

U.S. Department of Health & Human Services. Centers for Disease Control and Prevention (CDC). National Center for Health Statistics: Life table for non-Hispanic black males: United States, 2010; Life table for non-Hispanic black females: United States, 2010. In: National Statistics Reports, Vol. 63(7). United States Life Tables, 2010, pp. 41-44. Downloaded from: <http://www.cdc.gov/> (30.04.2015).

## United States Life Tables, 2010

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

### Abstract

**Objectives**—This report presents complete period life tables for the United States by race, Hispanic origin, and sex, based on age-specific death rates in 2010.

**Methods**—Data used to prepare the 2010 life tables are 2010 final mortality statistics; April 1, 2010 population estimates based on the 2010 decennial census; and 2010 Medicare data for persons aged 66-99. The methodology used to estimate the 2010 life tables was first implemented with data year 2008. The methodology used to estimate the life tables for the Hispanic population remains unchanged from that developed for the publication of life tables by Hispanic origin for data year 2006.

**Results**—In 2010, the overall expectation of life at birth was 78.7 years. Between 2009 and 2010, life expectancy at birth increased for all groups considered. Life expectancy increased for both males (from 76.0 to 76.2) and females (80.9 to 81.0) and for the white population (78.8 to 78.9), the black population (74.7 to 75.1), the Hispanic population (81.1 to 81.4), the non-Hispanic white population (78.7 to 78.8), and the non-Hispanic black population (74.4 to 74.7).

**Keywords:** life expectancy, survival, death rates, race, Hispanic origin

### Introduction

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

require the use of data projection techniques to estimate deaths into the future (2,3).

Unlike the cohort life table, the period life table does not represent the mortality experience of an actual birth cohort. Rather, the period life table presents what would happen to a hypothetical cohort if it experienced throughout its entire life the mortality conditions of a particular period in time. For example, a period life table for 2010 assumes a hypothetical cohort that is subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2010. The period life table may thus be characterized as rendering a “snapshot” of current mortality experience and shows the long-range implications of a set of age-specific death rates that prevailed in a given year. In this report the term “life table” refers only to the period life table and not to the cohort life table.

Life tables can be classified in two ways according to the length of the age interval in which data are presented. A complete life table contains data for every single year of age. An abridged life table typically contains data by 5- or 10-year age intervals. A complete life table, of course, can easily be aggregated into 5- or 10-year age groups (refer to the [Technical Notes](#) at the end of this report for instructions). Other than the decennial life tables, U.S. life tables based on data prior to 1997 are abridged life tables constructed by reference to a standard table (4). This report presents complete period life tables by race, Hispanic origin, race for the non-Hispanic population, and sex. The life tables by Hispanic origin are based on death rates that were adjusted for Hispanic origin misclassification (See [Technical Notes](#) for a detailed description of the methodology used to estimate Hispanic origin life tables).

### Data and Methods

The data used to prepare the U.S. life tables for 2010 are final numbers of deaths for the year 2010, April 1, 2010 population estimates based on the 2010 decennial census, and age-specific death and population counts for Medicare beneficiaries aged 66-99 for the year 2010 from the Centers for Medicare & Medicaid Services (CMS). Data from the Medicare program are used to supplement vital statistics and census data for ages 66 and over. (See [Technical Notes](#) for a detailed description of the data sets used.)



**Table 17. Life table for non-Hispanic black males: United States, 2010**Spreadsheet version available from: [ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/63\\_07/Table17.xlsx](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table17.xlsx)

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	q(x)	l(x)	d(x)	L(x)	T(x)	e(x)
0-1	0.012496	100,000	1,250	98,919	7,142,761	71.4
1-2	0.000731	98,750	72	98,714	7,043,842	71.3
2-3	0.000514	98,678	51	98,653	6,945,127	70.4
3-4	0.000341	98,628	34	98,611	6,846,474	69.4
4-5	0.000256	98,594	25	98,581	6,747,864	68.4
5-6	0.000239	98,569	24	98,557	6,649,282	67.5
6-7	0.000211	98,545	21	98,535	6,550,725	66.5
7-8	0.000186	98,524	18	98,515	6,452,190	65.5
8-9	0.000151	98,506	15	98,499	6,353,675	64.5
9-10	0.000111	98,491	11	98,486	6,255,177	63.5
10-11	0.000080	98,480	8	98,476	6,156,691	62.5
11-12	0.000085	98,472	8	98,468	6,058,215	61.5
12-13	0.000158	98,464	16	98,456	5,959,746	60.5
13-14	0.000310	98,448	30	98,433	5,861,290	59.5
14-15	0.000509	98,418	50	98,393	5,762,857	58.6
15-16	0.000711	98,368	70	98,333	5,664,464	57.6
16-17	0.000894	98,298	88	98,254	5,566,131	56.6
17-18	0.001075	98,210	106	98,157	5,467,877	55.7
18-19	0.001261	98,105	124	98,043	5,369,719	54.7
19-20	0.001458	97,981	143	97,909	5,271,677	53.8
20-21	0.001684	97,838	165	97,756	5,173,767	52.9
21-22	0.001913	97,673	187	97,580	5,076,012	52.0
22-23	0.002088	97,486	204	97,385	4,978,432	51.1
23-24	0.002174	97,283	211	97,177	4,881,047	50.2
24-25	0.002185	97,071	212	96,965	4,783,870	49.3
25-26	0.002168	96,859	210	96,754	4,686,905	48.4
26-27	0.002163	96,649	209	96,545	4,590,151	47.5
27-28	0.002171	96,440	209	96,336	4,493,606	46.6
28-29	0.002209	96,231	213	96,125	4,397,270	45.7
29-30	0.002271	96,018	218	95,909	4,301,146	44.8
30-31	0.002339	95,800	224	95,688	4,205,237	43.9
31-32	0.002398	95,576	229	95,461	4,109,548	43.0
32-33	0.002450	95,347	234	95,230	4,014,087	42.1
33-34	0.002490	95,113	237	94,995	3,918,857	41.2
34-35	0.002526	94,876	240	94,757	3,823,862	40.3
35-36	0.002578	94,637	244	94,515	3,729,105	39.4
36-37	0.002653	94,393	250	94,268	3,634,591	38.5
37-38	0.002745	94,142	258	94,013	3,540,323	37.6
38-39	0.002856	93,884	268	93,750	3,446,310	36.7
39-40	0.002993	93,616	280	93,476	3,352,560	35.8
40-41	0.003153	93,336	294	93,189	3,259,084	34.9
41-42	0.003353	93,041	312	92,885	3,165,896	34.0
42-43	0.003615	92,729	335	92,562	3,073,011	33.1
43-44	0.003946	92,394	365	92,212	2,980,449	32.3
44-45	0.004333	92,030	399	91,830	2,888,237	31.4
45-46	0.004737	91,631	434	91,414	2,796,407	30.5
46-47	0.005167	91,197	471	90,961	2,704,993	29.7
47-48	0.005668	90,726	514	90,469	2,614,032	28.8
48-49	0.006261	90,211	565	89,929	2,523,563	28.0
49-50	0.006938	89,647	622	89,336	2,433,634	27.1
50-51	0.007647	89,025	681	88,684	2,344,299	26.3
51-52	0.008381	88,344	740	87,974	2,255,614	25.5
52-53	0.009205	87,603	806	87,200	2,167,641	24.7
53-54	0.010154	86,797	881	86,356	2,080,440	24.0
54-55	0.011230	85,916	965	85,433	1,994,084	23.2
55-56	0.012448	84,951	1,057	84,422	1,908,650	22.5
56-57	0.013738	83,894	1,153	83,317	1,824,228	21.7
57-58	0.015002	82,741	1,241	82,120	1,740,911	21.0
58-59	0.016138	81,500	1,315	80,842	1,658,791	20.4
59-60	0.017160	80,184	1,376	79,496	1,577,949	19.7
60-61	0.018218	78,808	1,436	78,091	1,498,452	19.0
61-62	0.019383	77,373	1,500	76,623	1,420,362	18.4

**Table 17. Life table for non-Hispanic black males: United States, 2010—Con.**Spreadsheet version available from: [ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/63\\_07/Table17.xlsx](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table17.xlsx)

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	q(x)	l(x)	d(x)	L(x)	T(x)	e(x)
62-63	0.020559	75,873	1,560	75,093	1,343,739	17.7
63-64	0.021758	74,313	1,617	73,505	1,268,646	17.1
64-65	0.023024	72,696	1,674	71,859	1,195,141	16.4
65-66	0.024404	71,022	1,733	70,156	1,123,281	15.8
66-67	0.025975	69,289	1,800	68,389	1,053,126	15.2
67-68	0.027718	67,489	1,871	66,554	984,736	14.6
68-69	0.029661	65,619	1,946	64,646	918,182	14.0
69-70	0.031809	63,672	2,025	62,660	853,536	13.4
70-71	0.034018	61,647	2,097	60,599	790,877	12.8
71-72	0.036295	59,550	2,161	58,469	730,278	12.3
72-73	0.039034	57,389	2,240	56,269	671,809	11.7
73-74	0.042198	55,149	2,327	53,985	615,540	11.2
74-75	0.045540	52,821	2,406	51,619	561,555	10.6
75-76	0.049361	50,416	2,489	49,172	509,937	10.1
76-77	0.053735	47,927	2,575	46,640	460,765	9.6
77-78	0.057941	45,352	2,628	44,038	414,126	9.1
78-79	0.062216	42,724	2,658	41,395	370,088	8.7
79-80	0.067923	40,066	2,721	38,705	328,693	8.2
80-81	0.074520	37,345	2,783	35,953	289,987	7.8
81-82	0.080399	34,562	2,779	33,172	254,034	7.4
82-83	0.087986	31,783	2,796	30,385	220,862	6.9
83-84	0.095363	28,986	2,764	27,604	190,477	6.6
84-85	0.103247	26,222	2,707	24,869	162,873	6.2
85-86	0.111655	23,515	2,626	22,202	138,004	5.9
86-87	0.120602	20,889	2,519	19,630	115,802	5.5
87-88	0.130098	18,370	2,390	17,175	96,172	5.2
88-89	0.140149	15,980	2,240	14,860	78,997	4.9
89-90	0.150759	13,741	2,072	12,705	64,137	4.7
90-91	0.161925	11,669	1,890	10,724	51,432	4.4
91-92	0.173639	9,780	1,698	8,930	40,708	4.2
92-93	0.185889	8,081	1,502	7,330	31,777	3.9
93-94	0.198655	6,579	1,307	5,926	24,447	3.7
94-95	0.211912	5,272	1,117	4,714	18,522	3.5
95-96	0.225626	4,155	937	3,686	13,808	3.3
96-97	0.239760	3,217	771	2,832	10,122	3.1
97-98	0.254269	2,446	622	2,135	7,290	3.0
98-99	0.269102	1,824	491	1,579	5,155	2.8
99-100	0.284205	1,333	379	1,144	3,576	2.7
100 and over	1.000000	954	954	2,432	2,432	2.5

**Table 18. Life table for non-Hispanic black females: United States, 2010**Spreadsheet version available from: [ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/63\\_07/Table18.xlsx](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table18.xlsx)

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	q(x)	l(x)	d(x)	L(x)	T(x)	e(x)
0-1	0.010285	100,000	1,029	99,092	7,771,599	77.7
1-2	0.000621	98,971	61	98,941	7,672,507	77.5
2-3	0.000362	98,910	36	98,892	7,573,566	76.6
3-4	0.000221	98,874	22	98,863	7,474,674	75.6
4-5	0.000202	98,852	20	98,842	7,375,811	74.6
5-6	0.000175	98,832	17	98,824	7,276,968	73.6
6-7	0.000147	98,815	15	98,808	7,178,145	72.6
7-8	0.000129	98,801	13	98,794	7,079,337	71.7
8-9	0.000121	98,788	12	98,782	6,980,542	70.7
9-10	0.000122	98,776	12	98,770	6,881,761	69.7
10-11	0.000130	98,764	13	98,757	6,782,991	68.7
11-12	0.000146	98,751	14	98,744	6,684,233	67.7
12-13	0.000166	98,737	16	98,728	6,585,490	66.7
13-14	0.000189	98,720	19	98,711	6,486,761	65.7
14-15	0.000215	98,702	21	98,691	6,388,051	64.7
15-16	0.000242	98,680	24	98,668	6,289,360	63.7
16-17	0.000272	98,656	27	98,643	6,190,691	62.8
17-18	0.000309	98,630	30	98,614	6,092,048	61.8
18-19	0.000357	98,599	35	98,582	5,993,434	60.8
19-20	0.000416	98,564	41	98,543	5,894,852	59.8
20-21	0.000484	98,523	48	98,499	5,796,309	58.8
21-22	0.000554	98,475	55	98,448	5,697,810	57.9
22-23	0.000618	98,421	61	98,390	5,599,362	56.9
23-24	0.000669	98,360	66	98,327	5,500,972	55.9
24-25	0.000710	98,294	70	98,259	5,402,645	55.0
25-26	0.000754	98,224	74	98,187	5,304,386	54.0
26-27	0.000805	98,150	79	98,111	5,206,198	53.0
27-28	0.000854	98,071	84	98,029	5,108,088	52.1
28-29	0.000902	97,987	88	97,943	5,010,058	51.1
29-30	0.000951	97,899	93	97,853	4,912,115	50.2
30-31	0.001002	97,806	98	97,757	4,814,263	49.2
31-32	0.001062	97,708	104	97,656	4,716,506	48.3
32-33	0.001135	97,604	111	97,549	4,618,850	47.3
33-34	0.001224	97,493	119	97,434	4,521,301	46.4
34-35	0.001327	97,374	129	97,309	4,423,867	45.4
35-36	0.001446	97,245	141	97,175	4,326,558	44.5
36-37	0.001572	97,104	153	97,028	4,229,383	43.6
37-38	0.001698	96,952	165	96,869	4,132,355	42.6
38-39	0.001822	96,787	176	96,699	4,035,486	41.7
39-40	0.001951	96,611	188	96,516	3,938,787	40.8
40-41	0.002091	96,422	202	96,321	3,842,271	39.8
41-42	0.002255	96,221	217	96,112	3,745,949	38.9
42-43	0.002454	96,004	236	95,886	3,649,837	38.0
43-44	0.002690	95,768	258	95,639	3,553,952	37.1
44-45	0.002953	95,510	282	95,369	3,458,312	36.2
45-46	0.003216	95,228	306	95,075	3,362,943	35.3
46-47	0.003488	94,922	331	94,757	3,267,868	34.4
47-48	0.003806	94,591	360	94,411	3,173,111	33.5
48-49	0.004185	94,231	394	94,034	3,078,700	32.7
49-50	0.004615	93,837	433	93,620	2,984,666	31.8
50-51	0.005073	93,404	474	93,167	2,891,046	31.0
51-52	0.005534	92,930	514	92,673	2,797,879	30.1
52-53	0.005999	92,416	554	92,138	2,705,207	29.3
53-54	0.006467	91,861	594	91,564	2,613,069	28.4
54-55	0.006949	91,267	634	90,950	2,521,504	27.6
55-56	0.007476	90,633	678	90,294	2,430,554	26.8
56-57	0.008047	89,955	724	89,593	2,340,260	26.0
57-58	0.008629	89,231	770	88,846	2,250,667	25.2
58-59	0.009204	88,461	814	88,054	2,161,820	24.4
59-60	0.009783	87,647	857	87,219	2,073,766	23.7
60-61	0.010397	86,790	902	86,339	1,986,548	22.9
61-62	0.011080	85,887	952	85,412	1,900,209	22.1

**Table 18. Life table for non-Hispanic black females: United States, 2010—Con.**Spreadsheet version available from: [ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/63\\_07/Table18.xlsx](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table18.xlsx)

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	q(x)	l(x)	d(x)	L(x)	T(x)	e(x)
62-63	0.011840	84,936	1,006	84,433	1,814,797	21.4
63-64	0.012704	83,930	1,066	83,397	1,730,364	20.6
64-65	0.013692	82,864	1,135	82,297	1,646,967	19.9
65-66	0.014826	81,729	1,212	81,123	1,564,671	19.1
66-67	0.016091	80,518	1,296	79,870	1,483,547	18.4
67-68	0.017446	79,222	1,382	78,531	1,403,678	17.7
68-69	0.018830	77,840	1,466	77,107	1,325,147	17.0
69-70	0.020239	76,374	1,546	75,601	1,248,039	16.3
70-71	0.021737	74,829	1,627	74,015	1,172,438	15.7
71-72	0.023355	73,202	1,710	72,347	1,098,423	15.0
72-73	0.025195	71,492	1,801	70,592	1,026,076	14.4
73-74	0.027331	69,691	1,905	68,739	955,484	13.7
74-75	0.029367	67,786	1,991	66,791	886,745	13.1
75-76	0.031736	65,796	2,088	64,752	819,954	12.5
76-77	0.034391	63,708	2,191	62,612	755,203	11.9
77-78	0.037506	61,517	2,307	60,363	692,591	11.3
78-79	0.041016	59,209	2,429	57,995	632,228	10.7
79-80	0.044921	56,781	2,551	55,506	574,232	10.1
80-81	0.049945	54,230	2,709	52,876	518,727	9.6
81-82	0.054570	51,522	2,812	50,116	465,851	9.0
82-83	0.059314	48,710	2,889	47,266	415,735	8.5
83-84	0.065399	45,821	2,997	44,323	368,470	8.0
84-85	0.072879	42,824	3,121	41,264	324,147	7.6
85-86	0.080679	39,703	3,203	38,102	282,883	7.1
86-87	0.088415	36,500	3,227	34,887	244,781	6.7
87-88	0.096769	33,273	3,220	31,663	209,895	6.3
88-89	0.105768	30,053	3,179	28,464	178,232	5.9
89-90	0.115435	26,874	3,102	25,323	149,768	5.6
90-91	0.125787	23,772	2,990	22,277	124,445	5.2
91-92	0.136837	20,782	2,844	19,360	102,168	4.9
92-93	0.148591	17,938	2,665	16,606	82,807	4.6
93-94	0.161047	15,273	2,460	14,043	66,202	4.3
94-95	0.174197	12,813	2,232	11,697	52,159	4.1
95-96	0.188022	10,581	1,989	9,586	40,462	3.8
96-97	0.202492	8,592	1,740	7,722	30,875	3.6
97-98	0.217570	6,852	1,491	6,107	23,154	3.4
98-99	0.233206	5,361	1,250	4,736	17,047	3.2
99-100	0.249342	4,111	1,025	3,598	12,311	3.0
100 and over	1.000000	3,086	3,086	8,713	8,713	2.8