visited on 2/14/2013

National Vital Statistics Reports

Volume 54, Number 14 April 19, 2006

United States Life Tables, 2003

Report revised as of March 28, 2007

by Elizabeth Arias, Ph.D., Division of Vital Statistics

Abstract

This report presents period life tables for the United States based on age-specific death rates in 2003. Data used to prepare these life tables are 2003 final mortality statistics; July 1, 2003, population estimates based on the 2000 decennial census; and data from the Medicare program. Presented are complete life tables by age, race, and sex. In 2003, the overall expectation of life at birth was 77.4 years, representing an increase of 0.1 years from life expectancy in 2002. Between 2002 and 2003, life expectancy increased for males and females and for both the white and black populations. Life expectancy increased by 0.2 years (from 77.7 to 77.9) for the white population and by 0.3 years (from 72.3 to 72.6) for the black population. Both males and females in each race group experienced increases in life expectancy between 2002 and 2003. The greatest increase was experienced by black females with an increase of 0.3 years (from 75.6 to 75.9). Life expectancy increased by 0.1 years for black males (from 68.8 to 68.9), and for white females (from 80.3 to 80.4), and by 0.2 for white males (from 75.1 to 75.3).

Introduction

There are two types of life tables—the cohort (or generation) life table and the period (or current) life table. The cohort life table presents the mortality experience of a particular birth cohort, all persons born in the year 1900, for example, from the moment of birth through consecutive ages in successive calendar years. Based on age-specific death rates observed through consecutive calendar years, the cohort life table reflects the mortality experience of an actual cohort from birth until no lives remain in the group. To prepare just a single complete cohort life table requires data over many years. It is usually not feasible to construct cohort life tables entirely on the basis of observed data for real cohorts due to data unavailability or incompleteness (1). For example, a life table representation of the mortality experience of a cohort of persons born in 1970 would require the use of data projection techniques to estimate deaths into the future (2,3).

Unlike the cohort life table, the period life table does not represent the mortality experience of an actual birth cohort. Rather, the period life table presents what would happen to a hypothetical (or synthetic) cohort if it experienced throughout its entire life the mortality conditions of a particular period in time. Thus, for example, a period life table for 2003 assumes a hypothetical cohort subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2003. The period life table may thus be characterized as rendering a "snapshot" of current mortality experience, and shows the long-range implications of a set of age-specific death rates that prevailed in a given year. In this report, the term "life table" refers only to the period life table and not to the cohort life table.

Data and Methods

The data used to prepare the U.S. life tables for 2003 are final numbers of deaths for the year 2003, postcensal population estimates for the year 2003, and data from the Medicare program of the Centers for Medicare and Medicaid Services.

The populations used to estimate the life tables shown in this report were produced under a collaborative agreement with the U.S. Census Bureau and are consistent with the postcensal estimates of the 2000 census. Reflecting the new guidelines issued in 1997 by the Office of Management and Budget (OMB), the 2000 census included

Keywords: life expectancy • life tables • survival • death rates • race

Acknowledgments

This report was prepared in the Division of Vital Statistics under the general direction of Charles J. Rothwell, Director, Division of Vital Statistics and Robert N. Anderson, Chief, Mortality Statistics Branch. Content review was provided by Vanetta Harrington of the Systems, Programming, and Statistical Resources Branch. This report was edited by Demarius V. Miller, typeset by Jacqueline M. Davis, and graphics produced by Michael W. Jones, NOVA contractor, Office of Information Services, Information Design and Publishing Staff.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL CENTER FOR HEALTH STATISTICS
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL VITAL STATISTICS SYSTEM

visited on 2/14/2013

an option for individuals to report more than one race as appropriate for themselves and household members (4). The 1997 OMB guidelines also provided for the reporting of Asian persons separately from Native Hawaiians or other Pacific Islanders. Under the prior OMB standards (issued in 1977), data for Asian or Pacific Islander persons were collected as a single group (5). Death certificates currently collect only one race for the decedent in the same categories as specified in the 1977 OMB guidelines (death certificate data do not report Asians separately from Native Hawaiians or other Pacific Islanders). Death certificate data by race (the numerators for death rates) are thus currently incompatible with the population data collected in the 2000 census (the denominators for the rates). To produce death rates for 2000–2003, it was necessary to "bridge" the reported population data for multiple-race persons back to single-race categories. In addition, the 2000 census counts were modified to be consistent with the 1977 OMB race categories, that is, to report the data for Asian persons and Native Hawaiians or other Pacific Islanders as a combined category, Asian or Pacific Islanders, and to reflect age as of the census reference data (6). The procedures used to produce the "bridged" populations are described in separate publications (7). It is anticipated that "bridged" population data will be used over the next few years for computing population-based rates. Beginning with deaths occurring in 2003, some States implemented multiple-race categories on the death certificate. Multiple-race data for these States are bridged back to single race categories. Once all States are collecting data on race according to the 1997 OMB guidelines, it is expected that use of the bridged populations will be discontinued.

Readers should keep in mind that the population data used to compile death rates by race are based on special estimation procedures. They are not true counts. This is the case even for the 2000 populations that are based on the 2000 census. The estimation procedures used to develop these populations contain some error (7). Over the next several years, additional information will be incorporated in the estimation procedures, possibly resulting in further revisions of the population estimates (see "Technical Notes").

Data from the Medicare program are used to calculate probabilities of dying for ages over 85 years (see "Technical Notes").

Life tables can be classified in two ways according to the length of the age interval in which data are presented. A complete life table contains data for every single year of age. An abridged life table typically contains data by 5- or 10-year age intervals. A complete life table, of course, can be easily aggregated into 5- or 10-year age groups (see "Technical Notes" for instructions on how to do this). Other than the decennial life tables, U.S. life tables based on data prior to 1997 are abridged life tables constructed by reference to a standard table (8). The 2003 U.S. life tables are complete life tables calculated using a method implemented with the 1997 life tables and are similar to the U.S. Decennial Life Tables (9,10). See "Technical Notes" for more information on the method used to construct the life tables in this report.

Expectation of life—The most frequently used life table statistic is life expectancy (e_x), which is the average number of years of life remaining for persons who have attained a given age (x). Life expectancy and other life table values for each age in 2003 are shown for the total population and by race and sex in Tables 1–9. Life expectancy is summarized by age, race, and sex in Table A.

Life expectancy at birth (e_0) for 2003 for the total population was 77.4 years. This represents the average number of years that the members of the hypothetical life table cohort may expect to live at the time of birth (Table A).

Survivors to specified ages—Another way of assessing the longevity of the synthetic life table cohort is by determining the proportion who survive to specified ages. The l_x column of the life table provides the data for computing the proportion. Table B summarizes the number of survivors by age, race, and sex. To illustrate, 52,743 persons out of the original 2003 synthetic life table cohort of 100,000 (or 52.7 percent) were alive at exact age 80. In other words, the probability that a person will survive from birth to age 80, given 2003 age-specific mortality, is 53 percent. Probabilities of survival can be calculated at any age by simply dividing the number of survivors at the terminal age by the number at the beginning age. For example, to calculate the probability of surviving from age 20 to age 85, one would divide the number of survivors at age 85 (36,981) by the number of survivors at age 20 (98,693), which results in a 37.5 percent probability of survival.

Explanation of the columns of the life table

Column 1—Age (x to $x+1$)—This column shows the age interval between the two exact ages indicated. For instance, "20–21" means the 1-year interval between the 20th and 21st birthdays.

Column 2—Probability of dying (q_x)—This column shows the probability of dying between ages x to $x+1$. For example, for males in the age interval 20–21 years, the probability of dying is 0.001293 (Table 2). The "probability of dying" column forms the basis of the life table; all subsequent columns are derived from it.

Column 3—Number surviving (l_x)—This column shows the number of persons from the original synthetic cohort of 100,000 live births, who survive to the beginning of each age interval. The l_x values are computed from the q_x values, which are successively applied to the remainder of the original 100,000 persons still alive at the beginning of each age interval. Thus out of 100,000 female babies born alive, 99,392 will complete the first year of life and enter the second; 99,217 will reach age 10; 98,949 will reach age 20; and 44,191 will live to age 85 (Table 3).

Column 4—Number dying (d_x)—This column shows the number dying in each successive age interval out of the original 100,000 live births. For example, out of 100,000 males born alive, 761 will die in the first year of life; 127 between ages 20 and 21; and 1,025 will die after reaching age 100 (Table 2). Each figure in column 4 is the difference between two successive figures in column 3.

Column 5—Person-years lived (L_x)—This column shows the number of person-years lived by the synthetic life table cohort within an age interval x to $x+1$. Each figure in column 5 represents the total time (in years) lived between two indicated birthdays by all those reaching the earlier birthday. Thus, the figure 98,386 for males in the age interval 20 to 21 years is the total number of years lived between the 20th and 21st birthdays by the 98,450 (column 3) males who reached their 20th birthday out of 100,000 males born alive (Table 2).

Column 6—Total number of person-years lived (T_x)—This column shows the total number of person-years that would be lived after the beginning of the age interval x to $x+1$ by the synthetic life table cohort.

visited on 2/14/2013

Table A. Expectation of life by age, race, and sex: United States, 2003

Age	All races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	77.4	74.7	80.0	77.9	75.3	80.4	72.6	68.9	75.9
1	77.0	74.3	79.5	77.4	74.8	79.8	72.6	69.0	75.9
5	73.1	70.4	75.6	73.4	70.9	75.9	68.7	65.2	72.0
10	68.1	65.5	70.6	68.5	65.9	71.0	63.8	60.2	67.1
15	63.2	60.5	65.7	63.5	61.0	66.0	58.9	55.3	62.1
20	58.4	55.8	60.8	58.7	56.2	61.1	54.1	50.6	57.2
25	53.6	51.2	56.0	54.0	51.6	56.3	49.5	46.2	52.4
30	48.9	46.5	51.1	49.2	46.9	51.4	44.9	41.7	47.7
35	44.1	41.8	46.3	44.5	42.2	46.6	40.3	37.3	43.0
40	39.5	37.2	41.5	39.8	37.6	41.8	35.8	32.9	38.4
45	34.9	32.8	36.9	35.2	33.1	37.1	31.5	28.6	34.0
50	30.5	28.5	32.3	30.7	28.7	32.5	27.4	24.7	29.8
55	26.2	24.3	27.9	26.4	24.5	28.0	23.7	21.1	25.7
60	22.2	20.4	23.7	22.3	20.5	23.7	20.1	17.8	21.9
65	18.4	16.8	19.7	18.4	16.8	19.7	16.8	14.8	18.3
70	14.8	13.4	15.9	14.9	13.4	15.9	13.8	12.0	15.0
75	11.7	10.5	12.5	11.6	10.4	12.5	11.1	9.6	12.1
80	8.9	7.9	9.5	8.8	7.9	9.4	8.8	7.6	9.5
85	6.6	5.9	7.0	6.5	5.8	6.9	6.9	6.0	7.3
90	4.8	4.3	5.0	4.7	4.2	4.9	5.3	4.6	5.6
95	3.5	3.1	3.5	3.4	3.0	3.4	4.1	3.5	4.2
100	2.5	2.2	2.5	2.4	2.1	2.4	3.1	2.7	3.1

Table B. Number of survivors by age, out of 100,000 born alive, by race and sex: United States, 2003

Age	All races			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,313	99,239	99,392	99,428	99,363	99,495	98,597	98,443	98,755
5	99,189	99,100	99,282	99,314	99,239	99,394	98,414	98,234	98,600
10	99,116	99,020	99,217	99,246	99,163	99,334	98,317	98,128	98,512
15	99,022	98,906	99,143	99,158	99,057	99,264	98,190	97,973	98,415
20	98,693	98,450	98,949	98,838	98,621	99,068	97,796	97,379	98,228
25	98,219	97,761	98,703	98,397	97,986	98,837	97,077	96,289	97,882
30	97,752	97,111	98,430	97,974	97,400	98,590	96,261	95,094	97,424
35	97,210	96,391	98,072	97,477	96,736	98,270	95,332	93,854	96,782
40	96,442	95,421	97,510	96,772	95,835	97,771	94,031	92,251	95,758
45	95,285	93,981	96,641	95,702	94,484	96,989	92,119	89,937	94,212
50	93,584	91,846	95,374	94,135	92,498	95,850	89,234	86,386	91,937
55	91,181	88,846	93,566	91,918	89,721	94,203	85,107	81,203	88,767
60	87,774	84,725	90,871	88,685	85,811	91,657	79,721	74,565	84,520
65	82,688	78,694	86,712	83,777	79,989	87,656	72,483	65,888	78,573
70	75,555	70,382	80,712	76,761	71,795	81,786	63,612	55,703	70,888
75	65,717	59,229	72,078	66,938	60,634	73,206	52,650	43,618	60,894
80	52,743	45,080	60,060	53,819	46,271	61,108	40,050	30,646	48,546
85	36,981	29,188	44,191	37,705	29,942	44,936	27,023	18,595	34,616
90	20,898	14,743	26,387	21,152	14,988	26,660	15,333	9,269	20,757
95	8,499	5,110	11,360	8,423	5,063	11,249	6,832	3,484	9,762
100	2,118	1,025	2,952	2,006	962	2,793	2,183	896	3,251

For example, the figure 5,494,007 is the total number of years lived after attaining age 20 by the 98,450 males reaching that age (Table 2).

Column 7—Expectation of life (e_x)—The expectation of life at any given age is the average number of years remaining to be lived by those surviving to that age on the basis of a given set of age-specific rates of dying. It is derived by dividing the total person-years that would be lived above age x by the number of persons who survived to that age interval (T_x/l_x). Thus, the average remaining lifetime for males who reach age 20 is 55.8 years (5,494,007 divided by 98,450) (Table 2).

Results

Life expectancy in the United States

Tables 1–9 show complete life tables by race (white and black) and sex for 2003. Tables A and B summarize life expectancy and survival by age, race, and sex. Life expectancy at birth for 2003 represents the average number of years that a group of infants would

visited on 2/14/2013

live if the infants were to experience throughout life the age-specific death rates prevailing in 2003. In 2003, life expectancy at birth was 77.4 years, increasing by 0.1 years from 77.3 years in 2002. This increase is typical of the average yearly changes that occurred during the last 30 years in the United States. Throughout the past century, the trend in U.S. life expectancy was one of gradual improvement, which has continued into the new century (11).

Life expectancy in 2003 was 74.7 years for males, increasing by 0.2 year from 74.5 years in 2002. Life expectancy for females was 80.0 years, increasing by 0.1 year from 79.9 years in 2002. The increase in life expectancy between 2002 and 2003 for females was primarily the result of decreases in mortality from diseases of heart, malignant neoplasms, and cerebrovascular diseases. The increase in life expectancy for females could have been greater were it not for the offsetting effect of increases in mortality from accidents (unintentional injuries), Alzheimer's disease, and essential (primary) hypertension and hypertensive renal disease. For males, life expectancy increased primarily because of decreases in mortality from diseases of heart, malignant neoplasms, and cerebrovascular diseases. The increase in life expectancy for males could have been greater were it not for the offsetting increases in mortality from Alzheimer's disease, essential (primary) hypertension and hypertensive renal disease, and nephritis, nephrotic syndrome and nephrosis (12).

The difference in life expectancy between the sexes was 5.3 years in 2003, down by 0.1 year from 2002. From 1900 to 1975, the difference in life expectancy between the sexes increased from 2.0 years to 7.8 years. The increasing gap during these years is attributed to increases in male mortality due to ischemic heart disease and lung cancer, both of which increased largely as the result of men's early and widespread adoption of cigarette smoking (11,13). Since 1979, the difference in life expectancy between the sexes has narrowed from 7.8 years to 5.3 years, reflecting proportionately greater increases in lung cancer mortality for women than for men and proportionately larger decreases in heart disease mortality among men (11,13).

Between 2002 and 2003, life expectancy for the black population rose 0.3 years to 72.6 years. For the white population, life expectancy rose by 0.2 years to 77.9 years. The difference in life expectancy between the white and black populations was 5.3 years in 2003, a historically record low level. The white-black difference in life expectancy narrowed from 14.6 years in 1900 to 5.7 years in 1982, but increased to 7.1 years in 1993 before beginning to decline again in 1994 (7.0 years). The increase in the gap from 1983 to 1993 was largely the result of increases in mortality among the black male population due to HIV infection and homicide (11,14).

Among the four race-sex groups (Figure 1), white females continued to have the highest life expectancy at birth (80.4 years), followed by black females (75.9 years), white males (75.3 years), and black males (68.9 years). Between 2002 and 2003, life expectancy increased 0.1 years for black males (from 68.8 in 2002 to 68.9 in 2003). Black males experienced an unprecedented decline in life expectancy every year for 1984–89 (13), but annual increases in 1990–92 and 1994–2003. From 2002 to 2003, life expectancy for black females increased from 75.6 years to 75.9 years, an increase of 0.3 years. Life expectancy for white males rose 0.2 years, from 75.1 years in 2002 to 75.3 years in 2003. White female life expectancy increased during the same period by 0.1 years from 80.3 to 80.4 years. Overall, gains in life expectancy between 1980 and 2003 were 5.1 years for black males, 4.6 years for white males, 3.4 years for black females, and 2.3 years for white females (Table 12).

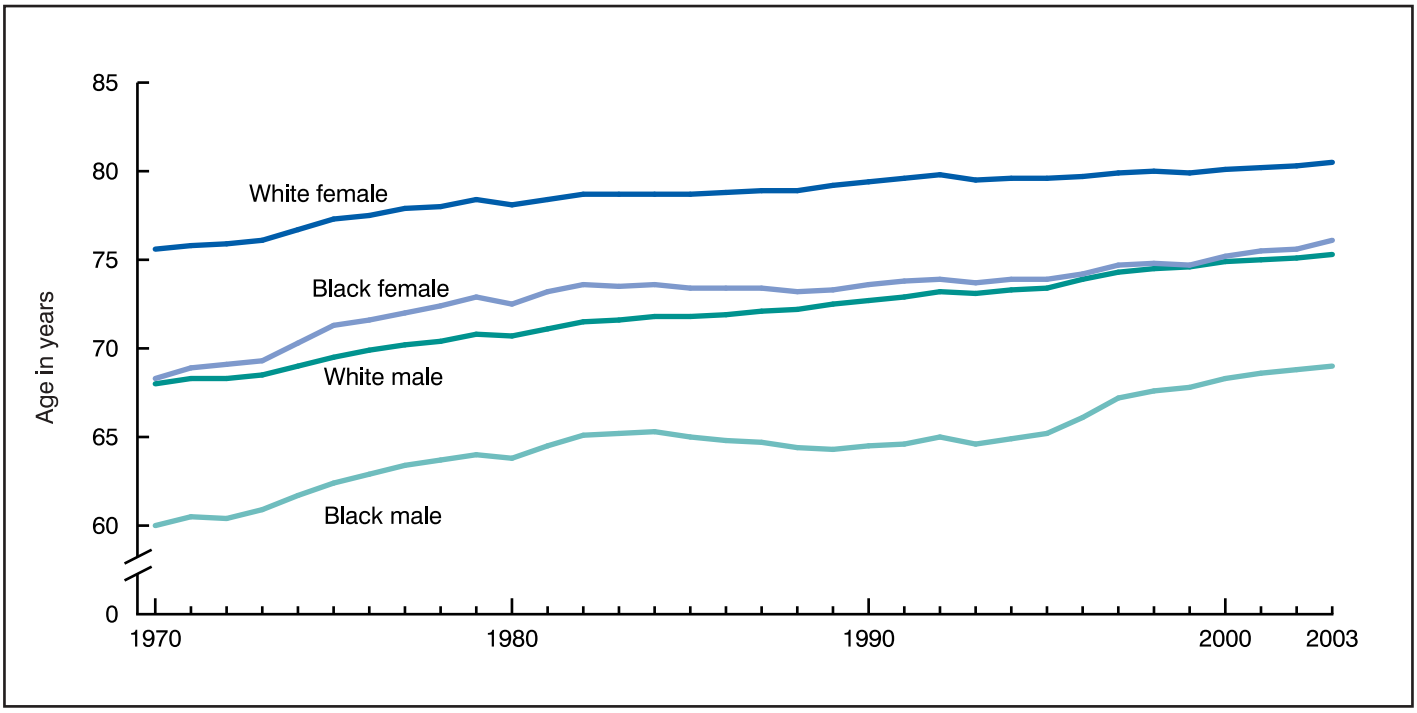

Figure 1. Life expectancy at birth by race and sex: 1970–2003

visited on 2/14/2013

The 2003 life table may be used to compare life expectancy at any age from birth onward. On the basis of mortality experienced in 2003, a person aged 65 years could expect to live an average of 18.4 more years for a total of 83.4 years, and a person age 100 years could expect to live an additional 2.5 years on average (Table A). Life expectancy at 100 years of age, particularly for the black population, should be interpreted with caution as these figures may be affected somewhat by age misreporting (9,15,16).

Survivorship in the United States

Table B summarizes the number of survivors out of 100,000 persons born alive (lx) by age, race, and sex. Table 10 shows trends in survivorship from 1900 to 2003. In 2003, 99.3 percent of all infants born in the United States survived the first year of life. In contrast, only 87.6 percent of infants born in 1900 survived the first year. Fifty-three percent of the 2003 synthetic life table cohort survived to age 80 years, and about 2.1 percent survived to age 100 years. In 1900, the median age at death was 58 years, and only 0.03 percent survived to age 100.

Among the four race-sex groups (Figure 2 and Table B), white females have the highest median age at death with about 48.5 percent surviving to age 84. Of the original hypothetical cohort of 100,000 infant white females, 99.1 percent survive to age 20, 87.6 percent survive to age 65, and 44.9 percent survive to age 85. For white males and black females, the pattern of survival by age is similar. These groups have approximately the same median age at death of about 79 years. However, white males have slightly higher survival rates than black females at the younger ages with 98.6 percent surviving to age 20 and 80.0 percent surviving to age 65 compared with 98.2 percent and 78.6 percent, respectively, for black females. At the older ages, in contrast, black female survival surpasses white male survival. At age 85, white male survival is 29.9 percent compared with 34.6 percent for black females. This crossover, which occurs at about age 72, is clearly shown in Figure 2. The median age at death for black males is 72 years, 11 years less than that for white females; 97.4 percent of black males survive to age 20, 65.9 percent to age 65, and 18.6 percent to age 85. By age 100, there is very little difference between the white and black populations in terms of survival. Approximately 1 percent of white and black males and 3 percent of white and black females, respectively, survive to age 100.

Plotting the percentage surviving by age for the periods 1900–1902, 1949–51, and 2003 shows an increasingly rectangular survival curve (Figure 3). That is, the survival curve has become increasingly flat in response to progressively lower mortality, particularly at the younger ages, and increasingly vertical at the older ages. The survival curve for 1900–1902 shows a rapid decline in survival in the first few years of life and a relatively steady decline thereafter. In contrast, the survival curve for 2003 is nearly flat until about age 50, after which the decline in survival becomes more rapid. Improvements in survival between 1900–1902 and 1949–51 occurred at all ages, although the largest improvements were among the younger population. Between 1949–51 and 2003, improvements occurred primarily for the older population.

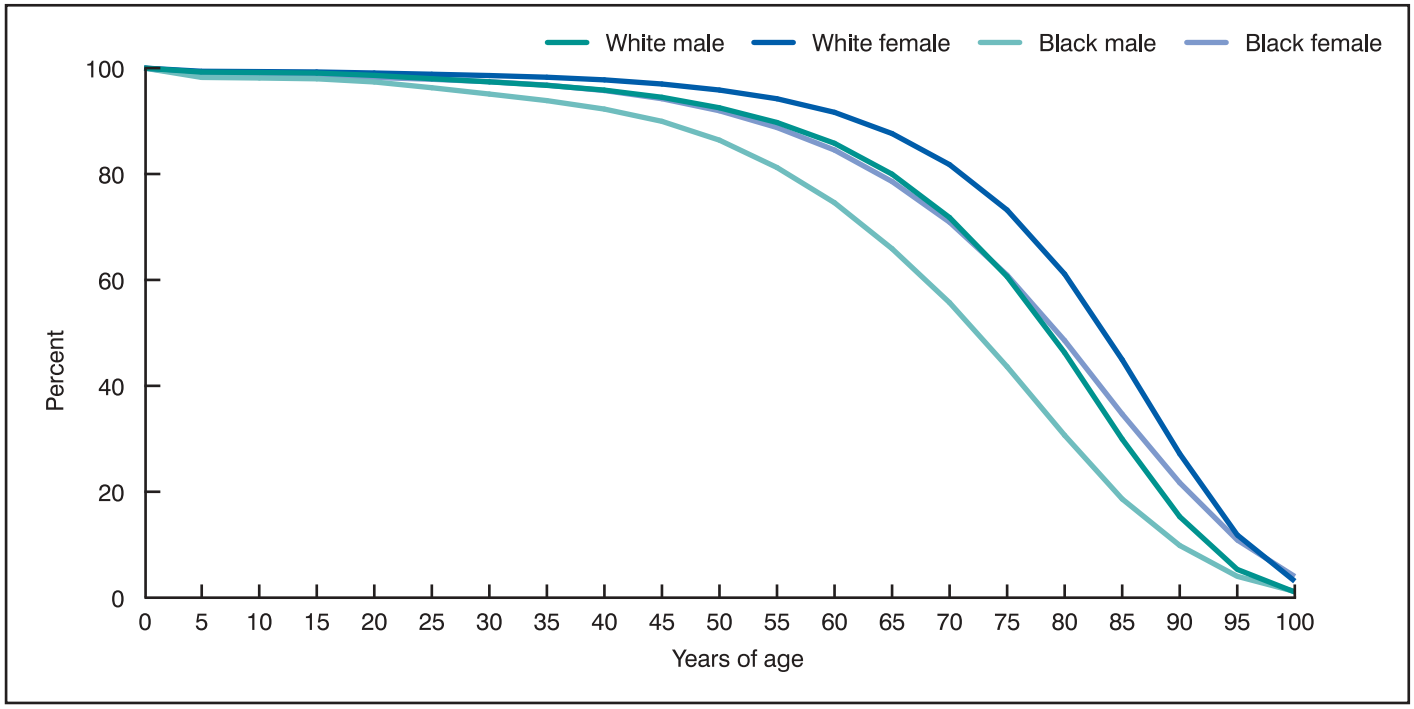

Figure 2. Percent surviving by age, race, and sex: United States, 2003

visited on 2/14/2013

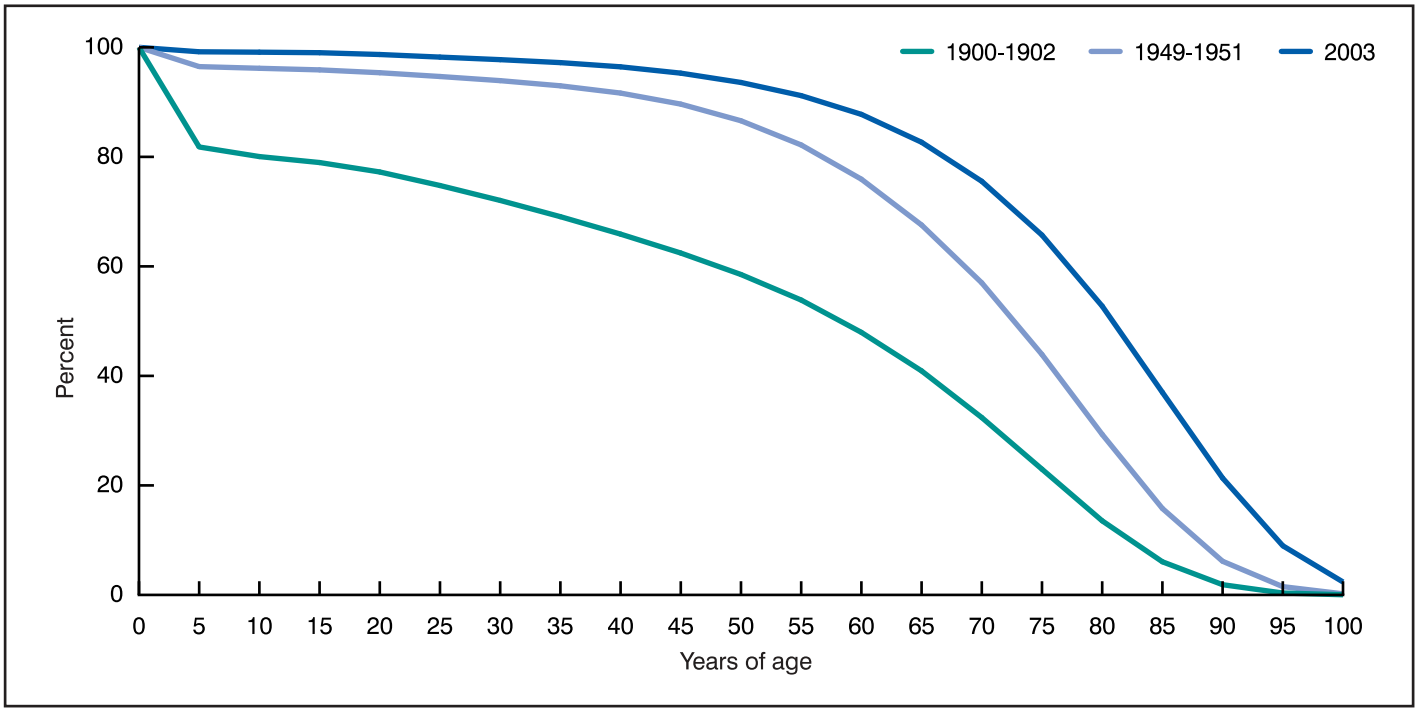

Figure 3. Percent surviving by age: Death-registration States, 1900–1902, and United States, 1949–51 and 2003

References

1. Shryock HS, Siegel JS, et al. The methods and materials of demography, vol 2. U.S. Bureau of the Census. Washington: U.S. Government Printing Office. 1971.
2. Moriyama IM, Gustavus SO. Cohort mortality and survivorship, United States death-registration States, 1900–68. National Center for Health Statistics. Vital Health Stat 3(16). 1972.
3. Preston SM, Heuveline P, Guillot M. Demography, Measuring and Modeling Population Processes. Oxford: Blackwell Publishers. 2001.
4. Office of Management and Budget. Revisions to the standards for the classification of Federal data on race and ethnicity. Federal Register 62FR58782–58790. October 30, 1997. Available from: http://www.whitehouse.gov/omb/fedreg/ombdir15.html.
5. Office of Management and Budget. Race and ethnic standards for Federal statistics and administrative reporting. Statistical policy directive 15. 1977.
6. U.S. Census Bureau. Age, sex, race, and Hispanic origin information from the 1990 census: A comparison of census results with results where age and race have been modified, 1990. CPH-L-74. Washington: U.S. Department of Commerce. 1991.
7. Ingram DD, Parker JD, Schenker N, Weed JA, Hamilton B, Arias E, Madans JH. United States census 2000 population with bridged race categories. Vital Health Stat 2(135). 2003.
8. Sirken MG. Comparison of two methods of constructing abridged life tables by reference to a "standard" table. National Center for Health Statistics. Vital Health Stat 2(4). 1966.
9. Anderson RN. A method for constructing complete annual U.S. life tables. National Center for Health Statistics. Vital Health Stat 2(129). 1999.
10. Armstrong RJ. Methodology of the national and state life tables. U.S. decennial life tables for 1989–91, vol 1 no 2. Hyattsville, MD: National Center for Health Statistics. 1998.
11. Anderson RN. Some trends and comparisons of United States life table data: 1900–1991. U.S. decennial life tables for 1989–91, vol 1 no 3. Hyattsville, MD: National Center for Health Statistics. 1999.
12. Hoyert DL, Heron M, Murphy SL, Kung HC. Deaths: Final data for 2003. National vital statistics reports, vol 54 no 13. Hyattsville, MD: National Center for Health Statistics. 2006.
13. Waldron I. Recent trends in sex mortality ratios for adults in developed countries. Soc Sci Med 36:451–62. 1993.
14. Kochanek KD, Maurer JD, Rosenberg HM. Causes of death contributing to changes in life expectancy: United States, 1984–89. Vital Health Stat 20(23). 1994.
15. Kestenbaum B. A description of the extreme aged population based on improved Medicare enrollment data. Demography 29:565–80. 1992.
16. Coale AJ, Kisker EE. Defects in data on old-age mortality in the United States: New procedures for calculating mortality schedules and life tables at the highest ages. Asian and Pacific Population Forum 4: 1–31. 1990.
17. Anderson RN, Arias E. The Effect of Revised Populations on Mortality Statistics for the United States, 2000. National vital statistics reports, vol 51 no 9. Hyattsville, MD: National Center for Health Statistics. 2003.
18. Greville TNE, Carlson GA. Estimated average length of life in the death-registration States. National Center for Health Statistics. Vital statistics—special reports, vol 33 no 9. Washington: Public Health Service. 1951.
19. Kestenbaum B. Recent mortality of the oldest old, from Medicare data. Paper presented at the 1997 meetings of the Population Association of America, March 27–29. 1997.
20. Horiuchi S, Wilmoth JR. Deceleration in the age pattern of mortality at older ages. Demography, 35:391–412. 1998.
21. Wilmoth JR. Are mortality rates falling at extremely high ages? An investigation based on a model proposed by Coale and Kisker. Population Studies 49:281–95. 1995.

visited on 2/14/2013

List of Detailed Tables

1. Life table for the total population: United States, 2003 8
2. Life table for males: United States, 2003 10
3. Life table for females: United States, 2003 12
4. Life table for the white population: United States, 2003. 14
5. Life table for white males: United States, 2003 16
6. Life table for white females: United States, 2003 18
7. Life table for the black population: United States, 2003. 20
8. Life table for black males: United States, 2003 22
9. Life table for black females: United States, 2003 24
10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003 26
11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003 30
12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–2003 34

visited on 2/14/2013

Table 1. Life table for the total population: United States, 2003

Click here for spreadhseet version

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.006865	100,000	687	99,394	7,743,016	77.4
1–2	0.000469	99,313	47	99,290	7,643,622	77.0
2–3	0.000337	99,267	33	99,250	7,544,332	76.0
3–4	0.000254	99,233	25	99,221	7,445,082	75.0
4–5	0.000194	99,208	19	99,199	7,345,861	74.0
5–6	0.000177	99,189	18	99,180	7,246,663	73.1
6–7	0.000160	99,171	16	99,163	7,147,482	72.1
7–8	0.000147	99,156	15	99,148	7,048,319	71.1
8–9	0.000132	99,141	13	99,134	6,949,171	70.1
9–10	0.000117	99,128	12	99,122	6,850,036	69.1
10–11	0.000109	99,116	11	99,111	6,750,914	68.1
11–12	0.000118	99,105	12	99,100	6,651,803	67.1
12–13	0.000157	99,094	16	99,086	6,552,704	66.1
13–14	0.000233	99,078	23	99,067	6,453,618	65.1
14–15	0.000339	99,055	34	99,038	6,354,551	64.2
15–16	0.000460	99,022	46	98,999	6,255,513	63.2
16–17	0.000577	98,976	57	98,947	6,156,514	62.2
17–18	0.000684	98,919	68	98,885	6,057,566	61.2
18–19	0.000769	98,851	76	98,813	5,958,681	60.3
19–20	0.000832	98,775	82	98,734	5,859,868	59.3
20–21	0.000894	98,693	88	98,649	5,761,134	58.4
21–22	0.000954	98,605	94	98,558	5,662,485	57.4
22–23	0.000990	98,511	98	98,462	5,563,928	56.5
23–24	0.000997	98,413	98	98,364	5,465,466	55.5
24–25	0.000982	98,315	97	98,267	5,367,101	54.6
25–26	0.000960	98,219	94	98,171	5,268,835	53.6
26–27	0.000942	98,124	92	98,078	5,170,663	52.7
27–28	0.000936	98,032	92	97,986	5,072,585	51.7
28–29	0.000947	97,940	93	97,894	4,974,599	50.8
29–30	0.000974	97,847	95	97,800	4,876,705	49.8
30–31	0.001008	97,752	98	97,703	4,778,906	48.9
31–32	0.001046	97,654	102	97,603	4,681,203	47.9
32–33	0.001097	97,551	107	97,498	4,583,600	47.0
33–34	0.001162	97,444	113	97,388	4,486,102	46.0
34–35	0.001244	97,331	121	97,271	4,388,715	45.1
35–36	0.001336	97,210	130	97,145	4,291,444	44.1
36–37	0.001441	97,080	140	97,010	4,194,299	43.2
37–38	0.001567	96,940	152	96,864	4,097,289	42.3
38–39	0.001714	96,788	166	96,705	4,000,424	41.3
39–40	0.001874	96,623	181	96,532	3,903,719	40.4
40–41	0.002038	96,442	197	96,343	3,807,187	39.5
41–42	0.002207	96,245	212	96,139	3,710,844	38.6
42–43	0.002389	96,033	229	95,918	3,614,705	37.6
43–44	0.002593	95,803	248	95,679	3,518,787	36.7
44–45	0.002819	95,555	269	95,420	3,423,108	35.8
45–46	0.003064	95,285	292	95,139	3,327,688	34.9
46–47	0.003322	94,993	316	94,836	3,232,548	34.0
47–48	0.003589	94,678	340	94,508	3,137,713	33.1
48–49	0.003863	94,338	364	94,156	3,043,205	32.3
49–50	0.004148	93,974	390	93,779	2,949,049	31.4
50–51	0.004458	93,584	417	93,375	2,855,270	30.5
51–52	0.004800	93,167	447	92,943	2,761,895	29.6
52–53	0.005165	92,719	479	92,480	2,668,952	28.8
53–54	0.005554	92,241	512	91,984	2,576,472	27.9
54–55	0.005971	91,728	548	91,454	2,484,487	27.1
55–56	0.006423	91,181	586	90,888	2,393,033	26.2
56–57	0.006925	90,595	627	90,281	2,302,145	25.4
57–58	0.007496	89,968	674	89,630	2,211,864	24.6
58–59	0.008160	89,293	729	88,929	2,122,234	23.8
59–60	0.008927	88,565	791	88,169	2,033,305	23.0
60–61	0.009827	87,774	863	87,343	1,945,136	22.2
61–62	0.010831	86,911	941	86,441	1,857,793	21.4
62–63	0.011872	85,970	1021	85,460	1,771,352	20.6
63–64	0.012891	84,949	1095	84,402	1,685,892	19.8
64–65	0.013908	83,854	1166	83,271	1,601,490	19.1
65–66	0.015003	82,688	1241	82,068	1,518,219	18.4
66–67	0.016267	81,448	1325	80,785	1,436,151	17.6

visited on 2/14/2013

Table 1. Life table for the total population: United States, 2003—Con.

Click here for spreadhseet version

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
67–68	0.017699	80,123	1418	79,414	1,355,366	16.9
68–69	0.019320	78,705	1521	77,944	1,275,953	16.2
69–70	0.021108	77,184	1629	76,369	1,198,008	15.5
70–71	0.022950	75,555	1734	74,688	1,121,639	14.8
71–72	0.024904	73,821	1838	72,902	1,046,951	14.2
72–73	0.027151	71,982	1954	71,005	974,050	13.5
73–74	0.029784	70,028	2086	68,985	903,044	12.9
74–75	0.032753	67,942	2225	66,830	834,059	12.3
75–76	0.035831	65,717	2355	64,540	767,230	11.7
76–77	0.038987	63,362	2470	62,127	702,690	11.1
77–78	0.042503	60,892	2588	59,598	640,563	10.5
78–79	0.046557	58,304	2714	56,947	580,965	10.0
79–80	0.051200	55,589	2846	54,166	524,019	9.4
80–81	0.056335	52,743	2971	51,258	469,853	8.9
81–82	0.061837	49,772	3078	48,233	418,595	8.4
82–83	0.067856	46,694	3168	45,110	370,362	7.9
83–84	0.074504	43,526	3243	41,904	325,252	7.5
84–85	0.081975	40,283	3302	38,632	283,348	7.0
85–86	0.089682	36,981	3317	35,322	244,716	6.6
86–87	0.098031	33,664	3300	32,014	209,394	6.2
87–88	0.107059	30,364	3251	28,739	177,380	5.8
88–89	0.116804	27,113	3167	25,530	148,641	5.5
89–90	0.127300	23,946	3048	22,422	123,111	5.1
90–91	0.138581	20,898	2896	19,450	100,689	4.8
91–92	0.150676	18,002	2712	16,646	81,239	4.5
92–93	0.163611	15,289	2502	14,039	64,594	4.2
93–94	0.177408	12,788	2269	11,654	50,555	4.0
94–95	0.192080	10,519	2021	9,509	38,901	3.7
95–96	0.207636	8,499	1765	7,616	29,392	3.5
96–97	0.224075	6,734	1509	5,980	21,776	3.2
97–98	0.241387	5,225	1261	4,594	15,796	3.0
98–99	0.259552	3,964	1029	3,449	11,202	2.8
99–100	0.278539	2,935	818	2,526	7,752	2.6
100+	1.00000	2,118	2118	5,226	5,226	2.5

visited on 2/14/2013

Table 2. Life table for males: United States, 2003

Click here for spreadhseet version

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.007611	100,000	761	99,329	7,473,674	74.7
1–2	0.000522	99,239	52	99,213	7,374,345	74.3
2–3	0.000371	99,187	37	99,169	7,275,132	73.3
3–4	0.000288	99,150	29	99,136	7,175,963	72.4
4–5	0.000215	99,122	21	99,111	7,076,827	71.4
5–6	0.000196	99,100	19	99,091	6,977,716	70.4
6–7	0.000179	99,081	18	99,072	6,878,625	69.4
7–8	0.000165	99,063	16	99,055	6,779,553	68.4
8–9	0.000147	99,047	15	99,040	6,680,498	67.4
9–10	0.000126	99,032	12	99,026	6,581,458	66.5
10–11	0.000113	99,020	11	99,014	6,482,432	65.5
11–12	0.000125	99,009	12	99,003	6,383,418	64.5
12–13	0.000180	98,996	18	98,987	6,284,415	63.5
13–14	0.000291	98,979	29	98,964	6,185,428	62.5
14–15	0.000445	98,950	44	98,928	6,086,464	61.5
15–16	0.000618	98,906	61	98,875	5,987,536	60.5
16–17	0.000787	98,845	78	98,806	5,888,661	59.6
17–18	0.000946	98,767	93	98,720	5,789,855	58.6
18–19	0.001079	98,673	106	98,620	5,691,135	57.7
19–20	0.001186	98,567	117	98,508	5,592,515	56.7
20–21	0.001293	98,450	127	98,386	5,494,007	55.8
21–22	0.001392	98,323	137	98,254	5,395,621	54.9
22–23	0.001449	98,186	142	98,115	5,297,366	54.0
23–24	0.001456	98,044	143	97,972	5,199,252	53.0
24–25	0.001424	97,901	139	97,831	5,101,279	52.1
25–26	0.001376	97,761	135	97,694	5,003,448	51.2
26–27	0.001334	97,627	130	97,562	4,905,754	50.3
27–28	0.001308	97,497	128	97,433	4,808,192	49.3
28–29	0.001311	97,369	128	97,305	4,710,759	48.4
29–30	0.001339	97,241	130	97,176	4,613,454	47.4
30–31	0.001377	97,111	134	97,044	4,516,278	46.5
31–32	0.001417	96,978	137	96,909	4,419,233	45.6
32–33	0.001471	96,840	142	96,769	4,322,325	44.6
33–34	0.001541	96,698	149	96,623	4,225,556	43.7
34–35	0.001628	96,549	157	96,470	4,128,933	42.8
35–36	0.001729	96,391	167	96,308	4,032,463	41.8
36–37	0.001848	96,225	178	96,136	3,936,155	40.9
37–38	0.001995	96,047	192	95,951	3,840,019	40.0
38–39	0.002171	95,855	208	95,751	3,744,068	39.1
39–40	0.002365	95,647	226	95,534	3,648,317	38.1
40–41	0.002566	95,421	245	95,299	3,552,783	37.2
41–42	0.002775	95,176	264	95,044	3,457,484	36.3
42–43	0.003006	94,912	285	94,769	3,362,440	35.4
43–44	0.003270	94,627	309	94,472	3,267,671	34.5
44–45	0.003566	94,317	336	94,149	3,173,199	33.6
45–46	0.003889	93,981	365	93,798	3,079,050	32.8
46–47	0.004225	93,615	396	93,418	2,985,251	31.9
47–48	0.004575	93,220	426	93,007	2,891,834	31.0
48–49	0.004932	92,793	458	92,565	2,798,827	30.2
49–50	0.005303	92,336	490	92,091	2,706,263	29.3
50–51	0.005708	91,846	524	91,584	2,614,172	28.5
51–52	0.006148	91,322	561	91,041	2,522,588	27.6
52–53	0.006606	90,760	600	90,461	2,431,547	26.8
53–54	0.007074	90,161	638	89,842	2,341,086	26.0
54–55	0.007561	89,523	677	89,185	2,251,244	25.1
55–56	0.008082	88,846	718	88,487	2,162,060	24.3
56–57	0.008662	88,128	763	87,746	2,073,573	23.5
57–58	0.009332	87,365	815	86,957	1,985,826	22.7
58–59	0.010128	86,549	877	86,111	1,898,869	21.9
59–60	0.011061	85,673	948	85,199	1,812,758	21.2
60–61	0.012157	84,725	1,030	84,210	1,727,559	20.4
61–62	0.013379	83,695	1,120	83,135	1,643,349	19.6
62–63	0.014658	82,575	1,210	81,970	1,560,213	18.9
63–64	0.015922	81,365	1,295	80,717	1,478,243	18.2
64–65	0.017186	80,070	1,376	79,382	1,397,526	17.5
65–66	0.018538	78,694	1,459	77,964	1,318,144	16.8
66–67	0.020089	77,235	1,552	76,459	1,240,180	16.1

visited on 2/14/2013

Table 2. Life table for males: United States, 2003—Con.

Click here for spreadhseet version

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
67–68	0.021847	75,683	1,653	74,856	1,163,721	15.4
68–69	0.023845	74,030	1,765	73,147	1,088,865	14.7
69–70	0.026053	72,265	1,883	71,323	1,015,718	14.1
70–71	0.028315	70,382	1,993	69,385	944,394	13.4
71–72	0.030693	68,389	2,099	67,339	875,009	12.8
72–73	0.033440	66,290	2,217	65,181	807,670	12.2
73–74	0.036693	64,073	2,351	62,898	742,488	11.6
74–75	0.040399	61,722	2,493	60,475	679,591	11.0
75–76	0.044294	59,229	2,623	57,917	619,115	10.5
76–77	0.048274	56,605	2,733	55,239	561,198	9.9
77–78	0.052603	53,873	2,834	52,456	505,960	9.4
78–79	0.057451	51,039	2,932	49,573	453,504	8.9
79–80	0.062909	48,106	3,026	46,593	403,931	8.4
80–81	0.069071	45,080	3,114	43,523	357,338	7.9
81–82	0.075759	41,966	3,179	40,377	313,815	7.5
82–83	0.082842	38,787	3,213	37,181	273,438	7.0
83–84	0.090223	35,574	3,210	33,969	236,257	6.6
84–85	0.098137	32,364	3,176	30,776	202,288	6.3
85–86	0.106994	29,188	3,123	27,627	171,512	5.9
86–87	0.116538	26,065	3,038	24,546	143,885	5.5
87–88	0.126802	23,028	2,920	21,568	119,339	5.2
88–89	0.137815	20,108	2,771	18,722	97,771	4.9
89–90	0.149607	17,337	2,594	16,040	79,049	4.6
90–91	0.162199	14,743	2,391	13,547	63,010	4.3
91–92	0.175613	12,352	2,169	11,267	49,462	4.0
92–93	0.189860	10,182	1,933	9,216	38,195	3.8
93–94	0.204947	8,249	1,691	7,404	28,979	3.5
94–95	0.220874	6,559	1,449	5,834	21,575	3.3
95–96	0.237632	5,110	1,214	4,503	15,741	3.1
96–97	0.255201	3,896	994	3,399	11,238	2.9
97–98	0.273553	2,901	794	2,505	7,840	2.7
98–99	0.292650	2,108	617	1,799	5,335	2.5
99–100	0.312443	1,491	466	1,258	3,536	2.4
100+	1.00000	1,025	1,025	2,278	2,278	2.2

visited on 2/14/2013

Table 3. Life table for females: United States, 2003

Click here for spreadhseet version

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.006083	100,000	608	99,460	8,001,484	80.0
1–2	0.000414	99,392	41	99,371	7,902,023	79.5
2–3	0.000301	99,351	30	99,336	7,802,652	78.5
3–4	0.000218	99,321	22	99,310	7,703,317	77.6
4–5	0.000172	99,299	17	99,290	7,604,007	76.6
5–6	0.000158	99,282	16	99,274	7,504,716	75.6
6–7	0.000141	99,266	14	99,259	7,405,442	74.6
7–8	0.000128	99,252	13	99,246	7,306,183	73.6
8–9	0.000117	99,240	12	99,234	7,206,937	72.6
9–10	0.000108	99,228	11	99,223	7,107,703	71.6
10–11	0.000105	99,217	10	99,212	7,008,481	70.6
11–12	0.000110	99,207	11	99,201	6,909,269	69.6
12–13	0.000132	99,196	13	99,189	6,810,067	68.7
13–14	0.000173	99,183	17	99,174	6,710,878	67.7
14–15	0.000228	99,166	23	99,154	6,611,704	66.7
15–16	0.000293	99,143	29	99,129	6,512,549	65.7
16–17	0.000356	99,114	35	99,096	6,413,421	64.7
17–18	0.000408	99,079	40	99,059	6,314,324	63.7
18–19	0.000440	99,038	44	99,017	6,215,266	62.8
19–20	0.000457	98,995	45	98,972	6,116,249	61.8
20–21	0.000472	98,949	47	98,926	6,017,277	60.8
21–22	0.000489	98,903	48	98,879	5,918,351	59.8
22–23	0.000502	98,854	50	98,830	5,819,473	58.9
23–24	0.000510	98,805	50	98,780	5,720,643	57.9
24–25	0.000516	98,754	51	98,729	5,621,863	56.9
25–26	0.000522	98,703	52	98,678	5,523,134	56.0
26–27	0.000533	98,652	53	98,626	5,424,457	55.0
27–28	0.000548	98,599	54	98,572	5,325,831	54.0
28–29	0.000570	98,545	56	98,517	5,227,259	53.0
29–30	0.000597	98,489	59	98,460	5,128,742	52.1
30–31	0.000629	98,430	62	98,399	5,030,282	51.1
31–32	0.000667	98,368	66	98,336	4,931,882	50.1
32–33	0.000716	98,303	70	98,268	4,833,547	49.2
33–34	0.000778	98,233	76	98,194	4,735,279	48.2
34–35	0.000854	98,156	84	98,114	4,637,085	47.2
35–36	0.000938	98,072	92	98,026	4,538,970	46.3
36–37	0.001031	97,980	101	97,930	4,440,944	45.3
37–38	0.001137	97,879	111	97,824	4,343,014	44.4
38–39	0.001256	97,768	123	97,707	4,245,191	43.4
39–40	0.001383	97,645	135	97,578	4,147,484	42.5
40–41	0.001512	97,510	147	97,436	4,049,907	41.5
41–42	0.001644	97,363	160	97,283	3,952,470	40.6
42–43	0.001780	97,203	173	97,116	3,855,188	39.7
43–44	0.001926	97,029	187	96,936	3,758,072	38.7
44–45	0.002084	96,843	202	96,742	3,661,136	37.8
45–46	0.002257	96,641	218	96,532	3,564,394	36.9
46–47	0.002439	96,423	235	96,305	3,467,862	36.0
47–48	0.002629	96,187	253	96,061	3,371,557	35.1
48–49	0.002824	95,935	271	95,799	3,275,496	34.1
49–50	0.003030	95,664	290	95,519	3,179,697	33.2
50–51	0.003254	95,374	310	95,219	3,084,179	32.3
51–52	0.003504	95,063	333	94,897	2,988,960	31.4
52–53	0.003786	94,730	359	94,551	2,894,063	30.6
53–54	0.004102	94,372	387	94,178	2,799,512	29.7
54–55	0.004456	93,984	419	93,775	2,705,334	28.8
55–56	0.004847	93,566	454	93,339	2,611,559	27.9
56–57	0.005278	93,112	491	92,866	2,518,221	27.0
57–58	0.005762	92,621	534	92,354	2,425,354	26.2
58–59	0.006311	92,087	581	91,796	2,333,000	25.3
59–60	0.006935	91,506	635	91,189	2,241,204	24.5
60–61	0.007669	90,871	697	90,523	2,150,015	23.7
61–62	0.008492	90,174	766	89,792	2,059,492	22.8
62–63	0.009338	89,409	835	88,991	1,969,701	22.0
63–64	0.010156	88,574	900	88,124	1,880,710	21.2
64–65	0.010972	87,674	962	87,193	1,792,585	20.4
65–66	0.011861	86,712	1,028	86,198	1,705,392	19.7
66–67	0.012902	85,684	1,105	85,131	1,619,194	18.9

visited on 2/14/2013

Table 3. Life table for females: United States, 2003—Con.

Click here for spreadhseet version

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
67–68	0.014086	84,578	1,191	83,983	1,534,063	18.1
68–69	0.015429	83,387	1,287	82,744	1,450,080	17.4
69–70	0.016916	82,100	1,389	81,406	1,367,337	16.7
70–71	0.018468	80,712	1,491	79,966	1,285,931	15.9
71–72	0.020140	79,221	1,595	78,423	1,205,965	15.2
72–73	0.022067	77,625	1,713	76,769	1,127,541	14.5
73–74	0.024315	75,913	1,846	74,990	1,050,772	13.8
74–75	0.026843	74,067	1,988	73,073	975,783	13.2
75–76	0.029448	72,078	2,123	71,017	902,710	12.5
76–77	0.032155	69,956	2,249	68,831	831,693	11.9
77–78	0.035257	67,706	2,387	66,513	762,862	11.3
78–79	0.038947	65,319	2,544	64,047	696,349	10.7
79–80	0.043250	62,775	2,715	61,418	632,302	10.1
80–81	0.047952	60,060	2,880	58,620	570,884	9.5
81–82	0.052970	57,180	3,029	55,666	512,264	9.0
82–83	0.058629	54,151	3,175	52,564	456,598	8.4
83–84	0.065153	50,977	3,321	49,316	404,034	7.9
84–85	0.072705	47,655	3,465	45,923	354,718	7.4
85–86	0.080141	44,191	3,541	42,420	308,795	7.0
86–87	0.088261	40,649	3,588	38,855	266,375	6.6
87–88	0.097113	37,061	3,599	35,262	227,520	6.1
88–89	0.106742	33,462	3,572	31,676	192,258	5.7
89–90	0.117194	29,890	3,503	28,139	160,582	5.4
90–91	0.128514	26,387	3,391	24,692	132,443	5.0
91–92	0.140742	22,996	3,237	21,378	107,751	4.7
92–93	0.153916	19,760	3,041	18,239	86,373	4.4
93–94	0.168066	16,718	2,810	15,314	68,134	4.1
94–95	0.183218	13,909	2,548	12,634	52,820	3.8
95–96	0.199387	11,360	2,265	10,228	40,186	3.5
96–97	0.216580	9,095	1,970	8,110	29,958	3.3
97–98	0.234792	7,125	1,673	6,289	21,848	3.1
98–99	0.254004	5,452	1,385	4,760	15,559	2.9
99–100	0.274185	4,067	1,115	3,510	10,799	2.7
100+	1.00000	2,952	2,952	7,289	7,289	2.5

visited on 2/14/2013

Table 4. Life table for the white population: United States, 2003

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.005725	100,000	572	99,494	7,790,790	77.9
1–2	0.000418	99,428	42	99,407	7,691,295	77.4
2–3	0.000301	99,386	30	99,371	7,591,889	76.4
3–4	0.000232	99,356	23	99,344	7,492,518	75.4
4–5	0.000186	99,333	19	99,324	7,393,173	74.4
5–6	0.000164	99,314	16	99,306	7,293,849	73.4
6–7	0.000151	99,298	15	99,291	7,194,543	72.5
7–8	0.000140	99,283	14	99,276	7,095,252	71.5
8–9	0.000125	99,269	12	99,263	6,995,976	70.5
9–10	0.000108	99,257	11	99,252	6,896,713	69.5
10–11	0.000097	99,246	10	99,241	6,797,462	68.5
11–12	0.000103	99,237	10	99,231	6,698,220	67.5
12–13	0.000141	99,226	14	99,219	6,598,989	66.5
13–14	0.000219	99,212	22	99,202	6,499,769	65.5
14–15	0.000328	99,191	33	99,174	6,400,568	64.5
15–16	0.000451	99,158	45	99,136	6,301,393	63.5
16–17	0.000569	99,113	56	99,085	6,202,257	62.6
17–18	0.000672	99,057	67	99,024	6,103,172	61.6
18–19	0.000746	98,991	74	98,954	6,004,148	60.7
19–20	0.000796	98,917	79	98,877	5,905,195	59.7
20–21	0.000844	98,838	83	98,796	5,806,317	58.7
21–22	0.000891	98,755	88	98,710	5,707,521	57.8
22–23	0.000917	98,666	90	98,621	5,608,811	56.8
23–24	0.000917	98,576	90	98,531	5,510,189	55.9
24–25	0.000899	98,486	89	98,441	5,411,659	54.9
25–26	0.000873	98,397	86	98,354	5,313,217	54.0
26–27	0.000852	98,311	84	98,269	5,214,863	53.0
27–28	0.000843	98,227	83	98,186	5,116,594	52.1
28–29	0.000854	98,144	84	98,103	5,018,408	51.1
29–30	0.000882	98,061	86	98,017	4,920,305	50.2
30–31	0.000918	97,974	90	97,929	4,822,288	49.2
31–32	0.000957	97,884	94	97,837	4,724,359	48.3
32–33	0.001006	97,791	98	97,741	4,626,521	47.3
33–34	0.001066	97,692	104	97,640	4,528,780	46.4
34–35	0.001138	97,588	111	97,533	4,431,140	45.4
35–36	0.001218	97,477	119	97,418	4,333,607	44.5
36–37	0.001313	97,358	128	97,294	4,236,190	43.5
37–38	0.001429	97,230	139	97,161	4,138,895	42.6
38–39	0.001568	97,091	152	97,015	4,041,734	41.6
39–40	0.001721	96,939	167	96,856	3,944,719	40.7
40–41	0.001878	96,772	182	96,682	3,847,863	39.8
41–42	0.002037	96,591	197	96,492	3,751,182	38.8
42–43	0.002207	96,394	213	96,288	3,654,689	37.9
43–44	0.002392	96,181	230	96,066	3,558,402	37.0
44–45	0.002594	95,951	249	95,827	3,462,336	36.1
45–46	0.002817	95,702	270	95,567	3,366,509	35.2
46–47	0.003051	95,433	291	95,287	3,270,942	34.3
47–48	0.003292	95,141	313	94,985	3,175,655	33.4
48–49	0.003536	94,828	335	94,660	3,080,670	32.5
49–50	0.003790	94,493	358	94,314	2,986,009	31.6
50–51	0.004065	94,135	383	93,943	2,891,696	30.7
51–52	0.004373	93,752	410	93,547	2,797,752	29.8
52–53	0.004716	93,342	440	93,122	2,704,205	29.0
53–54	0.005100	92,902	474	92,665	2,611,083	28.1
54–55	0.005523	92,428	511	92,173	2,518,418	27.2
55–56	0.005985	91,918	550	91,643	2,426,245	26.4
56–57	0.006490	91,368	593	91,071	2,334,602	25.6
57–58	0.007055	90,775	640	90,454	2,243,531	24.7
58–59	0.007700	90,134	694	89,787	2,153,077	23.9
59–60	0.008442	89,440	755	89,063	2,063,290	23.1
60–61	0.009316	88,685	826	88,272	1,974,227	22.3
61–62	0.010299	87,859	905	87,406	1,885,955	21.5
62–63	0.011323	86,954	985	86,462	1,798,549	20.7
63–64	0.012328	85,969	1,060	85,440	1,712,087	19.9
64–65	0.013336	84,910	1,132	84,343	1,626,647	19.2

visited on 2/14/2013

Table 4. Life table for the white population: United States, 2003—Con.

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.014434	83,777	1,209	83,173	1,542,304	18.4
66–67	0.015712	82,568	1,297	81,919	1,459,131	17.7
67–68	0.017163	81,271	1,395	80,573	1,377,212	16.9
68–69	0.018798	79,876	1,502	79,125	1,296,639	16.2
69–70	0.020590	78,374	1,614	77,567	1,217,514	15.5
70–71	0.022428	76,761	1,722	75,900	1,139,946	14.9
71–72	0.024380	75,039	1,829	74,124	1,064,047	14.2
72–73	0.026636	73,209	1,950	72,234	989,922	13.5
73–74	0.029293	71,259	2,087	70,216	917,688	12.9
74–75	0.032298	69,172	2,234	68,055	847,472	12.3
75–76	0.035402	66,938	2,370	65,753	779,417	11.6
76–77	0.038579	64,568	2,491	63,323	713,664	11.1
77–78	0.042133	62,077	2,615	60,770	650,341	10.5
78–79	0.046256	59,462	2,750	58,087	589,572	9.9
79–80	0.050997	56,711	2,892	55,265	531,485	9.4
80–81	0.056234	53,819	3,026	52,306	476,220	8.8
81–82	0.061834	50,793	3,141	49,222	423,914	8.3
82–83	0.067972	47,652	3,239	46,033	374,692	7.9
83–84	0.074768	44,413	3,321	42,753	328,659	7.4
84–85	0.082422	41,092	3,387	39,399	285,906	7.0
85–86	0.090362	37,705	3,407	36,002	246,508	6.5
86–87	0.098980	34,298	3,395	32,601	210,506	6.1
87–88	0.108315	30,903	3,347	29,230	177,905	5.8
88–89	0.118406	27,556	3,263	25,925	148,675	5.4
89–90	0.129292	24,293	3,141	22,723	122,750	5.1
90–91	0.141007	21,152	2,983	19,661	100,027	4.7
91–92	0.153582	18,170	2,791	16,774	80,366	4.4
92–93	0.167045	15,379	2,569	14,095	63,592	4.1
93–94	0.181416	12,810	2,324	11,648	49,497	3.9
94–95	0.196709	10,486	2,063	9,455	37,849	3.6
95–96	0.212930	8,423	1,794	7,527	28,394	3.4
96–97	0.230076	6,630	1,525	5,867	20,868	3.1
97–98	0.248131	5,104	1,267	4,471	15,000	2.9
98–99	0.267071	3,838	1,025	3,325	10,529	2.7
99–100	0.286858	2,813	807	2,409	7,204	2.6
100+	1.00000	2,006	2,006	4,794	4,794	2.4

visited on 2/14/2013

Table 5. Life table for white males: United States, 2003

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.006366	100,000	637	99,440	7,529,817	75.3
1–2	0.000460	99,363	46	99,341	7,430,377	74.8
2–3	0.000330	99,318	33	99,301	7,331,036	73.8
3–4	0.000263	99,285	26	99,272	7,231,735	72.8
4–5	0.000201	99,259	20	99,249	7,132,463	71.9
5–6	0.000182	99,239	18	99,230	7,033,214	70.9
6–7	0.000169	99,221	17	99,212	6,933,984	69.9
7–8	0.000158	99,204	16	99,196	6,834,772	68.9
8–9	0.000140	99,188	14	99,181	6,735,576	67.9
9–10	0.000117	99,174	12	99,169	6,636,394	66.9
10–11	0.000100	99,163	10	99,158	6,537,226	65.9
11–12	0.000109	99,153	11	99,148	6,438,068	64.9
12–13	0.000161	99,142	16	99,134	6,338,920	63.9
13–14	0.000271	99,126	27	99,113	6,239,786	62.9
14–15	0.000425	99,099	42	99,078	6,140,673	62.0
15–16	0.000596	99,057	59	99,028	6,041,595	61.0
16–17	0.000760	98,998	75	98,960	5,942,567	60.0
17–18	0.000910	98,923	90	98,878	5,843,607	59.1
18–19	0.001029	98,833	102	98,782	5,744,729	58.1
19–20	0.001118	98,731	110	98,676	5,645,947	57.2
20–21	0.001206	98,621	119	98,561	5,547,271	56.2
21–22	0.001289	98,502	127	98,438	5,448,710	55.3
22–23	0.001333	98,375	131	98,309	5,350,272	54.4
23–24	0.001331	98,244	131	98,178	5,251,963	53.5
24–25	0.001295	98,113	127	98,049	5,153,784	52.5
25–26	0.001242	97,986	122	97,925	5,055,735	51.6
26–27	0.001197	97,864	117	97,806	4,957,810	50.7
27–28	0.001170	97,747	114	97,690	4,860,004	49.7
28–29	0.001177	97,633	115	97,575	4,762,314	48.8
29–30	0.001210	97,518	118	97,459	4,664,739	47.8
30–31	0.001254	97,400	122	97,339	4,567,280	46.9
31–32	0.001301	97,278	127	97,214	4,469,941	46.0
32–33	0.001357	97,151	132	97,085	4,372,727	45.0
33–34	0.001423	97,019	138	96,950	4,275,642	44.1
34–35	0.001503	96,881	146	96,808	4,178,692	43.1
35–36	0.001594	96,736	154	96,658	4,081,884	42.2
36–37	0.001703	96,581	164	96,499	3,985,225	41.3
37–38	0.001842	96,417	178	96,328	3,888,726	40.3
38–39	0.002011	96,239	194	96,143	3,792,398	39.4
39–40	0.002200	96,046	211	95,940	3,696,255	38.5
40–41	0.002395	95,835	230	95,720	3,600,315	37.6
41–42	0.002595	95,605	248	95,481	3,504,595	36.7
42–43	0.002811	95,357	268	95,223	3,409,114	35.8
43–44	0.003053	95,089	290	94,944	3,313,892	34.9
44–45	0.003320	94,799	315	94,641	3,218,948	34.0
45–46	0.003613	94,484	341	94,313	3,124,307	33.1
46–47	0.003920	94,142	369	93,958	3,029,994	32.2
47–48	0.004234	93,773	397	93,575	2,936,036	31.3
48–49	0.004551	93,376	425	93,164	2,842,461	30.4
49–50	0.004877	92,951	453	92,725	2,749,297	29.6
50–51	0.005231	92,498	484	92,256	2,656,572	28.7
51–52	0.005623	92,014	517	91,756	2,564,316	27.9
52–53	0.006047	91,497	553	91,220	2,472,560	27.0
53–54	0.006502	90,944	591	90,648	2,381,340	26.2
54–55	0.006993	90,352	632	90,036	2,290,692	25.4
55–56	0.007521	89,721	675	89,383	2,200,655	24.5
56–57	0.008103	89,046	722	88,685	2,111,272	23.7
57–58	0.008764	88,324	774	87,937	2,022,587	22.9
58–59	0.009534	87,550	835	87,133	1,934,650	22.1
59–60	0.010433	86,715	905	86,263	1,847,518	21.3
60–61	0.011494	85,811	986	85,318	1,761,254	20.5
61–62	0.012686	84,824	1,076	84,286	1,675,937	19.8
62–63	0.013942	83,748	1,168	83,164	1,591,651	19.0
63–64	0.015190	82,581	1,254	81,953	1,508,486	18.3
64–65	0.016449	81,326	1,338	80,657	1,426,533	17.5

visited on 2/14/2013

Table 5. Life table for white males: United States, 2003—Con.

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.017808	79,989	1,424	79,276	1,345,875	16.8
66–67	0.019378	78,564	1,522	77,803	1,266,599	16.1
67–68	0.021160	77,042	1,630	76,227	1,188,796	15.4
68–69	0.023171	75,412	1,747	74,538	1,112,569	14.8
69–70	0.025378	73,664	1,869	72,729	1,038,032	14.1
70–71	0.027621	71,795	1,983	70,803	965,302	13.4
71–72	0.029981	69,812	2,093	68,765	894,499	12.8
72–73	0.032724	67,719	2,216	66,611	825,734	12.2
73–74	0.036002	65,503	2,358	64,323	759,123	11.6
74–75	0.039756	63,144	2,510	61,889	694,800	11.0
75–76	0.043696	60,634	2,649	59,309	632,911	10.4
76–77	0.047709	57,985	2,766	56,601	573,601	9.9
77–78	0.052083	55,218	2,876	53,780	517,000	9.4
78–79	0.056999	52,342	2,983	50,850	463,220	8.8
79–80	0.062555	49,359	3,088	47,815	412,370	8.4
80–81	0.068831	46,271	3,185	44,679	364,555	7.9
81–82	0.075649	43,086	3,259	41,456	319,876	7.4
82–83	0.082899	39,827	3,302	38,176	278,419	7.0
83–84	0.090493	36,525	3,305	34,873	240,244	6.6
84–85	0.098662	33,220	3,278	31,581	205,371	6.2
85–86	0.107809	29,942	3,228	28,328	173,790	5.8
86–87	0.117683	26,714	3,144	25,142	145,462	5.4
87–88	0.128319	23,570	3,025	22,058	120,319	5.1
88–89	0.139751	20,546	2,871	19,110	98,261	4.8
89–90	0.152006	17,675	2,687	16,331	79,151	4.5
90–91	0.165111	14,988	2,475	13,751	62,819	4.2
91–92	0.179085	12,513	2,241	11,393	49,069	3.9
92–93	0.193939	10,272	1,992	9,276	37,676	3.7
93–94	0.209680	8,280	1,736	7,412	28,400	3.4
94–95	0.226304	6,544	1,481	5,803	20,988	3.2
95–96	0.243796	5,063	1,234	4,446	15,184	3.0
96–97	0.262135	3,829	1,004	3,327	10,738	2.8
97–98	0.281284	2,825	795	2,428	7,411	2.6
98–99	0.301198	2,030	612	1,725	4,984	2.5
99–100	0.321817	1,419	457	1,191	3,259	2.3
100+	1.00000	962	962	2,068	2,068	2.1

visited on 2/14/2013

Table 6. Life table for white females: United States, 2003

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.005052	100,000	505	99,551	8,043,520	80.4
1–2	0.000374	99,495	37	99,476	7,943,969	79.8
2–3	0.000270	99,458	27	99,444	7,844,493	78.9
3–4	0.000199	99,431	20	99,421	7,745,049	77.9
4–5	0.000171	99,411	17	99,402	7,645,628	76.9
5–6	0.000146	99,394	15	99,387	7,546,226	75.9
6–7	0.000131	99,379	13	99,373	7,446,839	74.9
7–8	0.000120	99,366	12	99,360	7,347,467	73.9
8–9	0.000109	99,354	11	99,349	7,248,106	73.0
9–10	0.000099	99,343	10	99,339	7,148,758	72.0
10–11	0.000092	99,334	9	99,329	7,049,419	71.0
11–12	0.000097	99,324	10	99,320	6,950,090	70.0
12–13	0.000119	99,315	12	99,309	6,850,770	69.0
13–14	0.000164	99,303	16	99,295	6,751,461	68.0
14–15	0.000226	99,287	22	99,276	6,652,166	67.0
15–16	0.000298	99,264	30	99,250	6,552,891	66.0
16–17	0.000366	99,235	36	99,217	6,453,641	65.0
17–18	0.000418	99,199	41	99,178	6,354,425	64.1
18–19	0.000445	99,157	44	99,135	6,255,247	63.1
19–20	0.000452	99,113	45	99,091	6,156,112	62.1
20–21	0.000456	99,068	45	99,045	6,057,021	61.1
21–22	0.000464	99,023	46	99,000	5,957,976	60.2
22–23	0.000469	98,977	46	98,954	5,858,976	59.2
23–24	0.000472	98,930	47	98,907	5,760,022	58.2
24–25	0.000474	98,884	47	98,860	5,661,115	57.3
25–26	0.000477	98,837	47	98,813	5,562,255	56.3
26–27	0.000483	98,790	48	98,766	5,463,441	55.3
27–28	0.000494	98,742	49	98,718	5,364,675	54.3
28–29	0.000511	98,693	50	98,668	5,265,958	53.4
29–30	0.000535	98,643	53	98,616	5,167,290	52.4
30–31	0.000563	98,590	55	98,562	5,068,673	51.4
31–32	0.000597	98,535	59	98,505	4,970,111	50.4
32–33	0.000640	98,476	63	98,444	4,871,606	49.5
33–34	0.000693	98,413	68	98,379	4,773,162	48.5
34–35	0.000759	98,345	75	98,307	4,674,783	47.5
35–36	0.000830	98,270	82	98,229	4,576,476	46.6
36–37	0.000910	98,188	89	98,144	4,478,247	45.6
37–38	0.001005	98,099	99	98,050	4,380,103	44.6
38–39	0.001114	98,000	109	97,946	4,282,053	43.7
39–40	0.001232	97,891	121	97,831	4,184,107	42.7
40–41	0.001352	97,771	132	97,705	4,086,276	41.8
41–42	0.001473	97,638	144	97,566	3,988,572	40.9
42–43	0.001597	97,495	156	97,417	3,891,005	39.9
43–44	0.001727	97,339	168	97,255	3,793,589	39.0
44–45	0.001867	97,171	181	97,080	3,696,334	38.0
45–46	0.002021	96,989	196	96,891	3,599,254	37.1
46–47	0.002185	96,793	212	96,688	3,502,363	36.2
47–48	0.002356	96,582	228	96,468	3,405,675	35.3
48–49	0.002530	96,354	244	96,232	3,309,207	34.3
49–50	0.002715	96,110	261	95,980	3,212,975	33.4
50–51	0.002915	95,850	279	95,710	3,116,995	32.5
51–52	0.003144	95,570	300	95,420	3,021,285	31.6
52–53	0.003413	95,270	325	95,107	2,925,865	30.7
53–54	0.003730	94,945	354	94,767	2,830,758	29.8
54–55	0.004093	94,590	387	94,397	2,735,990	28.9
55–56	0.004494	94,203	423	93,992	2,641,594	28.0
56–57	0.004930	93,780	462	93,549	2,547,602	27.2
57–58	0.005410	93,318	505	93,065	2,454,053	26.3
58–59	0.005945	92,813	552	92,537	2,360,988	25.4
59–60	0.006549	92,261	604	91,959	2,268,451	24.6
60–61	0.007263	91,657	666	91,324	2,176,493	23.7
61–62	0.008069	90,991	734	90,624	2,085,169	22.9
62–63	0.008897	90,257	803	89,855	1,994,545	22.1
63–64	0.009697	89,454	867	89,020	1,904,690	21.3
64–65	0.010497	88,586	930	88,121	1,815,670	20.5

visited on 2/14/2013

Table 6. Life table for white females: United States, 2003—Con.

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.011379	87,656	997	87,158	1,727,548	19.7
66–67	0.012423	86,659	1,077	86,121	1,640,390	18.9
67–68	0.013616	85,582	1,165	85,000	1,554,270	18.2
68–69	0.014964	84,417	1,263	83,786	1,469,270	17.4
69–70	0.016450	83,154	1,368	82,470	1,385,484	16.7
70–71	0.018000	81,786	1,472	81,050	1,303,014	15.9
71–72	0.019675	80,314	1,580	79,524	1,221,964	15.2
72–73	0.021611	78,734	1,702	77,883	1,142,440	14.5
73–74	0.023874	77,032	1,839	76,113	1,064,558	13.8
74–75	0.026423	75,193	1,987	74,200	988,445	13.1
75–76	0.029035	73,206	2,126	72,144	914,245	12.5
76–77	0.031746	71,081	2,257	69,952	842,102	11.8
77–78	0.034881	68,824	2,401	67,624	772,149	11.2
78–79	0.038644	66,424	2,567	65,140	704,525	10.6
79–80	0.043048	63,857	2,749	62,482	639,385	10.0
80–81	0.047852	61,108	2,924	59,646	576,903	9.4
81–82	0.052956	58,184	3,081	56,643	517,257	8.9
82–83	0.058712	55,102	3,235	53,485	460,614	8.4
83–84	0.065354	51,867	3,390	50,172	407,129	7.8
84–85	0.073047	48,478	3,541	46,707	356,957	7.4
85–86	0.080703	44,936	3,627	43,123	310,250	6.9
86–87	0.089080	41,310	3,680	39,470	267,127	6.5
87–88	0.098228	37,630	3,696	35,782	227,657	6.0
88–89	0.108197	33,934	3,672	32,098	191,875	5.7
89–90	0.119037	30,262	3,602	28,461	159,777	5.3
90–91	0.130795	26,660	3,487	24,916	131,316	4.9
91–92	0.143513	23,173	3,326	21,510	106,400	4.6
92–93	0.157230	19,847	3,121	18,287	84,890	4.3
93–94	0.171979	16,727	2,877	15,288	66,603	4.0
94–95	0.187784	13,850	2,601	12,550	51,314	3.7
95–96	0.204660	11,249	2,302	10,098	38,765	3.4
96–97	0.222609	8,947	1,992	7,951	28,667	3.2
97–98	0.241622	6,955	1,681	6,115	20,715	3.0
98–99	0.261675	5,275	1,380	4,585	14,600	2.8
99–100	0.282729	3,894	1,101	3,344	10,016	2.6
100+	1.00000	2,793	2,793	6,672	6,672	2.4

visited on 2/14/2013

Table 7. Life table for the black population: United States, 2003

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.014035	100,000	1,403	98,754	7,257,898	72.6
1–2	0.000735	98,597	73	98,560	7,159,144	72.6
2–3	0.000500	98,524	49	98,499	7,060,584	71.7
3–4	0.000380	98,475	37	98,456	6,962,084	70.7
4–5	0.000238	98,437	23	98,426	6,863,628	69.7
5–6	0.000249	98,414	25	98,402	6,765,203	68.7
6–7	0.000214	98,389	21	98,379	6,666,801	67.8
7–8	0.000190	98,368	19	98,359	6,568,422	66.8
8–9	0.000173	98,350	17	98,341	6,470,063	65.8
9–10	0.000164	98,333	16	98,325	6,371,722	64.8
10–11	0.000166	98,317	16	98,308	6,273,397	63.8
11–12	0.000185	98,300	18	98,291	6,175,089	62.8
12–13	0.000228	98,282	22	98,271	6,076,798	61.8
13–14	0.000303	98,260	30	98,245	5,978,527	60.8
14–15	0.000406	98,230	40	98,210	5,880,282	59.9
15–16	0.000524	98,190	51	98,164	5,782,072	58.9
16–17	0.000651	98,139	64	98,107	5,683,908	57.9
17–18	0.000796	98,075	78	98,036	5,585,802	57.0
18–19	0.000949	97,997	93	97,950	5,487,766	56.0
19–20	0.001100	97,904	108	97,850	5,389,816	55.1
20–21	0.001258	97,796	123	97,734	5,291,966	54.1
21–22	0.001408	97,673	138	97,604	5,194,232	53.2
22–23	0.001519	97,535	148	97,461	5,096,628	52.3
23–24	0.001582	97,387	154	97,310	4,999,167	51.3
24–25	0.001609	97,233	156	97,155	4,901,857	50.4
25–26	0.001628	97,077	158	96,998	4,804,702	49.5
26–27	0.001656	96,919	161	96,838	4,707,704	48.6
27–28	0.001683	96,758	163	96,677	4,610,866	47.7
28–29	0.001712	96,595	165	96,512	4,514,190	46.7
29–30	0.001746	96,430	168	96,346	4,417,677	45.8
30–31	0.001781	96,261	171	96,176	4,321,332	44.9
31–32	0.001828	96,090	176	96,002	4,225,156	44.0
32–33	0.001903	95,914	182	95,823	4,129,154	43.1
33–34	0.002016	95,732	193	95,635	4,033,331	42.1
34–35	0.002164	95,539	207	95,435	3,937,695	41.2
35–36	0.002333	95,332	222	95,221	3,842,260	40.3
36–37	0.002516	95,110	239	94,990	3,747,039	39.4
37–38	0.002723	94,870	258	94,741	3,652,049	38.5
38–39	0.002953	94,612	279	94,472	3,557,308	37.6
39–40	0.003202	94,333	302	94,182	3,462,835	36.7
40–41	0.003458	94,031	325	93,868	3,368,654	35.8
41–42	0.003732	93,705	350	93,531	3,274,786	34.9
42–43	0.004046	93,356	378	93,167	3,181,255	34.1
43–44	0.004419	92,978	411	92,773	3,088,088	33.2
44–45	0.004847	92,567	449	92,343	2,995,315	32.4
45–46	0.005306	92,119	489	91,874	2,902,972	31.5
46–47	0.005786	91,630	530	91,365	2,811,098	30.7
47–48	0.006305	91,100	574	90,812	2,719,734	29.9
48–49	0.006861	90,525	621	90,215	2,628,921	29.0
49–50	0.007453	89,904	670	89,569	2,538,706	28.2
50–51	0.008110	89,234	724	88,872	2,449,137	27.4
51–52	0.008805	88,510	779	88,121	2,360,265	26.7
52–53	0.009471	87,731	831	87,316	2,272,145	25.9
53–54	0.010080	86,900	876	86,462	2,184,829	25.1
54–55	0.010663	86,024	917	85,565	2,098,367	24.4
55–56	0.011280	85,107	960	84,627	2,012,801	23.7
56–57	0.012000	84,147	1,010	83,642	1,928,175	22.9
57–58	0.012846	83,137	1,068	82,603	1,844,533	22.2
58–59	0.013843	82,069	1,136	81,501	1,761,930	21.5
59–60	0.014970	80,933	1,212	80,327	1,680,429	20.8
60–61	0.016222	79,721	1,293	79,075	1,600,102	20.1
61–62	0.017559	78,428	1,377	77,739	1,521,027	19.4
62–63	0.018902	77,051	1,456	76,323	1,443,288	18.7
63–64	0.020179	75,595	1,525	74,832	1,366,965	18.1
64–65	0.021408	74,069	1,586	73,276	1,292,133	17.4

visited on 2/14/2013

Table 7. Life table for the black population: United States, 2003—Con.

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.022625	72,483	1,640	71,663	1,218,857	16.8
66–67	0.023944	70,843	1,696	69,995	1,147,193	16.2
67–68	0.025470	69,147	1,761	68,267	1,077,198	15.6
68–69	0.027322	67,386	1,841	66,465	1,008,932	15.0
69–70	0.029492	65,545	1,933	64,578	942,466	14.4
70–71	0.031818	63,612	2,024	62,600	877,888	13.8
71–72	0.034236	61,588	2,109	60,533	815,288	13.2
72–73	0.036884	59,479	2,194	58,382	754,755	12.7
73–74	0.039770	57,285	2,278	56,146	696,373	12.2
74–75	0.042857	55,007	2,357	53,828	640,226	11.6
75–76	0.046092	52,650	2,427	51,436	586,398	11.1
76–77	0.049450	50,223	2,484	48,981	534,962	10.7
77–78	0.052979	47,739	2,529	46,475	485,981	10.2
78–79	0.056754	45,210	2,566	43,927	439,506	9.7
79–80	0.060843	42,644	2,595	41,347	395,579	9.3
80–81	0.065321	40,050	2,616	38,742	354,232	8.8
81–82	0.070129	37,434	2,625	36,121	315,490	8.4
82–83	0.075251	34,808	2,619	33,499	279,369	8.0
83–84	0.080731	32,189	2,599	30,890	245,870	7.6
84–85	0.086749	29,590	2,567	28,307	214,981	7.3
85–86	0.092984	27,023	2,513	25,767	186,674	6.9
86–87	0.099615	24,511	2,442	23,290	160,907	6.6
87–88	0.106661	22,069	2,354	20,892	137,617	6.2
88–89	0.114137	19,715	2,250	18,590	116,724	5.9
89–90	0.122062	17,465	2,132	16,399	98,134	5.6
90–91	0.130452	15,333	2,000	14,333	81,735	5.3
91–92	0.139321	13,333	1,858	12,404	67,402	5.1
92–93	0.148684	11,475	1,706	10,622	54,998	4.8
93–94	0.158552	9,769	1,549	8,995	44,376	4.5
94–95	0.168938	8,220	1,389	7,526	35,381	4.3
95–96	0.179850	6,832	1,229	6,217	27,855	4.1
96–97	0.191294	5,603	1,072	5,067	21,638	3.9
97–98	0.203274	4,531	921	4,071	16,571	3.7
98–99	0.215791	3,610	779	3,221	12,501	3.5
99–100	0.228842	2,831	648	2,507	9,280	3.3
100+	1.00000	2,183	2,183	6,773	6,773	3.1

visited on 2/14/2013

Table 8. Life table for black males: United States, 2003

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.015565	100,000	1,557	98,616	6,893,901	68.9
1–2	0.000858	98,443	84	98,401	6,795,285	69.0
2–3	0.000543	98,359	53	98,332	6,696,883	68.1
3–4	0.000437	98,306	43	98,284	6,598,551	67.1
4–5	0.000290	98,263	28	98,248	6,500,267	66.2
5–6	0.000275	98,234	27	98,221	6,402,018	65.2
6–7	0.000239	98,207	23	98,196	6,303,797	64.2
7–8	0.000212	98,184	21	98,173	6,205,602	63.2
8–9	0.000189	98,163	19	98,154	6,107,429	62.2
9–10	0.000172	98,144	17	98,136	6,009,275	61.2
10–11	0.000169	98,128	17	98,119	5,911,139	60.2
11–12	0.000193	98,111	19	98,102	5,813,019	59.2
12–13	0.000262	98,092	26	98,079	5,714,918	58.3
13–14	0.000387	98,066	38	98,047	5,616,839	57.3
14–15	0.000563	98,028	55	98,001	5,518,791	56.3
15–16	0.000765	97,973	75	97,936	5,420,790	55.3
16–17	0.000977	97,898	96	97,850	5,322,855	54.4
17–18	0.001210	97,803	118	97,744	5,225,004	53.4
18–19	0.001450	97,684	142	97,614	5,127,261	52.5
19–20	0.001681	97,543	164	97,461	5,029,647	51.6
20–21	0.001922	97,379	187	97,285	4,932,186	50.6
21–22	0.002149	97,192	209	97,087	4,834,901	49.7
22–23	0.002317	96,983	225	96,870	4,737,814	48.9
23–24	0.002410	96,758	233	96,641	4,640,944	48.0
24–25	0.002446	96,525	236	96,407	4,544,303	47.1
25–26	0.002464	96,289	237	96,170	4,447,896	46.2
26–27	0.002489	96,051	239	95,932	4,351,726	45.3
27–28	0.002501	95,812	240	95,692	4,255,794	44.4
28–29	0.002506	95,573	240	95,453	4,160,102	43.5
29–30	0.002510	95,333	239	95,213	4,064,649	42.6
30–31	0.002512	95,094	239	94,974	3,969,436	41.7
31–32	0.002526	94,855	240	94,735	3,874,461	40.8
32–33	0.002576	94,615	244	94,494	3,779,726	39.9
33–34	0.002675	94,372	252	94,245	3,685,233	39.1
34–35	0.002819	94,119	265	93,987	3,590,987	38.2
35–36	0.002990	93,854	281	93,714	3,497,001	37.3
36–37	0.003180	93,573	298	93,424	3,403,287	36.4
37–38	0.003406	93,276	318	93,117	3,309,863	35.5
38–39	0.003667	92,958	341	92,788	3,216,746	34.6
39–40	0.003957	92,617	367	92,434	3,123,958	33.7
40–41	0.004261	92,251	393	92,054	3,031,524	32.9
41–42	0.004592	91,857	422	91,647	2,939,470	32.0
42–43	0.004986	91,436	456	91,208	2,847,824	31.1
43–44	0.005465	90,980	497	90,731	2,756,616	30.3
44–45	0.006026	90,483	545	90,210	2,665,885	29.5
45–46	0.006629	89,937	596	89,639	2,575,675	28.6
46–47	0.007261	89,341	649	89,017	2,486,036	27.8
47–48	0.007957	88,692	706	88,340	2,397,019	27.0
48–49	0.008723	87,987	768	87,603	2,308,679	26.2
49–50	0.009552	87,219	833	86,803	2,221,077	25.5
50–51	0.010481	86,386	905	85,933	2,134,274	24.7
51–52	0.011460	85,481	980	84,991	2,048,341	24.0
52–53	0.012387	84,501	1,047	83,978	1,963,350	23.2
53–54	0.013205	83,454	1,102	82,903	1,879,372	22.5
54–55	0.013956	82,352	1,149	81,778	1,796,469	21.8
55–56	0.014735	81,203	1,197	80,605	1,714,691	21.1
56–57	0.015648	80,006	1,252	79,380	1,634,086	20.4
57–58	0.016720	78,755	1,317	78,096	1,554,706	19.7
58–59	0.017997	77,438	1,394	76,741	1,476,610	19.1
59–60	0.019453	76,044	1,479	75,304	1,399,869	18.4
60–61	0.021074	74,565	1,571	73,779	1,324,564	17.8
61–62	0.022799	72,993	1,664	72,161	1,250,785	17.1
62–63	0.024522	71,329	1,749	70,455	1,178,624	16.5
63–64	0.026136	69,580	1,819	68,671	1,108,169	15.9
64–65	0.027656	67,762	1,874	66,825	1,039,498	15.3

visited on 2/14/2013

Table 8. Life table for black males: United States, 2003—Con.

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.029122	65,888	1,919	64,928	972,674	14.8
66–67	0.030704	63,969	1,964	62,987	907,745	14.2
67–68	0.032576	62,005	2,020	60,995	844,759	13.6
68–69	0.034931	59,985	2,095	58,937	783,764	13.1
69–70	0.037762	57,890	2,186	56,796	724,827	12.5
70–71	0.040850	55,703	2,275	54,566	668,030	12.0
71–72	0.044049	53,428	2,353	52,251	613,464	11.5
72–73	0.047500	51,075	2,426	49,862	561,213	11.0
73–74	0.051174	48,649	2,490	47,404	511,352	10.5
74–75	0.055044	46,159	2,541	44,889	463,948	10.1
75–76	0.059107	43,618	2,578	42,329	419,059	9.6
76–77	0.063374	41,040	2,601	39,740	376,730	9.2
77–78	0.067857	38,439	2,608	37,135	336,991	8.8
78–79	0.072622	35,831	2,602	34,530	299,856	8.4
79–80	0.077717	33,229	2,582	31,937	265,326	8.0
80–81	0.083363	30,646	2,555	29,369	233,388	7.6
81–82	0.089365	28,092	2,510	26,836	204,020	7.3
82–83	0.095301	25,581	2,438	24,362	177,183	6.9
83–84	0.100901	23,143	2,335	21,976	152,821	6.6
84–85	0.106351	20,808	2,213	19,702	130,845	6.3
85–86	0.113621	18,595	2,113	17,539	111,144	6.0
86–87	0.121314	16,482	2,000	15,483	93,605	5.7
87–88	0.129446	14,483	1,875	13,545	78,123	5.4
88–89	0.138029	12,608	1,740	11,738	64,577	5.1
89–90	0.147078	10,868	1,598	10,069	52,839	4.9
90–91	0.156603	9,269	1,452	8,544	42,771	4.6
91–92	0.166613	7,818	1,303	7,166	34,227	4.4
92–93	0.177117	6,515	1,154	5,938	27,061	4.2
93–94	0.188120	5,361	1,009	4,857	21,122	3.9
94–95	0.199626	4,353	869	3,918	16,266	3.7
95–96	0.211636	3,484	737	3,115	12,347	3.5
96–97	0.224146	2,746	616	2,439	9,232	3.4
97–98	0.237152	2,131	505	1,878	6,793	3.2
98–99	0.250645	1,626	407	1,422	4,915	3.0
99–100	0.264614	1,218	322	1,057	3,493	2.9
100+	1.00000	896	896	2,437	2,437	2.7

visited on 2/14/2013

Table 9. Life table for black females: United States, 2003

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
0–1	0.012448	100,000	1,245	98,896	7,592,344	75.9
1–2	0.000608	98,755	60	98,725	7,493,448	75.9
2–3	0.000457	98,695	45	98,673	7,394,723	74.9
3–4	0.000321	98,650	32	98,634	7,296,051	74.0
4–5	0.000184	98,618	18	98,609	7,197,416	73.0
5–6	0.000223	98,600	22	98,589	7,098,807	72.0
6–7	0.000189	98,578	19	98,569	7,000,218	71.0
7–8	0.000167	98,560	16	98,551	6,901,649	70.0
8–9	0.000156	98,543	15	98,535	6,803,098	69.0
9–10	0.000155	98,528	15	98,520	6,704,562	68.0
10–11	0.000163	98,512	16	98,504	6,606,042	67.1
11–12	0.000176	98,496	17	98,488	6,507,538	66.1
12–13	0.000194	98,479	19	98,469	6,409,050	65.1
13–14	0.000216	98,460	21	98,449	6,310,581	64.1
14–15	0.000243	98,439	24	98,427	6,212,131	63.1
15–16	0.000275	98,415	27	98,401	6,113,705	62.1
16–17	0.000315	98,388	31	98,372	6,015,303	61.1
17–18	0.000367	98,357	36	98,339	5,916,931	60.2
18–19	0.000433	98,321	43	98,299	5,818,593	59.2
19–20	0.000506	98,278	50	98,253	5,720,293	58.2
20–21	0.000585	98,228	57	98,200	5,622,040	57.2
21–22	0.000662	98,171	65	98,138	5,523,841	56.3
22–23	0.000724	98,106	71	98,070	5,425,702	55.3
23–24	0.000767	98,035	75	97,997	5,327,632	54.3
24–25	0.000798	97,960	78	97,921	5,229,635	53.4
25–26	0.000832	97,882	81	97,841	5,131,714	52.4
26–27	0.000878	97,800	86	97,757	5,033,873	51.5
27–28	0.000930	97,714	91	97,669	4,936,116	50.5
28–29	0.000988	97,623	97	97,575	4,838,448	49.6
29–30	0.001052	97,527	103	97,475	4,740,873	48.6
30–31	0.001119	97,424	109	97,370	4,643,397	47.7
31–32	0.001196	97,315	116	97,257	4,546,027	46.7
32–33	0.001295	97,199	126	97,136	4,448,771	45.8
33–34	0.001422	97,073	138	97,004	4,351,635	44.8
34–35	0.001577	96,935	153	96,858	4,254,631	43.9
35–36	0.001745	96,782	169	96,698	4,157,772	43.0
36–37	0.001921	96,613	186	96,520	4,061,075	42.0
37–38	0.002114	96,428	204	96,326	3,964,555	41.1
38–39	0.002318	96,224	223	96,112	3,868,229	40.2
39–40	0.002531	96,001	243	95,879	3,772,117	39.3
40–41	0.002747	95,758	263	95,626	3,676,238	38.4
41–42	0.002971	95,495	284	95,353	3,580,611	37.5
42–43	0.003218	95,211	306	95,058	3,485,259	36.6
43–44	0.003497	94,905	332	94,739	3,390,201	35.7
44–45	0.003811	94,573	360	94,392	3,295,462	34.8
45–46	0.004146	94,212	391	94,017	3,201,070	34.0
46–47	0.004495	93,822	422	93,611	3,107,053	33.1
47–48	0.004861	93,400	454	93,173	3,013,442	32.3
48–49	0.005243	92,946	487	92,702	2,920,269	31.4
49–50	0.005640	92,459	521	92,198	2,827,567	30.6
50–51	0.006076	91,937	559	91,658	2,735,369	29.8
51–52	0.006542	91,379	598	91,080	2,643,711	28.9
52–53	0.007002	90,781	636	90,463	2,552,632	28.1
53–54	0.007447	90,145	671	89,809	2,462,169	27.3
54–55	0.007900	89,474	707	89,120	2,372,359	26.5
55–56	0.008392	88,767	745	88,395	2,283,239	25.7
56–57	0.008967	88,022	789	87,627	2,194,844	24.9
57–58	0.009645	87,233	841	86,812	2,107,217	24.2
58–59	0.010441	86,391	902	85,941	2,020,404	23.4
59–60	0.011337	85,490	969	85,005	1,934,464	22.6
60–61	0.012337	84,520	1,043	83,999	1,849,459	21.9
61–62	0.013415	83,478	1,120	82,918	1,765,460	21.1
62–63	0.014508	82,358	1,195	81,760	1,682,542	20.4
63–64	0.015567	81,163	1,263	80,531	1,600,782	19.7
64–65	0.016608	79,900	1,327	79,236	1,520,251	19.0

visited on 2/14/2013

Table 9. Life table for black females: United States, 2003—Con.

Click here for spreadhseet version

[Race categories are consistent with the 1977 Office of Management and Budget guidelines]

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	$q(_x)$	$l(_x)$	$d(_x)$	$L(_x)$	$T(_x)$	$e(_x)$
65–66	0.017668	78,573	1,388	77,878	1,441,015	18.3
66–67	0.018827	77,184	1,453	76,458	1,363,136	17.7
67–68	0.020149	75,731	1,526	74,968	1,286,679	17.0
68–69	0.021708	74,205	1,611	73,400	1,211,710	16.3
69–70	0.023503	72,594	1,706	71,741	1,138,311	15.7
70–71	0.025409	70,888	1,801	69,988	1,066,569	15.0
71–72	0.027414	69,087	1,894	68,140	996,582	14.4
72–73	0.029665	67,193	1,993	66,196	928,442	13.8
73–74	0.032197	65,200	2,099	64,150	862,245	13.2
74–75	0.034962	63,101	2,206	61,997	798,095	12.6
75–76	0.037878	60,894	2,307	59,741	736,098	12.1
76–77	0.040896	58,588	2,396	57,390	676,356	11.5
77–78	0.044071	56,192	2,476	54,954	618,967	11.0
78–79	0.047474	53,715	2,550	52,440	564,013	10.5
79–80	0.051194	51,165	2,619	49,856	511,573	10.0
80–81	0.055231	48,546	2,681	47,205	461,717	9.5
81–82	0.059628	45,865	2,735	44,497	414,512	9.0
82–83	0.064598	43,130	2,786	41,737	370,015	8.6
83–84	0.070351	40,344	2,838	38,925	328,278	8.1
84–85	0.077040	37,506	2,889	36,061	289,353	7.7
85–86	0.083147	34,616	2,878	33,177	253,292	7.3
86–87	0.089689	31,738	2,847	30,315	220,115	6.9
87–88	0.096689	28,891	2,793	27,495	189,801	6.6
88–89	0.104170	26,098	2,719	24,739	162,306	6.2
89–90	0.112155	23,379	2,622	22,068	137,567	5.9
90–91	0.120665	20,757	2,505	19,505	115,499	5.6
91–92	0.129723	18,253	2,368	17,069	95,994	5.3
92–93	0.139348	15,885	2,214	14,778	78,926	5.0
93–94	0.149559	13,671	2,045	12,649	64,148	4.7
94–95	0.160372	11,627	1,865	10,694	51,499	4.4
95–96	0.171802	9,762	1,677	8,923	40,805	4.2
96–97	0.183859	8,085	1,486	7,342	31,881	3.9
97–98	0.196551	6,598	1,297	5,950	24,540	3.7
98–99	0.209884	5,301	1,113	4,745	18,590	3.5
99–100	0.223856	4,189	938	3,720	13,844	3.3
100+	1.00000	3,251	3,251	10,125	10,125	3.1

visited on 2/14/2013

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003

Click here for spreadhseet version

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	2003	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
All races											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,313	99,064	98,740	97,998	97,407	97,024	95,290	94,028	92,515	88,538	87,552
5	99,189	98,877	98,495	97,668	96,998	96,482	94,220	91,978	83,389	83,887	81,804
10	99,116	98,766	98,347	97,460	96,765	96,177	93,710	91,106	88,129	82,458	80,052
15	99,022	98,635	98,196	97,261	96,551	95,885	93,235	90,385	87,144	81,506	78,963
20	98,693	98,215	97,741	96,716	96,111	95,366	92,435	89,089	85,441	80,074	77,239
25	98,219	97,671	97,110	96,000	95,517	94,676	91,335	87,269	83,146	78,046	74,768
30	97,752	97,070	96,477	95,307	94,905	93,919	90,078	85,302	80,642	75,779	72,043
35	97,210	96,322	95,808	94,482	94,144	92,976	88,573	83,118	77,961	73,127	69,078
40	96,442	95,373	94,926	93,322	93,064	91,648	86,650	80,557	75,114	70,042	65,890
45	95,285	94,154	93,599	91,587	91,378	89,634	84,069	77,343	72,036	66,561	62,436
50	93,584	92,370	91,526	88,972	88,756	86,591	80,487	73,321	68,429	62,460	58,514
55	91,181	89,658	88,348	85,110	84,711	82,176	75,557	68,182	63,947	57,555	53,852
60	87,774	85,537	83,726	79,529	79,067	75,921	68,924	61,563	58,079	51,138	47,946
65	82,688	79,519	77,107	71,933	71,147	67,555	60,366	53,195	50,560	43,194	40,911
70	75,555	71,357	68,248	61,984	60,857	56,987	49,655	42,768	41,090	33,816	32,390
75	65,717	60,449	56,799	49,705	48,170	43,903	36,735	30,789	29,729	23,552	22,960
80	52,743	47,084	43,180	35,285	33,576	29,313	22,883	18,580	18,298	13,712	13,529
85	36,981	31,770	27,960	20,908	18,542	15,785	11,073	8,542	8,683	6,001	6,053
90	20,898	17,046	14,154	9,297	7,080	6,144	3,796	2,998	2,941	1,868	1,867
95	8,499	6,282	5,043	2,786	1,524	1,511	857	636	646	361	344
100	2,118	1,424	1,150	542	183	199	123	62	67	40	31
Male											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,239	98,961	98,607	97,755	97,087	96,661	94,762	93,440	91,745	87,505	86,426
5	99,100	98,754	98,333	97,395	96,643	96,077	93,624	91,294	88,505	82,718	80,548
10	99,020	98,627	98,160	97,151	96,375	95,726	93,054	90,346	87,184	81,249	78,775
15	98,906	98,464	97,972	96,904	96,107	95,366	92,508	89,561	86,156	80,261	77,681
20	98,450	97,854	97,316	96,126	95,491	94,695	91,617	88,220	84,440	78,792	75,984
25	97,761	97,049	96,361	95,040	94,631	93,791	90,385	86,359	82,252	76,675	73,472
30	97,111	96,166	95,430	94,072	93,826	92,861	89,009	84,346	79,890	74,378	70,747
35	96,391	95,091	94,501	92,997	92,889	91,760	87,371	82,075	77,514	71,614	67,752
40	95,421	93,761	93,345	91,541	91,572	90,207	85,246	79,357	74,432	68,297	64,447
45	93,981	92,139	91,649	89,369	89,492	87,819	82,336	75,882	71,244	64,518	60,849
50	91,846	89,865	89,007	86,070	86,199	84,158	78,254	71,518	67,553	60,118	56,736
55	88,846	86,492	84,936	81,139	81,039	78,781	72,627	65,981	62,965	54,970	51,939
60	84,725	81,378	79,012	73,958	73,887	71,246	65,142	58,909	56,917	48,343	45,895
65	78,694	73,971	70,646	64,318	64,177	61,566	55,776	50,154	49,218	40,264	38,736
70	70,382	64,107	59,681	52,296	52,244	49,950	44,588	39,516	39,668	31,023	30,217
75	59,229	51,385	46,272	38,797	38,950	36,756	31,864	27,718	28,316	21,213	21,076
80	45,080	36,749	31,810	24,921	25,300	25,237	18,995	16,172	17,128	11,942	12,084
85	29,188	21,815	18,020	13,168	12,845	11,750	8,693	7,107	7,920	5,059	5,179
90	14,743	9,878	7,732	5,107	4,609	4,197	2,787	2,283	2,527	1,502	1,508
95	5,110	2,927	2,279	1,326	970	955	586	451	556	289	262
100	1,025	529	423	222	117	121	78	40	62	33	22
Female											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,392	99,172	98,880	98,254	97,744	97,406	95,848	94,728	93,383	89,623	88,733
5	99,282	99,006	98,666	97,955	97,371	96,908	94,848	92,789	90,380	85,117	83,119
10	99,217	98,911	98,544	97,784	97,173	96,652	94,402	92,008	89,186	83,728	81,390
15	99,143	98,814	98,432	97,636	97,016	96,431	94,000	91,364	88,247	82,813	80,307
20	98,949	98,597	98,184	97,331	96,756	96,066	93,293	90,116	86,556	81,418	78,555
25	98,703	98,325	97,883	96,966	96,418	95,583	92,322	88,328	84,135	79,481	76,119
30	98,430	98,013	97,551	96,544	95,996	94,933	91,182	86,398	81,463	77,247	73,394
35	98,072	97,596	97,140	95,966	95,409	94,206	89,810	84,304	78,713	74,719	70,463
40	97,510	97,033	96,531	95,097	94,560	93,101	88,092	81,927	75,907	71,894	67,407
45	96,641	96,222	95,570	93,793	93,265	91,469	85,856	79,041	72,954	68,755	64,121
50	95,374	94,932	94,060	91,852	91,327	89,075	82,828	75,456	69,452	65,001	60,415
55	93,566	92,881	91,760	89,066	88,451	85,694	78,708	70,832	65,099	60,392	55,908

See footnotes at end of table.

visited on 2/14/2013

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003—Con.

Click here for spreadhseet version

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	2003	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Female—Con.											
60	90,871	89,742	88,414	85,139	84,430	80,890	73,093	64,795	59,438	54,226	50,155
65	86,712	85,075	83,520	79,698	78,462	74,119	65,523	56,924	52,126	46,438	43,246
70	80,712	78,522	76,720	71,955	70,100	64,873	55,449	46,774	42,741	36,916	34,721
75	72,078	69,287	67,186	61,107	58,394	52,111	42,425	34,600	31,344	26,155	24,994
80	60,060	56,986	54,372	46,445	43,063	36,486	27,524	21,578	19,613	15,682	15,129
85	44,191	41,115	37,772	29,538	25,269	20,668	13,972	10,322	9,515	7,051	7,063
90	26,387	23,666	20,578	14,160	10,056	8,548	5,044	3,656	3,314	2,269	2,306
95	11,360	9,346	7,862	4,565	2,193	2,207	1,195	807	728	441	452
100	2,952	2,251	1,927	954	264	298	179	82	72	49	43
White											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,428	99,233	98,898	98,224	97,714	97,278	95,685	94,392	92,780	88,709	87,762
5	99,314	99,068	98,675	97,930	97,353	96,790	94,713	92,466	89,771	84,147	82,071
10	99,246	98,966	98,536	97,733	97,131	96,502	94,228	91,627	88,536	82,734	80,371
15	99,158	98,843	98,391	97,546	96,928	96,228	93,792	90,982	87,633	81,816	79,344
20	98,838	98,455	97,939	97,036	96,508	95,763	93,117	89,933	86,159	80,407	77,998
25	98,397	97,972	97,340	96,406	95,965	95,169	92,213	88,454	84,106	78,392	75,202
30	97,974	97,451	96,774	95,824	95,440	94,536	91,185	86,836	81,787	76,167	72,317
35	97,477	96,810	96,192	95,152	94,798	93,750	89,941	85,004	79,277	73,568	69,522
40	96,772	96,000	95,427	94,190	93,870	92,616	88,318	82,803	76,642	70,525	66,082
45	95,702	94,932	94,257	92,681	92,374	90,847	86,069	79,989	73,705	67,090	62,920
50	94,135	93,326	92,384	90,306	89,958	88,110	82,833	76,340	70,250	62,994	58,647
55	91,918	90,833	89,427	86,688	86,173	84,027	78,218	71,551	65,875	58,163	54,450
60	88,685	86,943	85,031	81,323	80,811	78,066	71,785	65,100	60,013	51,822	48,288
65	83,777	81,123	78,585	73,889	73,102	69,850	63,201	56,655	52,411	43,904	41,505
70	76,761	73,106	69,801	63,991	62,834	59,189	52,165	45,841	42,736	34,484	32,902
75	66,938	62,175	58,299	51,586	49,895	45,688	38,610	33,406	31,086	24,151	23,356
80	53,819	48,583	44,409	36,659	34,697	30,438	23,976	20,260	19,149	14,100	13,794
85	37,705	32,850	28,768	21,578	19,017	16,239	11,483	9,325	9,078	6,178	6,192
90	21,152	17,571	14,471	9,433	7,149	6,201	3,819	3,066	2,991	1,918	1,919
95	8,423	6,416	5,067	2,743	1,521	1,500	801	636	643	364	355
100	2,006	1,423	1,105	487	183	196	98	58	62	38	31
White male											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,363	99,138	98,769	97,994	97,408	96,931	95,188	93,768	91,975	87,674	86,655
5	99,239	98,956	98,519	97,671	97,015	96,403	94,150	91,738	88,842	82,972	80,864
10	99,163	98,839	98,357	97,441	96,758	96,069	93,601	90,810	87,530	81,519	79,109
15	99,057	98,686	98,176	97,208	96,503	95,728	93,089	90,074	86,546	80,549	78,037
20	98,621	98,134	97,525	96,480	95,908	95,104	92,293	88,904	84,997	79,116	76,376
25	97,986	97,430	96,616	95,524	95,106	94,294	91,241	87,371	83,061	77,047	73,907
30	97,400	96,662	95,783	94,716	94,401	93,489	90,092	85,707	80,888	74,810	71,219
35	96,736	95,731	94,980	93,843	93,589	92,543	88,713	83,812	78,441	72,108	68,245
40	95,835	94,588	93,984	92,631	92,427	91,173	86,880	81,457	75,733	68,848	64,954
45	94,484	93,167	92,494	90,725	90,533	89,002	84,285	78,345	72,696	65,115	61,369
50	92,498	91,124	90,105	87,690	87,424	85,601	80,521	74,288	69,107	60,741	57,274
55	89,721	88,022	86,303	83,001	82,463	80,496	75,156	68,981	64,574	55,622	52,491
60	85,811	83,182	80,625	75,969	75,485	73,172	67,787	61,933	58,498	48,987	46,452
65	79,989	75,962	72,393	66,343	65,834	63,541	58,305	52,964	50,663	40,862	39,245
70	71,795	66,181	61,384	54,138	53,825	51,735	46,739	41,880	40,873	31,527	30,640
75	60,634	53,308	47,712	40,324	40,207	38,104	33,404	29,471	29,205	21,585	21,387
80	46,271	38,245	32,788	25,885	25,993	24,005	19,860	17,221	17,655	12,160	12,266
85	29,942	22,720	18,538	13,527	13,065	12,015	9,013	7,572	8,154	5,145	5,252
90	14,988	10,214	7,891	5,125	4,600	4,209	2,812	2,356	2,568	1,523	1,523
95	5,063	2,988	2,279	1,274	956	942	552	461	556	289	263
100	962	523	404	189	115	118	65	40	61	31	22

See footnotes at end of table.

visited on 2/14/2013

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003—Con.

Click here for spreadhseet version

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	2003	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
White female											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,495	99,333	99,035	98,468	98,036	97,645	96,211	95,037	93,608	89,774	88,939
5	99,394	99,187	98,841	98,203	97,709	97,199	95,309	93,216	90,721	85,349	83,426
10	99,334	99,099	98,725	98,042	97,525	96,960	94,890	92,466	89,564	83,979	81,723
15	99,264	99,007	98,618	97,902	97,375	96,756	94,534	91,894	88,712	83,093	80,680
20	99,068	98,795	98,374	97,618	97,135	96,454	93,984	90,939	87,281	81,750	78,978
25	98,837	98,547	98,093	97,299	96,844	96,072	93,228	89,524	85,163	79,865	76,588
30	98,590	98,283	97,802	96,945	96,499	95,605	92,320	87,972	82,740	77,676	73,887
35	98,270	97,939	97,445	96,474	96,026	94,977	91,211	86,248	80,206	75,200	70,971
40	97,771	97,472	96,913	95,762	95,326	94,080	89,805	84,256	77,624	72,425	67,935
45	96,989	96,768	96,065	94,649	94,228	92,725	87,920	81,780	74,871	69,341	64,677
50	95,850	95,608	94,710	92,924	92,522	90,685	85,267	78,572	71,547	65,629	61,005
55	94,203	93,730	92,594	90,383	89,967	87,699	81,520	74,321	67,323	61,053	56,509
60	91,657	90,789	89,451	86,726	86,339	83,279	76,200	68,462	61,704	54,900	50,752
65	87,656	86,339	84,764	81,579	80,739	76,773	68,701	60,499	54,299	47,086	43,806
70	81,786	79,984	78,139	74,101	72,507	67,545	58,363	49,932	44,638	37,482	35,206
75	73,206	70,834	68,712	63,290	60,461	54,397	44,685	37,024	32,777	26,569	25,362
80	61,108	58,454	55,770	48,182	44,676	38,026	28,882	23,053	20,492	15,929	15,349
85	44,936	42,274	38,774	30,490	26,046	21,348	14,487	10,937	9,909	7,152	7,149
90	26,660	24,270	20,996	14,406	10,219	8,662	5,061	3,719	3,372	2,291	2,322
95	11,249	9,495	7,900	4,526	2,203	2,200	1,109	797	721	434	448
100	2,793	2,239	1,858	872	265	294	139	74	63	44	41
Black[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,597	98,187	97,885	96,731	95,732	95,407	92,584	92,035	90,379	79,784	76,609
5	98,414	97,884	97,522	96,207	95,051	94,482	90,983	89,303	86,174	70,691	66,222
10	98,317	97,720	97,322	95,928	94,745	94,060	90,339	88,258	84,690	68,437	63,410
15	98,190	97,539	97,134	95,661	94,460	93,646	89,591	87,156	83,180	66,410	61,060
20	97,796	96,925	96,652	94,887	93,880	92,738	87,839	84,386	79,641	63,165	57,931
25	97,077	95,972	95,804	93,513	92,925	91,321	85,210	80,320	74,973	59,608	54,512
30	96,261	94,809	94,680	91,934	91,699	89,584	82,194	75,962	70,492	56,112	51,287
35	95,332	93,260	93,288	89,977	90,046	87,402	78,683	71,141	65,865	52,125	48,007
40	94,031	91,239	91,439	87,304	87,766	84,478	74,466	65,974	61,244	47,866	44,518
45	92,119	88,689	88,834	83,700	84,501	80,507	69,284	59,827	56,442	43,054	40,628
50	89,234	85,285	85,044	78,938	80,172	74,976	62,702	53,141	51,422	37,800	36,103
55	85,107	80,635	79,816	72,826	73,893	67,660	54,846	45,558	45,803	32,233	31,404
60	79,721	74,335	72,913	65,250	65,795	58,593	46,318	37,654	39,418	26,046	25,698
65	72,483	66,154	64,391	56,102	56,038	48,649	37,838	30,015	32,738	19,806	20,474
70	63,612	56,192	54,617	45,785	45,434	38,616	29,654	22,505	25,585	14,021	14,960
75	52,650	44,872	43,274	34,262	34,531	28,968	21,798	15,546	18,011	9,139	9,956
80	40,050	33,149	31,711	23,710	24,815	20,003	14,408	9,589	11,376	5,158	5,750
85	27,023	21,352	19,939	15,044	15,337	12,433	8,326	4,900	5,794	2,414	2,782
90	15,333	11,646	10,713	8,087	7,195	6,394	4,077	2,044	2,317	913	1,054
95	6,832	4,729	4,463	3,252	1,777	2,010	1,557	638	689	324	296
100	2,183	1,376	1,360	1,036	214	301	399	120	129	77	57
Black Male[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,443	98,023	97,703	96,394	95,301	94,911	91,772	91,268	89,499	78,065	74,674
5	98,234	97,688	97,300	95,826	94,570	93,921	90,082	88,412	85,195	68,589	64,385
10	98,128	97,501	97,061	95,497	94,234	93,453	89,393	87,311	83,768	66,377	61,730
15	97,973	97,268	96,826	95,161	93,874	92,965	88,610	86,152	82,332	64,478	59,667
20	97,379	96,301	96,132	94,053	93,108	91,941	86,968	83,621	79,057	61,426	56,733
25	96,289	94,809	94,827	91,904	91,825	90,285	84,227	79,516	74,540	57,736	53,285
30	95,094	93,070	93,125	89,584	90,270	88,327	80,979	75,083	70,344	54,073	49,867
35	93,854	90,827	91,080	86,885	88,331	85,940	77,221	70,049	65,873	49,865	46,541
40	92,251	87,948	88,490	83,441	85,744	82,832	72,780	64,710	61,353	45,414	42,989
45	89,937	84,467	84,997	78,976	82,075	78,686	67,346	58,432	56,589	40,563	39,230
50	86,386	79,984	80,065	73,282	77,239	72,891	60,495	51,748	51,880	35,427	34,766
55	81,203	74,095	73,413	66,101	70,351	65,122	52,426	44,436	46,581	29,754	29,987

See footnotes at end of table.

visited on 2/14/2013

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003—Con.

Click here for spreadhseet version

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	2003	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Black Male[1]—Con.											
60	74,565	66,334	64,980	57,457	61,669	55,535	43,833	36,790	40,506	23,750	24,194
65	65,888	56,795	55,061	47,485	51,392	45,198	35,371	29,314	34,042	17,806	19,015
70	55,703	45,690	44,213	36,925	39,914	35,018	27,236	21,741	26,923	12,295	13,829
75	43,618	33,755	32,717	25,921	29,064	25,472	19,456	14,419	18,854	7,494	8,892
80	30,646	22,549	22,017	16,560	19,994	16,904	12,186	8,239	11,615	3,894	4,831
85	18,595	12,709	12,383	9,648	11,620	9,898	6,444	3,660	5,605	1,747	2,030
90	9,269	5,972	5,708	4,696	5,174	4,642	2,836	1,246	2,040	595	634
95	3,484	1,971	2,009	1,721	1,240	1,342	961	307	552	189	137
100	896	466	513	489	149	192	209	41	77	40	18
Black female[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,755	98,356	98,073	97,076	96,172	95,913	93,416	92,796	91,251	81,493	78,525
5	98,600	98,087	97,751	96,598	95,543	95,055	91,906	90,185	87,149	72,768	68,056
10	98,512	97,946	97,590	96,369	95,265	94,679	91,308	89,201	85,607	70,508	65,111
15	98,415	97,818	97,450	96,172	95,057	94,343	90,594	88,088	83,954	68,218	62,384
20	98,228	97,566	97,180	95,729	94,660	93,544	88,736	85,078	80,154	64,764	59,053
25	97,882	97,140	96,754	95,035	94,005	92,336	86,198	81,067	75,359	61,430	55,795
30	97,424	96,514	96,150	94,114	93,070	90,799	83,384	76,816	70,633	58,281	52,773
35	96,782	95,599	95,338	92,807	91,670	88,805	80,092	72,192	65,857	54,595	49,567
40	95,758	94,364	94,137	90,817	89,676	86,052	76,084	67,271	61,130	50,568	46,146
45	94,212	92,676	92,322	88,001	86,793	82,257	71,157	61,365	56,230	45,947	42,279
50	91,937	90,277	89,563	84,168	82,979	77,007	64,885	54,920	50,780	40,886	37,681
55	88,767	86,793	85,653	79,177	77,362	70,196	57,314	47,074	44,742	35,415	33,124
60	84,520	81,886	80,293	72,820	69,941	61,758	48,928	38,761	37,954	28,908	27,524
65	78,573	75,031	73,266	64,716	60,825	52,358	40,504	30,852	31,044	22,302	21,995
70	70,888	66,278	64,729	54,873	51,274	42,612	32,354	23,341	24,107	15,871	16,140
75	60,894	55,684	53,831	43,193	40,540	32,981	24,502	16,576	17,216	10,657	11,066
80	48,546	43,622	41,686	31,756	30,315	23,712	17,039	10,822	11,151	6,324	6,708
85	34,616	30,089	28,004	21,358	19,744	15,550	10,622	6,033	5,972	3,029	3,567
90	20,757	17,536	16,260	12,210	9,675	8,590	5,652	2,774	2,579	1,206	1,492
95	9,762	7,687	7,312	5,217	2,438	2,875	2,345	941	818	448	462
100	3,251	2,364	2,398	1,803	293	445	659	193	179	112	97

[1]For 1939–41 and 1949–51, data shown are for the entire nonwhite population. During these periods, life tables were not constructed for the black population. See "Technical Notes."

visited on 2/14/2013

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003

Click here for spreadhseet version

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Average number of years of life remaining (e_x)										
	2003	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
All races											
0	77.4	75.37	73.88	70.75	69.89	68.07	63.62	59.20	56.40	51.49	49.24
1	77.0	75.08	73.82	71.19	70.75	69.16	65.76	61.94	59.94	57.11	55.20
5	73.1	71.22	70.00	67.43	67.04	65.54	62.49	59.29	57.99	56.21	54.98
10	68.1	66.29	65.10	62.57	62.19	60.74	57.82	54.84	53.79	52.15	51.14
15	63.2	61.38	60.19	57.69	57.33	55.91	53.10	50.25	49.37	47.73	46.81
20	58.4	56.63	55.46	53.00	52.58	51.20	48.54	45.94	45.30	43.53	42.79
25	53.6	51.93	50.81	48.37	47.89	46.56	44.09	41.85	41.47	39.60	39.12
30	48.9	47.23	46.12	43.71	43.18	41.91	39.67	37.75	37.68	35.70	35.51
35	44.1	42.58	41.43	39.07	38.51	37.31	35.30	33.68	33.89	31.90	31.92
40	39.5	37.98	36.79	34.52	33.92	32.81	31.03	29.67	30.08	28.20	28.34
45	34.9	33.44	32.27	30.12	29.50	28.49	26.90	25.79	26.25	24.54	24.77
50	30.5	29.03	27.94	25.93	25.29	24.40	22.98	22.06	22.50	20.98	21.26
55	26.2	24.83	23.85	21.99	21.37	20.57	19.31	18.53	18.90	17.55	17.88
60	22.2	20.90	20.02	18.34	17.71	17.04	15.91	15.24	15.54	14.42	14.76
65	18.4	17.28	16.51	15.00	14.39	13.83	12.80	12.23	12.47	11.60	11.86
70	14.8	13.96	13.32	12.00	11.38	10.92	10.00	9.58	9.74	9.11	9.30
75	11.7	11.00	10.48	9.32	8.71	8.40	7.62	7.32	7.49	6.99	7.08
80	8.9	8.40	7.98	7.10	6.39	6.34	5.73	5.50	5.63	5.25	5.30
85	6.6	6.23	5.96	5.28	4.58	4.69	4.31	4.19	4.21	4.00	3.96
90	4.8	4.50	4.43	3.94	3.22	3.44	3.30	3.15	3.22	3.03	2.95
95	3.5	3.29	3.34	3.06	2.43	2.54	2.61	2.26	2.32	2.35	2.18
100	2.5	2.46	2.73	2.62	1.91	1.92	2.13	1.51	1.53	1.85	1.58
Male											
0	74.7	71.83	70.11	67.04	66.80	65.47	61.60	57.71	55.50	49.86	47.88
1	74.3	71.58	70.10	67.58	67.80	66.73	64.00	60.75	59.47	55.95	54.35
5	70.4	67.73	66.29	63.82	64.10	63.12	60.76	58.14	57.60	55.11	54.22
10	65.5	62.81	61.41	58.98	59.27	58.35	56.12	53.75	53.44	51.07	50.39
15	60.5	57.91	56.52	54.12	54.43	53.56	51.43	49.18	49.05	46.66	46.06
20	55.8	53.25	51.88	49.54	49.77	48.92	46.91	44.88	44.99	42.48	42.03
25	51.2	48.67	47.37	45.07	45.19	44.36	42.51	40.79	41.11	38.59	38.38
30	46.5	44.10	42.81	40.51	40.56	39.78	38.13	36.71	37.26	34.70	34.76
35	41.8	39.57	38.20	35.95	35.94	35.23	33.79	32.65	33.43	30.94	31.19
40	37.2	35.09	33.64	31.48	31.42	30.79	29.57	28.68	29.63	27.32	27.65
45	32.8	30.66	29.22	27.18	27.09	26.55	25.52	24.87	25.84	23.77	24.14
50	28.5	26.37	25.00	23.12	23.02	22.59	21.72	21.25	22.11	20.32	20.70
55	24.3	22.30	21.08	19.36	19.32	18.96	18.20	17.79	18.53	16.98	17.38
60	20.4	18.53	17.46	15.99	15.94	15.68	14.99	14.62	15.22	13.95	14.33
65	16.8	15.12	14.21	12.99	12.95	12.74	12.07	11.72	12.20	11.24	11.50
70	13.4	12.05	11.35	10.39	10.33	10.11	9.46	9.18	9.52	8.83	9.02
75	10.5	9.39	8.90	8.13	7.99	7.83	7.22	7.02	7.31	6.75	6.84
80	7.9	7.12	6.80	6.27	5.95	5.94	5.44	5.27	5.49	5.10	5.11
85	5.9	5.31	5.13	4.73	4.39	4.41	4.11	4.02	4.10	3.90	3.82
90	4.3	3.89	3.89	3.60	3.18	3.30	3.17	3.06	3.21	3.01	2.86
95	3.1	2.92	2.98	2.82	2.43	2.49	2.52	2.21	2.38	2.36	2.13
100	2.2	2.25	2.49	2.43	1.91	1.92	2.05	1.50	1.58	1.81	1.55
Female											
0	80.0	78.81	77.62	74.64	73.24	70.96	65.89	60.90	57.40	53.24	50.70
1	79.5	78.47	77.50	74.97	73.93	71.84	67.73	65.37	60.45	58.37	56.10
5	75.6	74.60	73.67	71.19	70.21	68.21	64.43	60.66	58.41	57.39	55.80
10	70.6	69.67	68.75	66.31	65.35	63.38	59.73	56.16	54.16	53.31	51.94
15	65.7	64.73	63.83	61.41	60.45	58.52	54.97	51.54	49.71	48.87	47.60
20	60.8	59.87	58.98	56.59	55.60	53.73	50.37	47.21	45.63	44.66	43.60
25	56.0	55.03	54.16	51.80	50.79	48.99	45.87	43.11	41.86	40.69	39.92
30	51.1	50.19	49.33	47.01	46.00	44.28	41.41	39.02	38.15	36.79	36.30
35	46.3	45.40	44.53	42.28	41.27	39.63	37.01	34.92	34.40	32.95	32.71
40	41.5	40.65	39.80	37.64	36.61	35.06	32.68	30.86	30.58	29.15	29.08
45	36.9	35.97	35.17	33.13	32.09	30.64	28.46	26.89	26.71	25.36	25.44
50	32.3	31.42	30.69	28.77	27.71	26.40	24.40	23.05	22.92	21.67	21.84
55	27.9	27.05	26.39	24.59	23.53	22.33	20.54	19.38	19.28	18.13	18.39

See footnotes at end of table.

visited on 2/14/2013

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003—Con.

Click here for spreadhseet version

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Average number of years of life remaining (e_x)										
	2003	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Female—Con.											
60	23.7	22.90	22.29	20.60	19.52	18.50	16.92	15.94	15.87	14.90	15.21
65	19.7	19.02	18.44	16.83	15.80	14.95	13.57	12.78	12.73	11.96	12.22
70	15.9	15.38	14.84	13.35	12.37	11.71	10.56	9.99	9.96	9.38	9.59
75	12.5	12.08	11.58	10.26	9.33	8.94	8.01	7.61	7.65	7.20	7.34
80	9.5	9.13	8.69	7.68	6.72	6.67	5.99	5.70	5.75	5.37	5.51
85	7.0	6.66	6.38	5.63	4.71	4.90	4.47	4.32	4.30	4.08	4.12
90	5.0	4.73	4.66	4.14	3.25	3.54	3.39	3.24	3.23	3.05	3.04
95	3.5	3.40	3.48	3.18	2.43	2.57	2.67	2.30	2.27	2.34	2.24
100	2.5	2.52	2.81	2.69	1.91	1.93	2.17	1.52	1.48	1.91	1.61
White											
0	77.9	76.13	74.53	71.62	70.73	69.02	64.92	60.86	57.42	51.90	49.64
1	77.4	75.72	74.35	71.91	71.38	69.95	66.84	63.46	60.87	57.46	55.47
5	73.4	71.84	70.52	68.12	67.64	66.29	63.52	60.75	58.86	56.51	55.18
10	68.5	66.92	65.62	63.26	62.79	61.48	58.83	56.29	54.65	52.43	51.34
15	63.5	61.99	60.71	58.37	57.92	56.65	54.09	51.69	50.21	48.01	47.01
20	58.7	57.23	55.98	53.66	53.16	51.91	49.47	47.28	46.04	43.77	43.17
25	54.0	52.50	51.30	49.00	48.44	47.22	44.92	43.02	42.07	39.79	39.26
30	49.2	47.76	46.59	44.28	43.69	42.52	40.40	38.76	38.17	35.86	35.51
35	44.5	43.06	41.86	39.58	38.97	37.86	35.93	34.50	34.27	32.03	32.01
40	39.8	38.41	37.17	34.95	34.33	33.29	31.54	30.33	30.38	28.29	28.28
45	35.2	33.81	32.60	30.48	29.84	28.88	27.29	26.29	26.45	24.60	24.82
50	30.7	29.34	28.21	26.21	25.57	24.70	23.26	22.42	22.64	21.01	21.18
55	26.4	25.08	24.05	22.19	21.58	20.77	19.47	18.75	18.97	17.57	17.91
60	22.3	21.08	20.16	18.48	17.84	17.15	15.98	15.37	15.57	14.43	14.73
65	18.4	17.40	16.59	15.08	14.44	13.86	12.80	12.28	12.47	11.60	11.87
70	14.9	14.02	13.35	12.01	11.37	10.89	9.96	9.58	9.72	9.10	9.31
75	11.6	11.03	10.47	9.27	8.65	8.34	7.55	7.30	7.47	6.98	7.08
80	8.8	8.39	7.95	7.01	6.33	6.27	5.64	5.45	5.59	5.22	5.30
85	6.5	6.20	5.90	5.19	4.53	4.62	4.20	4.12	4.15	3.97	3.95
90	4.7	4.46	4.36	3.84	3.20	3.41	3.16	3.10	3.17	3.00	2.93
95	3.4	3.25	3.25	2.92	2.43	2.53	2.45	2.22	2.28	2.29	2.16
100	2.4	2.43	2.62	2.41	1.91	1.92	1.95	1.48	1.50	1.71	1.56
White male											
0	75.3	72.72	70.82	67.94	67.55	66.31	62.81	59.12	56.34	50.23	48.23
1	74.8	72.35	70.70	68.33	68.34	67.41	64.98	62.04	60.24	56.26	54.61
5	70.9	68.48	66.87	64.55	64.61	63.77	61.68	59.38	58.31	55.37	54.43
10	65.9	63.55	61.98	59.69	59.78	58.98	57.03	54.96	54.15	51.32	50.59
15	61.0	58.65	57.09	54.83	54.93	54.18	52.33	50.39	49.74	46.91	46.25
20	56.2	53.96	52.45	50.22	50.25	49.52	47.76	46.02	45.60	42.71	42.19
25	51.6	49.33	47.92	45.70	45.65	44.93	43.28	41.78	41.60	38.79	38.52
30	46.9	44.71	43.31	41.07	40.97	40.29	38.80	37.54	37.65	34.87	34.88
35	42.2	40.12	38.66	36.43	36.31	35.68	34.36	33.33	33.74	31.08	31.29
40	37.6	35.57	34.04	31.87	31.73	31.17	30.03	29.22	29.86	27.43	27.74
45	33.1	31.07	29.55	27.48	27.34	26.87	25.87	25.28	26.00	23.86	24.21
50	28.7	26.71	25.26	23.34	23.22	22.83	21.96	21.51	22.22	20.39	20.76
55	24.5	22.56	21.25	19.51	19.45	19.11	18.34	17.97	18.59	17.03	17.42
60	20.5	18.71	17.56	16.07	16.01	15.76	15.05	14.72	15.25	13.98	14.35
65	16.8	15.24	14.26	13.02	12.97	12.75	12.07	11.77	12.21	11.25	11.51
70	13.4	12.11	11.35	10.38	10.29	10.07	9.42	9.20	9.51	8.83	9.03
75	10.4	9.40	8.87	8.06	7.92	7.77	7.17	7.02	7.30	6.75	6.84
80	7.9	7.11	6.76	6.18	5.89	5.88	5.38	5.26	5.47	5.09	5.10
85	5.8	5.28	5.09	4.63	4.34	4.35	4.02	3.99	4.06	3.88	3.81
90	4.2	3.85	3.83	3.49	3.16	3.27	3.06	3.03	3.18	2.99	2.85
95	3.0	2.88	2.91	2.67	2.43	2.48	2.40	2.19	2.36	2.31	2.12
100	2.1	2.21	2.41	2.20	1.91	1.92	1.96	1.49	1.58	1.68	1.55

See footnotes at end of table.

visited on 2/14/2013

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003—Con.

Click here for spreadhseet version

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Average number of years of life remaining (e_x)										
	2003	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
White female											
0	80.4	79.45	78.22	75.49	74.19	72.03	67.29	62.67	58.53	53.62	51.08
1	79.8	78.99	77.98	75.66	74.68	72.77	68.93	64.93	61.51	58.69	56.39
5	75.9	75.10	74.13	71.86	70.92	69.09	65.57	62.17	59.43	57.67	56.03
10	71.0	70.16	69.21	66.97	66.05	64.26	60.85	57.65	55.17	53.57	52.15
15	66.0	65.23	64.29	62.07	61.15	59.39	56.07	53.00	50.67	49.12	47.79
20	61.1	60.36	59.44	57.24	56.29	54.56	51.38	48.52	46.46	44.88	43.77
25	56.3	55.51	54.60	52.42	51.45	49.77	46.78	44.25	42.55	40.88	40.05
30	51.4	50.65	49.76	47.60	46.63	45.00	42.21	39.99	38.72	36.96	36.42
35	46.6	45.82	44.93	42.82	41.84	40.28	37.70	35.73	34.86	33.09	32.82
40	41.8	41.03	40.16	38.12	37.13	35.64	33.25	31.52	30.94	29.26	29.17
45	37.1	36.30	35.49	33.54	32.53	31.12	28.90	27.39	26.98	25.45	25.51
50	32.5	31.71	30.96	29.11	28.08	26.76	24.72	23.41	23.12	21.74	21.89
55	28.0	27.29	26.61	24.85	23.81	22.58	20.73	19.60	19.40	18.18	18.43
60	23.7	23.09	22.45	20.79	19.69	18.64	17.00	16.05	15.93	14.92	15.23
65	19.7	19.14	18.55	16.93	15.88	15.00	13.56	12.81	12.75	11.97	12.23
70	15.9	15.46	14.89	13.37	12.38	11.68	10.50	9.98	9.94	9.38	9.59
75	12.5	12.11	11.58	10.21	9.28	8.87	7.92	7.56	7.62	7.20	7.33
80	9.4	9.12	8.65	7.59	6.67	6.59	5.88	5.63	5.70	5.35	5.50
85	6.9	6.62	6.32	5.54	4.66	4.83	4.34	4.24	4.24	4.06	4.10
90	4.9	4.69	4.59	4.05	3.23	3.51	3.24	3.17	3.16	3.00	3.02
95	3.4	3.36	3.39	3.04	2.43	2.56	2.47	2.24	2.20	2.27	2.21
100	2.4	2.49	2.70	2.49	1.91	1.92	1.95	1.48	1.42	1.74	1.58
Black[1]											
0	72.6	69.16	68.52	64.11	63.91	60.73	53.85	48.53	47.03	35.87	33.80
1	72.6	69.43	68.99	65.27	65.75	62.65	57.15	51.71	51.01	43.84	43.00
5	68.7	65.64	65.25	61.62	62.21	59.25	54.13	49.25	49.44	45.34	45.55
10	63.8	60.75	60.38	56.79	57.41	54.50	49.50	44.80	45.26	41.74	42.46
15	58.9	55.86	55.49	51.94	52.57	49.73	44.89	40.37	41.02	38.02	39.04
20	54.1	51.19	50.75	47.34	47.88	45.19	40.73	36.62	37.72	34.86	36.03
25	49.5	46.67	46.18	43.00	43.35	40.85	36.91	33.32	34.91	31.72	33.04
30	44.9	42.22	41.69	38.70	38.89	36.59	33.17	30.07	31.98	28.43	29.96
35	40.3	37.87	37.28	34.48	34.56	32.44	29.53	26.94	29.07	25.39	26.82
40	35.8	33.65	32.98	30.46	30.39	28.48	26.06	23.82	26.07	22.41	23.73
45	31.5	29.55	28.87	26.65	26.46	24.75	22.82	20.97	23.17	19.58	20.67
50	27.4	25.62	25.03	23.11	22.74	21.38	19.94	18.22	20.17	16.84	17.95
55	23.7	21.95	21.50	19.83	19.45	18.41	17.43	15.80	17.33	14.33	15.23
60	20.1	18.59	18.29	16.83	16.53	15.87	15.18	13.62	14.72	12.16	13.06
65	16.8	15.56	15.37	14.16	13.96	13.59	13.02	11.49	12.22	10.22	10.87
70	13.8	12.87	12.67	11.77	11.63	11.48	10.93	9.54	9.90	8.59	8.96
75	11.1	10.48	10.32	9.89	9.52	9.48	8.97	7.84	8.00	7.08	7.24
80	8.8	8.30	8.17	8.20	7.28	7.62	7.31	6.19	6.22	5.80	5.79
85	6.9	6.51	6.54	6.54	5.27	5.79	5.91	4.92	4.88	4.80	4.56
90	5.3	4.94	5.13	5.09	3.48	3.97	4.64	3.83	3.84	4.26	3.60
95	4.1	3.82	4.08	4.28	2.43	2.70	3.51	2.83	2.90	3.31	2.82
100	3.1	2.91	3.58	3.93	1.91	1.94	2.57	1.87	1.94	2.27	2.18
Black male[1]											
0	68.9	64.47	64.10	60.00	61.48	58.91	52.26	47.55	47.14	34.05	32.54
1	69.0	64.76	64.60	61.24	63.50	61.06	55.93	51.08	51.63	42.53	42.46
5	65.2	60.98	60.86	57.60	59.98	57.69	52.95	48.69	50.18	44.25	45.06
10	60.2	56.09	56.01	52.79	55.19	52.96	48.34	44.27	45.99	40.65	41.90
15	55.3	51.22	51.14	47.96	50.39	48.23	43.74	39.83	41.75	36.77	38.26
20	50.6	46.71	46.48	43.49	45.78	43.73	39.52	35.95	38.36	33.46	35.11
25	46.2	42.40	42.09	39.45	41.38	39.49	35.72	32.67	35.54	30.44	32.21
30	41.7	38.14	37.81	35.40	37.05	35.31	32.05	29.45	32.51	27.33	29.25
35	37.3	34.02	33.60	31.42	32.81	31.21	28.48	26.39	29.54	24.42	26.16
40	32.9	30.05	29.51	27.61	28.72	27.29	25.06	23.36	26.53	21.57	23.12
45	28.6	26.18	25.61	24.03	24.89	23.59	21.88	20.59	23.55	18.85	20.09
50	24.7	22.50	22.03	20.69	21.28	20.25	19.06	17.92	20.47	16.21	17.34
55	21.1	19.08	18.79	17.66	18.11	17.36	16.60	15.46	17.50	13.82	14.69

See footnotes at end of table.

visited on 2/14/2013

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 2003—Con.

Click here for spreadhseet version

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Age, race, and sex	Average number of years of life remaining (e_x)										
	2003	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Black male[1]—Con.											
60	17.8	16.01	15.89	14.93	15.29	14.91	14.37	13.15	14.74	11.67	12.62
65	14.8	13.27	13.29	12.53	12.84	12.75	12.21	10.87	12.07	9.74	10.38
70	12.0	10.88	10.94	10.40	10.81	10.74	10.11	8.78	9.58	8.00	8.33
75	9.6	8.84	8.90	8.76	8.93	8.83	8.17	6.99	7.61	6.58	6.60
80	7.6	7.01	7.03	7.35	6.87	7.07	6.58	5.42	5.83	5.53	5.12
85	6.0	5.58	5.61	5.92	5.08	5.38	5.34	4.30	4.53	4.48	4.04
90	4.6	4.24	4.47	4.68	3.42	3.78	4.23	3.42	3.60	4.01	3.21
95	3.5	3.37	3.62	3.92	2.43	2.64	3.20	2.54	2.61	3.15	2.50
100	2.7	2.63	3.24	3.61	1.91	1.93	2.29	1.68	1.64	2.14	1.89
Black female[1]											
0	75.9	73.73	72.88	68.32	66.47	62.70	55.56	49.51	46.92	37.67	35.04
1	75.9	73.96	73.31	69.37	68.10	64.37	58.46	52.33	50.39	45.15	43.54
5	72.0	70.16	69.54	65.70	64.54	60.93	55.40	49.81	48.70	46.42	46.04
10	67.1	65.26	64.65	60.85	59.72	56.17	50.75	45.33	44.54	42.84	43.02
15	62.1	60.34	59.74	55.97	54.85	51.36	46.13	40.87	40.36	39.18	39.79
20	57.2	55.49	54.90	51.22	50.07	46.77	42.04	37.22	37.15	36.14	36.89
25	52.4	50.72	50.13	46.57	45.40	42.35	38.20	33.93	34.35	32.97	33.90
30	47.7	46.03	45.43	42.00	40.83	38.02	34.40	30.67	31.48	29.61	30.70
35	43.0	41.45	40.79	37.56	36.41	33.82	30.83	27.47	28.58	26.44	27.52
40	38.4	36.96	36.28	33.32	32.16	29.82	27.19	24.30	25.60	23.34	24.37
45	34.0	32.58	31.94	29.31	28.14	26.07	23.89	21.39	22.61	20.43	21.36
50	29.8	28.38	27.84	25.52	24.31	22.67	20.95	18.60	19.76	17.65	18.67
55	25.7	24.41	24.00	21.97	20.89	19.62	18.38	16.27	17.09	14.98	15.88
60	21.9	20.71	20.42	18.66	17.83	16.95	16.10	14.22	14.69	12.78	13.60
65	18.3	17.37	17.13	15.67	15.12	14.54	13.95	12.24	12.41	10.82	11.38
70	15.0	14.32	14.05	13.02	12.46	12.29	11.82	10.38	10.25	9.22	9.62
75	12.1	11.56	11.37	10.85	10.10	10.15	9.81	8.62	8.37	7.55	7.90
80	9.5	9.05	8.95	8.87	7.66	8.15	8.02	6.90	6.58	6.05	6.48
85	7.3	6.99	7.09	7.00	5.44	6.15	6.41	5.48	5.22	5.09	5.10
90	5.6	5.24	5.47	5.41	3.52	4.13	4.96	4.20	4.07	4.50	4.01
95	4.2	3.97	4.30	4.58	2.43	2.74	3.71	3.09	3.18	3.45	3.15
100	3.1	2.97	3.69	4.20	1.91	1.94	2.70	2.04	2.23	2.39	2.49

[1]For 1939–41 and 1949–51, data shown are for the entire nonwhite population. During these periods, life tables were not constructed for the black population. See "Technical Notes."

visited on 2/14/2013

Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–2003

Click here for spreadhseet version

[For selected years, life table values shown are estimates; see "Technical Notes." Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Area and year	All races			White			Black[2]		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States[1]									
2003	77.4	74.7	80.0	77.9	75.3	80.4	72.6	68.9	75.9
2002	77.3	74.5	79.9	77.7	75.1	80.3	72.3	68.8	75.6
2001	77.2	74.4	79.8	77.7	75.0	80.2	72.2	68.6	75.5
2000	77	74.3	79.7	77.6	74.9	80.1	71.9	68.3	75.2
1999	76.7	73.9	79.4	77.3	74.6	79.9	71.4	67.8	74.7
1998	76.7	73.8	79.5	77.3	74.5	80.0	71.3	67.6	74.8
1997	76.5	73.6	79.4	77.2	74.3	79.9	71.1	67.2	74.7
1996	76.1	73.1	79.1	76.8	73.9	79.7	70.2	66.1	74.2
1995	75.8	72.5	78.9	76.5	73.4	79.6	69.6	65.2	73.9
1994	75.7	72.4	79.0	76.5	73.3	79.6	69.5	64.9	73.9
1993	75.5	72.2	78.8	76.3	73.1	79.5	69.2	64.6	73.7
1992	75.8	72.3	79.1	76.5	73.2	79.8	69.6	65.0	73.9
1991	75.5	72.0	78.9	76.3	72.9	79.6	69.3	64.6	73.8
1990	75.4	71.8	78.8	76.1	72.7	79.4	69.1	64.5	73.6
1989	75.1	71.7	78.5	75.9	72.5	79.2	68.8	64.3	73.3
1988	74.9	71.4	78.3	75.6	72.2	78.9	68.9	64.4	73.2
1987	74.9	71.4	78.3	75.6	72.1	78.9	69.1	64.7	73.4
1986	74.7	71.2	78.2	75.4	71.9	78.8	69.1	64.8	73.4
1985	74.7	71.1	78.2	75.3	71.8	78.7	69.3	65.0	73.4
1984	74.7	71.1	78.2	75.3	71.8	78.7	69.5	65.3	73.6
1983	74.6	71.0	78.1	75.2	71.6	78.7	69.4	65.2	73.5
1982	74.5	70.8	78.1	75.1	71.5	78.7	69.4	65.1	73.6
1981	74.1	70.4	77.8	74.8	71.1	78.4	68.9	64.5	73.2
1980	73.7	70.0	77.4	74.4	70.7	78.1	68.1	63.8	72.5
1979	73.9	70.0	77.8	74.6	70.8	78.4	68.5	64.0	72.9
1978	73.5	69.6	77.3	74.1	70.4	78.0	68.1	63.7	72.4
1977	73.3	69.5	77.2	74.0	70.2	77.9	67.7	63.4	72.0
1976	72.9	69.1	76.8	73.6	69.9	77.5	67.2	62.9	71.6
1975	72.6	68.8	76.6	73.4	69.5	77.3	66.8	62.4	71.3
1974	72.0	68.2	75.9	72.8	69.0	76.7	66.0	61.7	70.3
1973	71.4	67.6	75.3	72.2	68.5	76.1	65.0	60.9	69.3
1972[2]	71.2	67.4	75.1	72.0	68.3	75.9	64.7	60.4	69.1
1971	71.1	67.4	75.0	72.0	68.3	75.8	64.6	60.5	68.9
1970	70.8	67.1	74.7	71.7	68.0	75.6	64.1	60.0	68.3
1969	70.5	66.8	74.4	71.4	67.7	75.3	64.5	60.6	68.6
1968	70.2	66.6	74.1	71.1	67.5	75.0	64.1	60.4	67.9
1967	70.5	67.0	74.3	71.4	67.8	75.2	64.9	61.4	68.5
1966	70.2	66.7	73.9	71.1	67.5	74.8	64.2	60.9	67.6
1965	70.2	66.8	73.8	71.1	67.6	74.8	64.3	61.2	67.6
1964	70.2	66.8	73.7	71.0	67.7	74.7	64.2	61.3	67.3
1963[3]	69.9	66.6	73.4	70.8	67.4	74.4	63.7	61.0	66.6
1962[3]	70.1	66.9	73.5	70.9	67.7	74.5	64.2	61.6	66.9
1961	70.2	67.1	73.6	71.0	67.8	74.6	64.5	62.0	67.1
1960	69.7	66.6	73.1	70.6	67.4	74.1	63.6	61.1	66.3
1959	69.9	66.8	73.2	70.7	67.5	74.2	63.9	61.3	66.5
1958	69.6	66.6	72.9	70.5	67.4	73.9	63.4	61.0	65.8
1957	69.5	66.4	72.7	70.3	67.2	73.7	63.0	60.7	65.5
1956	69.7	66.7	72.9	70.5	67.5	73.9	63.6	61.3	66.1
1955	69.6	66.7	72.8	70.5	67.4	73.7	63.7	61.4	66.1
1954	69.6	66.7	72.8	70.5	67.5	73.7	63.4	61.1	65.9
1953	68.8	66.0	72.0	69.7	66.8	73.0	62.0	59.7	64.5
1952	68.6	65.8	71.6	69.5	66.6	72.6	61.4	59.1	63.8
1951	68.4	65.6	71.4	69.3	66.5	72.4	61.2	59.2	63.4
1950	68.2	65.6	71.1	69.1	66.5	72.2	60.8	59.1	62.9
1949	68.0	65.2	70.7	68.8	66.2	71.9	60.6	58.9	62.7
1948	67.2	64.6	69.9	68.0	65.5	71.0	60.0	58.1	62.5
1947	66.8	64.4	69.7	67.6	65.2	70.5	59.7	57.9	61.9
1946	66.7	64.4	69.4	67.5	65.1	70.3	59.1	57.5	61.0
1945	65.9	63.6	67.9	66.8	64.4	69.5	57.7	56.1	59.6
1944	65.2	63.6	66.8	66.2	64.5	68.4	56.6	55.8	57.7
1943	63.3	62.4	64.4	64.2	63.2	65.7	55.6	55.4	56.1
1942	66.2	64.7	67.9	67.3	65.9	69.4	56.6	55.4	58.2

See footnotes at end of table.

visited on 2/14/2013

Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–2003—Con.

Click here for spreadhseet version

[For selected years, life table values shown are estimates; see "Technical Notes." Beginning 1970 excludes deaths of nonresidents of the United States; see "Technical Notes"]

Area and year	All races			White			Black[2]		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States[1]—Con.									
1941	64.8	63.1	66.8	66.2	64.4	68.5	53.8	52.5	55.3
1940	62.9	60.8	65.2	64.2	62.1	66.6	53.1	51.5	54.9
1939	63.7	62.1	65.4	64.9	63.3	66.6	54.5	53.2	56.0
1938	63.5	61.9	65.3	65.0	63.2	66.8	52.9	51.7	54.3
1937	60.0	58.0	62.4	61.4	59.3	63.8	50.3	48.3	52.5
1936	58.5	56.6	60.6	59.8	58.0	61.9	49.0	47.0	51.4
1935	61.7	59.9	63.9	62.9	61.0	65.0	53.1	51.3	55.2
1934	61.1	59.3	63.3	62.4	60.5	64.6	51.8	50.2	53.7
1933	63.3	61.7	65.1	64.3	62.7	66.3	54.7	53.5	56.0
1932	62.1	61.0	63.5	63.2	62.0	64.5	53.7	52.8	54.6
1931	61.1	59.4	63.1	62.6	60.8	64.7	50.4	49.5	51.5
1930	59.7	58.1	61.6	61.4	59.7	63.5	48.1	47.3	49.2
1929	57.1	55.8	58.7	58.6	57.2	60.3	46.7	45.7	47.8
Death-registration States									
1928	56.8	55.6	58.3	58.4	57.0	60.0	46.3	45.6	47.0
1927	60.4	59.0	62.1	62.0	60.5	63.9	48.2	47.6	48.9
1926	56.7	55.5	58.0	58.2	57.0	59.6	44.6	43.7	45.6
1925	59.0	57.6	60.6	60.7	59.3	62.4	45.7	44.9	46.7
1924	59.7	58.1	61.5	61.4	59.8	63.4	46.6	45.5	47.8
1923	57.2	56.1	58.5	58.3	57.1	59.6	48.3	47.7	48.9
1922	59.6	58.4	61.0	60.4	59.1	61.9	52.4	51.8	53.0
1921	60.8	60.0	61.8	61.8	60.8	62.9	51.5	51.6	51.3
1920	54.1	53.6	54.6	54.9	54.4	55.6	45.3	45.5	45.2
1919	54.7	53.5	56.0	55.8	54.5	57.4	44.5	44.5	44.4
1918	39.1	36.6	42.2	39.8	37.1	43.2	31.1	29.9	32.5
1917	50.9	48.4	54.0	52.0	49.3	55.3	38.8	37.0	40.8
1916	51.7	49.6	54.3	52.5	50.2	55.2	41.3	39.6	43.1
1915	54.5	52.5	56.8	55.1	53.1	57.5	38.9	37.5	40.5
1914	54.2	52.0	56.8	54.9	52.7	57.5	38.9	37.1	40.8
1913	52.5	50.3	55.0	53.0	50.8	55.7	38.4	36.7	40.3
1912	53.5	51.5	55.9	53.9	51.9	56.2	37.9	35.9	40.0
1911	52.6	50.9	54.4	53.0	51.3	54.9	36.4	34.6	38.2
1910	50.0	48.4	51.8	50.3	48.6	52.0	35.6	33.8	37.5
1909	52.1	50.5	53.8	52.5	50.9	54.2	35.7	34.2	37.3
1908	51.1	49.5	52.8	51.5	49.9	53.3	34.9	33.8	36.0
1907	47.6	45.6	49.9	48.1	46.0	50.4	32.5	31.1	34.0
1906	48.7	46.9	50.8	49.3	47.3	51.4	32.9	31.8	33.9
1905	48.7	47.3	50.2	49.1	47.6	50.6	31.3	29.6	33.1
1904	47.6	46.2	49.1	48.0	46.6	49.5	30.8	29.1	32.7
1903	50.5	49.1	52.0	50.9	49.5	52.5	33.1	31.7	34.6
1902	51.5	49.8	53.4	51.9	50.2	53.8	34.6	32.9	36.4
1901	49.1	47.6	50.6	49.4	48.0	51.0	33.7	32.2	35.3
1900	47.3	46.3	48.3	47.6	46.6	48.7	33.0	32.5	33.5

[1]Alaska included in 1959 and Hawaii in 1960.

[2]Deaths based on a 50-percent sample.

[3]Figures by race exclude data for residents of New Jersey; see "Technical Notes."

[4]Prior to 1970, data for the black population are not available. Data shown for 1900–1969 are for the nonwhite population. See "Technical Notes."

visited on 2/14/2013

Technical Notes

The life table program—Three series of complete life tables are prepared by the National Center for Health Statistics (NCHS) for the U.S. population—decennial, annual preliminary, and annual final. The U.S. decennial life tables are based on decennial census data and deaths for a 3-year period around the census year. Preliminary life tables are based on a substantial sample (approximately 90 percent) of death records. Estimates of life expectancy from the preliminary series are published annually. The annual final life tables (referred to in this section as annual life tables) are based on a complete count of all reported deaths.

Available since 1945, the annual life tables are based on deaths occurring during the calendar year and on midyear postcensal population estimates provided by the U.S. Census Bureau. From 1945 to 1996, the annual life tables were abridged life tables and were constructed by reference to a standard table (8). Beginning with 1997 mortality data, complete life tables are constructed using a new methodology (9,10). Also for 1997, life expectancy and other life table values were shown for ages 85 to 100 years for the first time as part of the annual U.S. life tables. Previously, the annual life tables were closed at age 85 years. Extension of the oldest age interval was implemented by NCHS for several reasons: 1) survival in the United States is such that approximately one-third of the population survives beyond age 85, 2) improvements have occurred in age reporting at older ages, and 3) high quality old-age mortality data are available from the Medicare program.

Geographic coverage—The geographic areas covered in life tables before 1929–31 were limited to the death-registration areas. Life tables for 1900–1902 and 1909–11 were constructed using mortality data from the 1900 death-registration states (10 states and the District of Columbia) and for 1919–21 from the 1920 death-registration states (34 states and the District of Columbia). The tables for 1929–31 through 1958 cover the coterminous United States. Decennial life table values for the 3-year period 1959–61 were derived from data that include both Alaska and Hawaii for each year (Tables 10 and 11). Data for each year shown in Table 12 include Alaska beginning in 1959 and Hawaii beginning in 1960. However, it is not believed that the inclusion of these two states materially affects life table values.

Revised life table values—Life table values for 1960–69, 1970–79, and 1980–89 were constructed using the U.S. decennial life tables for 1959–61, 1969–71, and 1979–81, respectively, as the standard tables. The life table values for years prior to 1989 appearing in this publication are based on revised intercensal estimates of the populations for those years. As a result, the life table values for these years may differ from the life table values for those years published in *Vital Statistics of the United States* for 1989 and earlier years. Life table values for 1991–99 are based on postcensal population estimates of the population enumerated in the 1990 decennial census while life table values for 2000–2003 are based on population estimates of the population enumerated in the 2000 decennial census. As a result, life expectancy values across the 1990s are not comparable to those estimated for 2000–2003. A comparison of life expectancy values for 2000 estimated alternately with 1990-based postcensal estimates of the 2000 population and population estimates based on the 2000 census revealed that life expectancy values estimated using the 2000 census population estimates were slightly higher throughout the entire age range (17). Revised life table values for 1991–99 using the census 2000-based new intercensal population estimates will be estimated by NCHS in the upcoming year.

New Jersey data, 1962–64—The life tables for 1962 and 1963 for the six population groups involving race do not include data from New Jersey, which omitted the item on race from its certificates of live birth, death, and fetal death in use at the beginning of 1962. The item was restored during the latter part of 1962. However, the certificate revision without this item was used for most of 1962 as well as for 1963. For computing vital rates, populations by age, race, and sex (excluding New Jersey) were estimated to obtain comparable denominators. Approximately 7 percent of the New Jersey death records for 1964 did not contain the race designation. When the records were being electronically processed for this State, the "race not stated" deaths were proportionally allocated to white or to black.

Nonresidents—Beginning in 1970, the deaths of nonresidents of the United States have been excluded from the life table statistics.

Estimation of life table functions—For some years, it was necessary to estimate life table functions for some race-sex groups. In Tables 10 and 11, figures for the black population during the periods 1949–51 and 1959–61 were estimated using figures for the nonwhite population. Life table functions were also missing in Tables 10 and 11 for race-sex groups for the periods from 1900–1902 to 1939–41. Figures were missing for the following groups:

Years	*Race and sex*
1900–1902	Total white, total black
1909–11	Total white, total black
1919–21	Total, male, female, total white, total black
1929–31	Total, male, female, total white, total black

These figures were estimated by weighted averages using population distributions as the weights. For example, life expectancy at age 20 years for the total black population was estimated by a weighted average of black male and black female life expectancies at age 20 years, using as weights the population distribution by sex of the black population aged 20 years.

Annual life tables were initiated in 1945 for white males, white females, all other males, and all other females. The figures in Table 12 by race and sex for the following years were estimated using a procedure other than the abridged life table methodology (18).

Years	*Race and sex*
1900–45	Total
1900–47	Male
1900–47	Female
1900–50	White
1900–44	White male
1900–44	White female

Annual life table functions were not calculated for the black population prior to 1970. In Table 12, life expectancy for the black population for years prior to 1970 are estimated using figures for the total nonwhite population.

Population bases for computing life tables—Populations used for computing life tables shown in this report represent the population residing in the United States, enumerated as of April 1 for census years

visited on 2/14/2013

and estimated as of July 1 for all other years. Life tables for the United States for 2003 are estimated using postcensal estimates published in 2003 based on the 2000 census estimated as of July 1, 2003. Life tables for 2000 shown in this report have been recomputed, based on revised populations that are consistent with the 2000 census. These estimates were produced under a collaborative arrangement with the U.S. Census Bureau and are based on the 2000 census counts by age, race, and sex, modified to be consistent with U.S. Office of Management and Budget race categories as of 1977 and historical categories for death data (5). The modified procedures are described in detail elsewhere (7). Life tables previously published in annual reports of final data for 1991 to 1999 were based on postcensal population estimates derived from the 1990 census. The 1991–99 life tables will be re-estimated using 2000 census-based intercensal population estimates.

Medicare data—Death rates at the oldest ages based on Medicare data are known to be more accurate than those based on vital statistics and census data. Consequently, q_x values calculated for ages 85 to 99 years are based on Medicare data collected by the Centers for Medicare and Medicaid Services. Medicare data were limited to the group insured for hospital insurance as age reporting is considered best among this group (10,15,16). For the 2003 life tables, pooled 1999–2001 Medicare data were used as 2003 data were not available in time for the preparation of this report.

Methodology

A more detailed treatment of the methodology used to calculate these life tables is contained in a separate report (9). Calculation of the complete life table is derived from the probability of death (q_x), which depends on the number of deaths (D_x) and the midyear population (P_x) for each single year of age (x) observed during the calendar year of interest.

Adjustment for deaths for which age was not reported—An adjustment must be made to account for the small proportion of deaths each year for which age is not reported. The number of deaths in each age category is adjusted proportionally to account for those with not-stated ages. The following factor is used to make the adjustment. This factor (F) is calculated for each race-sex group for which life tables are constructed.

$$F = \frac{D}{D^a} \qquad [1]$$

where D is the total number of deaths and D^a is the total number of deaths for which age is stated. F is then applied by multiplying it times the number of deaths in each age group. Table I shows values for F by race and sex used to adjust the 2003 mortality data.

Interpolation of P_x and D_x—Anomalies, both random and those associated with reporting age at death, can be problematic when using vital statistics and census data by single years of age to estimate the probability of death (1). Graduation techniques are often used to eliminate these anomalies and to derive a smooth curve by age. Beer's ordinary minimized fifth difference formula is used to obtain smoothed values of P_x and D_x (see reference 5 for details on the application of Beer's method).

Calculation of q_0—q_0 is calculated by using a birth cohort method employing a separation factor (f) defined as the proportion of infant deaths in year t occurring to infants born in the previous year (t–1).

Table I. Values for *F* used to adjust for not-stated age based on 2003 mortality data

Race and sex	Total deaths	Total deaths for which age was not stated	*F*
Total	2,448,288	342	1.00013971
Male	1,201,964	271	1.00022552
Female	1,246,324	71	1.00005697
White	2,103,714	292	1.00013882
Male	1,025,650	228	1.00022235
Female	1,078,064	64	1.00005937
Black	291,300	40	1.00013733
Male	148,022	35	1.00023651
Female	143,278	5	1.00003490

f can be calculated by categorizing infant deaths by date of birth. The probability of death in the first year is calculated as

$$q_0 = \frac{D_0\,(1-f)}{B^t} + \frac{D_0\,f}{B^{t-1}} \qquad [2]$$

where D_0 is the number of infant deaths adjusted for not-reported age, and B^t and B^{t-1} are the numbers of births in years t and t–1, respectively. Table II shows separation factors and numbers of births by race and sex for 2002–03.

Calculation of q_x for ages 1–84—q_x is calculated assuming that l_x (number of survivors at exact age x in the life table population) declines linearly between x and x+1 (i.e., that deaths between exact age x and x+1 occur on average at age x+½). This simplification is generally considered acceptable when age intervals are 1 year of age in length (1). Under this assumption, $l_x = L_x + ½d_x$ where L_x is the average life table population at risk of dying between ages x and x+1 and d_x is the number of deaths occurring between age x and x+1. q_x is then

$$q_x = \frac{d_x}{l_x} = \frac{d_x}{L_x + \frac{1}{2}d_x}$$

One can make the same assumption for the observed population (i.e., that the observed population aged x at risk of dying at the beginning of the year (N_x) declines linearly between ages x and x+1). Under this assumption, $N_x = P_x + ½D_x$ where P_x is the midyear population or average observed population at risk of dying between ages x and x+1 and D_x is the observed number of deaths occurring between ages x and x+1. q_x is calculated as

$$q_x = \frac{D_x}{N_x} = \frac{D_x}{P_x + \frac{1}{2}D_x} \qquad [3]$$

For $x = 1$ to 84, D_x is the observed number of deaths adjusted for not-stated age and P_x is the observed population at risk of dying between ages x and $x + 1$.

Use of Medicare data at ages 85 to 99 years—There is ample evidence that the rate of increase in q_x declines above age 85 (9,16,19–21). The change in q_x for ages over 85 years can be expressed using the formula

$$q_x = q_{x-1} \bullet e^k \qquad [4]$$

visited on 2/14/2013

Table II. Births in 2002 and 2003, deaths in 2003 of infants born in 2002 and 2003, and separation factors by race and sex: United States

	Total			White			Black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Births									
2002	4,021,726	2,057,979	1,963,747	3,174,760	1,626,303	1,548,457	593,691	301,498	292,193
2003	4,091,063	2,094,128	1,996,935	3,227,755	1,653,135	1,574,620	599,414	304,990	294,424
Deaths in 2003 of infants born in									
2002	3,270	1,896	1,374	2,152	1,269	883	939	526	413
2003	24,755	14,006	10,749	16,288	9,231	7,057	7,463	4,214	3,249
Separation factor (*f*)	0.117	0.119	0.113	0.117	0.121	0.111	0.112	0.111	0.113

Table III. *k* values by age, race, and sex based on insured Medicare data: United States, 1999–2001

	Total			White			Black		
Age	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
84–85	0.0898549	0.0864076	0.0973817	0.0919802	0.0886566	0.0996705	0.0694068	0.0661179	0.0762840
85–86	0.0890116	0.0854434	0.0965147	0.0910896	0.0876323	0.0987562	0.0688880	0.0655157	0.0757369
86–87	0.0880989	0.0844055	0.0955687	0.0901240	0.0865277	0.0977568	0.0683365	0.0648788	0.0751511
87–88	0.0871128	0.0832905	0.0945386	0.0890791	0.0853392	0.0966665	0.0677509	0.0642060	0.0745247
88–89	0.0860496	0.0820954	0.0934192	0.0879507	0.0840634	0.0954797	0.0671298	0.0634964	0.0738556
89–90	0.0849057	0.0808174	0.0922055	0.0867350	0.0826974	0.0941908	0.0664719	0.0627488	0.0731420
90–91	0.0836777	0.0794545	0.0908927	0.0854283	0.0812389	0.0927947	0.0657759	0.0619625	0.0723820
91–92	0.0823627	0.0780047	0.0894765	0.0840275	0.0796860	0.0912868	0.0650407	0.0611368	0.0715737
92–93	0.0809582	0.0764671	0.0879531	0.0825300	0.0780378	0.0896628	0.0642651	0.0602711	0.0707155
93–94	0.0794625	0.0748414	0.0863193	0.0809339	0.0762943	0.0879197	0.0634483	0.0593651	0.0698059
94–95	0.0778742	0.0731281	0.0845728	0.0792383	0.0744563	0.0860552	0.0625893	0.0584185	0.0688436
95–96	0.0761930	0.0713287	0.0827124	0.0774428	0.0725258	0.0840682	0.0616877	0.0574315	0.0678274
96–97	0.0744195	0.0694455	0.0807379	0.0755487	0.0705060	0.0819591	0.0607430	0.0564044	0.0667565
97–98	0.0725553	0.0674822	0.0786508	0.0735578	0.0684012	0.0797298	0.0597550	0.0553376	0.0656304
98–99	0.0706028	0.0654433	0.0764537	0.0714736	0.0662171	0.0773840	0.0587237	0.0542321	0.0644489

where k_x denotes the age-specific rate of mortality change with age (16,20). Solving for k_x gives

$$k_x = \ln(q_x) - \ln(q_{x-1}) \qquad [5]$$

Values for k_x are then obtained from the Medicare data. Table III shows values for k by age, race, and sex based on pooled 1991–2001 Medicare data. These data show clearly a declining rate of increase in q_x over age 85 years. These k_x values are then used to obtain q_x values for ages 85 to 99 years using equation 4. This method allows for flexibility in cases where the Medicare data are not available in a timely fashion. In these cases, Medicare data for the previous year can be used to calculate k_x values. Finally, ${}_{\infty}q_{100}$ is set equal to 1.0 because all will die at some point in this open-ended age interval. Once q_x is obtained for each single year of age, the other life table functions may be easily calculated.

Survivor function (l_x)—The life table radix, l_0, is set at 100,000. For ages greater than 0, the number of survivors remaining at exact age x is calculated as

$$l_x = l_{x-1}\,(1-q_{x-1}) \qquad [6]$$

Decrement function (d_x)—The number of deaths occurring between age x and $x+1$ is calculated from the survivor function.

$$d_x = l_x - l_{x+1} = l_x\, q_x \qquad [7]$$

Note that ${}_{\infty}d_{100} = {}_{\infty}l_{100}$ since ${}_{\infty}q_{100} = 1.0$.

Person-years lived (L_x)—Person-years lived for ages 1 to 99 is calculated assuming that the survivor function declines linearly between age x and $x+1$. This gives the formula

$$L_x = \tfrac{1}{2}\,(l_x + l_{x+1}) = l_x - \tfrac{1}{2}d_x \qquad [8]$$

For $x = 0$, the separation factor f is used to calculate L_0.

$$L_0 = f\,l_0 + (1-f)\,l_1$$

${}_{\infty}L_{100}$ is calculated by surviving the life table cohort from age 100 using equations 4, 5, and 6 until L_x at these ages is essentially zero (somewhere between ages 110 and 120). q_x for these ages can be extrapolated from the Medicare data using equation 4. However, k_x values must be estimated for these ages. k_x can be modeled as a linear function of age

$$k_x = k_{85} + (x-85)s \qquad [9]$$

where s is the slope of the change in k_x by age and k_{85} is calculated as $[\ln(q_{88}/q_{81})]/7$ in order to minimize the effects of random fluctuations (16,21). s can be obtained by treating equation 9 as a linear regression model. Calculated values for s are shown in Table IV. The predicted values for k_x are then used to calculate q_x above age 100 using equation 4. The corresponding L_x values for ages 100 years and over are then summed to give ${}_{\infty}L_{100}$.

visited on 2/14/2013

Table IV. Slope of the change in *k* values (*s*) by race and sex

Race and sex	*s*
Total, both sexes	–0.001370
Male	–0.001496
Female	–0.001487
White, both sexes	–0.001460
Male	–0.001602
Female	–0.001584
Black, both sexes	–0.000761
Male	–0.000848
Female	–0.008415

Person-years lived at and above age x (T_x)—T_x is calculated by summing L_x values at and above age x.

$$T_x = \sum_{t=0}^{\infty} L_{x+t} \qquad [10]$$

Life expectancy at age x (e_x)—Life expectancy at exact age x is calculated as

$$e_x = \frac{T_x}{l_x} \qquad [11]$$

Abridging the complete life table

An abridged or collapsed version of the complete life table can be easily calculated in which life table functions are shown for 5-year rather than single-year age intervals. It is often desirable to summarize the life table and save space when publishing life table data by single years of age. The abridgement of the complete life table is simplified by an important property of three of the six life table functions. The l_x, T_x, and e_x functions describe exact age x (i.e., the beginning of the age interval x to $x + n$ (n denotes the length of the age interval for 5-year age intervals $n = 5$)). Life expectancy at age 20 (e_{20}), for example, has the same value regardless of whether the age interval is 20–21 years or 20–25 years. Thus, the values l_x, T_x, and e_x can be extracted at 5-year intervals from the complete life table and placed into the abridged life table (compare l_x, T_x, and e_x in Table V with the same functions in Table 1). It is also illustrative to compare values for e_x and l_x in Tables A and B with their corresponding values presented in Tables 1–9. The q_x, d_x, and L_x functions, in contrast, describe the age interval x to $x + n$. In fact, for abridged life tables, the notation for these functions is different (${}_nq_x$, ${}_nd_x$, and ${}_nL_x$). Thus, ${}_5q_{20}$ is the probability of dying between ages 20 and 25 years and will obviously be somewhat larger than q_{20}, the probability of dying between ages 20 and 21 years. Taking this into account, ${}_nq_x$, ${}_nd_x$, and ${}_nL_x$ must be recalculated in the abridged life table. It is simplest to begin with ${}_nd_x$. The calculations are made for all but the final age interval as follows:

$${}_nd_x = l_x - l_{x+n}$$

$${}_nq_x = \frac{{}_nd_x}{l_x}$$

$${}_nL_x = T_x - T_{x+n}$$

Note that for the open-ended interval, ages 100 years and over: ${}_\infty d_{100} = l_{100}$, ${}_\infty q_{100} = 1.0$, and ${}_\infty L_{100} = T_{100}$. Table V shows each of the life table functions for the 2003 U.S. total population abridged from Table 1.

Table V. Abridged life table for the total population: United States, 2003

Age	Probability of dying between ages *x* to *x+n* ${}_nq_x$	Number surviving to age *x* l_x	Number dying between ages *x* to *x+n* ${}_nd_x$	Person-years lived between ages *x* to *x+n* ${}_nL_x$	Total number of person-years lived above age *x* T_x	Expectation of life at age *x* e_x
0–1	0.006865	100,000	687	99,394	7,743,016	77.4
1–2	0.001253	99,313	124	396,960	7,643,622	77.0
5–6	0.000734	99,189	73	495,748	7,246,663	73.1
10–11	0.000956	99,116	95	495,401	6,750,914	68.1
15–16	0.003317	99,022	328	494,379	6,255,513	63.2
20–21	0.004808	98,693	474	492,299	5,761,134	58.4
25–26	0.004749	98,219	466	489,929	5,268,835	53.6
30–31	0.005545	97,752	542	487,462	4,778,906	48.9
35–36	0.007907	97,210	769	484,257	4,291,444	44.1
40–41	0.011988	96,442	1156	479,499	3,807,187	39.5
45–46	0.017857	95,285	1701	472,418	3,327,688	34.9
50–51	0.025681	93,584	2403	462,237	2,855,270	30.5
55–56	0.037360	91,181	3407	447,897	2,393,033	26.2
60–61	0.057943	87,774	5086	426,917	1,945,136	22.2
65–66	0.086268	82,688	7133	396,580	1,518,219	18.4
70–71	0.130209	75,555	9838	354,409	1,121,639	14.8
75–76	0.197417	65,717	12974	297,377	767,230	11.7
80–81	0.298855	52,743	15763	225,136	469,853	8.9
85–86	0.434895	36,981	16083	144,027	244,716	6.6
90–91	0.593323	20,898	12399	71,297	100,689	4.8
95–96	0.750843	8,499	6381	24,166	29,392	3.5
100+	1.000000	2,118	2118	5,226	5,226	2.5

visited on 2/14/2013

Contents

Abstract 1
Introduction 1
Data and Methods 1
Explanation of the columns of the life table 2
Results 3
Life expectancy in the United States 3
Survivorship in the United States. 5
References 6
List of Detailed Tables 7
Technical Notes 36

This document is hereby certified as an official Federal document and is fully admissible as evidence in Federal court. Under Federal Rule of Evidence 902: "Self-authentication," (FED.R.EVID.902), no extrinsic evidence of authenticity, that is, seal or stamp, is required as a condition for admissibility of this document as evidence in court.

Copyright information

All material appearing in this report is in the public domain and may be reproduced or copied without permission; citation as to source, however, is appreciated.

Suggested citation

Arias E. United States life tables, 2003. National vital statistics reports; vol 54 no 14. Hyattsville, MD: National Center for Health Statistics. 2006.

National Center for Health Statistics

Director
Edward J. Sondik, Ph.D.

Acting Co-Deputy Directors
Jennifer H. Madans, Ph.D.
Michael H. Sadagursky

Division of Vital Statistics

Director, Charles J. Rothwell

U.S. DEPARTMENT OF
HEALTH & HUMAN SERVICES

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

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

To receive this publication regularly, contact the National Center for Health Statistics by calling 1-866-441-NCHS (6247)
E-mail: nchsquery@cdc.gov
Internet: www.cdc.gov/nchs

06-0103 (4/2006)
CS102387
T24765
DHHS Publication No. (PHS) 2006–1120

MEDIA MAIL
POSTAGE & FEES PAID
CDC/NCHS
PERMIT NO. G-284