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## Healthy Life Expectancy in North Carolina, 1996-2000

by

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### ABSTRACT

**Objectives:** Life tables have traditionally been used to estimate life expectancy at birth and at other ages. This study combines the life table methodology with measures of morbidity or ill health to calculate healthy life expectancy for the population of North Carolina.

**Methods:** We use 1996-2000 mortality data to calculate life expectancies for North Carolinians and then add 1993-2000 data from the Behavioral Risk Factor Surveillance System (BRFSS) to estimate, by age, average years of life remaining in good perceived health, in good physical health, in good mental health, and without activity limitation. These estimates are produced for the total population, males, females, whites, minorities, white males, white females, minority males, and minority females.

**Results:** The overall life expectancy at birth in North Carolina is 75.6 years. Females live longer than males and whites live longer than persons of minority race. The average life expectancy at birth is 73.8 years for white males, 79.6 years for white females, 68.0 years for minority males, and 75.8 years for minority females. The average years of healthy life remaining at birth (based on perceived health status) is 63.0. This means that 12.6 of the 75.6 years of life expectancy will be spent in a state where health status is perceived to be fair or poor. Females and minorities spend a higher number of their remaining years of life with perceived physical or mental health problems or some activity limitation. The average number of years from birth with health status perceived as fair or poor is 10.6 for white males, 13.0 for white females, 14.7 for minority males, and 16.5 for minority females.

**Conclusions:** Combining mortality and morbidity data provides a means of calculating healthy life expectancy. As the population of North Carolina ages, the burden of disease is likely to increase. The method presented here allows for regular updates of healthy life expectancy, using mortality and BRFSS data, which are collected each year at the state level.

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## Introduction

Life expectancy at birth in the United States increased dramatically during the 20th century, from 47 years in 1900 to 77 years in 1998, with most of this increase coming in the first half of the century. Chronic and degenerative diseases have become the leading causes of death, particularly among the older population. With a longer life span and the increase in chronic diseases, the issue of *healthy* years of life remaining has become more salient.<sup>1,2,3,4</sup>

In recognition of the current association between longevity and morbidity, the first goal of the national Healthy People 2010 program is to increase not only life expectancy, but also the quality and years of healthy life. Similarly, Governor James B. Hunt made increasing the span of healthy life of the citizens of North Carolina the first of the state's 2010 Health Objectives with his Executive Order No. 147. Exercise, healthy diet and weight, stress management, not smoking, moderate use of alcohol, and injury prevention habits such as wearing seat belts and bicycle helmets all contribute to a healthy life span. Health-related quality of life is more subjective than life expectancy and therefore can be more difficult to measure.

Life tables have traditionally been used to estimate life expectancy at birth and at other ages. Combining the life table methodology with measures of morbidity or ill health provides a means of calculating healthy life expectancy. This study uses 1996-2000 mortality data to calculate life expectancies for North Carolinians and then adds 1993-2000 data from the Behavioral Risk Factor Surveillance System (BRFSS) to estimate, by age, average years of life remaining in good perceived health, in good physical health, in good mental health, and without activity limitation.

## Methods

Several years of data were combined to improve the stability of the age-specific estimates. Mortality data for the period 1996-2000 were used to calculate life expectancy and BRFSS data for the period 1993-2000 were used to compute the four morbidity measures as a basis for calculating healthy life expectancy.

The life table technique begins with age specific death rates for a current time period and then assumes that this schedule of death rates is in operation for the lifetime of a hypothetical birth cohort of 100,000 persons. This cohort is "aged" year by year to produce life expectancy at birth and at each age thereafter. So the life expectancies are those that would be realized *if* the current age-specific death rates do not change. Details of the life table calculations are available elsewhere.<sup>4,5</sup> We produced 1996-2000 *abridged* life tables for North Carolina, meaning that 18 five-year age intervals were used rather than single years of age. The width of the last "open" age interval (85+) was assumed to be 15 years.

Life expectancy and healthy life expectancy were calculated for the following demographic groups: total population, males, females, whites, minorities, white males, white females, minority males, and minority females. All races other than white were grouped into the "minority" category mainly for statistical purposes: to avoid small numbers in the numerators of the rates and because of imprecise population (denominator) estimates for smaller racial groups. In North Carolina, more than 90 percent of the minority population is African American. Hispanic is an ethnic group and most Hispanics in North Carolina are included in the white racial category.

Four BRFSS questions, asked from 1993 through 2000, were used to assess health-related quality of life:<sup>6</sup>

- 1) Would you say that in general your health is: excellent, very good, good, fair, or poor?

- 2) Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?
- 3) Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?
- 4) During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

These questions were used to estimate the proportion of persons in each age group with perceived health problems. For the first question on self-rated health status, the proportion of persons who responded “fair” or “poor” was used. For the questions on recent physical health, mental health, and activity limitation, we used the mean proportion of days in the previous 30 days when health was impaired across all respondents within each age interval. These proportions were subtracted from 1.0 to estimate the proportion of persons in each age group who perceived themselves to be in a healthy state, and then these proportions were used to adjust the average years of life remaining to the average years of *healthy* life remaining. The details of these calculation methods are available in a publication of the National Center for Health Statistics.<sup>4</sup>

One issue is that the BRFSS interviews only persons age 18 and older, whereas the abridged life tables include the age groups 0-4, 5-9, 10-14, and 15-19. The National Center for Health Statistics publication<sup>4</sup> used the National Health Interview Survey to calculate the age-specific prevalence rates of being healthy, with the data for children provided by proxy. The proportion who were healthy was highest in the youngest age groups, and averaged approximately .98 for those less than age 20. For this study, we used the proportion in a healthy state from the BRFSS for ages 18-24 for each younger

age group, as a means of estimating morbidity in the youngest age groups. For example, from the BRFSS the proportion of physically healthy days for persons ages 18-24 was .95, so we estimated the proportion of physically healthy days as .95 for ages 20-24, 15-19, 10-14, 5-9, and 0-4. This process was repeated for each quality of life measure and for each race/sex group. This method of estimating morbidity in the younger age groups probably results in a slight underestimate of years of healthy life remaining.

## Results

Table 1 presents the average years of life remaining at each age, for the total population and for sex, race, and race/sex groups. Again, these are the life expectancies for a group of babies born today and experiencing the age-specific mortality rates for 1996-2000 throughout their life span. As expected, the life expectancy declines with increasing age. However, though a person at birth would be expected to live 75.6 years on average, once reaching an older age, the total life expectancy is greater than 75.6 years.

This current life expectancy of 75.6 years represents an increase in life expectancy in North Carolina over two decades. For 1979-81 the North Carolina Office of State Budget and Management calculated the life expectancy of North Carolinians as 72.9 years, while for 1989-91 the National Center for Health Statistics calculated the life expectancy of North Carolinians as 74.5 years.<sup>7</sup>

Females live longer than males and whites live longer than persons of minority race. However, at the oldest ages, minorities have a life expectancy that is the same or slightly greater than that of whites. This is known as the “crossover effect.”<sup>8,9</sup> Though minorities experience much higher death rates at the younger ages, at the oldest ages they experience somewhat lower death rates. Minority males have the lowest life expectancy at birth (68.0 years) and white females have the highest (79.6 years) (Figure 1).

**Table 1. Life Expectancy at Beginning of Age Interval for North Carolina Residents, Based on 1996-2000 Age-Specific Death Rates, by Race and Sex.**

<b>Age Interval</b>	<b>Total Population</b>	<b>Male</b>	<b>Female</b>	<b>White</b>	<b>Minority</b>	<b>White Male</b>	<b>White Female</b>	<b>Minority Male</b>	<b>Minority Female</b>
00-04	75.6	72.4	78.7	76.8	72.1	73.8	79.6	68.0	75.8
05-09	71.4	68.3	74.4	72.4	68.2	69.4	75.2	64.1	71.8
10-14	66.5	63.3	69.5	67.4	63.3	64.5	70.2	59.2	66.9
15-19	61.6	58.4	64.5	62.5	58.4	59.6	65.3	54.3	62.0
20-24	56.8	53.7	59.7	57.7	53.6	54.9	60.4	49.7	57.1
25-29	52.1	49.1	54.8	53.0	49.0	50.2	55.6	45.2	52.3
30-34	47.3	44.5	50.0	48.2	44.3	45.5	50.7	40.6	47.5
35-39	42.6	39.9	45.2	43.5	39.8	40.8	45.9	36.2	42.9
40-44	38.0	35.3	40.4	38.8	35.3	36.2	41.1	31.9	38.3
45-49	33.5	30.9	35.8	34.1	31.0	31.7	36.4	27.7	33.8
50-54	29.1	26.6	31.2	29.6	26.9	27.2	31.7	23.8	29.5
55-59	24.8	22.5	26.8	25.3	23.0	23.0	27.2	20.2	25.3
60-64	20.8	18.7	22.6	21.2	19.5	19.0	22.9	16.8	21.5
65-69	17.1	15.1	18.7	17.4	16.2	15.4	18.9	13.8	17.8
70-74	13.7	12.0	15.0	13.9	13.1	12.2	15.1	11.1	14.5
75-79	10.6	9.2	11.6	10.7	10.4	9.3	11.6	8.8	11.4
80-84	7.9	6.7	8.5	7.9	7.9	6.8	8.5	6.7	8.6
85 +	5.4	4.6	5.8	5.4	5.6	4.5	5.7	4.8	6.0

**Figure 1. Life Expectancy at Birth by Race-Sex Group, North Carolina, 1996-2000**

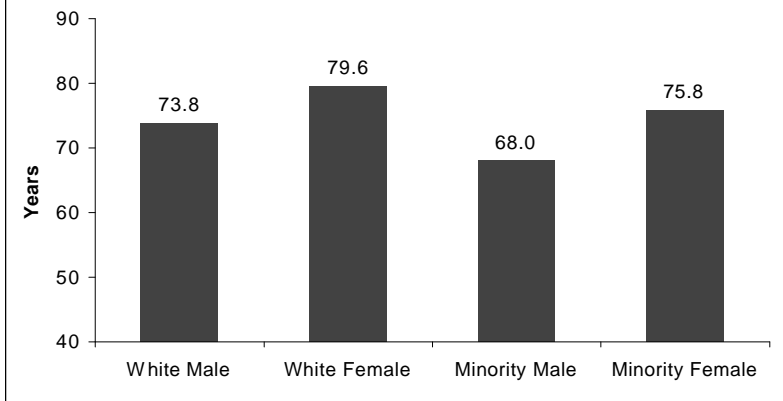


Table 2 presents, for the total population, the proportions of healthy persons by age for perceived health status, physical health, mental health, and no activity limitation. The Appendix tables show the same information for sex, race, and race/sex groups. In general, a lower proportion of persons report their health to be better than fair or poor than for the other measures of health (good physical health, good mental health, and no activity limitation). The proportions reporting health problems generally decline with increasing age, except for mental health where more than 90 percent report good mental health for every age group.

The data on proportion of healthy persons are used to adjust the average years of life remaining to produce average years of healthy life remaining. These healthy life expectancies are also presented in Table 2, for the total population. The corresponding information for sex, race, and race/sex groups is included in the Appendix tables. In Table 2, it can be seen that while the average years of life remaining at birth is 75.6, the average years of healthy life remaining (based on perceived health status) is 63.0. This implies that 12.6 of the 75.6 years will be spent in a state where health status is perceived to be fair or poor. Healthy life expectancy is higher for the other measures, ranging from 67.9 years estimated

to be spent in good physical health to 71.3 years with no activity limitation.

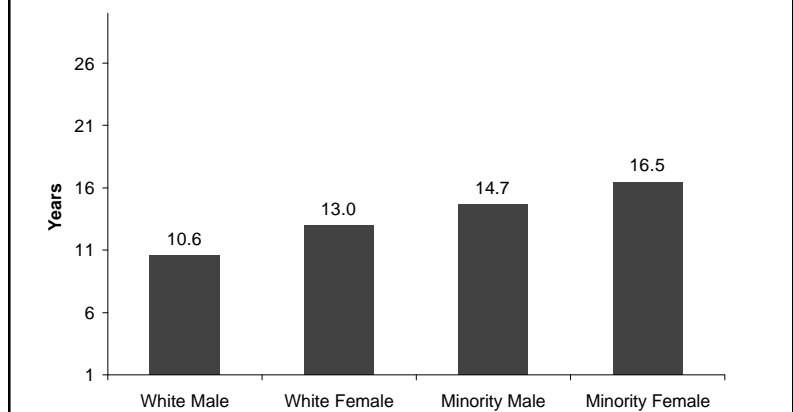
The differences in life expectancy and healthy life expectancy vary considerably by race and sex (see Appendix tables). For example, for perceived health status, females (at birth) live an average of 13.8 years in a state of fair or poor health, compared to 11.5 years for males. The comparable figure for whites is 11.9 years and for minorities it is 15.8 years. The expected number of years with health status perceived as fair or poor is 10.6 for white males, 13.0 for white females, 14.7 for minority males, and 16.5 for minority females (Figure 2).

The percentage of the total life expectancy (at birth) spent in fair or poor health is 14 percent for white males, 16 percent for white females, 22 percent for minority males, and 22 percent for minority females.

## Conclusions

For the total North Carolina population, of the 75.6 years of life expected at birth, an estimated 63 years are spent in perceived good health, 68 years in reported good physical health, 70 years in good mental health, and 71 years without activity limitation. There are substantial differences in life expectancy and healthy life expectancy by race and sex. Persons of minority race have a shorter life expectancy, and

**Figure 2. Expected Number of Years from Birth with Health Status Perceived as Fair or Poor by Race-Sex Group, North Carolina, 1996-2000**



**Table 2. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining For North Carolina Residents  
(Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data): Total Population.**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	75.6	0.94	0.95	0.92	0.97	63.0	67.9	69.8	71.3
05-09	71.4	0.94	0.95	0.92	0.97	59.0	63.9	65.9	67.2
10-14	66.5	0.94	0.95	0.92	0.97	54.3	59.2	61.3	62.4
15-19	61.6	0.94	0.95	0.92	0.97	49.7	54.6	56.8	57.6
20-24	56.8	0.94	0.95	0.92	0.97	45.2	50.0	52.4	52.9
25-29	52.1	0.92	0.94	0.92	0.97	40.8	45.5	48.0	48.3
30-34	47.3	0.93	0.94	0.92	0.96	36.3	41.0	43.7	43.7
35-39	42.6	0.91	0.93	0.91	0.96	31.9	36.6	39.4	39.1
40-44	38.0	0.88	0.91	0.91	0.94	27.7	32.3	35.2	34.7
45-49	33.5	0.85	0.90	0.91	0.95	23.6	28.2	31.1	30.4
50-54	29.1	0.80	0.88	0.92	0.92	19.8	24.1	27.0	26.2
55-59	24.8	0.74	0.86	0.92	0.91	16.3	20.3	23.2	22.3
60-64	20.8	0.70	0.84	0.94	0.91	13.2	16.9	19.5	18.6
65-69	17.1	0.68	0.84	0.94	0.92	10.5	13.7	16.0	15.2
70-74	13.7	0.63	0.81	0.94	0.90	8.1	10.7	12.8	12.0
75-79	10.6	0.58	0.77	0.92	0.88	6.0	8.1	9.9	9.2
80-84	7.9	0.55	0.75	0.92	0.85	4.3	6.0	7.3	6.7
85 +	5.4	0.55	0.77	0.94	0.84	3.0	4.2	5.1	4.6

a higher proportion of their years of life remaining are spent with health problems or some activity limitation. Females spend more years in an unhealthy state than males. This result by gender is consistent with the findings of other studies.<sup>10,11</sup>

There are some limitations to using the BRFSS data for estimating healthy life expectancy. Since the BRFSS is a telephone survey, households without a telephone will not be covered. Persons in households without telephones are, on average, of lower income and probably more likely to experience health problems. However, approximately 95 percent of households in North Carolina have one or more telephones.

Secondly, the BRFSS does not cover the institutionalized population, such as persons in nursing homes or hospitals, where health problems are likely to be greater. The net result is that the data presented in this report probably overestimate healthy life expectancy, since the level of health problems in the total population is likely to be greater than that reported through the BRFSS. From the 2000 Census, we determined that approximately 5 percent of persons in North Carolina age 65 and older reside in institutions. This percentage is much higher than

that for younger age groups. If we assume that all of these persons age 65 and older in institutions would report their health as fair or poor, then the proportion of persons where perceived health status is good (from Table 2) would be reduced to .65 for ages 65-69, .60 for 70-74, .55 for 75-79, .52 for 80-84, and .52 for 85+. When these revised figures are entered into the calculation of healthy life expectancy at birth, the original estimate of 63.0 is reduced to 62.6. So the effect of leaving out the institutionalized population from the estimates presented in this report is not large.

Another limitation of this study may be using the BRFSS estimates of health-related quality of life for 18-24 years olds for persons younger than age 18. Other data sources with direct measures for this younger population should be examined to validate this approach.

Combining mortality and morbidity data provides a means of calculating healthy life expectancy. As the population of North Carolina ages further, the burden of disease is likely to increase. The method presented here allows for regular updates of healthy life expectancy, using mortality and BRFSS data, which are collected each year at the state level.

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## Appendix

**Table A1. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining for Male North Carolina Residents  
(Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data)**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	72.4	0.94	0.96	0.94	0.98	60.9	66.2	68.1	68.7
05-09	68.3	0.94	0.96	0.94	0.98	56.9	62.2	64.2	64.6
10-14	63.3	0.94	0.96	0.94	0.98	52.3	57.5	59.6	59.8
15-19	58.4	0.94	0.96	0.94	0.98	47.7	52.8	55.0	55.0
20-24	53.7	0.94	0.96	0.94	0.98	43.3	48.3	50.6	50.4
25-29	49.1	0.91	0.95	0.93	0.97	38.9	43.9	46.3	45.9
30-34	44.5	0.94	0.95	0.94	0.98	34.6	39.4	41.9	41.3
35-39	39.9	0.92	0.95	0.94	0.97	30.2	35.0	37.6	36.8
40-44	35.3	0.88	0.92	0.92	0.95	26.0	30.7	33.4	32.4
45-49	30.9	0.85	0.91	0.94	0.95	22.0	26.5	29.3	28.1
50-54	26.6	0.79	0.89	0.94	0.92	18.2	22.6	25.2	24.0
55-59	22.5	0.72	0.85	0.94	0.89	14.9	18.9	21.4	20.2
60-64	18.7	0.74	0.87	0.95	0.93	12.0	15.6	17.8	16.8
65-69	15.1	0.68	0.86	0.96	0.92	9.3	12.5	14.5	13.5
70-74	12.0	0.61	0.82	0.96	0.88	7.0	9.7	11.4	10.5
75-79	9.2	0.59	0.79	0.95	0.88	5.1	7.3	8.7	8.1
80-84	6.7	0.54	0.76	0.94	0.86	3.6	5.4	6.4	5.9
85 +	4.6	0.53	0.85	0.97	0.90	2.4	3.9	4.4	4.1

## Appendix

**Table A2. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining for Female North Carolina Residents  
(Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data)**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	78.7	0.94	0.94	0.91	0.97	64.9	69.5	71.3	73.7
05-09	74.4	0.94	0.94	0.91	0.97	60.9	65.5	67.4	69.5
10-14	69.5	0.94	0.94	0.91	0.97	56.2	60.8	62.9	64.7
15-19	64.5	0.94	0.94	0.91	0.97	51.6	56.2	58.4	59.9
20-24	59.7	0.94	0.94	0.91	0.97	47.0	51.6	54.0	55.2
25-29	54.8	0.94	0.94	0.90	0.97	42.5	47.0	49.6	50.5
30-34	50.0	0.92	0.92	0.90	0.95	37.9	42.5	45.2	45.8
35-39	45.2	0.90	0.90	0.89	0.95	33.4	38.1	40.9	41.2
40-44	40.4	0.87	0.89	0.89	0.94	29.1	33.8	36.7	36.7
45-49	35.8	0.85	0.89	0.89	0.94	25.0	29.6	32.6	32.4
50-54	31.2	0.81	0.88	0.89	0.92	21.1	25.5	28.6	28.1
55-59	26.8	0.76	0.86	0.90	0.91	17.4	21.6	24.7	24.0
60-64	22.6	0.66	0.82	0.92	0.90	14.2	17.9	20.9	20.1
65-69	18.7	0.68	0.83	0.93	0.93	11.5	14.6	17.3	16.6
70-74	15.0	0.64	0.81	0.93	0.92	8.8	11.5	13.8	13.1
75-79	11.6	0.58	0.77	0.91	0.88	6.6	8.7	10.6	9.8
80-84	8.5	0.56	0.74	0.91	0.84	4.8	6.3	7.8	7.0
85 +	5.8	0.56	0.74	0.93	0.82	3.2	4.3	5.4	4.7

## Appendix

**Table A3. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining for White North Carolina Residents  
(Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data)**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	76.8	0.94	0.94	0.93	0.98	64.9	69.0	70.9	72.5
05-09	72.4	0.94	0.94	0.93	0.98	60.8	64.8	66.9	68.2
10-14	67.4	0.94	0.94	0.93	0.98	56.1	60.2	62.3	63.4
15-19	62.5	0.94	0.94	0.93	0.98	51.4	55.5	57.7	58.6
20-24	57.7	0.94	0.94	0.93	0.98	46.9	51.0	53.3	53.9
25-29	53.0	0.95	0.94	0.91	0.97	42.4	46.5	48.9	49.3
30-34	48.2	0.93	0.93	0.91	0.96	37.8	42.0	44.5	44.6
35-39	43.5	0.92	0.93	0.91	0.96	33.3	37.5	40.2	40.0
40-44	38.8	0.89	0.92	0.91	0.95	29.0	33.2	35.9	35.5
45-49	34.1	0.86	0.91	0.91	0.95	24.8	28.9	31.8	31.1
50-54	29.6	0.82	0.89	0.92	0.92	20.8	24.7	27.6	26.8
55-59	25.3	0.77	0.86	0.91	0.90	17.2	20.9	23.7	22.8
60-64	21.2	0.75	0.86	0.94	0.92	13.9	17.3	19.9	19.0
65-69	17.4	0.70	0.85	0.95	0.93	11.0	14.0	16.4	15.5
70-74	13.9	0.65	0.82	0.95	0.90	8.4	10.9	13.0	12.2
75-79	10.7	0.60	0.78	0.93	0.89	6.2	8.3	10.0	9.3
80-84	7.9	0.57	0.76	0.92	0.86	4.4	6.1	7.4	6.8
85 +	5.4	0.55	0.79	0.95	0.86	2.9	4.2	5.1	4.6

## Appendix

**Table A4. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining for Minority North Carolina Residents  
(Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data)**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	72.1	0.92	0.96	0.92	0.97	56.3	64.4	66.0	67.4
05-09	68.2	0.92	0.96	0.92	0.97	52.6	60.5	62.5	63.6
10-14	63.3	0.92	0.96	0.92	0.97	48.1	55.8	58.0	58.8
15-19	58.4	0.92	0.96	0.92	0.97	43.6	51.1	53.5	54.0
20-24	53.6	0.92	0.96	0.92	0.97	39.2	46.5	49.1	49.4
25-29	49.0	0.86	0.94	0.92	0.97	34.8	42.0	44.8	44.9
30-34	44.3	0.91	0.94	0.92	0.97	30.8	37.6	40.6	40.4
35-39	39.8	0.86	0.93	0.93	0.95	26.5	33.3	36.4	35.9
40-44	35.3	0.82	0.88	0.91	0.92	22.5	29.1	32.2	31.7
45-49	31.0	0.81	0.88	0.92	0.93	18.9	25.3	28.3	27.7
50-54	26.9	0.71	0.86	0.91	0.91	15.3	21.6	24.6	23.8
55-59	23.0	0.65	0.86	0.92	0.91	12.4	18.2	21.0	20.2
60-64	19.5	0.48	0.78	0.92	0.88	10.0	15.0	17.7	17.0
65-69	16.2	0.59	0.83	0.93	0.92	8.5	12.4	14.6	14.0
70-74	13.1	0.50	0.79	0.89	0.91	6.5	9.8	11.8	11.1
75-79	10.4	0.48	0.75	0.91	0.85	5.1	7.5	9.4	8.5
80-84	7.9	0.44	0.66	0.91	0.79	4.0	5.6	7.1	6.3
85 +	5.6	0.57	0.75	0.89	0.80	3.2	4.2	5.0	4.5

## Appendix

**Table A5. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining for White Male North Carolina Residents  
(Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data)**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	73.8	0.96	0.95	0.94	0.98	63.2	67.4	69.5	70.1
05-09	69.4	0.96	0.95	0.94	0.98	59.0	63.3	65.4	65.8
10-14	64.5	0.96	0.95	0.94	0.98	54.3	58.6	60.7	61.0
15-19	59.6	0.96	0.95	0.94	0.98	49.6	53.9	56.1	56.2
20-24	54.9	0.96	0.95	0.94	0.98	45.0	49.4	51.7	51.5
25-29	50.2	0.93	0.95	0.93	0.97	40.5	45.0	47.3	47.0
30-34	45.5	0.94	0.95	0.93	0.97	36.1	40.5	42.9	42.4
35-39	40.8	0.93	0.96	0.94	0.97	31.7	36.0	38.6	37.8
40-44	36.2	0.89	0.92	0.92	0.95	27.3	31.6	34.2	33.3
45-49	31.7	0.86	0.92	0.94	0.96	23.2	27.4	30.1	28.9
50-54	27.2	0.82	0.90	0.95	0.93	19.3	23.3	25.9	24.7
55-59	23.0	0.74	0.85	0.94	0.89	15.7	19.4	21.9	20.7
60-64	19.0	0.78	0.88	0.95	0.93	12.7	16.0	18.2	17.2
65-69	15.4	0.71	0.87	0.97	0.92	9.7	12.8	14.8	13.8
70-74	12.2	0.62	0.82	0.96	0.87	7.3	9.9	11.6	10.7
75-79	9.3	0.63	0.80	0.95	0.89	5.4	7.5	8.8	8.2
80-84	6.8	0.55	0.77	0.94	0.86	3.7	5.5	6.4	5.9
85 +	4.5	0.53	0.87	0.96	0.91	2.4	3.9	4.3	4.1

## Appendix

**Table A6. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining for White Female North Carolina Residents  
(Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data)**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	79.6	0.93	0.94	0.91	0.97	66.6	70.5	72.2	74.8
05-09	75.2	0.93	0.94	0.91	0.97	62.4	66.3	68.2	70.5
10-14	70.2	0.93	0.94	0.91	0.97	57.8	61.7	63.7	65.7
15-19	65.3	0.93	0.94	0.91	0.97	53.2	57.1	59.2	60.9
20-24	60.4	0.93	0.94	0.91	0.97	48.7	52.5	54.8	56.2
25-29	55.6	0.96	0.94	0.90	0.97	44.1	47.9	50.4	51.4
30-34	50.7	0.93	0.92	0.90	0.95	39.4	43.3	46.0	46.6
35-39	45.9	0.91	0.90	0.88	0.94	34.9	38.9	41.7	42.0
40-44	41.1	0.90	0.91	0.89	0.95	30.5	34.6	37.4	37.5
45-49	36.4	0.87	0.90	0.89	0.94	26.2	30.3	33.3	33.0
50-54	31.7	0.82	0.87	0.89	0.92	22.1	26.0	29.2	28.6
55-59	27.2	0.79	0.86	0.90	0.92	18.4	22.1	25.2	24.5
60-64	22.9	0.71	0.83	0.92	0.91	14.9	18.3	21.4	20.6
65-69	18.9	0.70	0.83	0.94	0.93	11.9	14.9	17.6	16.9
70-74	15.1	0.67	0.82	0.95	0.92	9.2	11.7	14.1	13.3
75-79	11.6	0.59	0.77	0.91	0.88	6.7	8.8	10.7	10.0
80-84	8.5	0.59	0.76	0.92	0.86	4.8	6.4	7.9	7.2
85 +	5.7	0.56	0.76	0.95	0.84	3.2	4.3	5.4	4.8

## Appendix

**Table A7. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining for Minority Male North Carolina Residents (Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data)**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	68.0	0.88	0.97	0.92	0.98	53.3	62.1	63.5	64.3
05-09	64.1	0.88	0.97	0.92	0.98	49.8	58.2	60.0	60.5
10-14	59.2	0.88	0.97	0.92	0.98	45.4	53.5	55.4	55.7
15-19	54.3	0.88	0.97	0.92	0.98	41.1	48.7	50.9	50.9
20-24	49.7	0.88	0.97	0.92	0.98	36.9	44.1	46.6	46.3
25-29	45.2	0.87	0.95	0.93	0.97	32.8	39.7	42.5	41.9
30-34	40.6	0.92	0.97	0.95	0.99	28.8	35.4	38.3	37.4
35-39	36.2	0.86	0.93	0.96	0.94	24.6	31.1	34.1	33.0
40-44	31.9	0.86	0.92	0.93	0.94	20.8	27.0	29.9	29.0
45-49	27.7	0.82	0.89	0.94	0.93	17.1	23.1	26.1	25.0
50-54	23.8	0.66	0.82	0.93	0.89	13.6	19.5	22.4	21.4
55-59	20.2	0.66	0.86	0.94	0.92	11.1	16.5	19.0	18.2
60-64	16.8	0.52	0.82	0.96	0.88	8.7	13.6	15.9	15.0
65-69	13.8	0.54	0.82	0.92	0.93	7.1	11.1	13.0	12.4
70-74	11.1	0.56	0.85	0.93	0.91	5.6	8.8	10.5	9.8
75-79	8.8	0.42	0.73	0.95	0.84	4.1	6.6	8.4	7.5
80-84	6.7	0.47	0.72	0.94	0.86	3.4	5.2	6.4	5.9
85 +	4.8	0.55	0.87	1.00	0.91	2.6	4.1	4.8	4.3

## Appendix

**Table A8. Life Expectancy, Estimated Proportion in a Healthy State, and Average Years of Healthy Life Remaining for Minority Female North Carolina Residents  
(Based on 1996-2000 Death Rates and 1993-2000 BRFSS Data)**

Age Interval	Life Expectancy At Beginning of Interval	Proportion of Persons or Years of Life in Healthy State				Average Years of Healthy Life Remaining at Beginning of Interval			
		Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation	Perceived Health Status Is Good	Good Physical Health	Good Mental Health	No Activity Limitation
00-04	75.8	0.95	0.95	0.91	0.96	59.3	66.4	68.3	70.1
05-09	71.8	0.95	0.95	0.91	0.96	55.3	62.6	64.6	66.3
10-14	66.9	0.95	0.95	0.91	0.96	50.6	57.9	60.2	61.5
15-19	62.0	0.95	0.95	0.91	0.96	45.9	53.2	55.7	56.8
20-24	57.1	0.95	0.95	0.91	0.96	41.3	48.5	51.2	52.1
25-29	52.3	0.86	0.93	0.91	0.96	36.6	43.9	46.8	47.5
30-34	47.5	0.91	0.92	0.90	0.95	32.5	39.5	42.5	42.9
35-39	42.9	0.87	0.92	0.90	0.96	28.2	35.2	38.3	38.4
40-44	38.3	0.80	0.84	0.89	0.90	24.1	30.9	34.2	33.9
45-49	33.8	0.80	0.87	0.90	0.94	20.4	27.1	30.2	29.9
50-54	29.5	0.75	0.90	0.90	0.94	16.8	23.3	26.3	25.8
55-59	25.3	0.64	0.86	0.92	0.90	13.6	19.5	22.6	21.9
60-64	21.5	0.44	0.75	0.90	0.88	11.0	16.1	19.1	18.4
65-69	17.8	0.62	0.83	0.93	0.90	9.5	13.4	15.8	15.1
70-74	14.5	0.47	0.76	0.87	0.90	7.2	10.4	12.5	11.9
75-79	11.4	0.52	0.76	0.88	0.85	5.8	8.0	9.9	9.0
80-84	8.6	0.43	0.64	0.90	0.75	4.3	5.7	7.4	6.4
85 +	6.0	0.58	0.68	0.83	0.74	3.5	4.1	4.9	4.4





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**Department of Health and Human Services**  
Carmen Hooker Buell, Secretary

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