



Life expectancy in Minnesota Varies by Region

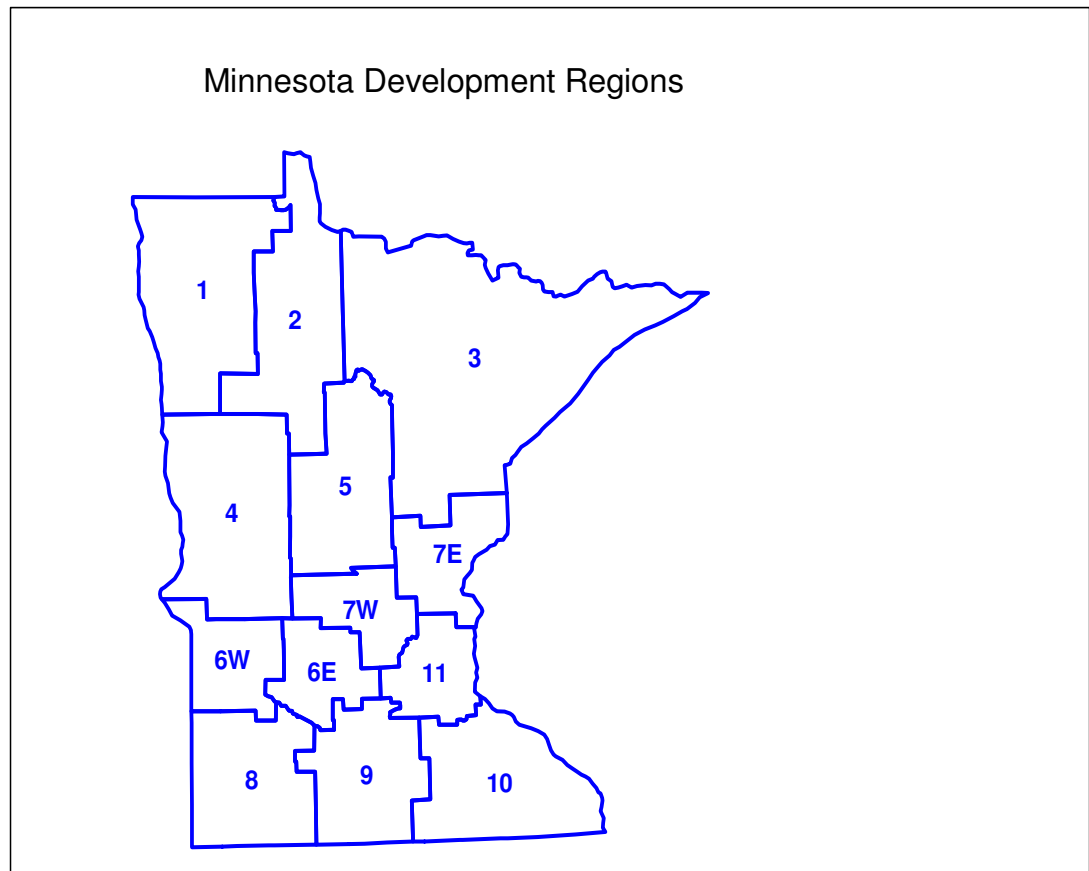
Martha McMurry

- Male life expectancy is significantly above the state average in the Twin Cities suburbs.
- Male life expectancy is significantly below average in Regions 2 (Headwaters) and 3 (Arrowhead).
- Female life expectancy is significantly above the state average in Region 10 (Southeastern Minnesota).
- Life expectancy over age 65 is lower in the Twin Cities area than in the state as a whole.
- Life expectancy has increased for both men and women and in every age group in all regions.

In 2005, life expectancy varied by several years from one region of Minnesota to another. Life expectancy for the total population ranged from a high of 81.0 in Region 10 (Southeastern Minnesota) to a low of 78.7 in Region 2 (Headwaters). Total life expectancy was lower than the state average at the 5 percent level of significance in Regions 3 (Arrowhead) and 7E (East Central).

The highest male life expectancy was 78.7 years in the Twin Cities suburbs, a five-county area including Anoka, Carver, Dakota, Scott and Washington counties. The lowest male life expectancy was 75.5 years in Region 2, the Headwaters Region. Male life expectancy was significantly below average in Region 3 (Arrowhead) and Region 2.

Among females, life expectancy was highest in Region 10 (Southeastern Minnesota) at 83.5 years. Women in Region 3 had the shortest life expectancy, 81.3 years.



Life expectancy shows how long people will live on average if death rates by age remain constant over time.

Life expectancy figures are derived from a mathematical model called a life table. Life expectancy is considered a good way to provide a snapshot of the mortality experience of a population, allowing comparisons across geographic areas and over time.

Male life expectancy in Minnesota in 2005 was 77.9 years. This means that a baby boy born in Minnesota in 2005 could expect to live on average 77.9 years if death rates remain constant over time and no one moves across state lines. Since death rates do not remain constant over time and people move often, the actual average years of life lived will almost certainly be higher or lower than the life table figure.

Minnesota Life Expectancy by Development Region and Age, 2005: Total Population

	State of Minnesota	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6E	Region 6W	Region 7E	Region 7W	Region 8	Region 9	Region 10	Region 11 total	Region 11-5 Suburban	Hennepin & Ramsey
Age interval	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)
0 to 1	80.2	79.6	78.7	<u>78.8</u>	80.3	79.2	80.5	80.4	<u>79.1</u>	80.7	80.3	80.9	81.0	80.4	80.5	80.2
1 to 5	79.7	79.1	<u>78.1</u>	<u>78.1</u>	79.8	78.8	79.7	79.7	<u>78.6</u>	80.1	79.7	80.2	80.3	79.8	79.9	79.6
5 to 10	75.8	75.1	<u>74.2</u>	<u>74.2</u>	76.0	74.8	75.7	75.8	<u>74.6</u>	76.2	75.8	76.3	76.4	75.9	76.0	75.7
10 to 15	70.8	70.2	<u>69.3</u>	<u>69.3</u>	71.0	69.9	70.8	70.8	<u>69.7</u>	71.2	70.9	71.3	71.5	70.9	71.0	70.7
15 to 20	65.8	65.3	<u>64.4</u>	<u>64.3</u>	66.1	<u>65.0</u>	65.9	66.0	<u>64.7</u>	66.3	66.0	66.3	66.5	65.9	66.0	65.8
20 to 25	61.0	60.4	<u>59.7</u>	<u>59.5</u>	61.2	60.2	61.1	61.4	<u>59.9</u>	61.4	61.3	61.4	61.7	61.1	61.2	60.9
25 to 30	56.2	55.6	55.1	<u>54.6</u>	56.5	55.5	56.4	57.0	<u>55.2</u>	56.6	56.6	56.6	56.8	56.3	56.3	56.1
30 to 35	51.4	50.8	50.5	<u>49.8</u>	51.7	<u>50.6</u>	51.5	52.1	<u>50.3</u>	51.8	51.8	51.7	52.0	51.4	51.5	51.3
35 to 40	46.6	46.1	45.7	<u>45.1</u>	46.9	<u>45.9</u>	46.7	47.3	<u>45.6</u>	46.9	47.1	46.9	47.2	46.6	46.6	46.5
40 to 45	41.8	41.3	41.0	<u>40.4</u>	42.1	<u>41.2</u>	42.0	42.5	<u>40.8</u>	42.1	42.4	42.1	42.4	41.8	41.8	41.7
45 to 50	37.1	36.7	36.4	<u>35.8</u>	37.5	36.6	37.3	37.8	<u>36.1</u>	37.4	37.7	37.4	37.6	37.1	37.0	37.1
50 to 55	32.5	32.2	32.0	<u>31.3</u>	32.9	<u>32.0</u>	32.7	33.3	<u>31.6</u>	32.8	33.0	32.9	33.1	32.5	32.3	32.5
55 to 60	28.1	27.6	27.7	<u>27.0</u>	28.6	27.7	28.1	28.7	<u>27.2</u>	28.2	28.5	28.4	28.6	28.0	27.8	28.1
60 to 65	23.8	23.5	23.6	<u>22.8</u>	24.2	23.5	23.9	24.4	<u>23.0</u>	23.9	24.2	24.1	24.3	23.7	23.4	23.8
65 to 70	19.7	19.5	19.7	<u>18.9</u>	20.2	19.5	19.8	20.6	<u>19.1</u>	19.8	20.1	19.9	20.2	19.6	19.2	19.8
70 to 75	15.9	15.8	16.0	<u>15.2</u>	16.5	15.9	15.9	16.7	<u>15.5</u>	16.0	16.3	16.1	16.4	<u>15.8</u>	15.3	16.0
75 to 80	12.5	12.4	12.7	<u>11.9</u>	12.9	12.6	12.5	13.0	<u>12.2</u>	12.4	12.8	12.8	12.8	<u>12.3</u>	11.8	12.5
80 to 85	9.4	9.4	9.8	<u>9.0</u>	9.9	9.6	9.4	9.9	<u>9.2</u>	<u>9.2</u>	9.9	9.7	9.7	<u>9.3</u>	8.8	9.5
85 to 90	6.9	7.1	7.2	<u>6.8</u>	7.3	6.9	6.8	7.1	<u>6.8</u>	<u>6.6</u>	7.2	7.0	7.1	<u>6.8</u>	6.4	7.0
90 to 94	4.8	5.0	4.9	<u>4.7</u>	4.9	4.9	<u>4.7</u>	4.9	<u>4.6</u>	<u>4.6</u>	<u>4.8</u>	4.8	4.8	4.8	4.6	4.9
95 to 100	3.3	3.4	3.3	3.4	3.4	3.1	3.2	3.0	3.3	3.1	3.1	3.3	3.1	3.4	3.4	3.4
100 and over	2.7	2.6	2.5	3.5	2.1	3.2	2.4	2.1	2.5	2.8	2.4	2.4	2.6	2.9	3.4	2.8

Calculated by Minnesota State Demographic Center, September 2008. Underlined, italicized values in red are significantly lower than the state average. Boldfaced values in blue are significantly higher than the state average. Source: Methods and Materials of Demography, 2nd edition, page 313. Infant mortality rate from 2005-2006 used for ages under 1.

Minnesota Life Expectancy by Development Region and Age, 2005: Male Population

Age interval	State of Minnesota	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6E	Region 6W	Region 7E	Region 7W	Region 8	Region 9	Region 10	Region 11 total	Region 11-5 Suburban	Hennepin & Ramsey
	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)
0 to 1	77.9	76.3	<u>75.5</u>	<u>76.2</u>	77.8	76.5	77.8	77.3	76.6	78.6	77.5	78.7	78.4	78.3	78.7	77.9
1 to 5	77.4	75.7	<u>75.0</u>	<u>75.6</u>	77.3	76.1	76.8	76.6	76.2	78.1	77.0	78.0	77.7	77.7	78.1	77.3
5 to 10	73.4	71.8	<u>71.1</u>	<u>71.7</u>	73.4	72.2	72.9	72.6	72.3	74.2	73.1	74.1	73.8	73.7	74.2	73.4
10 to 15	68.5	66.9	<u>66.3</u>	<u>66.7</u>	68.4	67.3	68.0	67.7	67.4	69.2	68.2	69.1	68.8	68.8	69.2	68.4
15 to 20	63.5	62.0	<u>61.4</u>	<u>61.8</u>	63.5	62.4	63.2	62.9	62.4	64.2	63.3	64.2	63.9	63.8	64.2	63.5
20 to 25	58.7	<u>57.2</u>	<u>56.8</u>	<u>57.0</u>	58.7	57.7	58.5	58.4	57.7	59.4	58.6	59.3	59.1	59.0	59.5	58.6
25 to 30	54.0	<u>52.5</u>	<u>52.3</u>	<u>52.3</u>	54.0	53.1	53.9	54.4	53.1	54.7	54.0	54.5	54.3	54.3	54.7	53.9
30 to 35	49.3	<u>47.7</u>	<u>47.9</u>	<u>47.5</u>	49.2	<u>48.2</u>	49.1	49.5	<u>48.3</u>	49.9	49.3	49.7	49.6	49.5	49.9	49.2
35 to 40	44.5	<u>43.1</u>	<u>43.2</u>	<u>42.9</u>	44.5	<u>43.6</u>	44.4	44.7	43.6	45.2	44.7	45.0	44.8	44.7	45.1	44.4
40 to 45	39.8	<u>38.5</u>	<u>38.5</u>	<u>38.3</u>	39.8	<u>38.9</u>	39.7	39.9	<u>38.9</u>	40.4	40.0	40.2	40.1	40.0	40.2	39.7
45 to 50	35.1	<u>34.0</u>	<u>34.0</u>	<u>33.8</u>	35.2	<u>34.4</u>	35.1	35.2	<u>34.2</u>	35.8	35.3	35.6	35.4	35.3	35.5	35.1
50 to 55	30.6	<u>29.7</u>	<u>29.7</u>	<u>29.4</u>	30.8	<u>29.9</u>	30.5	30.7	<u>29.8</u>	31.2	30.7	31.1	30.9	30.8	30.9	30.7
55 to 60	26.3	<u>25.3</u>	<u>25.4</u>	<u>25.2</u>	26.5	25.7	26.1	26.1	<u>25.6</u>	26.7	26.3	26.6	26.6	26.4	26.4	26.3
60 to 65	22.1	<u>21.1</u>	21.6	<u>21.1</u>	22.4	21.7	22.1	21.9	<u>21.4</u>	22.5	22.2	22.4	22.4	22.2	22.1	22.2
65 to 70	18.1	<u>17.3</u>	17.9	<u>17.4</u>	18.4	17.8	18.1	18.6	<u>17.6</u>	18.4	18.3	18.4	18.4	18.2	17.9	18.2
70 to 75	14.4	<u>13.9</u>	14.4	<u>13.8</u>	14.9	14.3	14.3	14.8	14.3	14.6	14.5	14.7	14.8	14.4	<u>14.0</u>	14.5
75 to 80	11.1	<u>10.6</u>	11.2	<u>10.6</u>	11.6	11.2	11.0	11.5	11.1	11.1	11.2	11.5	11.4	11.0	<u>10.7</u>	11.1
80 to 85	8.3	8.0	8.7	<u>7.8</u>	8.8	8.7	8.2	8.5	8.4	<u>8.1</u>	8.6	8.6	8.4	<u>8.2</u>	<u>7.9</u>	8.3
85 to 90	6.1	6.1	6.4	<u>5.9</u>	6.5	6.3	6.1	6.0	6.3	<u>5.8</u>	6.3	6.2	6.1	<u>5.9</u>	<u>5.6</u>	6.0
90 to 94	4.3	4.7	<u>4.2</u>	<u>4.1</u>	4.3	4.7	4.3	<u>4.1</u>	4.3	4.3	<u>4.0</u>	4.2	<u>4.1</u>	4.4	4.3	4.4
95 to 100	3.0	3.5	2.8	3.1	2.9	3.1	3.0	2.6	2.9	3.0	2.7	2.9	2.7	3.1	3.4	3.0
100 and over	2.6	2.6	3.3	4.6	1.6	2.2	1.7	1.8	1.3	2.7	2.5	2.3	3.0	2.8	2.3	3.1

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Minnesota Life Expectancy by Development Region and Age, 2005: Female Population

	State of Minnesota	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6E	Region 6W	Region 7E	Region 7W	Region 8	Region 9	Region 10	Region 11 total	Region 11-5 Suburban	Hennepin & Ramsey
Age interval	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)	e(x)
0 to 1	82.4	83.1	81.8	81.3	82.8	82.1	83.0	83.3	81.5	82.7	83.1	82.9	83.5	82.3	82.1	82.2
1 to 5	81.9	82.6	81.2	<u>80.6</u>	82.3	81.5	82.3	82.8	80.9	82.0	82.4	82.1	82.9	81.7	81.5	81.6
5 to 10	77.9	78.7	77.4	<u>76.7</u>	78.5	77.5	78.4	78.9	77.0	78.1	78.5	78.2	78.9	77.7	77.6	77.7
10 to 15	73.0	73.8	72.4	<u>71.8</u>	73.6	72.6	73.5	74.0	72.0	73.1	73.6	73.3	74.0	72.8	72.6	72.7
15 to 20	68.0	68.8	67.6	<u>66.8</u>	68.7	67.6	68.6	69.0	67.1	68.2	68.7	68.3	69.0	67.8	67.7	67.8
20 to 25	63.1	63.9	62.8	<u>61.9</u>	63.8	62.8	63.7	64.3	62.3	63.3	64.0	63.4	64.1	62.9	62.8	62.8
25 to 30	58.2	58.9	58.1	<u>56.9</u>	58.9	58.0	58.8	59.5	57.3	58.4	59.1	58.5	59.2	58.0	57.9	57.9
30 to 35	53.3	54.0	53.2	<u>52.1</u>	54.0	53.1	53.9	54.6	52.4	53.5	54.3	53.6	54.3	53.1	53.0	53.1
35 to 40	48.5	49.1	48.4	<u>47.2</u>	49.2	48.2	48.9	49.8	47.6	48.6	49.4	48.7	49.4	48.3	48.1	48.2
40 to 45	43.6	44.2	43.6	<u>42.4</u>	44.3	43.5	44.2	45.1	<u>42.7</u>	43.7	44.6	43.8	44.5	43.4	43.2	43.4
45 to 50	38.9	39.4	38.9	<u>37.8</u>	39.7	38.9	39.5	40.3	<u>38.0</u>	39.0	39.9	39.1	39.7	38.7	38.4	38.7
50 to 55	34.2	34.7	34.4	<u>33.2</u>	34.9	34.2	34.7	35.6	<u>33.3</u>	34.2	35.2	34.4	35.0	<u>34.0</u>	33.6	34.0
55 to 60	29.6	30.0	30.0	<u>28.6</u>	30.5	29.7	30.0	31.2	<u>28.7</u>	29.6	30.4	29.9	30.4	<u>29.4</u>	29.0	29.5
60 to 65	25.2	25.8	25.6	<u>24.3</u>	25.9	25.4	25.6	26.7	<u>24.5</u>	25.2	26.0	25.5	25.9	<u>25.0</u>	24.5	25.1
65 to 70	21.0	21.5	21.5	<u>20.3</u>	21.9	21.2	21.4	22.2	<u>20.5</u>	21.0	21.7	21.2	21.7	<u>20.7</u>	20.2	20.9
70 to 75	17.0	17.5	17.5	<u>16.3</u>	17.8	17.3	17.3	18.2	<u>16.5</u>	17.1	17.7	17.3	17.7	<u>16.8</u>	16.2	17.0
75 to 80	13.4	13.9	14.0	<u>12.9</u>	13.9	13.7	13.8	14.2	<u>13.0</u>	13.3	14.0	13.6	13.9	<u>13.2</u>	12.6	13.4
80 to 85	10.2	10.5	10.6	<u>9.8</u>	10.6	10.3	10.2	10.8	<u>9.7</u>	<u>9.9</u>	10.8	10.4	10.5	<u>10.0</u>	9.4	10.2
85 to 90	7.4	7.7	7.6	<u>7.2</u>	7.7	7.3	<u>7.3</u>	7.8	<u>7.1</u>	<u>7.0</u>	7.7	7.5	7.6	<u>7.3</u>	6.7	7.5
90 to 94	5.0	5.2	5.3	5.0	5.2	5.1	<u>4.8</u>	5.3	<u>4.8</u>	<u>4.7</u>	5.1	5.1	5.1	5.0	4.7	5.1
95 to 100	3.4	3.4	3.5	3.4	3.5	3.1	3.3	3.1	3.4	3.2	3.2	3.4	3.3	3.4	3.4	3.4
100 and over	2.7	2.3	2.4	3.3	2.3	3.6	2.6	2.2	2.9	2.8	2.4	2.4	2.5	2.9	3.7	2.7

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In this report, the determination of which differences in life expectancy are statistically significant is based on comparing the regional averages to the state average. If the regions were compared instead to the highest or lowest regional values, more of the differences would be significant.

Regional differences in life expectancy have persisted over time. In 1980, male life expectancy was highest in Region 10 (Southeast) and lowest in Regions 2 (Headwaters) and 3 (Arrowhead). The same was true in 2005. The correlation between 1980 and 2005 regional life expectancies was .80 for males and .75 for females. The correlation between 2000 and 2005 values was .78 for females and .93 for males.

The causes of regional differences in life expectancy are not analyzed here. Such an analysis would require looking at cause-specific mortality rates by age, differences in health care, and other factors.

Life expectancy differences by age group are not always consistent and age-specific patterns are sometimes puzzling. For example, life expectancy in some older age groups in the Twin Cities suburbs is significantly lower than the state average, even though overall suburban life expectancies are close to or exceed the state average.

Regions in western Minnesota – 4 (West Central), 6W (Upper Minnesota Valley) and 8 (Southwest) – generally have significantly higher survival rates for people ages 45 and older, though at lower ages differences from the state average are not significant.

Over a 25-year period, life expectancy has increased in every age group and every region. Males have seen substantially greater gains than females. Between 1980 and 2005, statewide life expectancy at birth grew 5.4 years for males versus 2.5 years for females. Regional gains for males ranged from 4.1 years in Region 1 (Northwest) to 6.0 years in the 7-county Twin Cities area. For females, gains ranged from 1.1 years in Region 4 (West Central) to 3.1 years in Region 5 (North Central).

Male life expectancy by Minnesota Development Region, 1980,2000 and 2005

	1980	2000	2005	Change 1980-2005	Change 2000-2005
Minnesota	72.5	76.6	77.9	5.4	1.3
1- Northwest	72.2	75.6	76.3	4.1	0.7
2-Headwaters	70.6	74.2	75.5	4.9	1.3
3- Arrowhead	70.9	75.3	76.2	5.3	0.9
4- West Central	73.1	76.4	77.8	4.7	1.4
5- North Central	71.4	75.9	76.5	5.1	0.6
6E- Mid-Minnesota	72.5	76.0	77.8	5.3	1.8
6W- Upper Minnesota Valley	72.9	76.0	77.3	4.4	1.3
7E- East Central	71.0	75.5	76.6	5.6	1.1
7W- Central	73.2	76.8	78.6	5.4	1.8
8- Southwest	74.0	76.4	77.5	3.5	1.1
9- South Central	73.2	77.3	78.7	5.5	1.4
10- Southeast	73.3	77.4	78.4	5.1	1.0
11- Twin Cities Area	72.3	76.6	78.3	6.0	1.7

1980 data from Martha McMurry, "Minnesota Life Expectancy Increases More than Three Years During the 1970s," *Population Notes*, Minnesota State Planning Agency, Office of the State Demographer, November 1984.

Female life expectancy by Minnesota Development Region, 1980,2000 and 2005

	1980	2000	2005	Change 1980-2005	Change 2000-2005
Minnesota	79.9	81.5	82.4	2.5	0.9
1- Northwest	80.6	81.5	83.1	2.5	1.6
2-Headwaters	79.0	80.4	81.8	2.8	1.4
3- Arrowhead	79.6	80.4	81.3	1.7	0.9
4- West Central	81.2	81.3	82.3	1.1	1.0
5- North Central	79.0	79.3	82.1	3.1	2.8
6E- Mid-Minnesota	81.7	81.7	83.0	1.3	1.3
6W- Upper Minnesota Valley	80.7	81.7	83.3	2.6	1.6
7E- East Central	79.6	79.9	81.5	1.9	1.6
7W- Central	80.8	82.6	82.7	1.9	0.1
8- Southwest	81.1	82.9	83.1	2.0	0.2
9- South Central	81.0	82.1	82.9	1.9	0.8
10- Southeast	81.0	82.4	83.5	2.5	1.1
11- Twin Cities Area	80.0	81.3	82.3	2.3	1.0

1980 data from Martha McMurry, "Minnesota Life Expectancy Increases More than Three Years During the 1970s,"

Population Notes, Minnesota State Planning Agency, Office of the State Demographer, November, 1984

Between 2000 and 2005, Minnesota life expectancy increased 1.3 years for men and 0.9 years for women.

Region 6E (Mid-Minnesota) and 7W (Central) had the greatest gains for men, while Region 5 (North Central) posted the largest increase for women.

Methodology

Life expectancies for 2000 and 2005 were calculated using the Reed-Merrill method. For the year 2000, decennial Census single-year age data was used. The population figures for 2005 came from U.S. Census Bureau county age estimates. The 2005 population ages 85 plus was distributed to age groups 90 to 94, 95 to

99 and 100 and over using the statewide distributions in 2000, the last time single year of age data was collected.

Death data came from resident death files provided by the Minnesota Center for Health Statistics. For 2005, a 3-year average of deaths by age was used. For 2000, an 18-month average was used.

Infant mortality rates were calculated using data from the Minnesota Center for Health Statistics on births and infant deaths.

Sources

Jacob S. Siegel and David A. Swanson, editors, *The Methods and Materials of Demography*, Second Edition, Elsevier Academic Press, 2004, Chapter 13.

Minnesota Center for Health Statistics, annual mortality data files.

Population by age in 2000 and 2005 from U.S. Census Bureau, available from American FactFinder

<http://factfinder.census.gov/home/saff/main.html>

1980 life expectancy by region from Martha McMurry, "Minnesota Life Expectancy Increases More than Three Years During the 1970s," *Population Notes*, Minnesota State Planning Agency, Office of the State Demographer, November, 1984.

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