National Health and Nutrition Examination Survey I (NHANES I)	1971-74	1 - 74 yrs.
National Health and Nutrition Examination Survey II (NHANES II)	1976-80	6 mos.-74 yrs.
National Health and Nutrition Examination Survey III (NHANES III)	1988-94	2 mos. +

Each of the surveys included a household interview plus a physical examination and interview in a Mobile Examination Center (MEC). The MEC is a set of specially-equipped trailers moved from one geographical area to another along with a field staff of trained interviewers and examiners. The body measurements are part of a series of tests and procedures performed in the MEC. NCHS has published detailed descriptions of the design and procedures for each of these surveys. ⁴⁻¹⁴

Introduction

The current investigation focuses on secular changes in the U.S. population of children and young adults. Secular changes relate to differences in size when data from past decades are compared with more recent data. Secular change can be influenced by the change in the composition of the population. Here, we compare six anthropometric variables measured on an earlier cross-section of the US population (baseline) and on a later cross-section of different individuals. For the later cross-section, we use the information collected in the NHANES III.

For the earlier time period we adopted the appropriate NCHS survey from the time nearest that of the CPSC data. In most cases this is the NHANES I survey, but as Table 2 indicates, Wrist Breadth and Biacromial Breadth were not available in NHANES I, so NHES II and III were utilized. We used the NCHS data rather than the original CPSC for the baseline data, because all the NCHS surveys were nationally representative samples of the U.S. population. Also, we have easier access to the detailed documentation of the measurement and survey

procedures. With that documentation, we can make compensating adjustments to the readings as needed. Otherwise, results of the comparisons can be difficult to interpret.

Table 2. Comparison of Six Anthropometric Measures by Age Group (in years) and Survey

Measure	Survey			
	NHES II	NHES III	NHANES I	NHANES III
Weight			1-18	1-18
Height			2-18	2-18
Sitting Height			2-18	2-18
Head Circumference			1-7	1-7
Wrist Breadth		12-17		12-17
Biacromial Breadth	6-11	12-17		6-17

We compare the two survey findings through the difference of means for each available one-year increment in age for each gender, and for both genders together for each of the six measures. Also, we provide the standard error of the differences and a test of the hypothesis that the mean has not changed over this time period.

A similar analysis of secular change was conducted using the NHES surveys as baseline and compared with NHANES II.¹⁵ This comparison indicated that there has not been a change for whites and blacks in height and weight except for a slight increase in weight for girls that was more marked for blacks than for whites. Of course, the time period between NHANES I and NHANES III is longer, so there is more potential for change.

To permit visual assessment of the differences, we present plots of the same measures and age-gender groups we contrasted for statistical significance in Appendix A. These are plots of medians, however, rather than means, because medians are a more robust indicator of central tendency.¹⁶ Distributions of anthropometric measurements, particularly weight, are known to be skewed so that the median may be a more reliable indicator of central tendency.”

In the interest of potential trend analysis, we present the results of the five surveys in a set of tables in Appendix B. Within each anthropometric measure, for each age-sex category in each survey the tables present sample size, mean, and nine percentile values: the fifth, 10th, 15th, 25th, 50th (median), 75th, 85th, 90th, and 95th. These percentiles allow an assessment of the general shape of the distribution for each measure.

The remainder of this report is divided into these segments:

1. Survey Methods, where we give details about the survey design and data collection
2. Statistical Methods we used for this report
3. Results, where we cite some of the more important findings
4. Discussion, where we explain the overall patterns

Survey Methods

Examinations in all surveys were conducted by trained, experienced technicians in MECs using similar techniques. Field checks were routinely performed on all equipment. Height, breadth, and circumference measurements were made to the nearest millimeter. Most measurements that depend on the side of the body (such as wrist breadth) were taken on the right side. In order to ensure quality control, an observer and a recorder participated in all measurements.^{4,7,14} In addition, replicate measurements were done in all surveys starting with NHES III. Clothing varied slightly between surveys. In the NHES surveys, children wore shorts, cotton sweat socks and a sleeveless top? Children wore paper shirts and pants and foam slippers in the NHANES surveys.¹³ A major change made in NHANES III was the automatic recording of data.¹⁴

Body weight was measured in the surveys through NHANES II using calibrated Toledo beam-balanced weight scales. NHANES III used an electronic load cell scale. Measurements of weight were obtained in exactly the same way in NHES II and NHES III.⁵ Two changes in measurement were made between the NHES surveys and NHANES surveys. The first involved measurement recording when the data were entered into the computer. In NHES II and III measurements were recorded to the nearest 0.5 pound^{6,7}, in NHANES I and II to the nearest 0.25 pound^{8,9} while in NHANES III to the nearest 0.01 kilogram¹⁴. A second change was the clothing worn by the children. The weight of the clothing worn by children in NHES II and III varied between 0.24 and 0.66 pounds? The weight of the paper examination gowns was measured accurately in NHANES III and varied between 0.3 and 0.4 pounds. No adjustments were made for the difference in clothing weight.

Children younger than 2 years of age wore only a clean diaper, which was of negligible weight. The scale was tared with parent and then the child was handed to the parent for weighing in NHANES III.

Each survey also included measurements of height. Children stood in stocking feet in NHES surveys and in foam slippers in NHANES surveys. The measurements were taken while the child had his or her feet together, back and heels against the upright bar of the stadiometer and his or her head in the Frankfort plane:. To ensure accuracy for NHES III and all NHANES surveys, a photograph was taken of the measurement and this value was recorded.^{5,6,10} One procedural difference between the surveys is the measurement of height for 2 year old children. In NHANES I, the Procedures Manual instructed that the heights of children 1-2 years old be taken on the children's measuring board.* Thus, many of the height measurements were actually recumbent

length measurements.

Sitting height was measured in all surveys as the vertical distance from the sitting surface to the top of the head in the Frankfort plane for children 2 years and older.^{5,6,8,9,14} The child sat erect with his or her feet on a stool, or in NHANES III, a specially made measurement box, so that the thighs were horizontal. The movable caliper arm was brought down firmly to the midline of the top of the head. In NHANES III the measurement was taken from a photograph as was done with height.¹⁴ For both standing and sitting height measurements the measurement bar was brought down with sufficient pressure to compress hair, but hair pieces were not removed.

The NHANES surveys included head circumference measurements of children 7 years and younger. A steel tape measure was used in NHANES I & II, while a plasticized insertion tape was used in NHANES III. In both cases, the tape was placed around the head, above the ears across the frontal bones above the eyebrows, and over the occipital prominence at the back of the head. Hair ornaments and braids were removed.

NHES II & III and NHANES III included measurement of biacromial breadth.^{3,7,14} The examiner used sliding calipers to measure the maximum distance between the right and the left acromial processes of the scapulae. In NHES II & III the child was standing while in NHANES III the child was sitting for the measurement.

Wrist breadth was measured in NHES III and NHANES III.^{7,14} As the child stood, with right hand extended, a small sliding caliper was used to measure the distance between the most prominent aspect of the ulnar and radial styloid processes.

Statistical Methods

Sampling weights, which account for the oversampling and unit nonresponse, were used in all analyses to produce national estimates for means, medians, and other percentiles of the distribution. The standard errors of the mean difference between the two surveys were estimated through linearization, a method which takes into consideration the complex sample design, using SUDAAN software.¹⁸ Since the surveys cover distinct time intervals, it is valid to treat the two means as independent. We implemented this approach by considering the strata and primary sampling unit (psu) to be nested within the two surveys in SUDAAN. The statistical test is carried out using the Student-t distribution with pooled degrees of freedom from the two surveys.

We have conducted extensive analysis on these five surveys in connection with the production of new NCHS growth charts. In this analysis, we have identified a small number of outliers. In this analysis, we eliminated one outlier from NHANES I and two outliers from NHANES III.

For infants, we provide means and medians by three month intervals in the appendix

However, for these age groups, we did not carry out tests of differences because of small sample sizes.

Results

In table 3, we show the **mean** difference between the current value (NHANES III) and the early-70s value (NHANES I when it was available) by year. If the mean difference is positive, it indicates children are larger on that dimension for that age and gender category. We show the standard error of the mean difference in parentheses. Also, if the quantity is statistically significant at the 0.05 level we so indicate with a single star; at the 0.01 level with a double star. For the first four measures, the comparison is between NHANES I and NHANES III. The last two comparisons use NHES as the baseline (see table 2).

Data on differences in mean body weight are available for age 1 through 18 years. Table 3 shows that there has been a statistically significant increase in weight for ages 6 through 17 years. The mean increase for these ages is between 1 and 4 kilograms. Both sexes have shown significant gains over this period, but the increase is greater for boys. In two of the boys' age groups, the average increase is more than 5 kilograms. Up to age 5, the increase is smaller than a kilogram and is typically not statistically significant for either sex.

Height was measured on children age 2 through 18 years. There is a statistically significant difference for ages 8 through 13 years. The average difference over this age range is slightly less than 2 centimeters. Both sexes appear to have increased in height over this period, but, again, the increase is greater for boys. The average gain for boys in this age range is more than 2 centimeters. For ages less than 8 or greater than 13 the differences are not statistically significant.

Sitting Height was measured on children age 2 through 18 years. Overall, it appears that younger children's torsos are not as large as they were. There is a statistically significant difference between ages 2 and 7. The average difference over this age range is approximately 1.5 centimeters. The reduction is approximately the same for the two sexes. For ages older than 7, there does not seem to be much difference (less than a centimeter), and, in general the differences are not statistically significant.

Head circumference was measured on children up through age 7 years. Overall, head circumference has increased. The mean increase is between 0.18 and 0.55 centimeters and is statistically significant for four of the five ages from 2 through 6. But on this measure, girls seem to have increased more than the boys. For girls aged 2 through 6 the mean increase is statistically significant and is approximately 0.50 centimeters.

Wrist Breadth data are available only for ages 12 through 17 years. The earlier survey, NHES III (1966 - '70) was designed to cover only these ages of children, and this measure was

Table 3. Mean Change in Anthropometric Variables

	Weight (kg.) NH3-NH1	Height (cm.) NH3-NH1	Sitting Height (cm.) NH3-NH1	Head Circumference (cm.) NH3-NH1	Wrist Breadth (cm.) NH3-HES3	Biacromial Breadth (cm.) NH3-HES2	Biacromial Breadth (cm.) NH3-HES3
Boys							
1	-0.23 (0.16)			0.03 (0.14)			
2	0.02 (0.20)	-0.14 (0.44)	-1.65 (0.26) **	0.43 (0.15) **			
3	0.17 (0.24)	0.26 (0.41)	-2.08 (0.25) **	0.20 (0.15)			
4	-0.07 (0.21)	-0.84 (0.45)	-2.47 (0.25) **	0.10 (0.20)			
5	-0.14 (0.26)	0.49 (0.46)	-1.87 (0.28) **	0.19 (0.20)			
6	1.18 (0.65)	0.80 (0.89)	-1.06 (0.51) *	0.37 (0.27)		0.24 (0.18) **	
7	1.38 (0.59) *	0.91 (0.77)	-1.31 (0.41) **	0.31 (0.18)		0.27 (0.14)	
8	3.82 (0.91) **	2.32 (0.76) **	-0.26 (0.40)			0.53 (0.27)	
9	2.80 (1.23) *	2.54 (0.97) **	0.44 (0.51)			0.88 (0.23) **	
10	3.08 (1.03) *	1.91 (1.18)	-0.41 (0.49)			(0.68 (0.24) **	
11	3.67 (1.23) *	1.0	-0.13 (0.77)			0.81 (0.19)	1.61 (0.33) **
12	5.08 (1.36) **	2.63 (1.27) *	0.56 (0.63)		0.24 (0.06) **	0.81 (0.19)	1.28 (0.23) **
13	4.07 (1.40) **	2.22 (1.13) *	0.54 (0.62) *		0.19 (0.05) **		1.28 (0.32) **
14	4.31 (1.49) **	2.31 (1.07) *	1.22				1.04 (0.32) **
15	5.76 (2.16) **	1.95 (1.31)	1.14 (0.66)		0.09 (0.04) *		1.10 (0.28) *
16	1.82 (2.06)	0.05 (1.23)	1.14 (0.66)		0.14 (0.04) **		1.36 (0.20) **
17	4.21 (1.72) *	-0.43 (1.02) **	0.18 (0.50)				
18	-2.99 (2.11)	0.73 (1.20)	0.49 (0.56)				
Girls							
1	0.03 (0.15)			0.32 (0.17)			
2	0.22 (0.14)	-0.42 (0.41)	-1.44 (0.26) **	0.55 (0.14) **			
3	0.37 (0.21)	0.59 (0.40)	-1.37 (0.24) **	0.54 (0.16) **			
4	1.05 (0.38) **	0.95 (0.51)	-0.98 (0.34) **	0.37 (0.17) *			
5	0.49 (0.38)	-0.01 (0.60)	-1.61 (0.34) **	0.39 (0.16) *			
6	10.98 (0.65)	-0.30 (0.83)	-1.13 (0.43) **	0.59 (0.23) *		0.33 (0.19)	
7	2.11 (0.88) *	-0.21 (0.99)	-1.19 (0.45) **	0.12 (0.27)		0.26 (0.21)	
8	2.38 (0.82) **	1.89 (0.81) *	-0.28 (0.47)			0.65 (0.21) **	
9	2.39 (1.36)	0.69 (0.90)	-0.71 (0.48)			0.95 (0.30) **	
10	1.0 (1.34) **	2.65 (1.02) *	0.64 (0.53)			0.57 (0.16) **	
11	2.91 (1.37) *	1.98 (1.02)	0.53 (0.58)			1.09 (0.24) **	
12	2.25 (1.57)	0.92 (0.94)	0.37 (0.55)		0.09 (0.05)		0.93 (0.22) **
13	4.36 (1.84) *	0.96 (0.98)	0.46 (0.60)		0.08 (0.04) *		1.56 (0.31) **
14	3.80 (1.70) *	0.44 (0.91)	0.24 (0.45)		0.05 (0.03)		1.18 (0.23) **
15	11.44 (1.40)	-0.90 (0.89)	-0.09 (0.47)		0.05 (0.03)		1.21 (0.22) **
16	4.91 (1.72) **	1.30 (0.85)	0.28 (0.46)		0.10 (0.04) *		11.31 (0.21) **
17	2.87 (1.90)	1.35 (1.00)	-0.20 (0.46)		10.08 (0.03) *		1.29 (0.17) **
18	3.23 (2.10)	-1.58 (0.98)	-1.09 (0.58)				
Both							
1	-0.10 (0.12)			0.18 (0.13)			
2	0.12 (0.11)	-0.27 (0.29)	-1.56 (0.20) **	0.50 (0.11) **			
3	0.26 (0.18)	0.41 (0.28)	-1.74 (0.17) **	0.35 (0.11) **			
4	0.45 (0.21) *	0.00 (0.36)	-1.77 (0.23) **	0.22 (0.16)			
5	0.19 (0.23)	0.24 (0.1)	0.73 (0.25) **	0.31 (0.14) *			
6	1.12 (0.50) *	10.30 (0.65) **	1.05 (0.35) **	0.55 (0.20) **		0.29 (0.15)	
7	1.73 (0.48) **	0.35 (0.63)	-1.26 (0.32) *	0.21 (0.20)		0.27 (0.13) *	
8	2.13 (0.63) **	2.12 (0.5) **	-0.25 (0.32)			0.60 (0.17) *	
9	2.60 (0.94) **	1.55 (0.68) *	-0.60 (0.35)			0.90 (0.20) **	
10	3.55 (0.78) **	2.20 (0.81) **	0.09 (0.39)			0.63 (0.14) **	
11	3.40 (0.99) **	1.63 (0.75) *	0.24 (0.39)			0.96 (0.14) **	
12	3.83 (1.04) **	1.91 (0.82) *	0.50 (0.41)		0.18 (0.04) **		1.29 (0.24) **
13	4.13 (1.21) **	1.64 (0.75) *	0.48 (0.44)		0.15 (0.04) **		1.42 (0.20) **
14	4.07 (1.20) **	1.50 (0.85)	0.76 (0.40)		0.12 (0.05) *		1.24 (0.24)
15	3.19 (1.21) **	0.07 (0.78)	0.35 (0.42)		0.02 (0.04)		0.98 (0.21) **
16	3.77 (1.41) **	1.22 (0.85)	0.43 (0.44)		0.12 (0.04) **		11.32 (0.22) **
17	3.43 (1.38) *	0.19 (0.95)	-0.10 (0.44)		0.13 (0.04) **		1.43 (0.22) **
18	1.22 (1.57)	0.34 (1.13)	-0.08 (0.58)				

Entries are mean difference (std. dev.), * = significant at level 0.05, ** = significant at level 0.01

not taken in any other survey until the NHANES III in 1988 - 94. Overall, wrist breadth is significantly greater for all ages except one (age '15). The average mean increase in wrist breadth is about 0.15 centimeters. The overall change seems to have been driven by the boys. The maximum mean increase for the girls is 0.10 centimeters.

For Biacromial Breadth we compared ages 6 through 17 years using both NHES II and NHES III. We show this fact with separate columns in Table 3. In general, there was a substantial increase for ages 7 through 17 years. Up to **age** 11 years, the mean increase is less than a centimeter, while it is between 1 and 1.5 centimeter typically for ages 12 and older. The increase for boys and girls seems to be comparable.

In table 4, we summarize the significance results of table 3. For each measure and each age we code each cell as a significant increase (I), significant decrease (D), no data (N), or not significantly different (blank). We use the results of both genders **from** table 3 to determine the entry.

Table 4. Summary of statistically significant changes for both genders

Measure	Age in Years																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Weight				I		I	I	I		I	I	I	I		I		I	
Height	X							III		I		I	I					
Head Circumference		I	I		I	I		xxx		x	x	x	x	x	x	x	X	x
Wrist Breadth	X	X	X	X	X	X	X	X	X	X	X	I	I	I		I	I	N
Biacromial Breadth	X	X	X	X	X		I	I	I	I	I	I	I	I	I	I	I	X
Sitting Height	X	D	D	D	D	D												

I = increase, D = (decrease, X= not available, Blank=no difference

We examined change as represented in the medians, as distinct from the means, since the former are a better indicator of central tendency.^{16,17} We calculated the percentage change in medians for all the same classes in which we compared the means. The percentages are given in Table 5. The findings are very much the same as those for the means: all measures except Sitting Height show some increase, with Weight the largest increase. **And** among the measures which increased, the change is more pronounced for the boys, with the exception of Head Circumference

Table 5. Percent Change in Medians of Anthropometric Variables

	Weight % change	Height % change	Sitting Height % change	Head Circumference % change	Wrist Breadth % change	Biacromial Breadth % change	Biacromial Breadth % change
Boys							
1	-0.61			-0.42			
2	0.07	0.22	-2.99	0.41			
3	-0.58	0.41	-3.70	-0.20			
4	-1.31	0.09	-3.69	0.20			
5	-0.30	-0.18	-3.22	0.59			
6	1.62	0.08	-2.33	-0.39		0.38	
7	3.41	-0.08	-2.52	0.19		0.73	
8	8.86	1.40	-1.02			2.46	
9	4.34	1.33	-0.84			2.37	
10	8.64	1.57	-1.22			2.29	
11	6.09	0.68	-0.80			2.83	
12	13.30	1.32	0.39		4.00		3.96
13	7.12	1.32	1.23		5.77		4.64
14	9.72	0.90	0.82		3.64		2.74
15	9.23	-0.53	-0.34		1.79		2.11
16	0.20	-1.43	-1.44		1.79		2.84
17	6.36	-1.42	-1.76		1.75		2.28
18	-4.78	0.00	-1.42				3.03
Girls							
1	-1.11			0.65			
2	1.87	-0.22	-2.67	0.84			
3	1.95	0.62	-2.71	0.41			
4	4.47	0.58	-2.41	0.20			
5	4.01	0.00	-2.92	0.20			
6	-1.50	0.51	-1.74	0.40		1.55	
7	2.05	0.49	-1.36	0.59		0.74	
8	8.82	1.24	-1.02			2.49	
9	0.45	0.74	-1.55			2.74	
10	10.45	1.13	0.69			1.64	
11	8.84	2.02	1.31			3.79	
12	3.15	1.43	0.50		2.04		4.52
13	8.66	-0.06	0.36		2.04		4.09
14	5.92	-0.19	-0.24		0.00		2.88
15	1.78	-0.18	-0.35		0.00		3.42
16	3.34	-0.37	-1.17		2.00		3.12
17	7.29	0.68	-0.58		2.00		3.67
18	1.36	-1.71	-1.75				2.54
Both							
1	0.00			0.21			
2	0.76	-0.22	-3.00	0.62			
3	0.00	0.92	-3.02	0.60			
4	1.75	-0.10	-3.20	0.40			
5	1.55	-0.18	-2.74	0.79			
6	0.47	0.34	-1.72	0.78		0.39	
7	3.29	0.08	-2.24	0.58		0.37	
8	9.73	1.63	-0.44			2.12	
9	3.23	1.18	-0.98			2.72	
10	9.73	2.07	0.00			1.31	
11	7.37	1.70	0.39			3.79	
12	8.47	1.11	0.50		4.08		3.93
13	7.94	0.94	0.24		1.96		3.50
14	6.04	1.04	1.53		1.92		3.66
15	3.69	-0.36	0.12		0.00		3.31
16	3.67	0.78	0.46		3.77		3.79
17	5.32	-0.12	0.34		3.77		3.74
18	1.93	0.06	-0.34				

where girls have increased more. The medians also show a decrease in Sitting Height, as the mean; do: here again the decrease is pronounced for ages 2 through 7, less so in later years, and stronger in boys than girls.

Only NHANES II and NHANES III have measurements on infants under the age of one year (table 2). In the appendix we provide means, medians, and sample sizes by three month age groups when they are available. We could do a comparison for only two of the measures: weight and head circumference for ages 6-8 and 9-11 months. It appears that there was little change in weight but a half centimeter increase for head circumference.

Discussion

For children in the U. S., five of the six anthropometric variables show a significant increase. The five are weight, height, head circumference, wrist breadth, and biacromial breadth. For 65% of the age categories, there has been a statistically significant increase (table 6) over all age groups and both genders. By contrast, we found discordant results for sitting height: a significant decrease for young children and no change for older children.

Table 6. Percentage of significant differences by measure

Measure	Fraction of significant increases	Percentage of significant increases
Weight	13/18	72
Height	6/17	35
Head Circumference	4/7	57
Wrist Breadth	5/6	83
Biacromial Breadth	11/12	92
Total	39/60	65

Possible explanations of these findings include: 1) true secular changes reflecting actual biological differences 2) bias in measurement, such as measurement error and differences in protocol between surveys 3) changes in the racial/ethnic composition of the population.

The increase in body weight probably reflects an actual biological change and supports the increase in the prevalence of overweight in children observed by Troiano¹⁹ and Ogden²⁰. The change in weight could be a factor in the small increases we noted in wrist breadth.

The differences in head circumference, wrist breadth, biacromial breadth, and height are small enough to be within measurement error, despite their statistical significance. For head circumference the greatest increase is barely greater than half a centimeter; wrist breadth has not increased more than a third of a centimeter; all increases in biacromial breadth are under 2 centimeters (4/5 of an inch); only 3 of the increases in height are as much as an inch. Based on analysis of previous NCHS surveys, measurement errors of 1 cm: are acceptable for height, sitting height, and biacromial breadth.* For head circumference, wrist breadth, and biacromial breadth, slightly different landmarks may have been used; the degree of compression of the measuring instrument may have varied as well over the surveys.

Changes in the racial/ethnic makeup of the U.S. population could account for the observed decrease in sitting height for ages 2-7 years. Minority children have increased as a percentage of the total over this time period. Further, African Americans are known to have smaller sitting height by age 2 than whites, but the difference is smaller than the 1.5 centimeter difference found in our analysis.²² Thus, the change in ethnic composition of the population is not sufficient to explain this decrease.

The observed decrease in sitting height between 1971-74 and 1988-94 is more likely due to differences in protocol between surveys. The positioning of the subject can vary and probably did. A review of the limited documentation available for NHANES I indicates that in younger children, the technicians were instructed to place one hand on the upper part of the chest of the examinee and one hand on the lower spine (lumbar area) to actually move the subject into a more upright position. This was done to yield a maximal sitting height by straightening the back. In NHANES III, the intent was the same, but to achieve this straightening of the spine, verbal instructions were given to the subjects to "sit up as tall as possible and take in a deep breath." Filling the lung cavity was intended to have the effect of maximally straightening the spine, but perhaps does not straighten as much as physically straightening the spine. The result would be slightly higher measurements in NHANES I if this is true.

References

1. United States Consumer Product Safety Commission Report (1975) "Physical Characteristics of Children as Related to Death and Injury for Consumer Product Safety Design" UM-HSRI-BI-75-5 Final Report on Contract FDA-72-70.
2. United States Consumer Product Safety Commission Report (1977) "Anthropometry of Infants, Children, and Youth to Age: 18 for Product Safety Design."
3. Kuczarski, Robert J. And Clifford Johnson (199 1), "National Nutritional Surveys Assessing Anthropometric Status," in *Anthropometric Assessment of Nutritional Status*, Wiley-Liss Inc.
4. National Center for Health Statistics (1973) "Plan, Operation, and Response Results of a Program of Children's Examinations" Series 1, Number 5. Hyattsville; Maryland.
5. National Center for Health Statistics. (1973) "Body weight, stature, and sitting height: White and Negro youths 12- 17 years: United States". Series 11, Number 126. Rockville, Maryland.
6. National Center for Health Statistics (1974) "Body dimensions and proportions, white and Negro children 6-1 1 years: United States". Series 11, Number 143. Rockville, Maryland.
7. National Center for Health Statistics (1974) "Plan and Operation of a Health Examination Survey of U.S. Youths 12-17 Years of Age". Series 1, Number 8. Hyattsville, Maryland.
8. National Center for Health Statistics (197 1) HANES Examination staff procedures manual for the health and nutrition examination survey, 1971-1973. Instruction manual, data collection, Part 15a. Rockville, Maryland.
9. National Center for Health Statistics (1977) "Anthropometric Reference Data & Prevalence of Overweight, United States, 1976-80". Series 11, Number 238. Hyattsville, Maryland.
10. National Center for Health Statistics (1977) "NCHS growth curves for children. Birth-18 years: United States". Series 11, Number 165. Hyattsville, Maryland.
11. National Center for Health Statistics (NCHS) (1977) "Plan and operation of the Health and Nutrition Examination Survey". *Vital and Health Statistics* Ser 1, No. 1 0b - Data Collection Forms of the Survey. DHEW Publ. No. (HRA) 77-13 10. U.S. Public Health Service. Washington, DC.: GPO
12. National Center for Health Statistics, McDowell A, Engel A, Massey JT, Maurer K (NCHS) (198 1) "Plan and operation of the Second National Health and Nutrition Examination Survey, 1976-80". *Vital and Health Statistics* Ser 1, No. 15. DHHS Publ No. (PHS) 81-13 17. U.S. Public Health Service. Washington, DC: GPO

13. National Center for Health Statistics (NCHS) (1995) "Plan and operation of the Third National Health and Nutrition Examination Survey, 1988-94". *Vital and Health Statistics Ser 1*, No. 32. DHHS Publ No. (PHS) 94-1308. U.S. Public Health Service. Washington, DC: GPO
14. National Center for Health Statistics (1996) "NHANES III Reference Manuals and Reports", CD-ROM.
15. Roche, A.F. (1992) "Executive Summary of NCHS Growth Chart Workshop" sponsored by National Center for Health Statistics.
16. Andrews, D.F., Bickel, P.J., Hampel, F.R., Huber, P.J., Rogers, W.H., Tukey, J.W. (1972) *Robust Estimates of Location*, Princeton University Press, Princeton, NJ
17. Cole, T.J. (1988), "Fitting Smoothed Centile Curves to Reference Data", *J. R. Statist. Soc. Ser. A*, 151, 385-418.
18. Shah, B.V., Barnwell, B.G., Bieler, G.S. (1996) *SUDAAN User's Manual*, Release 7.0, Research Triangle Park, NC Research Triangle Institute
19. Troiano, R.P., Flegal, K.M., Kuczmarski, R.J., Campbell, S.M., Johnson, C.L. (1995) "Overweight Prevalence and Trends for Children and Adolescents, The National Health and Nutrition Examination Surveys, 1963 to 1991", *Arch Pediatr Adolesc Med*, 149, 1085-1091
20. Ogden, C.L., Troiano, R.P., Briefel, R.R., Kuczmarski, R.J., Flegal, K.M., Johnson, C.L. (1997) "Prevalence of Overweight among Preschool Children in the United States, 1971 through 94", *Pediatrics*, 99(4), 1-8
21. Chumlea, W.C., Guo, S., Kuczmarski, R.J., Johnson, C.L., Leahy, C.K. (1990) "Reliability for anthropometric measurements in the Hispanic Health and Nutrition Survey (HHANES 1982-1984)", *Am. J. Clin. Nutr.*, 51, 902-907.
22. Martorell, R., Malina, R.M., Castillo, R.O., Mendoza, F.S., Pawson, I.G. (1988) "Body proportions in three ethnic groups: children and youths 2- 17 years in NHANES II and HHANES." *Human Biology*, 60, 205-222

Appendix A: Figures of Median Measures by Survey, Age, and Gender

- Figure A-1. Median Values by **Survey** for Weight (kg.): Boys 1 to 18
- Figure A-2. Median Values by Survey for Weight (kg.): Girls: 1 to 18
- Figure A-3. Median Values by Survey for Height (cm.): Boys 2 to 18
- Figure A-4. Median Values by Survey for Height (cm.): Girls: 2 to 18
- Figure A-5. Median Values by Survey for Sitting Height (cm.): Boys 2 to 18
- Figure A-6. Median Values by Survey for Sitting Height (cm.): Girls: 2 to 18
- Figure A-7. Median Values by Survey for Head Circumference (cm.): Boys 1 to 7
- Figure A-8. Median Values by Survey for Head Circumference (cm.): Girls: 1 to 7
- Figure A-9. Median Values by Survey for Wrist Breadth (cm.): Boys 12 to 17
- Figure A-10. Median Values by **Survey** for Wrist Breadth (cm.): Girls: 12 to 17
- Figure A-11. Median Values by Survey for Biacromial Breadth (cm.): Boys 6 to 17
- Figure A-12. Median Values by Survey for Biacromial Breadth (cm.): Girls: 6 to 17

Figure A-1

Median Values by Survey for Weight (kg.)
Boys 1 to 18

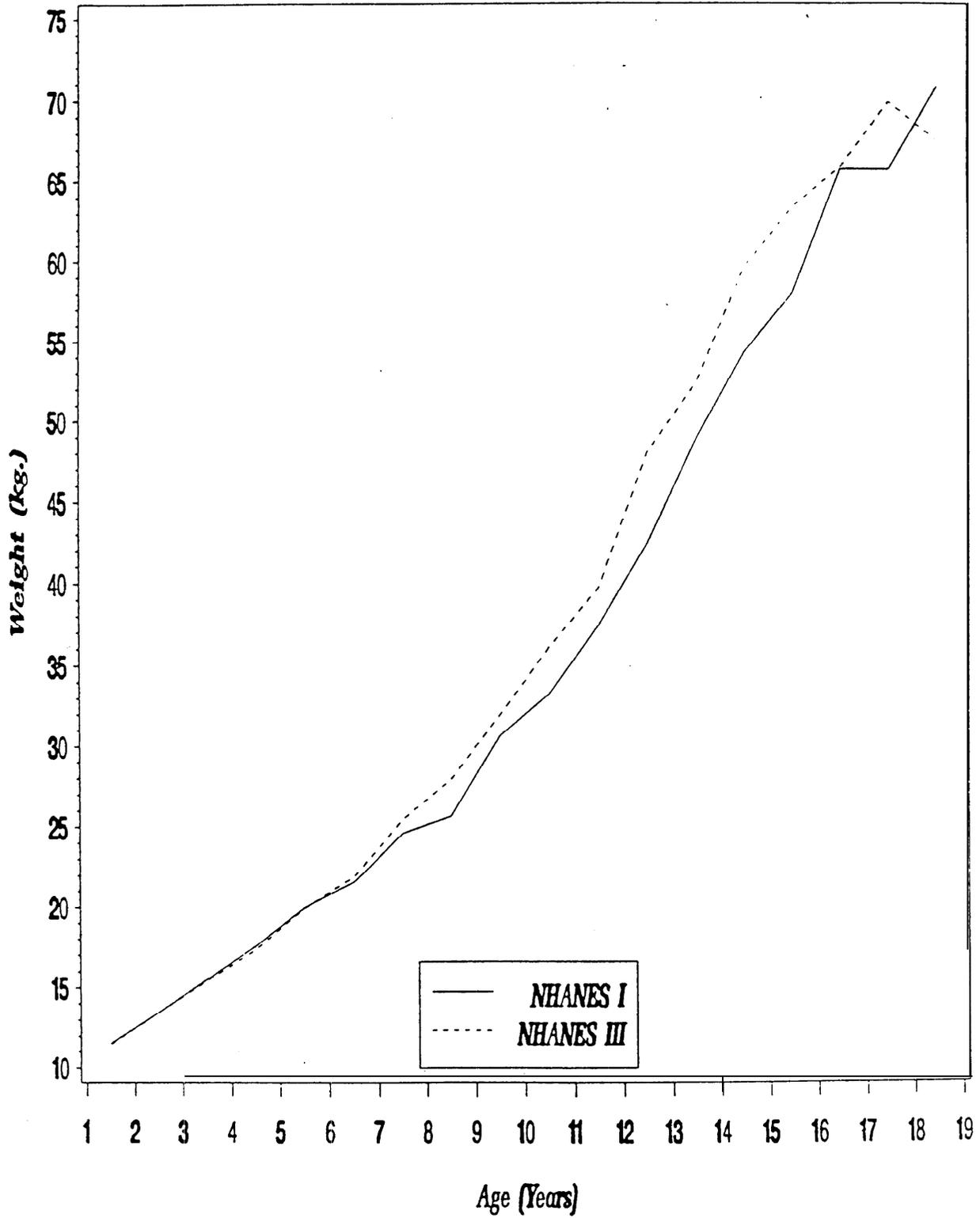


Figure A-2
Median Values by Survey for Weight (kg.)
Girls 1 to 18

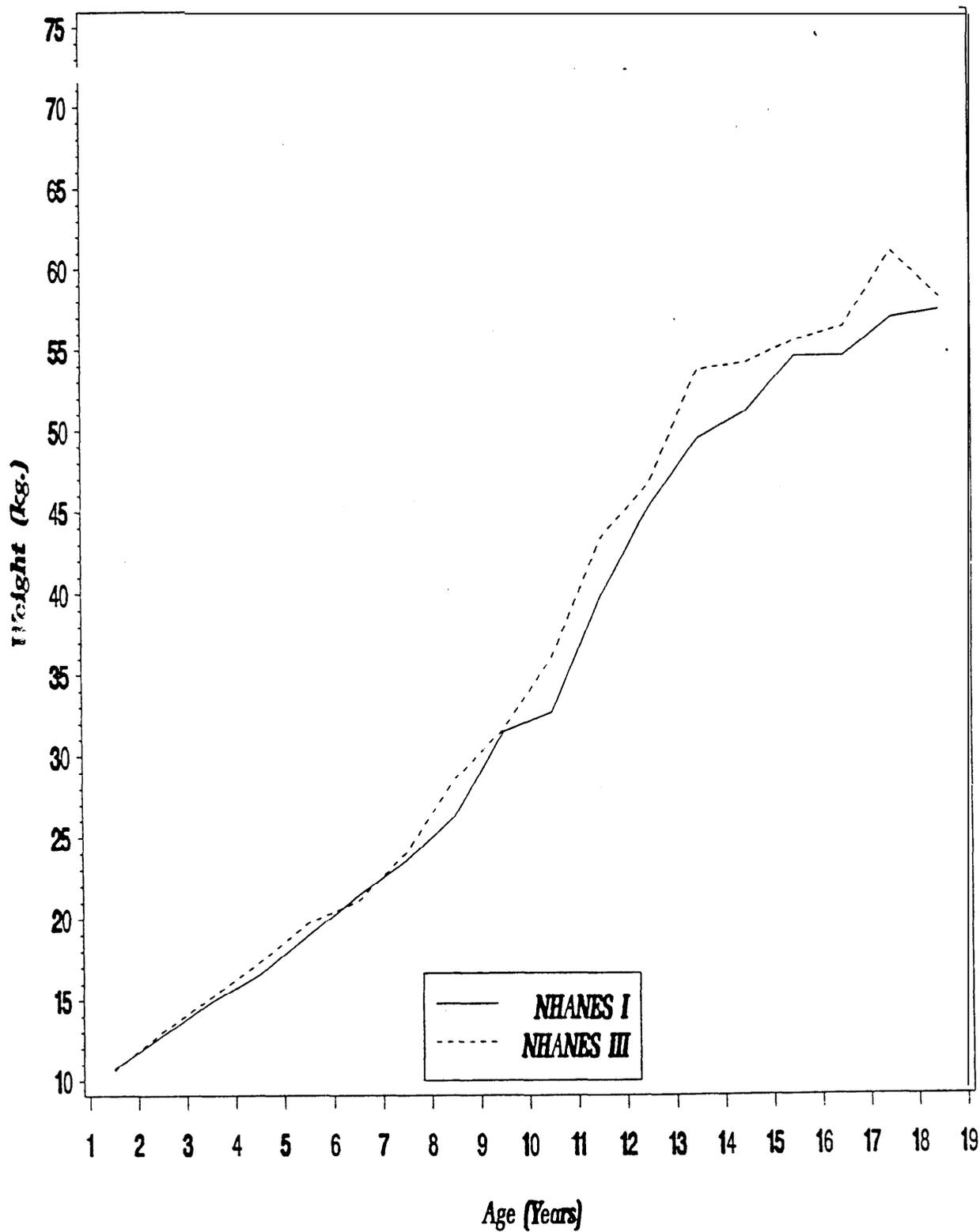


Figure A-3
Median Values by Survey for Height (cm.)
Boys 2 to 18

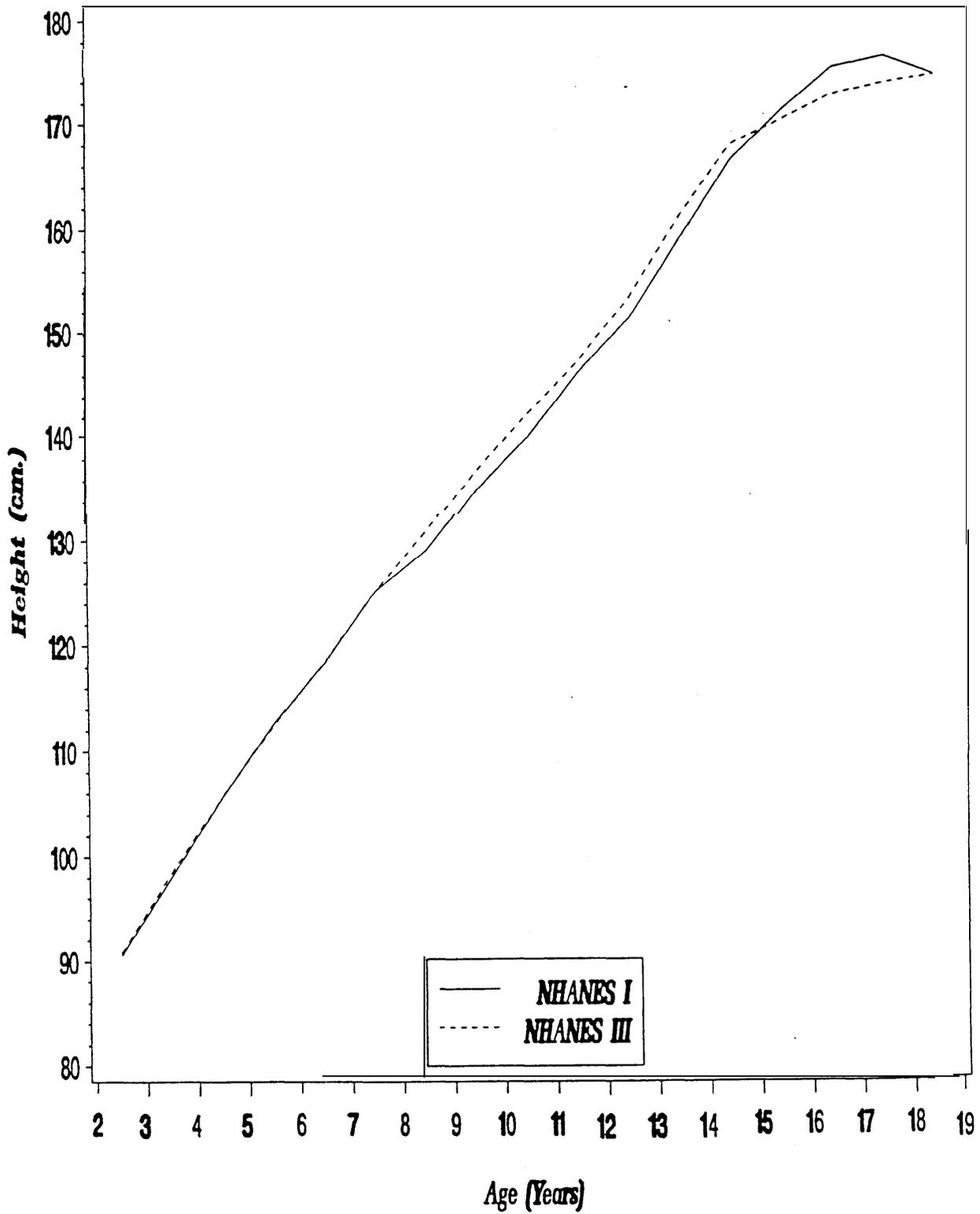


Figure A-4
Median Values by Survey for Height (cm.)
Girls 2 to 18

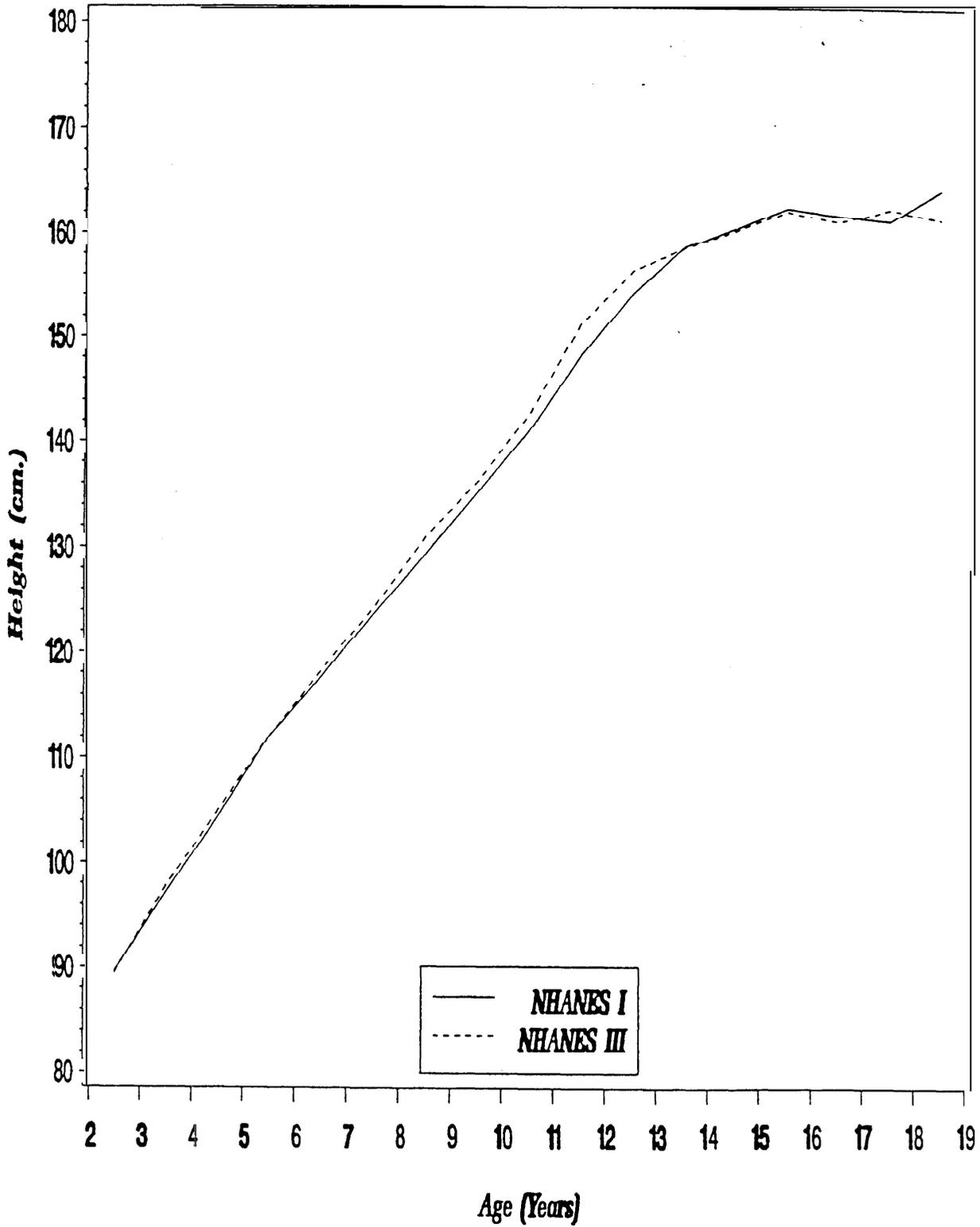


Figure A-5
Median Values by Survey for Sitting Height (cm.)
Boys 2 to 18

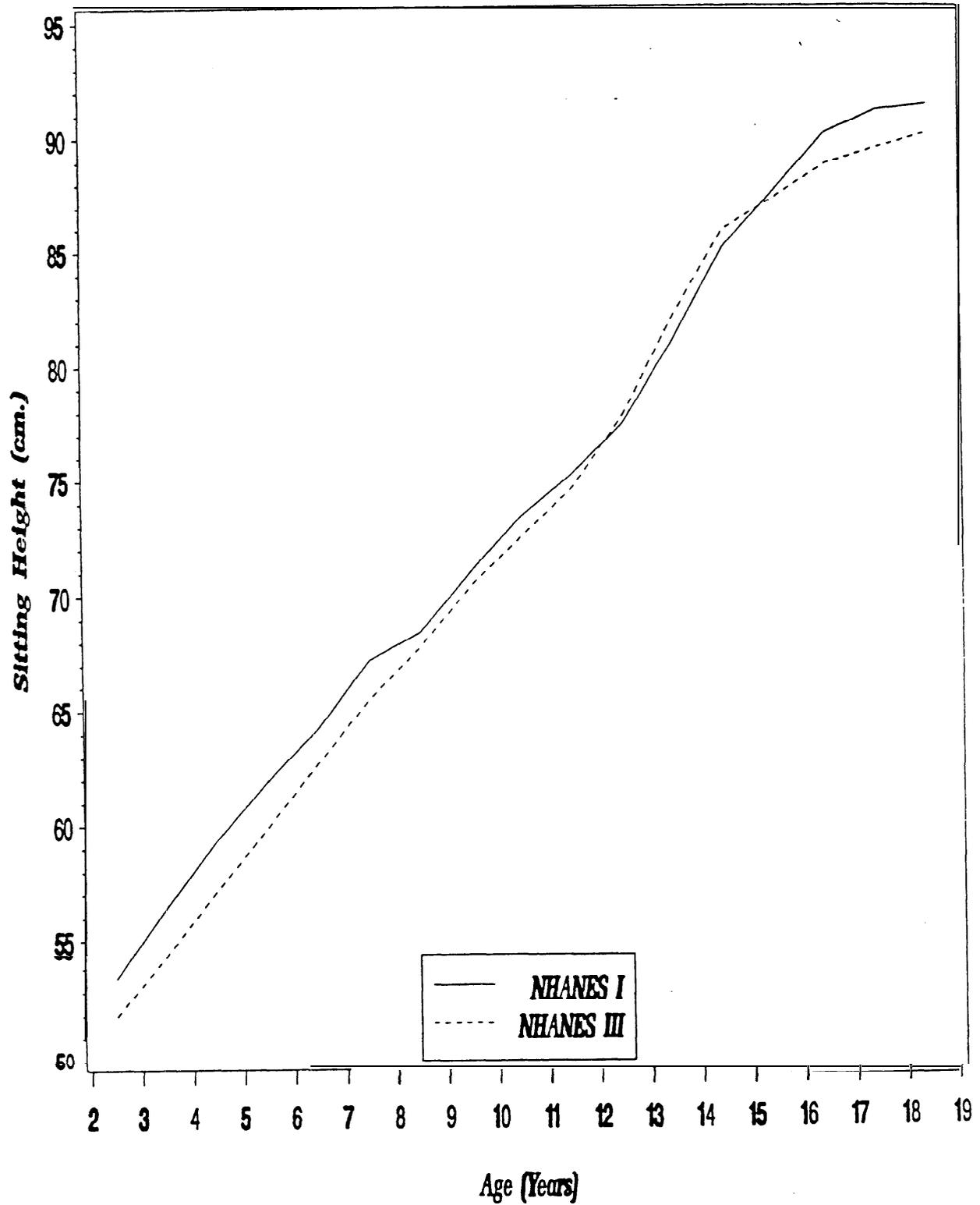


Figure A-6
Median Values by Survey for Sitting Height (cm.)
Girls 2 to 18

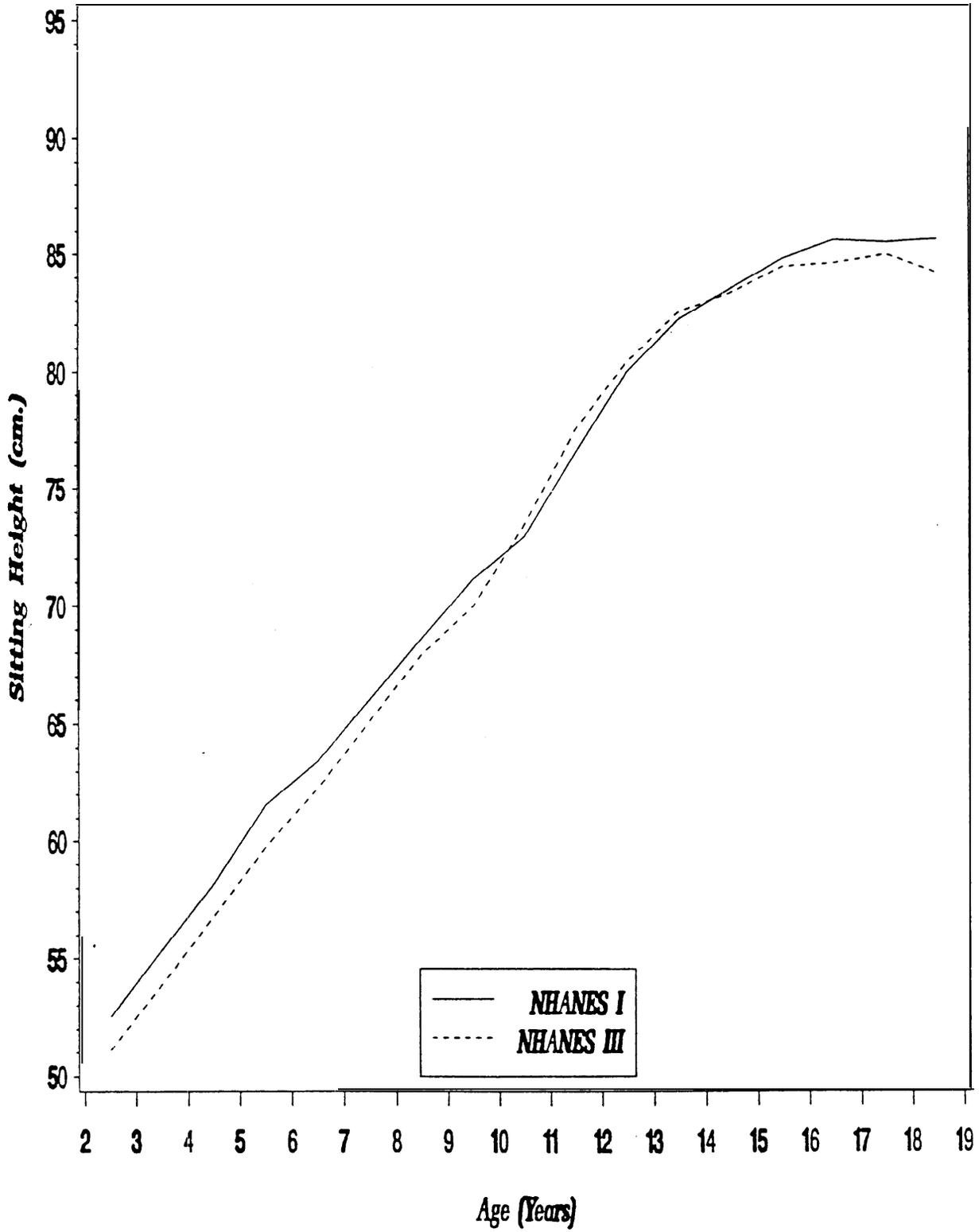


Figure A-7
Median Values by Survey for Head Circumference (cm.)
Boys 1 to 7

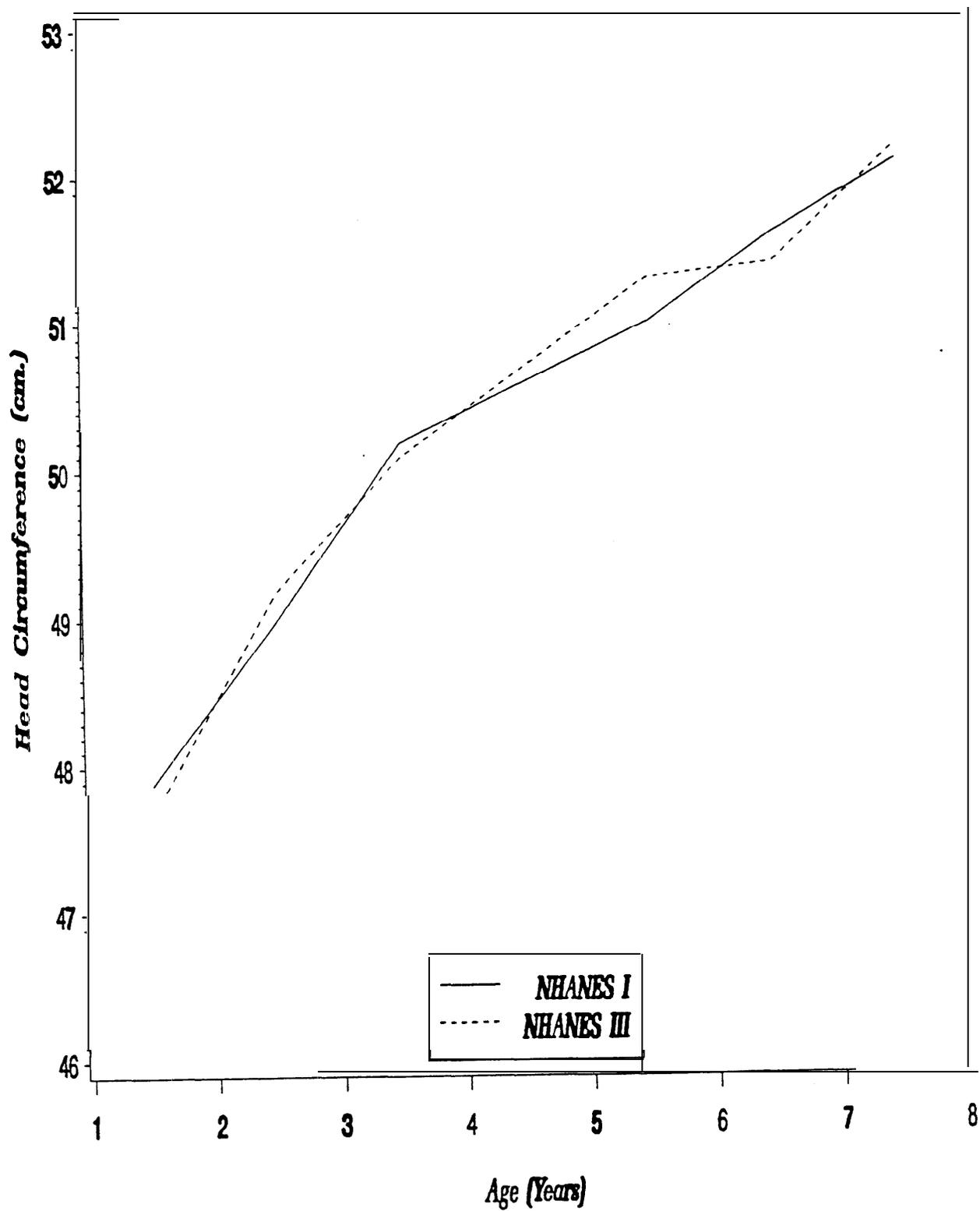


Figure A-8
Median Values by Survey for Head Circumference ^(a)
Girls 1 to 7

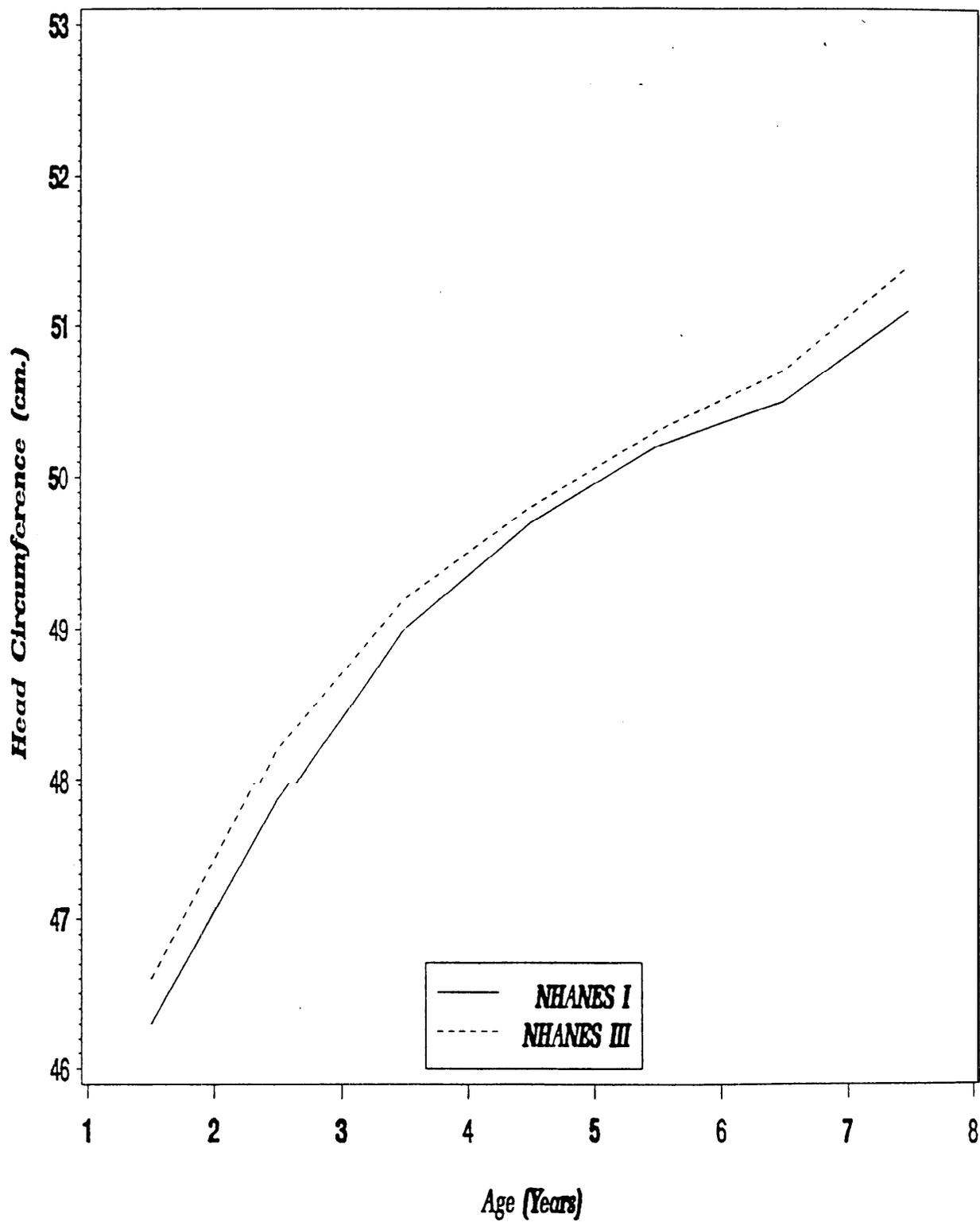


Figure A-9
Median Values by Survey for Wrist Breadth (cm.)
Boys 12 to 17

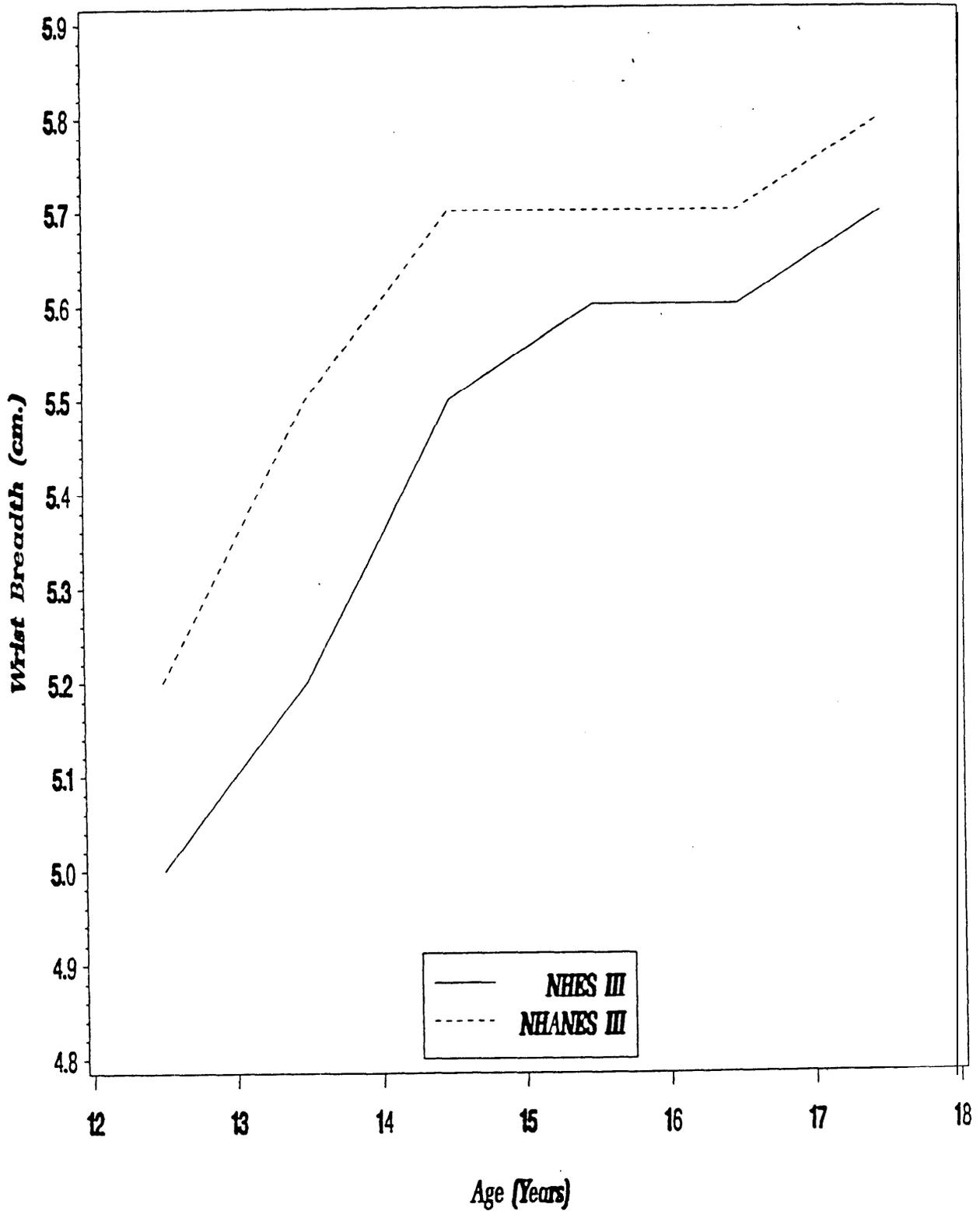


Figure A-10

Median Values by Survey for Wrist Breadth (cm.)
Girls 12 to 17

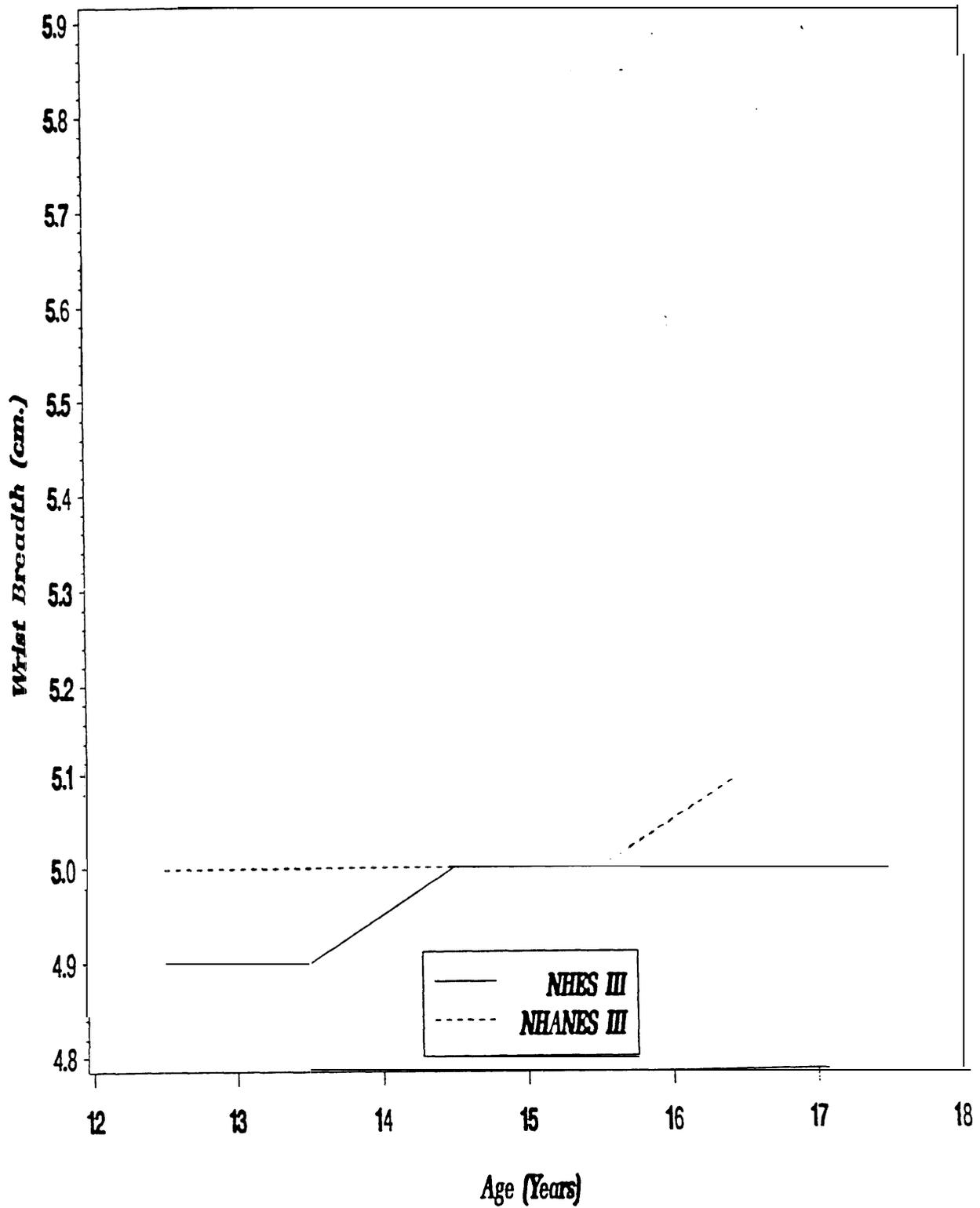


Figure A-1 1

Median Values by Survey for Biacromial Breadth (cm.)
Boys 6 to 17

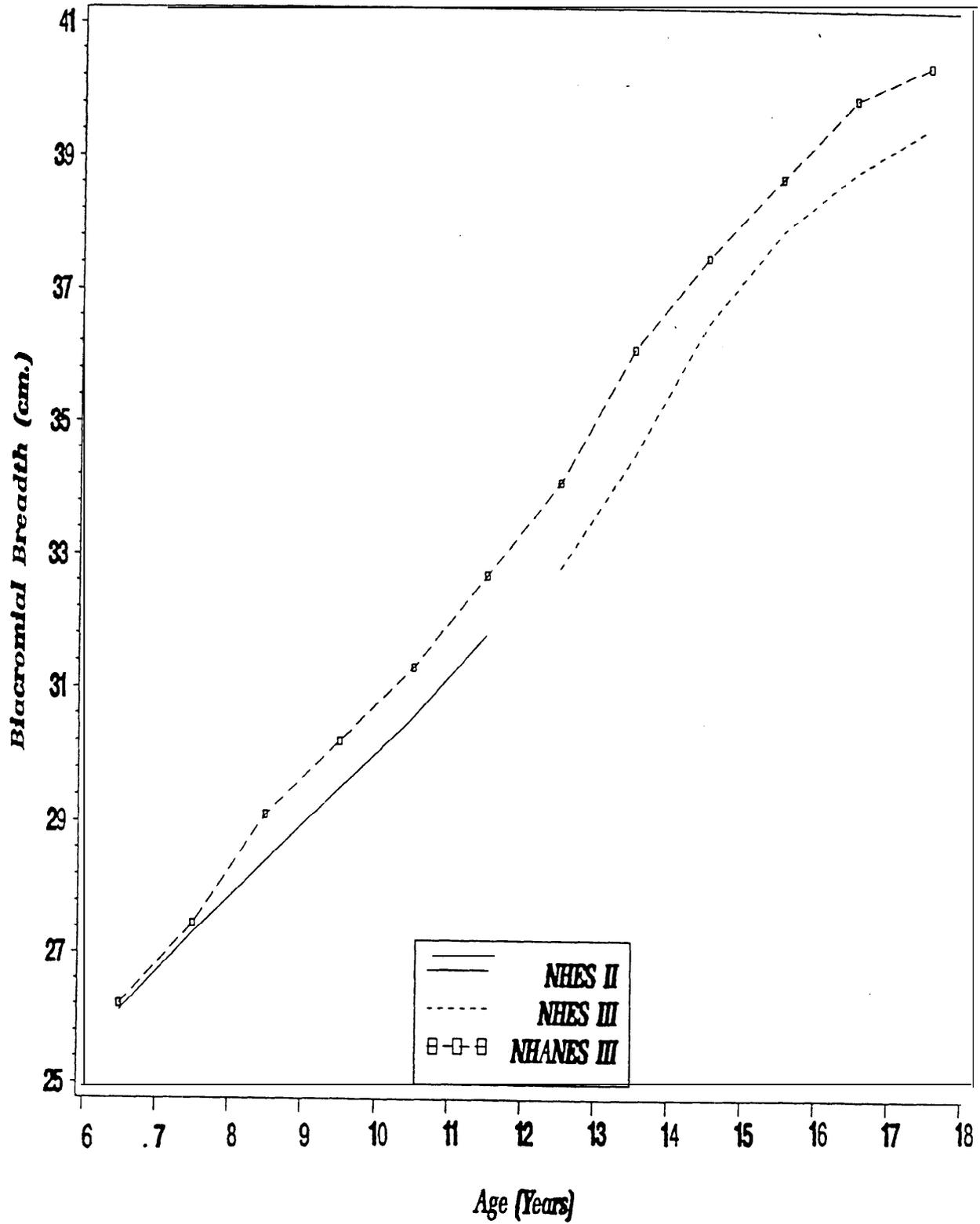
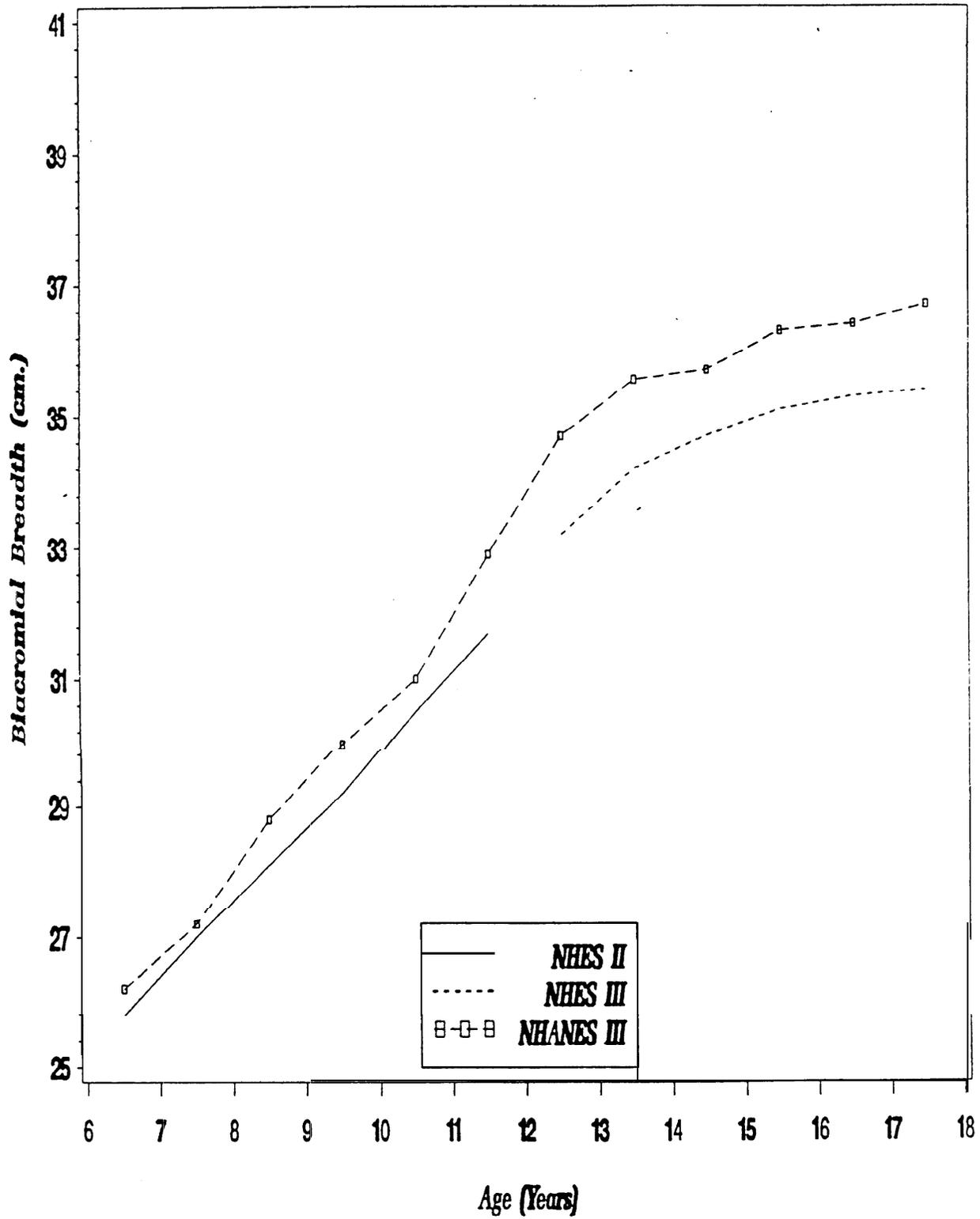


Figure A-12
Median Values by Survey for Biacromial Breadth (cm.)
Girls 6 to 17



Appendix B: Tables of **Selected** Percentiles of Measures by Survey, Age, and Gender

Table B- 1. Weight in kilograms of persons, ages 6- 11 years by gender and age with sample sizes, means, and nine **selected** percentiles: United States, 1962-65

Table B-2. Weight in kilograms of persons, ages 12-17 years by gender and age with sample sizes, means, and nine selected percentiles: United States, **1966-70**

Table B-3. Weight in kilograms of persons, ages 1-1 8 years by gender and age with **sample** sizes, means, and nine selected percentiles: United States, 1971-74

Table B-4. Weight in kilograms of persons, ages 1-1 8 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80

Table B-5. Weight in kilograms of persons, ages 1-1 8 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1988-94

Table B-6. Weight in kilograms of persons, ages 12-23 months by gender and age with sample sizes, means, and medians: United States, 197 1-74

Table B-7. Weight in kilograms-of persons, ages 6-23 months by gender and age with sample sizes, means, and medians: **United States**, 1976-80

Table B-8. Weight in kilograms of persons, ages 2-23 **months** by gender and age with sample sizes, means, and medians: United States, 1988-94

Table B-9. Height in centimeters of persons, ages 6-1 1 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1962-65

Table B-1 0. Height in centimeters of persons, ages 12-17 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1966-70

Table B-1 1. Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 197 1-74

Table B-12. Height in centimeters of persons, ages 2-1 8 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80

Table B-13. Height in centimeters of persons, ages 2-1 8 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1988-94

Table B-14. Sitting height in centimeters of persons, ages 6-1 1 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1962-65

Table B-1 5. Sitting height in centimeters of persons, ages 12-17 years by gender and age with sample sizes, **means**, and nine selected percentiles: United States, 1966-70

Table B-16. Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, **means**, and nine selected percentiles: United States, 1971-74

Table B-17. Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80

Table B-1 8. Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, **means**, and nine selected percentiles: United States, 1988-94

Table B- 19. Head circumference in centimeters of persons, ages 1-7 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1971-74

Table B-20. Head circumference in centimeters of persons, ages 1-7 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80

Table B-2 1. Head circumference in centimeters of persons, ages 1-7 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1988-94

Table B-22. Head circumference in centimeters of persons, ages 12-23 months by gender and age

with sample sizes, means, and medians: United States, 1971-74

Table B-23. Head circumference: in centimeters of persons, ages 6-23 months by gender and age with sample sizes, means, and medians: United States, 1976-80

Table B-24. Head circumference. in centimeters of persons, ages 2-23 months by gender and age with sample sizes, means, and medians: United States, 1988-94

Table B-25. Wrist breadth in centimeters of persons, ages 12-17 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1966-70

Table B-26. ^{wrist} breadth in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1988-94

Table B-27. Biacromial breadth in centimeters of persons, ages 6-11 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1962-65

Table B-28. Biacromial breadth in centimeters of persons, ages 12-17 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1966-70

Table B-29. Biacromial breadth in centimeters of persons, ages 3-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1988-94

Table B-1

Weight in kilograms of persons, ages 6-11 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1962-65

	SAMPLE I SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	I 25th	Median	75th	85th	90th	I 95th
GENDER											
Both Genders											
AGE at EXAMINATION in YEARS											
Age 6.....	1,241	21.8									
Age 7.....		24.4	20.9	22.0	16.6	21.6	23.6	25.0			27.9
Age 8.....	1,231	27.7	23.1	24.5	22.9	24.3	26.5	28.1	29.5	31.8	
Age 9.....	1,184	31.3			25.2	27.0	29.9	32.2	34.0	37.2	
Age 10.....					27.7	26.8	34.3	41.5	40.1	45.1	
Age 11.....	1,150	39.0	28.4	29.9	31.3	33.1	33.0	38.8	43.5	48.5	
								47.4	50.6	56.3	
Females											
AGE at EXAMINATION in YEARS											
Age 6.....	536							23.4			
Age 7.....	609	21.6	16.6	17.7	18.4	19.1	23.4	26.3	24.5	25.9	27.9
Age 8.....		27.6	18.8	21.6	20.2	21.3	26.8	28.4	29.7	31.5	
Age 9.....	613	31.4	22.9	24.5	22.5	23.6	29.9	32.4	34.5	38.3	
Age 10.....	584		24.7		25.2	29.0	34.0	34.7	38.1	42.0	45.6
Age 11.....	525	35.2	26.3	27.2	27.2	33.1	37.9	39.5	43.1	45.4	49.9
		39.8	28.1	29.9	31.3			44.9	49.4	52.6	58.3
Males											
AGE at EXAMINATION in YEARS											
Age 6.....	575	22.0	17.5	18.4	18.8	20.0	21.6	23.6	25.0	25.9	28.1
Age 7.....	632	24.7	19.5	20.6	21.1	22.0	24.0	26.5	28.1	29.3	31.8
Age 8.....	618	27.8	21.6	22.7	23.6	24.5	27.2	29.7	32.0	33.8	36.1
Age 9.....	603	31.2	23.1	24.5	25.4	26.8	29.7	33.8	36.5	38.8	43.3
Age 10.....	576	33.7	25.4	26.5	27.9	29.3	32.7	36.5	39.7	42.0	45.1
Age 11.....	595	38.2	28.6	29.9	31.1	32.9	36.5	41.5	46.0	48.1	53.5

Table B-2

Weight in kilograms of persons, ages 12-17 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1966-70

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION in YEARS											
Age 12.....	1,190	44.7	31.5	33.6	35.4	37.9	43.3	50.1	55.3	57.8	62.6
Age 13.....	1,208	50.2	36.1	37.4	39.2	42.4	48.5	56.5	60.8	64.0	69.9
Age 14.....	1,204	55.4	39.7	42.4	44.9	47.9	54.0	61.0	66.2	69.6	75.1
Age 15.....	1,116	59.1	43.5	46.4	48.3	51.0	57.2	65.1	70.1	73.3	82.6
Age 16.....	1,092	61.5	46.0	48.3	50.6	52.8	59.6	67.1	72.3	76.2	84.1
Age 17.....	900	62.9	46.7	49.0	51.0	54.4	61.2	69.4	74.6	77.8	86.2
Females											
AGE at EXAMINATION in YEARS											
Age 12.....	547	46.6	32.7	34.9	37.0	39.2	45.4	52.2	56.9	59.6	64.4
Age 13.....	582	50.5	36.7	38.8	39.9	43.3	49.0	56.2	60.3	63.0	67.8
Age 14.....	586	54.2	40.4	43.3	45.4	47.4	52.4	59.4	63.3	66.9	71.2
Age 15.....	503	56.5	42.0	44.7	46.3	49.0	54.9	60.8	67.4	71.2	79.4
Age 16.....	536	58.1	44.9	46.7	48.1	50.8	55.8	62.4	67.6	71.2	83.5
Age 17.....	442	57.6	44.7	46.7	48.5	50.8	55.8	61.9	65.5	69.6	76.4
Males											
AGE at EXAMINATION in YEARS											
Age 12.....	643	42.9	30.6	32.7	34.0	36.5	41.5	47.9	51.7	56.0	59.9
Age 13.....	626	50.0	34.9	36.7	38.3	41.3	48.3	56.5	61.5	64.6	71.0
Age 14.....	618	56.7	39.5	42.0	44.0	48.8	55.3	63.3	68.5	71.7	78.0
Age 15.....	613	61.6	46.7	49.0	50.8	54.2	60.3	67.1	71.9	74.8	83.2
Age 16.....	556	64.8	49.0	51.9	54.7	57.8	63.5	70.3	75.3	78.9	84.8
Age 17.....	458	68.1	52.2	55.6	57.8	60.8	66.0	73.9	78.2	82.3	90.7

Table B-3

Weight in kilograms of persons, ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles:
United States, 1971-74.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
in YEARS											
Age 1	553	11.3	9.0	9.5	9.8	10.2	11.2	12.3	12.8	13.4	14.1
Age 2	570	13.3	10.9	11.2	11.6	12.1	13.2	14.3	14.9	15.1	15.9
Age 3	600	15.3	12.6	13.0	13.5	14.0	15.3	16.4	17.2	17.6	18.5
Age 4	585	17.3	13.7	14.5	15.1	15.8	17.1	18.7	19.5	20.3	21.3
Age 5	587	19.9	15.8	16.6	17.0	17.7	19.4	21.3	22.5	23.5	26.2
Age 6	355	21.8	17.0	17.8	18.5	19.6	21.4	23.6	24.6	24.2	28.0
Age 7	333	24.6	18.9	20.3	20.9	21.9	24.3	26.5	28.2	29.5	32.1
Age 8	304	26.9	20.8	21.9	22.7	23.7	25.7	29.7	31.8	33.3	36.5
Age 9	340	31.8	23.4	24.4	25.3	26.8	31.0	34.7	39.0	40.4	43.3
Age 10	381	34.0	25.6	26.9	27.9	29.1	32.9	36.6	40.5	42.5	48.1
Age 11	344	39.9	28.5	30.1	31.6	34.0	38.0	44.1	47.4	52.7	57.3
Age 12	377	45.2	32.1	33.3	34.9	38.2	43.7	50.5	55.2	59.1	63.7
Age 13	371	50.7	36.4	38.9	40.3	43.0	49.1	56.5	60.2	64.6	74.6
Age 14	358	55.5	40.7	42.8	44.8	47.3	53.0	61.7	66.8	70.5	75.6
Age 15	342	58.5	42.9	46.5	48.8	50.4	56.9	62.9	69.2	73.8	77.9
Age 16	344	61.7	44.8	46.2	48.3	51.9	60.0	69.1	74.1	78.6	89.0
Age 17	333	64.4	46.3	50.2	52.4	55.5	62.0	70.7	77.3	81.1	91.3
Age 18	268	65.1	45.7	49.9	51.9	55.2	62.1	71.9	78.8	84.9	93.1

Table B-3 Continued

Weight in kilograms of persons, ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1971-74.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES									
			5th	10th	15th	25th	Median	75th	85th	90th	95th	
GENDER												
Females												
AGE at EXAMINATION in YEARS												
Age 1	267	10.8	8.5	9.2	9.4	9.9						
Age 2	272	13.0	10.8	11.2	11.5	11.9	12.8 10.8	11.8 14.0	12.3 14.5	14.9	15.5	
Age 3	292	15.0	12.4	12.9	13.2	13.7	14.9	16.3	17.2	17.6	18.3	
Age 4	281	16.8	13.5	14.2	14.6	15.3	16.6	17.9	18.9	20.0	21.2	
Age 5	314	19.7	15.2	16.2	16.8	17.5	18.9	20.9	22.5	23.5	26.7	
Age 6	176	21.6	17.0	17.6	18.4	19.4	21.3	23.5	24.4	25.3	27.6	
Age 7	169	24.3	19.3	20.2	20.8	21.8	23.5	26.3	27.7	29.4	31.9	
Age 8	152	27.5	20.8	21.8	22.5	23.3	31.4	35.0	33.3	34.6	39.9	
Age 9	171	32.0	23.7	24.6	25.9	26.8	32.6	36.4	38.8	41.2	44.7	
Age 10	197	33.8	25.6	26.9	27.7	29.1	35.7	39.7	40.3	43.8	47.2	
Age 11	166	41.2	28.8	29.9	32.0	34.3	39.7	46.3	50.5	55.8	60.8	
Age 12	177	46.7	32.7	33.9	36.6	43.5	45.1	51.9	57.4	61.2	66.0	
Age 13	197	51.5	38.2	39.4	40.6	46.3	48.3 51.0	56.1	60.7	66.9	75.2	
Age 14	184	54.6	40.1	42.1	44.5	48.9	54.4	60.9	66.8	70.1	75.6	
Age 15	171	56.8	43.4	46.2	47.4	48.9	54.4	60.9	65.7	69.5	77.6	
Age 16	175	56.8	43.4	45.1	45.8	47.9	54.4	62.1	67.1	71.2	78.0	
Age 17	157	59.5	42.8	45.8	48.7	52.2	56.8	62.4	69.2	74.7	81.8	
Age 18	144	58.2	44.9	46.0	48.8	51.8	57.3	62.1	63.8	68.4	79.5	

Table B-3 Continued

Weight in kilograms of persons, ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles:
United States, 1971-74.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Males											
AGE at EXAMINATION											
in YEARS											
Age 1	286	11.8	9.6	10.0	10.3	10.8	11.6	12.7	13.4		14.6
Age 2	298	13.6	11.1	11.6	11.9	12.4	13.5	14.6	15.0	13.3	16.3
Age 3	308	15.6	12.9	13.4	13.8	14.4	15.5	16.7	17.2	17.6	18.5
Age 4	304	17.7	14.1	15.3	15.5	16.1	17.6	19.1	20.1	20.5	21.3
Age 5	273	20.2	16.1	17.0	17.4	18.1	20.0	21.7	22.6	23.6	25.9
Age 6	179	22.0	17.1	18.1	18.8	19.8	21.6	23.6	24.7	26.9	28.1
Age 7	164	24.9	18.8	20.9	21.2	22.1	24.6	27.1	28.6	29.9	32.2
Age 8	152	26.4	20.6	22.5	22.9	24.2	25.6	28.6	30.6	31.2	32.9
Age 9	169	31.6	23.0	23.8	25.3	26.9	30.6	34.6	39.0	40.4	42.2
Age 10	184	34.2	25.9	27.4	28.0	29.1	33.2	37.2	40.5	42.2	50.2
Age 11	178	38.8	28.5	30.2	31.3	33.3	37.4	40.9	45.9	47.6	52.8
Age 12	200	44.0	32.0	32.9	34.5	36.7	42.4	49.1	53.9	55.3	62.6
Age 13	174	50.0	35.0	38.1	39.9	43.0	48.9	58.0	59.3	62.0	66.8
Age 14	174	56.3	41.6	44.0	45.8	48.7	54.3	62.6	66.8	71.9	75.2
Age 15	171	60.3	42.4	49.2	50.8	53.1	58.0	66.1	71.9	75.5	77.9
Age 16	169	66.9	51.3	53.6	55.0	58.6	65.8	74.1	78.6	82.1	89.9
Age 17	176	68.6	51.7	55.8	58.7	60.4	65.8	74.5	80.0	83.9	92.3
Age 18	124	74.3	56.0	60.4	61.8	63.7	71.0	79.4	88.3	94.4	100.4

Table B-4

Weight in kilograms of persons, ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles
 United States, 1976-80.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
in YEARS											
Age 1	727	11.2	8.9	9.3	9.6	10.1	11.1	12.1	12.7	13.0	13.8
Age 2	700	13.1	10.8	11.2	11.6	12.0	12.9	14.1	14.7	15.2	16.0
Age 3	788	15.2	11.9	12.7	13.2	13.8	15.1	16.3	17.1	17.5	18.6
Age 4	793	17.3	13.8	14.4	14.9	15.5	17.0	18.7	19.4	20.2	21.3
Age 5	762	19.6	15.5	16.3	16.8	17.5	19.2	21.1	22.5	23.7	25.9
Age 6	296	22.3	17.4	18.3	18.8	19.6	21.7	24.0	26.4	27.8	30.1
Age 7	304	24.8	19.2	19.7	20.6	21.7	24.2	26.5	28.2	30.3	33.9
Age 8	270	27.8	21.0	22.6	23.4	24.3	27.3	29.7	31.4	34.0	37.1
Age 9	295	31.3	23.4	25.1	25.7	26.9	29.7	32.9	36.6	40.3	45.5
Age 10	293	36.0	25.9	27.7	29.0	31.0	34.5	39.2	43.6	45.6	50.7
Age 11	296	40.6	28.4	30.2	31.5	33.5	38.1	45.4	50.9	54.3	59.9
Age 12	293	45.1	30.8	33.2	36.0	38.1	43.4	50.4	55.8	59.2	66.0
Age 13	319	49.8	35.4	37.0	38.7	41.4	48.1	56.1	60.3	64.3	71.0
Age 14	369	55.4	40.0	42.9	44.8	48.1	53.6	60.8	64.9	67.9	73.3
Age 15	327	58.1	44.1	46.4	47.9	49.6	57.3	62.6	66.3	69.4	76.5
Age 16	351	62.1	47.2	49.4	51.3	54.2	59.4	67.9	73.8	78.0	86.5
Age 17	319	63.5	48.1	50.6	51.6	54.8	62.1	69.6	73.6	79.5	85.3
Age 18	320	64.9	47.5	51.4	53.4	55.2	62.3	72.5	77.0	80.0	89.8

Table B-4 Continued

Weight in kilograms of persons, ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80.

AGE at EXAMINATION in YEARS	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Females											
Age 1	330	10.7	8.7	9.0	9.2	9.8	10.6	11.5	12.1	12.5	13.4
Age 2	367	14.8 12.8	10.6	11.0	11.5	11.9	12.6	13.7	14.4	14.7	15.5
Age 3			11.6	12.1	12.7	13.4	14.7	16.0	16.9	17.4	18.1
Age 4	388	16.8	13.7	14.2	14.4	15.1	16.4	18.4	19.2	20.0	21.1
Age 5	150	19.4	15.2	15.9	16.6	17.2	18.8	20.8	22.5	24.3	26.2
Age 6	154	21.7 21.9	17.0	17.5	18.4	19.1	21.0	23.8	26.1	27.7	29.5
Age 7			18.8	19.5	19.8	21.4	23.6	26.5	28.7	30.3	34.0
Age 8	125	27.5	21.4	22.5	23.3	24.3	27.3	29.8	31.0	32.6	36.3
Age 9	154	31.7	22.9	25.0	25.6	27.0	29.6	33.2	37.0	43.2	48.4
Age 10	128	35.7	25.7	27.3	29.0	30.3	34.4	39.5	43.6	45.5	49.3
Age 11	143	41.4	29.6	30.3	31.3	33.8	40.1	45.4	51.0	53.2	60.0
Age 12	146	46.1	31.8	34.3	36.5	38.7	45.3	51.7	58.0	60.2	64.1
Age 13	155	50.9	35.4	37.9	39.9	43.9	48.7	55.6	62.1	66.5	76.3
Age 14	181	54.3	40.0	42.9	43.7	47.0	52.8	60.1	65.7	67.4	75.2
Age 15	147	55.0	43.4	45.0	46.5	48.1	54.0	59.5	62.1	64.8	72.5
Age 16	171	57.8	44.1	47.2	48.9	51.3	55.3	62.1	67.5	73.3	77.8
Age 17	136	59.7	46.4	48.9	50.5	52.1	58.4	63.8	69.3	71.6	80.1
Age 18	164	59.1	44.2	49.6	50.7	53.1	56.5	62.9	65.8	70.1	78.0

Table B-4 Continued

Weight in kilograms of persons, ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles:
United States, 1976-80.

I	SAMPLE SIZE	Mean	SELECTED PERCENTILES									
			5th	10th	I	15th	25th	Median	75th	85th	90th	I
GENDER												
Males												
AGE at EXAMINATION												
in YEARS												
Age 1	374	11.7	9.4	9.9	10.1	10.7	11.6	12.5	13.0	13.4	14.4	
Age 2	370	13.4	11.0	11.3	11.7	12.3	13.4	14.3	14.9	15.4	16.3	
Age 3	421	15.5	12.7	13.3	13.7	14.4	15.3	16.6	17.1	17.8	18.9	
Age 4	405	17.7	14.1	14.9	15.3	16.0	17.5	18.9	19.8	20.5	23.7	
Age 5	393	19.7	16:0	16.8	17.1	17.7	19.3	21.1	22.3	23.5	24.8	
Age 6	146	22.8	18.1	19.1	19.8	20.2	22.0	24.0	26.4	28.4	30.1	
Age 7	150	24.9	19.3	20.4	21.2	22.1	24.4	26.7	27.9	30.1	33.9	
Age 8	145	28.0	20.6	22.7	23.5	24.3	27.4	29.7	32.9	35.5	38.4	
Age 9	141	30.8	24.0	25.6	25.9	26.8	29.8	32.7	34.3	38.4	42.4	
Age 10	165	36.2	27.1	27.9	29.4	31.3	34.6	39.2	43.6	46.3	53.2	
Age 11	153	39.7	26.8	28.8	31.6	33.5	36.5	45.3	50.9	54.4	59.8	
Age 12	147	44.1	30.6	32.2	35.7	37.4	42:1	48.8	52.5	57.3	67.6	
Age 13	164	48.8	34.6	36.2	37.8	39.4	47.6	56.4	59.1	63.8	69.0	
Age 14	188	56.4	39.9	43.2	46.4	49.4	55.5	62.8	64.8	68.8	73.3	
Age 15	180	61.2	46.2	49.1	50.4	54.4	60.2	65.6	68.7	72.8	80.3	
Age 16	180	66.5	52.7	54.0	55.0	58.0	63.6	71.9	78.0	81.3	91.2	
Age 17	183	66.7	50.5	53.2	54.6	58.9	65.7	72.4	76.8	82.3	88.0	
Age 18	156	71.1	54.1	56.0	59.8	61.9	70.8	76.9	80.0	83.5	93.8	

Table B-5

Weight in kilograms of persons: ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles
 United States, 1988-94.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
in YEARS											
Age 1	1,307	11.3	9.1	9.4	9.7	10.1	11.2	12.2	12.7	13.1	13.9
Age 2	1,269	13.4	10.9	11.3	11.7	12.3	13.3	14.4	15.0	15.6	16.3
Age 3	1,103	15.6	12.7	13.2	13.6	14.2	15.3	16.6	17.5	17.8	19.0
Age 4	1,086	17.8	14.0	14.8	15.3	15.9	17.4	19.0	19.8	20.7	22.2
Age 5	1,051	20.1	15.7	16.2	16.9	17.7	19.7	21.7	23.2	24.1	26.8
Age 6	555	23.0	16.7	17.9	18.6	19.6	21.5	24.8	27.1	29.7	35.3
Age 7	543	26.4	19.1	20.4	21.0	22.0	25.1	30.1	31.6	33.4	39.4
Age 8	514	30.1	21.3	22.9	23.7	24.8	28.2	33.1	35.7	40.9	46.5
Age 9	561	34.4	23.7	25.6	26.6	28.1	32.0	39.0	44.4	46.6	50.9
Age 10	555	37.6	25.9	27.9	29.0	30.7	36.1	42.0	48.7	50.2	53.9
Age 11	556	43.4	29.2	32.2	33.3	35.8	40.8	49.6	54.0	56.9	63.2
Age 12	439	49.1	34.0	35.9	37.3	41.0	47.4	56.1	60.1	63.3	72.5
Age 13	407	54.9	36.9	39.7	41.5	45.1	53.0	63.4	67.7	73.6	81.8
Age 14	407	59.6	44.4	46.2	48.5	51.3	56.2	65.5	71.1	74.3	81.6
Age 15	383	61.7	46.1	48.1	49.8	52.0	59.0	69.1	76.2	81.6	85.4
Age 16	409	65.5	48.1	50.8	52.7	54.2	62.2	71.0	77.5	80.2	93.9
Age 17	413	67.9	49.9	51.9	53.6	57.4	65.3	75.1	81.0	84.8	95.5
Age 18	369	66.3	46.9	49.2	51.7	56.3	63.3	72.8	82.3	89.1	96.6

Table B-5 Continued

Weight in of persons, ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles:
 United States, 1988-94.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Females											
AGE at EXAMINATION											
in YEARS											
Age 1	647	10.9	8.9	9.2	9.5	9.9	10.7	11.8	12.4	12.8	13.4
Age 2	624	13.2	10.8	11.2	11.4	12.0	13.1	14.2	14.9	15.4	16.3
Age 3	587	15.4	12.4	13.1	13.4	14.0	15.2	16.4	17.3	17.8	19.1
Age 4	537	17.9	14.0	14.5	15.1	15.8	17.3	19.0	20.1	20.7	24.7
Age 5	554	20.2	15.7	16.0	16.6	17.6	19.7	21.7	23.6	24.6	27.5
Age 6	272	22.6	16.4	17.7	18.5	19.3	21.0	24.3	27.5	29.6	32.8
Age 7	274	26.4	19.1	19.8	20.5	21.5	24.0	30.5	32.6	35.0	43.3
Age 8	248	29.9	21.8	22.4	23.4	24.5	28.5	33.1	35.4	37.7	44.8
Age 9	280	34.4	23.3	24.9	26.2	28.0	31.6	37.3	44.4	47.3	50.9
Age 10	258	38.0	26.8	28.0	29.1	30.4	36.0	43.6	49.2	52.0	58.2
Age 11.....	275	44.2	28.5	32.2	33.2	36.3	43.2	50.1	54.7	57.1	62.6
Age 12.....	236	49.0	34.0	34.1	36.3	41.4	46.6	56.1	60.4	63.8	72.3
Age 13.....	220	55.8	37.0	41.0	42.6	45.6	53.6	64.5	70.0	76.9	81.8
Age 14.....	220	58.5	44.4	45.6	47.4	50.2	54.1	67.3	70.6	73.5	81.5
Age 15.....	197	58.2	45.7	46.5	47.7	51.3	55.4	63.3	70.3	72.6	78.3
Age 16.....	215	61.7	46.2	49.2	50.8	52.6	56.3	67.9	73.8	80.2	85.6
Age 17.....	217	62.4	47.9	49.9	50.8	53.2	61.0	67.8	74.6	79.1	81.5
Age 18.....	193	61.5	44.1	46.9	48.0	51.1	58.1	68.0	75.8	84.2	92.5

Table B-5 Continued

Weight in kilograms of persons, ages 1 - 18 years by gender and age with sample sizes, means, and nine selected percentiles:
 United States, 1988-94.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Males											
AGE at EXAMINATION											
in YEARS											
Age 1	660	11.6	9.3	9.7	10.0	10.6	11.5	12.4	12.9	13.6	14.2
Age 2	645	13.6	11.3	11.8	12.1	12.5	13.5	14.5	15.1	15.8	16.3
Age 3	516	15.8	12.8	13.3	13.7	14.4	15.5	17.0	17.5	18.0	18.7
Age 4	549	17.7	14.4	15.1	15.4	16.0	17.4	18.9	19.7	20.6	21.8
Age 5	497	20.1	15.8	16.5	17.2	18.0	19.9	21.7	22.8	23.7	25.6
Age 6	283	23.3	17.5	18.3	18.8	19.7	21.9	24.8	27.0	29.7	36.0
Age 7	269	26.3	19.5	21.1	21.5	22.7	25.5	29.8	31.2	31.6	36.5
Age 8	266	30.2	21.3	23.2	24.0	25.1	27.9	33.2	37.2	42.3	47.4
Age 9	281	34.4	23.9	26.2	27.1	28.1	32.0	40.0	44.2	45.3	49.6
Age 10	297	37.3	25.7	27.9	28.5	31.7	36.1	41.4	48.4	49.6	51.1
Age 11	281	42.5	29.2	31.9	33.4	35.0	39.7	46.5	53.8	56.2	65.5
Age 12	203	49.1	34.5	36.0	37.9	41.0	48.1	56.0	60.1	63.2	73.0
Age 13	187	54.0	36.6	38.8	41.2	44.7	52.4	61.1	66.2	69.6	80.0
Age 14	187	60.6	43.6	47.5	50.4	53.2	59.6	65.1	71.7	76.7	81.6
Age 15	186	66.1	49.1	49.7	51.8	55.0	63.3	76.2	82.0	85.4	97.6
Age 16	194	68.8	51.8	53.9	54.7	58.6	65.9	74.2	78.4	86.5	98.1
Age 17	196	72.9	53.6	57.2	60.0	62.6	70.0	78.9	84.8	93.5	107.8
Age 18	176	71.3	55.5	56.5	57.6	60.2	67.6	77.3	87.3	91.4	100.9

Table B-6

Weight in kilograms of persons, ages 12-23 months by gender and age with sample sizes, means, and medians: United States, 1971-74 1/

	M	M	MED	N
GENDER				
Both Genders				
AGE at EXAMINATION				
in MONTHS.				
12 to 14	92	10.1	10.2	
15 to 17	141	10.8	10.8	
18 to 20	179	11.8	11.6	
21 to 23	141	12.0	12.0	
Females				
AGE at EXAMINATION				
in MONTHS.				
12 to 14	48	9.6	9.6	
15 to 17	68	10.4	10.6	
18 to 20	80	11.1	11.0	
21 to 23	71	11.8	11.8	
Males				
AGE at EXAMINATION				
in MONTHS.				
12 to 14	44	10.7	10.6	
15 to 17	73	11.2	11.2	
18 to 20	99	12.3	12.1	
21 to 23	70	12.2	12.1	

1/ NOTE: Mean and Median only are displayed because of the relatively sma sample sizes in NHANES I and NHANES II

Table B-7

Weight in kilograms of persons, ages 6-23 months by gender and age with sample sizes, means, and medians: United States, 1976-80 1/

	M	S	M	MED	N
GENDER					
Both Genders					
AGE at EXAMINATION					
in MONTHS					
6 to 8	114		8.4	8.4	8.4
9 to 11	185		9.3	9.2	9.2
12 to 14	195		10.2	10.1	10.1
15 to 17	179		11.1	10.9	10.9
18 to 20	177		11.5	11.5	11.5
21 to 23	176		12.1	12.1	12.1
emales					
AGE at EXAMINATION					
in MONTHS					
6 to 8	57		7.8	7.8	7.8
9 to 11	87		9.1	9.1	9.1
12 to 14	103		9.8	9.8	9.8
15 to 17	83		10.5	10.3	10.3
18 to 20	82		11.1	11.0	11.0
21 to 23	85		11.7	11.3	11.3
Males					
AGE at EXAMINATION					
in MONTHS					
6 to 8	57		8.9	8.9	8.9
9 to 11	98		9.5	9.5	9.5
12 to 14	92		10.6	10.7	10.7
15 to 17	96		11.6	11.2	11.2
18 to 20	95		11.9	11.9	11.9
21 to 23	91		12.6	12.5	12.5

1/ NOTE: Mean and Median only are displayed because of the relatively sma sample sizes in NHANES I and NHANES II

Table B-8

Weight in kilograms of persons, ages 2-23 months by gender and age with sample sizes, means, and medians: United States, 1988-94 2/

	SAMPLE SIZE	Mean	MEDIAN
GENDER			
Both Genders			
AGE at EXAMINATION			
in MONTHS			
2 to 5	673	6.9	6.9
6 to 8	584	8.5	8.4
9 to 11	590	9.3	9.3
12 to 14	347	10.3	10.1
15 to 17	323	10.9	10.9
18 to 20	321	11.5	11.3
21 to 23	316	12.3	12.2
Females			
AGE at EXAMINATION			
in MONTHS			
2 to 5	346	6.6	6.5
6 to 8	262	8.2	8.0
9 to 11	314	9.0	8.9
12 to 14	156	10.0	9.9
15 to 17	163	10.4	10.1
18 to 20	171	11.2	10.9
21 to 23	157	11.9	11.9
Males			
AGE at EXAMINATION			
in MONTHS			
2 to 5	327	7.2	7.2
6 to 8	322	8.8	8.7
9 to 11	276	9.6	9.6
12 to 14	191	10.5	10.5
15 to 17	160	11.4	11.4
18 to 20	150	11.9	11.6
21 to 23	159	12.5	12.3

1/ NOTE: Mean and Median only are displayed because of the relatively small sample sizes in NHANES I and NHANES I |.

2/ NOTE: Mean and Median only are displayed for NHANES III for the sake of consistency.

Table B-9

Height in centimeters of persons, ages 6-11 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1962-65

GENDER	AGE at EXAMINATION in YEARS	SAMPLE SIZE	Mean	SELECTED PERCENTILES									
				5th	10th	15th	25th	Median	75th	85th	90th	95th	
Both Genders													
Age 6	1,111	118.2	09.2	111.5	112.7	114.8	118.1	121.8	123.7	125.4	127.7	133.5
Age 7	1,241	124.0	14.7	117.0	118.2	120.3	124.0	127.6	129.8	131.2	133.5	139.3
Age 8	1,231	129.7	19.5	122.6	124.0	125.9	129.8	133.5	135.6	137.2	142.0	146.6
Age 9	1,184	135.5	24.6	127.0	128.5	131.1	135.4	140.0	142.4	144.0	149.3	152.6
Age 10	1,160	140.5	29.3	131.7	133.2	136.0	140.8	145.2	148.0	149.3	155.8	158.5
Age 11	1,120	146.4	34.6	137.5	139.5	141.9	146.4	151.1	153.7	155.8	159.4	163.1
Females													
Age 6	536	117.8	108.5	110.8	112.3	114.5	117.8	121.5	123.6	125.0	126.8	132.6
Age 7	609	123.5	113.8	116.6	117.6	119.8	123.5	127.3	129.3	130.6	132.6	138.4
Age 8	613	129.4	119.0	121.3	123.4	125.6	129.6	133.5	135.5	137.5	139.3	145.1
Age 9	581	135.5	124.6	127.0	128.5	130.9	135.3	140.1	143.0	144.8	147.2	153.0
Age 10	584	140.9	129.2	132.0	133.4	135.8	141.0	145.8	148.4	150.2	153.4	159.2
Age 11	525	147.3	135.0	138.8	140.2	142.9	147.2	152.4	155.2	157.3	159.4	165.2
Males													
Age 6	575	118.6	10.8	111.9	113.0	115.1	118.5	122.0	124.0	125.8	128.0	134.3
Age 7	632	124.5	15.5	117.8	119.1	120.8	124.4	128.0	130.3	131.8	134.3	140.8
Age 8	618	130.0	20.2	123.2	124.8	126.4	130.0	133.5	135.7	137.2	139.3	145.8
Age 9	603	135.5	24.7	127.0	128.7	131.5	135.5	140.0	142.0	143.4	145.8	152.3
Age 10	576	140.2	29.3	131.2	132.8	136.1	140.5	144.5	147.0	148.3	151.1	157.6
Age 11	595	145.5	34.3	136.9	138.9	140.9	145.7	150.1	152.3	154.2	156.7	163.2

Table B-10

Height in centimeters of persons, ages 12-17 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1966-70

GENDER	Both Genders	AGE at EXAMINATION in YEARS	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
					5th	10th	15th	25th	Median	75th	85th	90th	95th
		Age 12	1,190	153.7	140.2	142.9	145.6	148.9	154.1	158.7	161.9	163.5	166.7
		Age 13	1,208	159.3	146.0	148.8	150.7	153.9	159.2	164.8	167.9	170.0	173.1
		Age 14	1,204	164.1	151.9	154.1	156.0	158.4	163.7	169.5	172.7	174.7	177.7
		Age 15	1,116	166.9	153.1	155.5	157.5	160.9	167.0	173.0	175.6	177.4	180.8
		Age 16	1,092	168.6	153.9	157.0	159.3	162.2	168.1	174.8	178.4	179.7	183.2
		Age 17	900	169.3	154.9	156.9	159.1	162.5	168.9	176.3	179.4	181.4	184.4
		Age 12	547	155.2	141.9	145.6	148.4	151.1	155.2	160.0	162.8	164.0	167.3
		Age 13	582	158.8	146.8	149.6	151.4	154.3	158.9	163.4	166.2	167.5	170.0
		Age 14	586	161.4	151.1	153.6	155.5	157.3	161.2	165.5	167.6	169.3	171.3
		Age 15	503	162.2	151.2	153.2	154.6	157.5	162.6	167.1	169.5	170.6	173.2
		Age 16	536	162.7	151.7	154.0	155.9	158.5	163.0	166.5	168.7	170.9	173.2
		Age 17	442	162.9	152.1	154.9	155.8	158.3	163.0	167.3	169.2	171.2	173.0
		Age 12	643	152.3	138.6	141.6	143.6	146.8	152.4	157.3	160.2	162.6	165.5
		Age 13	626	159.8	145.3	148.3	150.1	153.6	159.5	166.0	169.9	172.5	174.7
		Age 14	618	166.7	152.2	154.9	157.3	160.4	167.8	173.1	175.3	177.1	179.9
		Age 15	613	171.4	158.5	161.9	164.1	166.8	172.1	176.0	178.4	180.2	183.0
		Age 16	556	174.3	162.8	165.5	167.1	170.3	174.3	178.8	181.2	183.1	185.3
		Age 17	458	175.6	162.7	166.9	168.5	170.8	175.8	180.2	182.8	184.4	187.4

Table B-11

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles:
United States, 1971-74

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
in YEARS											
Age 2	570	90.6	83.1	85.4	86.0	87.6	90.4	93.6	94.9	96.5	97.8
Age 3	600	98.1	91.6	92.9	94.0	95.4	97.7	100.9	102.6	103.7	105.2
Age 4	585	105.2	97.4	98.7	99.8	101.9	105.1	108.2	110.3	112.0	114.0
Age 5	587	112.5	104.5	106.4	107.1	108.9	112.3	115.6	117.9	118.8	120.8
Age 6	355	118.2	109.0	110.6	112.2	114.5	118.0	121.8	124.2	125.0	127.5
Age 7	333	124.8	116.2	118.5	119.2	120.6	124.5	128.6	130.6	132.7	134.1
Age 8	304	129.1	120.1	122.4	123.4	125.3	129.1	133.3	135.0	136.3	137.9
Age 9	340	135.5	125.2	127.8	129.4	131.0	135.3	139.6	141.7	143.5	146.5
Age 10	381	140.1	129.4	131.8	132.7	135.6	140.0	143.9	147.0	148.4	152.1
Age 11	344	147.2	135.0	138.1	139.8	141.9	146.7	152.4	154.7	156.5	158.8
Age 12	377	153.6	141.0	143.5	145.6	148.5	153.4	159.1	161.7	163.7	165.8
Age 13	372	159.1	147.2	150.7	152.3	154.2	159.0	163.8	165.7	167.7	171.6
Age 14	358	163.7	151.5	153.4	155.5	158.5	163.6	169.1	171.8	174.2	177.9
Age 15	342	167.2	154.2	157.1	158.1	161.5	167.0	173.1	175.8	177.6	180.8
Age 16	344	168.2	154.4	156.9	158.3	160.4	167.6	175.2	178.7	181.2	183.8
Age 17	333	170.0	154.4	157.2	159.0	161.7	170.1	177.7	181.7	183.1	185.6
Age 18	268	169.8	157.6	158.9	161.3	164.3	169.4	174.0	178.8	180.5	185.9

Table B-11 Continued

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles:

GENDER	SAMPLE SIZE	Mean	SELECTED PERCENTILES																	
			5th	10th	15th	25th	Median	75th	85th	90th	95th									
Females																				
AGE at EXAMINATION																				
AGE in YEARS																				
Age 2	272	90.1	82.9	84.6	85.5	86.4	90.0	93.5	94.8	96.3	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5
Age 3	292	97.7	91.5	92.8	93.8	95.2	97.3	100.1	101.9	103.0	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1
Age 4	281	104.2	96.0	97.5	98.8	100.7	104.1	106.8	109.2	110.3	106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8
Age 5	314	112.2	103.8	106.5	107.0	108.6	111.7	115.3	117.2	119.2	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3
Age 6	176	118.2	110.3	111.9	112.5	114.1	118.3	121.7	124.2	124.9	121.7	121.7	121.7	121.7	121.7	121.7	121.7	121.7	121.7	121.7
Age 7	169	124.6	116.7	118.5	118.8	120.3	123.7	128.7	130.7	132.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7	128.7
Age 8	152	129.2	119.0	122.1	123.1	124.4	129.2	133.6	135.5	137.4	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6
Age 9	171	135.9	126.2	128.4	129.5	130.7	135.4	140.1	142.5	144.9	140.1	140.1	140.1	140.1	140.1	140.1	140.1	140.1	140.1	140.1
Age 10	197	140.1	129.4	130.2	132.2	135.2	140.7	143.9	147.0	150.0	143.9	143.9	143.9	143.9	143.9	143.9	143.9	143.9	143.9	143.9
Age 11	166	148.2	135.0	138.1	139.5	142.3	148.3	153.9	156.8	158.4	153.9	153.9	153.9	153.9	153.9	153.9	153.9	153.9	153.9	153.9
Age 12	177	154.6	143.0	146.0	147.9	150.3	154.5	159.0	161.2	164.0	159.0	159.0	159.0	159.0	159.0	159.0	159.0	159.0	159.0	159.0
Age 13	198	158.9	149.8	151.4	153.4	155.2	159.0	162.8	164.9	165.6	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
Age 14	184	160.8	151.0	153.0	153.8	156.2	161.1	165.1	167.6	169.4	165.1	165.1	165.1	165.1	165.1	165.1	165.1	165.1	165.1	165.1
Age 15	171	163.7	152.9	155.4	157.3	158.8	163.3	167.6	169.7	172.8	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6
Age 16	175	161.8	151.3	154.4	156.2	157.2	161.2	166.2	168.5	171.5	166.2	166.2	166.2	166.2	166.2	166.2	166.2	166.2	166.2	166.2
Age 17	157	162.0	150.9	154.4	155.9	158.2	161.4	166.8	168.7	171.3	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8
Age 18	144	164.8	155.5	158.3	158.7	161.3	165.3	167.4	170.4	171.9	167.4	167.4	167.4	167.4	167.4	167.4	167.4	167.4	167.4	167.4

Table B-1 1 Continued

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles
United States, 1971-74

	SAMPLE SIZE	Mean	SELECTED PERCENTILES									
			5th	I	10th	15th	25th	Median	75th	I	85th	90th
GENDER												
Males												
AGE at EXAMINATION												
in YEARS												
Age 2	298	91.1	85.0		86.4	87.0	88.2	90.8	93.8	95.4	97.0	98.5
Age 3	308	98.5	92.0		93.0	94.3	95.7	98.2	101.5	103.0	104.0	106.0
Age 4	304	06.0	98.1	100.0	101.1	103.2	106.0	109.1	111.6	112.7	114.0	114.0
Age 5	273	12.8	104.7	106.3	107.5	109.3	113.2	116.2	118.0	118.8	120.7	120.7
Age 6	179	18.1	108.9	109.3	111.2	115.2	118.0	122.3	124.3	125.4	127.6	127.6
Age 7	164	25.0	115.6	118.5	119.3	121.4	125.0	128.6	130.4	131.7	133.8	133.8
Age 8	152	29.0	120.3	123.0	123.5	125.5	129.0	132.8	134.5	136.0	137.4	137.4
Age 9	169	35.2	122.9	127.1	129.4	131.5	135.3	138.8	141.1	142.8	144.7	144.7
Age 10	184	40.0	130.5	132.2	133.8	135.8	139.9	143.8	146.4	148.2	151.4	151.4
Age 11	178		135.6	138.2	140.1	141.2	145.9	151.0	153.4	154.7	156.0	156.0
Age 12	200	52.8	140.0	142.0	144.0	146.8	152.7	159.2	161.7	163.1	166.0	166.0
Age 13	174	59.3	145.3	148.6	151.9	153.4	158.6	165.6	168.9	171.6	175.4	175.4
Age 14	174	66.7	152.2	157.0	159.0	161.7	166.5	172.0	175.9	177.9	179.0	179.0
Age 15	171	170.8	156.8	161.3	162.9	166.0	171.5	175.8	177.8	181.0	184.7	184.7
Age 16	169	175.0	163.8	165.4	166.3	169.8	175.2	179.9	182.2	183.8	187.9	187.9
Age 17	176	176.9	164.7	168.6	170.0	172.8	176.6	182.0	183.6	185.2	187.3	187.3
Age 18	124	176.6	167.2	170.0	170.8	172.1	175.8	180.1	184.5	186.0	187.7	187.7

Table B-12

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles:

GENDER	AGE at EXAMINATION in YEARS	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
				5th	10th	15th	25th	Median	75th	85th	90th	95th
Both Genders	Age 2	664	90.3	83.6	85.0	86.1	87.2	90.2	93.1	94.5	95.7	97.2
	Age 3	788	97.9	90.0	91.9	93.3	94.8	97.8	101.1	103.0	103.9	105.9
	Age 4	793	104.9	97.0	98.5	99.6	101.4	104.7	108.3	110.0	111.1	113.1
	Age 5	762	111.8	103.1	105.3	106.4	108.5	111.8	115.0	117.0	118.8	120.4
	Age 6	296	118.5	109.3	111.2	112.0	114.5	118.8	122.3	124.5	125.7	127.6
	Age 7	304	124.0	114.2	116.8	117.7	120.2	124.4	127.5	129.7	131.3	134.0
	Age 8	270	129.6	119.6	122.0	123.7	125.4	129.9	133.6	135.4	137.3	140.5
	Age 9	295	134.5	124.5	127.4	128.1	130.2	134.8	138.8	140.7	142.2	145.0
	Age 10	293	141.5	130.4	132.8	133.8	137.2	141.3	146.3	148.5	150.2	152.5
	Age 11	296	146.5	134.6	136.9	139.4	141.3	146.4	151.5	153.9	155.2	159.9
	Age 12	293	153.2	139.9	143.4	145.8	147.8	152.7	158.3	160.9	162.6	165.5
	Age 13	320	158.5	145.7	149.2	150.4	153.4	158.9	163.7	165.8	168.6	170.7
	Age 14	369	163.8	151.5	154.0	155.7	158.0	163.4	168.9	172.4	174.6	178.4
	Age 15	327	167.1	155.2	157.9	159.3	161.7	166.5	173.0	175.4	177.2	179.1
	Age 16	351	168.0	154.0	157.6	159.7	162.3	168.0	173.6	177.0	178.5	182.1
	Age 17	319	169.7	156.8	159.0	161.0	163.0	169.5	175.8	178.5	182.0	184.2
	Age 18	320	169.7	154.6	157.2	159.4	162.5	169.3	177.5	180.3	182.6	185.6

Table B-12 Continued

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles:
United States, 1976-80

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Females											
AGE at EXAMINATION in YEARS											
Age 2	367	89.4	83.0	84.0	85.3	86.7	89.6	91.9	93.4	94.5	96.6
Age 3	388	197.1	89.5	90.8	92.3	94.0	97.0	100.5	102.3	103.3	104.3
Age 4			96.1	98.0	98.7	100.9	104.0	107.6	109.6	110.2	112.0
Age 5	369	111.2	102.5	104.8	105.9	107.8	111.3	114.9	116.2	118.2	119.8
Age 6	150	117.9	108.5	110.3	111.3	112.7	118.0	122.2	124.2	126.4	128.7
Age 7	154	123.4	113.3	116.5	117.3	119.3	124.0	127.9	129.6	130.9	134.5
Age 8	125	129.5	120.3	122.0	124.0	125.6	129.6	132.8	134.7	136.6	139.0
Age 9	154	134.1	124.2	126.3	127.5	128.4	134.7	138.8	140.6	141.8	146.0
Age 10	128	141.7	130.6	133.3	135.1	137.7	141.7	146.2	148.2	149.8	152.5
Age 11	143	147.4	134.6	138.7	139.6	141.6	147.6	152.1	154.7	156.1	162.7
Age 12	146	153.8	142.2	144.6	146.6	148.5	154.0	158.4	161.5	164.0	165.8
Age 13	155	158.7	149.1	150.3	152.9	155.3	158.8	162.8	164.4	165.9	168.9
Age 14	181	160.7	150.9	152.7	154.2	156.6	160.9	165.1	167.0	168.8	172.4
Age 15	147	163.2	153.8	155.2	157.3	159.3	163.0	166.5	169.7	172.4	173.4
Age 16	171	162.8	151.9	154.3	157.2	159.0	163.2	166.4	169.4	171.3	173.0
Age 17	136	163.6	153.8	156.8	158.3	159.8	163.1	166.7	169.8	171.0	175.6
Age 18	164	162.7	151.0	154.7	155.6	158.2	163.0	166.2	169.9	171.8	174.0

Table B-12 Continued

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles:

SEX	AGE IN YEARS	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
				5th	10th	15th	25th	Median	75th	85th	90th	95th
Male	2	350	91.1	84.4	85.8	86.5	88.0	91.2	94.0	95.4	96.3	97.5
"	3	421	98.7	90.5	93.5	94.5	95.8	98.3	101.7	103.4	104.8	106.7
"	4	405	105.5	97.5	99.3	100.2	102.0	105.6	108.7	110.3	111.6	113.9
"	5	393	112.3	103.9	105.6	106.9	109.1	112.3	115.3	117.8	119.4	121.0
"	6	146	119.1	110.3	112.4	113.7	115.7	119.4	122.6	124.7	125.4	126.8
"	7	150	124.5	114.6	117.6	118.2	121.0	125.2	127.4	129.7	131.4	133.3
"	8	145	129.6	118.7	122.0	123.3	125.1	130.0	134.1	136.4	138.2	142.2
"	9	141	135.0	126.0	128.1	129.4	131.1	134.8	138.7	140.7	142.3	144.5
"	10	165	141.3	130.0	132.4	133.7	136.6	141.0	146.8	149.2	150.2	152.7
"	11	153	145.5	133.0	135.9	138.0	141.0	145.3	150.8	153.5	154.7	158.9
"	12	147	152.5	138.8	142.5	144.2	147.4	151.7	157.9	160.4	161.9	164.4
"	13	165	158.3	144.2	147.5	149.6	152.5	159.1	164.8	168.4	169.3	171.4
"	14	188	166.8	153.3	155.6	158.1	161.0	166.7	172.4	175.6	178.3	179.9
"	15	180	171.2	160.9	162.0	163.4	165.9	172.0	175.7	177.6	179.1	182.7
"	16	180	173.4	162.7	164.2	166.6	169.4	173.3	177.9	180.1	182.7	186.0
"	17	183	174.8	162.9	167.0	168.1	170.6	174.7	179.5	182.7	183.6	187.3
"	18	156	177.3	166.8	169.0	170.1	172.8	177.8	181.3	184.2	185.6	189.7

Table B-13

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1988-94

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
in YEARS											
Age 2	1,153	90.3	83.4	85.0	86.2	87.5	90.2	93.2	94.7	95.8	91.3
Age 3	1,103	98.5	91.6	92.8	93.8	95.1	98.6	101.8	103.2	104.2	105.7
Age 4	1,086	105.2	97.6	99.3	100.4	102.3	105.0	108.2	110.3	111.5	113.0
Age 5	1,054	112.2	103.9	105.8	106.8	108.7	112.1	115.4	117.8	119.4	121.4
Age 6	557	118.5	108.7	110.1	111.9	114.5	118.4	122.9	125.2	126.3	128.8
Age 7	545	125.2	114.7	117.7	119.5	121.0	124.6	129.7	132.0	133.7	137.0
Age 8	516	131.2	121.3	123.8	125.2	126.6	131.2	135.3	137.2	139.3	141.1
Age 9	562	137.1	127.0	128.5	129.9	132.7	136.9	140.8	143.0	146.1	148.6
Age 10	559	142.3	130.8	134.1	135.5	138.0	142.9	146.8	150.1	151.9	153.3
Age 11	560	148.8	137.2	139.5	141.4	144.2	149.2	154.0	156.6	157.9	160.8
Age 12	446	155.5	143.3	145.8	147.5	150.1	155.1	161.3	164.5	166.0	167.8
Age 13	415	160.8	147.7	151.1	152.6	155.1	160.5	166.4	170.2	172.2	175.5
Age 14	417	165.2	151.1	154.6	156.1	160.4	165.3	170.9	173.7	175.4	179.4
Age 15	389	167.3	155.8	157.9	159.0	160.5	166.4	171.7	177.6	180.9	183.5
Age 16	418	169.4	155.3	158.0	159.6	162.3	168.9	175.9	178.9	181.9	186.0
Age 17	413	170.2	154.0	157.2	159.1	162.9	169.9	177.6	180.9	184.9	187.4
Age 18	369	170.2	154.7	156.6	159.3	163.4	169.5	176.4	180.4	183.5	189.7

Table B-13 Continued

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles:
United States, 1988-94

GENDER	SAMPL. SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
Females											
AGE at EXAMINATION											
in YEARS											
Age 2	564	89.7	82.5	84.0	85.1	86.9	89.2	92.7	94.3	95.3	96.9
Age 3	590	98.2	91.3	92.8	93.8	95.0	98.2	101.4	103.2	104.1	106.0
Age 4	535	105.1	97.2	98.3	100.2	102.2	104.9	108.4	110.3	111.5	112.5
Age 5	557	112.2	103.9	105.2	106.3	108.0	112.1	115.4	117.8	119.5	120.8
Age 6	274	117.9	109.1	110.0	111.5	114.5	118.2	122.2	124.2	125.6	127.8
Age 7	275	124.3	114.7	116.8	118.6	120.5	123.3	127.9	130.9	132.6	138.3
Age 8	247	131.1	119.3	123.4	125.3	127.4	131.2	135.5	137.5	138.7	141.2
Age 9	282	136.6	126.9	128.5	129.4	132.7	136.5	139.8	142.6	143.7	148.6
Age 10	262	142.7	132.9	134.0	135.4	137.2	142.5	147.9	150.7	151.1	154.7
Age 11	275	150.2	138.4	141.0	143.2	144.3	151.1	155.0	157.0	158.5	161.7
Age 12	239	155.5	143.3	145.8	147.3	150.7	155.5	161.0	164.0	165.3	166.2
Age 13	225	159.9	149.4	151.8	151.8	155.3	159.7	164.5	167.7	169.2	173.0
Age 14	226	161.2	150.1	151.2	154.6	156.1	161.4	166.4	169.2	170.4	172.7
Age 15	201	162.8	152.0	156.9	157.8	159.3	162.9	166.9	168.6	169.5	171.3
Age 16	221	163.1	154.1	155.3	157.4	159.0	162.7	166.3	168.6	170.6	173.4
Age 17	217	163.4	153.5	154.7	155.9	158.9	163.3	167.1	171.0	171.9	174.0
Age 18	193	163.2	151.9	154.7	154.9	158.0	163.5	167.5	170.0	172.2	174.9

Table B-13 Continued

Height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles
United States, 1988-94

GENDER	AGE at EXAMINATION IN YEARS	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
				5th	10th	15th	25th	Median	75th	85th	90th	95th
Males	Age 2	589	90.9	84.6	86.0	87.3	88.3	90.9	93.5	95.2	95.9	97.8
	Age 3	513	98.8	91.9	92.8	93.8	95.3	99.4	102.2	103.0	104.3	105.7
	Age 4	551	105.2	98.1	99.9	100.6	102.5	105.1	108.0	110.0	111.3	113.3
	Age 5	497	112.3	104.2	106.3	107.4	108.8	112.3	115.3	117.9	119.3	121.4
	Age 6	283	118.9	108.2	111.4	111.9	114.6	118.9	123.2	125.4	126.9	129.4
	Age 7	270	126.0	115.0	118.1	120.2	121.3	126.1	131.0	133.6	134.8	135.6
	Age 8	269	131.3	122.4	123.8	125.2	126.5	131.3	135.3	137.1	139.7	140.7
	Age 9	280	137.7	127.5	129.6	131.0	133.2	137.5	142.0	146.1	147.1	149.0
	Age 10	297	142.0	130.0	134.4	135.5	138.1	143.0	146.4	149.0	152.2	153.0
	Age 11	285	147.4	136.9	138.7	140.0	143.6	147.2	151.4	154.8	157.6	160.2
	Age 12	207	155.5	143.3	145.2	147.9	150.1	154.5	162.4	165.6	166.2	168.3
	Age 13	190	161.6	146.5	151.2	152.6	155.7	161.9	168.3	170.9	173.4	175.6
	Age 14	191	169.0	156.2	160.7	162.5	164.7	168.9	174.3	176.3	179.0	181.2
	Age 15	188	172.8	158.8	161.0	164.5	167.7	172.3	179.8	182.2	183.5	184.4
	Age 16	197	175.0	161.9	163.8	167.3	170.4	175.3	179.7	184.0	186.0	187.0
	Age 17	196	176.5	162.9	166.6	168.3	172.7	176.9	182.4	187.0	187.4	188.2
	Age 18	176	177.3	166.4	167.9	168.4	172.4	176.0	182.4	186.1	189.7	193.8

, Table B-14

Sitting height in centimeters of persons, ages 6-11 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1962-65

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION in YEARS											
Age 6	1,111	64.3	59.6	60.6	61.3	62.4	64.4	66.2	67.3	68.1	69.1
Age 7	1,241	66.6	61.8	62.9	63.7	64.6	66.6	68.5	69.7	70.4	71.5
Age 8	1,231	68.9	63.8	65.0	65.7	66.9	69.0	71.0	72.0	72.6	73.6
Age 9	1,184	71.1	65.7	66.9	67.7	68.9	71.1	73.4	74.6	75.3	76.5
Age 10	1,160	73.1	67.7	68.9	69.7	70.9	73.2	75.3	76.6	77.4	78.6
Age 11	1,120	75.7	69.8	71.5	72.1	73.4	75.6	78.0	79.2	80.2	81.9
Females											
AGE at EXAMINATION in YEARS											
Age 6	536	63.9	58.8	60.1	60.9	62.0	64.0	65.9	67.1	67.9	68.8
Age 7	609	66.2	61.2	62.3	63.0	64.1	66.3	68.2	69.4	70.2	71.2
Age 8	613	68.5	63.1	64.5	65.2	66.4	68.6	70.7	71.7	72.3	73.1
Age 9	581	71.0	65.5	66.8	67.7	68.7	70.8	73.2	74.5	75.3	76.3
Age 10	584	73.3	67.8	68.9	69.7	70.8	73.3	75.5	76.7	77.7	79.1
Age 11	525	76.2	69.5	71.6	72.3	73.7	76.0	78.6	80.1	81.2	83.1
Males											
AGE at EXAMINATION in YEARS											
Age 6	575	64.7	60.2	61.0	61.8	62.9	64.8	66.6	67.5	68.3	69.4
Age 7	632	67.0	62.6	63.6	64.2	65.1	67.0	68.8	69.9	70.6	71.7
Age 8	618	69.2	64.4	65.6	66.2	67.3	69.2	71.2	72.4	73.1	74.0
Age 9	603	71.3	65.9	66.9	67.6	69.1	71.4	73.6	74.8	75.5	76.5
Age 10	576	73.0	67.4	69.0	69.8	71.1	73.1	75.1	76.3	77.1	78.4
Age 11	595	75.3	69.9	71.2	71.9	73.1	75.1	77.5	78.5	79.3	80.4

Table B-15

Sitting height in centimeters of persons, ages 12-17 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1966-70

	SAMPLE SIZE	Mean	SELECTED PERCENTILES									
			5th	10th	15th	25th	Median	75th	85th	90th	95th	
GENDER												
Both Genders												
AGE at EXAMINATION												
in YEARS												
Age 12.....				73.7					82.0	83.5	84.8	86.2
Age 13.....	1,206	82.2	74.8	76.5	74.5	78.1	82.2	82.2	85.2	86.7	87.7	89.4
Age 14.....	1,204	84.9	77.7	79.2	80.3	82.2			87.7	89.3	90.4	91.9
Age 15.....	1,116	86.7					84.9		89.4	91.1		93.6
Age 16.....	1,092	87.9	79.7	81.4 82.5	82.3 83.4	83.8 84.9	87.8		90.8	92.5	92.2 93.6	95.2
Age 17.....	900	88.5	81.6	83.0	84.1	85.6	88.4		91.6	93.1	94.1	95.4
Females												
AGE at EXAMINATION												
in YEARS												
Age 12.....		80.5		75.2	76.5	77.8						
Age 13.....	547	82.7	74.0	77.7	78.6	80.3	80.7	83.1	84.6	85.5	86.9	
Age 14.....	582		76.2				82.9	85.4	86.4	87.2	88.6	
Age 15.....	586	84.4	78.8	80.7	81.1	82.6	84.5	86.5	87.7	88.5	89.7	
Age 16.....	503	85.1	78.9	81.6	81.6	83.6	85.2	87.5	88.6	89.4	90.7	
Age 17.....	536	85.7	80.1		82.5		85.8	87.8	89.1	90.0	90.9	
Age 17.....	442	86.0	80.4	81.7	82.7	83.9	86.3	88.3	89.3	90.1	90.7	
Males												
AGE at EXAMINATION												
in YEARS												
Age 12.....					73.5	75.0			80.4	81.9	83.4	84.8
Age 13.....	618	81.7	74.0	72.7	76.6	78.3	81.5	84.9	87.1	88.3	90.5	
Age 14.....	613	88.2	80.7	75.856	79.80	81.85	88.6	88.9	90.7	91.4	93.1	
Age 15.....										93.3	94.8	
Age 16.....	556	90.0			86.2		90.3	92.8	92.5	95.0	96.3	
Age 17.....	458	91.0	82.6 84.2	84.8 86.0	87.1	87.8 88.7	91.3	93.4	94.7	95.3	96.9	

Table B-16

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1971-74

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
in YEARS											
Age 2	249	53.3	49.5	50.0	50.8	51.6	53.3	54.8	55.6	56.1	57.3
Age 3	600	56.3	52.0	53.1	53.9	54.6	56.3	57.8	58.7	59.2	60.3
Age 4	585	59.1	54.5	55.7	56.1	57.3	59.1	60.9	62.1	62.9	63.8
Age 5	587	62.1	57.5	58.8	59.4	60.1	62.1	63.8	64.9	65.7	66.7
Age 6	355	64.1	59.0	60.6	61.1	61.8	64.0	66.3	67.3	68.0	69.1
Age 7	333	67.1	62.1	63.2	63.9	65.0	67.0	69.3	70.4	71.4	72.1
Age 8	304	68.7	64.1	64.7	65.8	66.7	68.7	70.8	72.0	72.6	73.5
Age 9	340	71.5	66.0	67.1	68.2	69.3	71.3	73.7	74.9	75.7	77.1
Age 10	381	73.3	67.7	69.0	70.0	71.1	73.3	75.4	76.7	77.3	79.0
Age 11	344	76.2	70.0	71.7	72.5	73.6	76.1	78.7	80.2	81.1	82.6
Age 12	377	79.2	72.7	73.6	74.5	76.3	79.3	82.2	83.7	84.4	86.2
Age 13	372	82.3	75.3	77.2	78.1	79.4	82.4	85.1	86.4	87.3	89.0
Age 14	358	84.7	78.5	80.0	81.0	82.3	84.8	87.5	88.6	89.5	90.6
Age 15	342	86.6	79.4	81.5	82.9	83.8	86.4	89.4	91.0	92.3	94.3
Age 16	344	87.8	80.8	82.0	83.1	84.7	87.7	91.0	93.1	94.2	95.0
Age 17	333	88.8	81.3	83.0	84.6	85.8	88.5	92.2	93.8	94.7	95.9
Age 18	268	88.7	82.6	83.3	84.6	85.7	89.1	91.7	93.1	93.9	95.7

Table B-16 Continued

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1971-74

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Females											
AGE at EXAMINATION in YEARS											
Age 2	110	52.7	49.2	49.6	50.0	50.9	52.8	54.2	54.8	56.1	57.2
Age 3	292	55.7	51.8	52.7	53.5	54.3	55.6	57.3	58.3	58.7	59.6
Age 4	281	58.2	54.2	54.9	55.7	56.5	58.3	59.7	60.7	61.4	63.0
Age 5	314	61.8	57.0	58.3	59.0	60.0	61.7	63.3	64.3	65.4	66.9
Age 6	176	63.8	59.4	60.8	61.1	61.5	63.6	66.0	66.8	67.4	68.0
Age 7	169	66.8	62.2	63.1	63.7	64.7	66.6	69.0	70.3	71.3	72.0
Age 8	152	68.6	63.1	64.5	64.7	66.5	68.2	70.7	72.0	72.6	73.9
Age 9	171	71.5	66.3	67.2	68.4	69.0	71.4	73.6	74.9	75.7	77.1
Age 10	197	73.0	66.4	68.8	69.3	70.6	72.6	75.2	76.1	77.5	80.9
Age 11	166	76.8	69.8	71.6	72.4	73.7	76.5	80.0	81.1	82.4	83.9
Age 12	177	80.0	71.9	74.5	76.3	77.2	80.5	82.9	83.9	84.7	86.2
Age 13	198	82.7	77.4	78.1	78.7	80.3	83.0	85.0	86.3	87.0	87.7
Age 14	184	84.1	78.5	79.8	80.5	82.0	84.0	86.7	87.7	88.0	88.8
Age 15	171	85.6	79.7	82.0	82.9	83.5	85.3	87.5	89.0	90.0	91.5
Age 16	175	85.4	80.3	81.1	82.3	83.3	85.6	87.8	88.7	89.4	90.8
Age 17	157	85.8	79.6	81.2		83.7	86.2	88.1	88.8	89.0	91.4
Age 18	144	86.7	82.1	82.8	83.0	84.7	87.0	89.1	89.9	90.9	92.0

Table B-16 Continued

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1971-74

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Males											
AGE at EXAMINATION in YEARS											
Age 2	139	53.7	49.8	51.1	51.6	52.1	53.6	55.2	55.7	56.5	57.4
Age 3	308	56.7	52.4	53.9	54.3	56.8	58.3	59.9	61.6	62.8	63.3
Age 4	304	59.9	55.2	56.3	57.0	58.8	59.9	61.6	62.8	63.3	64.6
Age 5	273	62.4	58.1	59.1	59.6	60.3	62.6	64.5	65.1	65.9	66.6
Age 6	179	64.4	58.7	59.9	61.3	62.5	64.3	66.5	68.1	68.9	69.6
Age 7	164	67.3	62.1	63.4	64.0	65.3	67.7	69.4	70.5	71.4	72.6
Age 8	152	68.9	64.3	66.8	66.2	67.5	68.7	70.9	72.1	72.5	73.0
Age 9	169	71.6	65.9	69.1	67.0	69.6	71.3	73.8	74.9	75.7	77.4
Age 10	184	73.5	67.8	71.6	71.6	71.6	73.7	75.7	76.7	77.0	78.5
Age 11	178	75.7	70.1	71.8	72.5	73.5	75.3	78.0	79.1	79.8	80.9
Age 12	200	78.6	72.9	75.6	74.1	75.4	78.2	81.4	82.5	84.3	86.2
Age 13	174	81.8	73.9	80.3	76.3	78.6	81.3	85.2	86.5	88.3	90.8
Age 14	174	85.4	77.5	81.3	81.3	82.7	85.9	88.5	89.6	90.4	91.6
Age 15	171	87.7	78.6	80.8	82.7	84.9	88.0	90.6	94.8	94.1	95.1
Age 16	169	90.3	81.6	85.1	86.1	87.7	90.6	93.4	95.1	95.1	96.9
Age 17	176	91.5	85.5	89.0	89.0	91.8	94.2	95.6	95.6	97.9	97.9
Age 18	124	91.4	85.1	88.3	88.3	89.5	91.9	93.8	95.3	95.7	96.7

, Table B-17

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
in YEARS											
Age 2	664	53.3	49.0	50.0	51.0	52.0	53.0	55.0	56.0	57.0	57.0
Age 3	788	56.2	51.0	53.0	53.0	54.0	56.0	58.0	59.0	60.0	60.0
Age 4	793	59.2	55.0	56.0	56.0	57.0	59.0	61.0	62.0	63.0	64.0
Age 5	762	61.9	57.0	58.0	59.0	60.0	62.0	64.0	65.0	65.0	67.0
Age 6	296	64.7	60.0	61.0	62.0	63.0	65.0	67.0	68.0	69.0	69.0
Age 7	304	66.9	62.0	63.0	64.0	65.0	67.0	69.0	70.0	71.0	71.0
Age 8	270	69.2	64.0	66.0	66.0	67.0	69.0	71.0	72.0	73.0	74.0
Age 9	295	70.9	66.0	67.0	68.0	69.0	71.0	73.0	74.0	75.0	77.0
Age 10	293	73.9	69.0	69.0	70.0	72.0	74.0	76.0	78.0	78.1	80.1
Age 11	296	76.2	70.0	71.0	72.0	74.0	76.0	79.0	80.0	81.3	83.0
Age 12	293	79.4	72.1	74.0	75.0	76.0	79.8	82.0	84.5	85.3	86.2
Age 13	320	82.1	75.0	76.0	77.0	79.0	82.3	85.5	87.0	88.2	89.7
Age 14	369	85.0	77.0	79.0	80.0	82.0	85.5	88.4	90.0	91.1	92.0
Age 15	327	87.2	80.6	82.0	83.0	84.8	86.9	89.8	91.5	92.5	93.8
Age 16	351	88.0	81.6	83.0	84.1	85.5	87.9	91.3	92.2	93.5	95.1
Age 17	319	89.1	81.6	83.6	84.4	85.8	89.2	92.4	93.6	94.7	96.3
Age 18	320	89.3	82.2	83.4	84.5	86.2	88.9	92.7	94.0	95.5	97.5

Table B-17 Continued

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Females											
AGE at EXAMINATION											
in YEARS											
Age 2	314	52.5	49.0	50.0	50.0	51.0	53.0	54.0	55.0	56.0	56.0
Age 3	367	55.6	51.0	52.0	53.0	54.0	56.0	57.0	58.0	59.0	60.0
Age 4	388	58.6	54.0	55.0	56.0	57.0	59.0	60.0	61.0	62.0	63.0
Age 5	369	61.5	57.0	58.0	59.0	60.0	61.0	63.0	64.0	65.0	66.0
Age 6	150	64.2	60.0	60.0	61.0	62.0	64.0	66.0	67.0	68.0	70.0
Age 7	154	66.5	62.0	62.0	63.0	65.0	66.0	69.0	70.0	70.0	72.0
Age 8	125	69.0	64.0	66.0	66.0	67.0	69.0	71.0	71.0	72.0	74.0
Age 9	154	70.7	65.0	66.0	67.0	68.0	71.0	73.0	74.0	76.0	77.3
Age 10	128	73.8	68.0	70.0	70.0	71.0	74.0	76.0	77.5	78.1	81.0
Age 11	143	76.8	70.0	72.0	73.0	74.0	77.0	79.0	81.0	82.0	84.3
Age 12	146	80.3	73.0	75.0	75.0	77.0	80.7	83.5	85.0	85.8	86.7
Age 13	155	82.6	76.0	78.0	78.4	80.0	82.8	85.5	86.3	87.1	89.7
Age 14	181	84.5	78.0	79.0	80.2	81.8	85.0	87.4	88.6	89.4	90.6
Age 15	147	85.9	80.0	81.0	82.1	84.0	86.4	87.9	89.5	90.4	91.7
Age 16	171	86.1	80.1	81.8	82.6	84.2	86.2	88.1	88.9	90.3	91.5
Age 17	136	86.6	80.5	82.0	82.8	84.2	86.2	88.7	90.6	92.0	93.1
Age 18	164	86.6	80.2	82.2	83.1	84.4	86.7	88.8	90.0	90.5	92.8

Table B-17 Continued

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Males											
AGE at EXAMINATION in YEARS											
Age 2	350	54.0	50.0	51.0	51.0	52.0	54.0	56.0	57.0	57.0	57.0
Age 3	421	56.9	52.0	54.0	54.0	55.0	57.0	59.0	60.0	60.0	61.0
Age 4	405	59.8	55.0	56.0	57.0	58.0	60.0	62.0	63.0	63.0	64.0
Age 5	393	62.3	58.0	59.0	59.0	60.0	63.0	64.0	65.0	66.0	67.0
Age 6	146	65.1	60.0	62.0	63.0	64.0	65.0	67.0	68.0	69.0	69.0
Age 7	150	67.2	62.0	64.0	64.0	65.0	67.0	69.0	70.0	71.0	71.0
Age 8	145	69.4	64.0	65.0	66.0	68.0	69.0	72.0	73.0	74.0	75.0
Age 9	141	71.1	66.0	67.0	68.0	69.0	71.0	73.0	74.0	75.0	76.0
Age 10	165	74.0	69.0	69.0	70.0	72.0	74.0	76.0	78.0	78.6	80.0
Age 11	153	75.6	69.0	70.0	72.0	73.0	76.0	78.0	79.4	81.0	82.4
Age 12	147	78.6	72.0	73.0	74.0	76.0	78.0	81.1	82.5	84.7	85.9
Age 13	165	81.6	74.0	75.0	75.3	77.0	82.0	85.4	88.0	88.8	89.7
Age 14	188	85.6	76.0	78.4	80.0	82.7	86.0	89.5	91.4	91.8	93.0
Age 15	180	88.5	81.2	83.6	84.4	85.7	88.5	91.5	92.8	93.7	95.6
Age 16	180	90.0	84.1	85.4	86.2	87.8	90.5	92.5	94.0	95.1	95.9
Age 17	183	91.2	84.4	86.0	87.7	89.1	91.5	93.7	95.3	96.0	96.7
Age 18	156	92.3	86.4	87.1	88.1	89.4	92.4	94.6	96.4	97.5	98.0

Table B-18

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes; means, and nine selected percentiles: United States, 1988-94

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
In YEARS											
Age 3	1,129	51.7	47.7	48.7	49.3	50.4	51.7	53.2	54.2	54.9	55.8
Age 4	1,092	54.5	50.5	51.1	51.9	52.8	54.6	56.2	57.0	57.8	58.8
Age 5	1,081	57.3	52.8	54.0	54.5	55.5	57.4	59.1	60.3	60.8	62.1
Age 6	1,053	60.4	55.4	56.2	57.2	58.5	60.4	62.6	63.4	64.2	65.3
Age 7	554	63.0	57.7	58.6	59.8	61.0	62.9	65.1	66.3	67.0	69.1
Age 8	545	65.8	61.1	61.7	62.4	63.4	65.5	68.1	69.7	70.2	71.5
Age 9	514	68.5	63.1	64.3	65.0	66.4	68.4	70.4	72.1	73.3	74.0
Age 10	555	70.9	65.7	66.8	67.4	68.4	70.6	73.2	74.4	75.3	77.1
Age 11	555	73.4	66.8	69.0	69.9	70.8	73.3	75.8	77.7	78.3	79.1
Age 12	557	76.5	70.0	71.5	72.1	73.6	76.4	79.6	81.0	81.6	83.2
Age 13	440	79.7	72.5	74.5	75.1	76.6	79.7	82.8	84.3	85.4	86.5
Age 14	405	82.7	75.3	76.6	77.9	79.2	82.6	85.6	87.6	88.7	90.7
Age 15	407	85.7	78.0	80.4	81.2	82.7	86.1	88.1	90.3	91.0	92.5
Age 16	407	88.0	81.2	81.9	82.9	85.0	86.5	90.9	92.7	93.1	94.3
Age 17	363	88.9	79.4	82.8	83.6	85.3	88.1	92.1	94.1	94.9	96.6
Age 18		88.6	83.0	83.6	83.6	85.0	88.8	91.9	94.2	95.4	97.2
Age 18			81.9	82.7	84.9	88.8	91.9	94.2	95.5	96.8	96.8

Table B-18 Continued

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1988-94

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	I Median	75th	85th	90th	95th
GENDER											
Females											
AGE at EXAMINATION in YEARS											
Age 2	548	51.3	47.4	48.1	48.8	49.8	51.4	52.8	53.8	54.7	55.6
Age 3	584	54.4	50.5	51.0	51.9	52.5	54.5	56.1	56.9	57.6	58.4
Age 4	530	57.3	52.7	53.9	54.3	55.2	57.3	59.0	60.3	61.2	62.6
Age 5	556	60.2	55.1	56.0	56.8	58.2	60.0	62.3	63.4	64.3	65.1
Age 6	272	62.6	58.0	58.6	59.8	60.5	62.8	64.4	66.0	66.6	67.6
Age 7	275	65.6	61.1	61.9	62.6	63.3	65.4	67.9	68.9	69.8	71.5
Age 8	245	68.3	62.2	64.0	65.3	66.2	68.4	70.2	70.7	72.6	74.2
Age 9	278	70.7	65.6	66.6	67.1	68.2	70.4	72.8	74.4	75.3	77.0
Age 10	261	73.6	67.2	69.0	69.8	70.8	73.7	76.2	78.1	78.4	79.1
A38 11	275	77.4	70.3	72.0	73.0	74.1	77.8	80.5	81.6	82.4	83.3
Age 12	237	80.4	72.8	75.6	75.9	76.8	80.2	83.4	85.3	86.3	87.9
Age 13	219	83.1	76.7	77.3	78.2	79.4	83.2	86.2	87.2	88.4	90.7
Age 14	218	84.3	77.9	80.0	80.5	81.4	84.8	87.1	88.0	88.8	89.9
Age 15	196	85.5	79.4	81.3	82.4	83.3	85.2	87.1	89.3	89.5	91.0
A30 16	217	85.7	80.3	81.2	82.3	83.6	86.0	88.1	89.1	89.8	90.6
A38 17	215	86.0	80.8	81.9	82.7	83.5	85.7	88.6	89.8	90.8	91.7
Age 18 ;.	190	85.6	79.2	79.4	81.3	82.4	85.7	88.8	89.3	90.6	92.4

Table B-18 Continued

Sitting height in centimeters of persons, ages 2-18 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1988-94

	SAMPLE SIZE	Mean	SELECTED PERCENTILES									
			5th	10th	15th	25th	Median	75th	85th	90th	95th	
GENDER												
Males												
AGE at EXAMINATION in YEARS												
Age 2	581	52.1	48.5	49.2	49.8	50.8	52.3	53.6	54.4	55.2	55.9	
Age 3	508	54.7	50.5	51.3	51.9	53.2	54.7	56.2	57.3	57.8	59.1	
Age 4	551	57.4	53.1	54.2	54.8	55.8	57.4	59.1	60.2	60.6	61.6	
Age 5	497	60.6	55.7	56.8	57.6	58.7	60.5	62.6	63.3	63.9	65.3	
Age 6	282	63.3	57.7	58.5	60.0	61.2	63.0	65.5	66.6	67.9	69.4	
Age 7	270	66.0	60.9	61.5	62.3	63.9	65.6	68.4	70.2	70.7	71.4	
Age 8	269	68.7	63.6	64.3	64.8	66.4	68.6	70.7	72.5	73.6	74.0	
Age 9	277	71.1	66.0	66.8	67.6	68.5	71.1	73.7	74.5	75.4	77.1	
Age 10	294	73.1	66.0	69.2	70.0	70.9	73.0	75.5	76.5	78.1	79.1	
Age 11	282	75.5	69.8	71.1	71.9	73.1	75.7	77.9	79.1	79.8	81.3	
Age 12	203	79.1	72.5	74.1	74.9	76.0	78.9	82.3	84.2	85.2	85.7	
Age 13	186	82.4	73.8	76.1	76.5	79.1	82.4	85.2	87.7	89.4	91.1	
Age 14	189	86.9	78.0	81.3	82.4	84.7	86.9	90.3	91.0	92.4	94.2	
Age 15	187	88.8	82.0	83.0	84.4	86.2	89.1	91.5	93.4	94.3	96.0	
Age 16	194	90.4	83.0	85.0	85.7	86.9	90.4	93.1	95.3	96.6	98.3	
Age 17	192	91.7	85.1	86.9	87.5	88.5	91.8	94.7	96.3	97.2	98.6	
Age 18	173	91.9	86.0	87.1	88.3	89.1	91.9	94.6	96.5	96.8	98.2	

Table B-19

Head circumference in centimeters of persons, ages 1 - 7 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1971-74.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION in YEARS											
Age 1	553	47.1	44.2	44.8	45.2	46.0	47.2	48.4	49.0	49.3	49.7
Age 2	570	48.4	45.8	46.4	46.8	47.4	48.5	49.5	50.1	50.4	51.1
Age 3	600	49.5	46.5	47.3	47.7	48.5	49.6	50.6	51.2	51.6	52.0
Age 4	585	50.2	47.3	47.9	48.4	49.2	50.2	51.3	51.9	52.4	53.2
Age 5	587	50.8	47.9	48.5	49.0	49.6	50.8	52.0	52.6	53.0	53.7
Age 6	355	51.0	47.8	49.0	49.2	49.8	51.1	52.1	52.6	53.1	54.1
Age 7	333	51.7	48.4	49.5	50.0	50.6	51.7	52.9	53.3	53.7	54.3
Females											
AGE at EXAMINATION in YEARS											
Age 1	267	46.4	43.5	44.3	44.6	45.2	46.1	47.6	48.2	48.7	49.2
Age 2	272	47.8	45.7	46.2	46.5	47.0	47.8	48.9	49.3	49.6	50.0
Age 3	292	48.9	46.1	46.7	47.3	47.7	49.1	50.1	50.6	51.0	51.3
Age 4	281	49.6	46.7	47.4	47.7	48.5	49.7	50.8	51.2	51.5	52.1
Age 5	314	50.3	47.7	48.0	48.5	49.0	50.3	51.4	52.0	52.5	53.1
Age 6	176	50.4	47.0	48.3	49.0	49.5	50.5	51.5	52.1	52.8	53.3
Age 7	169	51.2	48.3	49.0	49.5	50.1	51.1	52.2	52.7	53.2	53.7
Males											
AGE at EXAMINATION in YEARS											
Age 1	286	47.9	45.0	46.2	46.5	47.0	48.0	48.9	49.4	49.7	50.1
Age 2	298	49.0	46.2	47.0	47.4	48.2	49.1	50.1	50.4	50.8	51.3
Age 3	308	50.1	47.2	48.0	48.5	49.2	50.1	51.2	51.6	51.8	52.3
Age 4	304	50.7	48.0	48.7	49.1	49.5	50.6	51.8	52.5	53.0	54.0
Age 5	273	51.4	48.6	49.4	49.6	50.2	51.4	52.5	53.0	53.3	54.0
Age 6	179	51.6	49.0	49.7	49.9	50.6	51.6	52.5	53.0	53.8	54.8
Age 7	164	52.2	49.1	50.1	50.8	51.1	52.4	53.2	53.8	54.0	54.6

Table B-20

Head circumference in centimeters of persons, ages 1 - 7 years by gender and age with sample sizes, means, and nine selected percentiles: United States, 1976-80.

	SAMPLE SIZE	Mean	SELECTED PERCENTILES								
			5th	10th	15th	25th	Median	75th	85th	90th	95th
GENDER											
Both Genders											
AGE at EXAMINATION											
in YEARS											
Age 1	717	46.8	44.0	44.5	45.1	45.7	46.8	47.9	48.4	48.9	49.5
Age 2	695	48.5	45.9	46.4	46.9	47.3	48.4	49.5	50.0	50.3	51.0
Age 3	778	49.3	46.5	47.2	47.7	48.3	49.5	50.4	50.9	51.2	51.8
Age 4	785	50.0	47.4	47.8	48.3	48.9	50.0	51.0	51.6	52.0	52.7
Age 5	750	50.4	47.8	48.5	48.9	49.3	50.3	51.5	52.1	52.4	53.1
A30 6	292	51.1	48.5	49.2	49.5	49.9	50.9	52.3	52.9	53.1	53.9
A30 7	295	51.3	48.4	49.2	49.7	50.1	51.1	52.3	53.0	53.8	54.4
Females											
AGE at EXAMINATION											
in YEARS											
A38 1	350	46.1	43.6	44.2	44.5	45.1	46.0	47.0	47.5	48.0	48.4
A38 2	327	47.9	45.5	46.1	46.3	46.9	47.8	48.6	49.0	49.4	50.0
Age 3	364	48.6	45.8	46.6	47.0	47.7	48.7	49.7	50.2	50.5	51.2
Age 4	385	49.5	47.1	47.6	47.8	48.3	49.4	50.4	51.0	51.5	51.9
Age 5	362	49.8	47.0	48.1	48.4	48.9	49.8	50.7	51.2	51.4	52.0
Age 6	148	50.6	48.4	48.7	49.1	49.6	50.3	51.6	52.3	52.6	53.4
Age 7	148	50.6	47.4	48.7	49.2	49.8	50.5	51.8	52.4	52.7	53.4
Males											
AGE at EXAMINATION											
In YEARS											
Age 1	367	47.5	45.2	45.8	46.2	46.5	47.5	48.4	49.0	49.3	49.9
Age 2	368	49.0	46.4	47.0	47.3	48.0	49.0	50.0	50.4	50.9	51.5
Age 3	414	50.0	47.6	48.1	48.5	49.1	50.0	50.8	51.3	51.7	52.2
A30 4	400	50.5	48.0	48.4	49.0	49.6	50.5	51.5	52.0	52.3	52.9
A30 5	388	51.0	48.6	49.1	49.3	49.8	51.1	52.1	52.5	52.8	53.5
Age 6	144	51.5	49.2	49.6	49.9	50.2	51.4	52.8	53.0	53.2	54.0
Age 7	147	51.9	49.3	50.0	50.1	50.8	51.6	52.9	53.8	54.1	54.7