

## United States Life Tables, 1997

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### Abstract

The life tables in this report are current life tables for the United States based on age-specific death rates in 1997. Beginning with 1997 mortality data, complete U.S. life tables were constructed using a new methodology that replaces the abridged life table methodology used previously. The methodology is similar to that used in the decennial life tables. Also, life expectancy and other life table values are shown for ages 85 to 100 years for the first time as part of the annual U.S. life tables. Data used to prepare these life tables are 1997 final mortality statistics; July 1, 1997, population estimates; and data from the Medicare program. Presented are complete life tables by age, race, and sex. In 1997 the overall expectation of life at birth was 76.5 years, an increase of 0.4 years compared with life expectancy in 1996. Life expectancy increased from 1996 to 1997 for each of the four race-sex groups for which life expectancy is reported. Life expectancy increased for black males by 1.1 year (from 66.1 to 67.2), for black females by 0.5 year (from 74.2 to 74.7), for white males by 0.4 year (from 73.9 to 74.3), and for white females by 0.2 year (from 79.7 to 79.9).

### Introduction

Death rates for a specific period may be summarized by the life table method to obtain measures of comparative longevity. There are two types of life tables—the generation or cohort life table and the current life table.

The generation life table provides a “longitudinal” perspective in that it follows the mortality experience of a particular 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 generation 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 generation life table requires data over many years. It is not feasible to construct generation life tables entirely on the basis of actual data for cohorts born in this century (1). It is necessary to project data for the incomplete period for cohorts whose life spans are not yet complete (2).

The better-known current life table may, in contrast, be characterized as “cross-sectional.” Unlike the generation life table, the current life table does not represent the mortality experience of an actual cohort. Rather, the current life table considers a hypothetical cohort and assumes that it is subject to the age-specific death rates observed for an actual population during a particular period. Thus, for example, a current life table for 1997 assumes a hypothetical cohort subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 1997. The current 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 current life table and not to the generation life table.

Beginning with 1997 mortality data, complete life tables are constructed using a new methodology (3,4). Previously, the annual life tables were produced using an abridged life table method. Also, life expectancy and other life table values are 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. Extension of the oldest age interval was implemented by NCHS for several reasons, survival in the United States is such that approximately one-third of the population survives beyond age 85, improvements have occurred in age reporting at older ages, and high quality old-age mortality data are available from the Medicare program.

### Data and methods

The data used to prepare the U.S. life tables for 1997 are final mortality statistics for 1997; July 1, 1997, population estimates

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prepared by the U.S. Bureau of the Census; and data from the Medicare program prepared by the Health Care Financing Administration. 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. U.S. life tables based on data prior to 1997 other than the decennial life tables are abridged life tables constructed by reference to a "standard" table (5). The 1997 U.S. life tables are complete life tables calculated using a method similar to that of the U.S. Decennial Life Tables (3,6). A complete life table, of course, can be aggregated into 5- or 10-year age groups. 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 1997 are shown for the total population and by race and sex in [tables 1-9](#).

Life expectancy at birth ( $e_0$ ) for 1997 for the total population was 76.5 years. This represents the average number of years that the members of the life table cohort may expect to live at the time of birth ([table 1](#)).

**Survivors to specified ages**—Another way of assessing the longevity of the 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. For instance, 81,510 persons out of the original 1997 life table cohort of 100,000 (or 81.5 percent) were alive at exact age 65 ([table 1](#)). In other words, the probability that a person will survive from birth to age 65 is 81.5 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 (34,221) by the number of survivors at age 20 (98,558), which results in a 34.7 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—Proportion dying ( $q_x$ )**—This column shows the proportion of the cohort who are alive at the beginning of an indicated age interval and who will die before reaching the end of that age interval. For example, for males in the age interval 20-21 years, the proportion dying is 0.00136. Out of every 100,000 males alive and exactly 20 years of age at the beginning of the period, 136 will die before reaching their 21st birthday. The "proportion dying" column forms the basis of the life table. The life table is so constructed that all other columns are derived from it.

**Column 3—Number surviving ( $l_x$ )**—This column shows the number of persons, starting with a cohort of 100,000 live births, who survive to the exact age marking 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 male babies born alive, 99,205

will complete the first year of life and enter the second; 98,947 will reach age 10; 98,293 will reach age 20; and 25,630 will live to age 85.

**Column 4—Number dying ( $d_x$ )**—This column shows the number dying in each successive age interval out of 100,000 live births. Out of 100,000 males born alive, 795 will die in the first year of life; 133 between ages 20 and 21; and 720 will die after reaching age 85. Each figure in column 4 is the difference between two successive figures in column 3.

**Columns 5 and 6—Stationary population ( $L_x$  and  $T_x$ )**—Suppose that a group of 100,000 individuals like that assumed in columns 3 and 4 is born every year and that the proportions dying in each such group in each age interval throughout the lives of the members are exactly those shown in column 2. If there were no migration and if the births were evenly distributed over the calendar year, the survivors of these births would make up what is called a stationary population—stationary because in such a population the number of persons living in any given age group would never change. When individuals left the group, either by death or by growing older and entering the next higher age group, their places would immediately be taken by persons entering from the next lower age group. Thus, a census taken at any time in such a stationary community would always show the same total population and the same numerical distribution of that population among the various age groups. In such a stationary population supported by 100,000 annual births, column 3 shows the number of persons who, each year, reach the birthday that marks the beginning of the age interval indicated in column 1, and column 4 shows the number of persons who die each year in the indicated age interval.

Column 5 shows the number of persons in the stationary population in the indicated age interval. For example, the figure given for males in the age interval 20-21 years is 98,226. This means that in a stationary population of males supported by 100,000 annual births and with proportions dying in each age group always in accordance with column 2, a census taken on any date would show 98,226 persons between exact ages 20 and 21 years. This figure also represents the average number of person-years of exposure to the risk of dying during the age interval 20-21 years.

Column 6 shows the total number of persons in the stationary population (column 5) in the indicated age interval and all subsequent age intervals. For example, in the stationary population of males referred to in the last illustration, column 6 shows that there would be at any given moment a total of 5,377,806 persons who have passed their 20th birthday. The male population at all ages 0 and above (the total male population of the stationary community) would be 7,355,907.

**Column 7—Average remaining lifetime ( $e_x$ )**—The average remaining lifetime (also called life expectancy) 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. To arrive at this value, it is first necessary to observe that the figures in column 5 of the life table can also be interpreted in terms of a single life table cohort without introducing the concept of the stationary population. From this point of view, 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 98,226 for males in the age interval 20-21 is the total number of years lived between the 20th and 21st birthdays by the 98,293 (column 3) males who reached their 20th birthday out of 100,000 males born alive. The corresponding figure 5,377,806 in column 6 is the total number of years lived after

attaining age 20 by the 98,293 reaching that age. This number of years divided by the number of persons (5,377,806 divided by 98,293) gives 54.7 years as the average remaining lifetime of males at age 20.

## Results

### Life expectancy in the United States

Tables 1–9 show complete life tables by race (white and black) and sex for 1997. Life expectancy at birth for 1997 represents the average number of years that a group of infants would live if the infants were to experience throughout life the age-specific death rates prevailing in 1997. In 1997 life expectancy at birth was 76.5 years, an increase of 0.4 year compared with life expectancy in 1996 and represents a record high for life expectancy in the United States. The increase between 1996 and 1997 represents the continuation of the general upward trend in U.S. life expectancy observed throughout this century (7).

In 1997 life expectancy for females was 79.4 years, an increase of 0.3 year from 1996. Life expectancy was 73.6 years for males, a 0.5-year increase from 1996 to 1997. The difference in life expectancy between the sexes was 5.8 years in 1997, a slight narrowing from the difference (6.0) in the previous year. From 1900 to 1975, the difference in life expectancy between the sexes increased from 2.8 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 (7,8). Since 1979, the difference in life expectancy between the sexes has narrowed from 7.8 years to 5.8 years, reflecting proportionately greater increases in lung cancer mortality for women than for men and proportionately larger decreases in heart disease mortality among men (7,8).

Between 1996 and 1997, life expectancy for the black population rose 0.9 year to 71.1 years. For the white population it increased 0.4 year from 76.8 years to 77.2 years. The difference in life expectancy between the white and black populations was 6.1 years in 1997, a slight narrowing of the gap from 1996 (6.6 years). Although the white-black difference in life expectancy narrowed from 15.8 years in 1900 to 5.7 years in 1982, it increased to 7.1 years in 1993 before declining from 1994 (7.0 years) to 1997 (6.1 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 (7,9).

Among the four race-sex groups (figure 1), white females continued to have the highest life expectancy at birth (79.9 years), followed by black females (74.7 years), white males (74.3 years), and black males (67.2 years). Between 1996 and 1997, life expectancy increased 1.1 year for black males (from 66.1 in 1996 to 67.2 in 1997). Black males experienced an unprecedented decline in life expectancy every year for 1984–89 (9), but annual increases in 1990–92 and 1994–97. From 1996 to 1997, life expectancy for black females rose from 74.2 years to 74.7 years, an increase of 0.5 year. Life expectancy for white males rose 0.4 year, from 73.9 years in 1996 to 74.3 years in 1997. White female life expectancy increased during the same period by 0.2 year from 79.7 years to 79.9 years. Overall, the largest gains in life expectancy between 1980 and 1997 were for white males (3.6 years), followed by black males (3.4 years), black females (2.2 years), and white females (1.8 years).

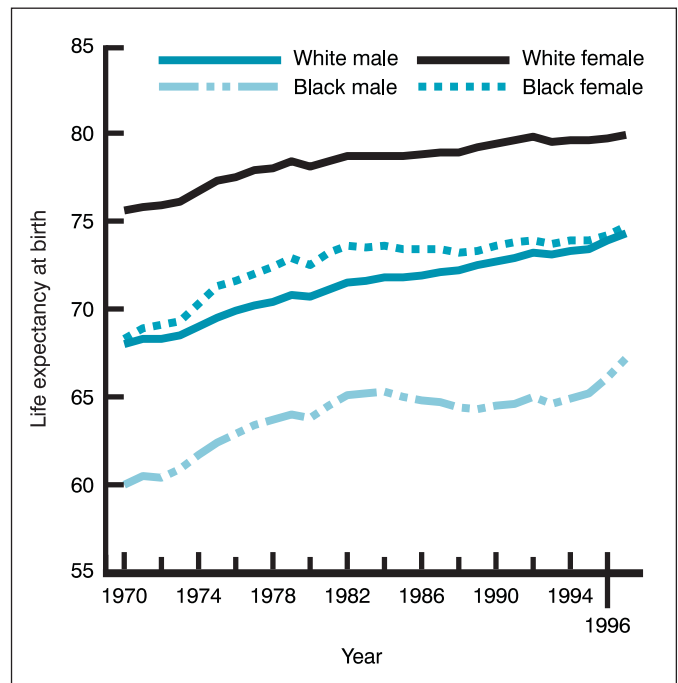


Figure 1. Life expectancy at birth by race and sex: 1970–97

The 1997 life tables may be used to compare life expectancies at any age from birth onward. On the basis of mortality experienced in 1997, a person aged 65 years could expect to live an average of 17.7 more years for a total of 82.7 years, and a person age 100 years could expect to live an additional 2.5 years on average (table 1). 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 (3,10,11).

### Survivorship in the United States

Table 10 shows trends in the number of survivors at each age out of 100,000 persons born alive ( $l_x$ ). In 1997, 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. About one-half of the 1997 cohort survived to age 80, the median age at death, and about 1.5 percent survived to age 100. In 1900, the median age at death was 58 and only 0.03 percent survived to age 100.

Among the four race-sex groups (figure 2), white females have the highest median age at death with 50 percent surviving to age 83. Of the original hypothetical cohort of 100,000 infant white females, 99.0 percent survive to age 20, 87.1 percent survive to age 65, and 43.3 percent survive to age 85. For white males and black females, survival is very similar. These groups have the same median age at death of 78 years. White males have slightly higher survival rates than black females at the younger ages with 98.5 percent surviving to age 20 and 78.9 percent surviving to age 65 compared with 98.0 percent and 77.0 percent, respectively, for black females. At the older ages, however, black female survival surpasses white male survival. At age 85, white male survival is 26.5 percent compared with 31.7 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 71 years,

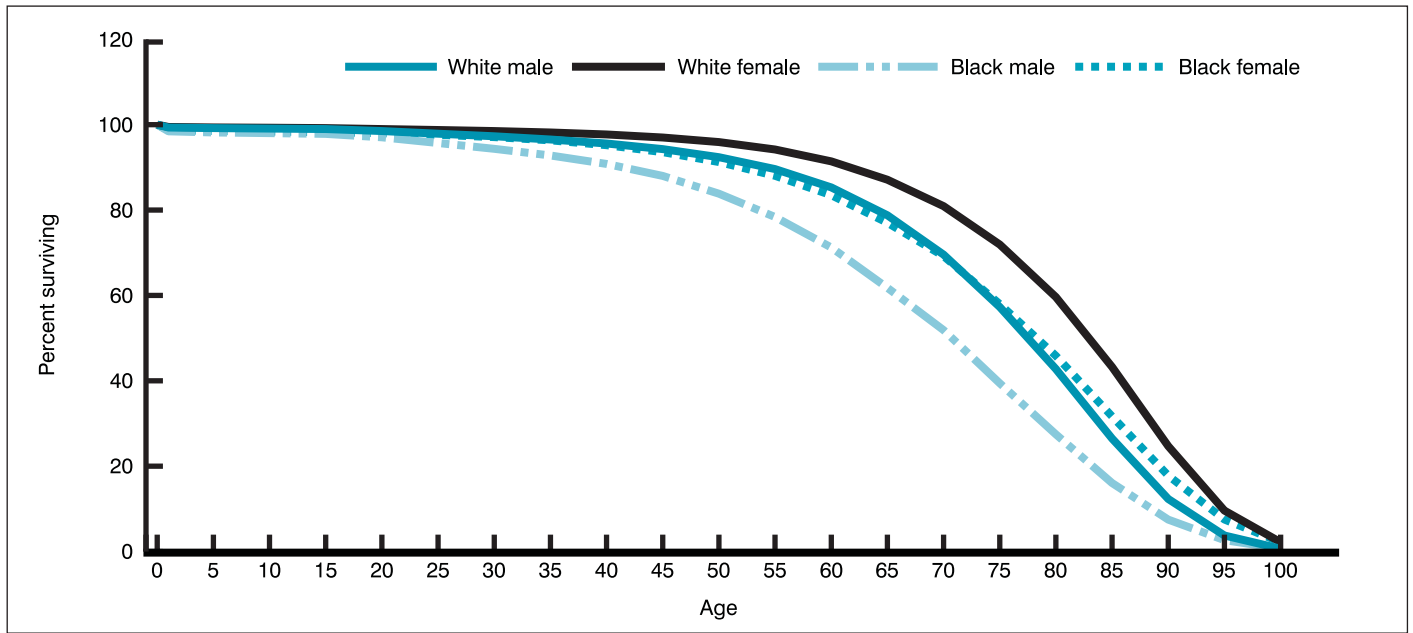


Figure 2. Percent surviving by age, race, and sex: United States, 1997

12 years less than that for white females. Ninety-seven percent of black males survive to age 20, 61.8 percent to age 65, and 16.1 percent to age 85. By age 100, there is very little difference between the white and black populations in terms of survival. About 0.7 percent of white and black males and about 2.2 percent of white and black females survive to age 100.

Plotting the percent surviving by age for the periods 1900–1902, 1949–51, and 1997 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 1997 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 1997, improvements occurred primarily for the older population.

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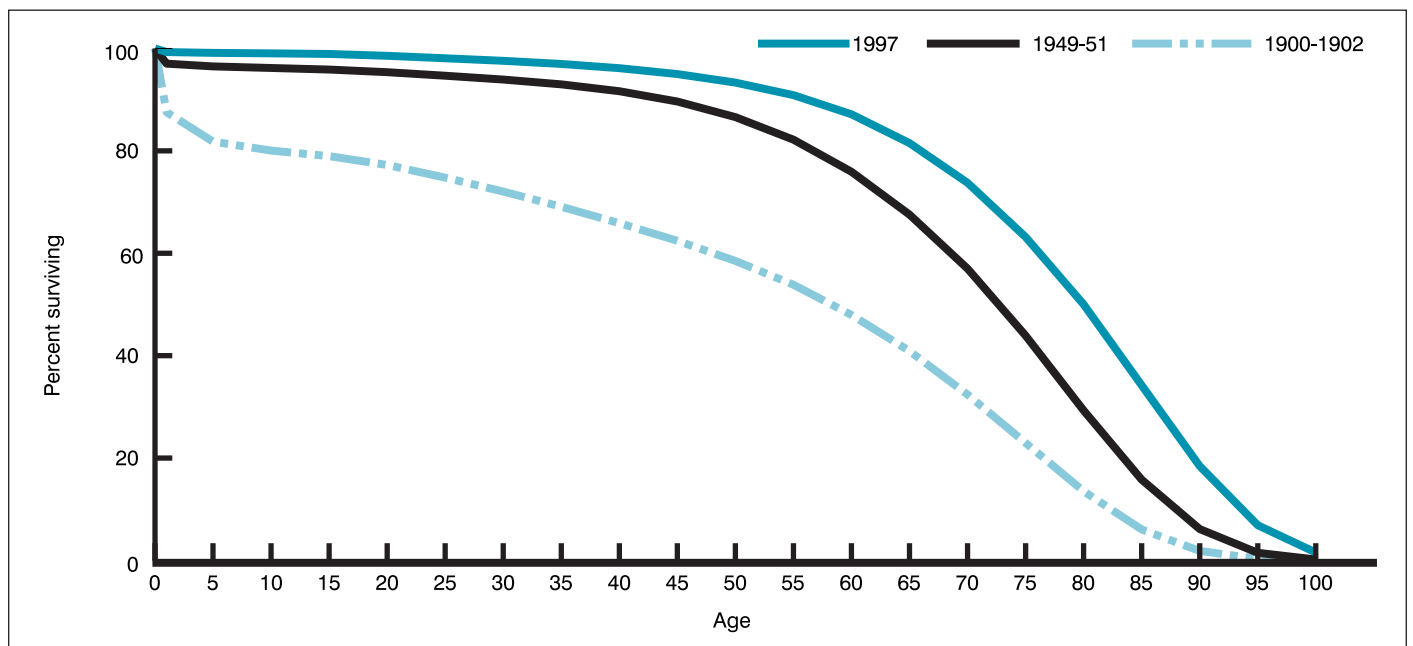


Figure 3. Percent surviving by age: Death-registration States, 1900–1902 and United States, 1949–51 and 1997

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12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–97 . . . . . 32

## List of detailed tables

1. Life table for the total population: United States, 1997 . . . . .	6
2. Life table for males: United States, 1997 . . . . .	8
3. Life table for females: United States, 1997 . . . . .	10
4. Life table for the white population: United States, 1997. . . . .	12
5. Life table for white males: United States, 1997 . . . . .	14
6. Life table for white females: United States, 1997 . . . . .	16
7. Life table for the black population: United States, 1997. . . . .	18
8. Life table for black males: United States, 1997 . . . . .	20
9. Life table for black females: United States, 1997 . . . . .	22
10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997 . . . . .	24

Table 1. Life table for the total population: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.00723	100,000	723	99,371	7,650,789	76.5
1-2	0.00055	99,277	55	99,250	7,551,418	76.1
2-3	0.00036	99,223	36	99,205	7,452,168	75.1
3-4	0.00029	99,187	29	99,172	7,352,963	74.1
4-5	0.00023	99,158	23	99,146	7,253,791	73.2
5-6	0.00021	99,135	21	99,125	7,154,644	72.2
6-7	0.00020	99,114	20	99,104	7,055,520	71.2
7-8	0.00019	99,094	19	99,085	6,956,416	70.2
8-9	0.00017	99,076	17	99,067	6,857,330	69.2
9-10	0.00015	99,059	15	99,051	6,758,263	68.2
10-11	0.00014	99,043	14	99,037	6,659,212	67.2
11-12	0.00014	99,030	14	99,023	6,560,175	66.2
12-13	0.00019	99,016	19	99,006	6,461,153	65.3
13-14	0.00028	98,997	28	98,983	6,362,147	64.3
14-15	0.00041	98,969	40	98,949	6,263,164	63.3
15-16	0.00055	98,929	54	98,901	6,164,215	62.3
16-17	0.00068	98,874	67	98,841	6,065,313	61.3
17-18	0.00078	98,807	77	98,768	5,966,473	60.4
18-19	0.00085	98,730	84	98,688	5,867,704	59.4
19-20	0.00089	98,646	88	98,602	5,769,016	58.5
20-21	0.00093	98,558	92	98,512	5,670,414	57.5
21-22	0.00098	98,467	96	98,418	5,571,902	56.6
22-23	0.00101	98,370	99	98,321	5,473,483	55.6
23-24	0.00101	98,272	100	98,222	5,375,162	54.7
24-25	0.00101	98,172	99	98,123	5,276,940	53.8
25-26	0.00100	98,073	98	98,024	5,178,818	52.8
26-27	0.00099	97,975	97	97,927	5,080,794	51.9
27-28	0.00100	97,878	98	97,829	4,982,867	50.9
28-29	0.00103	97,780	101	97,730	4,885,037	50.0
29-30	0.00108	97,679	106	97,627	4,787,307	49.0
30-31	0.00114	97,574	111	97,518	4,689,680	48.1
31-32	0.00119	97,463	116	97,405	4,592,162	47.1
32-33	0.00126	97,347	122	97,286	4,494,757	46.2
33-34	0.00133	97,225	129	97,160	4,397,471	45.2
34-35	0.00140	97,096	136	97,027	4,300,311	44.3
35-36	0.00149	96,959	144	96,887	4,203,284	43.4
36-37	0.00157	96,815	152	96,739	4,106,396	42.4
37-38	0.00167	96,663	161	96,582	4,009,657	41.5
38-39	0.00178	96,502	172	96,416	3,913,075	40.5
39-40	0.00192	96,330	185	96,237	3,816,659	39.6
40-41	0.00206	96,145	198	96,046	3,720,422	38.7
41-42	0.00222	95,947	213	95,841	3,624,376	37.8
42-43	0.00239	95,734	229	95,620	3,528,535	36.9
43-44	0.00257	95,506	246	95,383	3,432,915	35.9
44-45	0.00278	95,260	264	95,128	3,337,532	35.0
45-46	0.00300	94,996	285	94,853	3,242,404	34.1
46-47	0.00325	94,710	308	94,556	3,147,551	33.2
47-48	0.00352	94,402	332	94,236	3,052,995	32.3
48-49	0.00380	94,070	358	93,891	2,958,759	31.5
49-50	0.00411	93,712	385	93,519	2,864,868	30.6
50-51	0.00444	93,327	415	93,120	2,771,349	29.7
51-52	0.00482	92,912	448	92,688	2,678,229	28.8
52-53	0.00524	92,464	485	92,221	2,585,541	28.0
53-54	0.00571	91,979	525	91,717	2,493,320	27.1
54-55	0.00623	91,454	570	91,169	2,401,603	26.3
55-56	0.00685	90,884	622	90,573	2,310,434	25.4
56-57	0.00755	90,262	681	89,921	2,219,861	24.6
57-58	0.00833	89,580	746	89,208	2,129,940	23.8
58-59	0.00916	88,835	814	88,428	2,040,733	23.0
59-60	0.01005	88,021	884	87,579	1,952,305	22.2
60-61	0.01101	87,136	959	86,657	1,864,727	21.4
61-62	0.01208	86,177	1,041	85,657	1,778,070	20.6
62-63	0.01321	85,136	1,125	84,574	1,692,413	19.9
63-64	0.01439	84,011	1,209	83,407	1,607,839	19.1
64-65	0.01560	82,802	1,292	82,156	1,524,433	18.4
65-66	0.01679	81,510	1,368	80,826	1,442,277	17.7
66-67	0.01802	80,142	1,444	79,419	1,361,451	17.0

Table 1. Life table for the total population: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.01948	78,697	1,533	77,931	1,282,032	16.3
68-69 . . . . .	0.02127	77,164	1,642	76,343	1,204,101	15.6
69-70 . . . . .	0.02338	75,522	1,765	74,640	1,127,758	14.9
70-71 . . . . .	0.02565	73,757	1,892	72,811	1,053,118	14.3
71-72 . . . . .	0.02799	71,865	2,011	70,859	980,307	13.6
72-73 . . . . .	0.03043	69,854	2,126	68,791	909,447	13.0
73-74 . . . . .	0.03297	67,728	2,233	66,612	840,657	12.4
74-75 . . . . .	0.03563	65,495	2,334	64,328	774,045	11.8
75-76 . . . . .	0.03843	63,162	2,427	61,948	709,716	11.2
76-77 . . . . .	0.04147	60,735	2,519	59,475	647,768	10.7
77-78 . . . . .	0.04494	58,216	2,616	56,908	588,293	10.1
78-79 . . . . .	0.04904	55,600	2,726	54,237	531,385	9.6
79-80 . . . . .	0.05385	52,874	2,847	51,450	477,148	9.0
80-81 . . . . .	0.05938	50,026	2,971	48,541	425,698	8.5
81-82 . . . . .	0.06555	47,055	3,084	45,513	377,158	8.0
82-83 . . . . .	0.07241	43,971	3,184	42,379	331,644	7.5
83-84 . . . . .	0.07990	40,787	3,259	39,158	289,265	7.1
84-85 . . . . .	0.08812	37,528	3,307	35,875	250,107	6.7
85-86 . . . . .	0.09653	34,221	3,303	32,570	214,232	6.3
86-87 . . . . .	0.10556	30,918	3,264	29,286	181,663	5.9
87-88 . . . . .	0.11539	27,654	3,191	26,059	152,376	5.5
88-89 . . . . .	0.12616	24,463	3,086	22,920	126,318	5.2
89-90 . . . . .	0.13802	21,377	2,950	19,902	103,398	4.8
90-91 . . . . .	0.15085	18,427	2,780	17,037	83,496	4.5
91-92 . . . . .	0.16429	15,647	2,571	14,362	66,459	4.2
92-93 . . . . .	0.17813	13,076	2,329	11,912	52,097	4.0
93-94 . . . . .	0.19250	10,747	2,069	9,713	40,186	3.7
94-95 . . . . .	0.20764	8,678	1,802	7,777	30,473	3.5
95-96 . . . . .	0.22354	6,876	1,537	6,108	22,696	3.3
96-97 . . . . .	0.23999	5,339	1,281	4,699	16,588	3.1
97-98 . . . . .	0.25653	4,058	1,041	3,537	11,889	2.9
98-99 . . . . .	0.27295	3,017	823	2,605	8,352	2.8
99-100 . . . . .	0.28915	2,193	634	1,876	5,747	2.6
100+ . . . . .	1.00000	1,559	1,559	3,871	3,871	2.5

Table 2. Life table for males: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.00795	100,000	795	99,311	7,355,907	73.6
1-2	0.00060	99,205	60	99,175	7,256,597	73.1
2-3	0.00041	99,145	40	99,125	7,157,422	72.2
3-4	0.00033	99,105	33	99,089	7,058,296	71.2
4-5	0.00026	99,072	25	99,060	6,959,208	70.2
5-6	0.00023	99,047	23	99,036	6,860,148	69.3
6-7	0.00022	99,024	22	99,013	6,761,112	68.3
7-8	0.00021	99,002	21	98,992	6,662,099	67.3
8-9	0.00019	98,982	19	98,972	6,563,107	66.3
9-10	0.00016	98,963	16	98,955	6,464,134	65.3
10-11	0.00014	98,947	14	98,940	6,365,180	64.3
11-12	0.00015	98,933	15	98,925	6,266,240	63.3
12-13	0.00021	98,918	21	98,908	6,167,314	62.3
13-14	0.00035	98,897	35	98,880	6,068,407	61.4
14-15	0.00054	98,862	53	98,836	5,969,527	60.4
15-16	0.00074	98,809	74	98,772	5,870,691	59.4
16-17	0.00093	98,735	92	98,690	5,771,919	58.5
17-18	0.00109	98,644	107	98,590	5,673,230	57.5
18-19	0.00120	98,536	118	98,477	5,574,640	56.6
19-20	0.00127	98,418	125	98,356	5,476,162	55.6
20-21	0.00135	98,293	133	98,226	5,377,806	54.7
21-22	0.00144	98,160	141	98,089	5,279,580	53.8
22-23	0.00149	98,019	146	97,945	5,181,491	52.9
23-24	0.00150	97,872	147	97,799	5,083,545	51.9
24-25	0.00148	97,725	145	97,653	4,985,746	51.0
25-26	0.00145	97,581	141	97,510	4,888,093	50.1
26-27	0.00142	97,440	139	97,371	4,790,583	49.2
27-28	0.00142	97,301	138	97,232	4,693,212	48.2
28-29	0.00146	97,163	141	97,092	4,595,980	47.3
29-30	0.00151	97,022	147	96,948	4,498,888	46.4
30-31	0.00158	96,875	153	96,798	4,401,939	45.4
31-32	0.00165	96,721	160	96,641	4,305,141	44.5
32-33	0.00173	96,562	167	96,478	4,208,500	43.6
33-34	0.00181	96,395	174	96,308	4,112,022	42.7
34-35	0.00189	96,221	182	96,130	4,015,714	41.7
35-36	0.00198	96,039	190	95,944	3,919,584	40.8
36-37	0.00208	95,849	199	95,749	3,823,640	39.9
37-38	0.00220	95,649	210	95,544	3,727,891	39.0
38-39	0.00234	95,439	223	95,328	3,632,346	38.1
39-40	0.00250	95,216	238	95,097	3,537,018	37.1
40-41	0.00269	94,978	255	94,850	3,441,921	36.2
41-42	0.00289	94,723	273	94,586	3,347,071	35.3
42-43	0.00310	94,449	293	94,303	3,252,485	34.4
43-44	0.00335	94,156	315	93,999	3,158,182	33.5
44-45	0.00361	93,841	339	93,672	3,064,184	32.7
45-46	0.00391	93,502	366	93,319	2,970,512	31.8
46-47	0.00424	93,137	395	92,939	2,877,193	30.9
47-48	0.00458	92,742	424	92,530	2,784,253	30.0
48-49	0.00492	92,318	454	92,091	2,691,723	29.2
49-50	0.00528	91,863	485	91,621	2,599,633	28.3
50-51	0.00567	91,379	518	91,120	2,508,012	27.4
51-52	0.00612	90,860	556	90,582	2,416,892	26.6
52-53	0.00662	90,304	598	90,005	2,326,310	25.8
53-54	0.00719	89,706	645	89,384	2,236,304	24.9
54-55	0.00784	89,062	698	88,713	2,146,920	24.1
55-56	0.00860	88,363	760	87,984	2,058,208	23.3
56-57	0.00947	87,604	830	87,189	1,970,224	22.5
57-58	0.01045	86,774	907	86,320	1,883,036	21.7
58-59	0.01150	85,867	987	85,374	1,796,715	20.9
59-60	0.01262	84,880	1,071	84,344	1,711,342	20.2
60-61	0.01383	83,809	1,159	83,229	1,626,997	19.4
61-62	0.01517	82,649	1,254	82,022	1,543,768	18.7
62-63	0.01663	81,395	1,353	80,719	1,461,746	18.0
63-64	0.01817	80,042	1,455	79,315	1,381,027	17.3
64-65	0.01979	78,587	1,555	77,810	1,301,712	16.6
65-66	0.02137	77,032	1,646	76,209	1,223,902	15.9
66-67	0.02301	75,386	1,734	74,519	1,147,693	15.2



Table 2. Life table for males: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.02490	73,651	1,834	72,734	1,073,175	14.6
68-69 . . . . .	0.02718	71,818	1,952	70,842	1,000,440	13.9
69-70 . . . . .	0.02985	69,865	2,086	68,823	929,599	13.3
70-71 . . . . .	0.03275	67,780	2,220	66,670	860,776	12.7
71-72 . . . . .	0.03573	65,560	2,342	64,389	794,106	12.1
72-73 . . . . .	0.03882	63,218	2,454	61,991	729,717	11.5
73-74 . . . . .	0.04200	60,763	2,552	59,487	667,727	11.0
74-75 . . . . .	0.04527	58,212	2,635	56,894	608,239	10.4
75-76 . . . . .	0.04869	55,576	2,706	54,223	551,345	9.9
76-77 . . . . .	0.05238	52,870	2,770	51,485	497,122	9.4
77-78 . . . . .	0.05656	50,101	2,834	48,684	445,637	8.9
78-79 . . . . .	0.06149	47,267	2,906	45,814	396,953	8.4
79-80 . . . . .	0.06734	44,361	2,987	42,867	351,139	7.9
80-81 . . . . .	0.07432	41,374	3,075	39,836	308,272	7.5
81-82 . . . . .	0.08227	38,299	3,151	36,723	268,436	7.0
82-83 . . . . .	0.09093	35,148	3,196	33,550	231,713	6.6
83-84 . . . . .	0.09981	31,952	3,189	30,357	198,163	6.2
84-85 . . . . .	0.10893	28,763	3,133	27,196	167,806	5.8
85-86 . . . . .	0.11874	25,630	3,043	24,108	140,610	5.5
86-87 . . . . .	0.12892	22,586	2,912	21,130	116,502	5.2
87-88 . . . . .	0.13988	19,675	2,752	18,298	95,372	4.8
88-89 . . . . .	0.15177	16,922	2,568	15,638	77,073	4.6
89-90 . . . . .	0.16461	14,354	2,363	13,173	61,435	4.3
90-91 . . . . .	0.17823	11,991	2,137	10,923	48,262	4.0
91-92 . . . . .	0.19237	9,854	1,896	8,906	37,339	3.8
92-93 . . . . .	0.20676	7,958	1,645	7,136	28,433	3.6
93-94 . . . . .	0.22133	6,313	1,397	5,614	21,297	3.4
94-95 . . . . .	0.23603	4,916	1,160	4,336	15,683	3.2
95-96 . . . . .	0.25091	3,755	942	3,284	11,347	3.0
96-97 . . . . .	0.26594	2,813	748	2,439	8,063	2.9
97-98 . . . . .	0.28103	2,065	580	1,775	5,624	2.7
98-99 . . . . .	0.29615	1,485	440	1,265	3,849	2.6
99-100 . . . . .	0.31127	1,045	325	882	2,584	2.5
100+ . . . . .	1.00000	720	720	1,702	1,702	2.4

Table 3. Life table for females: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.00617	100,000	617	99,465	7,936,415	79.4
1-2	0.00050	99,383	50	99,358	7,836,950	78.9
2-3	0.00032	99,333	32	99,317	7,737,592	77.9
3-4	0.00025	99,302	25	99,289	7,638,274	76.9
4-5	0.00020	99,276	20	99,266	7,538,985	75.9
5-6	0.00019	99,256	19	99,247	7,439,719	75.0
6-7	0.00018	99,238	17	99,229	7,340,472	74.0
7-8	0.00017	99,220	16	99,212	7,241,243	73.0
8-9	0.00015	99,204	15	99,196	7,142,031	72.0
9-10	0.00014	99,188	14	99,181	7,042,835	71.0
10-11	0.00014	99,174	13	99,167	6,943,654	70.0
11-12	0.00014	99,161	14	99,154	6,844,486	69.0
12-13	0.00016	99,147	16	99,139	6,745,333	68.0
13-14	0.00021	99,131	21	99,121	6,646,194	67.0
14-15	0.00027	99,110	27	99,097	6,547,073	66.1
15-16	0.00034	99,083	34	99,066	6,447,977	65.1
16-17	0.00041	99,049	41	99,029	6,348,910	64.1
17-18	0.00046	99,009	45	98,986	6,249,881	63.1
18-19	0.00048	98,963	47	98,940	6,150,895	62.2
19-20	0.00048	98,916	48	98,892	6,051,956	61.2
20-21	0.00048	98,868	47	98,845	5,953,063	60.2
21-22	0.00048	98,821	48	98,797	5,854,219	59.2
22-23	0.00049	98,773	49	98,749	5,755,421	58.3
23-24	0.00050	98,725	50	98,700	5,656,672	57.3
24-25	0.00052	98,675	51	98,650	5,557,972	56.3
25-26	0.00054	98,624	53	98,598	5,459,323	55.4
26-27	0.00055	98,571	55	98,544	5,360,725	54.4
27-28	0.00058	98,517	57	98,488	5,262,181	53.4
28-29	0.00061	98,460	60	98,430	5,163,693	52.4
29-30	0.00065	98,400	64	98,368	5,065,264	51.5
30-31	0.00069	98,336	68	98,302	4,966,896	50.5
31-32	0.00074	98,268	72	98,232	4,868,594	49.5
32-33	0.00079	98,196	77	98,157	4,770,362	48.6
33-34	0.00085	98,118	84	98,076	4,672,205	47.6
34-35	0.00092	98,035	90	97,990	4,574,129	46.7
35-36	0.00099	97,945	97	97,896	4,476,139	45.7
36-37	0.00107	97,847	104	97,795	4,378,243	44.7
37-38	0.00115	97,743	112	97,687	4,280,448	43.8
38-39	0.00123	97,631	120	97,571	4,182,761	42.8
39-40	0.00133	97,511	130	97,446	4,085,190	41.9
40-41	0.00144	97,381	140	97,311	3,987,744	40.9
41-42	0.00156	97,241	151	97,165	3,890,433	40.0
42-43	0.00168	97,089	163	97,008	3,793,268	39.1
43-44	0.00182	96,926	176	96,838	3,696,261	38.1
44-45	0.00196	96,750	190	96,655	3,599,422	37.2
45-46	0.00212	96,561	205	96,458	3,502,767	36.3
46-47	0.00230	96,356	222	96,245	3,406,308	35.4
47-48	0.00250	96,134	241	96,014	3,310,063	34.4
48-49	0.00273	95,894	262	95,763	3,214,049	33.5
49-50	0.00298	95,632	285	95,489	3,118,287	32.6
50-51	0.00327	95,346	312	95,191	3,022,798	31.7
51-52	0.00359	95,035	341	94,864	2,927,607	30.8
52-53	0.00393	94,694	373	94,507	2,832,743	29.9
53-54	0.00431	94,321	406	94,118	2,738,236	29.0
54-55	0.00472	93,915	443	93,693	2,644,118	28.2
55-56	0.00520	93,471	486	93,228	2,550,425	27.3
56-57	0.00576	92,985	535	92,717	2,457,197	26.4
57-58	0.00637	92,449	589	92,155	2,364,480	25.6
58-59	0.00701	91,861	644	91,539	2,272,325	24.7
59-60	0.00769	91,217	702	90,866	2,180,786	23.9
60-61	0.00844	90,515	764	90,133	2,089,920	23.1
61-62	0.00928	89,751	833	89,335	1,999,787	22.3
62-63	0.01015	88,918	903	88,467	1,910,452	21.5
63-64	0.01103	88,016	971	87,530	1,821,985	20.7
64-65	0.01193	87,044	1,038	86,525	1,734,455	19.9
65-66	0.01280	86,006	1,101	85,456	1,647,930	19.2
66-67	0.01375	84,905	1,167	84,322	1,562,474	18.4

Table 3. Life table for females: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.01490	83,738	1,247	83,114	1,478,153	17.7
68-69 . . . . .	0.01634	82,491	1,348	81,817	1,395,038	16.9
69-70 . . . . .	0.01806	81,142	1,466	80,410	1,313,222	16.2
70-71 . . . . .	0.01993	79,677	1,588	78,883	1,232,812	15.5
71-72 . . . . .	0.02187	78,089	1,707	77,235	1,153,929	14.8
72-73 . . . . .	0.02391	76,381	1,827	75,468	1,076,694	14.1
73-74 . . . . .	0.02607	74,555	1,944	73,583	1,001,226	13.4
74-75 . . . . .	0.02838	72,611	2,061	71,580	927,644	12.8
75-76 . . . . .	0.03083	70,550	2,175	69,462	856,063	12.1
76-77 . . . . .	0.03353	68,375	2,293	67,228	786,601	11.5
77-78 . . . . .	0.03666	66,082	2,423	64,871	719,372	10.9
78-79 . . . . .	0.04041	63,659	2,573	62,373	654,501	10.3
79-80 . . . . .	0.04483	61,087	2,738	59,718	592,128	9.7
80-81 . . . . .	0.04978	58,348	2,905	56,896	532,411	9.1
81-82 . . . . .	0.05526	55,444	3,064	53,912	475,515	8.6
82-83 . . . . .	0.06152	52,380	3,223	50,769	421,603	8.0
83-84 . . . . .	0.06872	49,158	3,378	47,468	370,834	7.5
84-85 . . . . .	0.07692	45,779	3,521	44,019	323,365	7.1
85-86 . . . . .	0.08526	42,258	3,603	40,456	279,347	6.6
86-87 . . . . .	0.09454	38,655	3,654	36,828	238,890	6.2
87-88 . . . . .	0.10466	35,000	3,663	33,169	202,062	5.8
88-89 . . . . .	0.11573	31,337	3,627	29,524	168,894	5.4
89-90 . . . . .	0.12789	27,711	3,544	25,939	139,369	5.0
90-91 . . . . .	0.14105	24,167	3,409	22,462	113,431	4.7
91-92 . . . . .	0.15496	20,758	3,217	19,150	90,968	4.4
92-93 . . . . .	0.16946	17,541	2,973	16,055	71,819	4.1
93-94 . . . . .	0.18463	14,569	2,690	13,224	55,764	3.8
94-95 . . . . .	0.20067	11,879	2,384	10,687	42,540	3.6
95-96 . . . . .	0.21749	9,495	2,065	8,463	31,853	3.4
96-97 . . . . .	0.23482	7,430	1,745	6,558	23,390	3.1
97-98 . . . . .	0.25230	5,685	1,434	4,968	16,832	3.0
98-99 . . . . .	0.26968	4,251	1,146	3,678	11,864	2.8
99-100 . . . . .	0.28688	3,105	891	2,659	8,186	2.6
100+ . . . . .	1.00000	2,214	2,214	5,527	5,527	2.5

Table 4. Life table for the white population: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.00603	100,000	603	99,475	7,714,641	77.1
1-2	0.00049	99,397	49	99,373	7,615,166	76.6
2-3	0.00032	99,348	32	99,333	7,515,793	75.7
3-4	0.00026	99,317	26	99,304	7,416,460	74.7
4-5	0.00020	99,291	20	99,281	7,317,157	73.7
5-6	0.00018	99,271	18	99,262	7,217,875	72.7
6-7	0.00017	99,253	17	99,244	7,118,613	71.7
7-8	0.00016	99,236	16	99,228	7,019,369	70.7
8-9	0.00015	99,220	15	99,212	6,920,141	69.7
9-10	0.00014	99,204	14	99,198	6,820,929	68.8
10-11	0.00013	99,191	13	99,184	6,721,732	67.8
11-12	0.00013	99,178	13	99,172	6,622,547	66.8
12-13	0.00018	99,165	18	99,156	6,523,376	65.8
13-14	0.00027	99,147	26	99,134	6,424,219	64.8
14-15	0.00039	99,121	38	99,102	6,325,085	63.8
15-16	0.00052	99,083	51	99,057	6,225,983	62.8
16-17	0.00064	99,031	63	99,000	6,126,926	61.9
17-18	0.00073	98,968	72	98,932	6,027,927	60.9
18-19	0.00078	98,896	78	98,857	5,928,994	60.0
19-20	0.00081	98,818	80	98,778	5,830,137	59.0
20-21	0.00083	98,739	82	98,698	5,731,359	58.0
21-22	0.00086	98,656	85	98,614	5,632,661	57.1
22-23	0.00087	98,572	86	98,529	5,534,047	56.1
23-24	0.00088	98,486	86	98,443	5,435,518	55.2
24-25	0.00087	98,399	86	98,357	5,337,076	54.2
25-26	0.00086	98,314	85	98,272	5,238,719	53.3
26-27	0.00086	98,229	84	98,187	5,140,448	52.3
27-28	0.00087	98,145	85	98,103	5,042,260	51.4
28-29	0.00090	98,060	88	98,016	4,944,158	50.4
29-30	0.00094	97,972	92	97,926	4,846,141	49.5
30-31	0.00100	97,880	97	97,831	4,748,215	48.5
31-32	0.00105	97,783	103	97,731	4,650,384	47.6
32-33	0.00111	97,680	108	97,626	4,552,653	46.6
33-34	0.00117	97,572	114	97,515	4,455,027	45.7
34-35	0.00123	97,458	120	97,397	4,357,512	44.7
35-36	0.00130	97,337	126	97,274	4,260,115	43.8
36-37	0.00137	97,211	133	97,144	4,162,841	42.8
37-38	0.00146	97,078	141	97,007	4,065,696	41.9
38-39	0.00156	96,936	151	96,861	3,968,689	40.9
39-40	0.00168	96,786	162	96,704	3,871,828	40.0
40-41	0.00181	96,623	175	96,536	3,775,124	39.1
41-42	0.00195	96,449	188	96,354	3,678,588	38.1
42-43	0.00211	96,260	203	96,159	3,582,233	37.2
43-44	0.00227	96,058	218	95,949	3,486,074	36.3
44-45	0.00244	95,840	234	95,723	3,390,126	35.4
45-46	0.00264	95,606	252	95,480	3,294,403	34.5
46-47	0.00285	95,354	272	95,218	3,198,923	33.5
47-48	0.00310	95,082	295	94,934	3,103,706	32.6
48-49	0.00338	94,787	320	94,627	3,008,772	31.7
49-50	0.00368	94,467	348	94,293	2,914,145	30.8
50-51	0.00402	94,119	379	93,930	2,819,851	30.0
51-52	0.00440	93,741	413	93,534	2,725,922	29.1
52-53	0.00481	93,328	449	93,103	2,632,387	28.2
53-54	0.00525	92,879	488	92,635	2,539,284	27.3
54-55	0.00574	92,391	531	92,126	2,446,649	26.5
55-56	0.00633	91,860	581	91,570	2,354,524	25.6
56-57	0.00701	91,279	639	90,959	2,262,954	24.8
57-58	0.00776	90,640	703	90,288	2,171,995	24.0
58-59	0.00856	89,937	770	89,552	2,081,706	23.1
59-60	0.00940	89,167	838	88,748	1,992,155	22.3
60-61	0.01032	88,328	912	87,873	1,903,407	21.5
61-62	0.01135	87,417	992	86,921	1,815,535	20.8
62-63	0.01248	86,425	1,078	85,885	1,728,614	20.0
63-64	0.01368	85,346	1,168	84,762	1,642,729	19.2
64-65	0.01495	84,178	1,259	83,549	1,557,966	18.5
65-66	0.01621	82,920	1,344	82,248	1,474,417	17.8
66-67	0.01751	81,576	1,428	80,862	1,392,170	17.1

Table 4. Life table for the white population: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.01900	80,147	1,523	79,386	1,311,308	16.4
68-69 . . . . .	0.02077	78,625	1,633	77,808	1,231,922	15.7
69-70 . . . . .	0.02281	76,992	1,756	76,114	1,154,114	15.0
70-71 . . . . .	0.02498	75,236	1,879	74,296	1,078,000	14.3
71-72 . . . . .	0.02722	73,356	1,997	72,358	1,003,704	13.7
72-73 . . . . .	0.02961	71,360	2,113	70,303	931,346	13.1
73-74 . . . . .	0.03216	69,247	2,227	68,133	861,042	12.4
74-75 . . . . .	0.03490	67,020	2,339	65,850	792,909	11.8
75-76 . . . . .	0.03780	64,681	2,445	63,458	727,059	11.2
76-77 . . . . .	0.04094	62,235	2,548	60,961	663,601	10.7
77-78 . . . . .	0.04449	59,688	2,656	58,360	602,639	10.1
78-79 . . . . .	0.04866	57,032	2,775	55,644	544,280	9.5
79-80 . . . . .	0.05352	54,257	2,904	52,805	488,635	9.0
80-81 . . . . .	0.05908	51,353	3,034	49,836	435,830	8.5
81-82 . . . . .	0.06529	48,319	3,155	46,742	385,994	8.0
82-83 . . . . .	0.07220	45,164	3,261	43,534	339,253	7.5
83-84 . . . . .	0.07977	41,903	3,343	40,232	295,719	7.1
84-85 . . . . .	0.08811	38,561	3,397	36,862	255,487	6.6
85-86 . . . . .	0.09666	35,163	3,399	33,464	218,625	6.2
86-87 . . . . .	0.10584	31,765	3,362	30,084	185,161	5.8
87-88 . . . . .	0.11586	28,403	3,291	26,757	155,077	5.5
88-89 . . . . .	0.12688	25,112	3,186	23,519	128,320	5.1
89-90 . . . . .	0.13904	21,926	3,049	20,401	104,801	4.8
90-91 . . . . .	0.15221	18,877	2,873	17,441	84,400	4.5
91-92 . . . . .	0.16603	16,004	2,657	14,675	66,959	4.2
92-93 . . . . .	0.18033	13,347	2,407	12,143	52,284	3.9
93-94 . . . . .	0.19524	10,940	2,136	9,872	40,140	3.7
94-95 . . . . .	0.21098	8,804	1,858	7,875	30,268	3.4
95-96 . . . . .	0.22752	6,947	1,580	6,156	22,393	3.2
96-97 . . . . .	0.24458	5,366	1,312	4,710	16,237	3.0
97-98 . . . . .	0.26173	4,054	1,061	3,523	11,527	2.8
98-99 . . . . .	0.27873	2,993	834	2,576	8,004	2.7
99-100 . . . . .	0.29554	2,159	638	1,840	5,428	2.5
100+ . . . . .	1.00000	1,521	1,521	3,589	3,589	2.4

Table 5. Life table for white males: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.00667	100,000	667	99,422	7,430,189	74.3
1-2	0.00053	99,333	53	99,307	7,330,767	73.8
2-3	0.00036	99,280	36	99,262	7,231,460	72.8
3-4	0.00029	99,244	28	99,230	7,132,197	71.9
4-5	0.00023	99,216	23	99,205	7,032,967	70.9
5-6	0.00020	99,193	20	99,183	6,933,762	69.9
6-7	0.00019	99,173	19	99,163	6,834,579	68.9
7-8	0.00019	99,154	19	99,145	6,735,416	67.9
8-9	0.00017	99,135	17	99,127	6,636,271	66.9
9-10	0.00015	99,118	15	99,111	6,537,145	66.0
10-11	0.00013	99,103	13	99,097	6,438,034	65.0
11-12	0.00014	99,090	14	99,083	6,338,937	64.0
12-13	0.00020	99,076	20	99,066	6,239,854	63.0
13-14	0.00033	99,055	33	99,039	6,140,789	62.0
14-15	0.00050	99,023	49	98,998	6,041,750	61.0
15-16	0.00068	98,973	68	98,940	5,942,752	60.0
16-17	0.00085	98,906	84	98,864	5,843,812	59.1
17-18	0.00099	98,821	97	98,773	5,744,949	58.1
18-19	0.00107	98,724	106	98,671	5,646,176	57.2
19-20	0.00113	98,618	111	98,562	5,547,505	56.3
20-21	0.00118	98,507	116	98,448	5,448,943	55.3
21-22	0.00124	98,390	122	98,329	5,350,495	54.4
22-23	0.00128	98,268	125	98,205	5,252,166	53.4
23-24	0.00128	98,142	126	98,080	5,153,960	52.5
24-25	0.00126	98,017	124	97,955	5,055,881	51.6
25-26	0.00124	97,893	121	97,832	4,957,926	50.6
26-27	0.00122	97,772	119	97,712	4,860,094	49.7
27-28	0.00122	97,653	120	97,593	4,762,382	48.8
28-29	0.00126	97,533	123	97,471	4,664,789	47.8
29-30	0.00132	97,410	129	97,345	4,567,317	46.9
30-31	0.00139	97,281	136	97,213	4,469,972	45.9
31-32	0.00146	97,145	142	97,074	4,372,759	45.0
32-33	0.00153	97,003	149	96,929	4,275,684	44.1
33-34	0.00160	96,855	155	96,777	4,178,755	43.1
34-35	0.00168	96,699	162	96,618	4,081,978	42.2
35-36	0.00175	96,537	169	96,453	3,985,360	41.3
36-37	0.00183	96,368	177	96,280	3,888,907	40.4
37-38	0.00194	96,192	186	96,099	3,792,627	39.4
38-39	0.00206	96,006	198	95,907	3,696,528	38.5
39-40	0.00221	95,808	212	95,702	3,600,622	37.6
40-41	0.00238	95,595	228	95,482	3,504,920	36.7
41-42	0.00256	95,368	245	95,245	3,409,439	35.8
42-43	0.00276	95,123	262	94,992	3,314,193	34.8
43-44	0.00297	94,861	281	94,720	3,219,201	33.9
44-45	0.00319	94,579	302	94,428	3,124,481	33.0
45-46	0.00344	94,278	324	94,115	3,030,053	32.1
46-47	0.00372	93,953	349	93,779	2,935,937	31.2
47-48	0.00402	93,604	377	93,416	2,842,159	30.4
48-49	0.00435	93,227	406	93,024	2,748,743	29.5
49-50	0.00471	92,821	437	92,603	2,655,719	28.6
50-51	0.00512	92,384	473	92,148	2,563,116	27.7
51-52	0.00557	91,911	511	91,655	2,470,968	26.9
52-53	0.00605	91,400	553	91,123	2,379,313	26.0
53-54	0.00659	90,847	598	90,548	2,288,190	25.2
54-55	0.00719	90,248	649	89,924	2,197,642	24.4
55-56	0.00790	89,600	708	89,245	2,107,718	23.5
56-57	0.00874	88,891	777	88,503	2,018,473	22.7
57-58	0.00968	88,114	853	87,688	1,929,970	21.9
58-59	0.01068	87,262	932	86,796	1,842,282	21.1
59-60	0.01176	86,329	1,015	85,822	1,755,486	20.3
60-61	0.01291	85,314	1,102	84,764	1,669,664	19.6
61-62	0.01420	84,213	1,196	83,615	1,584,901	18.8
62-63	0.01565	83,017	1,299	82,367	1,501,286	18.1
63-64	0.01724	81,718	1,409	81,013	1,418,919	17.4
64-65	0.01894	80,309	1,521	79,549	1,337,906	16.7
65-66	0.02063	78,788	1,625	77,976	1,258,357	16.0
66-67	0.02235	77,163	1,725	76,301	1,180,381	15.3

Table 5. Life table for white males: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.02430	75,438	1,833	74,522	1,104,081	14.6
68-69 . . . . .	0.02659	73,605	1,957	72,627	1,029,559	14.0
69-70 . . . . .	0.02920	71,648	2,092	70,602	956,932	13.4
70-71 . . . . .	0.03200	69,556	2,226	68,443	886,330	12.7
71-72 . . . . .	0.03489	67,330	2,349	66,155	817,887	12.1
72-73 . . . . .	0.03792	64,981	2,464	63,749	751,732	11.6
73-74 . . . . .	0.04110	62,517	2,570	61,232	687,983	11.0
74-75 . . . . .	0.04445	59,947	2,665	58,615	626,751	10.5
75-76 . . . . .	0.04796	57,282	2,747	55,909	568,136	9.9
76-77 . . . . .	0.05174	54,535	2,822	53,124	512,227	9.4
77-78 . . . . .	0.05601	51,713	2,896	50,265	459,103	8.9
78-79 . . . . .	0.06103	48,817	2,980	47,327	408,838	8.4
79-80 . . . . .	0.06699	45,838	3,071	44,302	361,511	7.9
80-81 . . . . .	0.07408	42,767	3,168	41,183	317,208	7.4
81-82 . . . . .	0.08216	39,599	3,254	37,972	276,025	7.0
82-83 . . . . .	0.09094	36,345	3,305	34,693	238,053	6.5
83-84 . . . . .	0.09993	33,040	3,302	31,389	203,361	6.2
84-85 . . . . .	0.10919	29,738	3,247	28,115	171,972	5.8
85-86 . . . . .	0.11925	26,491	3,159	24,912	143,857	5.4
86-87 . . . . .	0.12973	23,332	3,027	21,819	118,945	5.1
87-88 . . . . .	0.14100	20,305	2,863	18,874	97,127	4.8
88-89 . . . . .	0.15323	17,442	2,673	16,106	78,253	4.5
89-90 . . . . .	0.16647	14,769	2,459	13,540	62,147	4.2
90-91 . . . . .	0.18057	12,311	2,223	11,199	48,607	3.9
91-92 . . . . .	0.19528	10,088	1,970	9,103	37,408	3.7
92-93 . . . . .	0.21039	8,118	1,708	7,264	28,305	3.5
93-94 . . . . .	0.22584	6,410	1,448	5,686	21,041	3.3
94-95 . . . . .	0.24161	4,962	1,199	4,363	15,355	3.1
95-96 . . . . .	0.25765	3,763	970	3,279	10,992	2.9
96-97 . . . . .	0.27384	2,794	765	2,411	7,713	2.8
97-98 . . . . .	0.29004	2,029	588	1,735	5,302	2.6
98-99 . . . . .	0.30617	1,440	441	1,220	3,567	2.5
99-100 . . . . .	0.32222	999	322	838	2,348	2.3
100+ . . . . .	1.00000	677	677	1,509	1,509	2.2

Table 6. Life table for white females: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.00536	100,000	536	99,530	7,988,994	79.9
1-2	0.00045	99,464	44	99,442	7,889,463	79.3
2-3	0.00027	99,420	27	99,406	7,790,021	78.4
3-4	0.00023	99,393	23	99,381	7,690,615	77.4
4-5	0.00017	99,370	17	99,361	7,591,234	76.4
5-6	0.00016	99,353	16	99,345	7,491,872	75.4
6-7	0.00015	99,337	15	99,330	7,392,527	74.4
7-8	0.00014	99,322	14	99,315	7,293,198	73.4
8-9	0.00013	99,308	13	99,302	7,193,883	72.4
9-10	0.00012	99,295	12	99,289	7,094,581	71.4
10-11	0.00012	99,283	12	99,277	6,995,292	70.5
11-12	0.00012	99,271	12	99,265	6,896,016	69.5
12-13	0.00015	99,259	15	99,251	6,796,751	68.5
13-14	0.00020	99,244	20	99,234	6,697,500	67.5
14-15	0.00026	99,224	26	99,211	6,598,266	66.5
15-16	0.00034	99,198	34	99,181	6,499,055	65.5
16-17	0.00041	99,164	41	99,144	6,399,874	64.5
17-18	0.00046	99,124	45	99,101	6,300,730	63.6
18-19	0.00047	99,078	47	99,055	6,201,629	62.6
19-20	0.00046	99,032	46	99,009	6,102,574	61.6
20-21	0.00045	98,986	45	98,963	6,003,565	60.7
21-22	0.00045	98,941	44	98,919	5,904,602	59.7
22-23	0.00044	98,897	44	98,875	5,805,683	58.7
23-24	0.00045	98,853	44	98,831	5,706,808	57.7
24-25	0.00046	98,809	45	98,787	5,607,977	56.8
25-26	0.00047	98,764	46	98,741	5,509,190	55.8
26-27	0.00048	98,718	47	98,695	5,410,449	54.8
27-28	0.00050	98,671	49	98,646	5,311,754	53.8
28-29	0.00052	98,622	52	98,596	5,213,108	52.9
29-30	0.00056	98,570	55	98,543	5,114,512	51.9
30-31	0.00059	98,516	58	98,486	5,015,969	50.9
31-32	0.00063	98,457	62	98,426	4,917,482	49.9
32-33	0.00068	98,395	67	98,362	4,819,056	49.0
33-34	0.00073	98,329	71	98,293	4,720,695	48.0
34-35	0.00078	98,257	77	98,219	4,622,402	47.0
35-36	0.00084	98,180	82	98,139	4,524,183	46.1
36-37	0.00090	98,098	88	98,054	4,426,044	45.1
37-38	0.00097	98,010	95	97,962	4,327,990	44.2
38-39	0.00104	97,915	102	97,864	4,230,028	43.2
39-40	0.00113	97,813	111	97,757	4,132,164	42.2
40-41	0.00123	97,702	120	97,642	4,034,407	41.3
41-42	0.00134	97,582	130	97,517	3,936,765	40.3
42-43	0.00145	97,452	141	97,381	3,839,248	39.4
43-44	0.00157	97,310	153	97,234	3,741,867	38.5
44-45	0.00169	97,158	165	97,076	3,644,633	37.5
45-46	0.00183	96,993	178	96,904	3,547,557	36.6
46-47	0.00200	96,815	193	96,719	3,450,653	35.6
47-48	0.00219	96,622	211	96,517	3,353,934	34.7
48-49	0.00241	96,411	232	96,295	3,257,418	33.8
49-50	0.00267	96,179	256	96,050	3,161,123	32.9
50-51	0.00296	95,922	284	95,780	3,065,072	32.0
51-52	0.00327	95,639	313	95,482	2,969,292	31.0
52-53	0.00361	95,326	344	95,154	2,873,810	30.1
53-54	0.00396	94,982	377	94,793	2,778,656	29.3
54-55	0.00436	94,605	412	94,399	2,683,863	28.4
55-56	0.00482	94,193	454	93,966	2,589,464	27.5
56-57	0.00536	93,739	502	93,488	2,495,498	26.6
57-58	0.00595	93,237	554	92,960	2,402,010	25.8
58-59	0.00656	92,683	608	92,379	2,309,050	24.9
59-60	0.00720	92,075	663	91,743	2,216,672	24.1
60-61	0.00791	91,412	723	91,050	2,124,929	23.2
61-62	0.00871	90,689	790	90,294	2,033,879	22.4
62-63	0.00956	89,899	860	89,469	1,943,585	21.6
63-64	0.01045	89,039	931	88,574	1,854,116	20.8
64-65	0.01137	88,109	1,002	87,607	1,765,542	20.0
65-66	0.01229	87,106	1,071	86,571	1,677,934	19.3
66-67	0.01327	86,036	1,142	85,465	1,591,363	18.5



Table 6. Life table for white females: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.01443	84,894	1,225	84,281	1,505,898	17.7
68-69 . . . . .	0.01584	83,669	1,325	83,006	1,421,617	17.0
69-70 . . . . .	0.01748	82,344	1,439	81,624	1,338,610	16.3
70-71 . . . . .	0.01924	80,905	1,557	80,126	1,256,986	15.5
71-72 . . . . .	0.02108	79,348	1,673	78,512	1,176,860	14.8
72-73 . . . . .	0.02307	77,675	1,792	76,779	1,098,348	14.1
73-74 . . . . .	0.02526	75,883	1,916	74,925	1,021,569	13.5
74-75 . . . . .	0.02765	73,967	2,045	72,944	946,644	12.8
75-76 . . . . .	0.03021	71,921	2,173	70,835	873,700	12.1
76-77 . . . . .	0.03301	69,748	2,302	68,597	802,866	11.5
77-78 . . . . .	0.03623	67,446	2,443	66,224	734,269	10.9
78-79 . . . . .	0.04002	65,002	2,602	63,702	668,044	10.3
79-80 . . . . .	0.04445	62,401	2,774	61,014	604,343	9.7
80-81 . . . . .	0.04939	59,627	2,945	58,155	543,329	9.1
81-82 . . . . .	0.05485	56,683	3,109	55,128	485,174	8.6
82-83 . . . . .	0.06114	53,573	3,275	51,936	430,046	8.0
83-84 . . . . .	0.06841	50,298	3,441	48,578	378,110	7.5
84-85 . . . . .	0.07675	46,857	3,596	45,059	329,533	7.0
85-86 . . . . .	0.08519	43,261	3,685	41,419	284,473	6.6
86-87 . . . . .	0.09458	39,576	3,743	37,704	243,055	6.1
87-88 . . . . .	0.10486	35,833	3,757	33,954	205,351	5.7
88-89 . . . . .	0.11617	32,075	3,726	30,212	171,397	5.3
89-90 . . . . .	0.12858	28,349	3,645	26,526	141,185	5.0
90-91 . . . . .	0.14204	24,704	3,509	22,949	114,658	4.6
91-92 . . . . .	0.15629	21,195	3,313	19,539	91,709	4.3
92-93 . . . . .	0.17118	17,882	3,061	16,352	72,170	4.0
93-94 . . . . .	0.18680	14,821	2,769	13,437	55,818	3.8
94-95 . . . . .	0.20327	12,053	2,450	10,828	42,381	3.5
95-96 . . . . .	0.22053	9,603	2,118	8,544	31,553	3.3
96-97 . . . . .	0.23833	7,485	1,784	6,593	23,009	3.1
97-98 . . . . .	0.25630	5,701	1,461	4,971	16,416	2.9
98-99 . . . . .	0.27425	4,240	1,163	3,659	11,445	2.7
99-100 . . . . .	0.29213	3,077	899	2,628	7,787	2.5
100+ . . . . .	1.00000	2,178	2,178	5,159	5,159	2.4

Table 7. Life table for the black population: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.01418	100,000	1,418	98,768	7,107,912	71.1
1-2	0.00092	98,582	91	98,536	7,009,144	71.1
2-3	0.00062	98,491	61	98,460	6,910,608	70.2
3-4	0.00049	98,429	48	98,406	6,812,148	69.2
4-5	0.00036	98,382	35	98,364	6,713,742	68.2
5-6	0.00036	98,347	35	98,329	6,615,378	67.3
6-7	0.00033	98,311	32	98,295	6,517,049	66.3
7-8	0.00031	98,279	30	98,264	6,418,754	65.3
8-9	0.00027	98,249	27	98,236	6,320,490	64.3
9-10	0.00024	98,222	23	98,210	6,222,254	63.3
10-11	0.00021	98,199	20	98,189	6,124,044	62.4
11-12	0.00020	98,179	20	98,169	6,025,855	61.4
12-13	0.00026	98,159	25	98,146	5,927,687	60.4
13-14	0.00038	98,134	38	98,115	5,829,541	59.4
14-15	0.00056	98,096	55	98,068	5,731,426	58.4
15-16	0.00075	98,041	74	98,004	5,633,358	57.5
16-17	0.00093	97,967	91	97,921	5,535,354	56.5
17-18	0.00110	97,876	107	97,822	5,437,432	55.6
18-19	0.00124	97,768	121	97,708	5,339,610	54.6
19-20	0.00138	97,647	134	97,580	5,241,902	53.7
20-21	0.00153	97,513	149	97,438	5,144,323	52.8
21-22	0.00169	97,364	164	97,282	5,046,884	51.8
22-23	0.00181	97,200	176	97,112	4,949,603	50.9
23-24	0.00187	97,024	181	96,933	4,852,491	50.0
24-25	0.00188	96,843	182	96,752	4,755,557	49.1
25-26	0.00188	96,661	182	96,570	4,658,806	48.2
26-27	0.00189	96,479	183	96,388	4,562,236	47.3
27-28	0.00192	96,296	185	96,204	4,465,848	46.4
28-29	0.00198	96,111	190	96,016	4,369,645	45.5
29-30	0.00206	95,921	197	95,823	4,273,628	44.6
30-31	0.00214	95,724	205	95,622	4,177,806	43.6
31-32	0.00222	95,519	213	95,413	4,082,184	42.7
32-33	0.00234	95,307	223	95,195	3,986,771	41.8
33-34	0.00250	95,084	238	94,965	3,891,576	40.9
34-35	0.00268	94,846	254	94,719	3,796,611	40.0
35-36	0.00288	94,592	272	94,455	3,701,892	39.1
36-37	0.00308	94,319	291	94,174	3,607,437	38.2
37-38	0.00330	94,028	310	93,873	3,513,263	37.4
38-39	0.00353	93,719	330	93,553	3,419,390	36.5
39-40	0.00378	93,388	353	93,212	3,325,836	35.6
40-41	0.00404	93,035	376	92,848	3,232,624	34.7
41-42	0.00433	92,660	401	92,459	3,139,777	33.9
42-43	0.00467	92,258	431	92,043	3,047,318	33.0
43-44	0.00507	91,828	466	91,595	2,955,275	32.2
44-45	0.00554	91,362	506	91,109	2,863,680	31.3
45-46	0.00607	90,856	552	90,580	2,772,571	30.5
46-47	0.00663	90,304	599	90,005	2,681,991	29.7
47-48	0.00718	89,705	644	89,383	2,591,987	28.9
48-49	0.00766	89,061	682	88,720	2,502,604	28.1
49-50	0.00811	88,379	717	88,021	2,413,883	27.3
50-51	0.00861	87,662	755	87,285	2,325,862	26.5
51-52	0.00921	86,908	801	86,507	2,238,577	25.8
52-53	0.00989	86,107	852	85,681	2,152,070	25.0
53-54	0.01063	85,255	906	84,802	2,066,389	24.2
54-55	0.01142	84,349	963	83,867	1,981,587	23.5
55-56	0.01221	83,386	1,018	82,877	1,897,720	22.8
56-57	0.01306	82,368	1,076	81,830	1,814,843	22.0
57-58	0.01406	81,292	1,143	80,721	1,733,013	21.3
58-59	0.01529	80,149	1,225	79,536	1,652,292	20.6
59-60	0.01672	78,924	1,319	78,264	1,572,756	19.9
60-61	0.01835	77,604	1,424	76,892	1,494,492	19.3
61-62	0.02001	76,180	1,524	75,418	1,417,600	18.6
62-63	0.02147	74,656	1,603	73,855	1,342,182	18.0
63-64	0.02255	73,053	1,647	72,230	1,268,327	17.4
64-65	0.02333	71,406	1,666	70,573	1,196,097	16.8
65-66	0.02388	69,740	1,665	68,907	1,125,524	16.1
66-67	0.02459	68,075	1,674	67,238	1,056,617	15.5

Table 7. Life table for the black population: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.02591	66,401	1,721	65,540	989,380	14.9
68-69 . . . . .	0.02823	64,680	1,826	63,767	923,839	14.3
69-70 . . . . .	0.03148	62,854	1,979	61,864	860,072	13.7
70-71 . . . . .	0.03544	60,875	2,157	59,796	798,208	13.1
71-72 . . . . .	0.03949	58,718	2,319	57,558	738,412	12.6
72-73 . . . . .	0.04322	56,399	2,438	55,180	680,854	12.1
73-74 . . . . .	0.04598	53,961	2,481	52,720	625,674	11.6
74-75 . . . . .	0.04787	51,480	2,465	50,247	572,953	11.1
75-76 . . . . .	0.04949	49,015	2,426	47,802	522,706	10.7
76-77 . . . . .	0.05150	46,590	2,399	45,390	474,904	10.2
77-78 . . . . .	0.05406	44,190	2,389	42,996	429,514	9.7
78-79 . . . . .	0.05770	41,801	2,412	40,595	386,518	9.2
79-80 . . . . .	0.06253	39,389	2,463	38,158	345,923	8.8
80-81 . . . . .	0.06825	36,926	2,520	35,666	307,765	8.3
81-82 . . . . .	0.07450	34,406	2,563	33,124	272,099	7.9
82-83 . . . . .	0.08142	31,843	2,593	30,546	238,975	7.5
83-84 . . . . .	0.08863	29,250	2,592	27,954	208,428	7.1
84-85 . . . . .	0.09600	26,658	2,559	25,378	180,474	6.8
85-86 . . . . .	0.10275	24,099	2,476	22,860	155,096	6.4
86-87 . . . . .	0.10989	21,622	2,376	20,434	132,236	6.1
87-88 . . . . .	0.11754	19,246	2,262	18,115	111,801	5.8
88-89 . . . . .	0.12572	16,984	2,135	15,916	93,686	5.5
89-90 . . . . .	0.13446	14,849	1,997	13,850	77,770	5.2
90-91 . . . . .	0.14369	12,852	1,847	11,929	63,919	5.0
91-92 . . . . .	0.15333	11,005	1,687	10,162	51,991	4.7
92-93 . . . . .	0.16330	9,318	1,522	8,557	41,829	4.5
93-94 . . . . .	0.17356	7,796	1,353	7,120	33,272	4.3
94-95 . . . . .	0.18408	6,443	1,186	5,850	26,152	4.1
95-96 . . . . .	0.19486	5,257	1,024	4,745	20,302	3.9
96-97 . . . . .	0.20590	4,233	872	3,797	15,557	3.7
97-98 . . . . .	0.21721	3,361	730	2,996	11,760	3.5
98-99 . . . . .	0.22879	2,631	602	2,330	8,763	3.3
99-100 . . . . .	0.24062	2,029	488	1,785	6,433	3.2
100+ . . . . .	1.00000	1,541	1,541	4,648	4,648	3.0

Table 8. Life table for black males: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.01549	100,000	1,549	98,657	6,715,423	67.2
1-2	0.00105	98,451	103	98,399	6,616,766	67.2
2-3	0.00069	98,348	68	98,314	6,518,367	66.3
3-4	0.00058	98,280	57	98,251	6,420,053	65.3
4-5	0.00039	98,223	39	98,203	6,321,802	64.4
5-6	0.00038	98,184	37	98,165	6,223,599	63.4
6-7	0.00035	98,147	35	98,129	6,125,434	62.4
7-8	0.00032	98,112	32	98,096	6,027,304	61.4
8-9	0.00028	98,080	28	98,066	5,929,208	60.5
9-10	0.00023	98,052	23	98,041	5,831,142	59.5
10-11	0.00018	98,030	18	98,021	5,733,101	58.5
11-12	0.00018	98,012	18	98,003	5,635,080	57.5
12-13	0.00028	97,994	27	97,980	5,537,077	56.5
13-14	0.00049	97,967	48	97,943	5,439,097	55.5
14-15	0.00079	97,918	77	97,880	5,341,154	54.5
15-16	0.00111	97,841	109	97,787	5,243,274	53.6
16-17	0.00140	97,732	137	97,664	5,145,488	52.6
17-18	0.00167	97,595	163	97,514	5,047,824	51.7
18-19	0.00192	97,432	187	97,338	4,950,310	50.8
19-20	0.00215	97,245	209	97,141	4,852,972	49.9
20-21	0.00241	97,036	234	96,919	4,755,831	49.0
21-22	0.00268	96,802	259	96,672	4,658,912	48.1
22-23	0.00287	96,543	277	96,404	4,562,240	47.3
23-24	0.00294	96,265	283	96,124	4,465,836	46.4
24-25	0.00292	95,982	280	95,842	4,369,712	45.5
25-26	0.00285	95,702	273	95,565	4,273,870	44.7
26-27	0.00281	95,429	269	95,294	4,178,305	43.8
27-28	0.00281	95,160	267	95,027	4,083,011	42.9
28-29	0.00285	94,893	271	94,758	3,987,984	42.0
29-30	0.00294	94,623	278	94,483	3,893,226	41.1
30-31	0.00304	94,344	287	94,201	3,798,743	40.3
31-32	0.00314	94,058	295	93,910	3,704,541	39.4
32-33	0.00327	93,763	306	93,610	3,610,631	38.5
33-34	0.00343	93,456	321	93,296	3,517,022	37.6
34-35	0.00362	93,136	338	92,967	3,423,726	36.8
35-36	0.00383	92,798	356	92,620	3,330,759	35.9
36-37	0.00406	92,443	375	92,255	3,238,138	35.0
37-38	0.00431	92,068	397	91,869	3,145,883	34.2
38-39	0.00460	91,671	422	91,460	3,054,014	33.3
39-40	0.00494	91,249	450	91,024	2,962,554	32.5
40-41	0.00529	90,799	481	90,558	2,871,530	31.6
41-42	0.00568	90,318	513	90,062	2,780,972	30.8
42-43	0.00615	89,805	552	89,529	2,690,910	30.0
43-44	0.00672	89,253	599	88,953	2,601,381	29.1
44-45	0.00738	88,654	654	88,326	2,512,428	28.3
45-46	0.00815	87,999	717	87,641	2,424,101	27.5
46-47	0.00897	87,282	783	86,891	2,336,460	26.8
47-48	0.00974	86,499	842	86,078	2,249,570	26.0
48-49	0.01040	85,657	891	85,211	2,163,492	25.3
49-50	0.01098	84,766	931	84,301	2,078,280	24.5
50-51	0.01161	83,835	974	83,348	1,993,980	23.8
51-52	0.01238	82,862	1,026	82,349	1,910,632	23.1
52-53	0.01325	81,836	1,084	81,294	1,828,283	22.3
53-54	0.01422	80,751	1,148	80,177	1,746,989	21.6
54-55	0.01526	79,603	1,214	78,996	1,666,812	20.9
55-56	0.01630	78,389	1,278	77,750	1,587,816	20.3
56-57	0.01740	77,112	1,342	76,440	1,510,066	19.6
57-58	0.01872	75,769	1,418	75,060	1,433,625	18.9
58-59	0.02034	74,351	1,513	73,595	1,358,565	18.3
59-60	0.02225	72,838	1,621	72,028	1,284,970	17.6
60-61	0.02443	71,218	1,740	70,348	1,212,942	17.0
61-62	0.02664	69,478	1,851	68,553	1,142,594	16.4
62-63	0.02853	67,627	1,929	66,663	1,074,042	15.9
63-64	0.02981	65,698	1,959	64,719	1,007,379	15.3
64-65	0.03063	63,739	1,952	62,763	942,660	14.8
65-66	0.03109	61,787	1,921	60,826	879,897	14.2
66-67	0.03176	59,866	1,901	58,915	819,071	13.7

Table 8. Life table for black males: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.03318	57,965	1,923	57,003	760,155	13.1
68-69 . . . . .	0.03587	56,041	2,010	55,036	703,153	12.5
69-70 . . . . .	0.03978	54,031	2,149	52,956	648,117	12.0
70-71 . . . . .	0.04461	51,882	2,314	50,724	595,160	11.5
71-72 . . . . .	0.04963	49,567	2,460	48,337	544,436	11.0
72-73 . . . . .	0.05439	47,107	2,562	45,826	496,099	10.5
73-74 . . . . .	0.05802	44,545	2,585	43,253	450,272	10.1
74-75 . . . . .	0.06056	41,961	2,541	40,690	407,019	9.7
75-76 . . . . .	0.06278	39,419	2,475	38,182	366,330	9.3
76-77 . . . . .	0.06548	36,945	2,419	35,735	328,148	8.9
77-78 . . . . .	0.06866	34,525	2,370	33,340	292,413	8.5
78-79 . . . . .	0.07293	32,155	2,345	30,982	259,072	8.1
79-80 . . . . .	0.07854	29,810	2,341	28,639	228,090	7.7
80-81 . . . . .	0.08545	27,469	2,347	26,295	199,451	7.3
81-82 . . . . .	0.09327	25,121	2,343	23,950	173,156	6.9
82-83 . . . . .	0.10191	22,778	2,321	21,618	149,206	6.6
83-84 . . . . .	0.11035	20,457	2,257	19,328	127,588	6.2
84-85 . . . . .	0.11807	18,200	2,149	17,125	108,260	5.9
85-86 . . . . .	0.12545	16,051	2,014	15,044	91,134	5.7
86-87 . . . . .	0.13309	14,037	1,868	13,103	76,091	5.4
87-88 . . . . .	0.14110	12,169	1,717	11,310	62,988	5.2
88-89 . . . . .	0.14950	10,452	1,563	9,671	51,677	4.9
89-90 . . . . .	0.15825	8,889	1,407	8,186	42,007	4.7
90-91 . . . . .	0.16727	7,483	1,252	6,857	33,821	4.5
91-92 . . . . .	0.17647	6,231	1,100	5,681	26,964	4.3
92-93 . . . . .	0.18577	5,131	953	4,655	21,283	4.1
93-94 . . . . .	0.19507	4,178	815	3,771	16,628	4.0
94-95 . . . . .	0.20432	3,363	687	3,019	12,857	3.8
95-96 . . . . .	0.21351	2,676	571	2,390	9,838	3.7
96-97 . . . . .	0.22268	2,105	469	1,870	7,448	3.5
97-98 . . . . .	0.23184	1,636	379	1,446	5,577	3.4
98-99 . . . . .	0.24099	1,257	303	1,105	4,131	3.3
99-100 . . . . .	0.25013	954	239	835	3,026	3.2
100+ . . . . .	1.00000	715	715	2,191	2,191	3.1

Table 9. Life table for black females: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
0-1	0.01283	100,000	1,283	98,882	7,473,657	74.7
1-2	0.00080	98,717	79	98,678	7,374,775	74.7
2-3	0.00055	98,638	54	98,611	7,276,097	73.8
3-4	0.00039	98,584	38	98,565	7,177,486	72.8
4-5	0.00032	98,545	31	98,530	7,078,922	71.8
5-6	0.00033	98,514	33	98,498	6,980,392	70.9
6-7	0.00031	98,481	30	98,466	6,881,894	69.9
7-8	0.00029	98,451	28	98,437	6,783,428	68.9
8-9	0.00026	98,423	26	98,410	6,684,991	67.9
9-10	0.00024	98,397	24	98,385	6,586,581	66.9
10-11	0.00023	98,373	23	98,362	6,488,196	66.0
11-12	0.00022	98,350	22	98,339	6,389,835	65.0
12-13	0.00023	98,328	23	98,317	6,291,495	64.0
13-14	0.00027	98,305	27	98,292	6,193,179	63.0
14-15	0.00032	98,279	32	98,263	6,094,887	62.0
15-16	0.00038	98,247	38	98,228	5,996,624	61.0
16-17	0.00044	98,210	43	98,188	5,898,395	60.1
17-18	0.00050	98,166	49	98,142	5,800,208	59.1
18-19	0.00054	98,118	53	98,091	5,702,066	58.1
19-20	0.00059	98,064	58	98,035	5,603,975	57.1
20-21	0.00064	98,006	63	97,975	5,505,940	56.2
21-22	0.00070	97,944	69	97,910	5,407,964	55.2
22-23	0.00076	97,875	75	97,838	5,310,055	54.3
23-24	0.00083	97,800	81	97,760	5,212,217	53.3
24-25	0.00089	97,719	87	97,676	5,114,457	52.3
25-26	0.00096	97,632	94	97,585	5,016,782	51.4
26-27	0.00104	97,538	101	97,487	4,919,197	50.4
27-28	0.00111	97,437	108	97,383	4,821,709	49.5
28-29	0.00118	97,329	115	97,271	4,724,327	48.5
29-30	0.00126	97,214	122	97,153	4,627,055	47.6
30-31	0.00133	97,091	129	97,027	4,529,903	46.7
31-32	0.00141	96,962	137	96,894	4,432,876	45.7
32-33	0.00153	96,825	148	96,751	4,335,982	44.8
33-34	0.00168	96,677	162	96,596	4,239,231	43.8
34-35	0.00185	96,515	179	96,426	4,142,635	42.9
35-36	0.00204	96,337	196	96,239	4,046,209	42.0
36-37	0.00222	96,141	213	96,034	3,949,970	41.1
37-38	0.00240	95,928	230	95,813	3,853,936	40.2
38-39	0.00257	95,698	246	95,575	3,758,123	39.3
39-40	0.00275	95,452	262	95,320	3,662,549	38.4
40-41	0.00293	95,189	279	95,049	3,567,228	37.5
41-42	0.00314	94,910	298	94,761	3,472,179	36.6
42-43	0.00337	94,612	319	94,453	3,377,418	35.7
43-44	0.00364	94,293	343	94,122	3,282,965	34.8
44-45	0.00394	93,950	371	93,765	3,188,844	33.9
45-46	0.00429	93,579	401	93,379	3,095,079	33.1
46-47	0.00465	93,178	434	92,961	3,001,700	32.2
47-48	0.00502	92,744	465	92,512	2,908,739	31.4
48-49	0.00537	92,279	496	92,031	2,816,227	30.5
49-50	0.00573	91,783	526	91,521	2,724,196	29.7
50-51	0.00613	91,258	560	90,978	2,632,675	28.8
51-52	0.00661	90,698	600	90,398	2,541,697	28.0
52-53	0.00715	90,098	645	89,776	2,451,299	27.2
53-54	0.00773	89,454	692	89,108	2,361,523	26.4
54-55	0.00834	88,762	740	88,392	2,272,415	25.6
55-56	0.00896	88,022	788	87,628	2,184,023	24.8
56-57	0.00963	87,234	840	86,814	2,096,395	24.0
57-58	0.01042	86,394	900	85,944	2,009,581	23.3
58-59	0.01136	85,494	972	85,008	1,923,637	22.5
59-60	0.01246	84,522	1,053	83,996	1,838,630	21.8
60-61	0.01371	83,469	1,144	82,897	1,754,634	21.0
61-62	0.01500	82,324	1,235	81,707	1,671,737	20.3
62-63	0.01618	81,089	1,312	80,433	1,590,030	19.6
63-64	0.01710	79,778	1,364	79,095	1,509,597	18.9
64-65	0.01785	78,413	1,399	77,714	1,430,502	18.2
65-66	0.01842	77,014	1,419	76,304	1,352,788	17.6
66-67	0.01915	75,595	1,448	74,871	1,276,483	16.9

Table 9. Life table for black females: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	$q_x$	$l_x$	$d_x$	$L_x$	$T_x$	$e_x$
67-68 . . . . .	0.02041	74,147	1,513	73,391	1,201,612	16.2
68-69 . . . . .	0.02251	72,634	1,635	71,817	1,128,222	15.5
69-70 . . . . .	0.02538	70,999	1,802	70,098	1,056,405	14.9
70-71 . . . . .	0.02883	69,197	1,995	68,200	986,307	14.3
71-72 . . . . .	0.03236	67,202	2,174	66,115	918,107	13.7
72-73 . . . . .	0.03553	65,028	2,310	63,873	851,991	13.1
73-74 . . . . .	0.03782	62,718	2,372	61,531	788,119	12.6
74-75 . . . . .	0.03938	60,345	2,376	59,157	726,587	12.0
75-76 . . . . .	0.04068	57,969	2,358	56,790	667,430	11.5
76-77 . . . . .	0.04236	55,611	2,356	54,433	610,640	11.0
77-78 . . . . .	0.04470	53,255	2,381	52,065	556,207	10.4
78-79 . . . . .	0.04821	50,874	2,453	49,648	504,143	9.9
79-80 . . . . .	0.05292	48,422	2,562	47,140	454,495	9.4
80-81 . . . . .	0.05843	45,859	2,679	44,519	407,354	8.9
81-82 . . . . .	0.06434	43,180	2,778	41,791	362,835	8.4
82-83 . . . . .	0.07088	40,402	2,864	38,970	321,044	7.9
83-84 . . . . .	0.07786	37,538	2,923	36,077	282,074	7.5
84-85 . . . . .	0.08527	34,615	2,952	33,140	245,997	7.1
85-86 . . . . .	0.09233	31,664	2,924	30,202	212,858	6.7
86-87 . . . . .	0.10001	28,740	2,874	27,303	182,656	6.4
87-88 . . . . .	0.10828	25,866	2,801	24,465	155,353	6.0
88-89 . . . . .	0.11714	23,065	2,702	21,714	130,888	5.7
89-90 . . . . .	0.12658	20,363	2,578	19,074	109,174	5.4
90-91 . . . . .	0.13657	17,786	2,429	16,571	90,099	5.1
91-92 . . . . .	0.14704	15,357	2,258	14,228	73,528	4.8
92-93 . . . . .	0.15795	13,098	2,069	12,064	59,301	4.5
93-94 . . . . .	0.16927	11,030	1,867	10,096	47,237	4.3
94-95 . . . . .	0.18094	9,163	1,658	8,334	37,140	4.1
95-96 . . . . .	0.19295	7,505	1,448	6,781	28,807	3.8
96-97 . . . . .	0.20526	6,057	1,243	5,435	22,026	3.6
97-98 . . . . .	0.21787	4,813	1,049	4,289	16,591	3.4
98-99 . . . . .	0.23075	3,765	869	3,330	12,302	3.3
99-100 . . . . .	0.24387	2,896	706	2,543	8,972	3.1
100+ . . . . .	1.00000	2,190	2,190	6,429	6,429	2.9









**Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.**

[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 ( <i>L</i> )										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>Black male<sup>1</sup>—Con</b>											
60 . . . . .	71,218	66,334	64,980	57,457	61,669	55,535	43,833	36,790	40,506	23,750	24,194
65 . . . . .	61,787	56,795	55,061	47,485	51,392	45,198	35,371	29,314	34,042	17,806	19,015
70 . . . . .	51,882	45,690	44,213	36,925	39,914	35,018	27,236	21,741	26,923	12,295	13,829
75 . . . . .	39,419	33,755	32,717	25,921	29,064	25,472	19,456	14,419	18,854	7,494	8,892
80 . . . . .	27,469	22,549	22,017	16,560	19,994	16,904	12,186	8,239	11,615	3,894	4,831
85 . . . . .	16,051	12,709	12,383	9,648	11,620	9,898	6,444	3,660	5,605	1,747	2,030
90 . . . . .	7,483	5,972	5,708	4,696	5,174	4,642	2,836	1,246	2,040	595	634
95 . . . . .	2,676	1,971	2,009	1,721	1,240	1,342	961	307	552	189	137
100 . . . . .	715	466	513	489	149	192	209	41	77	40	18
<b>Black female<sup>1</sup></b>											
0 . . . . .	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1 . . . . .	98,717	98,356	98,073	97,076	96,172	95,913	93,416	92,796	91,251	81,493	78,525
5 . . . . .	98,514	98,087	97,751	96,598	95,543	95,055	91,906	90,185	87,149	72,768	68,056
10 . . . . .	98,373	97,946	97,590	96,369	95,265	94,679	91,308	89,201	85,607	70,508	65,111
15 . . . . .	98,247	97,818	97,450	96,172	95,057	94,343	90,594	88,088	83,954	68,218	62,384
20 . . . . .	98,006	97,566	97,180	95,729	94,660	93,544	88,736	85,078	80,154	64,764	59,053
25 . . . . .	97,632	97,140	96,754	95,035	94,005	92,336	86,198	81,067	75,359	61,430	55,795
30 . . . . .	97,091	96,514	96,150	94,114	93,070	90,799	83,384	76,816	70,633	58,281	52,773
35 . . . . .	96,337	95,599	95,338	92,807	91,670	88,805	80,092	72,192	65,857	54,595	49,567
40 . . . . .	95,189	94,364	94,137	90,817	89,676	86,052	76,084	67,271	61,130	50,568	46,146
45 . . . . .	93,579	92,676	92,322	88,001	86,793	82,257	71,157	61,365	56,230	45,947	42,279
50 . . . . .	91,258	90,277	89,563	84,168	82,979	77,007	64,885	54,920	50,780	40,886	37,681
55 . . . . .	88,022	86,793	85,653	79,177	77,362	70,196	57,314	47,074	44,742	35,415	33,124
60 . . . . .	83,469	81,886	80,293	72,820	69,941	61,758	48,928	38,761	37,954	28,908	27,524
65 . . . . .	77,014	75,031	73,266	64,716	60,825	52,358	40,504	30,852	31,044	22,302	21,995
70 . . . . .	69,197	66,278	64,729	54,873	51,274	42,612	32,354	23,341	24,107	15,871	16,140
75 . . . . .	57,969	55,684	53,831	43,193	40,540	32,981	24,502	16,576	17,216	10,657	11,066
80 . . . . .	45,859	43,622	41,686	31,756	30,315	23,712	17,039	10,822	11,151	6,324	6,708
85 . . . . .	31,664	30,089	28,004	21,358	19,744	15,550	10,622	6,033	5,972	3,029	3,567
90 . . . . .	17,786	17,536	16,260	12,210	9,675	8,590	5,652	2,774	2,579	1,206	1,492
95 . . . . .	7,505	7,687	7,312	5,217	2,438	2,875	2,345	941	818	448	462
100 . . . . .	2,190	2,364	2,398	1,803	293	445	659	193	179	112	97

<sup>1</sup>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.



**Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.**

[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 ( <i>L<sub>x</sub></i> )										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>Female—Con.</b>											
60 . . . . .	23.1	22.90	22.29	20.60	19.52	18.50	16.92	15.94	15.87	14.90	15.21
65 . . . . .	19.2	19.02	18.44	16.83	15.80	14.95	13.57	12.78	12.73	11.96	12.22
70 . . . . .	15.5	15.38	14.84	13.35	12.37	11.71	10.56	9.99	9.96	9.38	9.59
75 . . . . .	12.1	12.08	11.58	10.26	9.33	8.94	8.01	7.61	7.65	7.20	7.34
80 . . . . .	9.1	9.13	8.69	7.68	6.72	6.67	5.99	5.70	5.75	5.37	5.51
85 . . . . .	6.6	6.66	6.38	5.63	4.71	4.90	4.47	4.32	4.30	4.08	4.12
90 . . . . .	4.7	4.73	4.66	4.14	3.25	3.54	3.39	3.24	3.23	3.05	3.04
95 . . . . .	3.4	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
<b>White</b>											
0 . . . . .	77.1	76.13	74.53	71.62	70.73	69.02	64.92	60.86	57.42	51.90	49.64
1 . . . . .	76.6	75.72	74.35	71.91	71.38	69.95	66.84	63.46	60.87	57.46	55.47
5 . . . . .	72.7	71.84	70.52	68.12	67.64	66.29	63.52	60.75	58.86	56.51	55.18
10 . . . . .	67.8	66.92	65.62	63.26	62.79	61.48	58.83	56.29	54.65	52.43	51.34
15 . . . . .	62.8	61.99	60.71	58.37	57.92	56.65	54.09	51.69	50.21	48.01	47.01
20 . . . . .	58.0	57.23	55.98	53.66	53.16	51.91	49.47	47.28	46.04	43.77	43.17
25 . . . . .	53.3	52.50	51.30	49.00	48.44	47.22	44.92	43.02	42.07	39.79	39.26
30 . . . . .	48.5	47.76	46.59	44.28	43.69	42.52	40.40	38.76	38.17	35.86	35.51
35 . . . . .	43.8	43.06	41.86	39.58	38.97	37.86	35.93	34.50	34.27	32.03	32.01
40 . . . . .	39.1	38.41	37.17	34.95	34.33	33.29	31.54	30.33	30.38	28.29	28.28
45 . . . . .	34.5	33.81	32.60	30.48	29.84	28.88	27.29	26.29	26.45	24.60	24.82
50 . . . . .	30.0	29.34	28.21	26.21	25.57	24.70	23.26	22.42	22.64	21.01	21.18
55 . . . . .	25.6	25.08	24.05	22.19	21.58	20.77	19.47	18.75	18.97	17.57	17.91
60 . . . . .	21.5	21.08	20.16	18.48	17.84	17.15	15.98	15.37	15.57	14.43	14.73
65 . . . . .	17.8	17.40	16.59	15.08	14.44	13.86	12.80	12.28	12.47	11.60	11.87
70 . . . . .	14.3	14.02	13.35	12.01	11.37	10.89	9.96	9.58	9.72	9.10	9.31
75 . . . . .	11.2	11.03	10.47	9.27	8.65	8.34	7.55	7.30	7.47	6.98	7.08
80 . . . . .	8.5	8.39	7.95	7.01	6.33	6.27	5.64	5.45	5.59	5.22	5.30
85 . . . . .	6.2	6.20	5.90	5.19	4.53	4.62	4.20	4.12	4.15	3.97	3.95
90 . . . . .	4.5	4.46	4.36	3.84	3.20	3.41	3.16	3.10	3.17	3.00	2.93
95 . . . . .	3.2	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
<b>White male</b>											
0 . . . . .	74.3	72.72	70.82	67.94	67.55	66.31	62.81	59.12	56.34	50.23	48.23
1 . . . . .	73.8	72.35	70.70	68.33	68.34	67.41	64.98	62.04	60.24	56.26	54.61
5 . . . . .	69.9	68.48	66.87	64.55	64.61	63.77	61.68	59.38	58.31	55.37	54.43
10 . . . . .	65.0	63.55	61.98	59.69	59.78	58.98	57.03	54.96	54.15	51.32	50.59
15 . . . . .	60.0	58.65	57.09	54.83	54.93	54.18	52.33	50.39	49.74	46.91	46.25
20 . . . . .	55.3	53.96	52.45	50.22	50.25	49.52	47.76	46.02	45.60	42.71	42.19
25 . . . . .	50.6	49.33	47.92	45.70	45.65	44.93	43.28	41.78	41.60	38.79	38.52
30 . . . . .	45.9	44.71	43.31	41.07	40.97	40.29	38.80	37.54	37.65	34.87	34.88
35 . . . . .	41.3	40.12	38.66	36.43	36.31	35.68	34.36	33.33	33.74	31.08	31.29
40 . . . . .	36.7	35.57	34.04	31.87	31.73	31.17	30.03	29.22	29.86	27.43	27.74
45 . . . . .	32.1	31.07	29.55	27.48	27.34	26.87	25.87	25.28	26.00	23.86	24.21
50 . . . . .	27.7	26.71	25.26	23.34	23.22	22.83	21.96	21.51	22.22	20.39	20.76
55 . . . . .	23.5	22.56	21.25	19.51	19.45	19.11	18.34	17.97	18.59	17.03	17.42
60 . . . . .	19.6	18.71	17.56	16.07	16.01	15.76	15.05	14.72	15.25	13.98	14.35
65 . . . . .	16.0	15.24	14.26	13.02	12.97	12.75	12.07	11.77	12.21	11.25	11.51
70 . . . . .	12.7	12.11	11.35	10.38	10.29	10.07	9.42	9.20	9.51	8.83	9.03
75 . . . . .	9.9	9.40	8.87	8.06	7.92	7.77	7.17	7.02	7.30	6.75	6.84
80 . . . . .	7.4	7.11	6.76	6.18	5.89	5.88	5.38	5.26	5.47	5.09	5.10
85 . . . . .	5.4	5.28	5.09	4.63	4.34	4.35	4.02	3.99	4.06	3.88	3.81
90 . . . . .	3.9	3.85	3.83	3.49	3.16	3.27	3.06	3.03	3.18	2.99	2.85
95 . . . . .	2.9	2.88	2.91	2.67	2.43	2.48	2.40	2.19	2.36	2.31	2.12
100 . . . . .	2.2	2.21	2.41	2.20	1.91	1.92	1.96	1.49	1.58	1.68	1.55

See footnote at end of table.



**Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.**

[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 ( <i>L<sub>x</sub></i> )										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
<b>Black male<sup>1</sup></b>											
60 . . . . .	17.0	16.01	15.89	14.93	15.29	14.91	14.37	13.15	14.74	11.67	12.62
65 . . . . .	14.2	13.27	13.29	12.53	12.84	12.75	12.21	10.87	12.07	9.74	10.38
70 . . . . .	11.5	10.88	10.94	10.40	10.81	10.74	10.11	8.78	9.58	8.00	8.33
75 . . . . .	9.3	8.84	8.90	8.76	8.93	8.83	8.17	6.99	7.61	6.58	6.60
80 . . . . .	7.3	7.01	7.03	7.35	6.87	7.07	6.58	5.42	5.83	5.53	5.12
85 . . . . .	5.7	5.58	5.61	5.92	5.08	5.38	5.34	4.30	4.53	4.48	4.04
90 . . . . .	4.5	4.24	4.47	4.68	3.42	3.78	4.23	3.42	3.60	4.01	3.21
95 . . . . .	3.7	3.37	3.62	3.92	2.43	2.64	3.20	2.54	2.61	3.15	2.50
100 . . . . .	3.1	2.63	3.24	3.61	1.91	1.93	2.29	1.68	1.64	2.14	1.89
<b>Black female<sup>1</sup></b>											
0 . . . . .	74.7	73.73	72.88	68.32	66.47	62.70	55.56	49.51	46.92	37.67	35.04
1 . . . . .	74.7	73.96	73.31	69.37	68.10	64.37	58.46	52.33	50.39	45.15	43.54
5 . . . . .	70.9	70.16	69.54	65.70	64.54	60.93	55.40	49.81	48.70	46.42	46.04
10 . . . . .	66.0	65.26	64.65	60.85	59.72	56.17	50.75	45.33	44.54	42.84	43.02
15 . . . . .	61.0	60.34	59.74	55.97	54.85	51.36	46.13	40.87	40.36	39.18	39.79
20 . . . . .	56.2	55.49	54.90	51.22	50.07	46.77	42.04	37.22	37.15	36.14	36.89
25 . . . . .	51.4	50.72	50.13	46.57	45.40	42.35	38.20	33.93	34.35	32.97	33.90
30 . . . . .	46.7	46.03	45.43	42.00	40.83	38.02	34.40	30.67	31.48	29.61	30.70
35 . . . . .	42.0	41.45	40.79	37.56	36.41	33.82	30.83	27.47	28.58	26.44	27.52
40 . . . . .	37.5	36.96	36.28	33.32	32.16	29.82	27.19	24.30	25.60	23.34	24.37
45 . . . . .	33.1	32.58	31.94	29.31	28.14	26.07	23.89	21.39	22.61	20.43	21.36
50 . . . . .	28.8	28.38	27.84	25.52	24.31	22.67	20.95	18.60	19.76	17.65	18.67
55 . . . . .	24.8	24.41	24.00	21.97	20.89	19.62	18.38	16.27	17.09	14.98	15.88
60 . . . . .	21.0	20.71	20.42	18.66	17.83	16.95	16.10	14.22	14.69	12.78	13.60
65 . . . . .	17.6	17.37	17.13	15.67	15.12	14.54	13.95	12.24	12.41	10.82	11.38
70 . . . . .	14.3	14.32	14.05	13.02	12.46	12.29	11.82	10.38	10.25	9.22	9.62
75 . . . . .	11.5	11.56	11.37	10.85	10.10	10.15	9.81	8.62	8.37	7.55	7.90
80 . . . . .	8.9	9.05	8.95	8.87	7.66	8.15	8.02	6.90	6.58	6.05	6.48
85 . . . . .	6.7	6.99	7.09	7.00	5.44	6.15	6.41	5.48	5.22	5.09	5.10
90 . . . . .	5.1	5.24	5.47	5.41	3.52	4.13	4.96	4.20	4.07	4.50	4.01
95 . . . . .	3.8	3.97	4.30	4.58	2.43	2.74	3.71	3.09	3.18	3.45	3.15
100 . . . . .	2.9	2.97	3.69	4.20	1.91	1.94	2.70	2.04	2.23	2.39	2.49

<sup>1</sup>For 1939–41 and 1949–51, data shown are for the entire nonwhite population. During these periods, life tables See Technical notes.

**Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–97**

[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 <sup>4</sup>		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States <sup>1</sup>									
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 <sup>2</sup>	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 <sup>3</sup>	69.9	66.6	73.4	70.8	67.4	74.4	63.7	61.0	66.6
1962 <sup>3</sup>	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
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

See footnotes at end of table.



**Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–97—Con.**

[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 <sup>4</sup>		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States—Con.									
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

<sup>1</sup>Alaska included in 1959 and Hawaii in 1960.<sup>2</sup>Deaths based on a 50-percent sample.<sup>3</sup>Figures by race exclude data for residents of New Jersey; see Technical notes.<sup>4</sup>Prior to 1970, data for the black population are not available. Data shown for 1900–69 are for the nonwhite population. See Technical notes.

## Technical notes

*The life table program*—Three series of complete life tables are prepared by the National Center for Health Statistics 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. Bureau of the Census. From 1945 to 1996, the annual life tables were abridged life tables and were constructed by reference to a standard table (5). Beginning with 1997 mortality data, the annual life tables are complete life tables and are constructed using a methodology similar to that used to construct the decennial series (3,6). Also beginning with 1997 data, the annual life tables show life table values for ages 85 to 100 years.

*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 conterminous 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, 1961–89*—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 and later are based on postcensal population estimates and will be recalculated when intercensal estimates become available.

*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 1900–02 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, using as weights the population distribution by sex of the black population age 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 (12).

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 is estimated using figures for the total nonwhite population.

*Population bases for computing life tables*—The population used for computing life table values shown in this section (furnished by the U.S. Bureau of the Census) represents the resident population of the United States. The age-specific populations used for computing the 1997 life table values are based on the July 1, 1997, population estimates that are consistent with the 1990 census (13). The 1990 census counts by race and age were modified. Race was modified to be consistent with the Office of Management and Budget categories and historical categories for mortality data. The modification procedures for race and age are described in a census report (14).

*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 prepared by the Health Care Financing Administration (HCFA). Medicare data were limited to the group insured for hospitalization as age reporting is considered best among this group (6,10,11). For the 1997 life tables, 1996 Medicare data were used as 1997 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 (3). 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 data are aggregated into 5-year age groups for those aged 5 years and over and into single years for those under 5 years. 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.

$$F = \frac{D}{D^a} \tag{1}$$

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 1997 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 3 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 ( $t-1$ ).  $f$  can be calculated by categorizing infant deaths by date of birth. The probability of death in the first year is calculated as

$$q_0 = \frac{D_0(1-f)}{B^t} + \frac{D_0 f}{B^{t-1}} \tag{2}$$

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  $t-1$ ,

**Table I. Values for F used to adjust for not stated age based on 1997 mortality data**

Race and sex	Total deaths	Total deaths for which age was not stated	F
Total . . . . .	2,314,245	401	1.00017330
Male . . . . .	1,154,039	317	1.00027476
Female . . . . .	1,160,206	84	1.00007241
White . . . . .	1,996,393	301	1.00015079
Male . . . . .	986,884	249	1.00025237
Female . . . . .	1,009,509	52	1.00005151
Black . . . . .	276,520	90	1.00032558
Male . . . . .	144,110	62	1.00043041
Female . . . . .	132,410	28	1.00021151

respectively. Table II shows separation factors and numbers of births by race and sex for 1996–97.

*Calculation of  $q_x$  for ages 1–84 years*— $q_x$  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  $x+1/2$ . This simplification is generally considered acceptable when age intervals are 1 year of age in length (1). Under this assumption,  $l_x = L_x + 1/2 d_x$  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,  $N_x = P_x + 1/2 D_x$  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

$$q_x = \frac{D_x}{N_x} = \frac{D_x}{P_x + \frac{1}{2} D_x} \tag{3}$$

For  $x = 1$  to 4,  $D_x$  is the observed number of deaths adjusted for not-stated age and  $P_x$  is obtained by Beer's interpolation formula. For  $x = 5$  to 84, both  $D_x$  and  $P_x$  are obtained by interpolation (3).

*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 (3,15,16,17). The change in  $q_x$  for ages above 85 can be expressed using the formula

$$q_x = q_{x-1} \cdot e^{k_x} \tag{4}$$

where  $k_x$  denotes the age-specific rate of mortality change with age (14,16). Solving for  $k_x$  gives

$$k_x = \ln(q_x) - \ln(q_{x-1}) \tag{5}$$

Values for  $k_x$  are then obtained from the Medicare data. Table III shows values for  $k$  by age, race, and sex based on 1996 Medicare data. These data show clearly a declining rate of increase in  $q_x$  above age 85. 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,  ${}_∞q_{100}$  is set equal to 1.0 since 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

$$l_x = l_{x-1} (1 - q_{x-1}) \tag{6}$$

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

$$d_x = l_x - l_{x+1} = l_x q_x \tag{7}$$

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

**Table II. Births in 1996 and 1997, deaths in 1997 of infants born in 1996 and 1997, 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									
1996 . . . . .	3,891,494	1,990,480	1,901,014	3,093,057	1,584,423	1,508,634	594,781	301,474	293,307
1997 . . . . .	3,880,894	1,985,596	1,895,298	3,072,640	1,573,622	1,499,018	599,913	304,530	295,383
Deaths in 1997 of infants born in									
1996 . . . . .	3,638	2,100	1,538	2,388	1,403	985	1,109	623	486
1997 . . . . .	24,362	13,668	10,694	16,126	9,090	7,036	7,368	4,078	3,290
Separation factor . . . . .	0.130	0.133	0.126	0.129	0.134	0.123	0.131	0.133	0.129

**Table III. k values by age, race, and sex based on insured Medicare data: United States, 1996**

Age	Total			White			Black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
84-85 . . . . .	0.091181	0.086271	0.102951	0.092648	0.088117	0.104382	0.068007	0.060599	0.079584
85-86 . . . . .	0.089378	0.082232	0.103287	0.090739	0.084212	0.104601	0.067175	0.059143	0.079864
86-87 . . . . .	0.089073	0.081638	0.101669	0.090431	0.083306	0.103157	0.067299	0.058438	0.079452
87-88 . . . . .	0.089188	0.081528	0.100561	0.090884	0.083159	0.102382	0.067281	0.057785	0.078595
88-89 . . . . .	0.089883	0.081237	0.099911	0.091519	0.082865	0.101556	0.067210	0.056886	0.077566
89-90 . . . . .	0.088905	0.079517	0.097960	0.090469	0.081326	0.099509	0.066399	0.055412	0.075960
90-91 . . . . .	0.085312	0.076301	0.094030	0.086929	0.078337	0.095620	0.064893	0.053592	0.073872
91-92 . . . . .	0.080874	0.072163	0.089441	0.082634	0.074508	0.090998	0.062984	0.051358	0.071579
92-93 . . . . .	0.077608	0.068083	0.085771	0.079457	0.070873	0.087331	0.060950	0.048849	0.069157
93-94 . . . . .	0.075690	0.064318	0.083282	0.077533	0.067502	0.084484	0.058836	0.046305	0.066721
94-95 . . . . .	0.073817	0.061117	0.080482	0.075469	0.064258	0.081528	0.056927	0.043998	0.064245
95-96 . . . . .	0.070976	0.058176	0.076681	0.072286	0.060943	0.077616	0.055101	0.042061	0.061863
96-97 . . . . .	0.066674	0.055203	0.071785	0.067770	0.057473	0.072691	0.053490	0.040284	0.059621
97-98 . . . . .	0.062023	0.052406	0.066622	0.062928	0.054140	0.067694	0.051933	0.038724	0.057419
98-99 . . . . .	0.057652	0.049796	0.061827	0.058566	0.051076	0.063140	0.050430	0.037244	0.055308

*Stationary population (L<sub>x</sub>)*—The stationary population at ages 1 to 99 is calculated assuming that the survivor function declines linearly between age x and x+1. This gives the formula

$$L_x = \frac{1}{2}(l_x + l_{x+1}) = l_x - \frac{1}{2}d_x \tag{8}$$

For x = 0, the separation factor f is used to calculate L<sub>0</sub>.

$$L_0 = fl_0 + (1 - f)l_1$$

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

$$k_x = k_{85} + (x - 85)s \tag{9}$$

where s is the slope of the change in k<sub>x</sub> by age and k<sub>85</sub> is calculated as [ln(q<sub>88</sub>/q<sub>81</sub>)]/7 in order to minimize the effects of random fluctuations (11,17). 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<sub>x</sub> are then used to calculate q<sub>x</sub> above age

100 using equation 4. The corresponding L<sub>x</sub> values for ages 100 and older are then summed to give  $\infty L_{100}$ .

*Person-years lived at and above age x (T<sub>x</sub>)*—T<sub>x</sub> is calculated by summing L<sub>x</sub> values at and above age x.

$$T_x = \sum_{t=0}^{\infty} L_{x+t} \tag{10}$$

**Table IV. Slope of the change in k values (s) by age, race, and sex based on 1996 Medicare data**

Race and sex	s
Total, both sexes . . . . .	-0.002379
Male . . . . .	-0.002710
Female . . . . .	-0.003031
White, both sexes . . . . .	-0.001902
Male . . . . .	-0.002390
Female . . . . .	-0.002427
Black, both sexes . . . . .	-0.001074
Male . . . . .	-0.001586
Female . . . . .	-0.001512

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

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

**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 . . . . . 3

References . . . . . 4

List of detailed tables . . . . . 5

Technical notes . . . . . 34

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