



November 2006

DATA SUMMARY No. DS06-11002

Reports from prior periods are available on this subject.

Highlights

- In 2004 life expectancy at birth for the total California population was 80.2 years, an increase of 0.6 year from 2003.
- The life expectancy at birth of Californians was 2.3 years longer than the life expectancy of the U.S. population.
- The difference in life expectancy at birth between California males and females was 4.7 years in 2004, narrowing the difference of 6.7 years in 1990.

Abridged Life Tables for California, 2004

By Robert Richard Springborn, Ph.D.

Introduction

Life tables statistically summarize the death rates for a specific period, and they have long been used as the principal analytical tool in the study of life expectancy. 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 and involves the mortality experience of a group or cohort of individuals that were born during the same time period. This type of life table best reflects changing environmental conditions, but is not often used due to the practical constraints of gathering mortality data over many years.

A current life table can be characterized as “cross-sectional.” Unlike the generation life table, the current life table does not represent the mortality experience of an actual cohort. This type of table considers a hypothetical cohort and assumes that it is subject to the age-specific death rates for an actual population during a particular period. In this report the term “life table” refers only to the current life table and not to the generation life table.

Life tables can also differ in the length of the age intervals used. A complete life table uses every single year of age from birth to the last applicable age. An abridged life table uses broader age intervals--generally five years. This report uses current abridged life tables for all California residents, males and females, for 2004.

Life Expectancy at Birth for Total Population

Table 1 (page 4) shows that in 2004 the average life expectancy at birth was 80.2 years for the total California population. Life expectancy continued the general increase that has occurred over the years presented in Table 1, going back to 1950. Figure 1 (page 2) shows the trend of increasing life expectancy in California for the years 1990 through 2004. During this time period, life expectancy increased 4.0 years.

The life expectancy of Californians continues to exceed the life expectancy of the population of the United States (U.S.). In 2004 life expectancy was 80.2 years for the total California population compared with 77.9 years for that of the U.S. population as a whole (Table 2, page 5). The U.S. data for 2004 are preliminary.

A description of [methods](#) is provided at the end of this report.

Life Expectancy at Birth by Sex

Life expectancy for females in 2004 was 82.5 years. Between 1990 and 2004 life expectancy for females increased 3.0 years. Life expectancy for males was 77.8 years in 2004 with an increase of 5.0 years between 1990 and 2004. In 2004 the difference in life expectancy between males and females was 4.7 years, a slight decrease from the difference in 2003 of 4.8 years and a continuing narrowing of the gender difference from 6.7 years in 1990.

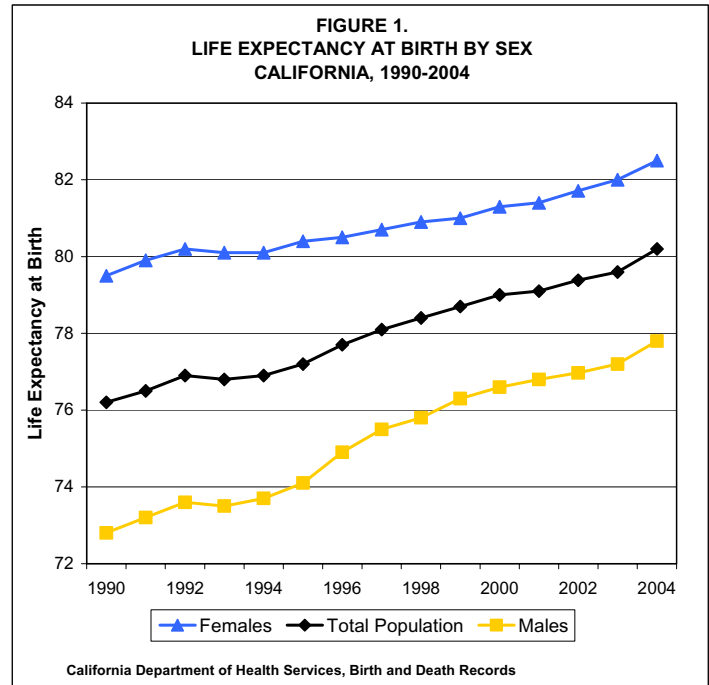


Figure 1 shows the increases in life expectancy for both males and females, as well as the decrease in discrepancy between the two sexes.

California’s male population at birth was expected to live 2.6 years longer than the U.S. male population in 2004. California’s females were expected to live 2.1 years longer than the U.S. female population in 2004.

Life Expectancy at Age 65

Expected remaining average years of life are often examined at 65 years of age. In 2004 a 65-year-old person living in California could expect to live an additional 20.4 years, for a total of 85.4 years. This projection was 0.5 year longer than in 2003 and 2.5 years longer than in 1990.

At age 65, Californians were expected to live 1.7 years longer than the U.S. population in 2004 (preliminary), a larger discrepancy than in prior years (1.5 years in 2003 and 0.7 year in 1990). The average years of life remaining at age 65 in California has consistently exceeded the average years of life remaining at age 65 in the U.S.

Life Expectancy at Age 65 by Sex

In 2004 the life expectancy for California females at age 65 was 21.5 years, up from 21.1 years in 2003 (**Table 1**). California male life expectancy at age 65 was 19.0 years, an increase of 0.4 year from 18.6 in 2003. In 2004 the difference in life expectancy at age 65 between males and females was 2.5 years.

In 2004 California's male population at age 65 was expected to live 1.9 years longer than the U.S. male population (preliminary), while California's female population was expected to live 1.5 years longer than the U.S. female population (preliminary). Californians of both sexes at age 65 have exceeded their respective U.S. life expectancies for many years (**Tables 1 and 2**).

For more data, see Department of Health Services Center for Health Statistics Home Page at:

www.dhs.ca.gov/OHIR

Detailed Life Tables

Tables 3 through 5 (pages 6 to 8) in this report are 2004 abridged life tables for California's total, male, and female populations. These tables show more detail than **Tables 1 and 2**, with age intervals calculated in five-year increments.

Methodological Approach

A report entitled "Methodology for Constructing Life Tables for 1977" describes in detail the methodology used in constructing life tables.¹ The standard life table methodology uses Chiang's formulae and the "fraction of last year of life" adjustments to calculate the probability of death.² The 2004 life tables in this report follow this methodology, with the exceptions that are noted in the technical notes of the report "California Life Expectancy: Abridged Life Tables For California 1990-1996."³ The 2004 population data used for the life tables in this report came from the State of California, Department of Finance.

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¹Oreglia A. *Methodology For Constructing Abridged Life Tables For California, 1977*, Data Matters, No. 81-01021, Center for Health Statistics, California Department of Health Services, January 1981.

²Chiang Chin Long. *Life Table and Mortality Analysis*, World Health Organization, 1978.

³Harms C, McKendry J. *California Life Expectancy: Abridged Life Tables For California, 1990-96*, Data Matters, No. DM98-08000, Center for Health Statistics, California Department of Health Services, August 1998.

TABLE 1.
LIFE EXPECTANCY AT BIRTH
AND AVERAGE YEARS OF LIFE REMAINING AT AGE 65
BY SELECTED YEARS AND SEX,
CALIFORNIA, 1919-1941^a, 1950, 1959-61, 1969-71, 1979-81, 1990-2004

YEAR	AT BIRTH			AT 65 YEARS		
	TOTAL POPULATION	MALES	FEMALES	TOTAL POPULATION	MALES	FEMALES
2004	80.2	77.8	82.5	20.4	19.0	21.5
2003	79.6	77.2	82.0	19.9	18.6	21.1
2002	79.4	77.0	81.7	19.5	18.1	20.7
2001	79.1	76.8	81.4	19.3	17.9	20.5
2000	79.0	76.6	81.3	19.1	17.6	20.4
1999	78.7	76.3	81.0	18.8	17.3	20.1
1998	78.4	75.8	80.9	18.7	17.1	20.0
1997	78.1	75.5	80.7	18.6	17.0	20.0
1996	77.7	74.9	80.5	18.6	16.8	20.0
1995	77.2	74.1	80.4	18.5	16.7	19.9
1994	76.9	73.7	80.1	18.3	16.5	19.8
1993	76.8	73.5	80.1	18.3	16.5	19.8
1992	76.9	73.6	80.2	18.4	16.5	19.9
1991	76.5	73.2	79.9	18.1	16.2	19.7
1990	76.2	72.8	79.5	17.9	16.0	19.4
1979-81	74.8	71.3	78.3	17.1	14.9	19.0
1969-71	71.7	68.2	75.4	15.5	13.4	17.4
1959-61	70.9	67.6	74.5	15.1	13.3	16.7
1950	69.2	65.9	73.0	14.5	13.0	16.1
1939-41	NA	61.9	68.3	NA	11.8	14.4
1929-31	NA	58.6	63.7	NA	12.0 ^b	14.0 ^b
1919-20	NA	54.5	58.4	NA	12.4 ^b	13.4 ^b

^a Whites Only

^b Interpolated

NA Not Available

Sources: 1979-81 and 1990-2004 State of California, Department of Health Services, Birth and Death Records.

1969-71 National Center for Health Statistics, U.S. Decennial Life Tables for 1969-71: California, DHEW Publication No. (HRA) 75-1151, U.S. DHEW, June 1975.

1959-61 Norris FD, Riese DC, *Abridged Life Tables, California, 1959-61*, California Department of Public Health, September 1963.

1950 Schoen R, Collens M, *Mortality by Cause: Life Tables for California, 1950-1970*. California State Department for Public Health.

1939-41 National Office of Vital Statistics, State and Regional Life Tables, 1939-41, U.S. Federal Security Agency, March 11, 1948, pp. 82-85.

1919-20 and 1929-31 Dublin, L I., et al. *Length of Life*, Ronald Press Company, New York 1949, p. 325 and 333.

State of California, Department of Finance; 1979-81 and 1990-96 Population: 1970-1996 Race/Ethnic Population Estimates by County with Age and Sex Detail, January 1998. 1997 Population: Population Estimates with Age and Sex Detail, June 1999. 1998 Population: Population Estimates with Age and Sex Detail, May 2000. 1999-2002 Population: 1997-2040 Population Projections with Age and Sex Detail, December 1998. 2003-2004 Population: State of California, Department of Finance, Race and Ethnic Population with Age and Sex Detail, 2000-2050, Sacramento, CA, May 2004.

TABLE 2
LIFE EXPECTANCY AT BIRTH
AND AVERAGE YEARS OF LIFE REMAINING AT AGE 65
BY SELECTED YEARS AND SEX
UNITED STATES, 1949-51, 1959-61, 1969-71, 1979-81, 1990-2004

YEAR	AT BIRTH			AT 65 YEARS		
	TOTAL POPULATION	MALES	FEMALES	TOTAL POPULATION	MALES	FEMALES
2004 *	77.9	75.2	80.4	18.7	17.1	20.0
2003	77.5	74.8	80.1	18.4	16.8	19.8
2002	77.3	74.5	79.9	18.2	16.6	19.5
2001	77.2	74.4	79.8	18.1	16.4	19.4
2000	77.0	74.3	79.7	18.0	16.2	19.3
1999	76.7	73.9	79.4	17.7	16.1	19.1
1998	76.7	73.8	79.5	17.8	16.0	19.2
1997	76.5	73.6	79.4	17.7	15.9	19.2
1996	76.1	73.1	79.1	17.5	15.7	19.0
1995	75.8	72.5	78.9	17.4	15.6	18.9
1994	75.7	72.4	79.0	17.4	15.5	19.0
1993	75.5	72.2	78.8	17.3	15.3	18.9
1992	75.8	72.3	79.1	17.5	15.4	19.2
1991	75.5	72.0	78.9	17.4	15.3	19.1
1990	75.4	71.8	78.8	17.2	15.1	18.9
1979-81	73.9	70.1	77.6	16.5	14.2	18.4
1969-71	70.8	67.0	74.6	15.0	13.0	16.8
1959-61	69.9	66.8	73.2	14.4	13.0	15.8
1949-51	68.1	65.5	71.0	13.8	12.7	15.0

* Data for 2004 are preliminary

Note: Prior to 1970 includes deaths of nonresidents of the United States.

Sources: 1949-1998 Data: National Center for Health Statistics, United States Life Tables, 1998, Vol. 48, No.18, Tables 11 and 12, February 2001 and National Center for Health Statistics, Health, United States, 2000 With Adolescent Health Chartbook, July 2000.

1999 Data: National Vital Statistics Reports, Deaths: Final Data for 1999, Volume 49, Number 8, Tables 6 and 7, September 2001.

2000-2001 Data: National Vital Statistics Reports, Deaths: Preliminary Data for 2001, Volume 51, Number 5, March 2003.

2001-2002 Data: National Vital Statistics Reports, Deaths: Preliminary Data for 2002, Volume 52, Number 10, December 2003.

2002-2003 Data: National Vital Statistics Reports, Deaths: Preliminary Data for 2003, Volume 53, Number 15, February 2005.

2003-2004 Data: National Vital Statistics Reports, Deaths: Preliminary Data for 2004, Volume 54, Number 19, June 2006.

**TABLE 3
ABRIDGED LIFE TABLE FOR TOTAL POPULATION
CALIFORNIA, 2004**

AGE INTERVAL	PROPORTION DYING			OF 100,000 BORN ALIVE		STATIONARY POPULATION		AVERAGE REMAINING LIFETIME
	Uncorrected	Correction Term	Corrected	Number Living at Beginning of Age Interval	Number Dying During Age Interval	In The Age Interval	In This And All Subsequent Age Intervals	Average Remaining Years of Life
0-1		0.17347	0.00516	100,000	516	99,573	8,020,023	80.20
1-5	0.00025	0.40036	0.00099	99,484	99	397,699	7,920,450	79.62
5-10	0.00013	0.50429	0.00064	99,385	63	496,769	7,522,751	75.69
10-15	0.00015	0.58096	0.00075	99,322	75	496,453	7,025,982	70.74
15-20	0.00058	0.59917	0.00287	99,247	285	495,664	6,529,530	65.79
20-25	0.00083	0.49584	0.00416	98,962	412	493,772	6,033,865	60.97
25-30	0.00078	0.49343	0.00388	98,550	382	491,782	5,540,093	56.22
30-35	0.00087	0.52497	0.00436	98,168	428	489,823	5,048,311	51.43
35-40	0.00120	0.52475	0.00600	97,740	586	487,307	4,558,489	46.64
40-45	0.00191	0.53592	0.00951	97,154	924	483,625	4,071,182	41.90
45-50	0.00304	0.52885	0.01510	96,230	1,453	477,725	3,587,557	37.28
50-55	0.00450	0.52113	0.02227	94,777	2,111	468,829	3,109,832	32.81
55-60	0.00636	0.52590	0.03135	92,666	2,905	456,443	2,641,003	28.50
60-65	0.00947	0.52373	0.04631	89,761	4,157	438,906	2,184,560	24.34
65-70	0.01430	0.52682	0.06915	85,604	5,919	414,016	1,745,654	20.39
70-75	0.02274	0.52421	0.10787	79,685	8,596	377,974	1,331,638	16.71
75-80	0.03610	0.52024	0.16611	71,089	11,809	327,118	953,664	13.42
80-85	0.05928	0.51837	0.25939	59,280	15,377	259,372	626,546	10.57
85+	0.11957		1.00000	43,903	43,903	367,174	367,174	8.36

Ref: Oreglia A. *Methodology for Constructing Abridged Life Tables for California, 1977*, Data Matters. No. 81-01021, Center for Health Statistics, California Department of Health Services, January 1981.

Harms C, McKendry J. *California Life Expectancy: Abridged Life Tables For California, 1990-96*, Data Matters. No. DM98-08000. Center for Health Statistics, California Department of Health Services, August 1998.

Sources: State of California, Department of Finance, Race and Ethnic Population with Age and Sex Detail, 2000-2050, Sacramento, CA, May 2004.

State of California, Department of Health Services, Birth and Death Records.

**TABLE 4
ABRIDGED LIFE TABLE FOR MALE POPULATION
CALIFORNIA, 2004**

AGE INTERVAL	PROPORTION DYING			OF 100,000 BORN ALIVE		STATIONARY POPULATION		AVERAGE REMAINING LIFETIME
	Uncorrected	Correction Term	Corrected	Number Living at Beginning of Age Interval	Number Dying During Age Interval	In The Age Interval	In This And All Subsequent Age Intervals	Average Remaining Years of Life
Period of Life Between Two Exact Ages	Average Annual Death Rate	Fraction of Last Age Interval Lived	Proportion Dying During Age Interval	Number Living at Beginning of Age Interval	Number Dying During Age Interval	In The Age Interval	In This And All Subsequent Age Intervals	Average Remaining Years of Life
0-1		0.17188	0.00569	100,000	569	99,529	7,778,553	77.79
1-5	0.00026	0.39172	0.00105	99,431	105	397,470	7,679,024	77.23
5-10	0.00014	0.49000	0.00069	99,327	69	496,458	7,281,553	73.31
10-15	0.00018	0.57012	0.00090	99,258	90	496,097	6,785,095	68.36
15-20	0.00083	0.61104	0.00416	99,168	413	495,039	6,288,999	63.42
20-25	0.00124	0.49585	0.00620	98,755	612	492,235	5,793,960	58.67
25-30	0.00111	0.48917	0.00552	98,144	542	489,335	5,301,725	54.02
30-35	0.00118	0.51858	0.00588	97,602	574	486,628	4,812,390	49.31
35-40	0.00158	0.51861	0.00789	97,028	765	483,298	4,325,762	44.58
40-45	0.00241	0.52851	0.01198	96,263	1,153	478,596	3,842,463	39.92
45-50	0.00380	0.52726	0.01882	95,110	1,790	471,318	3,363,868	35.37
50-55	0.00568	0.51914	0.02800	93,320	2,613	460,316	2,892,550	31.00
55-60	0.00794	0.52028	0.03897	90,706	3,535	445,053	2,432,234	26.81
60-65	0.01162	0.51908	0.05651	87,171	4,926	424,012	1,987,181	22.80
65-70	0.01724	0.52641	0.08280	82,245	6,810	395,101	1,563,169	19.01
70-75	0.02723	0.52404	0.12787	75,435	9,646	354,222	1,168,068	15.48
75-80	0.04365	0.51512	0.19735	65,789	12,984	297,470	813,846	12.37
80-85	0.06884	0.51565	0.29502	52,806	15,579	226,302	516,376	9.78
85+	0.12834		1.00000	37,227	37,227	290,075	290,075	7.79

Ref: Oreglia A. *Methodology for Constructing Abridged Life Tables for California, 1977*, Data Matters. No. 81-01021, Center for Health Statistics, California Department of Health Services, January 1981.

Harms C, McKendry J. *California Life Expectancy: Abridged Life Tables For California, 1990-96*, Data Matters. No. DM98-08000. Center for Health Statistics, California Department of Health Services, August 1998.

Sources: State of California, Department of Finance, Race and Ethnic Population with Age and Sex Detail, 2000-2050, Sacramento, CA, May 2004.

State of California, Department of Health Services, Birth and Death Records.

**TABLE 5
ABRIDGED LIFE TABLE FOR FEMALE POPULATION
CALIFORNIA, 2004**

AGE INTERVAL	PROPORTION DYING			OF 100,000 BORN ALIVE		STATIONARY POPULATION		AVERAGE REMAINING LIFETIME
	Uncorrected	Correction Term	Corrected	Number Living at Beginning of Age Interval	Number Dying During Age Interval	In The Age Interval	In This And All Subsequent Age Intervals	Average Remaining Years of Life
Period of Life Between Two Exact Ages	Average Annual Death Rate	Fraction of Last Age Interval Lived	Proportion Dying During Age Interval	Number Living at Beginning of Age Interval	Number Dying During Age Interval	In The Age Interval	In This And All Subsequent Age Intervals	Average Remaining Years of Life
0-1		0.17650	0.00461	100,000	461	99,620	8,253,387	82.53
1-5	0.00023	0.41077	0.00093	99,539	93	397,937	8,153,767	81.92
5-10	0.00012	0.52238	0.00058	99,446	57	497,094	7,755,830	77.99
10-15	0.00012	0.59817	0.00060	99,389	59	496,825	7,258,736	73.03
15-20	0.00030	0.56390	0.00151	99,330	150	496,320	6,761,911	68.08
20-25	0.00039	0.49144	0.00193	99,179	192	495,410	6,265,591	63.17
25-30	0.00042	0.50895	0.00210	98,988	208	494,427	5,770,181	58.29
30-35	0.00055	0.53932	0.00275	98,779	272	493,271	5,275,754	53.41
35-40	0.00080	0.53761	0.00399	98,507	393	491,628	4,782,483	48.55
40-45	0.00140	0.54929	0.00696	98,114	683	489,033	4,290,855	43.73
45-50	0.00229	0.53235	0.01137	97,432	1,107	484,569	3,801,822	39.02
50-55	0.00337	0.52442	0.01670	96,324	1,609	477,796	3,317,253	34.44
55-60	0.00487	0.53452	0.02409	94,716	2,282	468,266	2,839,457	29.98
60-65	0.00749	0.53057	0.03683	92,433	3,404	454,177	2,371,191	25.65
65-70	0.01170	0.52809	0.05691	89,029	5,067	433,192	1,917,013	21.53
70-75	0.01901	0.52472	0.09094	83,963	7,636	401,668	1,483,821	17.67
75-80	0.03049	0.52671	0.14219	76,327	10,853	355,952	1,082,154	14.18
80-85	0.05283	0.52113	0.23449	65,474	15,353	290,610	726,202	11.09
85+	0.11506		1.00000	50,121	50,121	435,592	435,592	8.69

Ref: Oreglia A. *Methodology for Constructing Abridged Life Tables for California, 1977*, Data Matters. No. 81-01021, Center for Health Statistics, California Department of Health Services, January 1981.

Harms C, McKendry J. *California Life Expectancy: Abridged Life Tables For California, 1990-96*, Data Matters. No. DM98-08000. Center for Health Statistics, California Department of Health Services, August 1998.

Sources: State of California, Department of Finance, Race and Ethnic Population with Age and Sex Detail, 2000-2050, Sacramento, CA, May 2004.

State of California, Department of Health Services, Birth and Death Records.