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NCHS NATIONAL CENTER FOR HEALTH STATISTICS

Blood Pressure Levels of Persons 6-74 Years

United States, 1971-1974

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
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NATIONAL HEALTH SURVEY

Series 11
Number 203

Blood Pressure Levels of Persons 6-74 Years

United States, 1971-1974

Survey methods and findings from single readings of systolic and diastolic blood pressure of the civilian noninstitutionalized population by age, sex, race, and selected demographic and socioeconomic variables, based on data from the first Health and Nutrition Examination Survey of 1971-1974.

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Public Health Service
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DIVISION OF HEALTH EXAMINATION STATISTICS

COOPERATION OF THE U.S. BUREAU OF THE CENSUS

Under the legislation establishing the National Health Survey, the Public Health Service is authorized to use, insofar as possible, the services or facilities of other Federal, State, or private agencies.

In accordance with specifications established by the National Center for Health Statistics, the Bureau of the Census, under a contractual arrangement, participated in the design and selection of the sample and in carrying out the first stage of the field interviewing and certain parts of the statistical processing.

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SYMBOLS

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BLOOD PRESSURE LEVELS OF PERSONS 6-74 YEARS

Jean Roberts and Kurt Maurer, *Division of Health Examination Statistics*

INTRODUCTION

This report includes estimates of the blood pressure levels of the U.S. population age 6-74 years based on findings from the first Health and Nutrition Examination Survey among a national probability sample examined in 1971-1974. The data from the single systolic and diastolic readings are analyzed by age, sex, race, ancestry, geographic region, population density, income, and education. National estimates of the prevalence of hypertension as determined from these blood pressure measurements, of previously diagnosed hypertension, and of antihypertensive drug usage are also included.

The Health Examination Survey, in which these data were obtained, is one of the major programs of the National Center for Health Statistics authorized under the National Health Survey Act of 1956 by the 84th Congress as a continuing Public Health Service activity to determine the health status of the population.

The National Health Survey[1] is carried out through the programs of the Health Examination Survey; the Health Interview Survey, which collects health information from samples of persons by household interviews focused primarily on the impact of illness and disability within various population groups; the Health Manpower and Facilities surveys which obtain data on hospitals, nursing homes and other resident institutions, and the entire range of personnel in the health occupations; and the Health Resources Utilization surveys.

Only in the Health Examination Survey programs are health data collected by direct physical examinations, tests, and measurements performed on samples of the population. Hence it provides the best of the survey methods for obtaining diagnostic data on the prevalence of medically defined illness. It is the only one of the survey programs of the National Center for Health Statistics that secures information on previously unrecognized or undiagnosed conditions as well as on a variety of physical, physiological, and psychological measures within the population. Medical history, demographic, and socioeconomic data with which the examination findings may be interrelated are also collected on the sample population under study in these examination surveys.

Since it was organized, the Health Examination Survey has been conducted as a series of separate programs, called "cycles," each of which is limited to some specific segment of the U.S. population and to specific aspects of health. During the first cycle, in 1960-1962, the prevalence of certain chronic diseases and distributions of various physical and physiological measures, including blood pressure, were determined among a defined adult population.[2,3] For that program a national probability sample of 7,710 adults, of whom 6,672 (86.5 percent) were examined, was selected to represent the 111 million civilian noninstitutionalized adults age 18-79 years in the U.S. population at that time.

For the second and third cycles in 1963-1965 and 1966-1970, the target populations were the Nation's noninstitutionalized children age 6-11 years and youths age 12-17 years, respectively.[4,5] In both programs the examination focused primarily on health factors related to growth and development. For the second

program a probability sample of 7,417, of which 7,119 (96 percent) were examined, was selected to represent the nearly 24 million noninstitutionalized children age 6-11 years in the United States. For the third program the national probability sample size was 7,518, of which 6,768 (90 percent) were examined, was selected to represent the 22.7 million youths age 12-17 years in the civilian noninstitutionalized population.

The first Health and Nutrition Examination Survey (HANES), from which the findings in this report were derived, was designed to measure the nutritional status of the U.S. population age 1-74 years and to obtain some limited information on the general health status of the entire age group, as well as more detailed information on the health status and medical care needs of adults age 25-74 years in the civilian noninstitutionalized population. A comprehensive description of the content and plan of operation of the first HANES program, including the sample design, has been published.[6]

As in previous Health Examination Survey programs, the U.S. Bureau of the Census cooperated in designing the sample and in the initial interviewing at selected eligible households in the 65 primary sampling units (PSU's) throughout the United States. Additional household visiting, interviewing, history taking, and explaining the examination portion of the program were performed by members of the field teams of the mobile examination center. The selected sample persons for whom an appointment could be made were brought into the specially constructed mobile examination centers which were moved into a central location in each of the primary sampling units. The teams, which traveled to the various survey locations throughout the country, included medical and dental examiners, technicians, interviewers, and other staff.

The probability sample design used in the study provided for a higher sampling ratio of (oversampling among) the poor, preschool children, women of childbearing ages, and the elderly than the ratio among others in the civilian noninstitutionalized population.

Field data collection operations for the first HANES survey were started in April 1971 and completed in June 1974. Of the 28,043 persons age 1-74 years selected to represent the 194 million of that age in the civilian noninstitutionalized population, 20,749 (74.0 percent) were examined. The response rate decreases with age from 83.7 percent among those 1-5 years to 64.3 percent among the group 65-74 years. When adjustments are made for the differential sampling ratios used in the age-, sex-, income-defined population subgroups, this represents an effective response rate of 75.2 percent. Among those 6-74 years of age at the time of interview for whom blood pressure levels were determined, there were 17,854 examined out of the probability sample of 24,513 selected to represent the 131.4 million of that age in the civilian noninstitutionalized population. This is an unadjusted response rate of 72.8 percent and an effective adjusted response rate of 74.4 percent.

The findings in this report are shown as national estimates based on weighted observations, i.e., the data obtained for each examined person are inflated to the level of the total population of which the sample was representative. The estimates have been calculated as though the examined persons in each of the age (at interview), sex, and income classes are a random subsample of the sample persons in the same class. While there is evidence from earlier examination surveys and medical history data from HANES that this is not an unreasonable approximation, it is clear that some estimates are subject to considerable risk of bias when more than one-quarter of the sample persons in a particular age-sex-income class were not examined. All age-specific data in the report are shown as age at the time of the examination.

Statistical notes on the sample design, reliability of the data, and sampling and measurement error are included in appendix I. Demographic and socioeconomic terms are defined in appendix II. Sources of variation affecting the reliability of the blood pressure measurements are discussed in appendix III.

DATA SOURCES

Blood Pressure Measurements

Upon arrival at the examination center the examinee was greeted by the nurse and coordi-

nator who described the general procedures to be followed. Examinees then changed from street clothes into disposable examination uniforms designed to facilitate and standardize various elements of the examination. The oral temperature of each examinee was then taken by the coordinator and reported to the staff physician if over 101° F. Major elements in the examination were venipuncture, body measurement, dental examination, and physical examination by the staff physician. The sequence was varied to keep to a minimum the time the examinee was in the examining center and to permit the most efficient use of the examiner's time.

As the first procedure in the physical examination given as part of the nutritional screening evaluation, the staff physician, with the assistance of the nurse, measured the examinee's blood pressure while the examinee was seated.

Blood pressure was measured indirectly with a standard clinical sphygmomanometer, the instrument usually used in physicians' offices and in most surveys to obtain blood pressure. In 13 of the first 16 examination locations an aneroid instrument was used. In the remaining 52 locations the standard mercury sphygmomanometer was employed.

The following guidelines, based on the American Heart Association's "Recommendations for Human Blood Pressure Determinations by Sphygmomanometers,"[7] were observed:

1. The cuff was at least 20 percent wider than the diameter of the arm or covered approximately two-thirds of the arm. (An adult 13-cm. cuff and a pediatric 9.5-cm. cuff were provided.)
2. The manometer was at eye level with the physician.
3. The meniscus of the mercury instruments was checked weekly for zero-level calibration.
4. While measuring, the rate of fall in pressure was maintained at 2-3 mm. Hg per heartbeat, which was slow enough to detect the first and last sounds but sufficiently rapid to avoid the intermittent trapping of blood between systolic and diastolic levels.
5. For diastolic pressure, the level was recorded at the point of complete cessation of Korotkoff's sounds or, if there was no cessation, the point of muffling.
6. Measurements were recorded to the nearest 2 mm. on the scale.

The middle of the cuff was placed over the bulge in the upper right arm. Using the bell of the stethoscope, the physician noted and recorded the systolic pressure (when the sound was first heard) and the diastolic pressure (when the sounds disappeared or first became muffled).

Although results will generally be comparable with clinical findings, indirect blood pressure measurements may differ from "true" values, i.e., those obtained by direct (intra-arterial) measurement. The direct and indirect methods of measurement have been found to agree closely for systolic pressure if the cuff size is appropriate to the examinee's height and arm girth. For diastolic pressure, however, the agreement is not as good. Use of the American Heart Association criterion—the point of complete cessation of sound or, if no cessation, the point at which it first becomes muffled—will tend to underestimate intra-arterial diastolic blood pressure. However, had the point at which the sounds first become muffled been used, there would have been a similar bias introduced in the opposite direction.[8,9]

Blood pressure measurements obtained on less than one-third of the examinees in the first 35 locations with aneroid instruments did not differ significantly from those obtained with mercury sphygmomanometers from the remaining two-thirds of the first half-sample. Mean systolic pressures for the two groups differed by less than 1 mm. Hg (0.3), while mean diastolic pressure differed by just slightly more than 1 mm. Hg (1.2), differences that could easily be due to sampling variability alone and are not statistically significant at the 5-percent probability level.[10]

Because blood pressure may vary considerably over a short period of time under even relatively standard conditions, these single measurements can be considered only a rough estimate of the examinees' "true" blood pressure. They will also probably somewhat overstate the "true" blood pressure levels in the population

since in previous surveys the initial blood pressure was found to be somewhat higher than subsequent readings.[19,22,23]

Systolic and diastolic blood pressure measurements were obtained by the staff physician for 98.9 percent of all examinees age 6-74 years. The proportion not measured ranged from 25 percent at 6 years, to 1.4 percent at 7-11 years and to less than one percent (0.6 percent or less) among the youths and adults at 12-74 years. Estimates of missing measurements were made for those persons age 7-74 years but not for the 6-year-olds, as described in appendix I. The blood pressure data for the 6-year-olds are shown separately in the detailed tables because the national estimates based on them are subject to substantially more risk of bias than those for persons age 7-74 years.

Medical History

The field representative from the mobile examining center who visited the household of each person selected in the sample to make the appointment for the examination, obtained a medical history for all sample persons age 12-74 years which included questions on whether the individual had ever been told by a doctor that he had high blood pressure and whether he had used any medication for that condition within the preceding 6 months.

FINDINGS

Children

Age and sex.—Systolic blood pressure among U.S. children increases significantly with age from a mean of 95.6 mm. Hg at 6 years to a mean of 106.0 mm. Hg at 11 years, an increase of 10.4 mm. Hg with an average increment of 2.1 mm. Hg per year of age (table 1 and figure 1). Across the more reliable part of the age range, 7-11 years, the mean value increases more slowly from 99.9 mm. Hg to 106.0 mm. Hg, an average increment of 1.5 mm. Hg per year of age.

Boys and girls show a similar pattern of increase in systolic blood pressure with age, although the trend is somewhat less consistent,

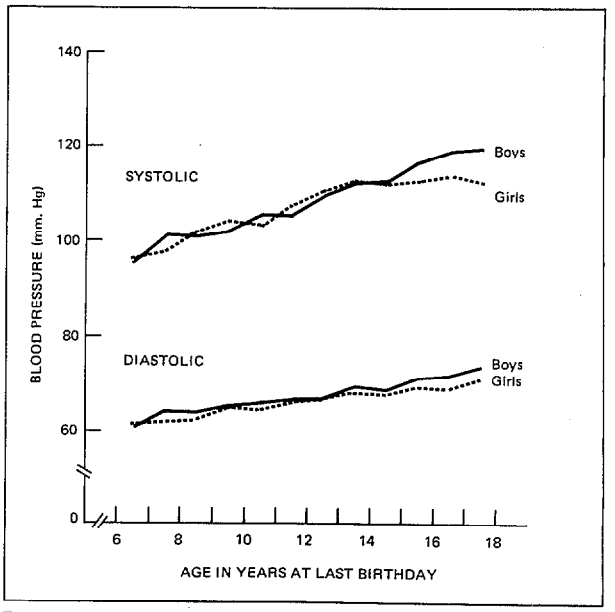

Figure 1. Mean systolic and diastolic blood pressure of children and youths 6-17 years, by age and sex: United States, 1971-1974.

reflecting the greater sampling variability in these estimates than for all children. The yearly increment for boys age 6-11 of 2.0 mm. Hg is just slightly less than the 2.2-mm. Hg annual increase for girls. At each year of age, except 7 and 10 years, the mean systolic pressure for girls slightly exceeds that for boys, but differences are not large enough to be statistically significant.

The variability in systolic blood pressure among children 6-11 years, as measured by the standard deviation, shows no consistent increase with age, although it is least at 6 years. However, the relative variability in relation to the size of the mean values (100 times the ratio of the standard deviation to the mean) remains consistently between 11 and 12 percent across the age range and is no greater among boys than girls. At each of the selected percentile points in the distribution of these systolic pressures there is a general pattern of increase with age for boys and girls from 6 or 7 to 11 years, but the increase with age at the lower percentiles is about the same as at the upper percentiles (table 1 and figure 2).

For the entire 7-11-year age group, systolic blood pressure means for boys and girls are

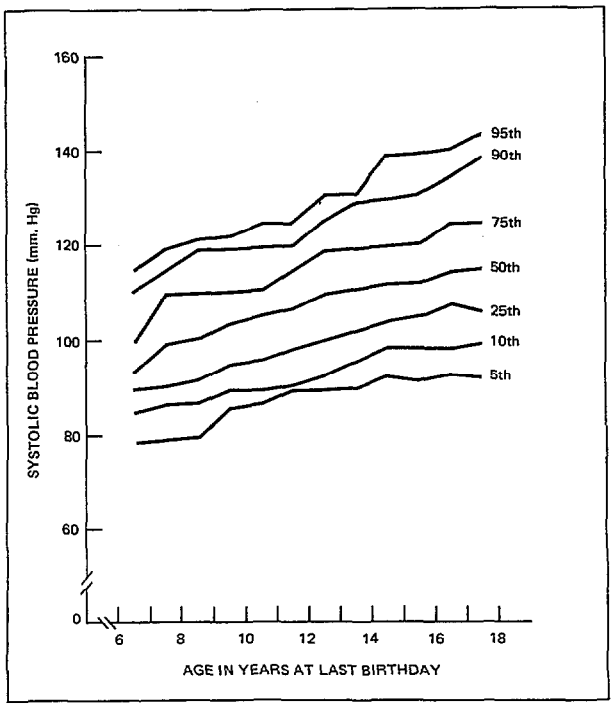

Figure 2. Selected percentiles in the distribution of systolic blood pressure of children and youths 6-17 years, by age: United States, 1971-1974.

identical—103.3 mm. Hg—and the standard deviation just slightly greater among girls (12.3 mm. Hg) than among boys (12.0 mm. Hg).

Mean diastolic blood pressure among children also increases significantly with age from 6 to 11 years, but at an annual increment only about half that of systolic pressure. The mean level increases from 61.0 mm. Hg at age 6 years to 66.6 mm. Hg at age 11 years, an average yearly increment of 1.1 mm. Hg. From ages 7 to 11 years the average annual increment is slightly less—0.9 mm. Hg.

Boys 6-11 years show a slightly faster rate of increase in mean diastolic pressure (1.3 mm. Hg per year) than girls (1.0 mm. Hg per year). At each year of age from 7 through 11 years mean diastolic pressure for boys is slightly, but not significantly, greater than for girls, whereas at 6 years of age the reverse is evident.

The variability in diastolic blood pressure levels of children, as measured by the standard deviation, is slightly less at 6 years of age than at 7-11 years, but shows no consistent trend with age from 7 through 11 years. The relative variability in relation to the mean values is slightly greater for diastolic than for systolic blood pressure of children, ranging from 14 to 16 percent (compared with 11 to 12 percent for systolic pressure) for boys and girls throughout this age span. As with systolic pressure, there is a general pattern of increase with age between 6 or 7 years and 11 years (figure 3).

For the entire 7-11-year age group, the mean diastolic blood pressure of boys (65.1 mm. Hg) is slightly, but not significantly, higher than that for girls (64.3 mm. Hg), while the standard deviation in these levels among girls (10.0 mm. Hg) is negligibly greater than among boys (9.6 mm. Hg).

The bivariate distributions of systolic and diastolic blood pressure levels among boys and girls 7-11 years of age are generally similar, with 59 percent of boys and 55 percent of girls having systolic pressure of 90-119 mm. Hg and diastolic pressure 60-79 mm. Hg (tables 2 and 3). The proportion of children with substantially elevated blood pressure—systolic of at least 140 mm. Hg or diastolic of at least 90 mm. Hg—is less than 1 percent and is about the same among girls (0.9 percent) and boys (0.8 percent).

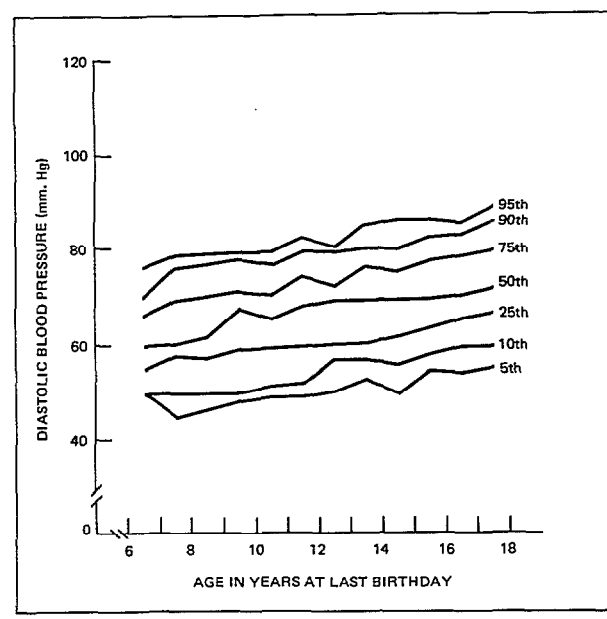

Figure 3. Selected percentiles in the distribution of diastolic blood pressure of children and youths 6-17 years, by age: United States, 1971-1974.

Race.—The mean systolic pressure of white children in the United States increases significantly with age from 95.4 mm. Hg at age 6 and 99.7 mm. Hg at age 7 to 106.2 mm. Hg at age 11, an average gain of 2.2 mm. Hg per year from 6 to 11 years and 1.6 mm. Hg per year from 7 to 11 years. This gain is similar to the respective yearly increase for children of all races combined. For white boys and girls ages 6 to 11 years the yearly increments are identical (2.2 mm. Hg). None of the mean differences in age-specific systolic pressures for white boys and girls are large enough to be statistically significant and those for girls are the higher at only 3 of the 6 years of age: 6, 8, and 11 years (table 4 and figure 4).

For the 7-11-year age group, the mean systolic blood pressure levels for white boys and girls are nearly identical (103.6 and 103.1 mm. Hg, respectively) and the standard deviations in the distribution of these levels among the two groups are also similar (12.0 and 12.4 mm. Hg, respectively).

As for all races combined, the mean diastolic blood pressure levels of white children increase significantly with age, from 6 or 7 years to 11 years but at a slower rate than for systolic pressure. The yearly increment for white children from 6 to 11 years is 1.2 mm. Hg and from 7 to 11 years is 1.0 mm. Hg. For white boys at 7-11 years the mean diastolic blood pressure (65.3 mm. Hg) slightly exceeds the pressure for white girls (64.2 mm. Hg), and over the 6-11-year age range the age-specific mean levels for boys slightly exceed those for girls at 7, 9, and 10 years.

Among Negro children, the mean systolic blood pressure increases significantly with age from 6 and 7 years to 11 years as it did among white children, but at a slower, less consistent rate. For Negro boys the mean systolic blood pressure increases generally with age from 98.6 mm. Hg at 6 years and 100.6 mm. Hg at 7 years to 105.6 mm. Hg at 11 years, while for Negro girls the mean levels are slightly lower at 6-8 years than at 9-11 years (table 5 and figure 5). The mean systolic pressure for 7-11-year-old Negro boys (102.1 mm. Hg) is only slightly lower than that for Negro girls (104.2 mm. Hg). At each of the individual years in the 7-10-year range the mean systolic levels for boys are slightly, but not significantly, lower than for girls. Mean diastolic pressures for Negro children tend to be slightly higher at 10 and 11 years for boys and 9-11 years for girls than they are for younger Negro children, but the relationship

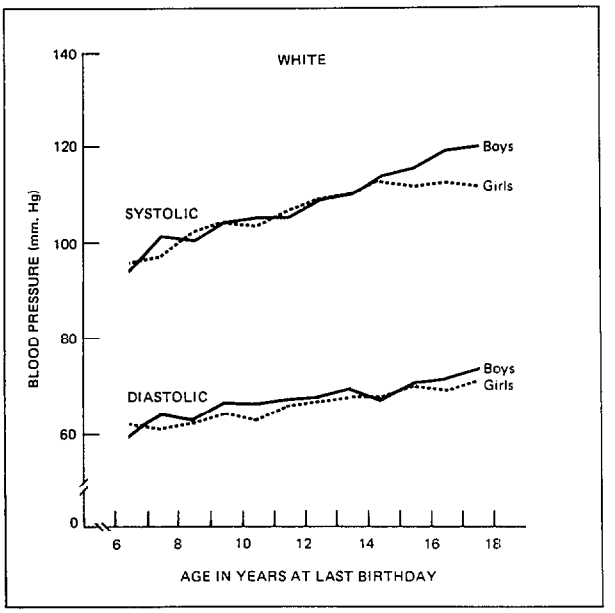

Figure 4. Mean systolic and diastolic blood pressure of white boys and girls 6-17 years, by age: United States, 1971-1974.

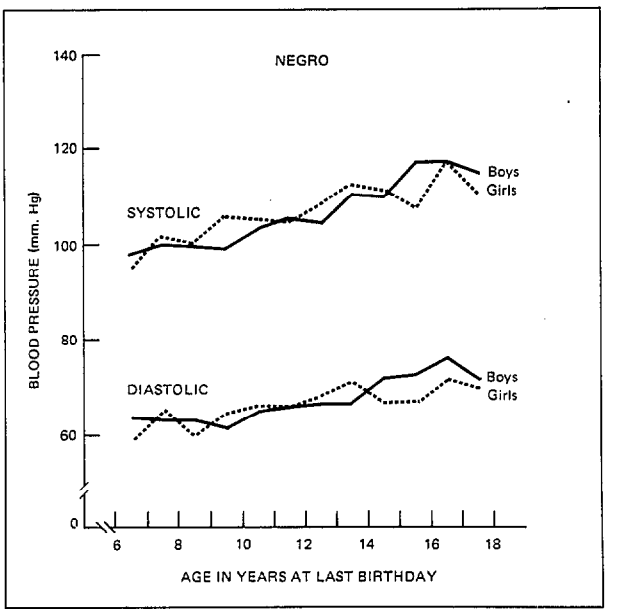

Figure 5. Mean systolic and diastolic blood pressure of Negro boys and girls 6-17 years, by age: United States, 1971-1974.

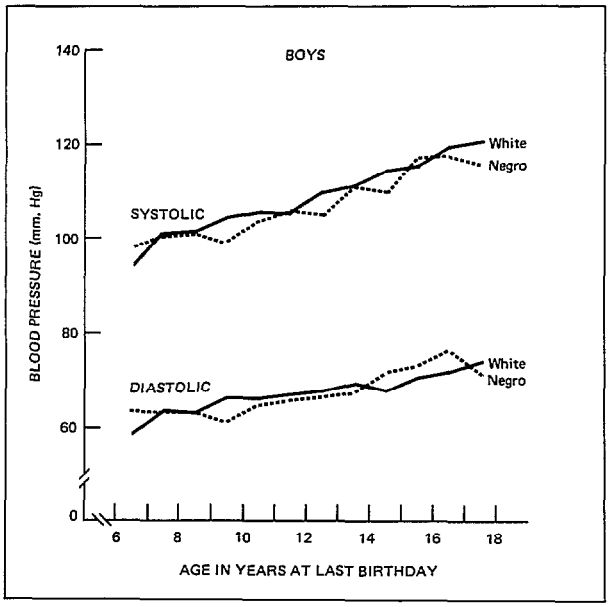

Figure 6. Mean systolic and diastolic blood pressure of white and Negro boys 6-17 years, by age: United States, 1971-1974.

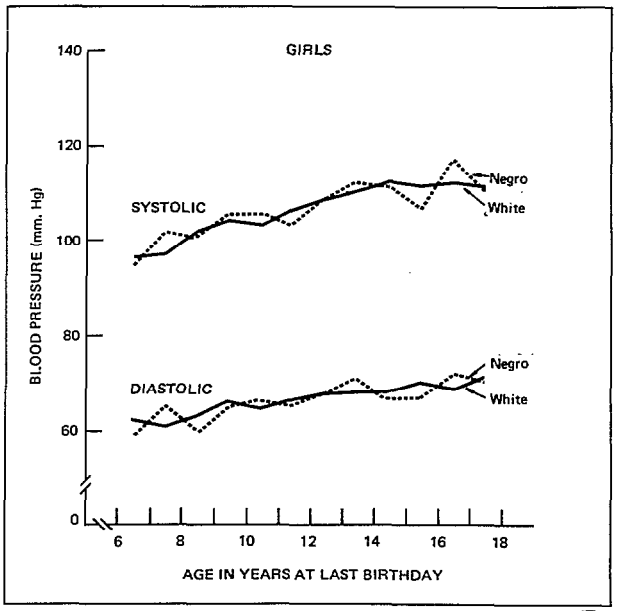

Figure 7. Mean systolic and diastolic blood pressure of white and Negro girls 6-17 years, by age: United States, 1971-1974.

between age and pressure levels is less consistent than that for white children.

Mean systolic and diastolic blood pressure levels for white and Negro children age 7-11 years are similar—systolic mean of 103.3 mm. Hg for white and 103.2 mm. Hg for Negro children with diastolic means of 64.8 mm. Hg for white and 64.3 mm. Hg for Negro children. The pattern of racial differences in mean blood pressure levels across the age range is not consistent among boys or girls (figures 6 and 7).

Youths

Age and sex.—Among youths, mean systolic blood pressure increases from 109.3 mm. Hg at 12 years of age to 116.3 mm. Hg at 17 years, a total increase of 7.0 mm. Hg or an average yearly increment of 1.4 mm. Hg (table 6 and figure 1). This rate of increase is similar to that for children from 7 to 11 years. With the slight acceleration in systolic pressure from ages 10 to 14 years, the average annual increment over the entire 7-17-year timespan is slightly more rapid—1.6 mm. Hg per year.

Boys but not girls in the youth age range show a consistent increase with age in mean systolic blood pressure in contrast to the findings among children. From 12 to 17 years, the mean levels for boys increase steadily from 108.9 mm. Hg to 119.5 mm. Hg, an average increment of 2.1 mm. Hg per year, while for girls the increase is slight and inconsistent over the age range, from the mean of 109.7 mm. Hg at 12 years to 112.2 mm. Hg at 17 years, an average increment of only 0.5 mm. Hg per year. The mean systolic blood pressure of boys and girls ages 6-14 years are similar, showing only small differences not consistently in the same direction probably due to sampling variability alone. However, from 15-17 years the mean levels for boys consistently exceed those for girls by magnitudes which are statistically significant and increase with age from 4.7 mm. Hg at 15 years to 7.3 mm. Hg at 17 years.

The variability in systolic blood pressure among youths, as measured by the standard deviation, is slightly greater than among children and does increase, though negligibly, with age from 15 to 17 years for both boys and girls. However, the relative variability in relation to the mean shows no age-related pattern and is at about the same level among youths (11-13 percent) as among children (11-12 percent). At each of the selected percentile points in the distribution of systolic blood pressures among

boys, but not girls, there is a general and significant increase in pressure with age from 12 to 17 years, reflecting the greater proportion of boys than girls by this age with substantially elevated blood pressure. This increase in pressure levels from 12 to 17 years for boys is more than twice as great at the upper extreme of the distribution—the 90th and 95th percentiles (19.8 and 21.8 mm. Hg, respectively) than across the remainder of the distribution where the differences between the levels at 12 years and 17 years range from 6.7 mm. Hg at the 10th to 9.6 mm. Hg at the 25th percentiles. The age-related trend for girls in systolic pressure is less consistent and the increases between 12 and 17 years of age are 2.0 mm. Hg or less at all percentile points, except at the 95th where the increment is 4.0 mm. Hg.

For the entire 12-17-year age range, the mean systolic blood pressure of boys (114.9 mm. Hg) is significantly higher than that for girls (111.9 mm. Hg) because of the differences at ages 15-17 years, and the variability is just slightly greater among boys than girls (standard deviations of 13.8 and 13.4 mm. Hg).

The mean diastolic blood pressure of youths increases significantly with age from 67.4 mm. Hg at age 12 years to 72.6 mm. Hg at 17 years, an increment of 1.0 mm. Hg per year, which is nearly identical to that noted for children from 6 to 11 years of age. Hence, over the entire 6-17-year range the average yearly increment remains about 1.0 mm. Hg. The mean diastolic pressures of boys and girls are similar at 6-14 years, while from 15-17 years the levels of boys are consistently higher.

The variability in diastolic blood pressure levels, as measured by the standard deviation, is slightly less at 12 than at 17 years but shows no trend consistent with age for either boys or girls, a finding similar to that for diastolic pressure among children. In relation to the size of the mean values, the relative variability of the diastolic pressure shows no age-related pattern and is at about the same level among youths (13-15 percent) as among children (14-16 percent). Among both children and youths the relative variability in diastolic pressure is slightly greater than in systolic pressure (11-13 percent).

For all youths, the mean diastolic pressure of boys (70.5 mm. Hg) is significantly higher than that of girls (69.0 mm. Hg), while the standard deviation among boys (10.0 mm. Hg) is only negligibly larger than that among girls (9.7 mm. Hg).

In the bivariate distributions for the two blood pressure measurements among U.S. youths 12-17 years of age, nearly two-thirds of the boys (67 percent) and girls (65 percent) have systolic pressures of 100-129 mm. Hg and diastolic pressures of 60-89 mm. Hg (tables 7 and 8). The proportion of youths in this age range with substantially elevated blood pressure—systolic pressure of at least 140 mm. Hg *or* diastolic of at least 90 mm. Hg—is nearly twice as great among boys (8 percent) as among girls (4 percent) of this age. Similarly, the proportion with substantial elevations of both systolic and diastolic pressures—systolic pressure of at least 140 mm. Hg *and* diastolic pressure of at least 90 mm. Hg—is about twice as large among boys (1.3 percent) as among girls (0.7 percent).

Race.—Similar to the findings for youths of all races, the mean systolic blood pressure of white youths in the United States increases significantly with age among boys but not among girls. For all white youths there is an increase from 109.8 mm. Hg at 12 years of age to 116.5 mm. Hg at 17 years, a rate of 1.3 mm. Hg per year, which is large enough to be considered statistically significant (table 9 and figure 4).

For white boys the mean systolic pressure levels increase from 109.7 mm. Hg at 12 years to 120.1 mm. Hg at 17 years, an average rate of 2.1 mm. Hg per year of age, while white girls show no significant or consistent age-related trend. At 12 and 13 years, mean levels for white boys and girls are essentially identical, but from 14 years on the mean systolic pressure levels for white boys become progressively greater than those for white girls until by 16 and 17 years of age the mean differences are too large to reflect sampling variability alone.

At 12-17 years the mean systolic blood pressure for white boys (115.1 mm. Hg) is significantly greater than that for white girls (112.0 mm. Hg), but the variability in systolic blood pressure among the two groups is similar (standard deviations of 13.8 mm. Hg for white boys, 13.4 mm. Hg for white girls).

The mean diastolic blood pressure of both white boys and girls age 12-17 years increases significantly with age from 67.7 mm. Hg at 12 years to 73.9 mm. Hg at 17 years (a rate of 1.2 mm. Hg per year) for white boys and from 67.3 mm. Hg at 12 years to 71.1 mm. Hg at 17 years (a rate of 0.8 mm. Hg per year) for white girls. Although the mean diastolic levels for white boys generally exceed those for white girls from 12 to 17 years, the age-specific differences, as well as the differences for the total age group, are not large enough to be statistically significant.

Among Negro youths there is a significant increase with age in mean systolic blood pressure from 107.0 mm. Hg at 12 years to 113.7 mm. Hg at 17 years, an average of 1.3 mm. Hg per year of age (table 10 and figure 5). The rate of increase, however, is substantially more rapid among Negro boys (2.2 mm. Hg per year of age) than among Negro girls (0.4 mm. Hg per year of age). Although the trend is similar to that for white youths, the increases are less consistent over the age range, probably because of the greater sampling variability in the national estimates for this substantially smaller segment of the population.

Diastolic blood pressure of Negro youths increases significantly with age from a mean of 67.5 mm. Hg at 12 years of age to a mean of 71.6 mm. Hg at 17 years, a gain of 0.8 mm. Hg per year. The increase from 12 to 17 years among Negro boys is more consistent and the rate of increase (1.1 mm. Hg per year) for them is more than twice that among Negro girls (0.5 mm. Hg per year).

Mean systolic and diastolic blood pressure levels of Negro boys and girls 12-17 years of age are similar. The differences between the systolic mean values of 112.5 mm. Hg for boys and 111.6 mm. Hg for girls, and diastolic mean values of 71.1 mm. Hg for boys and 69.3 mm. Hg for girls are small enough to be due to sampling variability alone.

As in findings among those 6-11 years of age (figure 6), mean systolic and diastolic blood pressure levels for white and Negro boys age 12-17 years reflect no consistent significant pattern of racial differences.

The age-specific mean levels of systolic and diastolic blood pressure among white and Negro girls also fail to show a consistent or significant pattern of racial differences across either the 12-17-year or 6-17-year age ranges (figure 7).

Adults

Age and sex.—The mean systolic blood pressure of civilian noninstitutionalized adults in the United States, as estimated from the Health and Nutrition Examination Survey findings in this cross-sectional study of 1971-1974, increases significantly and consistently with age from 119.0 mm. Hg in ages 18-24 years to 150.1 mm. Hg in ages 65-74 years (table 11). The increment is least among young adults 18-34 years (averaging 0.2 mm. Hg per year), then increases to and maintains a fairly steady rate of increase from 35 years on (an average of 0.8 mm. Hg per year). The rate of increase in systolic pressure is most rapid among children and youths (1.6 mm. Hg per year), then decreases to a minimal rate among young adults.

For both men and women, mean systolic blood pressure increases significantly with age but from 25 years on, the rate is substantially faster among women than men (figure 8). The increase is at a minimum and similar for both men and women ages 18-34 years (an average in-

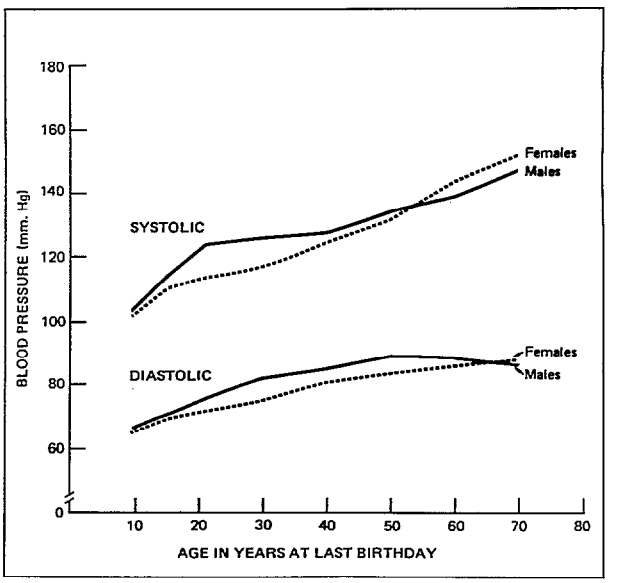

Figure 8. Mean systolic and diastolic blood pressure of persons 7-74 years, by age and sex: United States, 1971-1974.

crement of 0.2 mm. Hg per year). In ages 25-44 years and 45-64 years the average yearly increment is two to three times greater among women than men (an average annual increment of 0.7 mm. Hg for women compared with 0.2 mm. Hg for men in ages 25-44 years and 1.1 mm. Hg for women compared with 0.4 mm. Hg for men in ages 45-64 years).

Mean systolic pressure levels of males age 15-44 years are significantly higher than those for females, the differences reaching a maximum of nearly 9 mm. Hg in ages 18-24 and 25-34 years. In ages 45-54 years the mean systolic pressure of men is just slightly greater than that of women while from 55 years on the mean levels for women exceed significantly those for men by 4 to 6 mm. Hg.

The variability in systolic blood pressure levels of adults, as measured by the standard deviation, increases consistently with age from 13.8 mm. Hg among young adults 18-24 years to 25.2 mm. Hg among the oldest age group, 65-74 years. From 35 years on there is greater variability among women than among men in these pressure levels, though in ages 65-74 years the difference is negligible. In relation to the size of the mean systolic blood pressures, the relative variability in these levels among adults is less in ages 18-44 years (12-14 percent) than in ages 45 years and over (17 percent). Among men the relative variability is negligibly less (10-12 percent in ages 18-44 years and 15-17 percent in ages 45-74 years) than among women of a corresponding age (11-12 percent in ages 18-34 years and 16-18 percent in ages 35-74 years). The relative variability is just slightly greater among young adults 18-44 years than among children (11-12 percent) or youths (11-13 percent).

At each of the selected percentile points in the distribution of systolic blood pressure among adults, there is a consistent increase with age from 18-24 years to 65-74 years and that increase becomes progressively greater across the distribution from 16.1 mm. Hg at the 5th percentile to 53.7 mm. Hg at the 95th percentile. Among men the increase is from a difference (youngest to oldest) of only 6.7 mm. Hg in systolic pressure levels for those at the 5th percentile to 45.7 mm. Hg at the 95th percentile, while for women the increase is from 22.4 mm. Hg at the 5th percentile to 66.3 mm. Hg at the 95th percentile (figures 9 and 10).

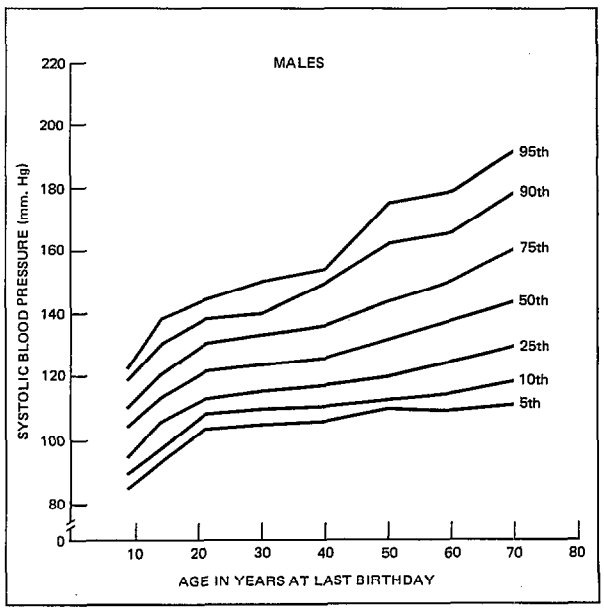

Figure 9. Selected percentiles in the distribution of systolic blood pressure of males 6-74 years, by age: United States, 1971-1974.

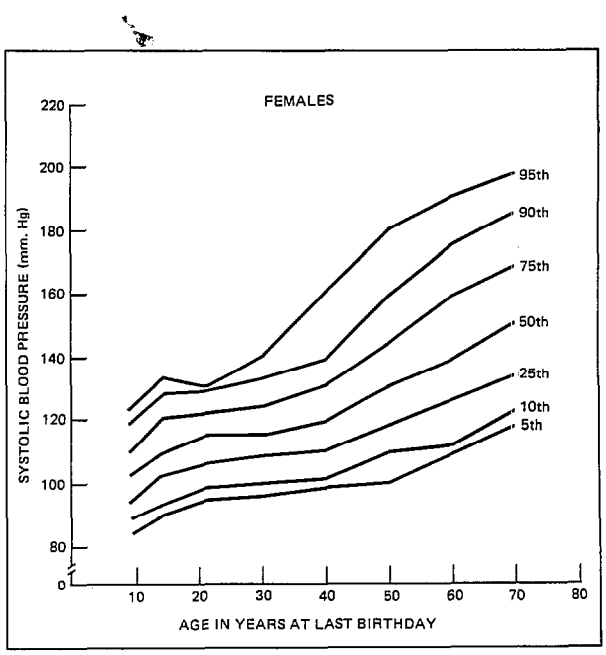

Figure 10. Selected percentiles in the distribution of systolic blood pressure of females 6-74 years, by age: United States, 1971-1974.

Among all adults age 18-74 years the mean systolic pressure of men (131.4 mm. Hg) significantly exceeds that for women (128.4 mm. Hg) while the variability among men is less than among women, standard deviations of 19.2 mm. Hg and 24.0 mm. Hg, respectively.

Mean diastolic blood pressure levels of U.S. adults increase with age, from 73.8 mm. Hg in ages 18-24 years to 86.7 mm. Hg in ages 55-64 years, then drop slightly. The average yearly increment is greater in ages 18-44 years (0.5 mm. Hg) than among those 45 years and over, in contrast to systolic pressure levels which increase more rapidly among older than younger adults.

Among men, mean diastolic pressures increase significantly with age, reaching a maximum in ages 45-54 years, at a rate which declines from an average of 0.5 mm. Hg per year in ages 18-34 years to 0.3 mm. Hg per year in ages at 35-54 years. For women, mean diastolic blood pressures increase significantly with age from 18-64 years, at a rate that is fairly constant but slightly more rapid in ages 25-44 years than over the rest of the age range. In ages 18-54 years, mean diastolic blood pressures of men are significantly greater than those of women, while in ages 55-74 years the mean levels are similar.

The variability in diastolic blood pressure, as measured by the standard deviation, generally increases with age, but at a slower rate and less consistently than for systolic pressure. In relation to the size of the mean values, the relative variability is between 14 and 16 percent across the adult age range similar to findings for children and youths and shows no consistent age-related trend, in contrast to the increase in relative variability of systolic pressure with age among adults. The variability, relative and absolute, in diastolic blood pressures among men is slightly less than among women.

The difference in diastolic blood pressure between young adults age 18-24 years and the oldest adults 65-74 years is greater at the upper than the lower percentiles in the distribution, ranging from 10 mm. Hg at the 5th through the 50th percentiles to nearly 20 mm. Hg at the 95th percentile. The increases with age, from youngest to oldest adults, are greater for women than for men, but for both are greater at the higher than the lower percentiles (figures 11 and 12).

As was noted for systolic blood pressure, the mean diastolic blood pressure of men age 18-74 years (83.4 mm. Hg) significantly exceeds that of women (79.7 mm. Hg) while the variability among men is slightly less (standard deviations of 12.3 mm. Hg for men and 13.3 mm. Hg for women).

The various percentile points in the distribution of systolic and diastolic blood pressure levels across the 6-74-year age range in the U.S. population, as shown in tables 1, 6, and 11, reflect the extent of the lack of symmetry in

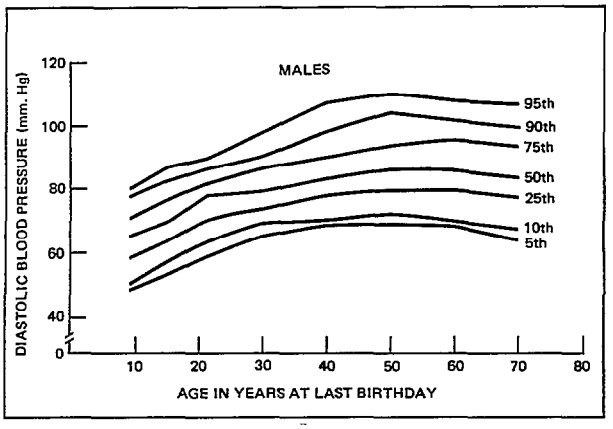

Figure 11. Selected percentiles in the distribution of diastolic blood pressure of males 6-74 years, by age: United States, 1971-1974.

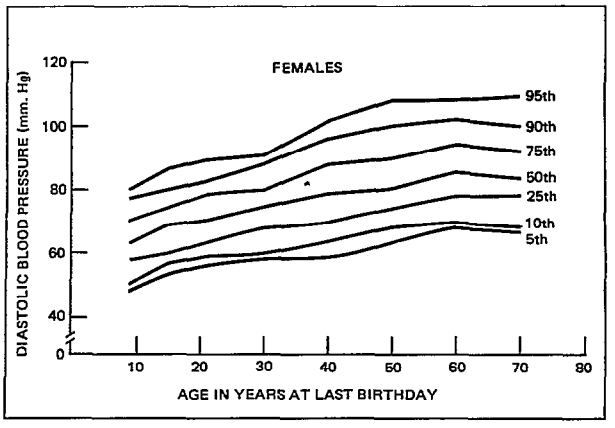

Figure 12. Selected percentiles in the distribution of diastolic blood pressure of females 6-74 years, by age: United States, 1971-1974.

these distributions. The degree of conformity of these distributions of blood pressure levels in the population to the normal distribution was tested and the extent of skewness and kurtosis is shown in table 24. As may be seen, the distribution of systolic and diastolic blood pressures for both men and women become increasingly skewed to the right and more peaked than normal through ages 45-54 years. For those 55 years and over, the skewness and peakedness in the distributions of systolic and diastolic blood pressures lessen for both men and women.

As shown in tables 12-23 the bivariate distributions of systolic and diastolic blood pressures of adults reflect the greater variability, particularly in systolic pressure, among women than among men in ages 35-64 years. The proportion with substantially elevated pressures of at least 140 mm. Hg systolic *or* at least 90 mm. Hg diastolic increases with age for both sexes, but in ages 55-74 years the increase is substantially more rapid for women than men. Among males these proportions increased steadily and significantly from 8 percent in ages 12-17 years to 65 percent in ages 65-74 years, while among females the gradient is more rapid, increasing from 4 percent at 12-17 years to 74 percent at 65-74 years. Among youths and adults 18-54 years, the proportion with substantially elevated blood pressure of this degree is consistently greater among males than among females. Similarly, the proportion with both systolic and diastolic blood pressure substantially elevated (systolic pressure of at least 140 mm. Hg *and* diastolic of at least 90 mm. Hg) increases markedly with age. For men, the increase is from 4 percent in ages 18-24 years to 36 percent in ages 65-74 years, while among women the percentage increases from 2 to 36 percent in ages 55-64 years, then drops slightly. In ages 12-54 years the proportion of men with both systolic and diastolic pressure substantially elevated exceeds that for women.

Race.—Among white U.S. adults, both men and women, the increase with age in mean systolic blood pressure and the rates of increase over the 18-74-year age range are nearly identical to those shown for adults of all races. Mean systolic pressures of all white adults increase steadily and significantly with age from 119.3 mm. Hg in ages 18-24 years to 149.2 mm. Hg in ages 65-74 years, at average yearly increments ranging from a minimum of 0.1 mm. Hg in ages 18-34 years to 0.8 mm. Hg in ages 35-74 years (table 25). The trends in variability and relative variability in systolic pressure among white adults are similar to those for adults of all races.

In ages 18 through 54 years, the mean systolic pressures of white men significantly exceed those for white women, although from 55 years on the means for white women are the higher (figure 13). In the 25-44 and 45-74-year age groups, the average rates of increase with age are about twice as great among white women as they are among white men.

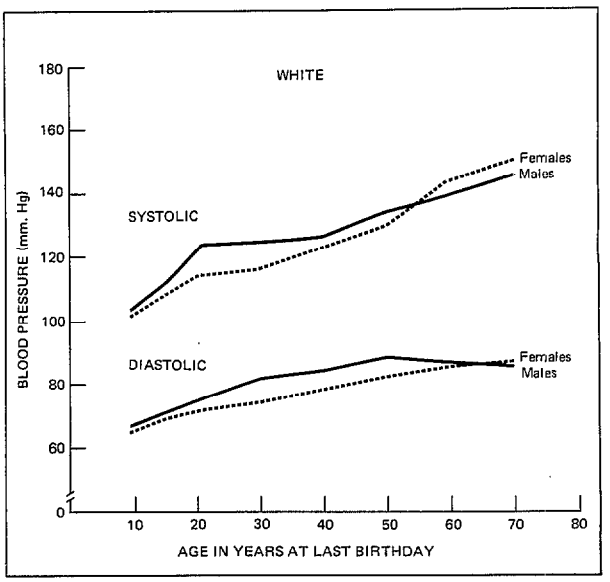

Figure 13. Mean systolic and diastolic blood pressure of white males and females 7-74 years, by age: United States, 1971-1974.

Diastolic blood pressure means for white adults increased steadily with age from 73.8 mm. Hg in ages 18-24 years to 86.3 mm. Hg in ages 55-64 years, with the maximum for white men reached in ages 45-54 years and for white women in ages 55-64 years, a finding similar to that for adults of all races. The mean diastolic blood pressures of white men are significantly greater than those of white women of ages 18-54 years, while among older adults age 55-74 years the mean levels for both sexes are nearly identical (figure 13).

Among Negro adults the increase with age in both systolic and diastolic blood pressure means is more rapid than that shown for white adults. Systolic blood pressure means for Negro men increase from 122.9 mm. Hg in ages 18-24 years to 156.6 mm. Hg in ages 65-74 years, while those for Negro women increase from 113.2 mm. Hg to 161.3 mm. Hg (table 26 and figure 14). The mean systolic blood pressure of Negro men is significantly greater than that of Negro women in ages 18-44 years. In ages 45-74 years, while systolic pressure mean values for Negro women exceed those for Negro men, the differences are not large enough to be statistically significant because of the small number of older Negro adults examined (and the correspondingly larger sampling variability in these estimates than for the white population).

Diastolic blood pressure means of Negro adults also increase with age, but reach a maximum for men in ages 55-64 years (93.4 mm. Hg) and 10 years earlier, for women in ages 45-54 years (93.5 mm. Hg). The mean diastolic blood pressure of Negro men exceeds that for Negro women at all ages except 45-54 years where the relationship is reversed (figure 14). However, in ages 45-74 years the differences between the levels for Negro men and women are insignificant.

The mean systolic and diastolic blood pressures of white men 18-24 years are slightly higher than those of Negro men of comparable age (tables 25, 26, and figure 15), while in ages 25-34 years and older the mean pressures of Negro men are higher than those of white men and remained so through 65-74 years. The mean differences in systolic pressure ranged from 4.1 mm. Hg in ages 25-34 years to 10.6 mm. Hg in ages 65-74 years, all statistically significant (reflecting more than sampling variability), while those for diastolic pressure range from 3.5 mm. Hg in ages 25-34 years to 7.0 mm. Hg in ages 35-44 and 55-64 years. The consistency of the more rapid increase in systolic and diastolic pressures with age among Negro than white men is evident across the selected percentile points in these distributions. From 35 years on the variation in systolic pressure among the population is also greater for Negro than white men.

Racial differences in systolic and diastolic blood pressure levels among white and Negro women follow a pattern generally similar to that

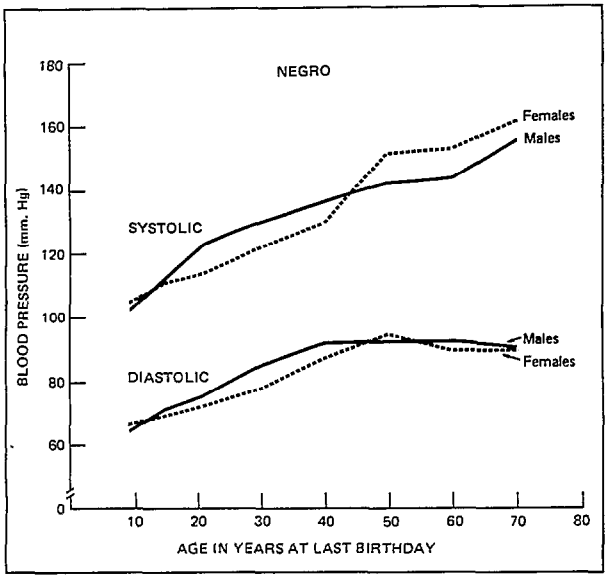

Figure 14. Mean systolic and diastolic blood pressure of Negro males and females 7-74 years, by age: United States, 1971-1974.

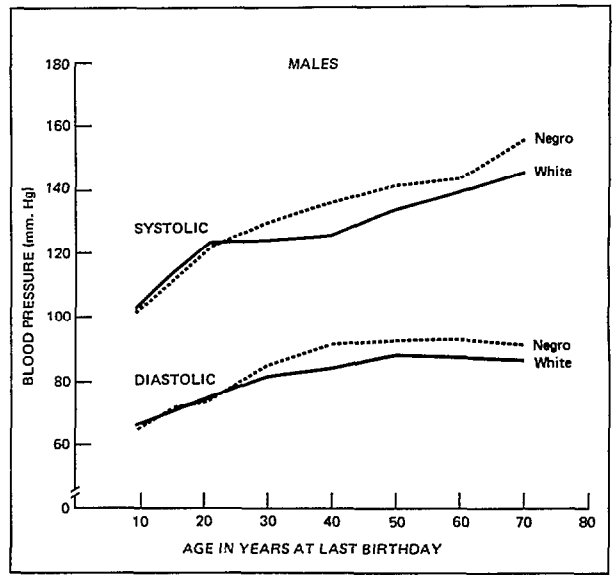

Figure 15. Mean systolic and diastolic blood pressure of white and Negro males 7-74 years, by age: United States, 1971-1974.

for men. In ages 18-24 years, the mean systolic pressure for white women is slightly greater and the mean diastolic pressure slightly less than that for Negro women, while from 35 years on the mean levels for Negro women are significantly higher than those for white women. Mean differences in systolic pressure range from 5.3 mm. Hg in ages 25-34 years to 19.7 mm. Hg in ages 45-54 years and for diastolic pressure from 3.4 mm. Hg in ages 25-34 years to 10.9 mm. Hg in ages 45-54 years (tables 25, 26, and figure 16).

Across the adult age range in this study, the variation in blood pressure—both systolic and diastolic—and the increase in this variability with age among Negro women exceed that among white women.

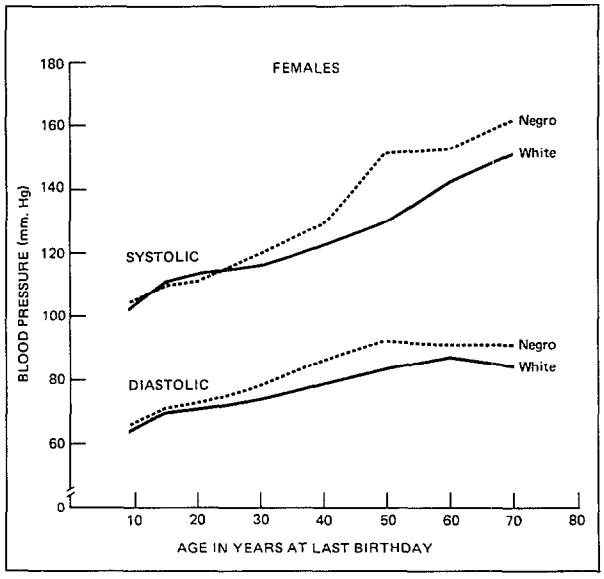

Figure 16. Mean systolic and diastolic blood pressure of white and Negro females 7-74 years, by age: United States, 1971-1974.

Ancestry

To provide a basis for national estimates on the health status of some of the larger minority groups in the U.S. population, information on ancestry, in addition to data on race, was obtained by the census interviewer for each sample person selected for the Health and Nutrition Examination Survey. The interviewer classified the race of the sample person, by observation or by questioning if not evident, as "white," "Negro," or "other." On this basis, 88 percent of the civilian noninstitutionalized population 7-74 years of age at the midpoint of the survey was considered white, 11 percent Negro, and 1 percent of other racial groups. The other racial groups included those identified as American Indian and the various Oriental races. Those classified as white included Mexican and Latin or Spanish American unless identified as Negro or other. Persons not identified as Negro were further classified as to their primary ancestry or national origin.

From this the three largest minority groups identified in the population are the Negro (11 percent), persons of Spanish or Mexican ancestry (4.4 percent), and American Indians (1.8 percent). The latter group—the American Indians—will be representative only of those not living on reservations; because of previous operational difficulties, the sample design used for the survey specifically excluded all persons residing on any of the reservation lands set aside for the use of American Indians.

National estimates of blood pressure levels in the Negro population, as shown in tables 5, 10, and 26, have been analyzed in the three preceding sections.

Among persons in the two smaller minority groups—the Spanish-Mexican Americans and the American Indians living off reservations—mean systolic and diastolic blood pressures increase with age and for the total age group are slightly higher among males than females similar to the general pattern for the total white population and for the Negroes (table 27).

The mean systolic and diastolic pressure of the Spanish-Mexican Americans and these American Indians are generally less than those of the Negro population; however, because of the small size of the groups and the correspondingly large sampling variability, only the differences for ages 65-74 years are large enough to be statistically significant.

Geographic Region

In the sample design used for this survey, the United States was divided into four broad geographic regions—the Northeast, Midwest, South, and West—approximately equal in population, as described in appendixes I and II. The

sample size and design of the survey do not provide an adequate basis for estimating blood pressure levels of the population in smaller geographic areas or in the individual States.

Across the 7-74-year age span, the mean systolic blood pressures of persons living in the South are higher than those of persons in the other three regions (table 28). When adjustments are made for differences in age distribution among the populations in the four regions, the age-adjusted mean systolic blood pressure level of persons in the South is significantly higher than that of persons in the Northeast (3.9 mm. Hg higher) or the West (4.3 mm. Hg higher) and slightly higher (2.3 mm. Hg) than for those in the Midwest. The mean systolic pressure levels are similar among persons living in the other three regions. The variation in systolic blood pressure levels among the populations in the South and Northeast is slightly greater than the variation among those in the Midwest and West.

Among males, there are no significant regional differences in mean systolic blood pressure levels. The age-adjusted values range from 127.2 mm. Hg for those in the South to 124.1 mm. Hg for those in the Northeast. However, among females age 7-74 years the mean, age-adjusted systolic pressure for those in the South (127.0 mm. Hg) is significantly higher than for those in the Midwest (123.2 mm. Hg), the Northeast (122.0 mm. Hg), and the West (121.3 mm. Hg). In each of these regions, the age-adjusted mean systolic pressure levels of men slightly exceed those of women, except in the South where essentially no difference exists.

Diastolic blood pressure levels of the population in each of the four regions are similar. The mean, age-adjusted values range from 78.5 mm. Hg and 78.4 mm. Hg in the South and Midwest, respectively, to 77.2 mm. Hg in the Northeast and West, while the variability as measured by the standard deviation in these measurements ranges from 14.1 mm. Hg in the South to 13.4 mm. Hg in the Midwest. In each of the regions the mean, age-adjusted diastolic blood pressure levels of males exceed those of females, and, except in the South these differences are too large to be due solely to sampling variability.

Among the white population, the mean, age-adjusted systolic pressure of those in the South is higher than those in the other three regions, but the differences are not large enough to exceed the confidence limits for such estimates, except between those in the South and West for all white persons (3.8 mm. Hg) and for white females (4.7 mm. Hg) age 7-74 years (table 29).

Similar to the findings for all races combined, regional differences in the mean diastolic blood pressure levels of white persons age 7-74 years are negligible. The age-adjusted mean values range from 78.3 mm. Hg in the Midwest to 76.8 mm. Hg in the West.

Among the Negro population, which because of its smaller size has a greater sampling variability than the white population, the systolic blood pressure levels of those living in the South also tend to be higher than those in the other three regions of the country; however, the age-adjusted mean value (131.7 mm. Hg) is significantly higher only than those in the Midwest (126.3 mm. Hg) and Northeast (125.3 mm. Hg), as shown in table 30. Negro females in the South have higher mean systolic pressure than those in the other three regions, but the differences are large enough to be significant only in comparison with levels in the Midwest (9.2 mm. Hg) and Northeast (8.7 mm. Hg). Regional differences in systolic blood pressure levels among Negro males are negligible, a finding similar to that for white males age 7-74 years.

Diastolic pressure levels among the Negro population also show no consistent or significant regional pattern.

In each of the four regions of the country the mean, age-adjusted, systolic and diastolic blood pressure levels of the Negro population, both male and female, are higher than those for the white population age 7-74 years.

Because of the scheduling of the examination locations in the present survey—the North was avoided during the winter as was the South during the summer—the effect of any seasonal or climatic fluctuations on blood pressure levels may have been either masked or accentuated in these regional findings.

Income

Mean systolic blood pressure levels of the U.S. population are found to be inversely related to the size of the family income. As family

income increases from less than $3,000 to $10,000 or more per year, the mean systolic blood pressure of the population age 7-74 years decreases from 131.7 mm. Hg to 122.0 mm. Hg (table 31).

Within each of the income groups, mean systolic pressure increases consistently with age from the youngest to the oldest age group, this increase being more rapid in the lowest and least rapid in the highest income level group. When adjustment is made for differences in age distribution within the income level classes, the mean, age-adjusted systolic pressure levels for the population age 7-74 years decrease consistently from 126.5 mm. Hg among those in families with less than $3,000 income per year to 123.3 mm. Hg for those with $10,000 or more annual income—a decrease less than that for the unadjusted mean values but also statistically significant.

Among both males and females 7-74 years of age, mean systolic blood pressure decreases with the increase in the size of the family income, the decrease being statistically significant among females (4.1 mm. Hg in the age-adjusted values from the lowest to the highest income level class) but not among males (2.5 mm. Hg). Within each income level the mean, age-adjusted, systolic pressure for males exceeds that for females, but only in the highest income group is the difference large enough to reflect more than sampling variability.

Mean diastolic blood pressure of the U.S. population age 7-74 years also decreases significantly with the increase in the size of the family income; however, the association is significant only among females. Across all income levels the mean, age-adjusted diastolic pressure of males exceeds that for females.

Among the white population age 7-74 years in the United States, mean, age-adjusted systolic and diastolic blood pressures decrease with the increase in the size of the family income, the decrease being large enough to be statistically significant among white females but not among white males (table 32). The mean levels for white males consistently exceed those for white females in each income class group.

Similar to the relationship for the white population, mean, age-adjusted systolic and diastolic blood pressures of the Negro population age 7-74 years decrease with increase in size of family income, the decrease being statistically significant only for Negro females (table 33). The mean, age-adjusted diastolic blood pressures among Negro males generally exceed that for Negro females within each income class (except in the total group with annual income less than $5,000 where the mean values are identical). For all Negroes 7-74 years with annual family incomes of $5,000 or more, the mean, age-adjusted systolic and diastolic blood pressures of males exceed those of females. None of these mean differences exceed the confidence limits for such estimates and hence may reflect sampling variability alone.

Education

The two measures of educational attainment used in this report are those which most closely affect the socioeconomic status of the family: the educational level of the head of the household, for children and youths age 7-17 years, and the educational level of the examinee for adults.

On either basis, blood pressure shows a significant inverse relationship to educational level (similar to that with size of family income), the mean blood pressure decreasing with the increase in educational attainment.

Among children and youths age 7-17 years, mean systolic pressure decreases significantly with increase in educational level of the head of the household from 109.9 mm. Hg for those in families where the head of the household had completed less than 5 years of formal schooling to 107.3 mm. Hg among those with some college education (table 34). Similarly, among adults 18-74 years of age, mean, age-adjusted systolic pressure decreases significantly and consistently from 136.9 mm. Hg for those with less than 5 years' schooling to 129.1 mm. Hg for those with some college education.

For boys and for girls, the relationship between systolic pressure and education of head of the household is nonsignificant. However, among both men and women the inverse relationship is consistent and significant. The mean, age-adjusted systolic pressure among men in the highest education level is 9.4 mm. Hg less and

for women 8.3 mm. Hg less than among those in the respective lowest educational levels.

Diastolic blood pressure levels for children and youths of both sexes are unrelated to the educational levels of the head of the households. In contrast, among adults 18-74 years there is a significant relationship between education and diastolic blood pressure. The mean, age-adjusted diastolic blood pressure of persons at the highest educational level is lower than that of persons at the lowest educational level, the difference being 5.5 mm. Hg for men and 4.4 mm. Hg for women.

Within the white population, mean systolic blood pressure decreases significantly as educational level increases. White boys, but not girls, at ages 7-17 follow this trend. Among white adults the decrease in mean, age-adjusted systolic pressure is consistent and significant from lowest to highest educational levels for both men (7.1 mm. Hg decrease), and women (5.1 mm. Hg decrease). The decrease in mean, age-adjusted, diastolic pressure from lowest to highest educational levels is significant among white men (5.4 mm. Hg) and women (1.7 mm. Hg), but the differences in mean diastolic pressure among white boys and girls are not significant (table 35).

For the Negro population the inverse pattern of association between blood pressure and educational level is similar to that for white persons (table 36). Among Negro children and youths mean systolic pressure decreases significantly with increase in education (head of household) only for girls, while diastolic pressure levels for both boys and girls show no significant relationship. Among Negro adults the inverse relationship of systolic and diastolic blood pressure to education is evident, but strong enough to be significant only among women.

Population Density

Systolic blood pressure levels of the U.S. population age 7-74 years show an inverse relationship to population density. The regression line, fitted by weighted least squares to the age-adjusted, mean systolic blood pressure of those persons in the four population density groups, has a slope significantly different from zero (the horizontal), indicating that the systolic blood pressure levels of the population vary significantly with population density (table 37). As would be expected, this relationship of blood pressure to population density is consistent with the findings for income because of the higher per capita income in urban than in rural areas.

The mean, age-adjusted systolic blood pressure of those persons age 7-74 years living in rural areas is 125.6 mm. Hg, compared with 123.1 mm. Hg for those in the largest urban areas. The relationship of population density to systolic blood pressure is not limited to the older age groups, but is clearly evident across the age range from children 7-11 years, through adults 65-74 years (with one insignificant exception, persons age 55-64 years).

Among both males and females, mean, age-adjusted systolic blood pressure is significantly and inversely related to the population density of their area of residence.

The age-adjusted mean diastolic blood pressure of persons 7-74 years also generally increases with a decrease in population density of their place of residence. The mean, age-adjusted diastolic blood pressures are between 77.2 and 77.8 mm. Hg for those living in urban communities, compared with 78.6 mm. Hg for those in rural areas. The decrease is slower than that for systolic pressure and is not statistically significant for males.

Among white persons in this country, there is also a significant increase in age-adjusted, mean systolic blood pressure with a decrease in population density of their place of residence. The mean, age-adjusted difference in systolic blood pressure between persons in the highest and lowest population density areas is 2.5 mm. Hg. This relationship of systolic pressure to population density is statistically significant for white women, as indicated by a mean difference of 3.1 mm. Hg, but not for white men (table 38).

The age-adjusted, mean diastolic blood pressure for white persons of both sexes combined is higher among those living in rural areas than for those in urban areas, but the inverse association with population density is significant only for females.

Among Negro males, but not females, there is a significant increase in age-adjusted, mean systolic blood pressure with a decrease in population density of their place of residence (table 39). The pattern of association of diastolic pressure levels among the Negro population with population density of place of residence is similar but less marked than that for their systolic pressures, but nevertheless is significant for both sexes combined.

Hypertension[a]

Epidemiologic studies have established that elevated systemic arterial blood pressure increases the risk of coronary artery disease and cerebrovascular accident.[11-16] Recent studies by the Veterans Administration have clearly demonstrated that this risk is reduced by lowering blood pressure.[17,18]

Prevalence estimates of the extent and distribution of hypertension in the U.S. population as determined from the single blood pressure obtained in this study are shown in tables 40-42. For these the following criteria for adults were used:

Definite hypertension—either systolic pressure of 160 mm. Hg or more *or* diastolic pressure of 95 mm. Hg or more. (A subgroup of those with diastolic pressure of 105 mm. Hg or more is shown separately.)

Borderline hypertension—systolic pressure below 160 mm. Hg *and* diastolic pressure below 95 mm. Hg, *but not both* below 140 mm. Hg systolic and 90 mm. Hg diastolic.

Normotension—both systolic pressure below 140 mm. Hg *and* diastolic pressure below 90 mm. Hg.

Definite hypertension.—In the United States there are an estimated 23.4 million or 15.2 per 100 persons age 12-74 years and 23.2 million or 18.1 per 100 persons age 18-74 years with definite hypertension, based on findings from the Health and Nutrition Examination Survey of 1971-1974. The prevalence rate increases rapidly with age from 0.8 per 100 persons at 12-17 years to 40.7 per 100 at 65-74 years (table 40). The average increment in this prevalence rate with age is slowest among youths and young adults (0.3 and 0.4 percent per year) and most rapid among persons 25-64 years of age (an average of 0.9 percent per year); then among older persons the rate of increase drops slightly (0.8 percent per year).

Definite hypertension is slightly more prevalent among men 18-74 years (19.2 per 100) than among women (17.1 per 100). The prevalence rates increase more rapidly with age among men than among women through 54 years of age, then the pattern reverses. In ages 18-34 years, definite hypertension is more than twice as prevalent among men; then in ages 35-54 years, while the difference decreases, the rates among men remain significantly higher than those among women. Finally, among persons 65-74 years the prevalence of definite hypertension becomes significantly higher among women (43.9 percent) than among men (36.6 percent).

In the white U.S. population, as for persons of all races, the prevalence of definite hypertension increases with age, and rates are higher among young men than among young women. The rate of definite hypertension among white persons increases from 0.7 per 100 in ages 12-17 years to 39.3 per 100 in ages 65-74 years. Among white males and females, the rates increase from 1.0 per 100 and 0.3 per 100, respectively, in ages 12-17 years to 35.3 per 100 and 42.3 per 100, respectively, in ages 65-74 years. For white males age 12-54 years the rate is substantially greater than that for white females of the same age, then the pattern reverses until by 65-74 years the prevalence is significantly greater among women.

Among the Negro population the prevalence rate of definite hypertension increases more rapidly with age than among whites, from 1.2 per 100 Negro youths 12-17 years to 55.1 per 100 at ages 65-74 years. For Negro males and females the respective rates increase from 0.2 and 2.2 per 100 in ages 12-17 years to 50.1 and 58.8 per 100 in ages 65-74 years. Definite

[a]Estimates of the prevalence of hypertension have also been made based on data from the Center's 1974 Health Interview Survey (HIS). Discussions of the similarities and differences in the estimates from the HANES and HIS programs can be found in a forthcoming Series 10 publication, *Characteristics of Persons with Hypertension, United States, 1974*, and in future Series 11 reports.

hypertension is more prevalent among Negro males than females from 18-44 years, but the reverse is evident among both Negro youths and adults age 45-74 years.

Definite hypertension is more prevalent among Negro than among white persons across the 12-74-year age range; the differences are large enough to be statistically significant from 25 years on. When the effect of differences in the age distributions for the two races are eliminated, the age-adjusted rates for adults are substantially less among white (16.8 per 100) than among Negro (30.5 per 100) adults ages 18-74 years.

The racial differences in these hypertension prevalence rates in ages 35-74 years are consistently greater among women than men. In ages 25-44 years among men and 18-54 years among women, definite hypertension is at least twice as prevalent among Negroes as among the white population. Among adults ages 18-74 years the age-adjusted prevalence rates for Negro men (30.1 per 100) and Negro women (31.2 per 100) are significantly greater than among white men (18.3 per 100) and white women (15.5 per 100).

An estimated 6.2 million people age 12-74 years—about one-fourth (26.5 percent) of all those with definite hypertension—have substantially elevated diastolic blood pressure of 105 mm. Hg or greater (table 41). Among the population with definite hypertension, the proportion of people with this degree of elevation of diastolic pressure increases with age from 13 percent in ages 12-17 years to 36 percent in ages 45-54 years, then decreases to 19 percent in ages 65-74 years, becoming slightly higher in the 12-74-year age range among males (28.1 percent) than among females (24.9 percent). The proportion is consistently higher among Negroes (39 percent) than among white persons (24 percent).

Borderline hypertension.—In addition to the 23.4 million youths and adults with definite hypertension, there are 24.8 million persons age 12-74 years in the United States with borderline hypertension (as defined here), a rate of 16.2 per 100 (table 42). Prevalence rates increase consistently with age more slowly than for definite hypertension, from 5.6 per 100 youths age 12-17 years to 29.8 per 100 adults 65-74 years. These figures show a five-fold increase in prevalence compared with a fifty-fold increment for definite hypertension. Among persons under 35 years of age the prevalence of borderline hypertension is more than twice that for definite hypertension; in ages 35-54 years the rates are essentially equal; while in ages 55-74 years the rate drops to about three-fourths of the rate for definite hypertension.

Except in the oldest age groups, 55-74 years, where the rates for men and women are similar, the prevalence rates for borderline hypertension among males exceed that among females. As was the case with definite hypertension, the increase in the prevalence of this borderline condition with age, from 12 to 74 years, is about twice as rapid for women as for men, but for both sexes the increase with age is substantially less than that shown in definite hypertension.

The prevalence of borderline hypertension among white adults age 18-74 years (18.5 per 100, age adjusted) is slightly greater than among Negro adults (16.3 per 100) in contrast to the substantially higher prevalence of definite hypertension among Negro adults. For both racial groups the prevalence rates for borderline hypertension are greater for men than for women (21.8 per 100 and 15.6 per 100 for white men and women; 18.1 per 100 and 14.8 per 100 for Negro men and women).

Medical history.—Information was obtained in the medical histories preceding the examination on whether the examinees had ever been told by a doctor that they had hypertension, how many years they had such a condition (if previously diagnosed), and whether during the previous 6 months they had used medication for high blood pressure, and, if so, how frequently. The association of this information with the blood pressure findings of definite and borderline hypertension (as defined in this report) among the U.S. adult population is shown in table A.

Among those 23.2 million U.S. adults 18-74 years with definite hypertension, as determined from the blood pressure levels at examination, more than half (54.9 percent or 12.7 million) had never been diagnosed by a doctor as having hypertension, one-third (33.2 percent) had been so diagnosed and knew they still had the condition, while for the remainder this condition had been previously diagnosed, but either

Table A. Number and percent distribution of adults 18-74 years by responses to selected medical history questions, according to hypertensive status: United States, 1971-1974

Medical history questions	Definite hypertensive		Borderline hypertensive		Normotensive		Definite hypertensive with at least 105 mm. Hg diastolic pressure	
	Population in thousands	Percent	Population in thousands	Percent	Population in thousands	Percent	Population in thousands	Percent
All adults, 18-74 years	23,171	100.0	23,413	100.0	81,353	100.0	6,172	100.0
Has a doctor ever told you that you have high blood pressure?								
Yes, still have it	7,701	33.2	3,421	14.6	2,997	3.7	2,731	44.2
Yes, but not now	1,846	8.0	1,598	6.8	2,371	2.9	444	7.2
Yes, don't know now	904	3.9	562	2.4	596	0.7	277	4.5
No	12,713	54.9	17,811	76.1	75,282	92.6	2,716	44.0
Unknown	7	0.0	21	0.1	107	0.1	4	0.1
If yes, how many years ago did you first have it?								
Less than 1 year	177	0.8	65	0.3	54	0.1	97	1.6
1-5 years	5,343	23.0	3,241	13.8	3,616	4.4	1,550	25.1
6-70 years	4,874	21.0	2,241	9.6	2,259	2.8	1,793	29.0
Not applicable, unknown	12,777	55.2	17,866	76.3	75,424	92.7	2,732	44.3
During the past 6 months have you ever used any medicine, pills, or drugs for high blood pressure?								
Regularly	4,893	21.1	2,084	8.9	1,670	2.0	1,471	23.8
Occasionally	831	3.6	309	1.3	233	0.3	307	5.0
No	17,420	75.2	20,992	89.7	79,338	97.6	4,390	71.1
Unknown	27	0.1	28	0.1	112	0.1	4	0.1

they thought they no longer had it (8.0 percent) or did not know if they still had it (3.9 percent).

The proportion of those with definite hypertension whose condition was previously undiagnosed is higher among younger than among older adults, the percent generally decreasing with age from 68.5 percent of persons age 18-24 years to 48.5 percent of persons 65-74 years (table 43). However, because the prevalence of definite hypertension, as determined from blood pressure levels in this examination survey, increases substantially with age, the population estimates of those with undiagnosed hypertension increase from about 0.5 million in ages 18-24 years to a maximum of nearly 3.5 million in ages 45-54 years, then drops to 2.5 million at 65-74 years.

The decrease with age in the proportion of cases of undiagnosed hypertension (among those with definite hypertension) is more rapid and more statistically significant among women than among men. Men age 18-74 years are more likely than women to have such an undiagnosed condition (62.9 percent for men and 46.7 percent for women), the differences being largest and statistically significant among older adults 55-74 years.

Nearly 11.0 million or 56.6 percent of white adults age 18-74 years with definite hypertension at the time of this examination had conditions not previously diagnosed, the proportion being higher and decreasing less rapidly with age among white men than among white women.

The proportion of undiagnosed conditions among those with definite hypertension is significantly lower for Negroes than for white adults age 18-74 years. About 1.7 million or 47.2 percent of Negro adults with definite hypertension had conditions not previously diagnosed, the proportion being higher among men than women (as it was also in the white adult population). Because of the large sampling variability for this relatively small segment of the population, the trend by age is less consistent that for the white population.

Those adults with definite hypertension whose diastolic blood pressure was 105 mm. Hg or greater at the time of the examination were less likely than the remainder with definite hypertension to have a condition that was not previously diagnosed (44.0 percent of those with elevated diastolic pressure of at least 105 mm. Hg compared with 58.8 percent of the remainder) and more likely to have the previously diagnosed condition still present (44.2 percent compared with 29.2 percent for the remainder with definite hypertension) as shown in tables 43, 44, and A. In this group with substantially elevated diastolic pressure as well as the remainder of those with definite hypertension, the proportion whose condition had not been previously diagnosed was significantly greater among men than women.

As might be expected, the proportion with no previous diagnosis of high blood pressure among those adults with borderline hypertension at the time of this survey (76.1 percent) was substantially greater than the corresponding proportion among adults with definite hypertension (54.9 percent), while the portion with a previously diagnosed condition of high blood pressure (14.6 percent of the borderline group) was less than half that among those adults with definite hypertension (33.2 percent). The proportion of those with borderline hypertension who were never diagnosed as having high blood pressure decreases with age from 87.3 percent among the 18-24-year-olds to 60.5 percent among those 65-74 years of age, and as for the undiagnosed group with definite hypertension, is significantly greater among men (81.8 percent) than among women (69.3 percent). The proportion tends to be somewhat lower among Negro than among white adults, but the age-sex trends are similar for both races (table 45).

Nearly all (92.6 percent of the 81.4 million adults classified as normotensive on the basis of examination survey findings have never been diagnosed by a doctor as having high blood pressure. Those whose condition has been so diagnosed may be expected to include persons whose blood pressure is adequately controlled by medication, those whose condition has changed or was different at the time of the initial diagnosis than at the time of the survey, and those whose own doctor had used a different criterion for diagnosis than that used in the survey.

More than half the adults previously diagnosed as having high blood pressure had known this for 5 years or less, the proportion being 52.8 percent of those with definite hypertension, 59.2 percent of the borderline group, and 61.6 percent of the normotensives.

The question regarding the use of medication (medicine, pills or drugs) for high blood pressure in the past 6 months was asked each examinee irrespective of whether the condition had been previously diagnosed. The proportion taking such medication regularly is directly related to the severity of their hypertensive condition; 21.1 percent of those with definite hypertension took medication, compared with 8.9 percent of those with borderline hypertension and 2.0 percent of the normotensive group. Those with diastolic pressure of 105 mm. Hg or greater are more likely than the other definite hypertensives to have taken medication for this condition (23.8 percent compared with 21.1 percent). Similarly, the proportion taking such medication occasionally decreases from 3.6 percent among those classed as definite hypertensive to 1.3 percent among the borderline group and to 0.3 percent among those with normal blood pressure.

If it can be assumed that those adults classed as borderline hypertensive or normotensive but taking medication regularly for high blood pressure are keeping their blood pressure below the level for definite hypertension by use of this medication, there would be an estimated 26.9 million adults in the United States, a rate of 21.0 per 100, with definite hypertension—the

18.1 per 100 whose blood pressure is still elevated to that degree and the 2.9 per 100 with blood pressure presumably controlled below that level by medication.

Comparison With Previous National Survey Findings

Background.—Blood pressure levels of the U.S. population have been estimated previously from the Health Examination Survey findings among national probability samples representative of the civilian noninstitutionalized adult population age 18-79 years in 1960-1962, children age 6-11 years in 1963-1965, and youths age 12-17 years in 1966-1970.[19-23]

In the present and the preceding three national surveys the 1951 American Heart Association (AHA) recommendations for human blood pressure determination[7] were followed. The extent to which differences in examination procedures and examiners may have affected comparability of the data is summarized here. Because a single blood pressure measurement was obtained in this part of the present survey examination, only the comparable findings from the three preceding surveys are considered.

Blood pressure determinations in the 1960-1962 survey among adults and in the present survey were made in the standard, recommended manner with the examinee in a seated position. For the initial blood pressure measurements in the 1963-1965 survey among children and in the 1966-1970 survey among youths the examinee was in a supine position. It has been suggested that if the arm is held at heart level there are probably no great differences in the blood pressures of normal persons whether recorded in the supine, sitting, and standing positions.[7] The findings among youths in the 1966-1970 survey which showed no essential difference in mean levels between the second (supine) and third (seated) blood pressure determination[23] support this suggestion.

Exercise tolerance tests were included in both the 1963-1965 and 1966-1970 surveys among children and youths, but not in those of 1960-1962 or the present survey. While the effect of exertion on blood pressure has been demonstrated,[7] the scheduling of examination components in the two earlier surveys among children and youths was such that the analysis of the effect of exercise indicated that it introduced no substantial bias in the estimates of blood pressure from those two surveys.[23]

Blood samples were obtained by venipuncture in the 1960-1962, 1966-1970, and present surveys. The effect of this procedure on the national estimates of blood pressure from the three surveys has been analyzed and found to be negligible (appendix III).[19,23]

Another identifiable difference among the four surveys that may have influenced comparability of estimates relates to the observers. In the 1960-1962 survey among adults and in the present survey among the 6-74-year-olds, the measurements were taken by the examining physicians in each location—39 different physicians in the first survey, 43 in the present. Determinations were made during the earlier surveys among children and youths by four nurses and two nurses, respectively. An analysis of the possible effect of the number and differences among observers in the blood pressure estimates obtained in the first three surveys has been published.[23] The findings seem to indicate that the greater the number of skilled observers in such surveys, the more closely the national estimates are likely to approximate the actual distribution of blood pressure in the population as obtained by a variety of observers such as the individual's own private physicians.

The accuracy of the blood pressure determinations in the four surveys, as indicated by the pattern of end-digit preference, could also affect the comparability of the national estimates. The extent to which accuracy could be a factor is assessed in appendix III.

Published reports on estimated blood pressure levels in the population of adults and children as determined from the 1960-1962 and 1963-1965 surveys show details based only on mean values from three and two readings per examinee, respectively.[19-22] For use in comparison with the single reading findings from the present survey, national estimates based on the first blood pressure measurement in those two earliest surveys are included in tables 46-57 of this report. Data from the individual blood pressure determinations among youths in the

1966-1970 survey have been published along with a detailed examination of the factors which could have explained why levels were higher than expected.[2,3]

Children.—Mean systolic and diastolic blood pressure levels of U.S. children age 6-11 years as estimated from the Health and Nutrition Examination Survey findings of 1971-1974 are lower and more variable than the national estimates for children of this age obtained from the 1963-1965 survey (tables 1 and 46 and figure 17).

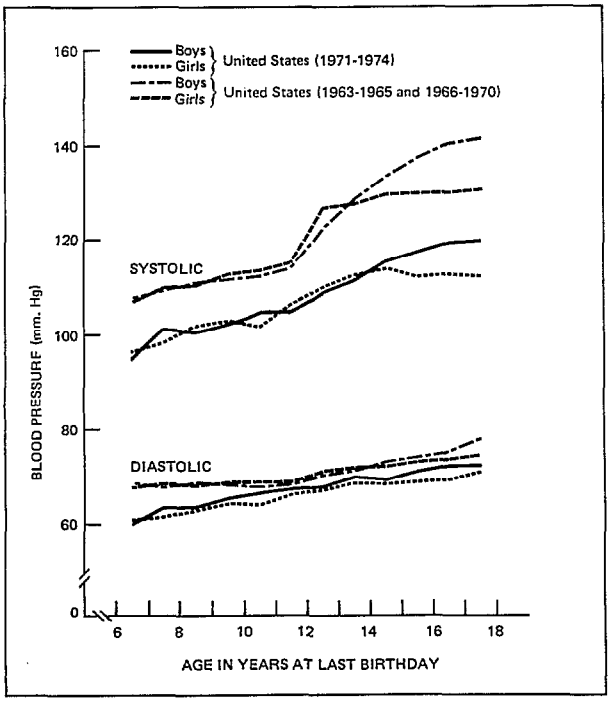

Figure 17. Mean systolic and diastolic blood pressure of children and youths 6-17 years, by age and sex: United States, 1971-1974, 1963-1965, and 1966-1970.

Across the 7-11-year age range the mean systolic blood pressure levels of U.S. children in 1971-1974 are about 9 mm. Hg below those from the 1963-1965 survey. The mean levels for both sexes show a similar, consistent pattern, the values for girls being slightly more than 9 mm. Hg, and those for boys slightly less than 9 mm. Hg below those of about 8 years ago. At 6 years of age, where the estimates in the present survey are least reliable (based on only three-fourths of the examinees), the mean systolic pressure levels from the 1971-1974 survey are about 12 mm. Hg lower than the earlier estimates.

Mean diastolic pressure values from the present survey among 7-11-year-old children are 2.9 mm. Hg lower (2.3 mm. Hg for boys and 3.6 mm. Hg for girls) than those for U.S. children of that age from the 1963-1965 survey. The mean difference is less among older than younger children, probably only a reflection of sampling variability at age 11.

The variations in blood pressure levels in the child population and in the sampling variability of the mean values obtained from the 1971-1974 survey findings are much larger than those from the 1963-1965 survey because the sample in the earlier survey was about twice as large as the 6-11 year old sample in the present study.

Both white and Negro children age 6 or 7 through 11 years have lower mean systolic and diastolic blood pressure levels as estimated from the 1971-1974 survey than those for their respective racial groups from the 1963-1965 survey, the differences being greater for systolic than diastolic pressures (tables 4, 5, 47, and 48).

Youths.—Blood pressure levels among youths 12-17 years as determined in the present 1971-1974 survey are on the average, consistently lower than those national estimates obtained for this age group from the 1966-1970 survey, the mean differences being substantially greater for systolic than diastolic pressure (table 6 and figure 17).[2,3] The report presenting these previous blood pressure findings among youths[2,3] includes a detailed analysis of the factors affecting these measurements, showing that while these earlier data are internally consistent, the most likely explanation for the unexpectedly high levels obtained probably rests with the measurement process, i.e., the greater risk of examiner bias associated with using only two observers.

The mean systolic pressure of youths 12-17 years as estimated from the present survey is 18 mm. Hg lower than that obtained for this age group in the 1966-1970 survey. The differences are larger among older than younger youths, increasing from a mean difference of 16 mm. Hg at 12 years to over 20 mm. Hg at 16 and 17

years. The mean difference for boys (19 mm. Hg) is just slightly greater than that for girls (18 mm. Hg), with older boys showing a greater difference than younger boys of that age range.

Mean diastolic blood pressure levels for youths from the present survey are lower across the 12-17-year age range than those from the 1966-1970 survey, the mean differences being slightly greater for this age group (4.8 mm. Hg) than for children (2.9 mm. Hg). The mean diastolic pressure level differences are just slightly larger among older youths (5.2 mm. Hg at 17 years compared with 3.4 mm. Hg at 12 years), and greater for girls (5.5 mm. Hg) than for boys (4.1 mm. Hg).

Mean differences between blood pressure levels from the 1971-1974 and 1966-1970 surveys—both systolic and diastolic—for white and Negro youths are of about the same magnitude as those for youths of all races combined (tables 9 and 10).[2,3]

Adults.—In contrast to the substantial differences over time in blood pressure levels of children and youths between those determined from the present survey and those for the comparable age group in the earlier national surveys of 1963-1970, the blood pressure levels of the adult population from the present survey agreed more closely with national estimates obtained from the 1960-1962 survey.

Mean systolic blood pressure levels of U.S. adults 18-54 years (all races combined) as estimated from the 1971-1974 survey are nearly identical to those from the 1960-1962 survey (tables 11 and 49 and figure 18). Only for men in ages 35-44 years are the mean differences in systolic pressure from the two surveys large enough to reflect more than sampling variability. For both men and women in ages 55-64 and 65-74 years, the mean systolic pressures from the present survey are significantly lower than the mean levels from 1960-1962. The mean differences for men are 3.8 mm. Hg and 5.2 mm. Hg lower, respectively, and for women, 5.2 mm. Hg and 11.1 mm. Hg lower.

In contrast to the findings for systolic blood pressure, the diastolic blood pressure levels of adults as estimated from the 1971-1974 survey are consistently higher than those from the 1960-1962 survey, but the mean differences for

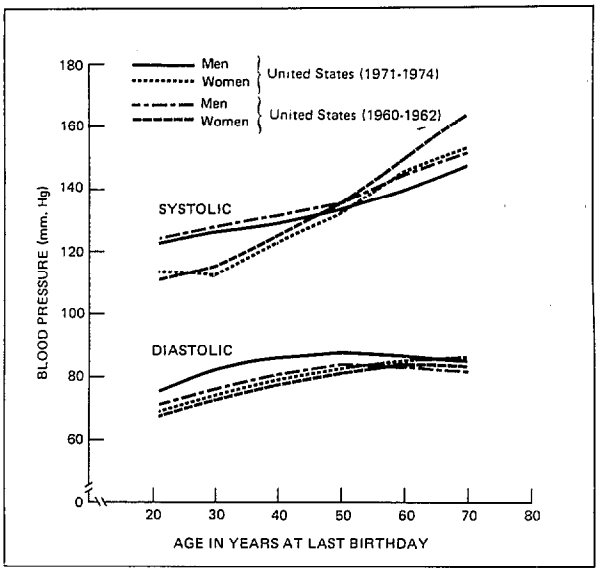

Figure 18. Mean systolic and diastolic blood pressure of adults 18-74 years, by age and sex: United States, 1971-1974 and 1960-1962.

men, although significant, are only 3.3-4.5 mm. Hg higher and for women, 1.6-2.5 mm. Hg higher.

The direction and magnitude of the differences in the national estimates from the 1971-1974 and 1960-1962 surveys for systolic and diastolic blood pressures of white and Negro adults are similar to those described for adults of all races combined (tables 25, 26, 49, 50, and 51).

Hypertension.—Definite hypertension is as prevalent among U.S. adults age 18-74 years in 1971-1974 as it was in 1960-1962. The prevalence rate as estimated from single blood pressure determination in each of the national surveys is 18.1 per 100 population from the present study compared with 18.2 per 100 from the earlier study. This close agreement is the resultant of the somewhat lower systolic pressure among the middle and older age groups and the higher diastolic pressure across the adult age range from the present study. When adjustment is made in the estimate from the 1960-1962 rate to compensate for differences in the age-sex distribution in the U.S. population at the two points in time, the projected rate from the 1960-1962 survey in the present population would be 17.6 per 100, slightly below the rate

actually found in the more recent national survey.

The prevalence rates of hypertension among white and Negro adults—both for men and women—in 1971-1974 and 1960-1962 differ no more than expected from sampling variability alone (tables 40 and 52). At both points in time, the prevalence of definite hypertension is significantly greater among Negro than white adults, both men and women.

Borderline hypertension rates among U.S. adults in 1971-1974 also do not differ significantly from these rates in 1960-1962 among white or Negro men or women (tables 42 and 54).

However, the prevalence estimate of persons with definite hypertension whose diastolic blood pressure is at least 105 mm. Hg from the present survey is significantly higher than that from the earlier national study (1960-1962) for men of all races combined and for white men, but not for women. As noted previously the mean diastolic blood pressure levels of men from the present 1971-1974 survey are significantly higher than those for men in the 1960-1962 national survey and those for women consistently higher but not significantly so. Not only are the mean diastolic pressure levels higher for men in the present survey, but the differences are consistent across the selected percentile points in the distribution, with rates remaining somewhat greater for men than for women. This consistency in elevation of the diastolic pressure levels in the present survey rather than an elevation at the upper percentiles might suggest that the increase in the prevalence estimates for this group of the hypertensives between the two points in time reflects survey differences rather than an actual increase in this type of hypertension, in the 12 years elapsing between the two surveys.

In both the present and earlier survey among adults, it was possible from the medical history to identify, in a nearly similar manner, those adults whose high blood pressure condition had not been previously diagnosed by a doctor. The proportion of adults with previously undiagnosed definite hypertension from the present national study (54.9 percent) is substantially less than that from the 1960-1962 survey (58.0 percent)—a difference of 3.1 percent or 7.7 percent if differences in the age distribution within the population at the two points in time are taken into account. This trend is consistent among both white and Negro adults (tables A, B, 43, and 55). At both points in time the proportion with definite hypertension not previously diagnosed is significantly higher (about one-third more) among men than women.

Among those with diastolic blood pressure of at least 105 mm. Hg, whose condition had not been previously diagnosed, the proportion is about the same from the present survey (44.0 percent) as that from the 1960-1962 survey (42.4 percent) but would be 10.1 percent lower than from the earlier survey if differences in age distribution within the populations at the two points in time are taken into account (tables A, B, 44, and 56).

The proportion with borderline hypertension from the present study, whose high blood pressure condition had not been previously diagnosed (76.1 percent), is also significantly lower than the corresponding proportion from the 1960-1962 study—6.3 percent less than in 1960-1962 or 5.5 percent less if differences in age distribution within the population at the two points in time are taken into account. This trend is consistent among both white and Negro adults (tables 45 and 57).

Questions asked about the use of medication from the two surveys were not completely comparable. In the present study the examinee was asked about the frequency of taking medication for high blood pressure within the preceding 6 months, whereas in the 1960-1962 survey the question was limited to whether they were taking medication for high blood pressure. Among persons with substantially elevated blood pressure classified as definite hypertension, the proportion taking medication regularly for high blood pressure in the present survey (21.1 percent) is nearly identical to the proportion taking such medication from the 1960-1962 survey (21.0 percent). However, among those with borderline hypertension, as defined here, and those with normal blood pressure the proportions reported taking such medication regularly are slightly higher in the present than the 1960-1962 survey—8.9 percent compared with 7.1 percent in the borderline hypertension

Table B. Number and percent distribution of adults 18-74 years by responses to selected medical history questions, according to hypertensive status: United States, 1960-1962

Medical history questions	Definite hypertensive		Borderline hypertensive		Normotensive		Definite hypertensive with at least 105 mm. Hg diastolic pressure	
	Population in thousands	Percent	Population in thousands	Percent	Population in thousands	Percent	Population in thousands	Percent
All adults, 18-74 years	19,661	100.0	19,452	100.0	69,102	100.0	4,074	100.0
Have you ever had any reason to think you may have high blood pressure? Did a doctor tell you it was high blood pressure?								
Yes, doctor diagnosed	8,252	42.0	3,325	17.1	3,498	5.1	2,323	57.1
Yes, doctor did not diagnose	694	3.5	750	3.8	1,397	2.0	218	5.3
No	10,536	53.6	15,261	78.5	63,898	92.5	1,503	36.9
Unknown	179	0.9	116	0.6	309	0.4	30	0.7
How long ago did you first start having it?								
1 year	1,459	7.4	822	4.2	1,374	2.0	459	11.3
1-5 years	3,215	16.4	1,533	7.9	1,787	2.6	805	19.7
More than 5 years	4,069	20.7	1,622	8.4	1,710	2.5	1,160	28.5
Other	382	1.9	200	1.0	284	0.4	147	3.6
Not applicable	10,536	53.6	15,275	78.5	63,947	92.5	1,503	36.9
Have you had it in the past 12 months?								
Yes	6,058	30.9	2,436	12.5	2,478	3.6	1,738	42.6
No	2,134	10.8	1,240	6.4	2,152	3.1	545	13.4
Unknown	933	4.7	501	2.6	525	0.8	288	7.1
Not applicable	10,536	53.6	15,275	78.5	63,947	92.5	1,503	36.9
Do you take any pills or medicine for it?								
Yes	4,124	21.0	1,382	7.1	1,265	1.8	1,155	28.4
No	4,719	24.0	2,667	13.8	3,647	5.4	1,340	32.8
Unknown	282	1.4	128	0.6	243	0.3	76	1.9
Not applicable	10,536	53.6	15,275	78.5	63,947	92.5	1,503	36.9

groups and 2.0 percent compared with 1.8 percent in the normotensive group (tables A and B).

Comparison With Other Studies

Children and youths.—Blood pressure findings from three large-scale studies of children and youths among more geographically limited groups in the United States have been selected for comparison with the national estimates obtained from the 1963-1970 Health Examination Surveys and the 1971-1974 Health and Nutrition Examination Survey. These studies include

- The longitudinal Child Research Council study of 1927-1967 among patients of Denver physicians from which McCammon[24] reports blood pressure level findings for 249 boys and girls 6-17 years of age on whom more than 4,500 such measurements were

obtained by an unspecified number of different observers.

- Johnson et al.[25] report findings from the first round of examinations in 1959-1960 for the total community study of Tecumseh, Michigan, residents including 2,509 in the age range 6-19 years.
- Blood pressure level findings from one examination for 1,159 healthy children 6-15 years of age seen in one physician's office and outpatient clinic in St. Louis, Missouri, were reported by Londe[26] in 1966.

The methods used in blood pressure measurement and other design characteristics of these studies are described in table C. However, because many different factors that may affect blood pressure measurement were either uncontrolled or not described among the various studies—the examiners, the equipment, the conditions of the examination, and the condition of the examinee—at least small differences in mean levels among the various study groups would be expected.

As shown in figure 19 mean systolic and diastolic blood pressure levels of U.S. children and youths age 6-17 years as estimated from the Health and Nutrition Examination Survey of 1971-1974, although lower than those from the previous Health Examination Surveys of 1963-1970, are within the range of mean levels reported for children and youths of comparable ages in the Denver, Tecumseh, and St. Louis studies. U.S. children and youths in general have higher blood pressure than children and youths in the Denver study had, lower blood pressure than examinees in the Tecumseh community, and lower systolic but not diastolic blood pressure than examinees in St. Louis.

Adults.—National estimates of blood pressure levels from the 1971-1974 Health and

Table C. Design characteristics of selected studies of blood pressure among children and youths

Author	Type and time of study	Examinee			Method of measurement
		Source	Number	Age	
McCammon[24]	Longitudinal, 1927-1967	Children, Denver area	[1]249	6-17 years	Number of different examiners not stated, child sitting, diastolic pressure recorded when sound became muffled
Johnson et al.[25]	Single time, 1959-1960	Children, Tecumseh, Michigan area	2,509	6-19 years	49 examiners, child sitting, diastolic pressure recorded when sounds disappeared
Londe[26]	Not stated (published 1966) (not longitudinal)	Healthy children seen in physician's office and clinic, St. Louis area	1,159	6-15 years	One examiner, child supine, diastolic pressure recorded when sounds disappeared
Health Examination Survey	Cross-sectional, 1963-1965	U.S. national probability sample	7,119	6-11 years	Four examiners, child supine, diastolic pressure recorded when sounds disappeared
Health Examination Survey	Cross-sectional, 1966-1970	U.S. national probability sample	6,768	12-17 years	Two examiners, youth supine, (first two measurements only), diastolic pressure recorded when sounds disappeared
Health and Nutrition Examination Survey	Cross-sectional, 1971-1974	U.S. national probability sample	4,283	6-17 years	43 examiners, examinee seated, diastolic pressure recorded when sounds disappeared

[1] 4,544 measurements.

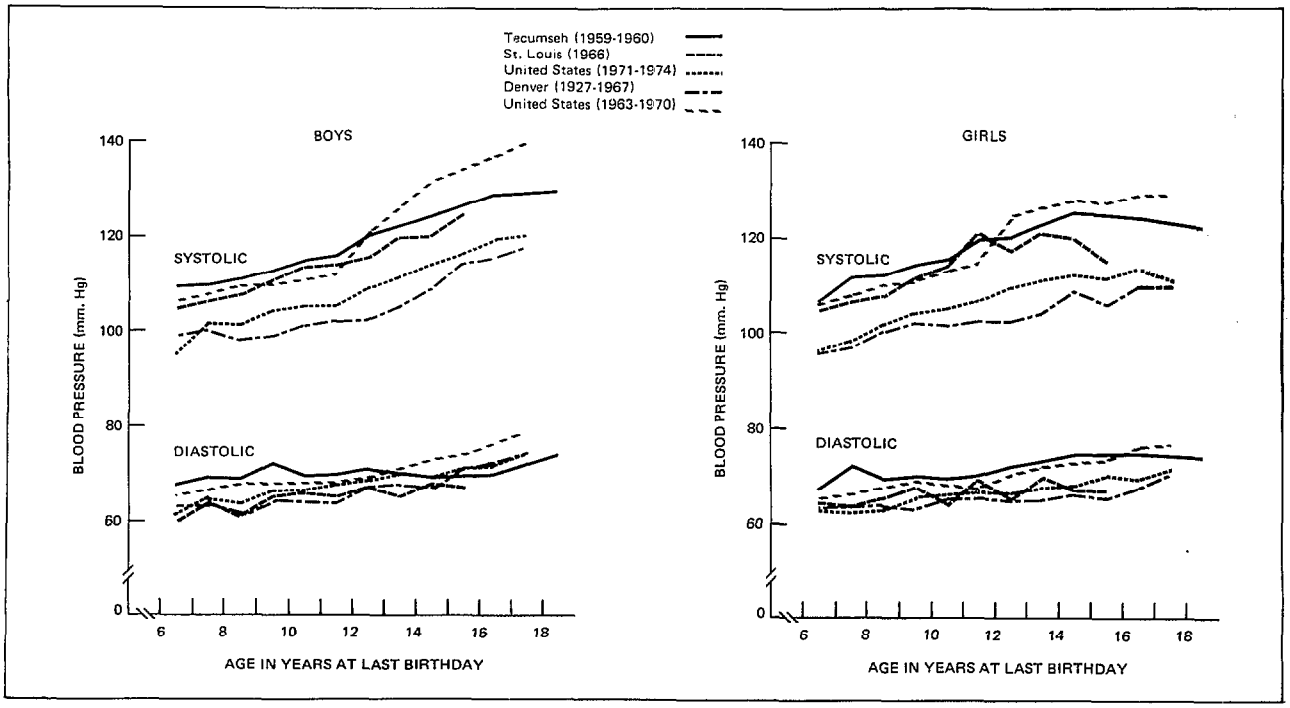

Figure 19. Mean blood pressure levels of U.S. boys and girls 6-17 years of age in the 1960 Tecumseh, Michigan, study; 1966 St. Louis study; estimates for the U.S. population in 1963-1970 and 1971-1974; and 1927-1967 Denver study.

Nutrition Examination Survey and the 1960-1962 Health Examination Survey are compared with the following three large-scale studies:

- The 1959-1960 total community study of some 2,200 Tecumseh, Michigan, residents age 18-74 years from first round examinations, as reported by Johnson et al.[25]
- The Society of Actuaries' Build and Blood Pressure Study of 1959[27] (BBP) covering the experience of 26 large life insurance companies under some 4 million policies issued to men and women from 1935 through 1953.
- The nationwide Community Hypertension Evaluation Clinic (CHEC) Program in 1973-1975 in which more than 1 million persons were screened at 1,171 sites, as reported by Stamler et al.[28]

In each of these studies the blood pressure measurements were obtained by a large number of different trained observers using methods probably generally similar to those used in the two national surveys.

The mean systolic blood pressure levels of men 20-54 years and women 35-64 years from both national surveys are about midway between the higher levels of the Tecumseh, Michigan, population and the lower levels of the insured population in the Society of Actuaries 1959 study (figure 20).

Diastolic mean levels for men across the age range in the present national survey are nearly identical to the levels of the Tecumseh population, exceeding levels from the 1960-1962 Health Examination Survey and the lower levels of the insured population, whereas the mean diastolic blood pressure levels for women 35-74 years in both national surveys are about midway between the mean levels of the Tecumseh and the insured populations.

Although screening in the CHEC program was not done among defined populations, mean blood pressure levels of the persons measured in it generally paralleled estimates for the U.S.

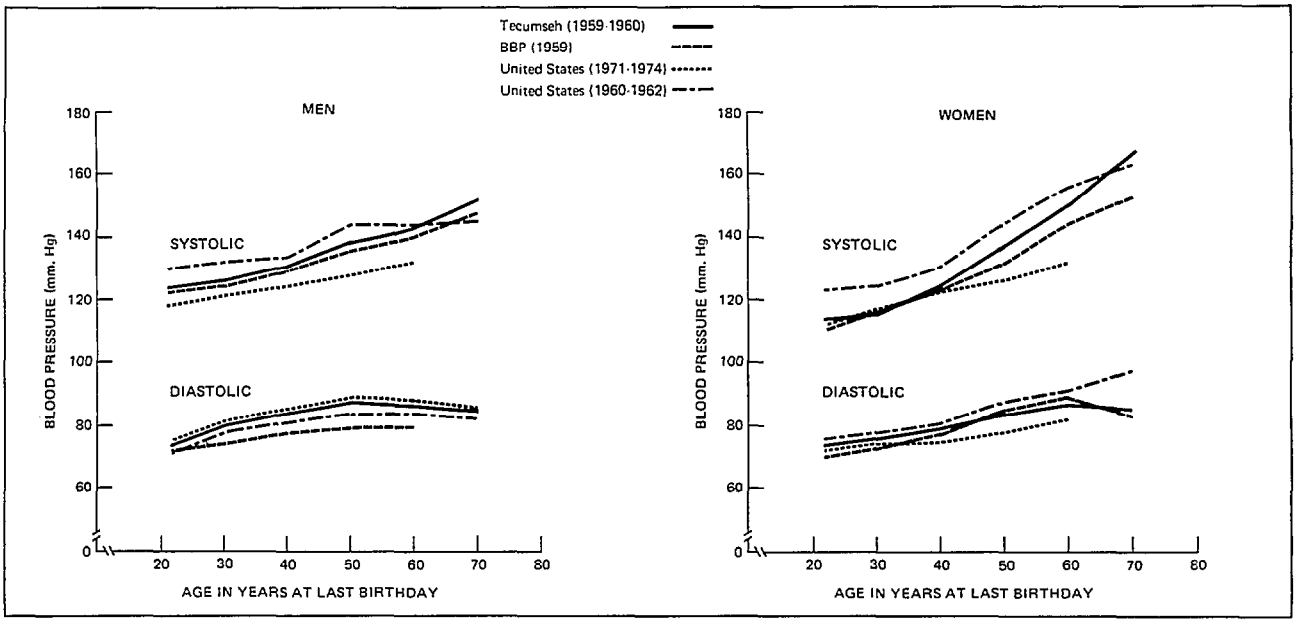

Figure 20. Mean blood pressure levels of adults in the 1959 Society of Actuaries' Build and Blood Pressure (BBP) study; the 1960 Tecumseh, Michigan, study; and estimates for the U.S. population in 1960-1962 and 1971-1974.

population from the two national surveys, more closely for systolic than diastolic blood pressure for white and Negro men and women (figure 21). Prevalence rates for elevated blood pressure in the CHEC study were based on a diastolic blood pressure of at least 90 mm. Hg and at least 110 mm. Hg. If these CHEC rates are age-sex-race-adjusted to the total U.S. population to be comparable with the U.S. estimates from the present survey findings, the national prevalence rates from HANES are an average of 1 percent higher than rates based on the CHEC study.

SUMMARY

This report contains national estimates of blood pressure levels of the U.S. civilian noninstitutionalized population 6-74 years of age based on findings from the Health and Nutrition Examination Survey of 1971-1974.

For this survey a national probability sample of 28,043 persons age 1-74 years was selected to represent the 194.0 million persons in the target population of that age. Of this sample, 20,749 persons (74.0 percent) were examined. The national estimates of blood pressure levels of the population in this report are based on findings for the 24,513 persons in the sample 6-74 years of age. Of this group 17,854 persons (72.8 percent or 74.4 percent if age-adjusted) were examined.

Only one blood pressure measurement was taken on each examinee with the use of a sphygmomanometer. Standard procedures were followed by the examining physician responsible for these measurements.

The findings are as follows:

- Among boys and girls age 6-17 years mean systolic and diastolic blood pressure increases substantially with age. Before age 15 the mean pressure levels for boys and girls are similar; in ages 15-17 years the mean blood pressure levels for boys consistently exceed those for girls, the differences increasing with age. No real differences in blood pressure levels among white and Negro children or youths are evident.

- Mean systolic and diastolic pressures continue to increase with age into the adult age range, but at a slower rate than among children and youths.

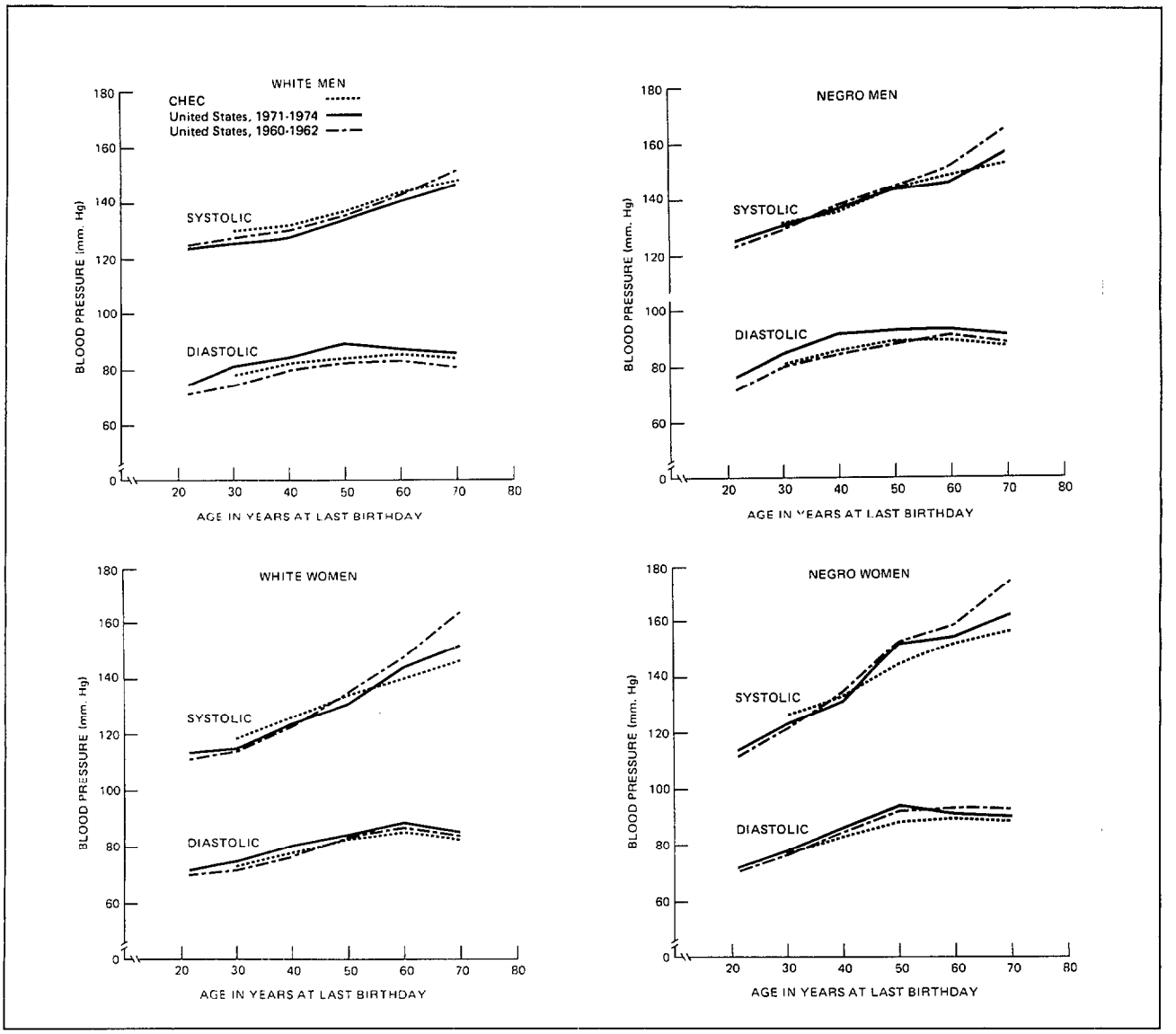

Figure 21. Mean blood pressure levels of white and Negro men and women in the 1973-1975 nationwide Community Hypertension Evaluation Clinic (CHEC) program and estimates for the U.S. population in 1960-1962 and 1971-1974.

- Among adults systolic pressure continues to increase with age, and although the mean values for men exceed those for women in ages 18-54 years, from 55 years on the mean levels for women are higher.
- Diastolic pressure (mean values) of men increases with age and significantly exceeds mean diastolic pressure of women in ages 18-54 years, then decreases slowly from 55 years on; among women mean diastolic pressure levels off at 65-74 years but does not decrease significantly.
- Systolic and diastolic mean pressures for Negro men exceed those for white men, and those for Negro women exceed the mean levels for white women in ages 25-74 years.
- Mean systolic and diastolic blood pressures decrease significantly with increase in family income and with education, the two socioeconomic factors considered here.

- Mean systolic blood pressures for both white and Negro men and women living in the South are significantly higher than for those living in the Northeast or West, while no regional differences in mean diastolic blood pressure are evident.

- Both systolic and diastolic mean blood pressures decrease with increasing population density in the areas of residence.

- An estimated 23.4 million persons in the United States 12-74 years of age including 23.2 million or 18.1 per 100 persons 18-74 years have definite hypertension—that is either systolic blood pressure of at least 160 mm. Hg *or* diastolic blood pressure of at least 95 mm. Hg. The prevalence rate of definite hypertension, as defined here, increases rapidly with age from 0.8 per 100 at 12-17 years to 40.7 per 100 at 65-74 years. In ages 18-54 years definite hypertension is more prevalent among men than women, while at 65-74 years the condition is more prevalent among women.

- Hypertension is substantially more prevalent among Negro adults than among white adults in the United States.

- About one-fourth of the adults with definite hypertension have diastolic blood pressure of at least 105 mm. Hg.

- More than half the adults with definite hypertension have never been told by their doctors that they have this condition or high blood pressure.

- The proportion of persons taking medication regularly or occasionally for high blood pressure within the preceding 6 months is 25 percent of those with definite hypertension, 10 percent of those with borderline hypertension, and 2 percent of those with essentially normal blood pressure levels.

- Mean systolic blood pressure levels of U.S. children and youths as determined in the present 1971-1974 study are substantially lower than those national estimates for children from the Health Examination Survey of 1963-1965 and for youths from the Health Examination Survey of 1966-1970. The national estimates of mean diastolic blood pressure from the present study are also lower than those obtained from the previous national surveys, but the differences are smaller.

- Among adults 18-74 years national estimates of mean systolic and diastolic blood pressure levels from the Health and Nutrition Examination Survey of 1971-1974 are in closer agreement with those from the Health Examination Survey of 1960-1962 than those for children and youths at the two available points in time. Mean systolic blood pressure levels for U.S. adults 18-54 years are nearly identical, but in ages 55-74 years levels are lower (an average of 4-8 mm. Hg) in 1971-1974 than 1960-1962. Diastolic pressure levels from the more recent survey are consistently higher (an average of 3 mm. Hg) across the 18-74-year age range.

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Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
SYSTOLIC	Blood pressure (mm. Hg)										
Both sexes											
6 years	95.6	10.5	1.04	79.3	83.4	89.2	93.7	99.9	109.7	114.4	---
7-11 years	103.3	12.1	0.68	83.7	89.1	93.9	102.0	109.8	119.3	121.9	20,275
7 years	99.9	11.4	1.13	79.8	85.0	90.0	99.3	109.2	114.5	119.5	4,069
8 years	101.5	12.6	0.97	79.7	85.4	91.5	99.8	109.5	119.3	121.7	3,515
9 years	104.0	12.1	0.96	85.3	89.3	95.2	103.2	109.8	119.4	122.0	3,839
10 years	104.5	11.6	0.93	85.8	89.4	95.7	103.9	110.0	119.4	124.1	4,558
11 years	106.0	12.0	0.98	89.0	89.6	97.5	105.1	114.2	119.7	123.9	4,294
Boys											
6 years	95.1	10.4	1.15	79.2	79.9	89.3	93.5	99.6	109.2	114.5	---
7-11 years	103.3	12.0	0.65	84.6	89.0	93.7	103.2	109.8	119.2	121.7	10,287
7 years	101.5	11.3	1.45	83.4	87.6	93.1	100.0	109.4	115.2	119.7	2,232
8 years	100.7	12.7	1.09	79.8	85.1	89.6	99.6	109.5	119.2	121.8	1,749
9 years	103.5	11.3	1.17	85.0	89.1	95.2	103.6	109.8	119.4	121.6	1,861
10 years	105.4	11.7	1.07	87.3	89.4	97.0	105.6	111.5	119.5	125.7	2,222
11 years	105.0	12.3	1.47	87.2	89.4	97.3	104.0	111.2	119.3	123.5	2,223
Girls											
6 years	96.1	10.5	1.35	79.5	84.4	89.0	93.9	103.7	109.9	114.3	---
7-11 years	103.3	12.3	0.93	83.4	89.2	94.0	101.6	109.8	119.4	123.1	9,988
7 years	98.0	11.3	1.64	79.5	83.8	89.6	95.8	105.1	114.4	119.1	1,838
8 years	102.4	12.5	1.42	79.6	87.8	94.6	100.0	109.5	119.3	120.0	1,766
9 years	104.5	12.9	1.55	89.0	89.5	95.2	103.2	109.8	119.4	129.4	1,978
10 years	103.8	11.5	1.40	83.8	89.4	95.6	103.5	109.8	119.4	123.8	2,335
11 years	107.0	11.7	1.20	89.3	89.9	97.8	105.8	115.7	119.9	125.1	2,071
DIASTOLIC											
Both sexes											
6 years	61.0	8.7	0.70	49.0	49.6	54.6	59.6	65.7	70.0	75.8	---
7-11 years	64.7	9.8	0.61	48.0	49.8	59.1	64.0	69.8	77.6	79.7	20,275
7 years	63.0	9.6	1.00	43.9	49.8	57.5	60.0	69.5	74.8	79.2	4,069
8 years	62.9	10.1	0.90	45.6	49.4	57.2	61.4	69.5	75.9	79.6	3,515
9 years	65.4	10.0	0.90	47.8	49.8	59.2	67.1	71.1	77.7	79.6	3,839
10 years	65.1	9.0	0.74	49.1	51.5	59.3	65.2	69.8	75.8	79.4	4,558
11 years	66.6	9.9	0.80	49.4	51.3	59.4	67.1	73.2	79.6	81.5	4,294
Boys											
6 years	60.4	8.2	0.91	47.3	49.4	55.2	59.5	65.4	69.6	73.3	---
7-11 years	65.1	9.6	0.57	49.1	49.9	59.2	65.1	69.9	77.6	79.6	10,287
7 years	63.7	9.0	1.13	44.0	51.4	59.2	61.8	69.6	74.6	77.2	2,232
8 years	63.0	10.6	1.05	45.3	49.4	57.1	61.2	69.6	79.1	79.9	1,749
9 years	65.6	9.3	0.95	49.2	49.9	59.3	65.9	71.0	77.4	79.6	1,861
10 years	66.1	9.1	0.86	49.1	55.4	59.6	67.1	71.1	77.6	79.6	2,222
11 years	66.7	9.7	1.05	49.3	50.0	59.6	67.3	73.4	79.4	79.8	2,223
Girls											
6 years	61.5	9.1	0.99	49.2	49.8	54.2	59.6	65.9	73.8	79.3	---
7-11 years	64.3	10.0	0.78	47.6	49.8	58.1	63.4	69.7	77.5	79.7	9,988
7 years	62.0	10.2	1.40	43.6	49.2	55.6	59.7	69.2	77.6	79.6	1,838
8 years	62.8	9.7	1.21	45.8	49.4	57.6	61.7	69.4	73.4	79.2	1,766
9 years	65.3	10.6	1.36	47.2	49.8	59.1	67.2	71.2	77.9	79.6	1,978
10 years	64.2	8.9	0.94	48.0	51.3	59.2	63.5	69.6	74.9	77.9	2,335
11 years	66.5	10.1	1.06	49.4	54.4	59.2	65.8	71.9	79.8	85.2	2,071

[1]These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 2. Percent distribution of boys 7-11 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)							
	Total	Under 40	40-49	50-59	60-69	70-79	80-89	90 and over
	Percent distribution							
Total	100.0	0.0	4.3	16.9	38.8	31.0	8.8	0.2
Under 80	1.3	-	1.1	0.1	0.1	-	-	-
80-89	8.6	0.0	1.5	4.1	2.9	0.1	-	-
90-99	24.3	-	1.0	7.1	13.5	2.1	0.6	-
100-109	28.8	-	0.4	4.3	11.5	11.1	1.5	-
110-119	26.0	-	0.3	1.1	7.7	13.0	3.8	0.1
120-129	9.4	-	-	0.2	2.9	4.2	2.1	0.0
130-139	1.2	-	-	-	0.2	0.4	0.5	0.1
140-149	0.2	-	-	-	-	0.1	0.1	-
150-159	0.2	-	-	-	-	-	0.2	-
160 and over	0.0	-	-	-	-	0.0	-	-

Table 3. Percent distribution of girls 7-11 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)							
	Total	Under 40	40-49	50-59	60-69	70-79	80-89	90 and over
	Percent distribution							
Total	100.0	0.4	5.4	19.3	38.4	27.5	8.6	0.4
Under 80	1.8	0.2	0.5	1.1	-	-	-	-
80-89	6.4	-	0.6	2.9	2.8	0.1	-	-
90-99	27.4	0.2	2.0	8.9	13.7	2.6	-	-
100-109	30.0	-	1.7	3.6	12.4	10.3	1.8	0.2
110-119	22.3	-	0.5	2.4	7.0	9.2	3.1	0.1
120-129	10.0	-	-	0.4	2.1	4.9	2.6	-
130-139	1.6	-	0.1	-	0.4	0.4	0.6	0.1
140-149	0.3	-	-	-	-	-	0.3	-
150-159	0.2	-	-	-	-	-	0.2	-
160 and over	-	-	-	-	-	-	-	-

Table 4. Systolic and diastolic blood pressure of white children 6-11 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1971-1974

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
SYSTOLIC											
Both sexes	Blood pressure (mm. Hg)										
6 years	95.4	10.4	1.15	79.2	83.2	89.1	93.7	99.9	109.6	114.0	---
7-11 years	103.3	12.2	0.70	83.7	89.1	93.9	103.0	109.8	119.3	123.0	17,267
7 years	99.7	11.4	1.21	79.7	84.6	90.0	99.2	109.2	114.4	119.5	3,473
8 years	101.7	12.9	1.12	79.5	84.9	91.4	100.0	109.5	119.4	121.9	3,029
9 years	104.3	11.8	0.96	85.8	89.6	96.0	103.3	109.7	119.3	123.1	3,225
10 years	104.4	11.5	0.97	87.1	89.4	95.6	103.9	109.9	119.4	124.3	3,947
11 years	106.2	12.3	1.00	89.1	89.7	97.6	105.3	114.5	119.8	125.2	3,593
Boys											
6 years	94.2	10.2	1.19	79.1	79.6	89.1	93.3	99.4	105.6	109.9	---
7-11 years	103.6	12.0	0.67	85.0	89.0	94.0	103.3	109.8	119.3	122.0	8,765
7 years	101.7	11.4	1.51	83.2	87.4	93.2	101.2	109.5	115.4	119.8	1,928
8 years	100.7	12.8	1.25	79.6	84.9	89.6	99.7	109.5	119.4	121.8	1,529
9 years	104.4	10.6	1.23	85.7	89.7	97.5	104.7	109.8	119.6	121.8	1,486
10 years	105.6	11.7	1.11	87.4	89.4	97.1	105.7	111.4	119.5	127.2	1,938
11 years	105.0	12.5	1.57	85.9	89.5	97.3	103.5	110.0	119.4	123.8	1,885
Girls											
6 years	96.5	10.4	1.61	79.6	84.9	89.1	94.9	104.1	109.9	114.3	---
7-11 years	103.1	12.4	0.99	83.2	89.2	93.9	101.3	109.8	119.3	123.1	8,502
7 years	97.2	11.0	1.78	79.4	83.3	89.5	95.3	103.8	113.7	115.4	1,545
8 years	102.6	13.0	1.64	79.4	85.2	93.9	101.7	109.6	119.4	123.2	1,500
9 years	104.1	12.7	1.57	89.0	89.5	95.3	101.9	109.7	117.8	129.4	1,739
10 years	103.4	11.1	1.44	85.3	89.5	95.5	103.3	109.6	119.2	123.4	2,008
11 years	107.7	11.9	1.38	89.3	91.1	98.0	109.0	117.1	121.0	127.1	1,708
DIASTOLIC											
Both sexes	Blood pressure (mm. Hg)										
6 years	60.8	9.0	0.83	47.7	49.4	53.8	59.6	67.1	71.3	75.3	---
7-11 years	64.8	9.9	0.64	47.8	49.9	59.1	64.7	69.9	77.5	79.6	17,267
7 years	62.7	9.7	1.10	43.6	49.7	57.2	60.0	69.4	74.7	79.0	3,473
8 years	63.1	10.4	0.98	45.2	49.3	57.3	61.8	69.6	77.4	79.7	3,029
9 years	65.9	10.0	0.92	47.8	51.4	59.4	67.5	71.5	77.8	79.6	3,225
10 years	65.0	9.0	0.81	49.0	51.5	59.3	65.0	69.8	75.8	79.3	3,947
11 years	66.8	9.7	0.84	49.4	52.0	59.4	67.3	73.3	79.5	81.5	3,593
Boys											
6 years	59.4	8.1	1.01	43.8	49.2	53.4	59.4	65.0	69.4	69.9	---
7-11 years	65.3	9.6	0.57	49.1	51.0	59.3	65.5	70.0	77.7	79.6	8,765
7 years	63.9	9.3	1.29	43.8	51.2	59.2	62.0	69.7	74.8	77.4	1,928
8 years	63.0	10.9	1.22	45.0	49.3	55.8	61.2	69.7	79.2	80.0	1,529
9 years	66.5	8.8	0.98	49.5	54.7	59.6	67.7	71.3	77.8	79.7	1,486
10 years	66.2	9.2	0.96	49.1	55.3	59.6	67.2	71.2	77.9	79.6	1,937
11 years	66.8	9.3	0.96	49.4	51.6	59.6	67.4	73.3	79.3	79.8	1,885
Girls											
6 years	62.1	9.5	1.09	49.2	49.8	54.2	59.8	69.1	74.4	81.0	---
7-11 years	64.2	10.0	0.86	47.4	49.8	59.0	63.5	69.8	77.3	79.6	8,502
7 years	61.3	9.9	1.49	43.1	49.2	55.4	59.6	67.8	74.2	79.5	1,545
8 years	63.3	9.9	1.36	45.4	49.3	59.0	63.3	69.6	73.6	79.4	1,500
9 years	65.3	10.8	1.51	45.9	49.6	59.1	67.4	71.9	77.8	79.6	1,740
10 years	63.9	8.8	1.08	47.9	51.3	59.1	63.0	69.5	74.8	77.5	2,009
11 years	66.8	10.1	1.33	49.4	54.6	59.4	67.2	73.4	79.8	85.1	1,708

[1]These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 5. Systolic and diastolic blood pressure of Negro children 6-11 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1971-1974

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
SYSTOLIC											
Both sexes	Blood pressure (mm. Hg)										
6 years	96.9	10.5	1.90	81.4	87.1	89.4	93.8	101.3	111.3	119.3	---
7-11 years	103.2	12.1	1.18	83.5	89.1	93.4	101.4	109.9	119.3	119.9	2,834
7 years	101.4	11.2	1.86	88.0	89.3	91.1	99.6	109.2	114.8	119.6	580
8 years	101.1	10.6	1.89	89.0	89.4	92.0	99.5	109.2	115.5	119.2	471
9 years	102.3	13.7	2.39	79.2	85.7	89.7	100.0	113.1	119.6	121.7	597
10 years	105.5	13.0	2.29	79.1	87.5	99.2	109.0	115.1	119.6	123.2	553
11 years	105.0	10.7	1.53	87.4	89.3	97.4	104.9	113.3	119.3	119.9	633
Boys											
6 years	98.6	10.5	2.72	89.1	89.2	89.6	97.2	103.6	111.1	119.6	---
7-11 years	102.1	12.1	1.32	79.7	87.6	91.0	99.8	109.8	115.9	119.8	1,416
7 years	100.6	10.5	2.37	89.1	89.4	91.4	99.3	107.9	109.8	113.4	295
8 years	100.7	12.3	3.27	83.6	89.2	89.8	97.5	109.6	115.8	124.4	205
9 years	99.7	13.0	3.03	77.8	79.5	89.2	99.4	109.8	115.3	121.1	375
10 years	104.4	11.3	2.73	79.9	89.1	99.1	109.0	113.1	119.2	119.6	241
11 years	105.6	11.7	2.83	87.3	87.8	97.2	107.6	114.7	119.2	119.9	300
Girls											
6 years	95.1	10.2	2.46	79.8	83.1	87.7	91.8	99.5	111.3	119.0	---
7-11 years	104.2	12.0	1.34	87.2	89.3	95.6	103.2	110.1	119.5	121.7	1,418
7 years	102.3	11.9	3.16	87.4	89.2	89.9	99.9	114.2	119.2	119.8	285
8 years	101.4	9.1	2.77	89.2	89.7	95.6	99.6	107.6	115.3	115.9	266
9 years	106.7	13.9	3.13	89.1	89.4	93.3	103.9	119.2	120.0	129.7	222
10 years	106.4	14.1	3.54	77.6	85.6	99.3	109.0	117.5	120.0	124.0	312
11 years	104.5	9.7	1.83	89.1	91.7	97.7	103.6	109.6	119.3	119.9	333
DIASTOLIC											
Both sexes											
6 years	61.6	7.5	1.25	49.6	51.6	57.6	59.5	63.7	69.8	77.8	---
7-11 years	64.3	9.8	0.83	49.2	49.6	57.9	63.1	69.7	79.2	79.8	2,834
7 years	64.3	8.8	1.67	49.1	55.2	59.2	61.3	69.6	79.0	79.6	580
8 years	61.3	8.2	1.35	49.2	49.6	57.2	59.6	66.0	73.1	77.1	471
9 years	63.3	10.0	1.82	47.9	49.4	55.4	63.1	69.6	75.5	79.6	597
10 years	66.0	9.2	0.99	49.2	49.9	59.4	67.7	69.8	77.8	80.0	553
11 years	65.8	11.4	2.10	49.2	49.5	57.5	64.2	74.9	79.7	87.2	633
Boys											
6 years	63.9	7.5	1.73	57.2	57.5	59.2	59.8	67.8	77.3	79.0	---
7-11 years	63.8	9.6	1.20	49.1	49.5	57.8	63.0	69.6	77.7	79.6	1,416
7 years	63.0	6.2	1.08	55.2	55.7	59.2	59.9	69.1	69.9	74.2	295
8 years	63.0	8.5	2.08	49.3	49.8	57.5	61.3	67.8	74.7	79.4	205
9 years	61.8	9.9	2.46	47.6	49.1	51.2	59.8	69.5	74.7	75.8	375
10 years	65.4	8.5	1.88	49.2	49.9	59.6	65.9	69.8	74.0	79.3	241
11 years	66.2	12.3	3.80	49.2	49.4	55.2	65.4	79.2	79.8	80.0	300
Girls											
6 years	59.2	6.7	1.39	49.2	49.8	55.5	59.1	61.8	65.5	69.9	---
7-11 years	64.8	10.0	0.89	49.2	49.7	57.9	63.5	69.7	79.3	80.0	1,418
7 years	65.7	10.6	2.95	47.5	49.2	59.2	64.3	71.7	79.6	79.9	285
8 years	60.0	7.7	2.04	49.2	49.5	53.4	59.4	63.9	69.6	73.7	266
9 years	65.8	9.6	1.66	49.6	51.4	59.4	65.3	69.7	79.5	85.1	222
10 years	66.6	9.7	1.58	49.1	50.0	59.4	68.0	69.8	79.5	83.9	312
11 years	65.4	10.4	2.08	49.4	49.8	57.6	63.2	69.9	79.6	87.3	333

[1]These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 6. Systolic and diastolic blood pressure of youths 12-17 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1971-1974

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
Systolic	Blood pressure (mm. Hg)										
Both sexes, 12-17 years	113.4	13.7	0.55	91.5	97.2	103.6	111.2	119.8	129.7	137.8	25,070
12 years	109.3	13.0	0.99	89.2	91.7	99.6	109.3	119.2	125.1	129.9	4,304
13 years	111.4	13.1	0.93	89.9	95.1	101.2	109.8	119.4	127.5	130.0	4,353
14 years	113.6	12.1	0.84	93.8	98.0	103.9	111.0	119.8	129.3	137.1	4,259
15 years	114.1	13.2	1.02	93.0	97.8	105.3	111.4	119.9	129.9	139.3	4,198
16 years	116.4	13.9	0.77	95.5	98.0	107.6	114.5	123.7	133.8	139.7	4,109
17 years	116.3	15.3	1.25	93.4	99.1	106.0	114.9	123.9	137.5	145.5	3,847
Boys, 12-17 years	114.9	13.8	0.65	93.9	97.9	105.6	113.2	120.0	130.0	139.6	12,808
12 years	108.9	12.1	1.12	89.4	93.2	99.7	109.3	119.0	119.9	127.4	2,365
13 years	111.3	13.2	1.26	93.1	95.8	99.8	109.6	119.5	127.2	129.8	2,030
14 years	114.4	11.7	1.02	97.2	99.4	107.4	113.1	119.9	125.9	139.0	2,084
15 years	116.4	13.5	1.34	93.8	99.6	109.1	113.6	125.0	137.3	139.7	2,131
16 years	119.1	14.0	1.44	97.6	99.7	109.3	117.8	129.1	139.0	145.3	2,059
17 years	119.5	14.8	1.43	97.7	99.9	109.3	117.7	128.0	139.7	149.2	2,137
Girls, 12-17 years	111.9	13.4	0.57	89.8	94.6	101.3	109.8	119.6	129.4	134.9	12,263
12 years	109.7	14.1	1.54	87.9	91.3	99.4	109.2	119.5	129.4	133.5	1,939
13 years	111.4	12.9	1.18	89.7	93.6	103.1	110.0	119.4	127.9	133.6	2,322
14 years	112.8	12.5	1.33	93.4	97.6	101.8	109.9	119.7	129.7	137.0	2,175
15 years	111.7	12.5	1.37	90.0	95.5	100.0	109.7	119.5	129.1	133.0	2,067
16 years	113.6	13.2	1.19	93.4	97.1	103.7	111.6	119.7	129.8	137.3	2,050
17 years	112.2	15.1	1.51	84.8	93.3	101.2	109.8	119.8	129.6	137.5	1,710
Diastolic											
Both sexes, 12-17 years	69.8	9.9	0.40	53.3	57.6	61.6	69.5	77.1	81.2	85.2	25,070
12 years	67.4	8.8	0.63	49.9	57.1	59.8	69.0	71.9	79.2	79.9	4,304
13 years	68.9	10.0	0.73	53.4	57.3	59.7	69.3	75.8	79.9	84.6	4,353
14 years	68.5	9.6	0.66	49.9	55.8	61.1	69.1	75.2	79.7	81.8	4,259
15 years	70.6	9.6	0.61	55.1	57.9	63.5	69.6	77.3	82.0	85.8	4,198
16 years	71.1	9.5	0.66	54.0	59.1	65.1	69.8	77.8	81.8	84.7	4,109
17 years	72.6	11.0	0.89	55.5	59.1	65.7	71.7	79.4	85.2	89.4	3,847
Boys, 12-17 years	70.5	10.0	0.38	53.4	57.9	63.4	69.7	77.6	81.9	85.4	12,808
12 years	67.5	8.1	0.71	51.7	57.5	61.6	69.1	71.6	79.1	79.6	2,365
13 years	69.5	10.4	1.03	54.1	55.9	59.7	69.6	77.2	83.5	84.7	2,030
14 years	68.6	10.3	0.92	49.6	55.5	60.0	69.1	75.5	79.9	84.5	2,084
15 years	71.4	9.9	0.84	53.8	57.2	64.1	69.9	79.2	83.4	87.2	2,131
16 years	72.8	9.0	0.73	59.0	59.6	67.5	73.1	79.4	83.3	85.3	2,059
17 years	73.7	10.9	1.08	56.7	59.5	67.8	73.7	79.6	85.5	89.7	2,137
Girls, 12-17 years	69.0	9.7	0.58	53.2	57.4	59.9	69.3	75.3	79.8	84.6	12,263
12 years	67.3	9.6	1.02	49.7	55.5	59.4	67.7	73.2	79.5	84.4	1,939
13 years	68.4	9.6	0.91	50.0	57.4	59.7	69.0	74.8	79.6	84.4	2,322
14 years	68.3	8.9	0.82	53.2	57.1	61.2	69.2	74.2	79.6	80.0	2,175
15 years	69.7	9.1	0.92	57.1	59.2	63.3	69.3	74.0	81.5	84.8	2,067
16 years	69.4	9.7	0.95	53.2	57.5	59.8	69.5	75.8	81.3	83.8	2,050
17 years	71.2	10.9	1.20	51.7	57.6	63.1	69.8	79.0	83.5	89.1	1,710

[1]These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 7. Percent distribution of boys 12-17 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)								
	Total	Under 40	40-49	50-59	60-69	70-79	80-89	90-99	100 and over
	Percent distribution								
Total	100.0	0.1	1.3	8.7	27.4	39.5	20.2	2.5	0.3
Under 80	0.0	-	-	0.0	-	-	-	-	-
80-89	1.4	-	-	0.6	0.7	0.1	-	-	-
90-99	8.9	-	0.7	1.8	4.7	1.5	0.2	-	-
100-109	19.7	-	0.2	2.5	7.1	8.8	1.1	-	-
110-119	31.7	-	0.3	2.6	8.9	14.2	5.6	0.1	-
120-129	22.9	0.1	-	0.8	5.0	8.7	7.5	0.7	0.1
130-139	8.4	-	0.1	0.4	0.6	3.9	2.8	0.6	-
140-149	4.7	-	-	0.0	0.2	1.2	2.7	0.6	-
150-159	1.8	-	-	-	0.2	0.7	0.3	0.4	0.2
160 and over	0.5	-	-	-	-	0.4	0.0	0.1	0.0

Table 8. Percent distribution of girls 12-17 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)								
	Total	Under 40	40-49	50-59	60-69	70-79	80-89	90-99	100 and over
	Percent distribution								
Total	100.0	0.1	1.1	12.1	32.2	37.4	14.6	2.2	0.3
Under 80	0.4	-	0.1	-	0.3	-	-	-	-
80-89	1.8	0.1	0.2	0.8	0.7	-	-	-	-
90-99	13.1	0.0	0.4	3.9	6.3	2.3	0.2	-	-
100-109	24.0	-	0.1	3.8	10.1	8.7	1.3	-	-
110-119	27.5	-	0.3	1.9	8.1	12.7	4.4	0.1	-
120-129	21.4	-	-	1.2	5.0	8.7	5.8	0.7	-
130-139	9.4	-	-	0.4	1.5	4.1	2.4	0.9	0.1
140-149	1.7	-	-	0.1	0.1	0.8	0.3	0.4	-
150-159	0.3	-	-	-	0.1	0.1	-	0.1	0.0
160 and over	0.4	-	-	-	-	-	0.2	0.0	0.2

Table 9. Systolic and diastolic blood pressure of white youths 12-17 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1971-1974

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
Systolic	Blood pressure (mm. Hg)										
Both sexes, 12-17 years	113.6	13.7	0.54	91.8	97.2	103.8	111.5	119.8	129.7	137.9	21,539
12 years	109.8	13.1	1.06	89.2	92.0	99.6	109.4	119.3	125.2	131.6	3,632
13 years	111.3	13.3	1.03	90.0	95.1	99.9	109.7	119.4	127.8	131.5	3,751
14 years	113.9	12.0	1.01	97.0	99.1	104.4	113.0	119.9	129.2	137.2	3,621
15 years	114.1	12.8	1.04	91.4	99.1	105.8	111.7	119.8	129.7	139.2	3,495
16 years	116.2	13.8	0.82	95.3	97.8	107.6	114.1	123.7	133.8	139.7	3,677
17 years	116.5	15.6	1.43	93.2	99.2	107.2	115.1	124.8	137.6	147.3	3,363
Boys, 12-17 years	115.1	13.8	0.67	95.0	99.0	105.7	113.4	121.2	131.2	139.7	11,024
12 years	109.7	12.0	1.19	89.8	94.1	99.9	109.4	119.2	120.0	129.1	2,030
13 years	111.4	13.3	1.34	93.9	97.0	99.8	109.6	119.5	127.3	129.8	1,747
14 years	114.8	11.3	1.13	97.5	99.7	107.9	113.4	120.0	125.6	135.9	1,782
15 years	115.8	13.1	1.38	93.8	99.5	107.9	113.4	124.0	137.0	139.5	1,779
16 years	119.3	14.3	1.61	97.5	99.6	109.3	117.6	129.2	139.4	147.3	1,803
17 years	120.1	15.1	1.59	98.0	100.0	109.4	119.1	129.2	139.8	149.4	1,884
Girls, 12-17 years	112.0	13.4	0.59	89.7	93.9	101.4	109.9	119.6	129.4	135.1	10,515
12 years	109.9	14.4	1.87	87.6	91.2	99.4	109.3	119.6	129.5	133.6	1,602
13 years	111.2	13.2	1.38	89.6	93.4	101.7	109.9	119.4	129.2	135.0	2,004
14 years	113.1	12.6	1.56	93.5	97.6	101.7	110.0	119.8	129.7	137.3	1,839
15 years	112.4	12.2	1.39	89.9	95.6	104.2	110.0	119.5	127.2	133.4	1,716
16 years	113.2	12.6	1.21	93.3	95.9	103.6	111.6	119.7	129.6	137.1	1,875
17 years	112.0	15.2	1.87	84.1	93.2	100.0	109.8	119.8	129.5	137.3	1,479
Diastolic											
Both sexes, 12-17 years	69.7	9.8	0.40	53.3	57.5	61.3	69.5	76.4	81.1	84.8	21,539
12 years	67.5	8.8	0.61	52.0	57.2	59.8	69.1	72.0	79.2	79.9	3,632
13 years	68.9	9.8	0.74	55.1	57.3	59.6	69.3	75.5	79.9	84.4	3,751
14 years	68.3	9.6	0.73	49.8	55.9	60.0	69.1	75.0	79.6	81.7	3,621
15 years	70.5	9.3	0.61	54.4	58.0	63.6	69.7	77.2	81.6	85.0	3,495
16 years	70.6	9.4	0.76	53.7	59.0	64.4	69.7	77.5	81.6	84.1	3,677
17 years	72.7	11.3	1.02	51.9	59.0	65.5	72.0	79.5	85.3	89.4	3,363
Boys, 12-17 years	70.4	10.0	0.43	53.3	57.8	63.3	69.7	77.4	81.8	85.2	11,024
12 years	67.7	8.0	0.68	53.2	57.5	61.7	69.2	71.8	79.0	79.6	2,030
13 years	69.9	10.0	1.06	55.2	57.7	59.7	69.8	77.2	83.4	84.5	1,747
14 years	67.8	10.2	1.02	49.5	54.6	59.8	67.6	73.9	79.7	82.0	1,782
15 years	70.8	9.6	0.88	53.5	55.6	63.8	69.8	79.1	81.6	85.4	1,779
16 years	72.3	9.1	0.76	57.9	59.5	67.2	71.2	79.3	83.2	85.3	1,803
17 years	73.9	11.2	1.22	56.5	59.4	67.9	74.2	79.7	85.7	89.7	1,884
Girls, 12-17 years	69.0	9.7	0.60	53.2	57.4	59.9	69.3	75.4	79.8	84.2	10,515
12 years	67.3	9.6	1.12	50.0	55.9	59.4	67.5	73.1	79.6	85.0	1,602
13 years	68.0	9.5	0.92	49.9	57.3	59.6	68.0	74.0	79.5	81.7	2,004
14 years	68.7	9.0	0.88	53.3	57.3	61.2	69.2	75.4	79.6	80.0	1,839
15 years	70.1	9.0	0.91	57.4	59.3	63.6	69.5	75.4	81.7	84.7	1,716
16 years	69.0	9.4	1.13	53.2	57.4	59.8	69.5	75.6	79.9	83.2	1,875
17 years	71.1	11.2	1.40	51.5	57.4	61.4	69.8	79.2	83.3	87.9	1,479

[1]These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 10. Systolic and diastolic blood pressure of Negro youths 12-17 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1971-1974

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
	Blood pressure (mm. Hg)										
Systolic											
Both sexes, 12-17 years	112.0	13.2	1.17	89.9	95.8	103.1	109.7	119.6	129.4	132.0	3,323
12 years	107.0	12.5	1.96	83.5	89.9	97.7	107.9	113.2	120.0	127.8	630
13 years	112.1	11.4	1.67	90.0	93.0	103.8	111.8	119.5	125.3	129.3	599
14 years	111.4	11.7	1.29	90.0	97.1	103.1	109.7	119.4	129.3	129.9	576
15 years	112.6	14.3	2.64	94.6	95.8	99.0	109.5	123.6	131.3	133.1	650
16 years	117.8	14.6	3.00	99.3	99.8	107.5	117.9	124.2	133.8	147.4	425
17 years	113.7	12.9	2.27	97.1	97.9	103.6	109.8	119.6	129.8	139.7	444
Boys, 12-17 years	112.5	13.1	1.46	89.6	95.1	103.7	109.8	119.6	129.3	131.9	1,667
12 years	104.6	11.9	2.99	82.0	83.6	95.6	109.1	109.9	117.5	127.2	318
13 years	111.0	12.2	3.13	90.0	90.0	103.6	109.9	119.4	124.2	129.6	283
14 years	110.1	11.5	2.31	90.0	91.2	99.9	109.7	119.2	125.0	129.3	284
15 years	117.6	13.3	2.83	93.9	99.8	109.4	114.9	126.0	131.4	139.5	299
16 years	117.6	11.6	2.75	100.0	100.0	109.3	119.3	124.0	133.1	134.6	257
17 years	115.6	12.3	3.14	98.0	98.0	109.1	111.4	119.7	134.4	141.1	226
Girls, 12-17 years	111.6	13.4	1.22	91.5	97.1	99.8	109.5	119.6	129.6	132.0	1,657
12 years	109.5	12.5	2.86	90.0	91.6	100.0	107.7	115.8	126.0	129.5	312
13 years	113.1	10.6	1.90	91.7	98.0	107.1	113.8	119.6	125.4	129.1	316
14 years	112.5	11.7	2.48	93.7	99.1	103.3	109.8	119.5	129.9	133.1	292
15 years	108.3	13.6	4.04	94.6	95.4	98.2	99.7	119.7	131.2	131.8	351
16 years	117.9	18.4	6.47	99.1	103.1	103.7	114.2	129.1	159.0	159.5	168
17 years	111.6	13.2	3.35	90.0	97.8	103.2	107.8	119.6	129.5	139.4	218
Diastolic											
Both sexes, 12-17 years	70.2	9.8	0.82	53.8	58.0	63.4	69.4	77.4	81.0	87.2	3,323
12 years	67.5	9.2	1.39	49.5	53.6	61.3	69.1	71.9	79.3	79.8	630
13 years	69.2	11.4	1.91	47.3	53.8	61.2	67.9	77.8	84.2	89.3	599
14 years	70.0	8.6	1.35	55.2	59.2	64.5	69.5	75.6	79.6	81.8	576
15 years	70.2	10.0	1.67	55.9	57.6	63.2	69.2	75.6	85.1	87.4	650
16 years	74.6	9.7	1.70	59.2	59.6	69.1	77.2	79.8	85.7	88.0	425
17 years	71.6	7.7	0.98	59.3	63.1	67.2	69.6	75.4	79.7	84.7	444
Boys, 12-17 years	71.1	9.9	0.95	53.6	59.0	63.8	69.8	79.1	83.2	85.9	1,667
12 years	66.9	8.6	2.13	49.6	55.1	61.7	65.6	69.9	79.3	79.7	318
13 years	67.0	12.4	3.21	44.6	49.4	59.7	67.1	73.8	87.8	89.5	283
14 years	72.4	8.8	1.92	55.2	59.5	67.2	73.8	79.0	79.8	84.2	284
15 years	73.1	9.4	2.06	58.0	59.1	69.1	71.1	79.8	85.6	87.2	299
16 years	76.0	7.8	1.37	59.4	59.8	69.8	77.7	79.9	83.8	85.3	257
17 years	72.5	8.0	2.28	59.2	63.3	67.6	69.8	79.1	79.9	85.0	226
Girls, 12-17 years	69.3	9.6	1.02	55.1	57.8	63.3	69.1	74.4	79.8	87.5	1,657
12 years	68.2	9.8	2.00	49.4	49.9	59.8	69.3	77.0	79.3	79.8	312
13 years	71.2	10.1	2.19	57.0	59.3	63.5	69.8	79.2	80.0	89.1	316
14 years	67.6	7.6	1.30	55.3	59.1	63.3	67.9	69.9	75.2	80.0	292
15 years	67.7	9.8	2.39	55.4	56.0	63.1	64.0	69.9	79.6	89.1	351
16 years	72.5	11.7	3.55	51.8	59.3	64.8	69.6	79.8	87.8	94.1	168
17 years	70.7	7.4	1.33	59.3	59.9	67.0	69.4	74.2	77.8	84.5	218

[1]These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 11. Systolic and diastolic blood pressure of adults 18-74 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1971-1974

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
Systolic	Blood pressure (mm. Hg)										
Both sexes, 18-74 years	129.8	21.9	0.41	99.7	107.0	114.5	125.4	139.6	159.3	169.8	127,937
18-24 years	119.0	13.8	0.47	97.6	99.8	109.4	119.2	127.7	137.3	140.0	23,462
25-34 years	120.9	14.7	0.46	99.1	101.8	109.7	119.4	129.4	139.4	146.0	26,762
35-44 years	125.6	17.6	0.57	99.7	105.1	113.3	123.2	133.8	149.1	157.8	22,575
45-54 years	134.1	22.7	1.03	103.8	109.4	119.3	129.6	143.6	160.0	175.8	23,524
55-64 years	142.0	23.5	0.79	109.1	113.4	125.1	139.3	155.6	169.9	185.8	18,841
65-74 years	150.1	25.2	0.83	113.7	119.6	131.3	147.7	163.6	181.4	193.7	12,773
40-74 years	138.1	24.0	0.59	105.6	109.8	119.8	133.9	149.8	169.5	181.7	66,597
Men, 18-74 years	131.4	19.2	0.47	105.7	109.5	119.2	129.2	139.6	157.3	169.2	60,565
18-24 years	123.5	13.0	0.67	103.0	107.8	113.8	121.4	130.0	139.6	144.0	11,351
25-34 years	125.5	13.9	0.64	103.9	109.4	115.8	123.6	131.7	140.0	149.6	12,766
35-44 years	127.7	15.4	0.81	105.0	109.2	117.6	125.7	135.7	149.0	155.0	10,804
45-54 years	135.3	20.7	1.23	109.1	111.3	119.8	131.1	143.7	161.4	175.1	11,260
55-64 years	139.7	20.8	1.16	107.9	113.8	123.9	137.8	149.9	166.0	179.1	8,888
65-74 years	146.9	24.7	1.05	109.7	119.1	129.4	143.5	159.8	179.4	189.7	5,496
40-74 years	137.4	21.5	0.71	109.7	111.7	121.1	133.7	149.2	166.0	179.1	31,177
Women, 18-74 years	128.4	24.0	0.52	99.1	101.8	109.9	121.9	139.5	159.7	174.1	67,372
18-24 years	114.8	13.1	0.59	95.1	99.0	105.6	113.9	121.2	129.7	131.1	12,111
25-34 years	116.7	14.1	0.45	95.9	99.4	107.6	115.0	123.7	133.4	139.8	13,996
35-44 years	123.6	19.2	0.64	99.0	101.3	109.6	119.7	131.1	149.3	159.6	11,772
45-54 years	132.9	24.4	1.28	99.8	109.1	117.2	129.2	143.4	159.9	179.2	12,264
55-64 years	144.0	25.6	0.94	109.2	112.0	126.7	139.7	159.4	175.7	189.3	9,953
65-74 years	152.5	25.2	0.98	117.5	121.5	135.1	149.3	167.1	184.4	197.4	7,277
40-74 years	138.7	25.9	0.74	103.4	109.5	119.5	134.2	153.2	170.0	187.6	35,420
Diastolic											
Both sexes, 18-74 years	81.4	13.0	0.28	59.8	65.9	71.7	79.6	89.1	97.9	103.8	127,937
18-24 years	73.8	10.4	0.41	57.4	59.5	67.5	73.6	79.6	85.6	89.5	23,462
25-34 years	77.8	10.9	0.30	59.6	63.9	69.6	77.8	83.9	89.7	95.3	26,762
35-44 years	82.4	12.2	0.39	61.9	69.0	73.6	79.9	89.2	99.0	104.0	22,575
45-54 years	85.7	13.6	0.60	67.1	69.6	77.4	83.8	91.6	101.9	109.4	23,524
55-64 years	86.7	12.5	0.47	69.2	71.0	79.0	85.2	94.2	101.5	109.1	18,841
65-74 years	85.7	13.0	0.50	67.2	69.5	77.4	83.8	93.4	100.0	109.1	12,773
40-74 years	85.5	12.9	0.37	67.2	69.6	77.4	83.7	91.8	100.0	109.1	66,597
Men, 18-74 years	83.4	12.3	0.31	64.4	69.2	75.1	81.3	89.5	99.3	104.7	60,565
18-24 years	76.3	10.0	0.52	59.2	63.1	69.5	77.2	81.2	87.7	91.2	11,351
25-34 years	81.1	10.3	0.48	65.6	69.0	73.8	79.7	87.4	91.8	99.1	12,766
35-44 years	84.8	11.5	0.55	69.0	69.6	77.5	83.4	89.8	99.5	107.2	10,804
45-54 years	87.9	13.1	0.68	69.5	73.2	79.4	87.1	93.8	103.8	109.8	11,260
55-64 years	86.8	12.3	0.68	69.1	70.0	79.2	85.4	95.0	101.9	109.2	8,888
65-74 years	85.4	13.2	0.57	65.3	69.4	77.1	83.7	93.3	99.9	107.9	5,496
40-74 years	86.6	12.6	0.43	69.1	70.0	79.1	85.2	93.4	101.8	109.3	31,177
Women, 18-74 years	79.7	13.3	0.35	59.4	63.5	69.7	79.2	87.2	96.9	103.0	67,372
18-24 years	71.5	10.2	0.52	55.2	59.2	63.8	69.8	79.1	83.6	87.6	12,111
25-34 years	74.9	10.6	0.30	59.2	59.9	67.8	74.1	79.8	87.6	90.0	13,996
35-44 years	80.2	12.5	0.46	59.6	64.3	70.0	79.4	87.2	95.6	101.3	11,772
45-54 years	83.6	13.7	0.67	63.8	69.1	74.0	80.0	89.7	99.9	107.9	12,264
55-64 years	86.6	12.7	0.55	69.2	71.1	77.7	85.0	93.9	101.3	108.0	9,953
65-74 years	85.9	12.9	0.57	67.5	69.6	77.5	83.8	93.5	100.0	109.2	7,277
40-74 years	84.5	13.1	0.41	65.3	69.4	75.5	83.1	91.1	99.8	107.6	35,420

[1] These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 12. Percent distribution of men 18-24 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)								
	Total	Under 50	50-59	60-69	70-79	80-89	90-99	100-109	110 and over
	Percent distribution								
Total	100.0	0.4	3.7	13.4	37.5	35.8	6.8	1.8	0.6
Under 100	1.7	0.0	0.4	0.7	0.6	-	-	-	-
100-109	8.9	0.3	0.4	2.9	4.0	1.3	-	-	-
110-119	21.8	-	1.4	5.1	8.4	6.6	0.3	-	-
120-129	32.9	0.1	1.0	3.0	13.5	13.6	1.5	0.2	-
130-139	20.9	-	0.2	0.8	8.1	8.8	2.6	0.3	0.1
140-149	10.8	-	0.3	0.9	2.3	4.7	1.8	0.7	0.1
150-159	1.9	-	-	-	0.4	0.4	0.6	0.5	-
160-169	1.0	-	-	-	0.2	0.3	0.0	0.1	0.4
170 and over	0.1	-	-	0.0	-	0.1	0.0	-	-

Table 13. Percent distribution of men 25-35 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)									
	Total	Under 50	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120 and over
	Percent distribution									
Total	100.0	0.4	0.6	8.8	28.2	40.6	16.2	3.8	1.2	0.2
Under 100	1.3	-	0.2	0.1	0.8	0.2	-	-	-	-
100-109	5.6	0.2	0.4	1.8	2.3	0.9	-	-	-	-
110-119	22.9	0.2	-	3.3	10.3	8.4	0.7	-	-	-
120-129	30.1	-	-	2.1	7.5	17.2	3.3	0.0	-	-
130-139	22.9	-	0.0	1.1	5.4	9.6	6.0	0.6	0.2	-
140-149	10.5	-	-	0.4	1.6	2.8	3.7	1.5	0.5	-
150-159	5.2	-	-	-	0.3	1.2	2.1	1.4	0.2	-
160-169	0.8	-	-	-	-	-	0.4	0.3	0.1	-
170-179	0.6	-	-	-	-	0.3	-	0.0	0.2	0.1
180 and over	0.1	-	-	-	-	-	-	-	-	0.1

Table 14. Percent distribution of men 35-44 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)									
	Total	Under 60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130 and over
	Percent distribution									
Total	100.0	0.8	4.1	22.1	40.2	20.3	8.3	3.5	0.5	0.2
Under 100	0.9	-	0.8	0.1	-	-	-	-	-	-
100-109	7.8	0.2	1.3	4.6	1.7	-	-	-	-	-
110-119	18.2	0.3	1.3	6.9	9.1	0.6	-	-	-	-
120-129	26.7	-	0.4	6.1	14.9	5.2	0.1	-	-	-
130-139	24.6	0.3	0.1	3.8	10.5	7.0	2.6	0.3	-	-
140-149	11.9	-	0.2	0.1	3.4	4.4	2.9	0.9	-	-
150-159	6.1	-	-	-	0.4	2.5	2.4	0.8	-	-
160-169	2.3	-	-	-	0.2	0.6	0.1	1.4	-	-
170-179	0.7	-	-	0.5	-	-	0.2	0.0	-	-
180 and over	0.8	-	-	-	-	-	-	0.1	0.5	0.2

Table 15. Percent distribution of men 45-54 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)									
	Total	Under 60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130 and over
	Percent distribution									
Total	100.0	0.7	2.4	16.8	36.8	25.5	10.6	4.5	1.7	1,0
Under 100	0.4	-	0.3	0.1	-	-	-	-	-	-
100-109	4.3	0.2	0.7	2.0	1.4	-	-	-	-	-
110-119	12.4	0.1	1.0	6.0	4.8	0.5	0.0	-	-	-
120-129	23.7	0.2	0.2	5.1	14.4	3.6	0.2	-	-	-
130-139	19.9	0.2	0.2	1.7	8.3	8.5	1.0	-	-	-
140-149	18.3	-	-	1.7	4.8	8.0	3.5	0.3	-	-
150-159	7.1	-	-	-	2.3	2.2	1.8	0.5	0.3	-
160-169	5.1	-	-	-	0.3	1.1	2.1	1.1	0.3	0.2
170-179	4.5	-	-	-	0.2	1.4	1.2	1.2	0.5	-
180-189	1.8	-	-	-	0.1	0.2	0.6	0.8	0.1	-
190-199	2.0	-	-	0.2	0.2	-	0.2	0.6	0.5	0.3
200 and over	0.5	-	-	-	-	-	0.0	0.0	0.0	0.5

Table 16. Percent distribution of men 55-64 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)									
	Total	Under 60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130 and over
	Percent distribution									
Total	100.0	0.9	3.8	17.7	34.7	23.7	13.6	4.2	1.3	0.1
Under 100	0.2	0.1	0.1	-	0.0	-	-	-	-	-
100-109	5.0	0.2	2.0	1.6	1.2	-	-	-	-	-
110-119	8.9	-	1.2	3.6	4.0	0.1	0.0	-	-	-
120-129	15.0	0.3	0.1	6.8	6.6	1.2	-	-	-	-
130-139	21.6	-	0.2	3.8	9.7	6.9	1.0	-	-	-
140-149	18.4	-	-	1.2	8.0	5.9	2.9	0.4	-	-
150-159	11.7	0.3	0.2	0.7	2.6	4.4	3.0	0.4	0.1	-
160-169	9.7	-	-	0.0	1.8	2.9	3.6	1.2	0.2	-
170-179	4.4	-	-	-	0.5	1.1	1.5	1.3	-	-
180-189	2.3	-	-	-	-	0.8	0.9	0.2	0.4	-
190-199	2.0	-	-	-	0.3	0.4	0.3	0.6	0.3	0.1
200-209	0.5	-	-	-	-	-	0.4	0.1	0.0	-
210 and over	0.3	-	-	-	-	-	-	-	0.3	-

Table 17. Percent distribution of men 65-74 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)									
	Total	Under 60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130 and over
	Percent distribution									
Total	100.0	1.1	6.5	21.7	31.3	23.5	11.2	2.9	1.6	0.2
Under 100	0.5	0.2	0.2	0.1	-	-	-	-	-	-
100-109	2.4	0.1	1.1	0.8	0.4	0.0	-	-	-	-
110-119	6.7	0.1	1.2	3.9	1.5	0.0	-	-	-	-
120-129	12.6	0.1	1.8	5.1	4.1	1.5	0.0	-	-	-
130-139	16.6	0.1	0.7	5.5	7.7	2.3	0.2	0.1	-	-
140-149	16.5	0.4	0.7	3.3	6.1	4.7	1.0	0.2	0.1	-
150-159	15.4	0.0	0.5	1.8	4.6	6.2	2.2	0.1	0.0	-
160-169	10.4	-	0.2	0.6	3.1	3.6	2.5	0.4	-	-
170-179	7.8	-	0.1	0.2	2.3	2.6	1.9	0.4	0.3	-
180-189	5.0	0.1	-	0.3	0.9	1.2	1.8	0.6	0.1	-
190-199	2.4	0.0	-	0.1	0.3	0.8	0.4	0.2	0.5	0.1
200-209	1.5	-	-	-	0.2	0.4	0.4	0.4	0.1	0.0
210-219	1.1	-	-	-	-	0.2	0.3	0.3	0.2	0.1
220-229	0.5	-	-	-	0.1	-	0.1	0.1	0.2	0.0
230-239	0.2	-	-	-	-	0.0	0.1	0.0	0.1	0.0
240 and over	0.4	-	-	-	-	-	0.3	0.1	-	0.0

Table 18. Percent distribution of women 18-24 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)								
	Total	Under 50	50-59	60-69	70-79	80-89	90-99	100-109	110 and over
	Percent distribution								
Total	100.0	1.1	7.5	27.7	37.9	21.9	3.1	0.5	0.3
Under 90	0.9	0.2	0.3	0.4	0.0	-	-	-	-
90-99	8.8	0.5	2.0	5.1	1.2	-	-	-	-
100-109	19.6	0.2	2.3	8.5	7.5	1.0	0.1	-	-
110-119	31.2	0.2	1.9	8.2	14.0	6.5	0.4	-	-
120-129	25.7	-	0.7	4.5	11.8	8.1	0.6	0.0	-
130-139	9.5	-	0.2	0.6	3.0	4.7	0.9	-	0.1
140-149	2.8	-	-	0.2	0.3	1.4	0.6	0.2	0.1
150-159	1.0	-	0.1	0.2	-	0.2	0.3	0.2	0.0
160-169	0.1	-	-	-	-	-	0.1	0.0	0.0
170 and over	0.4	-	-	-	0.1	-	0.1	0.1	0.1

Table 19. Percent distribution of women 25-34 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)									
	Total	Under 50	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120 and over
	Percent distribution									
Total	100.0	0.5	2.8	22.9	36.7	28.0	7.1	1.7	0.3	0.0
Under 90	0.5	-	0.2	0.3	-	-	-	-	-	-
90-99	6.7	0.3	1.1	3.9	1.2	0.2	-	-	-	-
100-109	19.4	0.1	0.8	8.5	8.2	1.8	-	-	-	-
110-119	31.8	0.1	0.6	8.0	15.3	7.5	0.3	-	-	-
120-129	22.9	-	0.1	1.8	9.5	10.0	1.4	0.1	-	-
130-139	11.7	-	-	0.4	2.0	6.1	2.9	0.3	-	-
140-149	4.0	-	-	0.0	0.3	1.8	1.1	0.7	0.1	0.0
150-159	1.4	-	-	-	0.1	0.3	0.8	0.2	0.0	0.0
160-169	1.1	-	-	-	0.1	0.1	0.5	0.2	0.2	-
170-179	0.3	-	-	-	-	0.1	0.1	0.1	0.0	0.0
180 and over	0.2	-	-	-	-	0.1	-	0.1	0.0	0.0

Table 20. Percent distribution of women 35-44 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)								
	Total	Under 60	60-69	70-79	80-89	90-99	100-109	110-119	120 and over
	Percent distribution								
Total	100.0	1.7	12.8	30.0	33.6	13.6	5.3	1.9	1.1
Under 90	0.7	0.4	0.3	-	-	-	-	-	-
90-99	4.2	0.4	2.4	1.3	0.1	-	-	-	-
100-109	14.3	0.5	4.7	7.3	1.7	0.1	-	-	-
110-119	23.1	0.3	3.9	11.1	7.1	0.7	0.0	-	-
120-129	24.2	0.1	1.4	7.1	12.1	3.0	0.5	-	-
130-139	14.5	-	0.1	2.6	8.1	3.5	0.2	-	-
140-149	8.2	-	-	0.6	2.9	3.3	1.3	0.1	-
150-159	4.8	-	-	0.0	1.2	2.0	1.3	0.3	-
160-169	2.8	-	-	-	0.2	0.8	0.7	0.8	0.3
170-179	1.5	-	-	-	0.2	0.2	0.6	0.2	0.3
180-189	0.9	-	-	-	-	-	0.6	0.2	0.1
190-199	0.3	-	0.0	-	-	-	0.1	0.1	0.1
200 and over	0.5	-	-	-	-	-	0.0	0.2	0.3

Table 21. Percent distribution of women 45-54 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)									
	Total	Under 60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130 and over
	Percent distribution									
Total	100.0	1.6	7.4	25.6	35.3	17.2	8.2	2.8	1.4	0.5
Under 90	0.5	0.3	0.2	0.0	-	-	-	-	-	-
90-99	2.0	0.4	1.2	0.4	-	-	-	-	-	-
100-109	6.9	0.3	2.1	3.5	1.0	-	-	-	-	-
110-119	18.0	0.6	2.2	7.5	6.7	1.0	-	-	-	-
120-129	20.9	-	0.9	8.4	9.8	1.8	-	-	-	-
130-139	17.4	-	0.8	3.8	8.5	3.9	0.3	0.1	-	-
140-149	13.4	-	0.0	1.6	5.2	4.8	1.6	0.2	-	-
150-159	6.9	-	-	0.2	2.0	2.5	1.6	0.4	0.2	-
160-169	6.5	-	-	0.1	1.9	2.1	1.9	0.1	0.4	-
170-179	2.7	-	-	0.1	0.2	0.6	1.1	0.5	0.1	0.1
180-189	1.0	-	-	-	-	0.3	0.3	0.1	0.3	-
190-199	1.2	-	-	-	-	0.2	0.6	0.3	0.1	-
200-209	1.5	-	-	-	-	-	0.8	0.4	0.1	0.2
210-219	0.5	-	-	-	-	-	-	0.4	0.0	0.1
220 and over	0.6	-	-	-	-	-	-	0.3	0.2	0.1

Table 22. Percent distribution of women 55-64 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)								
	Total	Under 70	70-79	80-89	90-99	100-109	110-119	120-129	130 and over
	Percent distribution								
Total	100.0	3.5	22.7	32.8	24.0	12.0	2.9	1.2	0.9
Under 100	1.1	0.3	0.8	-	-	-	-	-	-
100-109	3.1	0.9	1.7	0.5	-	-	-	-	-
110-119	11.2	0.6	7.6	3.0	-	-	-	-	-
120-129	12.0	0.5	4.5	5.8	1.2	-	-	-	-
130-139	17.8	0.8	5.0	8.6	3.1	0.3	-	-	-
140-149	15.0	0.1	0.8	6.8	6.3	0.8	0.2	-	-
150-159	12.4	0.2	0.8	3.0	6.1	1.8	0.5	-	-
160-169	10.1	0.1	0.3	3.1	2.4	4.0	0.2	0.0	-
170-179	7.6	-	0.5	1.6	2.2	2.7	0.6	-	-
180-189	4.1	-	0.5	0.3	1.6	1.0	0.5	0.2	-
190-199	1.5	-	0.2	-	0.5	0.6	0.1	-	0.1
200-209	1.4	-	-	0.1	0.1	0.5	0.4	0.2	0.1
210-219	1.3	-	-	-	0.5	0.3	0.1	-	0.4
220-229	0.7	-	-	-	-	-	-	0.7	-
230 and over	0.7	-	-	-	-	-	0.3	0.1	0.3

Table 23. Percent distribution of women 65-74 years, by specified systolic and diastolic blood pressures: United States, 1971-1974

Systolic blood pressure (mm. Hg)	Diastolic blood pressure (mm. Hg)								
	Total	Under 60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130 and over
	Percent distribution									
Total	100.0	0.5	5.6	21.1	34.6	22.0	10.4	4.0	1.1	0.7
Under 100	0.2	0.1	0.1	-	-	-	-	-	-	-
100-109	1.3	0.2	0.4	0.4	0.3	-	-	-	-	-
110-119	3.7	0.1	0.9	1.9	0.6	0.2	-	-	-	-
120-129	9.7	0.1	1.3	3.8	3.7	0.8	-	-	-	-
130-139	13.4	-	0.9	4.7	5.9	1.6	0.3	-	-	-
140-149	18.7	0.0	1.1	5.1	8.3	3.6	0.5	0.1	-	-
150-159	15.6	-	0.3	2.6	5.9	4.8	1.4	0.6	-	-
160-169	13.4	-	0.2	1.0	4.7	4.6	2.4	0.4	0.1	-
170-179	7.7	-	0.2	0.8	2.5	2.5	1.0	0.6	0.1	0.0
180-189	7.3	-	0.1	0.4	1.7	1.8	2.5	0.6	0.1	0.1
190-199	4.2	-	-	0.3	0.7	1.6	0.5	0.7	0.4	-
200-209	2.0	-	0.1	0.1	0.1	0.2	1.0	0.3	0.1	0.1
210-219	1.1	-	-	-	0.1	0.2	0.3	0.4	0.0	0.1
220-229	0.5	-	-	-	0.0	0.1	0.2	0.0	-	0.2
230-239	0.6	-	-	-	0.1	0.0	0.1	0.2	0.1	0.1
240 and over	0.6	-	-	-	-	-	0.2	0.1	0.2	0.1

Table 24. Tests of skewness and kurtosis of systolic and diastolic blood pressures of examinees, 6-74 years, by sex and age: United States, 1971-1974

Age	Both sexes		Males		Females		Both sexes		Males		Females		Number of examined persons			Levels of significance			
																Skewness		Kurtosis	
	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Both sexes	Males	Females	P_5	P_1	P_5	P_1
	Systolic						Diastolic												
6 years[1]	0.3	0.2	0.5	1.0	0.1	-0.4	0.4	0.3	0.1	0.3	0.5	0.1	268	134	134	0.30	0.43	0.57	0.98
7-11 years	0.2	0.3	0.2	0.3	0.2	0.3	-0.2	0.0	-0.2	-0.2	-0.1	0.2	1,702	847	855	0.13	0.18	0.26	0.41
12-17 years	0.4	0.7	0.6	0.9	0.3	0.3	0.0	0.2	-0.1	0.3	0.1	0.3	2,126	1,064	1,062	0.13	0.18	0.26	0.41
18-24 years	0.4	0.5	0.3	0.4	0.5	1.1	0.1	0.9	0.1	1.2	0.1	0.8	2,296	772	1,524	0.16-0.10	0.23-0.14	0.33-0.21	0.56-0.32
25-34 years	0.6	1.3	0.7	1.8	0.8	1.7	0.3	1.4	0.4	1.5	0.3	1.8	2,700	804	1,896	0.14-0.10	0.20-0.13	0.29-0.20	0.46-0.29
35-44 years	0.9	2.1	0.8	1.8	1.1	2.2	0.5	0.9	0.6	0.9	0.6	1.1	2,328	665	1,663	0.16-0.10	0.23-0.14	0.33-0.21	0.52-0.32
45-54 years	1.2	2.6	1.0	1.8	1.3	3.0	0.8	2.6	0.9	3.2	0.8	2.2	1,601	765	836	0.15-0.14	0.21-0.20	0.29-0.28	0.46-0.45
55-64 years	0.7	0.8	0.6	0.3	0.7	0.7	0.5	0.7	0.3	0.0	0.7	1.3	1,267	597	670	0.16-0.16	0.23-0.22	0.34-0.33	0.54-0.52
65-74 years	0.8	1.1	0.7	0.8	0.8	1.4	0.6	1.0	0.4	0.6	0.7	1.3	3,479	1,657	1,822	0.10-0.10	0.14-0.13	0.21-0.20	0.32-0.30

[1]Excludes the 87 six-year-old examinees for whom no estimation was made for missing blood pressure values.

NOTE: For skewness $P_5 = 0.18$ and $P_1 = 0.26$; for kurtosis (positive) $P_5 = +0.37$ and $P_1 = +0.60$, the probability levels based on simple random sampling theory for samples of 500 examinees will somewhat understate the probability levels from the complex sample design used in this survey.

Table 25. Systolic and diastolic blood pressure of white adults 18-74 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1971-1974

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
Systolic	Blood pressure (mm. Hg)										
Both sexes, 18-74 years	129.4	21.3	0.43	99.7	107.0	114.4	125.3	139.5	159.0	169.4	113,591
18-24 years	119.3	13.6	0.51	97.8	100.0	109.5	119.3	127.8	137.5	140.0	20,147
25-34 years	120.4	14.5	0.49	99.1	101.6	109.6	119.4	129.3	139.2	145.2	23,529
35-44 years	124.8	17.0	0.61	99.6	104.4	112.0	121.8	133.0	146.0	155.0	20,107
45-54 years	132.8	21.1	1.04	103.4	109.4	119.2	129.5	141.4	159.6	169.9	21,207
55-64 years	141.3	23.1	0.78	109.2	113.5	124.9	139.1	154.0	169.8	185.1	17,030
65-74 years	149.2	24.6	0.85	113.5	119.5	130.0	147.1	161.6	179.8	189.9	11,570
40-74 years	137.1	23.2	0.61	105.5	109.7	119.7	133.4	149.5	169.1	179.6	59,993
Men, 18-74 years	131.1	18.8	0.46	105.5	109.5	119.2	129.1	139.6	155.6	165.9	54,109
18-24 years	123.7	12.8	0.75	103.3	107.8	114.3	121.4	129.9	139.6	144.0	9,849
25-34 years	125.2	13.9	0.67	103.6	109.3	115.7	123.4	131.4	139.9	149.5	11,191
35-44 years	127.0	14.8	0.88	104.5	109.1	117.4	125.2	134.4	145.9	153.5	9,857
45-54 years	134.7	19.7	1.15	107.9	110.6	119.8	131.2	143.2	159.8	171.2	10,117
55-64 years	139.6	20.4	1.08	109.3	115.0	124.0	137.7	149.8	165.4	179.1	8,125
65-74 years	146.0	24.1	1.06	109.6	117.9	129.3	141.9	159.5	177.6	189.4	4,970
40-74 years	136.7	20.8	0.69	108.0	111.6	121.0	133.4	147.9	163.8	175.0	28,231
Women, 18-74 years	127.8	23.3	0.53	99.1	101.9	109.9	121.7	139.4	159.4	170.0	59,482
18-24 years	115.1	12.9	0.61	95.4	99.1	107.2	114.1	121.4	129.7	137.0	10,298
25-34 years	116.2	13.6	0.51	96.0	99.4	107.4	114.4	123.4	131.5	139.5	12,338
35-44 years	122.6	18.7	0.68	97.7	101.0	109.5	119.5	129.8	147.1	159.2	10,250
45-54 years	131.1	22.2	1.30	99.7	109.0	115.6	129.0	139.9	159.4	169.7	11,091
55-64 years	143.0	25.2	1.00	109.2	111.7	125.5	139.4	159.0	173.7	189.3	8,905
65-74 years	151.6	24.7	1.07	117.5	121.3	133.9	149.2	164.1	183.2	194.4	6,601
40-74 years	137.5	25.0	0.78	103.1	109.4	119.4	133.4	149.9	169.6	183.7	31,762
Diastolic											
Both sexes, 18-74 years	81.1	12.6	0.30	59.8	65.8	71.6	79.6	88.0	97.2	101.6	113,591
18-24 years	73.8	10.4	0.43	57.4	59.5	67.5	73.6	79.6	85.5	89.5	20,147
25-34 years	77.5	10.6	0.35	59.6	63.7	69.5	77.6	83.6	89.6	94.4	23,529
35-44 years	81.7	11.9	0.40	61.6	67.7	73.4	79.8	88.0	97.1	101.9	20,107
45-54 years	84.9	13.1	0.61	65.8	69.5	77.2	83.5	90.0	99.8	107.7	21,207
55-64 years	86.3	12.2	0.45	69.1	69.9	79.0	85.0	93.4	99.8	107.5	17,030
65-74 years	85.2	12.7	0.55	67.1	69.4	77.1	83.5	91.9	99.8	107.6	11,570
40-74 years	84.9	12.6	0.38	67.1	69.5	77.2	83.4	91.2	99.7	107.1	59,993
Men, 18-74 years	83.1	12.0	0.34	64.0	69.2	75.1	81.2	89.4	99.1	103.8	54,109
18-24 years	76.4	10.1	0.57	59.1	63.1	69.6	77.3	81.2	87.7	91.1	9,849
25-34 years	80.8	10.1	0.57	65.4	69.1	73.6	79.6	87.2	91.4	95.9	11,191
35-44 years	84.2	11.3	0.57	67.8	69.6	77.2	83.2	89.6	99.4	104.5	9,857
45-54 years	87.5	12.7	0.68	69.4	73.0	79.4	86.0	93.3	103.0	109.5	10,117
55-64 years	86.4	12.0	0.66	69.0	69.9	79.1	85.2	93.7	99.9	107.8	8,125
65-74 years	84.9	13.0	0.61	65.1	69.3	75.8	83.4	91.9	99.8	107.5	4,970
40-74 years	86.2	12.3	0.44	69.0	69.9	71.1	84.8	91.9	100.0	108.0	28,231
Women, 18-74 years	79.3	12.8	0.35	59.4	63.4	69.6	79.1	85.7	95.2	99.8	59,482
18-24 years	71.3	10.0	0.53	55.4	59.1	63.7	69.8	79.0	83.2	87.3	10,298
25-34 years	74.6	10.1	0.31	59.2	59.9	67.7	73.8	79.8	87.1	89.8	12,338
35-44 years	79.3	12.0	0.51	59.6	63.7	69.9	79.2	85.6	93.4	99.7	10,250
45-54 years	82.6	13.1	0.68	63.6	69.0	73.6	79.8	89.3	99.2	104.6	11,091
55-64 years	86.2	12.4	0.53	69.2	69.9	77.6	84.0	93.3	99.8	107.4	8,905
65-74 years	85.4	12.5	0.64	67.5	69.6	77.3	83.6	91.8	99.8	107.7	6,601
40-74 years	83.8	12.7	0.42	65.1	69.3	75.3	81.7	89.8	99.4	104.9	31,762

[1]These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 26. Systolic and diastolic blood pressure of Negro adults 18-74 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1971-1974

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands[1]
				5th	10th	25th	50th	75th	90th	95th	
Systolic	Blood pressure (mm. Hg)										
Both sexes, 18-74 years	134.4	26.6	1.03	99.6	107.7	117.2	129.2	147.1	169.7	185.4	12,998
18-24 years	117.5	15.2	1.26	93.6	99.1	107.8	117.5	127.6	135.6	141.2	2,905
25-34 years	125.2	15.9	0.88	99.4	107.4	113.1	124.4	133.9	144.5	153.7	2,917
35-44 years	132.8	20.7	1.19	103.6	109.4	119.3	129.4	141.5	159.2	169.8	2,175
45-54 years	146.4	32.3	4.24	109.5	113.7	119.8	137.7	163.8	189.7	199.8	2,218
55-64 years	149.7	26.1	2.97	109.1	115.6	129.4	145.8	167.9	181.6	189.0	1,644
65-74 years	159.3	28.6	2.69	117.4	125.1	139.4	155.1	177.5	194.1	209.7	1,140
40-74 years	147.9	29.0	2.00	109.5	114.8	124.0	141.5	166.0	185.6	199.3	6,140
Men, 18-74 years	135.3	22.8	1.29	109.1	109.7	119.5	129.8	143.5	169.1	179.8	5,730
18-24 years	122.9	14.5	2.20	99.2	104.7	109.8	123.9	131.6	139.2	145.2	1,287
25-34 years	129.3	13.1	1.61	109.3	109.9	119.5	129.4	137.7	149.1	153.6	1,377
35-44 years	136.7	18.8	2.29	109.7	119.2	123.6	131.6	141.4	159.6	179.1	820
45-54 years	141.7	28.2	4.23	109.8	114.1	119.7	129.9	159.0	185.7	189.8	1,087
55-64 years	144.2	23.0	3.57	107.7	109.6	129.2	139.8	165.0	169.8	179.5	672
65-74 years	156.6	28.3	3.57	117.2	119.6	139.2	150.0	174.4	189.8	209.5	486
40-74 years	145.1	26.2	2.24	109.8	115.5	123.1	139.6	159.7	179.9	189.8	2,711
Women, 18-74 years	133.7	29.2	1.34	97.9	103.2	111.6	125.4	149.3	173.4	189.1	7,268
18-24 years	113.2	14.3	1.11	90.0	95.6	101.6	111.0	119.7	129.4	139.1	1,618
25-34 years	121.5	17.2	0.96	95.3	99.6	109.5	119.4	129.6	139.8	154.4	1,540
35-44 years	130.5	21.4	1.52	99.9	109.1	115.1	124.8	141.7	158.0	169.3	1,354
45-54 years	150.8	35.1	5.69	109.3	113.2	120.0	145.6	169.4	199.3	200.0	1,131
55-64 years	153.4	27.4	4.44	109.5	123.1	129.7	153.0	169.6	185.0	189.9	971
65-74 years	161.3	28.7	2.88	117.5	129.2	139.6	159.5	178.0	194.8	209.9	654
40-74 years	150.1	30.8	2.66	109.3	113.7	125.1	145.6	169.2	189.2	199.7	3,429
Diastolic											
Both sexes, 18-74 years	84.9	15.3	0.55	61.4	67.9	74.2	81.7	93.6	104.8	109.7	12,998
18-24 years	74.2	11.0	0.78	57.6	59.7	67.9	73.8	79.8	87.5	89.9	2,905
25-34 years	81.0	12.9	0.86	59.8	67.1	71.2	79.6	89.0	99.3	104.3	2,917
35-44 years	88.5	13.3	0.97	69.2	69.7	79.3	87.6	95.9	104.6	110.0	2,175
45-54 years	92.7	16.2	1.82	69.6	75.1	79.6	89.4	103.5	110.0	119.5	2,218
55-64 years	91.7	14.0	1.77	71.2	73.6	79.6	89.7	100.0	109.5	114.1	1,644
65-74 years	90.6	15.1	0.96	69.1	69.8	79.6	89.3	99.4	109.6	119.1	1,140
40-74 years	91.6	15.0	0.98	69.4	73.7	79.6	89.5	99.8	109.6	117.6	6,140
Men, 18-74 years	86.5	14.4	0.76	67.1	69.4	77.6	83.9	94.8	104.9	109.8	5,730
18-24 years	76.2	9.9	1.03	59.4	61.3	69.5	75.7	81.3	89.1	93.4	1,287
25-34 years	84.3	11.7	1.60	67.3	69.1	77.4	81.3	89.6	99.8	105.4	1,377
35-44 years	91.2	12.1	1.43	69.8	77.0	81.8	89.9	97.4	107.1	109.8	820
45-54 years	91.9	16.5	2.45	74.2	75.6	79.7	87.7	99.8	110.0	119.8	1,087
55-64 years	93.4	14.1	2.23	69.7	79.1	80.0	89.8	103.4	109.8	117.4	672
65-74 years	90.9	14.0	1.20	69.4	74.9	79.8	89.5	99.2	109.2	115.4	486
40-74 years	92.2	14.7	1.26	69.9	77.1	79.9	89.4	99.7	109.7	118.7	2,711
Women, 18-74 years	83.7	15.8	0.77	59.7	65.4	71.4	79.8	93.1	104.7	109.7	7,268
18-24 years	72.7	11.6	1.02	51.9	59.3	64.6	71.5	79.4	87.2	89.4	1,618
25-34 years	78.0	13.1	0.95	59.3	64.2	69.5	77.9	84.4	93.0	101.4	1,540
35-44 years	86.9	13.7	1.29	69.0	69.5	77.6	84.8	95.5	104.2	111.1	1,354
45-54 years	93.5	15.8	2.20	69.4	71.7	79.6	91.4	104.6	110.0	119.4	1,131
55-64 years	90.6	13.9	2.23	71.6	73.4	79.1	89.6	99.8	109.2	109.8	971
65-74 years	90.4	15.9	1.31	67.3	69.5	79.4	87.9	99.5	109.7	119.2	654
40-74 years	91.1	15.1	1.17	69.2	71.2	79.3	89.6	99.9	109.6	115.5	3,429

[1] These population figures are not precise census estimates in this degree of age detail but are included to give a rough idea of the number in the population at risk.

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 27. Systolic and diastolic blood pressure of Spanish-Mexican Americans and American Indians 7-74 years, by sex and age—mean, standard error of the mean, and standard deviation: United States, 1971-1974

Blood pressure, sex, and age	Spanish-Mexican Americans			American Indians		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
Systolic	Blood pressure (mm. Hg)					
Both sexes, 7-74 years	117.6	1.00	19.4	121.4	2.06	19.2
7-11 years	100.4	1.86	12.1	98.4	4.18	13.5
12-17 years	112.0	2.06	14.1	117.4	2.61	11.1
18-24 years	114.8	1.62	13.0	118.0	2.42	11.4
25-34 years	119.4	1.48	14.0	122.7	3.20	13.5
35-44 years	123.3	1.53	17.4	122.2	3.59	22.0
45-54 years	134.5	3.02	17.2	134.5	5.66	17.9
55-64 years	142.4	8.67	24.5	142.1	4.87	16.7
65-74 years	147.9	2.69	20.4	143.1	3.10	14.9
Males, 7-74 years	119.3	1.45	18.1	122.6	1.84	16.6
7-11 years	100.2	2.19	10.4	101.9	3.78	11.5
12-17 years	114.1	1.82	13.9	116.7	2.42	9.4
18-24 years	119.1	2.65	10.4	121.2	4.91	10.8
25-34 years	121.6	2.28	13.2	128.0	4.97	13.9
35-44 years	124.7	3.10	12.8	127.7	6.32	15.6
45-54 years	140.1	5.52	15.0	130.9	8.27	17.3
55-64 years	139.9	7.22	19.9	139.4	8.55	14.8
65-74 years	146.0	4.64	19.4	139.9	6.17	14.9
Females, 7-74 years	116.1	1.29	20.3	120.3	3.47	21.4
7-11 years	100.6	2.54	13.7	95.5	6.71	14.4
12-17 years	110.5	2.59	14.0	118.8	5.31	13.6
18-24 years	109.6	1.36	14.0	114.9	2.88	11.1
25-34 years	117.2	1.96	14.5	119.0	3.02	11.9
35-44 years	122.4	2.82	19.8	117.4	4.45	25.3
45-54 years	130.0	2.71	17.5	138.9	9.67	17.7
55-64 years	144.8	15.47	28.0	144.3	6.81	17.8
65-74 years	150.1	3.04	21.2	145.0	4.86	14.6

See footnotes at end of table.

Table 27. Systolic and diastolic blood pressure of Spanish-Mexican Americans and American Indians 7-74 years, by sex and age—mean, standard error of the mean, and standard deviation: United States, 1971-1974—Con.

Blood pressure, sex, and age	Spanish-Mexican Americans			American Indians		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
Diastolic	Blood pressure (mm. Hg)					
Both sexes, 7-74 years	73.2	0.83	12.1	75.8	1.37	12.8
7-11 years	63.0	1.77	9.3	60.7	1.89	8.6
12-17 years	67.5	1.07	8.8	71.6	1.79	8.7
18-24 years	70.6	1.31	8.9	75.7	1.81	7.9
25-34 years	76.4	1.12	9.6	75.6	1.45	9.3
35-44 years	79.7	0.78	11.2	81.0	3.69	15.6
45-54 years	85.0	1.67	10.1	85.4	2.59	8.7
55-64 years	86.3	1.74	8.7	87.1	4.87	12.2
65-74 years	82.0	1.78	10.7	82.8	2.71	11.4
Males, 7-74 years	74.6	1.17	11.5	77.6	1.67	12.4
7-11 years	63.5	1.52	8.7	63.2	2.70	8.8
12-17 years	69.3	1.10	8.3	72.7	2.09	8.1
18-24 years	73.4	2.10	7.8	77.7	2.97	6.8
25-34 years	78.4	2.51	8.7	76.5	2.53	8.4
35-44 years	81.8	1.73	9.7	84.9	7.99	15.9
45-54 years	86.5	2.68	9.3	89.8	3.32	7.6
55-64 years	86.8	2.39	7.3	85.4	4.69	8.1
65-74 years	82.4	2.75	10.6	84.9	4.56	11.6
Females, 7-74 years	71.8	1.18	12.5	74.1	1.83	13.0
7-11 years	62.3	2.45	9.8	58.6	2.55	7.7
12-17 years	66.3	1.66	8.8	69.5	3.53	9.4
18-24 years	67.1	1.22	9.0	73.8	2.26	8.4
25-34 years	74.4	1.15	10.1	75.0	1.90	9.8
35-44 years	78.3	1.38	11.8	77.6	3.15	14.5
45-54 years	83.7	2.21	10.5	80.1	3.54	6.9
55-64 years	85.8	3.04	9.9	88.6	7.13	14.6
65-74 years	81.6	2.16	10.8	81.5	4.07	11.1

NOTES: This table includes only those examinees who identified themselves as Spanish Americans, Mexican Americans, or American Indians and were not living on a reservation or in an institution at the time of the survey.

$s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 28. Systolic and diastolic blood pressure of persons 7-74 years, by region, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Northeast			Midwest			South			West		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
Systolic	Blood pressure (mm. Hg)											
Both sexes, 7-74 years	123.4	0.91	22.8	124.2	0.65	21.2	127.7	0.86	23.3	122.5	0.94	21.1
7-11 years	100.5	1.18	11.8	103.7	0.74	10.5	106.6	1.52	12.0	102.8	1.75	13.5
12-17 years	110.9	0.85	12.7	114.2	0.90	13.3	115.1	1.52	14.4	113.6	1.21	14.0
18-24 years	118.1	1.10	13.6	120.2	1.11	12.6	120.2	0.97	14.1	117.5	0.76	14.3
25-34 years	119.4	1.08	14.3	122.0	0.90	14.6	123.6	0.92	14.8	118.7	0.70	14.5
35-44 years	124.2	0.97	17.3	126.2	1.26	18.0	128.3	1.46	19.0	124.0	1.09	15.9
45-54 years	134.1	2.54	22.6	133.0	1.34	20.8	138.9	2.20	26.0	130.8	1.98	20.7
55-64 years	141.6	1.94	23.6	141.6	1.34	24.7	144.2	1.36	21.5	140.4	1.58	24.0
65-74 years	150.3	1.82	26.3	141.2	1.82	24.3	153.3	1.83	26.6	147.2	1.00	22.6
Males, 7-74 years	124.0	0.81	21.2	125.9	0.75	19.6	127.5	1.12	20.9	124.4	1.14	19.9
7-11 years	100.0	0.82	11.3	104.2	0.74	10.7	105.8	1.76	11.8	103.4	1.73	13.3
12-17 years	112.0	1.25	12.8	116.1	1.04	13.2	115.7	1.50	14.7	115.6	1.60	14.2
18-24 years	123.2	1.58	11.6	123.5	1.21	12.3	124.8	1.15	13.8	122.6	1.67	13.9
25-34 years	124.1	1.46	14.1	126.5	1.19	13.2	128.8	1.04	13.4	122.7	1.31	14.1
35-44 years	126.1	1.67	13.6	129.1	1.99	17.1	129.7	1.73	17.1	126.6	1.18	13.5
45-54 years	136.3	2.75	22.4	135.0	1.32	20.0	136.8	3.06	21.3	133.7	2.81	19.3
55-64 years	138.1	2.52	22.5	141.0	1.58	19.0	140.3	2.17	18.9	139.2	2.84	22.7
65-74 years	148.0	2.31	25.4	145.7	2.37	24.1	149.9	1.89	26.3	144.0	2.07	22.5
Females, 7-74 years	122.8	1.15	24.2	122.5	0.79	22.6	127.7	0.89	25.2	120.7	0.99	22.0
7-11 years	101.0	1.75	12.3	103.2	1.25	10.2	107.4	1.67	12.3	102.2	2.30	13.6
12-17 years	109.7	0.91	12.5	112.1	1.03	13.2	114.5	1.69	13.9	111.7	1.01	13.6
18-24 years	113.0	1.34	13.6	116.6	1.21	11.8	116.3	1.41	13.2	113.3	0.89	13.2
25-34 years	114.9	0.99	13.0	117.7	1.05	14.5	119.0	0.79	14.4	115.2	0.58	14.0
35-44 years	122.4	1.12	20.0	123.6	1.16	18.4	127.2	1.67	20.3	121.4	1.35	17.6
45-54 years	132.3	3.12	22.7	130.8	2.18	21.5	140.7	2.24	29.2	128.2	1.87	21.6
55-64 years	144.3	1.73	24.1	142.1	2.26	29.6	147.8	1.63	23.0	141.5	1.99	25.0
65-74 years	152.2	2.44	26.9	151.7	1.70	24.2	155.8	1.96	26.6	149.8	1.51	22.4
Age-adjusted values:												
Both sexes	123.1	...	...	124.7	...	...	127.0	...	...	122.7	...	...
Males	124.1	...	...	126.0	...	...	127.2	...	...	124.4	...	...
Females	122.0	...	...	123.2	...	...	127.0	...	...	121.3	...	...
Diastolic												
Both sexes, 7-74 years	77.3	0.72	13.8	78.2	0.37	13.4	78.8	0.57	14.1	77.0	0.80	13.6
7-11 years	63.1	1.19	8.8	65.2	0.44	9.2	66.3	1.34	10.4	64.3	1.65	10.7
12-17 years	69.4	0.88	9.9	71.0	0.52	9.6	68.9	0.72	10.1	69.6	0.97	10.0
18-24 years	74.2	1.06	11.0	74.3	0.72	9.6	74.0	0.57	10.3	73.0	0.89	10.7
25-34 years	77.4	0.59	10.5	78.2	0.58	10.3	79.0	0.62	11.0	76.7	0.77	11.6
35-44 years	81.6	0.78	12.7	82.6	0.74	11.7	83.4	0.99	13.1	82.2	0.66	11.6
45-54 years	84.8	1.54	13.8	86.6	0.59	13.5	86.9	1.40	14.3	84.5	1.15	12.7
55-64 years	85.4	1.24	12.0	87.0	0.53	13.5	87.9	0.83	12.0	86.7	0.97	12.4
65-74 years	85.8	0.66	13.2	86.3	1.21	13.0	86.2	0.80	13.5	84.5	1.29	12.2
Males, 7-74 years	78.3	0.62	13.7	79.7	0.34	13.2	79.7	0.69	14.1	78.8	0.79	13.4
7-11 years	63.2	0.94	8.3	65.9	0.69	9.1	65.6	1.66	10.3	65.6	1.19	10.4
12-17 years	70.0	0.90	10.2	71.4	0.69	9.2	69.8	0.49	10.4	70.7	0.80	10.4
18-24 years	77.5	1.25	10.0	76.5	0.66	9.0	76.1	0.94	10.3	75.4	1.32	10.8
25-34 years	80.3	0.85	10.7	81.6	0.79	9.3	82.1	0.85	10.1	80.1	1.39	11.0
35-44 years	83.7	1.19	11.4	85.7	1.10	11.4	85.0	1.34	12.4	84.8	0.88	10.9
45-54 years	87.2	1.50	13.8	88.7	0.65	13.0	89.4	1.94	13.9	86.5	1.42	11.7
55-64 years	84.9	1.98	12.7	87.3	0.65	12.1	87.9	0.95	11.7	87.2	1.74	12.7
65-74 years	85.3	1.06	13.2	85.2	0.95	13.2	86.3	0.91	13.6	85.0	1.66	12.8
Females, 7-74 years	76.3	0.95	13.8	76.6	0.51	13.6	77.9	0.62	14.0	75.3	0.97	13.5
7-11 years	62.9	1.62	9.2	64.4	0.56	9.2	67.0	1.19	10.3	63.1	2.21	10.8
12-17 years	68.7	1.28	9.5	70.5	0.51	9.9	67.9	1.39	9.7	68.6	1.36	9.5
18-24 years	70.8	1.49	10.9	71.9	0.91	9.7	72.3	0.84	10.0	71.0	0.87	10.2
25-34 years	74.6	0.60	9.5	75.0	0.67	10.2	76.2	0.57	11.0	73.8	0.59	11.3
35-44 years	79.5	0.92	13.4	79.8	0.66	11.2	82.0	1.32	13.5	79.6	0.70	11.7
45-54 years	82.7	1.72	13.5	84.3	1.16	13.6	84.8	0.98	14.3	82.6	1.34	13.2
55-64 years	85.7	1.23	11.4	86.6	1.09	14.8	87.9	1.01	12.4	86.3	0.85	12.1
65-74 years	86.3	0.86	13.1	87.1	1.56	12.8	86.1	0.83	13.5	84.2	1.11	11.7
Age-adjusted values:												
Both sexes	77.2	...	...	78.4	...	...	78.5	...	...	77.2	...	...
Males	78.4	...	...	79.7	...	...	79.6	...	...	78.8	...	...
Females	75.9	...	...	77.0	...	...	77.6	...	...	75.7	...	...

NOTE: $s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 29. Systolic and diastolic blood pressure of white persons 7-74 years, by region, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Northeast			Midwest			South			West		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
Systolic	Blood pressure (mm. Hg)											
Both sexes, 7-74 years	123.6	0.92	22.5	124.3	0.72	21.0	127.3	1.03	22.1	122.3	0.93	20.7
7-11 years	100.9	1.03	11.5	104.0	0.75	10.5	106.8	1.70	12.2	102.6	1.82	13.7
12-17 years	111.4	0.71	12.7	114.4	0.98	13.5	115.2	1.73	14.8	113.6	1.16	13.8
18-24 years	118.6	1.06	13.3	120.5	1.28	12.4	120.6	1.04	14.0	117.8	0.73	14.3
25-34 years	119.2	1.07	13.7	121.6	1.03	14.7	122.9	1.10	14.6	118.4	0.64	14.3
35-44 years	123.7	1.03	16.8	126.0	1.32	17.6	126.5	1.64	18.1	123.4	1.04	15.7
45-54 years	133.5	2.69	21.8	132.5	1.54	20.7	136.0	1.95	22.0	130.0	1.70	19.5
55-64 years	141.8	1.79	23.8	141.8	1.48	24.2	142.5	1.63	20.5	139.2	1.32	23.4
65-74 years	149.8	2.07	25.8	148.4	1.99	23.9	151.9	1.54	26.0	146.6	0.96	22.3
Males, 7-74 years	124.3	0.75	20.9	126.1	0.85	19.4	127.6	1.32	20.2	124.3	1.07	19.3
7-11 years	100.5	0.74	10.9	104.4	0.84	10.8	106.1	1.99	12.0	103.7	1.77	13.5
12-17 years	112.7	1.23	12.6	116.4	1.14	13.3	116.2	1.80	15.1	115.3	1.54	14.2
18-24 years	123.3	1.62	11.4	123.9	1.39	12.1	125.0	1.64	13.9	122.8	1.63	13.7
25-34 years	123.7	1.28	13.5	126.2	1.40	13.2	128.7	1.15	13.9	122.6	1.31	14.2
35-44 years	125.6	1.67	13.2	128.4	2.14	16.1	128.0	2.16	16.8	126.5	1.19	13.5
45-54 years	135.7	2.87	21.6	135.1	1.47	20.0	135.7	2.92	18.3	132.6	2.15	18.0
55-64 years	139.1	2.14	22.5	141.3	1.65	18.7	139.8	2.41	18.7	137.7	2.44	21.9
65-74 years	147.8	2.48	25.4	144.8	2.61	23.7	148.0	1.31	25.2	143.4	2.18	21.9
Females, 7-74 years	122.9	1.24	23.9	122.4	0.79	22.4	127.1	1.03	23.6	120.6	1.08	21.7
7-11 years	101.2	1.63	12.2	103.6	1.19	10.1	107.6	2.09	12.4	101.5	2.48	13.9
12-17 years	109.9	0.94	12.7	112.3	1.11	13.4	114.1	1.88	14.2	112.1	1.07	13.2
18-24 years	113.6	1.23	13.2	116.8	1.34	11.6	116.8	1.48	12.8	113.5	0.90	13.3
25-34 years	114.7	1.08	12.4	117.5	1.12	14.7	117.7	1.02	13.2	114.8	0.68	13.4
35-44 years	121.6	1.28	19.7	123.8	1.24	18.6	125.3	1.78	19.0	120.2	1.30	17.0
45-54 years	131.6	3.28	21.8	129.5	2.18	21.2	136.3	1.86	24.4	127.5	1.98	20.6
55-64 years	143.8	1.87	24.5	142.4	2.51	29.5	145.1	1.65	21.8	140.6	1.96	24.6
65-74 years	151.4	2.82	26.0	150.9	1.92	23.7	154.7	1.93	26.1	149.2	1.71	22.3
Age-adjusted values:												
Both sexes	123.1	...	...	124.6	...	...	126.1	...	...	122.3	...	...
Males	124.2	...	...	126.0	...	...	126.8	...	...	124.0	...	...
Females	121.8	...	...	123.1	...	...	125.6	...	...	120.9	...	...
Diastolic												
Both sexes, 7-74 years	77.2	0.70	13.5	78.2	0.35	13.3	78.4	0.68	13.5	76.8	0.83	13.2
7-11 years	63.1	1 17	8.7	65.4	0.43	9.1	66.7	1.44	10.5	64.2	1.78	10.9
12-17 years	69.3	0.90	10.0	71.1	0.45	9.6	68.6	0.83	10.1	69.3	0.90	9.7
18-24 years	74.4	0.98	10.8	74.4	0.79	9.6	73.8	0.56	10.3	72.9	0.89	10.7
25-34 years	77.2	0.62	10.1	78.0	0.65	10.2	78.4	0.86	10.8	76.6	0.85	11.0
35-44 years	81.2	0.74	12.6	82.2	0.84	11.3	82.1	1.09	12.7	81.6	0.61	11.2
45-54 years	84.2	1.63	13.1	86.4	0.54	13.6	85.2	1.52	13.4	83.9	1.02	12.2
55-64 years	85.1	1.23	11.9	87.1	0.47	13.4	86.8	0.93	11.3	86.1	0.81	12.1
65-74 years	85.6	0.77	12.8	85.9	1.37	12.7	85.3	0.85	13.1	84.2	1.37	12.1
Males, 7-74 years	78.4	0.63	13.5	79.8	0.35	13.0	79.5	0.82	13.7	78.6	0.82	13.2
7-11 years	63.5	0.92	8.2	66.1	0.66	8.9	66.1	1.76	10.5	65.6	1.32	10.7
12-17 years	70.0	1.01	10.5	71.5	0.63	9.1	69.5	0.80	10.2	70.1	0.89	10.0
18-24 years	77.7	1.36	10.2	76.7	0.70	8.9	75.7	0.97	10.5	75.6	1.42	10.8
25-34 years	80.1	0.76	10.4	81.4	0.94	8.9	81.7	1.11	10.3	79.9	1.67	10.5
35-44 years	83.4	1.15	11.3	85.0	1.14	10.8	83.8	1.64	12.5	84.5	0.80	10.7
45-54 years	86.8	1.64	12.8	88.9	0.68	13.3	88.5	2.05	12.9	86.0	1.21	11.3
55-64 years	84.4	1.96	12.9	87.4	0.73	11.9	87.1	1.15	11.0	86.2	1.45	12.1
65-74 years	85.1	1.12	13.3	84.5	1.19	12.8	85.3	0.90	13.1	84.8	1.71	12.7
Females, 7-74 years	76.1	0.95	13.4	76.5	0.49	13.4	77.5	0.72	13.4	75.1	1.01	13.1
7-11 years	62.8	1.68	9.2	64.7	0.63	9.1	67.4	1.52	10.5	62.8	2.36	10.8
12-17 years	68.5	1.23	9.2	70.6	0.51	10.0	67.7	1.59	9.9	68.5	1.44	9.4
18-24 years	71.0	1.24	10.3	71.8	1.01	9.6	72.1	1.09	9.8	70.6	0.78	10.1
25-34 years	74.4	0.63	9.0	74.9	0.69	10.3	75.5	0.78	10.5	73.8	0.46	10.5
35-44 years	78.8	1.06	13.4	79.6	0.79	11.1	80.6	1.53	12.7	78.5	0.78	10.9
45-54 years	82.1	1.78	12.9	83.5	0.98	13.3	82.7	1.15	13.3	82.0	1.32	12.7
55-64 years	85.6	1.30	11.2	86.7	0.88	14.9	86.5	0.88	11.6	86.0	0.87	12.0
65-74 years	86.0	1.03	12.4	86.8	1.68	12.6	85.3	1.00	13.1	83.7	1.25	11.5
Age-adjusted values:												
Both sexes	77.0	...	...	78.3	...	...	77.8	...	...	76.8	...	...
Males	78.3	...	...	79.7	...	...	79.1	...	...	78.5	...	...
Females	75.7	...	...	76.8	...	...	76.7	...	...	75.3	...	...

NOTE: $s_{\bar{x}}$ = standard error of the mean. s_x = standard deviation.

Table 30. Systolic and diastolic blood pressure of Negro persons 7-74 years, by region, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Northeast			Midwest			South			West		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
Systolic	Blood pressure (mm. Hg)											
Both sexes, 7-74 years	122.0	1.54	26.5	124.1	1.18	23.3	129.0	1.17	27.2	125.0	3.43	26.1
7-11 years	97.6	2.97	13.7	101.9	2.26	10.3	106.0	1.55	11.5	104.1	3.85	11.4
12-17 years	107.6	2.46	12.6	112.2	1.01	11.8	114.9	2.23	13.1	111.5	2.99	14.1
18-24 years	112.2	3.77	16.2	119.6	3.88	15.3	118.9	1.33	14.2	116.1	4.10	15.4
25-34 years	123.2	3.19	19.2	125.9	1.46	13.5	126.3	1.31	15.0	123.3	1.83	17.0
35-44 years	130.4	3.05	19.9	129.8	4.18	22.5	136.4	1.92	21.1	131.2	2.78	16.7
45-54 years	145.5	5.18	30.5	138.7	4.43	20.9	152.7	8.60	37.0	143.0	9.16	32.4
55-64 years	144.3	3.71	20.3	138.5	9.56	30.3	154.1	2.40	24.4	162.6	8.47	24.4
65-74 years	158.7	4.84	32.4	159.4	4.80	27.8	160.6	4.74	28.7	155.9	4.18	25.0
Males, 7-74 years	121.2	1.95	25.2	125.3	1.40	21.8	127.5	1.49	23.4	126.4	4.76	26.2
7-11 years	96.3	3.31	13.7	102.6	2.00	10.2	105.1	1.71	10.9	100.8	4.09	12.3
12-17 years	107.5	2.76	13.3	114.8	3.32	12.1	114.2	2.57	13.2	114.3	3.91	11.4
18-24 years	119.5	5.59	15.3	123.0	5.40	14.7	124.2	1.78	13.0	120.6	12.96	17.7
25-34 years	131.3	4.95	17.7	130.7	3.21	12.7	129.1	1.51	10.5	124.9	6.61	12.6
35-44 years	137.3	5.46	14.0	140.0	8.71	26.1	137.6	2.38	16.7	127.7	1.60	11.9
45-54 years	145.9	7.22	31.4	135.4	5.07	19.3	141.3	7.36	30.2	148.9	13.50	29.1
55-64 years	138.5	7.70	19.7	128.4	13.92	27.9	143.7	2.02	19.8	161.6	9.67	23.6
65-74 years	150.5	5.85	25.1	157.4	4.25	26.8	159.4	6.68	29.5	153.0	5.50	28.0
Females, 7-74 years	122.6	2.12	27.6	123.1	2.13	24.5	130.3	1.86	30.2	123.8	2.94	25.9
7-11 years	99.0	3.60	13.4	101.3	3.46	10.4	107.0	1.57	11.9	107.2	2.28	9.4
12-17 years	107.7	2.91	11.3	109.9	1.56	11.0	115.4	2.09	13.0	109.3	3.03	15.7
18-24 years	108.8	4.18	15.4	115.8	2.92	15.1	114.3	1.19	13.7	113.1	3.14	12.7
25-34 years	116.5	1.37	17.7	119.8	1.75	12.0	124.1	1.50	17.4	122.1	3.27	19.6
35-44 years	127.8	3.13	21.2	122.2	2.73	15.4	135.4	2.95	23.8	132.9	4.30	18.3
45-54 years	145.2	8.33	29.8	141.7	7.15	21.8	164.4	10.52	39.6	136.0	11.25	34.6
55-64 years	150.0	2.08	19.1	140.1	11.24	30.4	162.7	4.09	24.4	163.6	9.73	25.2
65-74 years	164.1	6.89	35.3	161.1	7.21	28.5	161.6	4.57	28.1	158.0	4.08	22.2
Age-adjusted values:												
Both sexes	125.3	...	...	126.3	...	...	131.7	...	...	128.8	...	...
Males	126.5	...	...	127.1	...	...	129.5	...	...	129.1	...	...
Females	125.3	...	...	124.8	...	...	134.0	...	...	128.3	...	...
Diastolic												
Both sexes, 7-74 years	78.2	1.28	16.5	78.4	0.85	15.4	80.0	0.71	15.9	79.9	1.57	16.7
7-11 years	62.8	1.93	9.3	63.1	1.64	10.1	65.1	1.32	9.8	65.4	1.68	9.7
12-17 years	70.3	1.50	8.9	70.5	1.67	9.7	69.7	1.31	10.0	70.8	2.49	10.7
18-24 years	71.6	3.34	12.8	73.2	1.91	10.7	75.0	0.78	10.3	75.5	1.96	10.9
25-34 years	80.1	2.18	13.5	81.0	1.72	11.6	81.3	0.79	11.1	81.0	3.93	17.1
35-44 years	86.7	2.30	12.2	87.9	2.14	15.0	89.4	1.00	13.2	89.7	4.16	12.9
45-54 years	93.6	3.68	21.1	88.8	2.58	12.6	94.7	3.33	15.6	93.0	4.80	16.1
55-64 years	90.0	3.26	12.3	85.4	4.35	14.4	93.6	1.92	14.0	98.7	4.37	12.1
65-74 years	90.0	2.89	17.3	92.5	2.31	16.0	90.6	1.16	14.7	89.4	2.59	13.3
Males, 7-74 years	78.2	1.21	16.6	79.4	0.89	15.1	80.6	1.10	15.7	81.3	2.53	16.6
7-11 years	61.2	2.49	9.0	64.6	2.70	10.5	64.2	2.06	9.7	64.8	2.13	8.2
12-17 years	69.7	1.50	7.6	71.6	2.25	10.0	71.1	1.63	10.8	73.1	3.89	11.0
18-24 years	76.4	2.85	7.7	74.0	2.69	9.4	77.3	1.16	9.8	74.8	4.38	11.7
25-34 years	83.3	4.40	13.6	84.1	2.90	12.1	84.0	0.90	8.7	86.8	8.28	14.5
35-44 years	91.2	5.21	10.3	94.8	5.05	15.5	90.6	1.17	10.2	87.6	4.15	11.9
45-54 years	94.8	5.15	24.6	87.1	2.26	9.2	93.1	4.55	17.1	94.0	6.28	13.8
55-64 years	92.2	5.04	10.6	80.4	7.31	15.7	92.7	1.36	14.3	102.3	8.86	12.7
65-74 years	89.0	1.98	10.2	93.6	3.43	15.9	91.8	1.79	14.2	87.4	2.86	13.2
Females, 7-74 years	78.2	1.88	16.5	77.6	1.36	15.5	79.6	0.98	16.2	78.9	1.23	16.6
7-11 years	64.4	2.11	9.2	61.7	2.15	9.6	66.0	0.67	9.8	66.0	2.01	10.9
12-17 years	71.3	2.68	10.5	69.6	1.72	9.2	68.5	1.49	9.0	68.9	2.43	10.1
18-24 years	69.3	4.46	14.1	72.4	1.46	12.0	73.0	0.76	10.3	75.9	1.24	10.2
25-34 years	77.3	1.17	12.8	77.1	1.28	9.7	79.1	1.12	12.4	76.7	5.08	17.7
35-44 years	85.1	2.37	12.4	82.6	2.17	12.0	88.4	1.78	15.0	90.7	4.12	13.2
45-54 years	92.7	5.30	18.1	90.4	5.84	14.8	96.3	2.99	13.8	91.8	7.28	18.4
55-64 years	87.8	2.96	13.5	86.2	4.82	14.0	94.3	3.16	13.6	94.8	2.63	10.0
65-74 years	90.6	4.83	20.6	91.6	3.21	15.9	89.7	1.46	14.9	90.9	3.03	13.2
Age-adjusted values:												
Both sexes	80.0	...	...	79.6	...	...	81.8	...	...	82.3	...	...
Males	81.5	...	...	80.4	...	...	82.2	...	...	83.1	...	...
Females	79.3	...	...	78.5	...	...	81.5	...	...	81.4	...	...

NOTE: $s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 31. Systolic and diastolic blood pressure of persons 7-74 years, by annual family income, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Annual family income											
	Less than $3,000			Less than $5,000			$5,000-$9,999			$10,000 or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
Systolic	Blood pressure (mm. Hg)											
Both sexes, 7-74 years	131.7	0.92	27.0	130.4	0.74	26.7	124.2	0.63	21.4	122.0	0.40	20.1
7-11 years	102.5	1.60	12.2	104.0	1.12	11.7	103.7	0.99	12.5	102.9	0.67	12.1
12-17 years	115.5	1.43	13.1	114.0	1.29	14.2	113.9	0.79	13.6	113.1	0.59	13.4
18-24 years	118.1	1.14	14.8	117.5	0.84	14.5	119.5	0.59	13.7	119.7	0.80	13.3
25-34 years	120.2	1.65	14.0	121.5	1.00	15.4	121.3	0.85	13.9	120.5	0.53	14.9
35-44 years	129.5	1.62	19.7	129.0	1.33	19.7	127.2	0.85	18.3	124.1	0.70	16.7
45-54 years	140.9	4.12	26.6	141.1	2.50	29.0	132.5	1.34	21.3	133.5	1.12	21.7
55-64 years	146.2	2.18	26.6	146.4	1.75	26.5	143.4	1.25	22.4	137.9	1.41	21.9
65-74 years	153.8	1.13	25.9	151.8	0.99	25.5	149.7	1.24	24.0	146.7	1.56	27.1
Males, 7-74 years	129.7	1.49	24.6	128.6	1.23	24.0	125.4	0.60	19.9	124.3	0.46	19.2
7-11 years	101.8	1.57	11.6	104.5	1.21	11.7	104.2	0.94	11.8	102.6	0.85	12.1
12-17 years	117.2	1.71	12.3	115.2	1.67	14.6	115.8	0.84	14.2	114.2	0.75	13.1
18-24 years	123.6	1.38	13.5	122.6	1.35	13.8	123.5	1.16	12.9	124.5	1.05	12.6
25-34 years	122.3	2.69	12.6	124.9	1.80	12.7	124.7	1.10	13.2	126.1	0.87	14.2
35-44 years	131.7	3.69	17.4	128.9	2.20	16.2	129.4	1.56	16.5	126.9	1.08	14.9
45-54 years	145.4	5.97	25.9	140.3	3.36	24.3	134.4	1.91	19.8	135.1	1.25	20.5
55-64 years	140.3	3.52	23.5	142.8	3.63	25.1	139.9	1.46	19.4	137.8	1.48	19.1
65-74 years	151.6	2.11	28.2	148.7	1.42	26.0	146.7	1.50	24.1	143.1	1.78	22.6
Females, 7-74 years	133.1	1.02	28.4	131.6	0.82	28.4	123.1	0.84	22.7	119.5	0.54	20.8
7-11 years	103.4	2.35	12.9	103.4	1.48	11.6	103.3	1.46	13.1	103.2	1.08	12.0
12-17 years	114.0	2.13	13.6	112.8	1.48	13.7	112.2	1.04	12.8	111.9	0.84	13.8
18-24 years	113.3	1.58	14.3	113.4	0.94	13.7	115.9	0.86	13.3	114.7	0.83	12.2
25-34 years	118.8	1.61	14.7	119.6	1.09	16.3	118.1	0.82	13.8	115.1	0.49	13.5
35-44 years	128.1	1.81	20.9	129.2	1.89	22.2	125.4	0.89	19.4	121.4	0.76	17.9
45-54 years	138.5	4.49	26.7	141.6	3.46	31.4	131.0	1.81	22.2	131.6	1.60	22.9
55-64 years	149.6	3.46	27.8	148.4	2.25	27.1	146.5	1.74	24.4	138.1	2.26	25.1
65-74 years	154.8	1.19	24.8	153.7	1.14	25.0	152.6	1.76	23.6	150.1	2.65	30.3
Age-adjusted values:												
Both sexes	126.5	...	...	126.4	...	...	124.7	...	...	123.3	...	...
Males	127.3	...	...	126.6	...	...	125.6	...	...	124.8	...	...
Females	125.9	...	...	126.3	...	...	124.0	...	...	121.8	...	...
Diastolic												
Both sexes, 7-74 years	80.1	0.55	15.2	79.6	0.53	14.9	77.9	0.41	13.5	77.1	0.31	13.3
7-11 years	63.8	1.32	10.1	64.5	0.99	9.6	65.4	0.88	10.0	64.4	0.58	9.7
12-17 years	70.5	1.24	11.1	69.6	1.04	10.9	70.5	0.50	9.6	69.6	0.46	9.7
18-24 years	73.2	0.84	10.8	73.4	0.58	10.6	74.1	0.62	10.8	74.1	0.57	10.1
25-34 years	78.8	1.54	13.2	78.6	0.93	12.4	78.5	0.48	10.8	77.2	0.43	10.6
35-44 years	84.7	1.16	14.1	84.9	0.89	13.4	83.9	0.67	13.0	81.3	0.46	11.4
45-54 years	87.3	2.09	15.4	87.1	1.35	14.7	84.7	0.80	13.1	86.1	0.63	13.6
55-64 years	87.5	0.91	13.8	88.0	1.05	13.8	87.7	0.74	12.0	85.0	0.69	12.0
65-74 years	87.7	0.71	13.7	86.8	0.52	13.4	85.4	0.59	12.8	83.8	0.85	12.4
Males, 7-74 years	80.6	0.85	15.1	79.6	0.77	14.9	79.1	0.40	13.2	79.1	0.35	13.4
7-11 years	64.0	1.83	10.0	64.4	1.27	10.0	66.2	0.90	9.8	64.8	0.62	9.2
12-17 years	73.3	1.38	10.4	70.7	1.06	10.8	70.8	0.62	9.7	70.6	0.63	9.8
18-24 years	76.4	1.13	10.2	76.3	0.76	10.5	76.4	0.90	10.3	76.5	0.78	9.6
25-34 years	79.7	3.30	13.5	79.8	1.70	11.1	81.7	0.74	10.2	80.8	0.68	10.4
35-44 years	87.7	2.45	12.2	85.9	1.67	13.0	85.9	1.08	12.5	84.3	0.66	10.7
45-54 years	93.2	2.75	14.3	89.2	1.85	14.2	86.7	1.01	12.1	88.3	0.76	13.3
55-64 years	88.1	2.17	15.0	88.7	1.80	14.6	87.1	0.88	11.2	85.5	0.83	11.9
65-74 years	87.9	1.05	13.9	86.4	0.63	13.8	85.3	0.83	12.9	83.5	1.09	12.2
Females, 7-74 years	79.8	0.63	15.3	79.7	0.55	15.0	76.8	0.56	13.7	74.9	0.41	12.8
7-11 years	63.5	1.77	10.1	64.6	1.08	9.0	64.6	1.10	10.0	64.1	0.87	10.1
12-17 years	67.9	1.48	11.2	68.6	1.25	10.8	70.3	0.85	9.5	68.5	0.64	9.4
18-24 years	70.6	1.02	10.6	71.0	0.61	10.0	71.9	0.74	10.7	71.5	0.68	9.8
25-34 years	78.2	1.72	13.0	77.9	0.96	12.9	75.5	0.57	10.6	73.7	0.38	9.6
35-44 years	82.7	1.60	14.9	84.1	1.16	13.7	82.3	0.76	13.2	78.4	0.54	11.3
45-54 years	84.3	1.96	15.0	85.9	1.49	14.7	83.1	1.13	13.5	83.6	0.79	13.4
55-64 years	87.1	1.31	13.1	87.6	1.20	13.3	88.3	1.02	12.7	84.2	0.94	12.0
65-74 years	87.6	0.77	13.5	87.1	0.60	13.1	85.4	0.73	12.6	84.1	1.18	12.5
Age-adjusted values:												
Both sexes	78.6	...	...	78.5	...	...	78.3	...	...	77.3	...	...
Males	80.6	...	...	79.5	...	...	79.4	...	...	78.8	...	...
Females	77.3	...	...	77.9	...	...	77.2	...	...	75.6	...	...

NOTES: Persons with unknown income have been excluded.

$s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 32. Systolic and diastolic blood pressure of white persons 7-74 years, by annual family income, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Annual family income											
	Less than $3,000			Less than $5,000			$5,000-$9,999			$10,000 or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
Systolic	Blood pressure (mm. Hg)											
Both sexes, 7-74 years	132.7	1.33	26.4	131.2	0.94	25.7	124.2	0.67	21.1	121.9	0.41	20.0
7-11 years	101.7	2.28	13.0	104.2	1.67	12.3	103.8	1.02	12.3	103.0	0.68	12.1
12-17 years	115.0	2.05	13.9	114.2	1.50	14.6	114.5	0.86	13.8	113.1	0.65	13.3
18-24 years	118.2	1.48	15.0	118.0	0.89	14.3	119.9	0.69	13.6	119.7	0.79	13.1
25-34 years	119.1	1.53	13.0	120.8	1.10	14.2	120.8	0.91	13.6	120.2	0.54	14.8
35-44 years	126.5	2.09	16.2	127.8	1.86	19.0	125.8	0.95	17.5	123.9	0.70	16.4
45-54 years	138.3	4.53	25.0	137.3	2.66	24.4	130.7	1.51	19.6	133.1	1.07	21.1
55-64 years	144.1	2.50	26.2	145.2	1.96	26.0	143.1	1.24	22.1	137.8	1.46	22.0
65-74 years	152.2	1.22	24.9	150.4	1.01	24.6	149.3	1.28	23.7	146.7	1.55	27.0
Males, 7-74 years	131.0	1.79	23.5	129.9	1.33	23.4	125.3	0.64	19.3	124.3	0.47	19.1
7-11 years	101.2	3.09	12.2	104.6	1.92	12.4	104.6	0.94	11.5	102.9	0.86	12.1
12-17 years	119.8	2.66	12.6	116.7	2.13	14.6	116.4	0.98	14.5	114.0	0.84	13.0
18-24 years	124.0	1.54	12.7	123.1	1.20	13.0	123.7	1.36	13.2	124.5	1.07	12.4
25-34 years	120.8	2.88	12.5	124.8	1.93	13.0	124.2	1.15	12.9	125.8	0.88	14.2
35-44 years	129.9	3.06	13.5	128.2	2.54	15.1	127.7	1.83	15.9	126.6	1.10	14.5
45-54 years	142.7	3.68	18.7	137.8	2.68	21.5	132.9	1.82	17.5	135.1	1.24	20.1
55-64 years	139.7	3.72	22.6	143.3	3.74	24.9	139.5	1.39	18.8	137.7	1.53	19.0
65-74 years	150.1	2.25	27.3	147.4	1.51	25.4	146.1	1.51	23.5	143.0	1.81	22.4
Females, 7-74 years	133.8	1.41	28.0	132.1	1.01	27.2	123.2	0.85	22.5	119.4	0.55	20.6
7-11 years	102.5	3.84	14.1	103.7	2.26	12.1	103.0	1.56	12.9	103.2	1.13	12.1
12-17 years	111.8	2.92	13.8	111.8	1.98	14.2	112.7	1.15	12.8	112.0	0.87	13.6
18-24 years	113.2	2.28	15.0	113.5	1.30	13.8	116.4	0.89	13.1	114.7	0.84	11.8
25-34 years	118.1	1.77	13.3	118.6	1.27	14.3	117.6	0.94	13.5	115.0	0.53	13.4
35-44 years	124.3	2.33	17.4	127.5	2.60	22.1	124.1	1.04	18.6	121.2	0.79	17.8
45-54 years	137.0	5.57	26.5	137.0	3.64	25.6	129.1	2.11	20.9	130.8	1.58	22.0
55-64 years	146.8	3.89	28.0	146.3	2.54	26.5	146.3	1.87	24.3	138.0	2.30	25.2
65-74 years	153.1	1.36	23.7	152.2	1.22	23.9	152.3	1.84	23.5	150.3	2.62	30.4
Age-adjusted values:												
Both sexes	125.1	...	...	125.5	...	...	124.3	...	...	123.2	...	...
Male	126.7	...	...	126.5	...	...	125.2	...	...	124.8	...	...
Female	124.3	...	...	124.8	...	...	123.6	...	...	121:6	...	...
Diastolic												
Both sexes, 7-74	79.9	0.72	14.7	79.7	0.62	14.3	77.7	0.42	13.1	77.0	0.32	13.3
7-11 years	63.6	2.26	11.1	65.4	1.32	9.6	65.5	0.92	9.9	64.4	0.60	9.7
12-17 years	68.2	1.37	11.1	68.9	1.14	10.8	70.8	0.50	9.6	69.5	0.48	9.6
18-24 years	72.6	1.07	11.1	73.0	0.70	10.6	74.2	0.62	10.7	74.0	0.58	10.1
25-34 years	78.9	1.96	12.2	77.9	1.04	11.0	78.2	0.52	10.6	77.0	0.43	10.5
35-44 years	82.1	1.72	12.9	83.6	1.39	13.2	82.8	0.69	12.6	81.1	0.45	11.4
45-54 years	84.6	2.16	15.1	84.7	1.34	13.7	83.3	0.89	12.0	86.0	0.61	13.4
55-64 years	86.0	1.15	13.3	87.1	1.10	13.6	87.4	0.71	11.7	84.8	0.70	12.0
65-74 years	86.9	0.78	13.1	86.1	0.58	12.8	85.2	0.62	12.7	83.8	0.87	12.3
Males, 7-74 years	80.5	0.97	14.9	79.8	0.82	14.6	78.9	0.44	12.7	79.1	0.36	13.3
7-11 years	63.0	3.51	10.8	65.2	1.57	10.3	66.5	0.88	9.7	64.8	0.67	9.3
12-17 years	72.0	2.04	10.9	70.0	1.36	10.6	70.8	0.66	9.7	70.4	0.69	9.7
18-24 years	75.9	1.41	10.7	76.0	0.94	10.6	76.9	0.99	10.5	76.5	0.83	9.8
25-34 years	78.1	5.03	15.4	78.9	2.24	11.8	81.2	0.74	9.8	80.7	0.68	10.2
35-44 years	85.1	2.41	9.7	85.0	2.24	12.7	84.8	1.22	12.3	84.0	0.66	10.6
45-54 years	90.7	3.71	14.6	87.1	1.70	14.1	85.6	1.11	10.6	88.3	0.76	13.1
55-64 years	87.6	2.36	14.8	88.3	1.95	14.6	86.4	0.85	10.6	85.3	0.84	11.9
65-74 years	87.1	1.00	13.6	85.6	0.69	13.6	85.0	0.88	12.8	83.4	1.10	12.1
Females, 7-74 years	79.6	0.77	14.6	79.6	0.62	14.1	76.6	0.54	13.4	74.8	0.42	12.8
7-11 years	64.5	3.60	11.3	65.6	1.53	8.7	64.5	1.20	10.0	63.9	0.90	10.1
12-17 years	65.6	1.71	10.6	67.8	1.38	10.8	70.8	0.90	9.5	68.4	0.65	9.4
18-24 years	69.6	1.28	10.5	70.4	0.76	9.8	71.8	0.69	10.4	71.3	0.73	9.8
25-34 years	79.3	1.49	9.7	77.4	0.92	10.6	75.4	0.62	10.6	73.7	0.38	9.6
35-44 years	80.2	2.23	14.3	82.2	1.71	13.5	81.1	0.77	12.6	78.2	0.55	11.3
45-54 years	82.8	2.22	14.8	83.6	1.53	13.3	81.6	1.14	12.6	83.3	0.78	13.3
55-64 years	85.1	1.45	12.2	86.4	1.17	12.9	88.4	1.00	12.5	84.3	0.96	12.1
65-74 years	86.8	0.91	12.9	86.3	0.67	12.4	85.3	0.77	12.7	84.2	1.21	12.4
Age-adjusted values:												
Both sexes	77.3	...	...	77.5	...	...	77.9	...	...	77.1	...	...
Male	79.2	...	...	78.8	...	...	79.1	...	...	78.7	...	...
Female	76.3	...	...	77.0	...	...	76.9	...	...	75.5	...	...

NOTE: $s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 33. Systolic and diastolic blood pressure of Negro persons 7-74 years, by annual family income, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Annual family income											
	Less than $3,000			Less than $5,000			$5,000-$9,999			$10,000 or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
	Blood pressure (mm. Hg)											
Systolic												
Both sexes, 7-74 years	130.0	1.42	28.6	128.5	1.29	29.5	124.6	1.23	23.8	123.0	1.58	23.1
7-11 years	102.8	1.93	11.3	103.6	1.13	10.6	103.6	2.04	13.6	101.1	1.88	11.6
12-17 years	116.2	1.63	12.1	113.7	1.79	13.7	110.9	1.03	12.3	111.9	2.55	13.8
18-24 years	117.9	2.05	15.2	116.6	1.83	15.8	118.0	2.04	13.9	119.0	3.40	16.3
25-34 years	122.4	3.45	15.7	123.6	2.17	17.8	125.1	1.61	15.1	127.3	2.16	14.7
35-44 years	134.5	3.37	23.4	132.2	2.07	21.2	135.4	1.60	20.0	127.6	3.49	21.6
45-54 years	146.6	6.80	29.1	153.5	7.01	37.3	144.5	4.85	27.3	141.0	8.12	31.5
55-64 years	153.6	4.61	26.8	151.9	4.17	28.3	150.2	4.38	23.0	141.7	7.80	22.2
65-74 years	162.4	3.20	29.2	161.2	3.23	29.0	156.6	3.64	28.1	146.1	7.71	27.5
Males, 7-74 years	127.9	2.59	27.4	125.4	2.00	25.7	126.5	1.83	23.2	125.1	1.81	21.9
7-11 years	101.7	2.28	10.6	104.1	1.49	10.3	102.6	2.17	13.0	96.5	2.67	10.6
12-17 years	115.3	1.81	11.5	112.6	2.32	14.3	112.5	1.98	12.2	113.6	2.58	11.1
18-24 years	124.2	4.29	17.7	121.3	3.92	17.8	122.8	3.50	11.1	125.5	3.75	14.9
25-34 years	127.0	6.61	12.5	126.5	3.78	12.1	128.5	3.02	14.2	132.1	2.68	11.9
35-44 years	135.1	8.27	21.6	131.3	4.94	18.7	141.4	2.20	16.0	137.4	8.53	23.9
45-54 years	147.6	11.05	30.4	145.2	8.17	28.5	142.2	6.94	27.5	135.7	6.49	29.6
55-64 years	142.9	7.05	27.2	140.9	4.86	25.8	152.0	4.19	16.8	140.4	11.45	22.2
65-74 years	158.8	5.76	30.5	156.9	3.71	27.6	157.1	5.64	31.1	147.0	9.89	27.4
Females, 7-74 years	131.6	1.59	29.5	130.8	1.63	31.9	123.0	1.68	24.2	120.8	2.70	24.2
7-11 years	104.1	2.73	11.9	103.1	1.35	10.8	104.6	2.65	14.2	105.3	2.85	10.8
12-17 years	117.3	2.14	12.6	114.8	2.14	12.8	109.8	1.68	12.2	109.8	4.12	16.1
18-24 years	114.1	1.87	12.1	113.8	1.36	13.8	112.7	2.14	14.7	112.8	3.32	15.1
25-34 years	120.2	2.49	16.7	122.3	2.17	19.8	122.2	1.59	15.2	118.6	1.81	15.2
35-44 years	134.1	3.32	24.7	132.8	2.49	22.8	132.1	2.01	21.1	122.8	3.65	18.5
45-54 years	145.1	4.31	26.9	161.7	11.04	42.6	147.5	5.18	26.8	144.7	13.55	32.2
55-64 years	158.6	5.86	25.0	156.8	5.43	27.9	148.8	6.72	26.5	146.1	35.45	21.4
65-74 years	164.6	3.44	28.2	164.2	3.80	29.5	156.2	4.84	24.7	145.3	25.24	27.7
Age-adjusted values:												
Both sexes	129.8	...	...	129.9	...	...	128.6	...	...	125.7	...	...
Male	129.3	...	...	127.6	...	...	130.0	...	...	127.0	...	...
Female	130.3	...	...	132.0	...	...	127.7	...	...	124.5	...	...
Diastolic												
Both sexes, 7-74	80.8	0.78	16.6	80.0	0.65	16.9	79.1	0.89	16.0	78.6	0.97	14.2
7-11 years	64.0	1.15	9.1	63.1	0.97	9.3	65.2	1.45	10.4	65.9	1.22	8.7
12-17 years	73.1	1.47	10.6	71.2	1.42	10.7	69.3	1.04	9.0	70.8	1.24	9.0
18-24 years	75.2	1.27	10.5	74.9	1.04	11.1	73.3	1.57	11.2	75.3	1.76	9.3
25-34 years	78.9	3.11	15.1	80.6	1.97	14.8	80.9	1.73	12.2	81.5	1.81	11.7
35-44 years	88.9	2.21	15.1	88.4	1.52	13.7	90.2	1.70	13.7	84.7	1.52	11.9
45-54 years	93.5	2.83	14.0	94.7	2.30	14.9	94.1	2.45	15.8	88.8	3.64	17.2
55-64 years	92.6	1.88	14.3	92.2	1.91	14.1	91.3	3.31	14.4	91.8	3.92	12.4
65-74 years	92.0	1.47	15.5	92.0	1.28	15.6	89.2	1.70	12.6	84.3	4.75	15.3
Males, 7-74 years	81.4	1.41	15.8	79.3	1.22	16.1	80.5	1.19	16.3	80.5	1.24	14.7
7-11 years	65.0	1.85	9.1	63.1	1.58	9.4	64.6	1.80	10.3	64.6	1.80	6.9
12-17 years	74.5	1.68	9.8	71.5	1.74	11.1	70.8	1.52	9.4	72.0	1.37	8.4
18-24 years	78.1	2.02	10.0	77.7	1.81	11.5	74.2	2.07	9.1	78.0	1.47	7.1
25-34 years	83.8	3.64	9.6	82.9	2.28	9.2	85.2	2.93	12.6	84.2	2.56	12.0
35-44 years	92.0	5.55	14.4	88.6	3.34	13.6	94.0	1.51	11.0	91.0	4.11	11.2
45-54 years	95.2	4.31	13.6	93.5	3.45	13.5	92.4	4.00	16.7	89.2	4.44	20.5
55-64 years	90.5	3.07	15.5	90.9	1.96	14.3	97.4	4.07	13.5	94.6	6.53	11.8
65-74 years	91.8	2.38	14.5	91.2	1.49	14.2	90.2	1.77	13.1	88.0	5.87	14.8
Females, 7-74 years	80.2	1.02	17.2	80.5	0.71	17.4	77.9	1.28	15.6	76.6	1.35	13.2
7-11 years	62.8	1.54	9.0	63.1	1.01	9.3	65.9	1.81	10.4	67.0	2.19	9.8
12-17 years	71.3	1.91	11.3	70.8	1.70	10.3	68.3	1.35	8.6	69.4	2.53	9.6
18-24 years	73.4	1.24	10.3	73.3	1.02	10.5	72.4	2.29	13.1	72.7	2.36	10.4
25-34 years	76.4	3.56	16.7	79.4	2.43	16.7	77.0	1.16	10.3	76.4	1.42	9.1
35-44 years	86.8	2.10	15.2	88.3	1.52	13.7	88.2	2.26	14.6	81.5	1.87	10.9
45-54 years	90.9	2.32	14.1	95.9	2.69	16.1	96.3	2.67	14.3	88.5	4.96	14.5
55-64 years	93.6	2.32	13.6	92.8	2.39	14.0	86.8	3.54	13.4	82.1	19.22	8.9
65-74 years	92.2	1.71	16.0	92.5	1.76	16.4	88.0	2.73	11.9	80.7	14.23	14.9
Age-adjusted values:												
Both sexes	81.6	...	...	81.5	...	...	81.1	...	...	80.0	...	...
Male	83.1	...	...	81.6	...	...	82.7	...	...	82.0	...	...
Female	80.3	...	...	81.6	...	...	80.0	...	...	77.2	...	...

NOTE: $s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 34. Systolic and diastolic blood pressure of persons 7-74 years, by education, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure sex, and age	Education											
	Less than 5 years			5-8 years			9-12 years			13 years or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
SYSTOLIC												
Both sexes	Blood pressure (mm. Hg)											
7-17 years	109.9	2.38	15.9	109.5	0.87	13.4	109.3	0.57	13.8	107.3	0.68	14.1
7-11 years	103.3	2.40	12.1	103.9	1.07	11.2	104.0	0.78	12.1	101.4	0.98	12.5
12-17 years	115.9	2.35	16.6	113.0	0.99	13.4	113.8	0.73	13.6	112.3	0.65	13.5
18-74 years	146.0	2.04	27.4	139.1	0.84	25.0	128.3	0.51	20.7	125.3	0.59	19.1
18-24 years	124.9	4.19	10.6	118.0	1.76	12.9	119.7	0.56	14.4	117.9	0.74	12.7
25-34 years	129.7	5.28	18.8	121.6	1.42	13.0	121.8	0.55	15.2	119.0	0.71	13.7
35-44 years	129.6	2.22	19.2	129.7	1.01	17.9	125.2	0.83	18.0	124.2	1.01	16.0
45-54 years	143.1	4.33	26.1	137.2	1.92	25.4	133.0	1.13	21.8	132.7	1.98	21.4
55-64 years	148.6	3.58	25.7	145.6	1.54	24.3	140.3	0.94	22.5	138.2	2.42	22.9
65-74 years	158.4	1.92	28.2	150.1	1.22	25.3	150.0	1.09	24.6	145.8	1.14	22.7
Males												
7-17 years	111.8	2.86	17.6	110.4	1.10	13.0	110.1	0.64	14.0	108.4	0.81	14.9
7-11 years	102.3	2.34	9.9	105.0	1.27	10.7	104.1	0.71	11.7	101.3	1.25	13.2
12-17 years	118.9	3.17	18.8	114.1	1.17	13.1	115.1	0.88	13.7	114.1	1.03	13.6
18-74 years	146.0	2.98	27.0	136.8	1.04	21.3	130.7	0.57	18.4	127.8	0.61	16.5
18-24 years	128.5	4.28	8.6	121.0	2.82	11.4	124.6	0.96	13.8	122.1	0.97	11.8
25-34 years	136.9	7.34	14.3	123.6	2.14	11.2	127.1	0.83	14.7	123.6	0.97	12.7
35-44 years	132.4	5.36	15.9	129.1	1.57	14.7	127.9	1.11	15.9	127.0	1.35	14.6
45-54 years	147.1	6.21	27.7	135.1	1.89	21.1	135.4	1.30	20.6	133.4	2.16	18.5
55-64 years	142.2	6.81	25.5	141.7	1.99	20.1	138.4	1.25	19.9	138.5	2.10	21.3
65-74 years	156.6	3.18	29.7	147.1	1.82	24.4	146.1	1.49	23.9	141.9	1.60	20.5
Females												
7-17 years	108.3	2.94	14.1	108.5	1.08	13.7	108.5	0.66	13.7	106.2	1.08	13.2
7-11 years	104.1	3.80	13.4	102.7	1.55	11.5	104.0	1.08	12.6	101.5	1.35	11.8
12-17 years	112.9	2.94	13.5	111.9	1.23	13.7	112.4	0.84	13.3	110.3	1.05	13.0
18-74 years	146.0	2.19	27.9	141.3	1.16	27.9	126.5	0.63	22.1	122.3	0.87	21.4
18-24 years	113.0	4.30	7.3	114.9	2.13	13.5	115.6	0.57	13.5	113.1	0.89	12.0
25-34 years	121.7	4.36	19.8	119.6	1.56	14.2	117.8	0.55	14.4	113.4	0.69	12.7
35-44 years	127.9	3.43	20.9	130.4	1.82	20.8	123.4	0.91	19.1	119.8	1.28	17.2
45-54 years	137.1	3.91	22.2	139.6	3.05	29.5	131.3	1.55	22.6	131.8	2.73	24.5
55-64 years	157.5	4.08	23.3	149.5	2.28	27.3	141.5	1.24	24.0	137.9	4.08	24.8
65-74 years	160.2	1.94	26.4	152.6	1.31	25.7	152.5	1.31	24.7	148.3	1.73	23.7
Age-adjusted values:												
Both sexes, 18-74 years	136.9	...	...	131.6	...	...	129.6	...	...	129.1	...	...
Males, 18-74 years	139.0	...	...	131.0	...	...	131.7	...	...	129.6	...	...
Females, 18-74 years	133.6	...	...	132.3	...	...	128.1	...	...	125.2	...	...

See footnotes at end of table.

Table 34. Systolic and diastolic blood pressure of persons 7-74 years, by education, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974—Con.

Blood pressure sex, and age	Education											
	Less than 5 years			5-8 years			9-12 years			13 years or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
DIASTOLIC												
	Blood pressure (mm. Hg)											
Both sexes												
7-17 years	67.6	1.54	10.6	67.6	0.70	10.4	67.8	0.49	9.9	66.8	0.52	10.5
7-11 years	65.4	1.73	8.5	64.7	0.98	9.8	65.2	0.62	9.6	63.4	0.90	10.4
12-17 years	69.6	1.97	11.8	69.4	0.80	10.4	69.9	0.47	9.7	69.6	0.56	9.7
18-74 years	88.6	1.24	14.8	85.4	0.50	13.5	80.8	0.33	12.7	79.4	0.37	12.1
18-24 years	75.8	2.22	7.5	73.4	1.49	10.5	74.0	0.45	10.7	73.6	0.58	9.9
25-34 years	85.9	3.56	11.7	79.1	0.93	9.6	78.5	0.33	11.3	76.2	0.51	10.1
35-44 years	84.4	1.76	13.0	85.2	0.93	12.2	81.7	0.51	12.0	82.3	0.72	12.6
45-54 years	91.0	2.67	17.4	86.2	0.97	14.0	85.2	0.69	13.7	85.4	1.10	11.9
55-64 years	90.5	2.42	14.2	88.8	0.79	13.2	85.6	0.54	11.8	84.9	1.08	11.8
65-74 years	89.1	1.09	14.1	86.0	0.70	13.5	85.4	0.60	12.4	83.9	0.84	12.0
Males												
7-17 years	69.0	1.83	11.3	67.7	0.84	10.6	68.5	0.42	9.9	67.3	0.65	10.3
7-11 years	66.5	2.17	8.2	64.6	1.32	10.1	65.6	0.60	9.4	64.0	0.92	9.6
12-17 years	70.9	2.40	12.9	69.8	0.82	10.4	70.9	0.43	9.7	69.9	1.02	10.1
18-74 years	90.0	1.70	15.2	85.9	0.61	12.8	83.2	0.35	12.0	81.6	0.48	11.5
18-24 years	77.3	2.51	6.8	75.4	2.95	10.8	76.8	0.70	10.3	75.7	0.77	9.6
25-34 years	90.5	6.92	11.2	81.3	1.17	8.2	82.1	0.57	10.7	79.5	0.71	9.6
35-44 years	85.8	4.69	13.1	86.2	1.38	12.0	84.5	0.70	11.0	84.7	0.91	11.8
45-54 years	96.0	3.58	17.4	86.8	1.13	13.2	88.2	0.81	13.0	86.9	1.47	11.6
55-64 years	88.4	3.25	14.1	89.1	0.95	12.1	85.5	0.93	12.0	85.4	1.53	12.0
65-74 years	89.1	1.59	14.3	85.6	0.85	13.9	85.4	0.65	11.8	83.3	1.34	12.3
Females												
7-17 years	66.4	1.67	9.8	67.5	0.91	10.2	67.0	0.64	9.9	66.2	0.83	10.6
7-11 years	64.6	2.05	8.6	64.8	1.15	9.3	64.8	0.80	9.7	62.7	1.26	11.1
12-17 years	68.3	2.05	10.6	69.0	1.23	10.4	68.9	0.67	9.7	69.2	0.82	9.1
18-74 years	87.0	1.16	14.2	84.8	0.59	14.1	79.1	0.43	12.9	76.8	0.39	12.2
18-24 years	70.7	4.94	7.3	71.5	1.60	9.9	71.7	0.57	10.5	71.2	0.66	9.6
25-34 years	80.9	2.23	10.0	76.9	1.17	10.3	75.9	0.40	11.0	72.1	0.52	9.2
35-44 years	83.6	2.02	12.8	84.2	1.17	12.4	79.8	0.61	12.2	78.6	0.93	12.9
45-54 years	83.3	1.82	14.2	85.5	1.54	14.9	83.0	0.84	13.8	83.5	1.27	12.0
55-64 years	93.3	3.09	13.9	88.6	1.09	14.2	85.7	0.76	11.6	84.2	1.45	11.4
65-74 years	89.1	1.05	13.8	86.4	0.80	13.1	85.4	0.75	12.8	84.3	0.97	11.7
Age-adjusted values:												
Both sexes 18-74 years	85.7	...	...	82.6	...	...	81.2	...	...	80.5	...	...
Males, 18-74 years	87.8	...	...	83.6	...	...	83.5	...	...	82.3	...	...
Females, 18-74 years	82.7	...	...	81.5	...	...	79.6	...	...	78.3	...	...

NOTES: For those examinees 7-17 years education is that of the head of household; for those examinees 18-74 years education is that of the examinee. Examinees were excluded when the education level was unknown.

$s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 35. Systolic and diastolic blood pressure of white persons 7-74 years, by education, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Education											
	Less than 5 years			5-8 years			9-12 years			13 years or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
SYSTOLIC												
Both sexes	Blood pressure (mm. Hg)											
7-17 years	109.7	3.09	17.0	109.8	0.99	13.6	109.6	0.55	13.7	107.4	0.76	14.2
7-11 years	103.1	2.93	12.6	103.4	1.28	11.4	104.3	0.78	12.0	101.4	1.03	12.7
12-17 years	115.8	3.19	18.3	113.4	0.96	13.4	114.0	0.73	13.5	112.3	0.73	13.5
18-74 years	141.9	1.80	25.4	138.7	0.90	24.2	128.3	0.53	20.5	125.3	0.60	18.9
18-24 years	119.7	2.99	6.9	117.8	2.37	12.4	120.2	0.64	14.0	118.1	0.80	12.9
25-34 years	125.4	5.70	18.4	121.1	1.45	12.7	121.5	0.58	15.0	118.6	0.73	13.5
35-44 years	128.2	2.60	18.8	128.6	1.22	16.7	124.5	0.86	17.5	123.7	1.04	15.6
45-54 years	136.8	2.71	20.5	135.7	1.84	22.0	132.4	1.14	21.3	131.6	1.88	20.0
55-64 years	145.7	5.93	22.9	145.1	1.68	24.5	139.8	0.98	22.1	138.7	2.02	22.8
65-74 years	155.5	2.14	26.8	149.2	1.27	24.8	149.7	1.13	24.7	145.9	1.13	22.6
Males												
7-17 years	113.3	4.08	19.7	110.8	1.23	13.1	110.5	0.62	13.7	108.4	0.85	14.9
7-11 years	102.6	2.92	9.9	104.5	1.63	11.0	104.6	0.72	11.4	101.5	1.27	13.3
12-17 years	121.1	4.30	21.4	114.6	1.26	12.8	115.5	0.90	13.5	113.9	1.14	13.7
18-74 years	144.4	3.21	25.8	136.4	1.14	20.8	130.8	0.55	18.3	127.9	0.64	16.5
18-24 years	121.9	6.02	6.5	119.9	3.92	11.6	125.1	1.08	13.4	122.3	1.01	12.0
25-34 years	136.4	8.85	17.5	123.0	2.44	11.6	126.7	0.87	14.7	123.6	1.03	12.6
35-44 years	132.5	9.41	17.8	127.0	1.57	11.6	127.3	1.20	15.5	126.7	1.36	14.3
45-54 years	140.0	4.38	20.7	134.8	1.88	19.2	135.4	1.38	20.5	133.1	2.18	18.3
55-64 years	144.8	9.41	25.7	140.8	2.11	20.0	138.2	1.29	19.9	139.3	1.84	20.8
65-74 years	155.0	3.71	29.4	146.5	1.86	24.0	145.7	1.53	23.9	142.1	1.62	20.5
Females												
7-17 years	107.3	3.43	14.4	108.7	1.22	14.0	108.7	0.71	13.6	106.3	1.16	13.3
7-11 years	103.4	4.44	13.8	102.2	1.71	11.8	104.1	1.10	12.5	101.3	1.41	11.9
12-17 years	111.6	3.45	13.8	112.3	1.16	13.9	112.5	0.90	13.2	110.5	1.11	13.0
18-74 years	139.3	1.52	24.6	141.1	1.22	26.9	126.4	0.65	21.7	122.0	0.87	20.9
18-24 years	115.3	3.71	5.3	115.5	2.65	12.8	116.1	0.60	13.2	113.2	1.00	12.1
25-34 years	115.7	2.34	13.0	119.2	1.68	13.4	117.5	0.61	14.0	112.7	0.73	12.1
35-44 years	126.2	3.89	18.9	130.4	2.23	20.9	122.5	0.93	18.6	118.9	1.37	16.4
45-54 years	133.2	3.88	19.7	136.7	3.26	24.8	130.3	1.50	21.6	129.8	2.64	22.0
55-64 years	147.5	3.67	15.9	149.5	2.52	27.8	140.9	1.29	23.4	137.9	4.06	25.0
65-74 years	155.9	2.31	23.9	151.5	1.43	25.1	152.4	1.36	24.8	148.4	1.78	23.6
Age-adjusted values:												
Both sexes, 18-74 years	132.9	...	...	130.8	...	...	129.3	...	...	127.5	...	...
Males, 18-74 years	136.6	...	...	130.1	...	...	131.5	...	...	129.5	...	...
Females, 18-74 years	129.7	...	...	131.6	...	...	127.7	...	...	124.6	...	...

See footnotes at end of table.

Table 35. Systolic and diastolic blood pressure of white persons 7-74 years, by education, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974—Con.

Blood pressure, sex, and age	Education											
	Less than 5 years			5-8 years			9-12 years			13 years or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
DIASTOLIC												
	Blood pressure (mm. Hg)											
Both sexes												
7-17 years	66.6	1.78	10.8	67.9	0.70	10.3	67.9	0.48	9.8	66.6	0.57	10.5
7-11 years	65.0	2.10	8.4	65.0	1.16	9.9	65.4	0.63	9.5	63.3	0.92	10.5
12-17 years	68.1	2.31	12.4	69.6	0.77	10.2	69.9	0.45	9.7	69.4	0.57	9.7
18-74 years	85.8	1.15	13.7	85.0	0.54	13.1	80.7	0.34	12.4	79.3	0.38	12.0
18-24 years	76.8	3.00	6.4	72.9	1.82	9.4	74.0	0.45	10.6	73.6	0.62	10.1
25-34 years	84.2	4.47	12.7	78.5	1.09	9.2	78.3	0.37	10.8	76.0	0.51	10.0
35-44 years	83.7	2.12	13.1	84.7	1.09	11.8	81.0	0.52	11.6	81.9	0.75	12.3
45-54 years	86.4	2.67	16.1	85.3	0.97	12.9	84.8	0.71	13.5	85.0	1.08	11.8
55-64 years	86.1	3.27	12.9	88.6	0.81	13.2	85.3	0.54	11.6	84.8	1.05	11.6
65-74 years	87.4	1.19	12.8	85.5	0.77	13.2	85.4	0.63	12.5	83.7	0.87	11.9
Males												
7-17 years	67.5	2.32	12.0	68.0	0.87	10.2	68.7	0.42	9.8	67.1	0.67	10.3
7-11 years	66.2	2.49	7.9	64.8	1.58	10.0	66.1	0.61	9.4	64.0	0.96	9.8
12-17 years	68.5	3.47	14.1	69.9	0.94	9.8	70.9	0.46	9.7	69.6	1.02	10.1
18-74 years	88.5	1.93	14.6	85.5	0.68	12.3	83.1	0.40	11.9	81.5	0.51	11.5
18-24 years	79.8	1.77	1.6	74.6	3.59	9.5	77.0	0.74	10.4	75.8	0.82	9.9
25-34 years	91.7	9.66	13.5	80.9	1.41	8.3	81.8	0.66	10.3	79.3	0.74	9.4
35-44 years	86.5	8.39	15.4	85.3	1.54	11.3	83.9	0.73	10.7	84.5	0.95	11.7
45-54 years	92.5	4.30	17.1	86.5	1.25	11.8	88.2	0.90	13.0	86.7	1.50	11.6
55-64 years	87.1	4.84	13.9	88.4	0.96	11.8	85.2	0.94	11.9	85.3	1.57	11.9
65-74 years	87.3	1.74	13.0	85.3	0.94	13.9	85.1	0.65	11.9	83.4	1.36	12.4
Females												
7-17 years	65.9	1.99	9.9	67.9	1.01	10.5	67.0	0.66	9.8	66.1	0.87	10.7
7-11 years	64.3	2.45	8.6	65.3	1.57	9.8	64.8	0.82	9.6	62.5	1.31	11.2
12-17 years	67.7	2.45	10.9	69.4	1.28	10.5	68.9	0.68	9.6	69.2	0.85	9.2
18-74 years	83.0	0.69	12.0	84.5	0.61	13.8	78.9	0.44	12.6	76.5	0.39	11.9
18-24 years	70.8	6.10	7.9	71.0	1.88	8.8	71.5	0.59	10.2	71.1	0.72	9.8
25-34 years	77.6	1.29	7.0	76.2	1.33	9.5	75.6	0.41	10.4	71.9	0.55	9.2
35-44 years	82.4	2.28	11.8	84.0	1.38	12.4	78.9	0.62	11.8	77.8	0.99	12.2
45-54 years	79.6	1.98	11.6	83.8	1.72	14.0	82.4	0.85	13.3	82.7	1.38	11.7
55-64 years	84.0	2.36	10.6	88.8	1.20	14.6	85.4	0.73	11.4	84.1	1.41	11.2
65-74 years	87.6	1.38	12.5	85.7	0.85	12.5	85.5	0.81	12.8	84.0	1.01	11.5
Age-adjusted values:												
Both sexes, 18-74 years	83.8	...	...	82.0	...	...	80.9	...	...	80.3	...	...
Males, 18-74 years	87.6	...	...	83.0	...	...	83.3	...	...	82.2	...	...
Females, 18-74 years	79.6	...	...	80.9	...	...	79.2	...	...	77.9	...	...

NOTES: For those examinees 7-17 years education is that of the head of household; for those examinees 18-74 years education is that of the examinee. Examinees were excluded when the education level was unknown.

$s_{\bar{x}}$ = standard error of the mean. s_x = standard deviation.

Table 36. Systolic and diastolic blood pressure of Negro persons 7-74 years, by education, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Education											
	Less than 5 years			5-8 years			9-12 years			13 years or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
SYSTOLIC												
Both sexes	Blood pressure (mm. Hg)											
7-17 years	110.2	1.29	11.8	108.8	1.52	12.7	107.4	1.26	14.3	106.4	1.94	11.8
7-11 years	103.1	2.91	10.0	105.4	1.87	10.5	102.3	1.63	13.1	102.2	3.06	11.5
12-17 years	116.0	1.73	9.8	111.4	2.19	13.6	111.7	1.39	13.8	111.0	2.39	10.3
18-74 years	153.9	3.48	29.4	142.0	2.34	29.2	128.1	1.05	22.6	129.8	2.04	23.0
18-24 years	132.4	6.50	10.5	119.7	3.40	14.5	117.0	1.78	15.9	116.4	1.91	11.9
25-34 years	142.5	28.15	13.3	124.6	2.50	14.2	124.6	1.01	16.2	125.0	2.40	14.7
35-44 years	135.5	4.34	18.3	134.7	3.37	21.8	131.3	1.86	20.7	135.2	5.16	21.3
45-54 yeears	157.1	11.06	31.2	144.2	8.01	36.0	141.6	4.35	27.5	152.7	10.68	30.7
55-64 years	151.8	4.89	29.1	150.3	3.11	22.1	148.5	7.52	28.1	147.9	26.13	21.2
65-74 years	163.6	4.17	30.1	160.5	3.13	28.3	154.8	3.34	24.3	143.0	7.56	24.3
Males												
7-17 years	108.1	2.27	11.5	109.6	1.63	12.6	107.1	1.61	14.5	106.2	2.82	13.0
7-11 years	99.7	4.07	8.2	106.7	2.04	10.2	101.2	1.82	13.1	98.8	3.70	11.7
12-17 years	114.3	2.27	9.5	112.3	2.19	13.9	111.8	1.91	13.8	113.3	4.99	9.9
18-74 years	148.5	4.44	28.6	139.9	2.83	24.2	130.1	1.80	18.7	130.8	2.49	17.6
18-24 years	135.4	2.82	3.7	125.8	3.61	10.1	122.1	2.88	15.9	121.0	2.88	9.4
25-34 years	138.0	*	*	126.8	3.43	8.0	130.1	2.24	14.2	127.5	4.01	12.5
35-44 years	132.2	5.56	12.9	138.4	5.38	22.0	135.8	4.23	18.4	144.0	11.90	18.7
45-54 years	157.7	13.13	32.9	137.8	6.86	28.3	135.4	3.96	21.8	143.8	10.75	22.0
55-64 years	137.7	5.02	24.1	152.2	3.11	18.0	142.1	7.78	19.6	146.4	43.08	23.4
65-74 years	159.3	5.61	30.0	156.3	4.40	27.4	154.3	5.83	24.6	134.7	11.02	17.5
Females												
7-17 years	113.4	2.08	11.4	108.0	2.22	12.7	107.6	1.49	14.1	106.6	2.07	10.1
7-11 years	107.6	3.76	10.3	104.0	2.72	10.6	103.2	2.18	13.0	105.9	4.12	10.0
12-17 years	119.0	2.58	9.5	110.7	3.12	13.3	111.6	1.75	13.9	107.6	2.84	10.1
18-74 years	162.8	3.89	28.5	143.7	3.01	32.5	126.8	1.58	24.7	129.0	3.53	26.2
18-24 years	*	*	*	114.3	4.35	15.6	112.9	1.40	14.7	113.7	2.18	12.3
25-34 years	152.4	38.37	20.5	122.0	3.79	18.7	120.5	1.33	16.4	122.0	2.43	16.5
35-44 years	142.2	5.48	24.7	130.9	4.81	20.9	129.4	2.10	21.3	131.8	5.21	21.3
45-54 years	154.9	9.25	24.3	150.2	10.29	41.0	146.7	6.75	30.5	157.3	17.13	33.5
55-64 years	166.5	6.57	26.4	149.3	4.76	24.2	150.6	10.02	30.1	150.9	35.24	15.4
65-74 years	169.3	4.23	29.2	162.5	3.20	28.5	155.1	4.50	24.1	146.3	11.33	25.8
Age-adjusted values:												
Both sexes, 18-74 years	145.6	...	...	136.5	...	...	134.0	...	...	135.5	...	...
Males, 18-74 years	141.4	...	...	137.1	...	...	134.6	...	...	135.7	...	...
Females, 18-74 years	145.9	...	...	135.7	...	...	133.6	...	...	135.5	...	...

See footnotes at end of table.

Table 36. Systolic and diastolic blood pressure of Negro persons 7-74 years, by education, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974—Con.

Blood pressure, sex, and age	Education											
	Less than 5 years			5-8 years			9-12 years			13 years or more		
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
DIASTOLIC												
	Blood pressure (mm. Hg)											
Both sexes												
7-17 years	71.0	2.11	9.3	66.7	1.35	10.6	67.0	0.87	10.3	69.2	1.65	9.3
7-11 years	66.8	2.52	9.1	63.8	1.47	9.4	63.7	1.06	10.2	65.6	2.53	9.2
12-17 years	74.3	2.00	8.1	69.0	1.83	11.0	69.8	0.88	9.5	73.2	2.11	7.7
18-74 years	93.7	1.89	15.4	88.1	1.06	15.4	82.3	0.77	14.7	82.2	1.15	13.6
18-24 years	74.2	3.61	8.6	75.0	2.78	13.3	74.3	0.98	11.4	73.5	1.08	8.3
25-34 years	91.0	15.72	5.3	82.2	1.70	10.8	80.7	0.98	13.8	79.9	2.44	10.9
35-44 years	87.8	2.83	12.4	88.3	1.86	13.1	88.3	1.40	13.3	89.6	3.79	15.5
45-54 years	101.1	5.09	15.7	90.7	3.07	17.3	91.4	2.72	15.7	92.6	3.32	11.0
55-64 years	94.6	2.18	13.9	90.5	2.64	13.3	90.4	3.77	13.6	95.2	16.94	15.7
65-74 years	92.3	1.66	15.9	91.8	1.62	15.2	86.3	1.52	12.2	88.2	4.99	14.1
Males												
7-17 years	72.4	2.37	9.2	67.0	2.03	11.9	67.0	0.93	10.1	69.2	2.55	9.3
7-11 years	67.4	4.09	9.2	64.2	2.37	10.6	62.4	1.45	9.5	63.9	2.01	7.1
12-17 years	76.0	1.84	7.3	69.6	2.67	12.4	70.6	1.01	9.0	74.3	3.65	8.2
18-74 years	92.2	2.32	15.8	89.1	1.64	15.5	83.9	1.25	13.3	84.4	1.83	12.0
18-24 years	74.6	6.11	8.9	77.8	5.11	14.0	76.2	1.35	9.8	75.3	1.73	6.9
25-34 years	*	*	*	83.2	2.13	7.2	84.3	2.30	13.2	84.2	3.36	10.4
35-44 years	84.8	3.42	9.0	90.2	3.56	14.0	93.0	2.76	11.9	92.5	5.71	10.3
45-54 years	101.4	6.23	16.5	89.7	3.80	18.4	88.6	2.41	12.9	91.4	4.65	10.5
55-64 years	90.2	2.33	14.3	96.5	3.55	13.4	93.4	5.55	10.0	96.6	28.52	15.1
65-74 years	92.3	2.25	15.8	90.1	1.21	12.6	90.8	2.55	9.8	82.1	4.53	10.7
Females												
7-17 years	68.8	1.88	9.0	66.5	1.33	9.3	67.0	1.15	10.5	69.2	2.44	9.4
7-11 years	66.1	2.49	8.8	63.4	1.18	7.8	64.8	1.48	10.6	67.6	4.68	10.8
12-17 years	71.4	2.03	8.4	68.6	1.98	9.6	69.0	1.20	10.0	71.5	2.22	6.5
18-74 years	96.1	1.80	14.3	87.3	1.21	15.2	81.2	1.22	15.5	80.7	1.45	14.5
18-24 years	*	*	*	72.5	3.34	12.0	72.7	1.17	12.3	72.5	1.35	8.9
25-34 years	97.7	22.34	5.0	81.1	2.70	13.8	78.0	1.39	13.6	74.6	1.78	9.0
35-44 years	93.8	3.98	15.7	86.4	2.76	11.7	86.3	1.54	13.4	88.5	4.63	17.0
45-54 years	100.1	4.24	12.6	91.7	3.32	16.2	93.7	4.85	17.4	93.1	4.89	11.2
55-64 years	99.3	3.31	11.9	87.0	2.42	12.0	89.4	4.96	14.5	92.5	23.78	16.6
65-74 years	92.3	2.06	16.2	92.7	2.06	16.3	83.5	1.92	12.8	90.6	6.78	14.5
Age-adjusted values:												
Both sexes, 18-74 years	89.9	...	...	85.7	...	...	84.8	...	...	85.9	...	...
Males, 18-74	87.7	...	...	87.2	...	...	87.1	...	...	87.0	...	...
Females, 18-74 years	92.1	...	...	84.5	...	...	83.6	...	...	84.4	...	...

NOTES: For those examinees 7-17 years education is that of the head of household; for those examinees 18-74 years education is that of the examinee. Examinees were excluded when the education level was unknown.

$s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 37. Systolic and diastolic blood pressure of persons 7-74 years, by population density, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Urban areas						Urban not in urbanized area			Rural area		
	More than 1,000,000 persons			Less than 1,000,000 persons								
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
	Blood pressure (mm. Hg)											
Systolic												
Both sexes, 7-74 years	122.9	0.43	22.4	124.0	1.09	22.0	125.1	0.73	22.2	125.6	0.70	21.9
7-11 years	101.3	0.58	11.9	102.0	1.73	12.3	106.1	0.94	12.1	105.2	1.07	11.8
12-17 years	111.7	0.97	13.3	112.8	0.76	13.0	114.3	1.13	14.2	114.9	0.94	14.1
18-24 years	118.2	0.95	13.5	118.5	0.90	13.9	118.1	0.94	14.1	120.8	0.87	13.6
25-34 years	119.4	0.79	15.1	1 1.[illegible]	1.09	14.9	120.1	0.87	13.0	122.4	0.78	14.5
35-44 years	124.4	0.76	18.3	127.4	1.05	17.9	124.0	1.17	15.0	126.0	0.97	17.5
45-54 years	132.8	1.13	22.4	133.6	2.88	21.9	133.8	1.98	24.9	135.8	1.69	22.6
55-64 years	142.4	1.57	25.6	141.6	1.67	22.6	142.5	2.65	22.8	141.6	1.46	22.5
65-74 years	148.1	1.17	24.3	149.9	1.65	25.5	151.2	2.22	25.7	151.2	1.22	25.3
Males, 7-74 years	123.8	0.54	20.5	125.7	0.89	20.4	125.7	0.94	19.4	126.6	0.97	20.6
7-11 years	100.4	0.74	11.7	102.1	1.47	11.6	106.1	1.25	12.0	105.9	0.99	11.7
12-17 years	113.4	1.07	13.4	114.3	1.11	12.6	116.5	1.65	14.8	116.2	1.24	14.4
18-24 years	123.9	1.30	12.1	122.7	1.29	13.8	123.3	1.51	12.9	123.9	1.24	13.2
25-34 years	123.9	1.19	14.6	125.5	1.27	13.6	124.2	1.41	11.6	127.6	0.99	13.7
35-44 years	126.7	1.44	15.7	130.4	1.69	16.0	126.2	2.23	13.3	127.3	1.21	15.1
45-54 years	134.1	1.34	20.4	136.5	2.47	18.5	130.6	1.79	17.6	137.9	2.46	23.2
55-64 years	138.3	1.75	20.9	141.1	2.43	21.3	142.9	3.12	21.4	138.8	2.19	20.0
65-74 years	146.3	2.24	24.8	146.3	1.84	24.8	146.2	2.45	24.0	148.0	1.39	2.48
Females, 7-74 years	121.9	0.58	24.1	122.6	1.38	23.3	124.7	0.93	24.6	124.7	0.72	23.0
7-11 years	102.3	1.19	12.0	101.9	2.20	13.0	106.2	1.51	12.3	104.4	1.46	11.8
12-17 years	109.6	1.12	12.9	111.6	0.82	13.2	112.3	1.59	13.3	113.7	0.84	13.7
18-24 years	112.8	0.91	12.4	114.9	1.06	13.0	113.0	1.26	13.3	117.6	1.00	13.2
25-34 years	114.9	0.79	14.2	117.2	1.01	14.9	116.6	0.90	13.1	117.9	0.80	13.7
35-44 years	122.3	1.06	20.1	124.4	1.42	19.2	122.3	0.91	16.1	124.8	1.21	19.3
45-54 years	131.6	1.83	24.3	131.1	3.42	24.2	137.0	3.83	30.3	134.0	1.76	22.0
55-64 years	146.3	1.67	28.9	142.0	2.22	23.5	142.1	3.91	24.2	144.2	1.91	24.4
65-74 years	149.4	0.88	23.7	152.6	2.08	25.7	154.3	2.81	26.1	153.9	1.62	25.3
Age-adjusted values:												
Both sexes	123.1	...	...	124.2	...	...	124.4	...	...	125.6	...	...
Males	124.1	...	...	125.7	...	...	125.2	...	...	126.6	...	...
Females	122.0	...	...	122.9	...	...	123.8	...	...	124.7	...	...
Diastolic												
Both sexes, 7-74 years	77.1	0.32	13.8	77.7	0.89	13.8	77.6	0.37	13.3	78.6	0.40	13.7
7-11 years	63.4	0.49	9.3	64.0	1.51	10.3	64.7	0.97	9.8	66.4	0.92	9.7
12-17 years	69.1	0.57	9.6	69.9	1.09	9.6	70.0	0.63	9.8	70.2	0.62	10.3
18-24 years	73.8	0.63	10.0	73.5	0.99	11.0	73.5	0.64	9.9	74.3	0.59	10.6
25-34 years	76.6	0.65	11.0	78.3	0.50	10.7	76.5	0.74	10.9	79.1	0.42	10.8
35-44 years	81.4	0.71	12.5	84.5	0.83	12.8	80.8	0.53	10.2	82.6	0.55	12.1
45-54 years	84.9	0.70	13.5	85.6	1.66	13.8	85.1	1.18	12.9	86.6	0.88	13.8
55-64 years	86.9	0.84	13.0	85.4	1.21	12.1	87.2	1.44	12.1	87.4	0.86	12.5
65-74 years	86.0	0.58	12.5	84.5	1.01	13.3	85.4	1.18	13.7	86.4	0.64	12.8
Males, 7-74 years	78.1	0.43	13.5	79.8	0.70	13.7	78.8	0.54	12.8	79.8	0.50	13.9
7-11 years	63.6	0.75	9.4	64.4	1.22	9.0	64.6	1.45	10.2	67.2	0.75	9.5
12-17 years	69.8	0.70	9.7	71.6	0.87	9.6	71.4	1.22	9.6	70.3	0.61	10.7
18-24 years	76.8	1.08	9.6	75.6	0.99	10.6	76.1	0.92	9.5	76.6	0.88	10.2
25-34 years	79.9	1.05	10.8	81.3	0.63	9.8	79.2	1.30	9.6	82.6	0.74	10.1
35-44 years	83.6	1.13	11.9	88.1	0.97	11.2	83.4	1.22	9.2	83.9	0.97	11.7
45-54 years	86.5	0.75	12.4	89.2	1.45	12.3	85.4	1.25	10.3	89.6	1.37	15.1
55-64 years	85.2	1.16	12.1	86.5	1.86	13.5	89.0	1.78	11.8	87.6	1.13	11.7
65-74 years	86.0	1.07	12.3	84.5	1.46	13.9	85.4	1.00	13.6	85.6	0.59	13.2
Females, 7-74 years	76.1	0.38	14.1	75.8	1.17	13.7	76.5	0.50	13.6	77.4	0.47	13.5
7-11 years	63.1	0.71	9.2	63.7	1.98	11.3	64.8	0.95	9.2	65.6	1.23	9.7
12-17 years	68.1	0.72	9.5	68.5	1.41	9.3	68.6	0.86	9.9	70.1	0.82	9.9
18-24 years	71.2	0.49	9.4	71.8	1.38	11.0	71.0	0.70	9.7	72.0	0.73	10.4
25-34 years	73.4	0.40	10.2	75.5	0.70	10.7	74.3	0.85	11.3	76.0	0.50	10.4
35-44 years	79.4	0.70	12.8	80.7	1.06	13.3	78.7	0.81	10.4	81.3	0.74	12.3
45-54 years	83.3	1.05	14.2	82.5	1.88	14.3	84.9	1.71	15.1	84.2	0.82	12.1
55-64 years	88.4	1.00	13.5	84.6	1.60	10.9	85.4	1.82	12.2	87.2	1.04	13.2
65-74 years	86.0	0.60	12.6	84.6	0.94	12.8	85.5	1.63	13.8	87.1	0.83	12.5
Age-adjusted values:												
Both sexes	77.2	...	...	77.8	...	...	77.3	...	...	78.6	...	...
Males	78.3	...	...	79.7	...	...	78.6	...	...	79.8	...	...
Females	76.1	...	...	76.1	...	...	76.2	...	...	77.5	...	...

NOTE: $s_{\bar{x}}$ = standard error of the mean. s_x = standard deviation.

Table 38. Systolic and diastolic blood pressure of white persons 7-74 years, by population density, sex, and age--mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Urban areas						Urban not in urbanized area			Rural area		
	More than 1,000,000 persons			Less than 1,000,000 persons								
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
	Blood pressure (mm. Hg)											
Systolic												
Both sexes, 7-74 years	122.9	0.48	22.0	123.9	1.09	21.5	124.7	0.82	21.2	125.3	0.69	21.4
7-11 years	101.5	0.63	11.9	101.6	1.61	12.3	105.6	1.18	12.3	105.2	1.08	11.9
12-17 years	112.1	0.97	13.2	112.8	0.69	13.0	114.4	1.20	14.4	115.0	0.93	14.1
18-24 years	118.6	1.07	13.2	118.9	0.97	13.8	118.1	0.81	14.0	120.9	0.88	13.3
25-34 years	118.5	0.90	14.8	120.7	1.12	14.6	120.0	0.98	12.9	122.0	0.79	14.3
35-44 years	123.4	0.75	18.0	126.1	1.05	16.5	123.6	1.26	14.5	125.6	1.02	17.3
45-54 years	131.8	1.24	21.6	132.8	2.86	20.8	130.4	1.19	18.7	134.6	1.64	21.5
55-64 years	142.4	1.48	25.6	140.2	1.61	21.7	141.7	2.87	22.8	141.2	1.40	22.1
65-74 years	147.0	1.34	23.1	149.0	1.71	25.2	150.5	2.13	25.3	150.3	1.13	24.8
Males, 7-74 years	124.0	0.56	20.3	126.0	0.96	19.9	125.5	0.91	19.1	126.3	0.95	20.0
7-11 years	100.4	0.89	11.6	102.7	1.39	11.6	105.4	1.38	12.1	106.1	1.00	11.8
12-17 years	113.7	1.01	13.1	114.2	1.13	12.6	117.0	1.92	15.0	116.3	1.29	14.5
18-24 years	123.8	1.45	12.0	123.3	1.26	13.3	123.4	1.44	12.9	124.1	1.29	13.1
25-34 years	123.4	1.39	14.6	125.2	1.29	13.6	124.0	1.51	11.7	127.2	1.04	13.8
35-44 years	125.7	1.49	15.1	129.2	1.77	14.8	125.9	2.10	12.7	127.0	1.23	15.0
45-54 years	134.1	1.48	19.8	136.7	2.59	18.8	129.6	1.92	16.1	136.0	2.06	21.0
55-64 years	138.9	1.59	20.3	140.5	2.05	20.8	142.4	3.21	21.5	138.3	2.24	19.7
65-74 years	145.6	2.44	24.8	145.3	1.83	24.3	145.0	2.54	22.2	147.0	1.31	24.2
Females, 7-74 years	121.7	0.66	23.7	122.0	1.35	22.5	124.0	1.08	22.9	124.4	0.67	22.6
7-11 years	102.8	1.23	12.2	100.7	2.18	12.7	105.9	1.95	12.6	104.4	1.50	11.9
12-17 years	109.8	1.28	13.0	111.6	1.00	13.2	112.0	1.66	13.4	113.6	0.78	13.6
18-24 years	113.2	1.09	12.1	114.9	1.04	13.0	113.4	1.17	13.3	117.8	0.99	12.8
25-34 years	113.8	0.91	13.4	116.5	1.11	14.2	116.6	0.97	13.0	117.6	0.81	13.3
35-44 years	121.3	1.19	20.1	122.6	1.29	17.6	121.6	1.07	15.6	124.2	1.27	19.0
45-54 years	129.5	1.79	23.1	129.6	3.49	21.8	131.1	2.09	20.9	133.5	1.83	21.9
55-64 years	145.7	1.75	29.4	139.9	2.24	22.3	140.9	4.05	24.0	144.0	1.66	23.8
65-74 years	148.0	0.97	21.7	151.6	2.43	25.5	153.7	2.94	26.4	153.2	1.56	24.9
Age-adjusted values:												
Both sexes	122.7	...	...	123.6	...	...	123.7	...	...	125.2	...	...
Males	124.0	...	...	125.5	...	...	124.9	...	...	126.2	...	...
Females	121.4	...	...	121.9	...	...	122.7	...	...	124.5	...	...
Diastolic												
Both sexes, 7-74 years	76.9	0.33	13.5	77.5	0.88	13.5	77.4	0.38	12.9	78.4	0.41	13.4
7-11 years	63.5	0.52	9.3	63.8	1.52	10.3	64.4	1.02	10.0	66.5	0.95	9.7
12-17 years	68.8	0.59	9.4	69.9	1.10	9.5	69.8	0.62	9.8	70.2	0.60	10.4
18-24 years	74.0	0.74	9.9	73.4	0.94	11.0	73.3	0.63	9.9	74.3	0.64	10.5
25-34 years	75.9	0.73	10.7	77.8	0.64	10.3	76.9	0.69	10.1	78.9	0.42	10.6
35-44 years	80.6	0.68	12.4	83.6	0.85	12.3	80.2	0.53	9.4	82.1	0.60	11.9
45-54 years	84.1	0.71	12.8	85.2	1.77	13.7	83.8	1.25	12.2	85.9	0.83	13.2
55-64 years	86.4	0.89	12.8	84.7	1.18	11.7	86.8	1.51	12.1	87.0	0.79	12.1
65-74 years	85.5	0.68	11.9	84.0	1.12	13.0	85.0	1.15	13.5	86.0	0.73	12.6
Males, 7-74 years	78.1	0.50	13.2	79.8	0.76	13.5	78.6	0.55	12.6	79.7	0.49	13.5
7-11 years	63.7	0.86	9.3	64.9	1.26	9.1	64.3	1.49	10.4	67.3	0.72	9.5
12-17 years	69.5	0.83	9.5	71.4	0.89	9.7	70.9	1.12	9.3	70.4	0.65	10.7
18-24 years	76.9	1.25	9.8	75.8	1.07	10.8	76.0	0.92	9.7	76.7	0.94	10.0
25-34 years	79.5	1.19	10.7	80.7	1.07	9.4	79.3	1.46	9.5	82.5	0.79	10.0
35-44 years	82.9	1.16	11.8	87.5	1.02	10.6	82.7	1.07	8.3	83.7	0.99	11.7
45-54 years	86.4	0.84	11.8	89.3	1.58	12.4	84.7	1.17	9.6	88.6	1.28	14.3
55-64 years	84.7	1.24	11.7	85.7	1.63	13.2	88.7	1.87	11.8	87.1	1.14	11.4
65-74 years	85.7	1.19	12.3	84.0	1.49	13.9	84.5	0.93	13.2	85.1	0.70	12.7
Females, 7-74 years	75.7	0.41	13.6	75.4	1.13	13.2	76.3	0.57	13.1	77.2	0.49	13.2
7-11 years	63.4	0.79	9.3	62.9	2.06	11.1	64.5	1.19	9.4	65.7	1.31	9.8
12-17 years	67.7	0.88	9.2	68.7	1.44	9.1	68.8	0.91	10.1	70.1	0.86	10.1
18-24 years	70.9	0.65	9.1	71.3	1.18	10.6	70.8	0.75	9.4	72.0	0.86	10.4
25-34 years	72.5	0.44	9.5	75.0	0.71	10.4	74.7	0.69	10.1	75.8	0.52	10.1
35-44 years	78.5	0.84	12.6	79.1	1.16	12.6	78.1	0.89	9.7	80.7	0.81	12.0
45-54 years	81.8	0.97	13.4	81.6	1.97	13.8	82.9	1.84	14.2	83.6	0.82	11.7
55-64 years	88.1	0.99	13.5	84.0	1.66	10.4	84.9	1.88	12.1	86.8	0.88	12.8
65-74 years	85.3	0.63	11.6	83.9	1.18	12.3	85.2	1.75	13.7	86.8	0.88	12.4
Age-adjusted values:												
Both sexes	76.7	...	...	77.4	...	...	77.0	...	...	78.3	...	...
Males	78.0	...	...	79.5	...	...	78.2	...	...	79.6	...	...
Females	75.4	...	...	75.5	...	...	75.8	...	...	77.2	...	...

NOTE: $s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 39. Systolic and diastolic blood pressure of Negro persons 7-74 years, by population density, sex, and age—mean, standard error of the mean, standard deviation, and age-adjusted values: United States, 1971-1974

Blood pressure, sex, and age	Urban area						Urban not in urbanized area			Rural area		
	More than 1,000,000 persons			Less than 1,000,000 persons								
	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x	Mean	$s_{\bar{x}}$	s_x
Systolic	Blood pressure (mm. Hg)											
Both sexes, 7-74 years	123.3	0.91	24.4	125.8	1.90	26.3	129.4	2.55	30.2	129.2	1.61	26.9
7-11 years	100.2	1.40	11.9	103.9	2.69	12.7	109.2	2.68	10.5	104.8	1.47	10.7
12-17 years	109.8	1.39	12.6	113.3	2.11	13.2	112.5	3.51	11.8	114.6	2.85	14.2
18-24 years	116.6	1.91	15.1	116.5	2.93	14.8	118.6	4.34	15.3	119.2	1.78	15.2
25-34 years	123.7	0.97	16.1	126.8	2.53	16.2	121.1	2.35	13.9	128.0	2.54	15.4
35-44 years	130.6	1.94	19.4	136.4	3.17	22.3	126.4	5.47	19.4	135.2	2.61	19.6
45-54 years	139.7	3.14	25.8	144.4	12.31	33.3	158.6	11.11	43.5	152.8	9.32	30.4
55-64 years	145.6	2.92	24.8	158.3	6.79	25.8	157.0	8.49	18.9	146.8	6.27	28.0
65-74 years	156.1	3.03	30.2	161.2	5.83	26.3	158.1	6.60	27.9	162.0	6.26	28.4
Males, 7-74 years	123.2	1.07	22.2	123.5	1.88	23.8	127.8	4.33	22.7	130.8	2.29	26.8
7-11 years	100.4	1.95	12.7	99.6	2.59	11.2	112.0	3.38	9.2	104.8	1.64	10.4
12-17 years	110.9	2.23	13.2	114.4	2.30	12.6	110.1	3.80	10.1	114.7	2.86	13.7
18-24 years	125.1	2.55	13.0	117.8	8.55	16.8	124.9	5.46	14.0	122.2	2.80	13.9
25-34 years	127.8	2.38	14.2	130.0	4.24	12.6	129.4	2.75	9.1	131.2	3.88	12.2
35-44 years	136.5	3.79	17.6	140.9	4.01	20.9	122.7	44.73	15.7	136.8	4.33	14.9
45-54 years	134.9	3.03	24.2	134.2	4.99	13.9	137.5	8.74	24.9	160.8	12.18	33.6
55-64 years	139.3	4.22	21.8	146.9	11.22	26.0	155.9	55.28	14.3	145.8	5.22	22.3
65-74 years	152.0	3.05	24.9	157.3	5.60	27.5	154.9	13.97	33.6	161.9	6.41	28.2
Females, 7-74 years	123.3	1.43	26.1	127.6	3.04	28.0	130.8	4.91	35.3	127.7	2.39	26.9
7-11 years	100.0	1.92	10.9	108.1	2.80	12.7	107.3	2.63	10.8	104.8	1.68	11.0
12-17 years	108.6	1.38	11.8	112.3	3.33	13.6	114.6	4.31	12.8	114.5	3.75	14.6
18-24 years	111.3	1.75	13.9	115.7	2.91	13.3	111.7	3.75	13.6	115.6	2.07	15.9
25-34 years	120.1	1.39	16.8	124.4	2.30	18.1	116.4	2.61	13.9	123.9	1.96	17.9
35-44 years	127.2	2.18	19.6	133.5	4.48	22.8	129.1	5.15	21.2	134.3	3.39	21.8
45-54 years	143.8	5.53	26.4	152.0	18.16	40.7	185.6	23.61	47.1	143.0	9.93	22.5
55-64 years	149.3	4.27	25.8	166.3	6.80	22.3	157.6	15.92	21.0	147.7	13.33	32.4
65-74 years	159.1	4.64	33.2	163.8	6.71	25.1	161.0	2.06	20.9	162.1	6.64	28.5
Age-adjusted values:												
Both sexes	125.8	...	...	130.4	...	...	130.1	...	...	131.0	...	...
Males	126.4	...	...	127.8	...	...	128.4	...	...	132.5	...	...
Females	125.7	...	...	132.6	...	..	133.8	...	...	129.1	...	...
Diastolic												
Both sexes, 7-74 years	78.4	0.61	15.5	79.3	1.30	16.0	79.6	1.45	16.2	80.9	1.13	17.0
7-11 years	62.7	1.22	9.7	65.0	2.09	10.5	66.3	2.51	8.4	65.3	1.34	9.2
12-17 years	70.3	1.03	10.0	70.6	1.52	9.7	70.3	2.10	9.2	69.7	1.89	9.9
18-24 years	73.3	0.87	10.3	74.8	2.81	11.4	75.0	2.33	11.3	74.8	1.41	11.5
25-34 years	80.6	0.75	11.7	83.5	2.72	12.3	73.7	4.51	16.8	82.2	2.18	12.4
35-44 years	86.5	1.67	12.7	90.4	1.92	14.3	86.4	3.86	12.9	91.4	1.72	12.3
45-54 years	89.9	1.88	15.9	90.8	3.83	14.5	95.3	2.63	13.5	98.0	5.60	17.9
55-64 years	90.5	1.98	13.7	92.5	4.36	13.8	93.7	3.67	10.6	92.5	4.19	15.4
65-74 years	90.0	1.59	15.7	91.2	2.00	14.7	90.3	3.26	14.8	91.0	1.63	14.9
Males, 7-74 years	78.7	0.60	15.1	79.4	1.39	15.9	80.8	2.55	14.4	82.2	1.66	17.7
7-11 years	63.1	1.92	10.1	62.1	2.40	8.5	66.8	3.31	9.2	66.1	2.23	9.4
12-17 years	70.6	1.46	9.7	73.1	1.42	8.8	73.3	3.53	9.8	69.3	2.58	11.0
18-24 years	76.3	1.50	8.7	75.0	3.32	8.1	76.4	2.75	10.7	76.6	1.74	11.7
25-34 years	83.1	1.67	11.1	88.3	4.94	11.9	79.0	6.96	12.7	84.5	3.59	11.0
35-44 years	90.8	2.23	10.9	93.4	2.95	14.0	85.7	31.19	10.6	91.5	2.79	10.8
45-54 years	88.2	1.38	15.7	86.5	3.78	9.8	91.0	4.72	12.8	102.1	6.74	18.5
55-64 years	91.3	3.93	14.7	94.5	7.42	14.3	95.7	34.12	8.3	94.7	2.62	13.8
65-74 years	89.1	1.48	11.7	90.2	2.64	13.0	92.2	5.47	14.8	92.6	1.60	16.0
Females, 7-74 years	78.1	1.07	15.9	79.3	1.83	16.0	78.5	1.28	17.5	79.5	1.65	16.2
7-11 years	62.2	1.48	9.1	67.9	2.53	11.5	66.0	2.92	7.7	64.3	1.00	8.9
12-17 years	69.8	1.35	10.2	68.4	2.24	10.0	67.5	2.20	7.7	70.1	2.07	8.7
18-24 years	71.4	0.92	10.8	74.7	3.69	13.0	73.4	3.21	11.6	72.6	2.08	10.9
25-34 years	78.2	0.85	11.8	80.0	1.48	11.4	70.6	5.62	18.0	79.1	1.82	13.4
35-44 years	84.0	1.76	13.0	88.5	2.37	14.2	86.8	4.04	14.3	91.4	2.26	13.0
45-54 years	91.4	3.67	15.9	94.0	5.84	16.5	100.8	5.27	12.4	92.9	6.14	15.5
55-64 years	90.0	1.92	13.1	91.1	5.56	13.3	92.7	7.40	11.5	90.5	7.69	16.5
65-74 years	90.6	2.57	18.0	91.9	2.29	15.8	88.5	5.30	14.5	89.8	2.23	14.0
Age-adjusted values:												
Both sexes	79.8	...	...	81.7	...	...	80.5	...	...	82.5	...	...
Males	80.8	...	...	82.1	...	...	81.4	...	...	83.7	...	...
Females	79.2	...	...	81.6	...	...	80.2	...	...	81.0	...	...

NOTE: $s_{\bar{x}}$ = standard error of the mean, s_x = standard deviation.

Table 40. Rate and number of persons 12-74 years with definite hypertension, by race, sex, and age with standard errors of rate and age-adjusted values: United States, 1971-1974

Sex and age	All races[1]			White			Negro		
	Rate per 100 persons	Standard error of rate	Population in thousands	Rate per 100 persons	Standard error of rate	Population in thousands	Rate per 100 persons	Standard error of rate	Population in thousands
Both sexes									
12-17 years	0.8	0.20	206	0.7	0.22	145	1.2	0.72	40
18-74 years	18.1	0.58	23,171	17.0	0.57	19,359	28.2	1.75	3,672
18-24 years	3.1	0.58	738	3.1	0.65	632	3.7	1.06	106
25-34 years	6.6	0.67	1,777	5.8	0.65	1,373	13.7	2.86	401
35-44 years	15.5	1.12	3,492	13.6	1.09	2,738	32.0	3.85	696
45-54 years	24.2	1.64	5,702	22.2	1.59	4,710	44.0	6.31	975
55-64 years	33.2	1.66	6,257	31.4	1.59	5,354	52.6	5.24	865
65-74 years	40.7	1.60	5,205	39.3	1.72	4,551	55.1	3.87	628
Males									
12-17 years	1.1	0.37	140	1.0	0.39	115	0.2	0.17	3
18-74 years	19.2	0.77	11,656	18.5	0.84	10,000	27.8	2.33	1,595
18-24 years	4.8	1.10	544	4.9	1.29	485	4.6	1.77	59
25-34 years	9.1	1.34	1,159	8.2	1.28	912	17.7	5.98	244
35-44 years	18.9	1.92	2,043	17.3	1.97	1,706	38.2	6.55	313
45-54 years	26.8	2.12	3,022	25.8	2.06	2,611	36.8	7.95	401
55-64 years	32.3	2.18	2,875	31.1	2.14	2,529	49.9	7.86	335
65-74 years	36.6	1.74	2,014	35.3	1.85	1,757	50.1	4.28	243
Females									
12-17 years	0.5	0.24	67	0.3	0.16	29	2.2	1.44	37
18-74 years	17.1	0.76	11,515	15.7	0.72	9,359	28.6	2.28	2,077
18-24 years	1.6	0.31	194	1.4	0.30	147	2.9	1.06	47
25-34 years	4.4	0.51	618	3.7	0.57	461	10.2	1.95	157
35-44 years	12.3	1.01	1,449	10.1	0.94	1,033	28.3	4.71	383
45-54 years	21.9	1.91	2,680	18.9	1.86	2,099	50.9	7.69	575
55-64 years	34.0	2.08	3,382	31.7	2.02	2,825	54.5	7.11	530
65-74 years	43.9	2.03	3,191	42.3	2.26	2,795	58.8	4.73	385
Age-adjusted values:									
Both sexes, 18-74 years	-	...	...	16.8	...	...	30.5	...	...
Males, 18-74 years	-	...	...	18.3	...	...	30.1	...	...
Females, 18-74 years	-	...	...	15.5	...	...	31.2	...	...

[1]Includes all other races.

Table 41. Rate and number of persons 12-74 years with blood pressure of at least 105 mm. Hg diastolic, by race, sex, and age with standard errors of rate and age-adjusted values: United States, 1971-1974

Sex and age	All races[1]			White			Negro		
	Rate per 100 persons	Standard error of rate	Population in thousands	Rate per 100 persons	Standard error of rate	Population in thousands	Rate per 100 persons	Standard error of rate	Population in thousands
Both sexes									
12-17 years	0.1	0.07	27	0.1	0.08	27	-	-	-
18-74 years	4.8	0.34	6,172	4.1	0.32	4,660	11.1	1.33	1,449
18-24 years	0.5	0.18	119	0.5	0.20	101	0.6	0.32	18
25-34 years	1.5	0.32	403	1.0	0.27	246	5.4	2.21	157
35-44 years	5.0	0.72	1,130	4.3	0.67	862	11.2	2.79	243
45-54 years	8.7	1.05	2,048	7.1	0.94	1,509	24.2	5.36	537
55-64 years	8.0	0.93	1,505	6.8	0.90	1,161	19.0	3.89	312
65-74 years	7.6	0.64	968	6.8	0.62	782	16.0	2.41	182
Males									
12-17 years	0.0	0.04	6	0.1	0.04	6	-	-	-
18-74 years	5.5	0.45	3,307	4.9	0.47	2,632	11.2	1.91	640
18-24 years	0.7	0.33	82	0.8	0.38	76	0.5	0.53	6
25-34 years	2.4	0.70	308	1.7	0.55	185	8.9	5.28	123
35-44 years	6.0	1.14	653	5.3	1.17	524	12.7	5.76	104
45-54 years	9.8	1.37	1,106	8.9	1.26	899	18.8	6.33	205
55-64 years	8.4	1.57	743	7.4	1.59	599	20.7	7.32	139
65-74 years	7.5	0.88	415	7.0	0.89	349	12.8	2.54	62
Females									
12-17 years	0.2	0.13	20	0.2	0.15	20	-	-	-
18-74 years	4.3	0.38	2,866	3.4	0.35	2,028	11.1	1.57	809
18-24 years	0.3	0.11	36	0.2	0.11	25	0.7	0.41	11
25-34 years	0.7	0.19	95	0.5	0.17	61	2.2	0.96	34
35-44 years	4.1	0.61	477	3.3	0.60	338	10.3	2.20	139
45-54 years	7.7	1.36	942	5.5	1.12	610	29.4	7.48	332
55-64 years	7.7	1.20	762	6.3	1.22	562	17.8	4.92	173
65-74 years	7.6	0.69	553	6.6	0.72	433	18.4	3.20	120
Age-adjusted values:									
Both sexes, 18-74 years	-	...	...	4.0	...	...	12.0	...	...
Males, 18-74 years	-	...	...	4.8	...	...	11.9	...	...
Females, 18-74 years	-	...	...	3.4	...	...	12.3	...	...

[1]Includes all other races.

Table 42. Rate and number of persons 12-74 years with borderline hypertension, by race, sex, and age with standard errors of rate and age-adjusted values: United States, 1971-1974

Sex and age	All races[1]			White			Negro		
	Rate per 100 persons	Standard error of rate	Population in thousands	Rate per 100 persons	Standard error of rate	Population in thousands	Rate per 100 persons	Standard error of rate	Population in thousands
Both sexes									
12-17 years	5.6	0.83	1,392	5.4	0.83	1,160	6.0	1.58	201
18-74 years	18.3	0.54	23,413	18.7	0.61	21,207	15.8	1.17	2,052
18-24 years	9.3	0.90	2,186	9.7	1.02	1,949	7.5	1.65	218
25-34 years	13.0	0.90	3,488	12.8	1.01	3,023	15.3	2.64	447
35-44 years	16.5	1.12	3,731	16.1	1.18	3,234	21.8	4.14	475
45-54 years	22.8	1.12	5,360	23.7	1.26	5,018	14.1	2.87	313
55-64 years	25.7	1.39	4,839	26.3	1.49	4,484	19.0	3.52	312
65-74 years	29.8	1.22	3,809	30.2	1.30	3,499	25.3	2.71	288
Males									
12-17 years	7.3	1.10	931	7.3	1.14	800	6.8	2.25	113
18-74 years	21.3	0.82	12,900	21.9	0.94	11,845	17.6	2.14	1,009
18-24 years	14.0	1.45	1,592	14.7	1.71	1,452	10.6	3.13	137
25-34 years	19.0	1.56	2,424	19.4	1.79	2,167	17.7	6.05	244
35-44 years	18.7	2.03	2,016	18.6	1.94	1,833	22.4	8.41	184
45-54 years	26.3	1.69	2,963	27.5	1.91	2,779	17.0	3.77	185
55-64 years	26.2	2.29	2,325	26.9	2.39	2,188	18.1	4.59	122
65-74 years	28.7	1.50	1,580	28.7	1.63	1,427	28.6	4.19	139
Females									
12-17 years	3.8	0.78	461	3.4	0.75	360	5.3	2.34	87
18-74 years	15.6	0.57	10,513	15.7	0.57	9,362	14.3	1.76	1,043
18-24 years	4.9	0.66	594	4.8	0.74	497	5.0	1.49	81
25-34 years	7.6	0.87	1,064	6.9	0.91	855	13.2	2.13	203
35-44 years	14.6	1.05	1,715	13.7	1.17	1,401	21.5	4.55	291
45-54 years	19.5	1.54	2,396	20.2	1.57	2,239	11.4	4.30	129
55-64 years	25.3	1.81	2,515	25.8	1.90	2,297	19.6	5.17	190
65-74 years	30.6	1.62	2,229	31.4	1.75	2,072	22.7	3.10	149
Age-adjusted values:									
Both sexes, 18-74 years	-	...	...	18.5	...	...	16.3	...	...
Males, 18-74 years	-	...	...	21.8	...	...	18.1	...	...
Females, 18-74 years	-	...	...	15.6	...	...	14.8	...	...

[1] Includes all other races.

Table 43. Percent and number of adults 18-74 years never diagnosed as hypertensive among those with definite hypertension, by race, sex, and age with standard errors of percent and age-adjusted values: United States, 1971-1974

Sex and age	All races[1]			White			Negro		
	Percent of definite hypertension	Standard error of percent	Population in thousands	Percent of definite hypertension	Standard error of percent	Population in thousands	Percent of definite hypertension	Standard error of percent	Population in thousands
Both sexes, 18-74 years	54.9	1.29	12,712	56.6	1.51	10,955	47.2	3.87	1,729
18-24 years	68.5	9.45	505	66.9	10.86	422	78.1	8.91	83
25-34 years	65.5	5.24	1,165	69.1	6.02	948	54.0	11.52	216
35-44 years	57.9	3.13	2,021	63.3	4.02	1,733	39.6	4.94	276
45-54 years	60.6	3.22	3,458	61.9	3.22	2,916	55.6	8.45	542
55-64 years	48.6	3.10	3,039	50.4	3.18	2,699	39.2	7.35	337
65-74 years	48.5	1.76	2,525	49.2	1.95	2,237	43.7	4.67	275
Men, 18-74 years	62.9	1.76	7,333	64.5	2.00	6,448	54.9	5.13	876
18-24 years	69.5	12.62	378	67.0	13.68	325	90.4	16.94	53
25-34 years	66.9	7.57	776	71.1	8.84	649	52.0	18.35	127
35-44 years	61.6	5.18	1,258	66.8	6.48	1,138	38.2	8.82	120
45-54 years	65.1	3.82	1,967	64.3	3.74	1,680	71.8	10.26	288
55-64 years	60.4	4.13	1,738	62.1	4.34	1,571	48.9	12.99	164
65-74 years	60.5	2.24	1,216	61.9	2.32	1,085	51.0	4.70	124
Women, 18-74 years	46.7	1.67	5,379	48.2	1.86	4,507	41.2	4.66	854
18-24 years	65.5	9.27	127	66.4	12.00	98	62.6	18.33	30
25-34 years	63.0	5.33	389	65.0	6.67	300	57.0	12.55	90
35-44 years	52.6	4.03	763	57.5	4.57	594	40.8	6.79	156
45-54 years	55.6	4.42	1,491	58.9	4.71	1,236	44.3	10.03	255
55-64 years	38.5	4.49	1,301	39.9	4.71	1,128	33.0	8.36	173
65-74 years	41.0	2.30	1,308	41.2	2.56	1,152	39.1	5.58	151
Age-adjusted values:									
Both sexes	-	...	...	56.8	...	...	46.7	...	...
Men	-	...	...	64.6	...	...	55.6	...	...
Women	-	...	...	48.7	...	...	40.1	...	...

[1]Includes all other races.

Table 44. Percent and number of adults 18-74 years never diagnosed as hypertensive among those with blood pressures of at least 105 mm. Hg diastolic, by race, sex, and age with standard errors of percent and age-adjusted values: United States, 1971-1974

Sex and age	All races[1]			White			Negro		
	Percent with diastolic pressure 105 mm. Hg+	Standard error of percent	Population in thousands	Percent with diastolic pressure 105 mm. Hg+	Standard error of percent	Population in thousands	Percent with diastolic pressure 105 mm. Hg+	Standard error of percent	Population in thousands
Both sexes, 18-74 years	44.0	2.68	2,716	44.2	3.60	2,062	45.1	6.34	652
18-24 years	70.1	18.88	83	74.6	21.15	75	44.4	34.46	8
25-34 years	39.0	9.66	157	45.0	13.84	110	29.7	17.52	47
35-44 years	41.4	6.86	468	48.1	8.76	415	21.7	7.99	53
45-54 years	51.4	4.70	1,053	47.5	5.69	716	62.7	11.92	336
55-64 years	37.8	6.73	567	36.1	8.10	419	48.1	12.11	148
65-74 years	40.1	3.43	388	41.7	4.08	326	32.9	5.91	60
Men, 18-74 years	50.0	4.23	1,654	50.9	5.19	1,339	48.8	10.38	312
18-24 years	85.6	25.44	71	84.4	30.80	64	100.0	70.71	6
25-34 years	39.1	12.76	120	44.7	17.84	83	30.8	36.49	38
35-44 years	41.8	11.93	273	49.6	15.36	260	12.8	11.99	13
45-54 years	57.3	6.37	634	52.3	7.95	470	80.0	13.19	164
55-64 years	41.1	8.78	306	40.5	11.34	243	45.2	19.13	63
65-74 years	60.3	5.53	250	63.0	5.78	220	44.5	8.41	28
Women, 18-74 years	37.1	3.04	1,062	35.6	3.25	722	42.2	7.58	340
18-24 years	34.6	20.01	13	44.4	28.09	11	12.9	27.63	1
25-34 years	38.6	17.01	37	45.9	23.28	28	25.6	17.97	9
35-44 years	40.8	7.91	194	45.9	9.95	155	28.4	9.52	39
45-54 years	44.5	6.67	419	40.4	7.62	246	52.0	14.21	173
55-64 years	34.5	8.68	261	31.4	9.16	176	50.5	15.84	85
65-74 years	25.0	4.09	138	24.5	4.32	106	26.9	8.69	32
Age-adjusted values:									
Both sexes	-	...	...	42.3	...	...	44.4	...	...
Men	-	...	...	50.6	...	...	50.4	...	...
Women	-	...	...	36.0	...	...	41.4	...	...

[1]Includes all other races.

Table 45. Percent and number of adults 18-74 years never diagnosed as hypertensive among those with borderline hypertension, by race, sex, and age with standard errors of percent and age-adjusted values: United States, 1971-1974

Sex and age	All races[1]			White			Negro		
	Percent of borderline hypertension	Standard error of percent	Population in thousands	Percent of borderline hypertension	Standard error of percent	Population in thousands	Percent of borderline hypertension	Standard error of percent	Population in thousands
Both sexes, 18-74 years	76.1	1.33	17,810	76.6	1.39	16,236	70.9	3.77	1,456
18-24 years	87.3	2.99	1,897	88.9	3.24	1,719	72.6	10.73	158
25-34 years	82.0	2.94	2,861	82.4	3.04	2,491	78.4	8.25	351
35-44 years	82.7	2.87	3,087	84.5	2.99	2,733	71.3	8.47	338
45-54 years	79.1	2.40	4,239	79.3	2.53	3,977	74.5	7.87	233
55-64 years	70.8	3.52	3,428	70.8	3.65	3,175	72.4	10.13	226
65-74 years	60.5	2.05	2,299	61.3	2.18	2,141	51.8	5.02	149
Men, 18-74 years	81.8	1.48	10,529	82.4	1.52	9,738	76.6	5.98	773
18-24 years	87.3	3.70	1,377	89.3	3.98	1,284	65.7	15.54	90
25-34 years	82.7	3.77	2,004	82.4	3.88	1,786	83.7	14.06	204
35-44 years	92.6	3.05	1,867	93.5	3.11	1,714	83.4	13.99	153
45-54 years	84.4	3.10	2,502	85.0	3.21	2,362	75.7	10.27	140
55-64 years	73.8	4.31	1,717	73.6	4.42	1,610	88.1	8.32	107
65-74 years	67.6	2.34	1,063	69.2	2.64	983	56.9	8.48	79
Women, 18-74 years	69.3	1.95	7,282	69.4	2.14	6,498	65.5	4.42	683
18-24 years	87.5	4.46	520	87.6	4.22	435	84.4	13.44	68
25-34 years	80.5	3.23	857	82.4	3.39	705	72.2	7.26	147
35-44 years	71.1	3.85	1,220	72.7	4.37	1,019	63.7	10.86	185
45-54 years	72.5	4.18	1,738	72.1	4.26	1,615	72.8	16.36	94
55-64 years	68.1	4.78	1,711	68.1	5.20	1,565	62.4	15.74	119
65-74 years	55.4	2.90	1,236	55.9	3.04	1,158	47.1	7.12	70
Age-adjusted values:									
Both sexes	-	...	...	76.8	...	...	70.3	...	...
Men	-	...	...	82.4	...	...	77.1	...	...
Women	-	...	...	69.7	...	...	64.0	...	...

[1]Includes all other races.

Table 46. Systolic and diastolic blood pressure of children 6-11 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1963-1965

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands
				5th	10th	25th	50th	75th	90th	95th	
	Blood pressure (mm. Hg)										
SYSTOLIC											
Both sexes											
6 years	107.4	8.7	0.46	93.3	95.7	101.1	107.1	113.1	117.6	121.6	4,098
7-11 years	112.3	9.3	0.30	97.8	99.9	105.5	111.3	117.7	123.6	127.9	19,686
7 years	109.4	8.7	0.40	95.7	99.2	103.2	109.0	113.8	119.8	123.5	4,084
8 years	111.0	8.9	0.40	97.3	99.4	103.9	109.8	115.6	121.3	125.9	3,986
9 years	112.5	9.0	0.47	99.1	101.2	105.8	111.5	117.7	123.4	127.6	3,957
10 years	113.6	9.1	0.32	99.4	101.6	107.3	113.0	119.4	125.1	129.2	3,867
11 years	115.5	9.6	0.35	99.7	103.2	109.1	113.9	121.4	127.8	131.2	3,792
Boys											
6 years	107.6	8.8	0.67	93.2	95.4	101.3	107.3	113.2	118.0	121.6	2,082
7-11 years	111.8	8.9	0.29	97.9	99.8	105.4	111.1	117.3	121.9	127.2	9,999
7 years	109.4	8.9	0.54	95.9	99.3	103.2	107.9	113.5	119.9	123.4	2,074
8 years	111.0	8.5	0.36	97.6	99.6	105.1	109.8	115.5	121.2	125.3	2,026
9 years	111.8	8.7	0.47	99.0	99.9	105.6	111.2	117.1	123.1	127.3	2,012
10 years	112.5	8.8	0.39	99.2	101.2	105.8	111.5	117.9	123.2	127.2	1,963
11 years	114.4	9.0	0.45	99.5	103.2	108.0	113.4	119.5	125.5	129.5	1,924
Girls											
6 years	107.2	8.7	0.50	93.4	96.0	99.8	105.9	112.0	117.4	121.5	2,016
7-11 years	112.9	9.6	0.35	97.8	99.9	105.6	111.6	119.1	125.3	129.4	9,687
7 years	109.5	8.6	0.46	95.5	99.0	103.3	109.2	114.0	119.8	123.6	2,010
8 years	110.9	9.2	0.52	97.0	99.2	103.7	109.8	115.6	121.6	127.4	1,960
9 years	113.1	9.2	0.58	99.3	101.6	107.2	111.8	119.1	123.8	129.1	1,945
10 years	114.8	9.3	0.37	99.8	103.1	107.9	113.4	120.0	127.3	129.9	1,904
11 years	116.7	10.0	0.57	99.9	103.3	109.2	116.0	123.3	129.4	131.8	1,868
DIASTOLIC											
Both sexes											
6 years	66.4	8.5	0.81	51.1	53.9	59.9	67.1	71.3	77.3	79.6	4,098
7-11 years	67.6	8.3	0.59	52.0	57.1	61.3	67.7	73.1	77.6	79.8	19,686
7 years	66.7	8.3	0.59	51.5	55.5	59.9	67.3	71.4	77.2	79.5	4,084
8 years	67.6	8.4	0.73	53.2	55.9	61.2	67.6	73.1	77.6	79.9	3,986
9 years	68.1	8.3	0.62	53.1	57.2	61.7	67.9	73.3	77.6	79.8	3,957
10 years	68.6	8.1	0.64	53.8	57.4	61.8	69.1	73.4	77.8	79.8	3,867
11 years	67.3	8.5	0.57	51.6	55.9	61.1	67.5	73.1	77.6	79.8	3,792
Boys											
6 years	66.4	8.2	0.66	51.3	55.5	61.1	67.1	71.0	76.0	79.2	2,082
7-11 years	67.4	8.3	0.61	51.9	57.0	61.3	67.6	71.9	77.4	79.7	9,999
7 years	66.6	7.9	0.64	51.6	55.4	61.2	67.3	71.1	75.8	79.1	2,074
8 years	67.6	8.3	0.62	53.3	57.2	61.4	67.5	73.0	77.6	81.0	2,026
9 years	67.6	8.3	0.70	51.7	55.9	61.5	67.7	73.0	77.5	79.7	2,012
10 years	68.1	8.1	0.75	53.5	57.4	61.5	68.1	73.4	77.6	79.7	1,963
11 years	67.2	8.6	0.65	51.6	55.6	61.1	67.5	71.8	77.5	79.8	1,924
Girls											
6 years	66.3	8.9	1.05	50.0	53.6	59.6	67.1	71.5	77.6	79.9	2,016
7-11 years	67.9	8.4	0.58	53.1	57.1	61.3	67.8	73.3	77.7	79.9	9,687
7 years	66.9	8.6	0.61	51.4	55.6	59.8	67.4	71.6	77.5	79.8	2,010
8 years	67.5	8.4	0.90	53.1	55.6	61.0	67.7	73.2	77.5	79.8	1,960
9 years	68.6	8.3	0.59	53.6	57.4	61.8	69.1	73.6	77.7	79.9	1,945
10 years	69.0	8.1	0.60	54.0	57.6	63.2	69.2	73.6	78.0	80.0	1,904
11 years	67.5	8.4	0.59	51.7	57.1	61.1	67.5	73.3	77.7	79.8	1,868

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 47. Systolic and diastolic blood pressure of white children 6-11 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1963-1965

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands
				5th	10th	25th	50th	75th	90th	95th	
	Blood pressure (mm. Hg)										
SYSTOLIC											
Both sexes											
6 years	107.1	8.8	0.48	93.2	95.6	100.0	105.9	111.9	117.5	121.5	3,509
7-11 years	112.4	9.4	0.29	97.8	99.9	105.5	111.4	117.8	123.7	128.0	16,894
7 years	109.4	8.8	0.40	95.6	99.2	103.2	109.1	113.8	119.9	123.6	3,497
8 years	111.0	8.9	0.40	97.3	99.5	103.9	109.8	115.7	121.4	127.1	3,413
9 years	112.6	9.1	0.51	99.2	101.2	105.8	111.6	117.8	123.4	127.8	3,393
10 years	113.8	9.2	0.30	99.5	101.6	107.3	113.1	119.5	125.4	129.4	3,324
11 years	115.6	9.6	0.37	99.7	103.2	109.1	113.9	121.4	127.8	131.3	3,267
Boys											
6 years	107.2	8.8	0.66	93.2	95.3	101.1	106.0	112.0	117.7	121.5	1,787
7-11 years	111.9	9.0	0.25	97.9	99.9	105.4	111.1	117.4	122.0	127.4	8,604
7 years	109.4	8.9	0.56	95.7	99.3	103.2	108.0	113.6	119.8	123.4	1,781
8 years	111.1	8.6	0.38	97.6	99.7	105.2	109.8	115.8	121.3	125.9	1,739
9 years	111.9	8.7	0.46	99.1	99.9	105.5	111.3	117.4	123.1	127.2	1,730
10 years	112.6	8.9	0.38	99.2	101.2	105.9	111.6	117.8	123.4	127.4	1,692
11 years	114.6	9.0	0.45	99.6	103.3	109.1	113.4	119.6	125.6	129.6	1,662
Girls											
6 years	107.1	8.7	0.55	93.3	96.0	99.9	105.7	111.9	117.4	121.5	1,722
7-11 years	113.0	9.7	0.36	97.8	99.9	105.6	111.7	119.2	125.5	129.5	8,290
7 years	109.5	8.7	0.51	95.6	99.0	103.2	109.2	114.0	119.9	123.8	1,716
8 years	110.9	9.3	0.51	95.9	99.3	103.7	109.8	115.7	121.6	127.2	1,674
9 years	113.3	9.4	0.67	99.3	101.6	107.2	111.9	119.2	124.0	129.4	1,663
10 years	115.1	9.3	0.37	99.8	103.2	108.0	113.5	121.2	127.3	130.0	1,632
11 years	116.7	10.2	0.63	99.8	103.2	109.2	117.0	123.4	129.4	131.8	1,605
DIASTOLIC											
Both sexes											
6 years	66.0	8.6	0.89	49.9	53.6	59.6	65.8	71.1	77.2	79.4	3,509
7-11 years	67.5	8.3	0.64	52.0	57.1	61.3	67.6	72.0	77.5	79.7	16,894
7 years	66.6	8.2	0.66	51.6	55.4	59.8	67.3	71.3	77.1	79.4	3,497
8 years	67.5	8.3	0.77	53.1	55.9	61.2	67.6	73.0	77.5	79.9	3,413
9 years	68.0	8.4	0.67	51.9	57.1	61.6	67.9	73.3	77.6	79.8	3,393
10 years	68.5	8.1	0.63	53.9	57.5	61.8	69.1	73.3	77.8	79.8	3,324
11 years	67.1	8.4	0.63	51.6	55.7	61.0	67.4	71.9	77.5	79.8	3,267
Boys											
6 years	65.9	8.2	0.69	51.0	55.2	59.8	65.8	69.8	75.7	77.9	1,787
7-11 years	67.2	8.2	0.68	51.8	55.9	61.2	67.5	71.8	77.3	79.6	8,604
7 years	66.3	7.8	0.71	51.7	55.2	60.0	67.3	70.0	75.6	77.9	1,781
8 years	67.6	8.3	0.69	53.1	57.2	61.4	67.5	72.0	77.6	79.9	1,739
9 years	67.4	8.3	0.80	51.6	55.6	61.2	67.7	72.0	77.4	79.6	1,730
10 years	67.8	8.0	0.75	53.4	57.3	61.3	67.8	73.0	77.4	79.5	1,692
11 years	67.1	8.4	0.77	51.6	55.5	61.1	67.4	71.7	77.5	79.8	1,662
Girls											
6 years	66.0	9.1	1.19	49.8	53.3	59.4	65.9	71.5	77.6	79.9	1,722
7-11 years	67.8	8.4	0.61	53.1	57.1	61.3	67.7	73.2	77.7	79.9	8,290
7 years	66.8	8.7	0.69	51.4	55.5	59.7	67.3	71.6	77.5	80.0	1,716
8 years	67.5	8.2	0.92	53.0	55.6	61.2	67.7	73.1	77.4	79.8	1,674
9 years	68.6	8.5	0.62	53.3	57.3	61.8	69.1	73.6	77.8	80.0	1,663
10 years	69.2	8.1	0.57	55.3	57.8	63.4	69.3	73.7	79.0	81.0	1,632
11 years	67.2	8.4	0.63	51.6	57.0	60.0	67.4	73.2	77.6	79.8	1,605

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 48. Systolic and diastolic blood pressure of Negro children 6-11 years, by sex and age—mean, standard deviation, standard error of the mean, selected percentiles, and population estimates: United States, 1963-1965

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile							Population in thousands
				5th	10th	25th	50th	75th	90th	95th	
	Blood pressure (mm. Hg)										
SYSTOLIC											
Both sexes											
6 years	109.2	8.5	1.28	93.9	97.1	103.2	109.4	113.8	119.4	121.8	570
7-11 years	111.8	8.8	0.98	97.7	99.8	105.5	111.2	117.1	121.9	127.2	2,702
7 years	109.6	8.6	1.11	97.1	99.4	103.4	109.1	113.8	119.7	121.9	570
8 years	110.6	8.5	1.17	97.4	99.2	103.9	111.1	115.2	121.1	123.7	560
9 years	111.9	8.4	1.04	97.6	101.2	105.9	111.2	115.6	122.0	126.0	534
10 years	112.6	8.3	1.36	99.1	101.3	107.2	111.6	117.8	123.1	127.3	530
11 years	115.0	9.2	0.98	99.6	103.4	107.9	113.6	121.2	127.3	131.2	507
Boys											
6 years	110.4	8.5	1.81	93.9	95.9	103.9	109.9	115.4	119.7	123.5	289
7-11 years	111.2	8.6	1.07	97.7	99.6	105.3	109.8	115.6	121.5	125.3	1,353
7 years	109.5	8.9	1.52	99.0	99.6	102.0	107.8	113.2	119.9	123.4	286
8 years	110.1	7.7	1.02	97.6	99.3	103.8	109.8	115.0	117.9	121.6	279
9 years	111.6	8.6	1.45	97.1	101.5	105.8	109.8	114.0	125.1	127.5	269
10 years	111.9	7.9	1.26	97.9	101.1	105.9	110.0	119.0	121.4	123.3	264
11 years	113.2	9.1	1.47	97.7	99.8	107.5	113.0	117.6	123.8	127.6	255
Girls											
6 years	108.1	8.3	1.08	94.0	97.2	99.8	107.7	113.3	117.7	121.4	281
7-11 years	112.5	9.0	0.93	97.7	100.0	105.9	111.4	117.6	123.5	129.0	1,348
7 years	109.6	8.4	0.99	95.1	97.8	103.6	109.3	115.2	119.4	121.3	284
8 years	111.2	9.2	1.55	97.2	99.0	104.2	111.2	115.4	121.7	129.4	281
9 years	112.2	8.3	0.88	99.2	101.2	105.9	111.4	117.4	121.9	125.4	265
10 years	113.2	8.7	1.63	99.2	101.3	107.5	113.1	117.6	123.8	129.3	266
11 years	116.7	8.9	0.83	101.8	105.3	109.3	115.8	122.0	129.3	131.7	253
DIASTOLIC											
Both sexes											
6 years	68.9	7.5	0.87	55.9	59.1	63.8	67.9	71.9	79.1	80.0	570
7-11 years	68.5	8.5	0.69	53.5	57.2	62.0	69.0	73.6	77.9	79.9	2,702
7 years	67.7	8.3	0.59	51.3	57.2	63.2	67.7	71.6	77.5	79.9	570
8 years	67.9	9.0	1.09	55.2	55.8	59.8	67.5	73.7	77.9	81.4	560
9 years	69.1	7.8	0.79	55.8	59.1	63.4	69.2	73.6	77.9	79.9	534
10 years	69.0	8.4	1.46	53.2	57.1	61.7	69.4	73.9	79.0	81.3	530
11 years	68.8	9.0	0.98	51.9	57.3	61.9	69.3	75.2	77.9	79.7	507
Boys											
6 years	69.6	7.2	0.93	57.2	59.7	65.4	69.1	73.0	79.4	81.1	289
7-11 years	68.7	8.8	0.68	53.3	57.3	63.2	67.9	73.7	79.0	81.5	1,353
7 years	68.0	8.8	0.70	51.1	57.4	63.5	67.5	71.5	78.0	81.7	286
8 years	68.3	8.5	1.28	55.4	57.2	61.8	67.4	73.7	77.9	83.2	279
9 years	68.8	8.0	0.92	56.5	57.9	63.5	68.0	73.5	79.1	81.0	269
10 years	70.5	8.5	1.53	54.0	57.4	65.4	71.6	75.7	79.6	81.7	264
11 years	68.0	9.8	1.45	49.8	56.1	59.8	69.1	73.7	77.7	79.7	255
Girls											
6 years	68.1	7.7	1.11	55.4	57.8	62.0	67.6	71.7	77.4	79.9	281
7-11 years	68.2	8.3	0.79	53.5	57.1	61.6	69.1	73.5	77.8	79.6	1,348
7 years	67.4	7.8	0.59	51.5	57.0	61.6	67.9	71.7	77.2	79.3	284
8 years	67.4	9.4	1.44	53.6	55.5	59.3	67.9	73.7	78.0	79.8	281
9 years	69.4	7.7	0.86	57.2	59.3	63.2	69.4	73.8	77.7	79.7	265
10 years	67.6	8.1	1.53	53.0	55.3	61.1	67.9	73.2	77.4	79.6	266
11 years	69.5	8.1	0.85	55.8	59.2	63.4	69.5	75.9	78.0	79.7	253

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 49. Systolic and diastolic blood pressure of adults 18-74 years, by sex and age—mean, standard deviation, standard error of the mean, and selected percentiles: United States, 1960-1962

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile						
				5th	10th	25th	50th	75th	90th	95th
Systolic	Blood pressure (mm. Hg)									
Both sexes, 18-74 years	132.4	24.6	0.58	101.1	105.9	115.1	127.6	143.3	165.4	179.6
18-24 years	117.8	14.7	0.82	95.6	9	108.0	115.9	125.6	135.9	143.2
25-34 years	121.2	15.4	0.43	99.0	103.1	109.8	119.5	129.6	139.6	147.5
35-44 years	127.6	19.1	0.75	103.2	107.2	113.6	123.7	137.5	151.7	163.0
45-54 years	135.8	22.9	0.81	104.6	109.3	119.6	131.8	147.1	164.0	179.4
55-64 years	146.5	26.2	1.48	109.7	117.2	129.2	141.6	159.8	179.6	195.9
65-74 years	158.5	29.4	1.65	115.3	123.5	135.7	155.7	177.5	199.1	211.2
Men, 18-74 years	133.8	21.6	0.65	105.4	109.6	119.1	129.6	143.7	161.9	173.4
18-24 years	123.7	15.0	1.38	103.1	107.3	113.3	121.2	131.5	141.7	151.1
25-34 years	126.2	15.0	0.57	103.8	109.0	115.4	125.1	134.0	145.1	149.9
35-44 years	130.8	18.9	0.70	105.4	109.4	117.6	127.3	139.8	155.5	163.8
45-54 years	135.8	19.9	0.78	107.4	111.6	121.5	133.4	147.7	160.0	169.9
55-64 years	143.5	24.3	1.64	109.4	115.7	125.3	139.8	157.9	173.2	183.6
65-74 years	152.1	27.4	2.19	111.3	121.4	133.1	149.3	167.8	189.1	203.5
Women, 18-74 years	131.1	27.0	0.65	99.2	103.4	111.4	124.0	141.8	169.5	187.0
18-24 years	112.8	12.4	0.62	93.2	97.4	103.6	111.4	119.7	129.1	132.0
25-34 years	116.7	14.2	0.64	95.4	99.5	107.4	115.3	123.8	133.3	139.6
35-44 years	124.6	18.7	1.02	99.9	105.3	111.3	120.0	133.1	149.0	159.5
45-54 years	135.7	25.4	1.51	103.2	107.7	117.6	131.2	145.8	169.5	183.3
55-64 years	149.2	27.6	1.95	111.1	117.7	129.6	143.4	161.9	189.2	203.5
65-74 years	163.6	29.9	1.91	119.0	127.9	141.3	161.7	183.5	207.4	213.8
Diastolic										
Both sexes, 18-74 years	78.8	13.9	0.43	59.1	61.8	69.5	77.8	85.9	95.5	101.2
18-24 years	70.5	12.8	0.70	49.4	55.8	61.6	69.8	77.9	83.7	89.3
25-34 years	74.7	11.8	0.44	57.4	59.7	67.4	73.9	79.9	87.8	93.5
35-44 years	79.3	12.6	0.76	59.5	65.1	69.9	79.0	85.9	95.5	99.9
45-54 years	82.7	13.0	0.53	63.7	67.6	73.9	79.9	89.3	99.1	103.8
55-64 years	84.2	14.1	0.81	65.3	69.1	75.3	83.2	89.9	99.7	108.0
65-74 years	82.6	15.2	0.74	61.8	67.2	71.8	79.8	89.6	101.8	109.3
Men, 18-74 years	79.7	13.6	0.51	59.2	63.9	69.8	79.2	87.4	96.0	101.1
18-24 years	71.8	14.5	1.21	46.0	51.8	63.9	71.7	79.5	87.2	91.3
25-34 years	76.6	12.3	0.65	59.1	61.6	69.2	75.8	83.2	89.7	96.0
35-44 years	80.8	13.0	0.92	59.4	65.8	71.6	79.5	87.9	97.5	101.5
45-54 years	83.5	12.6	0.53	65.1	67.7	75.3	81.5	89.5	99.0	105.5
55-64 years	83.5	12.6	0.86	63.9	69.0	75.2	83.0	89.8	99.2	103.1
65-74 years	81.7	13.4	1.06	63.9	67.2	69.8	79.4	89.3	99.9	107.6
Women, 18-74 years	78.0	14.1	0.43	58.0	61.1	69.2	77.3	85.2	95.0	101.3
18-24 years	69.4	11.1	0.63	49.9	57.2	60.0	69.4	77.0	81.6	85.4
25-34 years	72.9	11.0	0.46	56.0	59.4	65.2	71.6	79.3	85.7	89.6
35-44 years	77.9	12.0	0.79	59.5	63.8	69.5	77.4	83.7	91.8	99.3
45-54 years	82.0	13.4	0.71	62.0	67.6	73.5	79.6	89.0	99.2	103.5
55-64 years	84.9	15.3	0.89	65.6	69.2	75.3	83.4	91.1	101.6	109.7
65-74 years	83.4	16.5	0.91	61.1	67.2	73.8	81.2	89.8	103.6	109.6

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 50. Systolic and diastolic blood pressure of white adults 18-74 years, by sex and age—mean, standard deviation, standard error of the mean, and selected percentiles: United States, 1960-1962

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile						
				5th	10th	25th	50th	75th	90th	95th
Systolic	Blood pressure (mm. Hg)									
Both sexes, 18-74 years	132.0	24.0	0.48	101.1	107.1	115.3	127.5	141.8	163.4	179.2
18-24 years	118.0	14.7	0.76	95.6	99.7	109.1	117.1	125.8	136.0	143.2
25-34 years	121.0	14.9	0.49	99.1	103.1	109.8	119.6	129.5	139.4	146.0
35-44 years	126.6	17.5	0.56	103.1	107.3	113.6	123.5	135.9	149.5	159.6
45-54 years	134.5	21.2	0.74	105.0	109.4	119.5	131.4	144.0	159.9	175.8
55-64 years	145.8	25.9	1.45	109.7	117.3	129.1	141.1	159.3	179.3	193.8
65-74 years	157.7	29.0	1.63	115.3	123.4	135.5	155.2	175.3	197.4	209.9
Men, 18-74 years	133.5	21.0	0.62	105.7	109.7	119.2	129.6	143.3	159.9	170.0
18-24 years	124.3	14.8	1.21	103.4	109.0	113.6	121.6	131.8	141.8	151.4
25-34 years	126.1	14.8	0.60	103.7	109.0	115.5	125.1	133.8	143.8	149.7
35-44 years	130.1	17.6	0.66	105.8	109.5	117.7	127.3	139.7	153.5	161.9
45-54 years	135.1	18.8	0.58	107.7	113.0	121.5	133.2	145.4	159.3	169.7
55-64 years	143.0	24.0	1.78	109.4	115.9	125.2	139.7	157.4	173.0	182.0
65-74 years	151.2	27.2	2.03	109.9	121.2	131.9	149.1	167.2	185.5	203.3
Women, 18-74 years	130.6	26.3	0.58	99.2	103.3	111.5	123.9	141.3	169.0	183.6
18-24 years	112.6	12.2	0.74	93.2	97.3	103.5	111.5	119.6	127.9	131.7
25-34 years	116.3	13.5	0.72	95.4	99.5	107.3	115.3	123.7	131.7	137.6
35-44 years	123.4	16.8	0.82	99.8	105.1	111.1	119.8	131.2	145.7	155.2
45-54 years	133.9	23.3	1.42	103.2	107.7	117.0	129.9	143.7	163.5	179.2
55-64 years	148.4	27.2	2.19	111.1	117.8	129.5	141.7	161.4	187.3	203.3
65-74 years	163.0	29.3	2.03	119.1	129.0	141.2	159.9	183.0	203.1	213.3
Diastolic										
Both sexes, 18-74 years	78.3	13.4	0.43	59.0	61.7	69.5	77.6	85.5	93.7	99.7
18-24 years	70.3	13.0	0.77	49.2	55.4	61.5	69.7	78.0	83.7	89.2
25-34 years	74.3	11.3	0.44	57.6	59.7	67.3	73.8	79.7	87.4	91.1
35-44 years	78.6	12.1	0.75	59.3	64.0	69.8	77.7	85.4	92.0	99.2
45-54 years	81.9	12.1	0.56	63.3	67.6	73.8	79.4	87.9	97.5	101.5
55-64 years	83.5	13.7	0.75	65.0	69.0	75.1	81.8	89.7	99.2	105.6
65-74 years	82.0	14.9	0.64	61.4	67.2	71.6	79.7	89.4	99.9	107.9
Men, 18-74 years	79.3	13.2	0.52	59.2	63.8	69.8	79.1	87.1	95.1	99.7
18-24 years	71.7	14.8	1.21	45.5	51.8	65.0	71.8	79.5	87.3	91.5
25-34 years	76.2	11.8	0.61	59.1	61.4	69.2	75.6	81.6	89.2	93.9
35-44 years	80.4	12.6	1.01	59.2	65.6	71.5	79.4	87.8	95.7	99.9
45-54 years	82.9	11.9	0.47	64.0	67.9	75.2	81.2	89.2	97.7	101.7
55-64 years	82.8	12.2	0.88	63.8	67.9	75.0	81.7	89.5	97.1	101.2
65-74 years	81.2	13.1	0.95	63.5	67.2	69.8	79.4	89.1	99.5	105.6
Women, 18-74 years	77.4	13.6	0.45	57.9	60.0	69.2	77.2	83.8	93.2	99.6
18-24 years	69.0	11.2	0.79	49.8	56.0	59.9	69.3	75.9	81.6	85.2
25-34 years	72.5	10.4	0.48	57.2	59.4	65.1	71.4	79.2	85.1	89.2
35-44 years	76.8	11.3	0.67	59.4	63.6	69.4	76.0	83.1	89.6	95.8
45-54 years	80.9	12.3	0.80	61.5	67.4	73.2	79.5	87.4	95.9	101.4
55-64 years	84.1	14.9	0.91	65.2	69.2	75.2	81.9	89.9	99.8	109.2
65-74 years	82.7	16.2	0.88	59.8	67.2	73.8	79.9	89.6	103.3	109.4

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 51. Systolic and diastolic blood pressure of Negro adults 18-74 years, by sex and age—mean, standard deviation, standard error of the mean, and selected percentiles: United States, 1960-1962

Blood pressure, sex, and age	Mean	s_x	$s_{\bar{x}}$	Percentile						
				5th	10th	25th	50th	75th	90th	95th
Systolic	Blood pressure (mm. Hg)									
Both sexes, 18-74 years	138.0	29.6	1.62	103.0	105.9	115.2	129.9	153.9	177.8	193.6
18-24 years	117.7	14.8	1.14	97.7	101.2	105.9	113.8	125.6	135.4	143.6
25-34 years	124.1	17.9	1.48	99.2	103.8	111.4	119.8	133.3	145.6	161.9
35-44 years	135.6	27.1	2.55	103.6	105.8	115.3	129.1	149.8	177.0	179.8
45-54 years	147.0	30.9	3.14	107.1	107.8	123.8	141.2	165.4	189.0	207.6
55-64 years	155.3	27.5	2.87	113.2	121.6	135.8	149.9	169.6	191.1	201.6
65-74 years	169.6	31.5	4.44	115.3	129.1	147.0	171.2	189.3	209.7	225.1
Men, 18-74 years	138.9	26.1	1.63	105.1	107.9	117.9	131.9	155.3	175.3	183.4
18-24 years	121.5	15.5	2.41	101.1	103.9	111.0	119.1	129.4	143.0	147.9
25-34 years	128.9	16.3	1.86	107.1	109.8	115.4	127.2	137.5	147.7	163.7
35-44 years	137.1	26.7	2.76	103.6	109.0	117.6	129.5	151.5	177.4	178.0
45-54 years	142.8	26.0	4.23	107.1	107.5	123.7	139.7	159.7	169.8	181.8
55-64 years	152.5	24.8	3.07	109.8	121.3	133.4	151.3	169.3	179.9	185.8
65-74 years	163.7	27.1	7.24	115.9	125.7	139.3	173.1	181.4	195.4	207.4
Women, 18-74 years	137.3	32.2	2.60	99.7	105.2	113.3	129.1	150.0	183.9	205.4
18-24 years	114.9	13.4	1.64	95.2	99.2	105.5	113.2	123.6	131.1	137.1
25-34 years	120.9	18.2	2.11	97.3	99.9	109.4	117.1	129.6	143.3	161.2
35-44 years	134.4	27.3	3.34	103.9	105.6	113.6	127.7	149.2	169.6	183.2
45-54 years	151.1	34.7	4.71	107.0	111.5	123.9	143.0	171.7	205.1	209.8
55-64 years	158.2	29.7	6.26	113.4	125.4	143.0	149.8	175.4	199.6	205.8
65-74 years	174.3	33.9	6.32	107.5	139.4	147.9	171.1	207.4	219.8	229.3
Diastolic										
Both sexes, 18-74 years	83.9	16.2	0.67	60.0	65.4	71.6	81.1	93.4	103.3	111.6
18-24 years	72.3	11.4	0.74	51.4	57.9	65.1	71.7	78.0	85.1	89.8
25-34 years	78.1	13.5	1.13	57.3	61.2	69.1	77.5	85.7	97.4	99.5
35-44 years	85.1	14.1	1.60	65.4	67.4	75.1	81.4	97.2	103.7	109.5
45-54 years	89.6	17.3	1.46	65.6	67.6	77.9	87.4	97.6	109.9	123.4
55-64 years	91.9	15.5	1.71	67.9	70.0	79.8	89.5	99.8	111.7	119.7
65-74 years	90.4	16.9	2.99	63.7	67.5	77.3	89.4	99.8	111.2	119.6
Men, 18-74 years	84.2	15.5	1.01	60.0	65.7	73.4	88.2	95.5	101.4	109.9
18-24 years	72.8	12.7	1.97	51.1	51.8	63.6	74.8	79.7	85.8	89.9
25-34 years	80.5	13.7	1.45	59.1	61.8	69.8	79.9	89.5	99.3	99.7
35-44 years	84.4	14.2	1.83	65.6	67.3	73.2	81.2	97.3	101.4	109.3
45-54 years	88.3	16.0	2.29	65.3	65.8	77.7	87.4	97.3	109.8	119.7
55-64 years	91.4	13.3	1.70	69.5	77.1	81.3	89.8	99.7	107.9	111.2
65-74 years	88.0	15.9	4.54	67.2	67.8	73.8	87.1	99.5	111.6	114.0
Women, 18-74 years	83.7	16.9	0.88	60.0	65.1	71.1	79.8	91.8	105.4	115.3
18-24 years	72.0	10.4	1.35	57.4	59.5	65.2	71.1	77.6	83.1	89.7
25-34 years	76.5	13.1	1.40	57.3	59.8	67.7	75.7	83.6	89.8	99.1
35-44 years	85.6	14.1	1.65	65.1	67.6	75.8	81.6	97.1	107.1	109.6
45-54 years	90.8	18.4	1.74	67.2	69.2	79.2	87.4	99.2	109.9	123.8
55-64 years	92.5	17.3	3.23	67.6	69.4	79.4	89.4	101.4	119.2	125.8
65-74 years	92.3	17.5	3.72	63.3	63.8	81.5	89.8	99.8	109.3	123.6

NOTE: s_x = standard deviation, $s_{\bar{x}}$ = standard error of the mean.

Table 52. Rate and number of adults 18-74 years with definite hypertension, by race, sex, and age with standard errors of rate and age-adjusted values: United States, 1960-1962

Sex and age	All races[1]			White			Negro		
	Rate per 100 adults	Standard error of rate	Population in thousands	Rate per 100 adults	Standard error of rate	Population in thousands	Rate per 100 adults	Standard error of rate	Population in thousands
Both sexes, 18-74 years	18.2	0.69	19,661	17.0	0.64	16,131	30.2	2.08	3,380
18-24 years	3.4	0.81	532	3.4	0.80	463	4.0	1.56	69
25-34 years	5.3	0.73	1,146	4.1	0.64	770	14.0	2.95	317
35-44 years	13.4	1.02	3,176	11.5	0.77	2,380	29.0	4.28	748
45-54 years	21.2	1.30	4,355	19.0	1.35	3,424	38.9	3.28	899
55-64 years	31.7	2.73	4,954	30.1	2.83	4,206	50.1	5.62	736
65-74 years	49.2	3.00	5,499	47.6	2.98	4,888	71.9	10.22	611
Men, 18-74 years	18.2	0.95	9,363	17.0	0.98	7,677	30.9	16.87	1,575
18-24 years	5.6	1.70	400	5.6	1.66	354	6.2	3.85	46
25-34 years	7.7	1.20	794	6.1	0.94	549	21.8	5.46	197
35-44 years	16.2	1.81	1,843	14.9	1.66	1,480	28.1	6.90	333
45-54 years	21.2	1.32	2,130	19.5	1.27	1,707	34.0	5.55	391
55-64 years	29.3	3.41	2,201	27.5	3.74	1,834	49.7	7.31	366
65-74 years	40.1	4.48	1,995	38.2	4.03	1,753	63.3	16.87	242
Women, 18-74 years	18.1	0.87	10,299	16.9	0.88	8,454	29.7	2.89	1,806
18-24 years	1.6	0.57	132	1.5	0.60	109	2.3	1.69	23
25-34 years	3.1	0.50	352	2.3	0.66	221	8.8	2.96	120
35-44 years	10.8	1.17	1,332	8.4	0.81	901	29.9	3.60	415
45-54 years	21.1	2.11	2,225	18.5	2.29	1,716	43.8	4.64	509
55-64 years	33.9	3.30	2,754	32.3	3.81	2,372	50.5	11.67	370
65-74 years	56.6	3.40	3,504	55.1	3.76	3,135	79.0	9.08	369
Age-adjusted values:									
Both sexes	17.6	...	...	16.2	...	...	30.5	...	...
Men	17.4	...	...	16.1	...	...	30.1	...	...
Women	17.8	...	...	16.3	...	...	31.4	...	...

[1]Includes all other races.

NOTE: Age adjustment is with respect to the population upon which the 1971-1974 survey was based.

Table 53. Rate and number of adults 18-74 years with blood pressure of at least 105 mm. Hg diastolic, by race, sex, and age with standard errors of rate and age-adjusted values: United States, 1960-1962

Sex and age	All races[1]			White			Negro		
	Rate per 100 adults	Standard error of rate	Population in thousands	Rate per 100 adults	Standard error of rate	Population in thousands	Rate per 100 adults	Standard error of rate	Population in thousands
Both sexes, 18-74 years	3.8	0.35	4,074	3.1	0.29	2,971	9.1	1.26	1,018
18-24 years	1.0	0.55	153	1.0	0.61	131	1.3	0.87	22
25-34 years	1.1	0.27	241	0.9	0.28	162	1.8	0.85	41
35-44 years	2.9	0.49	680	1.9	0.40	390	9.4	2.11	243
45-54 years	4.9	0.91	1,002	3.8	0.69	686	13.7	3.70	317
55-64 years	6.5	0.82	1,023	5.5	0.73	770	17.2	4.76	253
65-74 years	8.7	1.03	974	8.1	1.04	831	16.8	4.33	143
Men, 18-74 years	3.8	0.45	1,926	3.2	0.43	1,467	7.9	2.09	401
18-24 years	1.9	1.35	134	1.9	1.52	120	1.9	1.81	14
25-34 years	1.7	0.44	177	1.5	0.48	138	1.3	1.42	12
35-44 years	3.2	0.66	363	2.5	0.69	249	7.0	2.14	83
45-54 years	5.2	1.22	527	4.3	0.91	379	12.8	5.99	147
55-64 years	4.4	0.85	332	3.8	0.74	251	11.0	4.83	81
65-74 years	7.9	1.73	393	7.2	1.57	329	16.7	6.92	64
Women, 18-74 years	3.8	0.31	2,148	3.0	0.30	1,504	10.1	1.53	617
18-24 years	0.2	0.16	19	0.2	0.16	12	0.8	0.84	7
25-34 years	0.6	0.20	64	0.2	0.18	24	2.1	1.20	29
35-44 years	2.6	0.54	317	1.3	0.33	141	11.5	2.72	160
45-54 years	4.5	0.95	476	3.3	0.86	306	14.6	3.09	169
55-64 years	8.5	1.39	691	7.1	1.50	519	23.5	8.80	172
65-74 years	9.4	1.00	581	8.8	1.21	502	16.9	6.38	79
Age-adjusted values:									
Both sexes	3.7	...	...	3.0	...	...	9.0	...	...
Men	3.6	...	...	3.1	...	...	7.4	...	...
Women	3.7	...	...	2.9	...	...	10.5	...	...

[1]Includes all other races.

NOTE: Age adjustment is with respect to the population upon which the 1971-1974 survey was based.

Table 54. Rate and number of adults 18-74 years with borderline hypertension, by race, sex, and age with standard errors of rate and age-adjusted values: United States, 1960-1962

Sex and age	All races[1]			White			Negro		
	Rate per 100 adults	Standard error of rate	Population in thousands	Rate per 100 adults	Standard error of rate	Population in thousands	Rate per 100 adults	Standard error of rate	Population in thousands
Both sexes, 18-74 years	18.0	0.79	19,452	18.4	0.81	17,470	15.8	1.60	1,763
18-24 years	7.0	1.00	1,093	6.8	1.08	916	9.3	2.29	159
25-34 years	10.2	0.75	2,195	10.5	0.69	1,957	8.4	2.61	192
35-44 years	16.4	1.11	3,893	16.6	1.08	3,441	14.7	3.48	380
45-54 years	22.9	1.30	4,712	23.1	1.21	4,172	21.6	4.43	498
55-64 years	30.6	2.34	4,791	30.9	2.55	4,329	28.7	4.80	422
65-74 years	24.8	2.30	2,768	25.8	2.36	2,655	13.3	5.07	113
Men, 18-74 years	21.5	1.20	11,040	22.2	1.25	10,025	17.4	2.91	889
18-24 years	13.0	1.96	931	12.9	2.09	806	14.4	4.35	107
25-34 years	15.4	1.53	1,588	16.1	1.51	1,450	10.0	4.30	91
35-44 years	21.2	1.42	2,406	22.1	1.48	2,203	16.1	3.83	190
45-54 years	25.8	2.73	2,590	26.3	2.76	2,303	23.0	7.84	264
55-64 years	29.9	3.01	2,248	30.6	3.31	2,038	25.1	6.93	185
65-74 years	25.7	3.03	1,278	26.7	3.13	1,226	13.6	8.37	52
Women, 18-74 years	14.8	0.60	8,412	14.9	0.63	7,445	14.4	1.48	875
18-24 years	1.9	0.54	162	1.5	0.53	11	5.4	2.17	52
25-34 years	5.4	0.59	607	5.2	0.70	51	7.4	2.11	101
35-44 years	12.1	1.10	1,487	11.5	1.11	1,238	13.6	4.77	189
45-54 years	20.1	1.14	2,122	20.1	1.23	1,869	20.2	3.84	235
55-64 years	31.3	2.83	2,543	31.2	3.11	2,292	32.3	11.49	236
65-74 years	24.1	3.00	1,490	25.1	3.20	1,429	13.1	6.50	61
Age-adjusted values:									
Both sexes	17.5	...	...	17.7	...	...	15.6	...	...
Men	21.0	...	...	21.6	...	...	16.9	...	...
Women	14.5	...	...	14.3	...	...	14.7	...	...

[1]Includes all other races.

NOTE: Age adjustment is with respect to the population upon which the 1971-1974 survey was based.

Table 55. Percent and number of adults 18-74 years never diagnosed as hypertensive among those with definite hypertension, by race, sex, and age with standard errors of percent and age-adjusted values: United States, 1960-1962

Sex and age	All races[1]			White			Negro		
	Percent with definite hypertension	Standard error of percent	Population in thousands	Percent with definite hypertension	Standard error of percent	Population in thousands	Percent with definite hypertension	Standard error of percent	Population in thousands
Both sexes, 18-74 years	58.0	1.75	11,399	57.6	2.25	9,292	57.9	4.13	1,957
18-24 years	88.9	8.61	473	90.6	8.43	420	77.8	26.86	53
25-34 years	71.7	4.32	822	65.0	5.28	501	82.7	10.64	262
35-44 years	67.0	3.01	2,129	65.9	3.70	1,569	68.6	6.35	513
45-54 years	65.2	2.73	2,838	66.0	2.99	2,262	60.6	8.01	545
55-64 years	49.7	3.85	2,460	49.2	4.48	2,069	51.6	6.13	380
65-74 years	48.8	3.22	2,676	50.7	3.48	2,473	33.3	8.11	203
Men, 18-74 years	67.4	2.16	6,309	66.0	2.46	5,068	71.8	5.37	1,130
18-24 years	96.1	4.88	384	95.6	5.46	338	100.0	35.35	5
25-34 years	81.2	5.53	645	75.0	8.95	412	93.8	5.28	185
35-44 years	70.8	3.99	1,304	64.8	4.46	958	94.8	5.78	316
45-54 years	68.4	5.02	1,458	68.6	5.80	1,172	64.9	13.85	254
55-64 years	59.7	5.07	1,315	58.4	5.56	1,071	66.5	5.50	244
65-74 years	60.3	4.56	1,203	63.7	5.10	1,116	35.8	9.14	87
Women, 18-74 years	49.5	2.60	5,090	50.0	3.09	4,224	45.8	5.20	826
18-24 years	67.1	27.57	89	74.2	32.97	81	32.8	40.86	7
25-34 years	50.3	12.61	177	40.2	19.27	89	64.4	19.93	78
35-44 years	61.9	2.83	825	67.8	4.32	611	47.5	6.30	197
45-54 years	62.0	3.62	1,380	63.5	3.34	1,089	57.2	8.89	291
55-64 years	41.6	4.65	1,145	42.0	5.43	997	36.8	11.61	136
65-74 years	42.2	4.42	1,473	43.4	4.62	1,357	31.6	13.34	117
Age-adjusted values:									
Both sexes	67.3	...	...	66.3	...	...	65.7	...	...
Men	74.7	...	...	72.4	...	...	80.5	...	...
Women	55.3	...	...	56.0	...	...	46.8	...	...

[1]Includes all other races.

NOTE: Age adjustment is with respect to the population upon which the 1971-1974 survey was based.

Table 56. Percent and number of adults 18-74 years never diagnosed as hypertensive among those with blood pressure of at least 105 mm. Hg diastolic, by race, sex, and age with standard errors of percent and age-adjusted values: United States, 1960-1962

Sex and age	All races[1]			White			Negro		
	Percent with diastolic pressure 105 mm. Hg+	Standard error of percent	Population in thousands	Percent with diastolic pressure 105 mm. Hg+	Standard error of percent	Population in thousands	Percent with diastolic pressure 105 mm. Hg+	Standard error of percent	Population in thousands
Both sexes, 18-74 years	43.0	3.76	1,751	38.2	4.80	1,134	52.2	5.71	531
18-24 years	92.4	32.90	141	91.1	50.40	120	100.0	50.00	22
25-34 years	71.0	12.76	171	66.3	20.83	107	62.6	36.35	26
35-44 years	55.4	10.03	377	41.4	11.60	161	69.2	12.14	168
45-54 years	44.1	6.21	442	42.4	7.72	291	47.7	11.56	151
55-64 years	32.1	5.48	329	26.9	7.16	207	47.9	13.49	121
65-74 years	29.8	5.32	290	29.7	5.21	247	30.5	16.99	44
Men, 18-74 years	45.9	6.26	884	38.1	8.55	558	66.6	5.32	267
18-24 years	100.0	35.35	134	100.0	50.00	120	100.0	70.71	14
25-34 years	78.3	17.57	139	72.2	28.55	100	100.0	70.71	12
35-44 years	46.1	11.87	167	24.7	11.78	62	90.3	13.04	75
45-54 years	50.0	9.16	263	49.2	10.88	187	52.1	14.97	77
55-64 years	30.7	13.48	102	17.8	12.86	45	71.0	19.70	57
65-74 years	19.8	9.62	78	14.0	9.74	46	50.0	12.75	32
Women, 18-74 years	40.4	4.08	867	38.3	4.63	576	42.8	8.88	264
18-24 years	39.0	41.15	7	-	-	-	100.0	70.71	7
25-34 years	50.6	33.42	32	32.6	52.92	780	47.3	39.08	14
35-44 years	66.1	9.98	209	71.0	17.75	100	58.2	13.63	93
45-54 years	37.6	5.42	179	34.1	8.25	105	44.0	15.12	74
55-64 years	32.8	6.79	226	31.4	8.20	163	37.0	22.69	64
65-74 years	36.6	6.71	212	40.0	7.88	201	14.7	25.74	12
Age-adjusted values:									
Both sexes	57.4	...	...	52.6	...	...	62.5	...	...
Men	59.1	...	...	51.4	...	...	80.6	...	...
Women	44.7	...	...	34.3	...	...	53.0	...	...

[1]Includes all other races.

NOTE: Age adjustment is with respect to the population upon which the 1971-1974 survey was based.

Table 57. Percent and number of adults 18-74 years never diagnosed as hypertensive among those with borderline hypertension, by race, sex, and age with standard errors of percent and age-adjusted values: United States, 1960-1962

Sex and age	All races[1]			White			Negro		
	Percent with borderline hypertension	Standard error of percent	Population in thousands	Percent with borderline hypertension	Standard error of percent	Population in thousands	Percent with borderline hypertension	Standard error of percent	Population in thousands
Both sexes, 18-74 years	82.9	1.37	16,127	82.7	1.49	14,441	85.6	2.64	1,508
18-24 years	86.3	4.90	943	85.6	6.10	784	88.7	9.46	141
25-34 years	88.2	2.41	1,935	87.2	2.89	1,706	95.1	5.06	182
35-44 years	86.7	2.65	3,376	87.0	2.69	2,992	92.9	3.85	353
45-54 years	85.3	2.44	4,022	85.6	2.87	3,572	81.8	5.85	408
55-64 years	81.6	2.90	3,907	81.2	3.21	3,516	83.2	7.24	351
65-74 years	70.2	5.19	1,944	70.4	5.69	1,870	65.5	24.93	74
Men, 18-74 years	88.6	1.29	9,783	88.3	1.36	8,855	90.2	4.32	802
18-24 years	86.2	5.75	802	86.2	6.85	695	83.2	13.86	89
25-34 years	90.7	3.30	1,439	89.8	3.73	1,302	100.0	-	91
35-44 years	91.6	2.22	2,203	90.8	2.34	2,000	100.0	-	190
45-54 years	87.8	2.67	2,274	87.7	3.27	2,019	87.6	10.24	231
55-64 years	87.8	4.45	1,973	87.8	4.72	1,789	85.7	15.76	159
65-74 years	85.5	4.75	1,092	85.7	4.81	1,050	81.2	33.29	42
Women, 18-74 years	75.4	2.35	6,344	75.0	2.40	5,586	80.8	4.62	707
18-24 years	86.8	10.18	141	80.6	14.54	89	100.0	-	52
25-34 years	81.6	7.08	496	79.8	8.59	404	90.8	9.47	91
35-44 years	78.8	5.30	1,173	80.1	5.53	992	85.7	8.07	162
45-54 years	82.4	3.37	1,748	83.1	4.08	1,554	75.3	5.64	177
55-64 years	76.1	3.93	1,934	75.4	4.43	1,728	81.2	14.25	192
65-74 years	57.2	8.81	852	57.4	9.42	820	52.1	36.37	32
Age-adjusted values:									
Both sexes	84.3	...	...	84.0	...	...	86.4	...	...
Men	88.6	...	...	88.2	...	...	90.7	...	...
Women	78.7	...	...	77.5	...	...	83.1	...	...

[1]Includes all other races.

NOTE: Age adjustment is with respect to the population upon which the 1971-1974 survey was based.

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APPENDIX I

STATISTICAL NOTES

The Survey Design

The sampling plan for the first 65 stands of the Health and Nutrition Examination Survey (HANES) followed a stratified multistage probability design in which a sample of the civilian noninstitutionalized population of the coterminous United States, 1-74 years of age, was selected. Excluded from the selection were persons residing in Alaska and Hawaii and those within the coterminous United States confined to institutions or residing on reservation lands of American Indians. Successive elements dealt with in the process of sampling were the primary sampling unit (PSU), census enumeration district (ED), segment (a cluster of households), household, eligible persons, and finally sample persons.

The starting points in the first stage of this design were the 1960 decennial census lists of addresses and the nearly 1,900 primary sampling units (PSU's) into which the entire United States was divided. Each PSU is either a standard metropolitan statistical area (SMSA), a county, or two or three contiguous counties. The PSU's were grouped into 357 strata for use in the Health Interview Survey and subsequently collapsed into 40 super strata for use in Cycle II and Cycle III of the Health Examination Survey and HANES.

Fifteen of the forty super strata contained a single large metropolitan area of more than 2,000,000 population. These 15 large metropolitan areas were chosen into the sample with certainty. The 25 noncertainty strata were classified into four broad geographic regions of approximately equal population and cross-classified into four broad population density groups in each region. Then a modified Goodman-Kish controlled-selection technique was used to select two PSU's from each of the 25 noncertainty super strata with the probability of selection of a PSU proportionate to its 1960 population so that proportionate representation of specified state groups and rate of population change classes was maintained in the sample. In this manner a total first-stage sample of 65 PSU's was selected. These 65 sample PSU's or stands are the areas within which a sample of persons would be selected for examination over a three-year survey period.

Although the 1970 census data were used as the frame for selecting the sample within PSU's when they became available, the calendar of operations required that 1960 census data be used for 44 of the 65 stands in the sample of HANES. Census enumeration districts (ED's) in each PSU were divided into segments of an expected six housing units each. In urban ED's the segments were clusters of six addresses from the 1960 Census Listing Books. For ED's not having usable addresses, area sampling was employed and consequently some variation in the segment size occurred. To make the sample representative of the current population of the United States, the address or list segments were supplemented by a sample of housing units that had been constructed since 1960.

Within each PSU a systematic sample of segments was selected. The enumeration districts which fell into the sample were coded into one of two economic classes. The first class, identified as the "poverty stratum," was composed of "current poverty areas" that had been identified by the Bureau of the Census in 1970 (pre-1970 census), plus other ED's in the PSU with a mean

income of less than $3,000 in 1959 (based on 1960 census). The second economic class, the "nonpoverty stratum," included all ED's not designated as belonging to the "poverty stratum." All sample segments classified as being in the "poverty stratum" were retained in the sample. For those sample segments in "nonpoverty stratum" ED's, the selected segments were divided into eight random subgroups and one of the subgroups was chosen to remain in the HANES sample. This procedure permits a separate analysis with adequate reliability of those classified as being below the poverty level and those classified as being above the poverty level.

After identifying the sample segments, a list of all current addresses within the segment boundaries was made, and the households were interviewed to determine the age and sex of each household member, as well as other demographic and socioeconomic information.

To select the persons in sample segments to be examined in HANES, all household members aged 1-74 in each segment were listed on a sample selection worksheet with each household in the segment listed serially. The number of household members in each of the six age-sex groups shown below were listed on the worksheet under the appropriate age-sex group column. The sample selection worksheets were then put in segment number order and a systematic random sample of persons in each age-sex group was selected to be examined using the following sampling rates.

Age	*Rate*
1-5 years	1/2
6-19 years	1/4
20-44 years (male)	1/4
20-44 years (female)	1/2
45-64 years	1/4
65-74 years	1

The persons selected in the 65-stand sample of HANES comprise a representative sample of the target population and included 28,043 sample persons 1-74 years of age of whom 20,749 or 74.0 percent were examined. When adjustments are made for differential sampling for high-risk groups, the response rate becomes 75.2 percent.

All data presented in this report are based on "weighted" observations. That is, data recorded for each sample person are inflated to characterize the subuniverse from which that sample person was drawn. The weight for each examined person is a product of the reciprocal of the probability of selecting the person, an adjustment for nonresponse cases (i.e., persons not examined), and a poststratified ratio adjustment which increases precision by making the final sample estimates of the population agree approximately with independent controls prepared by the U.S. Bureau of the Census for the noninstitutionalized population of the United States as of November 1, 1972 (approximate midsurvey point), by color, sex, and age shown in table I. Population estimates are included in some of the tables in greater detail than that used for weighting. These population figures, while not precise census estimates in this degree of age detail, are included to give a rough idea of the number in the population at risk.

A more detailed description of the survey design and selection technique can be found in *Vital and Health Statistics*, Series 1-No. 10a.[6]

Nonresponse

In any health examination survey, after the sample is identified and the sample persons are requested to participate in the examination, the survey meets one of its more severe problems. Usually a sizable number of sample persons will not participate in the examination. Individual participation is determined by many factors, some of them uncontrollable, and therefore it may be treated as a random event with a particular probability of occurrence. If this probability were known and were greater than zero for all persons, then the examined persons would constitute a probability sample from which unbiased estimates of the target population could be derived. In this situation, the effect of nonparticipation would only reduce the sample size, thereby increasing the sampling errors of examination findings. In practice, however, a potential for bias due to nonresponse

NOTE: A list of references follows the text.

Table I. United States civilian noninstitutionalized population, by age, sex, and race, November 1, 1972

Race and sex	Total	Age				
		1-5 years	6-19 years	20-44 years	45-64 years	65-74 years
Total	193,976,447	17,282,843	55,434,127	66,307,351	42,344,237	12,607,889
Male	94,151,059	8,818,156	28,014,291	31,757,861	20,090,791	5,469,960
White	82,652,067	7,407,500	23,911,243	28,195,112	18,190,148	4,948,064
Other races	11,498,992	1,410,656	4,103,048	3,562,749	1,900,643	521,896
Female	99,825,388	8,464,687	27,419,836	34,549,490	22,253,446	7,137,929
White	86,932,196	7,070,529	23,261,515	30,102,612	20,011,119	6,486,421
Other races	12,893,192	1,394,158	4,158,321	4,446,878	2,242,327	651,508

SOURCE: Unpublished estimates of September 27, 1974, from the U.S. Bureau of the Census.

exists because exact probabilities are never known. A further potential for bias exists if:

1. A sizable proportion of sample persons have a zero probability of participation; that is, if they would never agree to participate in an examination survey employing the same procedures and inducements.
2. These persons differ from other sample persons with respect to the characteristics under examination.

For these reasons intensive efforts are made in HANES to develop and implement procedures and inducements that reduce the number of nonrespondents, thereby reducing the potential for bias. These procedures and inducements are discussed in the Plan and Operation of the Health and Nutrition Examination Survey, United States, 1971-1973, *Vital and Health Statistics*, Series 1-No. 10a.[6]

Despite these intensive efforts 24.8 percent of the sample persons from the 65 stands were not examined. Consequently, the potential for sizable bias does exist in the estimates in this publication. However, from what is known about the nonrespondents and the nature of nonresponse the likelihood of sizable bias is small. For instance, only a small proportion of persons gave reasons for nonparticipation which would lead to the belief that they would never agree to participate in examination surveys and that they may differ from examined persons with respect to the characteristic under examination. Only 15 percent of the nonrespondents gave as their reasons for nonparticipation personal illness, physically unable, pregnant, anti-doctor, or fear of finding something wrong. Typical among the reasons given by the other nonrespondents were: unable because of work, school, or household duties; suspicious or skeptical of the program; just not interested in participating; and private medical care sufficient or just visited doctor.

An analysis of medical history data obtained from most nonexaminees as well as from examinees also supports the belief that the likelihood of sizable bias due to nonresponse is small. No large differences were found between the examined group and nonexamined group for the statistics compared. For example, 11 percent of persons examined reported having an illness or condition which interferes with their eating as compared to 9 percent of persons not examined but who had completed a medical history. The percent of persons examined reporting ever being told by a doctor that they had arthritis was 20 percent; the percent for high blood pressure was 18 percent and for diabetes was 4 percent. The corresponding percents for nonexamined persons were: arthritis, 17 percent; high blood pressure, 21 percent; and diabetes, 4 percent.

As was mentioned earlier the data in this report are based on weighted observations, and one of the components of the weight assigned to an examined person was an adjustment for

nonresponse. Since the probabilities of participation are not known for sample persons in HANES, a procedure was adopted which multiplies the reciprocal of the probability of selection of sample persons by a factor which brings estimates based on examined persons only up to a level which would have been achieved if all sample persons had been examined. This nonresponse adjustment factor is the ratio of the sum of sampling weights for all sample persons within a relatively homogeneous class defined by age, sex, and five income groups (under $3,000, $3,000-$6,999, $7,000-$9,999, $10,000-$14,999, and $15,000 and over) within each stand, to the sum of sampling weights for all responding sample persons within the same homogeneous class for the same stand. To the degree that homogeneous groups can be defined which are also homogeneous with respect to the characteristics under study, the procedure can be effective in reducing the potential bias from nonresponse. For the 65-stand sample of HANES, the percent distribution of the nonresponse adjustment factors used for the 325 income group-stand cells is shown in table II.

Table II. Number and percent distribution of cells by size of nonresponse adjustment factors, HANES, stands 01-65, 1971-1974

Size of factor	Number of cells	Percent distribution
Total	325	100.0
1.00-1.24	106	32.6
1.25-1.49	125	38.4
1.50-1.74	59	18.2
1.75-1.99	24	7.4
2.00-2.49	9	2.8
2.50-2.99	1	0.3
3.00-3.03	1	0.3

Missing Data

Examination surveys lose information not only through the failure to examine all sample persons, but also through the failure to obtain and record all items of information for examined persons. When data are found missing for some of the examinees, imputation of the missing data becomes necessary to minimize the effect on population estimates.

Out of the 17,854 examinees age 6-74 years, only 204 (1.1 percent) measurements of either systolic or diastolic blood pressure or both were missing. (Both types were missing for 195 persons and 9 persons lacked only the diastolic readings.) Table III contains the complete distribution of missing measurements by age, race, and sex.

Although the total number of missing measurements is relatively small, a disproportionate share were those for 6-year-olds: 24.5 percent (87) of the systolic readings and 25.3 percent (90) of the diastolic readings. About one in every four blood pressures among 6-year-olds was not taken because some of the physicians had misinterpreted the examination form, which stated that blood pressures were to be taken only on those examinees "over 6 years." Because such a large proportion of the blood pressures among the 6-year-olds were not recorded, no imputations were made for them when both values were missing. Rather, it has been assumed that the distribution of these values by age, race, and sex would be similar to that for 6-year-olds whose blood pressures were measured. However, imputations were made for the three 6-year-old examinees with a systolic pressure, but not a diastolic pressure, recorded, using the diastolic pressure of another randomly selected 6-year-old of the same sex and race with similar systolic pressure, arm girth, weight, and height.

Even though 1.1 percent of the systolic or diastolic readings or both for examinees 6-74 years were missing, the extent of missing data was only 0.7 percent among examinees age 7-74 years. For most of these examinees (97) both blood pressures were missing, and these values were randomly selected from other examinees of the same age, sex, and race, with similar arm girth, weight, and height. For the other six missing diastolic measurements, the systolic pressure was also taken into account when the random selection was made.

Special imputation procedures were used for two additional groups. There were four other examinees with both systolic and diastolic pres-

Table III. Total number of examinees and number of examinees with missing systolic and diastolic blood pressures by race, sex, and age of the examinee: United States, 1971-1974

Blood pressure and age	All races, both sexes	White		Negro		Other		Total number of examinees
		Male	Female	Male	Female	Male	Female	
	Number of examinees with missing blood pressure measurements							
Systolic								
All ages, 6-74 years	195	59	73	22	41	-	-	17,854
6 years	87	34	25	11	17	-	-	355
7-11 years	24	6	12	3	3	-	-	1,702
12-17 years	11	4	4	1	2	-	-	2,126
18-24 years	9	2	2	1	4	-	-	2,296
25-34 years	19	2	10	4	3	-	-	2,700
35-44 years	9	2	3	-	4	-	-	2,328
45-54 years	10	2	5	1	2	-	-	1,601
55-64 years	7	1	3	-	3	-	-	1,267
65-74 years	19	6	9	1	3	-	-	3,479
Diastolic								
All ages, 6-74 years	204	60	76	25	43	-	-	17,854
6 years	90	34	26	13	17	-	-	355
7-11 years	26	7	13	3	3	-	-	1,702
12-17 years	12	4	5	1	2	-	-	2,126
18-24 years	10	2	2	1	5	-	-	2,296
25-34 years	20	2	10	5	3	-	-	2,700
35-44 years	9	2	3	-	4	-	-	2,328
45-54 years	10	2	5	1	2	-	-	1,601
55-64 years	7	1	3	-	3	-	-	1,267
65-74 years	20	6	9	1	4	-	-	3,479

sures missing, who weighed between 311 and 398 pounds, and no other examinees could be found to match their physical characteristics. Imputation of blood pressures for these examinees was accomplished by extrapolating the regression lines derived within 10-year age groups for each race and sex. Age, arm girth, weight, and height were used as the independent variables, even though only about 10 percent of the variation was accounted for by these physical variables.

In addition, seven others with missing systolic and diastolic pressures had no physical measurements recorded. For these, an examinee was randomly selected from among those of the same age, race, and sex as the examinee with the missing pressures. The systolic and diastolic pressures of the randomly selected examinee were then used as the imputed pressures of the examinee with the missing pressures.

Small Numbers

In some tables magnitudes are shown for cells for which the sample size is so small that the sampling error may be several times as great as the statistic itself. Obviously in such instances the numbers, if shown, have been included to convey an impression of the overall story of the table.

Sampling and Measurement Error

In the present report, reference has been made to efforts to minimize bias and variability of measurement techniques. The potential for residual bias due to the high nonresponse rate has also been discussed.

The probability design of the survey makes possible the calculation of sampling errors.

Traditionally the role of the sampling error has been the determination of how imprecise the survey results may be because they come from a sample rather than from the measurement of all elements in the universe.

The estimation of sampling errors for a study of the type of the Health and Nutrition Examination Survey is difficult for at least three reasons: (1) measurement error and "pure" sampling error are confounded in the data—it is not easy to find a procedure which will either completely include both or treat one or the other separately, (2) the survey design and estimation procedure are complex, and, accordingly, require computationally involved techniques for the calculation of variances, and (3) hundreds of statistics are presented in the tables in this report, many for subclasses of the population for which there are a small number of sample cases. Estimates of sampling error are obtained from the sample data and are themselves subject to sampling error when the number of cases in a cell is small or, even occasionally, when the number of cases is substantial.

Estimates of the standard errors for selected statistics used in this report are presented in most of the tables in this report. These estimates have been prepared by a replication technique which yields overall variability through observation of variability among random subsamples of the total sample.[29,30] Again, readers are reminded that these estimated sampling errors do not reflect any residual bias which might still be present after the attempted correction for nonresponse. The standard error is primarily a measure of sampling variability, that is, the variations that might occur by chance because only a sample of the population is surveyed. As calculated for this report, the standard error also reflects part of the variation which arises in the measurement process. It does not include estimates of any biases which might lie in the data. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference would be less than twice the standard error and about 99 out of 100 that it would be less than two and a half times as large.

Tests of Significance

The procedure used in this report for testing the significance of the difference between the two means consisted of dividing the difference between the two means by the standard error of the difference; that is a Z-statistic was computed. An approximation of the standard error of a difference $d = x - y$ of the two statistics x and y is given by the formula $S_d = (S_x^2 + S_y^2)^{1/2}$ where S_x and S_y are the sampling errors, respectively, of x and y. Of course, where the two groups or measures are positively or negatively correlated, this will give an overestimate or underestimate, respectively, of the actual standard error.

If more than one test is implied (such as regional differences—six implied tests) then the Bonferroni test[31] was used to test for significance. In the Bonferroni test the Z-statistic is also computed; but, for the difference between two means to be considered significant at the 95-percent confidence level, the Z-statistic must be greater than or equal to 2.64 when six tests are implied.

To test for a positive relationship between variables like education and blood pressure, it would be useful to fit a regression line to the data and then test if the slope of the line is significantly different from zero. However, the data from a complex survey such as HANES present certain very basic problems which make the use of classical regression procedures more difficult. Among these problems are the lack of complete independence among the original observations, lack of complete homoskedasticity, i.e., unequal variances of the dependent variable within each category of the independent variable, and possibly lack of normality in the distribution, etc. What follows is a description of a modified regression model which makes no assumptions about the original observations and which makes no stronger assumptions about the sample estimates than are made in testing whether two means are equal when the estimated means and their standard errors are obtained from complex surveys. Estimates of

the standard errors of the dependent variable used in this modified regression model were obtained from the half-sample replication technique discussed above.

The proposed model is as follows:

1. Let $\bar{Y}_i$ be the estimated mean and $S_{\bar{x}}$ be its estimated standard error for the ith group.
2. Let X_i be the midpoint of the independent variable for the group.
3. Assume $S_{\bar{Y}_i}$ is based on a large enough number of observations that it can be assumed it is, in fact, equal to $\sigma_{\bar{Y}_i}$ and thus has no sampling error.
4. Further assume that

$$E(\bar{Y}_i) = \alpha + \beta X_i$$

$$V(\bar{Y}_i) = S^2_{\bar{Y}_i}$$

for $i = 1, 2, \ldots, K$, where K is the number of groups.

5. Finally, it is assumed that the $\bar{Y}_i$'s are normally distributed and are statistically independent of each other.

The proposed weighting procedure weights all observations by the reciprocal of the variance. That is,

$$W_i = \frac{1}{S^2_{\bar{Y}_i}}$$

and the mean

$$\bar{X} = \frac{\sum w_i X_i}{\sum w_i}$$

and the mean

$$\bar{\bar{Y}} = \frac{\sum w_i \bar{Y}_i}{\sum w_i}$$

The slope is computed in a manner similar to the classical least squares regression, by the following formula:

$$b = \frac{\sum w_i (X_i - \bar{X}) \bar{Y}_i}{\sum w_i (X_i - \bar{X})^2}$$

Computationally, this is easily computed by

$$b = \frac{\sum w_i X_i \bar{Y}_i - (\sum w_i)(\bar{X})(\bar{\bar{Y}})}{\sum w_i X_i^2 - (\sum w_i)\bar{X}^2}$$

The variance of the slope is

$$\sigma^2_b = \frac{\sum w_i (X_i - \bar{X})^2 \sigma^2_{\bar{Y}}}{\left[\sum w_i (X_i - \bar{X}^2)\right]^2}$$

Now, since

$$W_i = \frac{1}{\sigma^2_{\bar{Y}_i}}$$

This formula can be simplified to

$$\sigma^2_b = \frac{\sum w_i (X_i - \bar{X})^2}{\left[\sum w_i (X_i - \bar{X})^2\right]^2} = \frac{1}{\sum w_i (X_i - \bar{X})^2}$$

and computationally

$$S_b = \sqrt{\frac{1}{\sum w_i X_i^2 - (\sum w_i)\bar{X}^2}}$$

An approximate normal deviate test can now be performed by

$$Z = \frac{b}{S_b}$$

This would test the hypothesis that $\beta = 0$ or, alternatively, compute confidence intervals for β.

Tests of Normality

In this report the formulas used to measure kurtosis and skewness were those defined in the *Statistical Package for the Social Sciences* (SPSS).[3 2] Kurtosis is defined as the general peakedness of a distribution. The formula is:

$$\text{Kurtosis} = \frac{\sum_{i=1}^{N} \left[(X_i - \bar{X})/S\right]^4}{N} - 3$$

A positive value indicates that the distribution is more peaked than the normal distribution and a negative value indicates that the distribution is flatter than the normal distribution.

A skewed distribution is one that has a larger number of cases in one tail of the distribution than in the other. The formula is:

$$\text{Skewness} = \frac{\sum_{i=1}^{N} \left[(X_i - \bar{X})/S \right]^3}{N}$$

A positive value indicates that the distribution is skewed to the right; a negative value indicates that the distribution is skewed to the left.

APPENDIX II

DEMOGRAPHIC AND SOCIOECONOMIC TERMS

Age.—Two ages were recorded for each examinee: the age at last birthday at the time of examination and at the time of the census interview. The age criterion for inclusion in the sample used in this survey was defined as age at time of census interview. The adjustment and weighting procedures used to produce national estimates were based on the age at interview. Data in the detailed tables and text of the report are shown by age at the time of the examination, except that those few who became 75 years by the time of the examination are included in the 65-74-year group.

Race.—Race was recorded as "white," "Negro," or "other." "Other" includes Japanese, Chinese, American Indian, Korean, Eskimo, and all races other than white and Negro. Mexicans were included with "white" unless definitely known to be American Indian or of other nonwhite race. Negroes and persons of mixed Negro and other parentage were recorded as "Negro." When a person of mixed racial background was uncertain about his race, the race of his father was recorded.

Ancestry.—For a Negro eligible person, "Negro" was recorded on the household questionnaire without asking. If the respondent insisted that he did not have *one* main national origin, his complete multiple origin was recorded, e.g., Scotch-Irish or Russian-Polish. However, only one origin was actually coded—the first one listed (that is, Scotch-Irish was coded as "Irish" and Russian-Polish was coded as "Russian"). If none of the origins could be coded using the given codes, the origin was coded as "other." Religious groups were not identified with national origins, but if a respondent said he was "Jewish," this was accepted.

Geographic region.—The 48 contiguous States and the District of Columbia (excluding Alaska and Hawaii) were stratified into four broad geographic regions, each of about the same population size. With a few exceptions the compositions of the regions were as follows:

Region	*States included*
Northeast	Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania
Midwest	Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri
South	Delaware, Maryland, Virginia, West Virginia, Kentucky, Arkansas, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, District of Columbia
West	Washington, Oregon, Idaho, Montana, Wyoming, Colorado, Utah, Nevada, California, Arizona, New Mexico, Texas, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota

In a few instances the actual boundaries of the regions did not follow State lines. Some strata in the Midwest and South include PSU's actually located in the West. Similarly, some strata in the West contain PSU's located in the Midwest and South.

Family income.—The income recorded was the total income received during the 12 months prior to the interview by the head of the

household and all other household members related to the head. This income was the gross cash income (excluding pay in kind) except in the case of a family with its own farm or business. In that instance net income was recorded. Also included was the income of a member of the Armed Forces living at home with his family (even though he was not considered a household member). If he was not living at home, allotments and other money received by the family from him were included in the family income figure.

Education.—The only grades counted were those attended in a regular graded public or private school where persons were given formal education, whether during the day or at night, on a fulltime or part-time attendance basis. A "regular" school is one which advances a person toward an elementary or high school diploma, or a college, university, or professional school degree. Education received in vocational, trade, or business schools outside the regular school system was not counted in determining the highest grade of school completed. If a person attended school in a foreign country, at an ungraded school, under a tutor, or under other special circumstances, the nearest equivalent of his highest grade attended was given.

Population density.—The classification of urban-rural areas was that used in the 1960 census. According to the 1960 definition, those areas considered urban are: (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, villages, and towns (except towns in New England, New York, and Wisconsin); (b) the densely settled urban fringe, whether incorporated or unincorporated, of urbanized areas; (c) towns in New England and townships in New Jersey and Pennsylvania which contain no incorporated municipalities as subdivisions and have either 2,500 inhabitants or more, or a population of 2,500 to 25,000 and a density of 1,500 persons per square mile; (d) counties in States other than the New England States, New Jersey, and Pennsylvania that have no incorporated municipalities within their boundaries and have a density of 1,500 persons or more per square mile; and (e) unincorporated places of 2,500 inhabitants or more which are not included in any urban fringe. The remaining population is classified as rural.

By means of the first digit of the identification code on the household questionnaire, the urban and rural population was divided into the following categories according to population: (1) urban, 3,000,000 or more; (2) urban, 1,000,000-2,999,999; (3) urban, 250,000-999,999; (4) urban, under 250,000; (5) urban not in urbanized area, 25,000 or more; (6) urban not in urbanized area, 10,000-24,999; (7) urban not in urbanized area, 2,500-9,999; and (8) rural.

APPENDIX III

SOURCES OF VARIATION IN BLOOD PRESSURE MEASUREMENT

Venipuncture

At some convenient time during the examination a venipuncture was done on the examinees by the nurse with the assistance of the dermatologist. This procedure may have had some effect upon the examinees' blood pressure either elevating it because of apprehension or lowering it because of the removal of 55 cc. of blood.

To determine the effect of the venipuncture on the blood pressures, the examinees were divided into two groups: those with blood pressure measurement taken first and those with venipuncture done first. Both groups were further subdivided by the amount of time that elapsed between the venipuncture and blood pressure determination. The results of this analysis are presented in table IV. Because of the substantial variation in blood pressure with age, the effect of age was removed by age adjusting the mean blood pressures. The direct method of adjustment was used for this purpose with the weighted population of the United States (November 1972) as the reference population.

It might be expected that some if not all of those who had their blood pressure taken before the venipuncture might be apprehensive about the procedure and consequently show some elevation in pressure if they were aware that they were soon to have the venipuncture done. However, as may be seen in table IV the age-adjusted mean systolic and diastolic pressures of those who had their blood pressures taken less than 20 minutes before they had the venipuncture are, respectively, 1.0 mm. Hg and 3.0 mm. Hg lower, not higher than the systolic and diastolic pressures of those that had 30 minutes or more elapse before having the venipuncture done. The difference between the age-adjusted mean systolic pressures is statistically significant but that for diastolic pressures is not. Therefore, apprehension about the venipuncture was apparently not a significant factor affecting the blood pressures of those that had their blood pressures taken before the venipuncture. The significant elevation in systolic mean pressures among examinees who had their blood pressures taken 30 minutes or more before the venipuncture may be a reflection of the fact that many were measured near the beginning of the examination. In previous Health Examination Surveys the initial blood pressure of an examinee on whom more than one reading was obtained has generally been higher than the subsequent ones, possibly because of apprehension about the examination when the examinees first arrived. Since the time of day each examinee began the examination is not readily available, it is not possible to separate effects of normal variation in blood pressure during the day from those due to apprehension, if any, about the examination.

Although apprehension about the examination or the venipuncture appeared not to bias the estimates in this report, the venipuncture could have caused a hypotensive effect upon the blood pressures of those that had their blood pressure taken shortly after having the venipuncture done. If there was such a hypotensive effect, the mean blood pressure of those on whom these measurements were taken less than 20 minutes after the venipuncture should be lower than those taken 30 minutes or longer afterward. In fact, no significant difference in

Table IV. Systolic and diastolic blood pressure of examinees 7-74 years, by age and time between blood pressure reading and venipuncture—mean, standard error of the mean, age-adjusted values and sample size: United States, 1971-1974

Blood pressure and age	Blood pressure taken before venipuncture						Blood pressure taken after venipuncture					
	30 minutes or more		20-29 minutes		Less than 20 minutes		Less than 20 minutes		20-29 minutes		30 minutes or more	
	$\bar{x}$	$s_{\bar{x}}$	$\bar{x}$	$s_{\bar{x}}$	$\bar{x}$	$s_{\bar{x}}$	$\bar{x}$	$s_{\bar{x}}$	$\bar{x}$	$s_{\bar{x}}$	$\bar{x}$	$s_{\bar{x}}$
Systolic	mm. Hg											
Age-adjusted values	125.9	---	126.5	---	122.9	---	124.7	---	123.4	---	123.8	---
All ages, 7-74 years	120.2	0.74	123.7	1.14	119.6	0.91	124.0	0.54	123.3	0.61	126.3	0.55
7-11 years	103.6	0.99	104.3	1.08	103.9	1.63	103.5	0.93	103.3	1.66	102.3	1.09
12-17 years	115.4	1.19	115.8	1.37	113.8	1.58	114.0	0.94	112.4	1.13	112.6	0.81
18-24 years	121.4	1.13	119.2	1.87	118.6	1.50	120.0	0.87	117.7	1.34	118.6	0.68
25-34 years	120.4	1.39	122.4	1.46	120.4	1.92	121.5	0.72	120.8	1.54	120.7	0.60
35-44 years	126.5	1.88	127.3	2.53	123.4	1.14	124.7	1.18	124.7	1.24	126.0	0.76
45-54 years	138.0	2.61	132.6	3.38	130.3	2.83	133.5	1.53	132.2	2.41	133.6	1.17
55-64 years	143.7	4.02	150.2	4.13	136.4	6.55	142.6	1.97	141.8	2.58	141.2	0.97
65-74 years	151.7	1.72	157.7	3.00	149.2	2.91	151.6	1.52	147.4	2.16	148.9	1.14
Diastolic												
Age-adjusted values	78.1	---	77.8	---	77.1	---	77.6	---	77.3	---	78.0	---
All ages, 7-74 years	74.6	0.59	75.8	0.65	75.0	0.51	77.2	0.44	77.3	0.43	79.5	0.39
7-11 years	64.4	1.03	64.5	0.87	65.0	1.22	65.1	0.87	64.4	1.66	65.2	0.82
12-17 years	69.9	0.79	68.7	1.27	70.0	1.21	69.8	0.63	69.2	0.59	70.0	0.63
18-24 years	74.9	1.16	73.3	1.50	74.3	0.96	74.4	0.61	73.0	0.72	73.8	0.62
25-34 years	76.5	0.83	77.2	1.32	76.9	1.27	78.2	0.59	77.8	1.11	78.0	0.42
35-44 years	82.7	1.27	83.8	1.72	81.8	1.12	80.7	0.84	82.7	0.68	83.0	0.52
45-54 years	86.7	1.19	83.9	2.22	83.7	1.35	85.3	0.92	84.0	1.21	85.7	0.71
55-64 years	88.2	1.87	88.5	1.74	84.6	2.35	85.4	1.08	87.1	1.56	86.8	0.55
65-74 years	86.1	1.07	88.3	1.24	84.5	1.33	86.6	0.77	84.0	1.11	85.3	0.65
Sample size	1,939	...	929	...	750	...	3,170	...	1,695	...	8,395	...

NOTE: $\bar{x}$ = mean, $s_{\bar{x}}$ = standard error of the mean.

the age-adjusted mean systolic or diastolic pressures between the two groups was found. Hence, venipuncture apparently did not significantly bias the blood pressure measurements in this examination, whether taken before or afterward.

End-Digit Preference

An analysis of end-digit preference in a survey such as HANES is an important one because such an analysis indicates with what accuracy the blood pressures were being recorded by the examiners. In the Health and Nutrition Examination Survey of 1971-1974 and the Health Examination Surveys of 1960-1962, 1963-1965, and 1966-1970, the examiners were instructed to measure and record the blood pressures of the examinees to the nearest 2 mm. Hg. Any departure from those instructions could be detected by an analysis of the end-digits that were recorded. If the end-digits were randomly distributed among the even digits, as they should be, then each even end-digit should have a frequency 20 percent of the total. Table V contains the percent distribution of the end-digits of the first systolic and diastolic blood pressure reading for each of the four surveys mentioned above.

In the HANES of 1971-1974 the most commonly recorded end-digit was the zero; 46.9

Table V. Percent distribution of end-digits of systolic and diastolic blood pressure in the Health and Nutrition Examination Survey of 1971-1974 and the Health Examination Surveys of 1960-1962, 1963-1965, and 1966-1970

End-digit	HANES 1971-74, ages 6-74 years		HES 1960-62, ages 18-79 years		HES 1963-65, ages 6-11 years		HES 1966-70, ages 12-17 years	
	Systolic	Diastolic	Systolic	Diastolic	Systolic	Diastolic	Systolic	Diastolic
	Percent distribution							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0	46.9	43.9	32.5	34.9	24.7	24.8	24.0	37.1
1	0.0	0.0	-	0.0	-	-	0.0	0.0
2	10.9	10.1	16.1	13.6	20.3	18.5	19.4	11.3
3	0.0	0.0	-	0.0	-	0.0	0.0	0.0
4	13.7	14.0	18.0	14.1	21.6	17.1	22.0	19.1
5	4.7	4.9	1.0	1.0	0.1	0.1	0.2	0.3
6	10.1	12.3	15.1	16.8	14.7	13.4	20.0	19.9
7	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0
8	13.6	14.7	17.3	19.6	18.6	26.1	14.4	12.3
9	0.1	0.1	0.0	0.0	0.0	-	-	0.0

NOTE: Percent distribution of end-digits for all four of the surveys are for the first reading.

percent of the systolic blood pressure measurements and 43.9 percent of the diastolic blood pressure measurements were recorded with an end-digit of zero. Since a zero should have been recorded as an end-digit only 20 percent of the time, more than twice as many end-digits of zero were recorded as were expected. This fact indicates that the blood pressures were apparently recorded with less accuracy than they should have been. That is, many of the systolic and diastolic blood pressures were recorded accurately only to the nearest 10 mm. Hg rather than to the nearest 2 mm. Hg as was instructed. In the previous three Health Examination Surveys the end-digit of zero was also recorded more often than was expected but in none of those surveys was the end-digit of zero recorded as frequently as it was in HANES.

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