U.S. Department of Health & Human Services. Centers for Disease Control and Prevention (CDC). National Center for Health Statistics: Life table for white males: United States, 2010; Life table for white females: United States, 2010. In: National Statistics Reports, Vol. 63(7). United States Life Tables, 2010, pp. 17-20. Downloaded from: http://www.cdc.gov/ (30.04.2015).

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United States Life Tables, 2010

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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.)

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics
National Vital Statistics System

Table 5. Life table for white males: United States, 2010

Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table05.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	0.005622	100,000	562	99,509	7,654,399	76.5
1-2	0.000400	99,438	40	99,418	7,554,890	76.0
2-3	0.000294	99,398	29	99,383	7,455,472	75.0
3-4	0.000242	99,369	24	99,357	7,356,089	74.0
4-5	0.000168	99,345	17	99,336	7,256,732	73.0
5-6	0.000157	99,328	16	99,320	7,157,395	72.1
6-7	0.000138	99,313	14	99,306	7,058,075	71.1
7-8	0.000121	99,299	12	99,293	6,958,769	70.1
8-9	0.000103	99,287	10	99,282	6,859,477	69.1
9-10	0.000084	99,277	8	99,272	6,760,195	68.1
10-11	0.000073	99,268	7	99,265	6,660,923	67.1
11-12	0.000079	99,261	8	99,257	6,561,658	66.1
12-13	0.000119	99,253	12	99,247	6,462,401	65.1
13-14	0.000198	99,241	20	99,231	6,363,154	64.1
14-15	0.000305	99,222	30	99,206	6,263,922	63.1
15-16	0.000417	99,191	41	99,171	6,164,716	62.1
16-17	0.000525	99,150	52	99,124	6,065,545	61.2
17-18	0.000639	99,098	63	99,066	5,966,421	60.2
18-19	0.000760	99,035	75	98,997	5,867,355	59.2
19-20	0.000884	98,959	87	98,916	5,768,358	58.3
20-21	0.001017	98,872	101	98,822	5,669,443	57.3
21-22	0.001142	98,771	113	98,715	5,570,621	56.4
22-23	0.001234	98,658	122	98,598	5,471,906	55.5
23-24	0.001278	98,537	126	98,474	5,373,309	54.5
24-25	0.001287	98,411	127	98,347	5,274,835	53.6
25-26	0.001285	98,284	126	98,221	5,176,487	52.7
26-27	0.001287	98,158	126	98,095	5,078,267	51.7
27-28	0.001293	98,031	127	97,968	4,980,172	50.8
28-29	0.001307	97,905	128	97,841	4,882,204	49.9
29-30	0.001328	97,777	130	97,712	4,784,363	48.9
30-31	0.001355	97,647	132	97,581	4,686,651	48.0
31-32	0.001382	97,515	135	97,447	4,589,070	47.1
32-33	0.001412	97,380	137	97,311	4,491,623	46.1
33-34	0.001443	97,242	140	97,172	4,394,312	45.2
34-35	0.001480	97,102	144	97,030	4,297,140	44.3
35-36	0.001532	96,958	149	96,884	4,200,109	43.3
36-37	0.001601	96,810	155	96,732	4,103,225	42.4
37-38	0.001680	96,655	162	96,574	4,006,493	41.5
38-39	0.001772	96,492	171	96,407	3,909,919	40.5
39-40	0.001880	96,321	181	96,231	3,813,512	39.6
40-41	0.002000	96,140	192	96,044	3,717,281	38.7
41-42	0.002149	95,948	206	95,845	3,621,237	37.7
42-43	0.002351	95,742	225	95,629	3,525,392	36.8
43-44	0.002615	95,517	250	95,392	3,429,763	35.9
44-45	0.002920	95,267	278	95,128	3,334,371	35.0
45-46	0.003237	94,989	307	94,835	3,239,243	34.1
46-47	0.003555	94,681	337	94,513	3,144,408	33.2
47-48	0.003889	94,345	367	94,161	3,049,895	32.3
48-49	0.004245	93,978	399	93,778	2,955,734	31.5
49-50	0.004625	93,579	433	93,363	2,861,955	30.6
50-51	0.005026	93,146	468	92,912	2,768,593	29.7
51-52	0.005445	92,678	505	92,426	2,675,681	28.9
52-53	0.005890	92,173	543	91,902	2,583,255	28.0
53-54	0.006368	91,630	584	91,339	2,491,353	27.2
54-55	0.006885	91,047	627	90,733	2,400,015	26.4
55-56	0.007449	90,420	674	90,083	2,309,281	25.5
56-57	0.008054	89,746	723	89,385	2,219,198	24.7
57-58	0.008683	89,024	773	88,637	2,129,813	23.9
58-59	0.009315	88,251	822	87,840	2,041,176	23.1
59-60	0.009951	87,429	870	86,994	1,953,336	22.3
60-61	0.010610	86,559	918	86,099	1,866,342	21.6
61-62	0.011321	85,640	970	85,155	1,780,243	20.8

Table 5. Life table for white males: United States, 2010—Con.

Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table05.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	0.012105	84,671	1,025	84,158	1,695,088	20.0
63-64	0.013010	83,646	1,088	83,102	1,610,929	19.3
64-65	0.014070	82,558	1,162	81,977	1,527,828	18.5
65-66	0.015319	81,396	1,247	80,772	1,445,851	17.8
66-67	0.016737	80,149	1,341	79,478	1,365,079	17.0
67-68	0.018245	78,808	1,438	78,089	1,285,600	16.3
68-69	0.019783	77,370	1,531	76,604	1,207,512	15.6
69-70	0.021441	75,839	1,626	75,026	1,130,907	14.9
70-71	0.023256	74,213	1,726	73,350	1,055,881	14.2
71-72	0.025281	72,487	1,833	71,571	982,531	13.6
72-73	0.027638	70,655	1,953	69,678	910,960	12.9
73-74	0.030323	68,702	2,083	67,660	841,282	12.2
74-75	0.033404	66,619	2,225	65,506	773,622	11.6
75-76	0.036673	64,393	2,361	63,213	708,116	11.0
76-77	0.040126	62,032	2,489	60,787	644,903	10.4
77-78	0.044287	59,543	2,637	58,224	584,116	9.8
78-79	0.048898	56,906	2,783	55,514	525,891	9.2
79-80	0.054068	54,123	2,926	52,660	470,377	8.7
80-81	0.059822	51,197	3,063	49,666	417,717	8.2
81-82	0.066422	48,134	3,197	46,536	368,051	7.6
82-83	0.073375	44,937	3,297	43,288	321,516	7.2
83-84	0.080644	41,640	3,358	39,961	278,227	6.7
84-85	0.090515	38,282	3,465	36,549	238,267	6.2
85-86	0.101047	34,817	3,518	33,058	201,717	5.8
86-87	0.112565	31,299	3,523	29,537	168,660	5.4
87-88	0.125106	27,775	3,475	26,038	139,123	5.0
88-89	0.138695	24,301	3,370	22,615	113,085	4.7
89-90	0.153341	20,930	3,209	19,325	90,469	4.3
90-91	0.169039	17,721	2,995	16,223	71,144	4.0
91-92	0.185762	14,725	2,735	13,358	54,921	3.7
92-93	0.203464	11,990	2,440	10,770	41,563	3.5
93-94	0.222073	9,550	2,121	8,490	30,793	3.2
94-95	0.241497	7,429	1,794	6,532	22,303	3.0
95-96	0.261620	5,635	1,474	4,898	15,771	2.8
96-97	0.282307	4,161	1,175	3,574	10,873	2.6
97-98	0.303404	2,986	906	2,533	7,299	2.4
98-99	0.324745	2,080	676	1,742	4,766	2.3
99-100	0.346158	1,405	486	1,162	3,024	2.2
100 and over	1.000000	918	918	1,862	1,862	2.0

Table 6. Life table for white females: United States, 2010

Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table06.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	0.004710	100,000	471	99,588	8,128,871	81.3
1-2	0.000383	99,529	38	99,510	8,029,283	80.7
2-3	0.000204	99,491	20	99,481	7,929,773	79.7
3-4	0.000162	99,471	16	99,463	7,830,292	78.7
4-5	0.000125	99,455	12	99,448	7,730,830	77.7
5-6	0.000116	99,442	12	99,436	7,631,381	76.7
6-7	0.000104	99,431	10	99,426	7,531,945	75.8
7-8	0.000095	99,420	9	99,416	7,432,519	74.8
8-9	0.000088	99,411	9	99,407	7,333,104	73.8
9-10	0.000083	99,402	8	99,398	7,233,697	72.8
10-11	0.000082	99,394	8	99,390	7,134,299	71.8
11-12	0.000087	99,386	9	99,382	7,034,909	70.8
12-13	0.000103	99,377	10	99,372	6,935,528	69.8
13-14	0.000132	99,367	13	99,360	6,836,156	68.8
14-15	0.000169	99,354	17	99,345	6,736,795	67.8
15-16	0.000209	99,337	21	99,327	6,637,450	66.8
16-17	0.000248	99,316	25	99,304	6,538,123	65.8
17-18	0.000285	99,292	28	99,277	6,438,819	64.8
18-19	0.000320	99,263	32	99,247	6,339,542	63.9
19-20	0.000352	99,232	35	99,214	6,240,294	62.9
20-21	0.000386	99,197	38	99,178	6,141,080	61.9
21-22	0.000420	99,158	42	99,138	6,041,902	60.9
22-23	0.000449	99,117	45	99,094	5,942,765	60.0
23-24	0.000469	99,072	47	99,049	5,843,670	59.0
24-25	0.000484	99,026	48	99,002	5,744,621	58.0
25-26	0.000498	98,978	49	98,953	5,645,620	57.0
26-27	0.000514	98,929	51	98,903	5,546,667	56.1
27-28	0.000532	98,878	53	98,851	5,447,763	55.1
28-29	0.000555	98,825	55	98,798	5,348,912	54.1
29-30	0.000583	98,770	58	98,741	5,250,114	53.2
30-31	0.000615	98,713	61	98,682	5,151,373	52.2
31-32	0.000652	98,652	64	98,620	5,052,691	51.2
32-33	0.000693	98,588	68	98,553	4,954,071	50.3
33-34	0.000735	98,519	72	98,483	4,855,518	49.3
34-35	0.000781	98,447	77	98,408	4,757,035	48.3
35-36	0.000836	98,370	82	98,329	4,658,626	47.4
36-37	0.000900	98,288	88	98,244	4,560,297	46.4
37-38	0.000967	98,199	95	98,152	4,462,054	45.4
38-39	0.001038	98,104	102	98,053	4,363,902	44.5
39-40	0.001117	98,002	109	97,948	4,265,849	43.5
40-41	0.001202	97,893	118	97,834	4,167,901	42.6
41-42	0.001303	97,775	127	97,712	4,070,067	41.6
42-43	0.001433	97,648	140	97,578	3,972,355	40.7
43-44	0.001595	97,508	156	97,430	3,874,777	39.7
44-45	0.001778	97,353	173	97,266	3,777,347	38.8
45-46	0.001963	97,179	191	97,084	3,680,081	37.9
46-47	0.002147	96,989	208	96,885	3,582,997	36.9
47-48	0.002342	96,780	227	96,667	3,486,112	36.0
48-49	0.002555	96,554	247	96,430	3,389,445	35.1
49-50	0.002785	96,307	268	96,173	3,293,015	34.2
50-51	0.003037	96,039	292	95,893	3,196,842	33.3
51-52	0.003295	95,747	316	95,589	3,100,949	32.4
52-53	0.003545	95,432	338	95,263	3,005,359	31.5
53-54	0.003779	95,093	359	94,914	2,910,097	30.6
54-55	0.004012	94,734	380	94,544	2,815,183	29.7
55-56	0.004259	94,354	402	94,153	2,720,639	28.8
56-57	0.004546	93,952	427	93,739	2,626,486	28.0
57-58	0.004895	93,525	458	93,296	2,532,747	27.1
58-59	0.005321	93,067	495	92,820	2,439,451	26.2
59-60	0.005810	92,572	538	92,303	2,346,632	25.3
60-61	0.006343	92,034	584	91,742	2,254,329	24.5
61-62	0.006907	91,450	632	91,135	2,162,586	23.6

Table 6. Life table for white females: United States, 2010—Con.

Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table06.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	0.007518	90,819	683	90,477	2,071,452	22.8
63-64	0.008193	90,136	739	89,767	1,980,974	22.0
64-65	0.008958	89,397	801	88,997	1,891,208	21.2
65-66	0.009865	88,597	874	88,160	1,802,211	20.3
66-67	0.010908	87,723	957	87,244	1,714,051	19.5
67-68	0.012006	86,766	1,042	86,245	1,626,807	18.7
68-69	0.013118	85,724	1,125	85,162	1,540,562	18.0
69-70	0.014301	84,599	1,210	83,994	1,455,401	17.2
70-71	0.015637	83,390	1,304	82,738	1,371,406	16.4
71-72	0.017207	82,086	1,412	81,379	1,288,669	15.7
72-73	0.018934	80,673	1,527	79,909	1,207,289	15.0
73-74	0.020896	79,146	1,654	78,319	1,127,380	14.2
74-75	0.023104	77,492	1,790	76,597	1,049,061	13.5
75-76	0.025556	75,701	1,935	74,734	972,465	12.8
76-77	0.028238	73,767	2,083	72,725	897,730	12.2
77-78	0.031343	71,684	2,247	70,560	825,005	11.5
78-79	0.034911	69,437	2,424	68,225	754,445	10.9
79-80	0.038764	67,013	2,598	65,714	686,220	10.2
80-81	0.042890	64,415	2,763	63,034	620,506	9.6
81-82	0.047653	61,652	2,938	60,183	557,472	9.0
82-83	0.053141	58,715	3,120	57,154	497,288	8.5
83-84	0.059534	55,594	3,310	53,939	440,134	7.9
84-85	0.067280	52,285	3,518	50,526	386,195	7.4
85-86	0.075631	48,767	3,688	46,923	335,669	6.9
86-87	0.085029	45,079	3,833	43,162	288,746	6.4
87-88	0.095406	41,246	3,935	39,278	245,584	6.0
88-89	0.106818	37,311	3,985	35,318	206,306	5.5
89-90	0.119309	33,325	3,976	31,337	170,988	5.1
90-91	0.132914	29,349	3,901	27,399	139,651	4.8
91-92	0.147652	25,448	3,757	23,569	112,252	4.4
92-93	0.163524	21,691	3,547	19,917	88,683	4.1
93-94	0.180509	18,144	3,275	16,506	68,765	3.8
94-95	0.198561	14,869	2,952	13,392	52,259	3.5
95-96	0.217611	11,916	2,593	10,620	38,867	3.3
96-97	0.237561	9,323	2,215	8,216	28,247	3.0
97-98	0.258287	7,108	1,836	6,190	20,031	2.8
98-99	0.279644	5,272	1,474	4,535	13,841	2.6
99-100	0.301463	3,798	1,145	3,226	9,306	2.5
100 and over	1.000000	2,653	2,653	6,080	6,080	2.3