

# Oregon Tobacco Facts

December 2007

Tobacco Prevention and Education Program  
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All data in this document are age-adjusted, except where the analysis focuses on specific age categories. Age-adjustment is used to control for differences in estimates that are due PURELY to populations having different age distributions. Previous publications of Oregon Tobacco Facts reported unadjusted data and should not be compared to the data presented in this report.

## Introduction

“Oregon Tobacco Facts” is designed as a reference for the most recent Oregon data on tobacco.

In November 1996, Oregon voters passed Ballot Measure 44, which increased the tax on a pack of cigarettes \$0.30. The ballot measure dedicated 10 percent of the new revenue to the Department of Human Services “...for funding of prevention and education programs designed to reduce cigarette and tobacco use.”

During the 2007 Oregon Legislative Session, these funds, which had been cut by over 50 percent during the 2003 Legislative Session, were restored to the Tobacco Prevention and Education Program. In addition, the Oregon Legislature passed Senate Bill 571 to expand the Oregon Indoor Clean Air Act to prohibit smoking in almost all indoor spaces beginning January 2009.

Below is a summary of the changes that have occurred in Oregon since 1996, the last full year before the Ballot Measure 44 tax increase and implementation of the Tobacco Prevention and Education Program.

### **Changes in Oregon tobacco consumption 1996 to 2006:**

- Per capita cigarette consumption decreased 41 percent.
- 2.6 billion fewer cigarettes were sold in 2006 than in 1996.

### **Changes in Oregon tobacco use from 1996 to 2006:**

- Twenty-two percent fewer adults smoked in 2006 than in 1996. Had this decrease not occurred, today Oregon would have 143,000 additional adult smokers.
- Smoking has declined 59 percent among Oregon’s 8<sup>th</sup> graders and 46 percent among Oregon’s 11<sup>th</sup> graders.
- Smokeless tobacco use has declined 56 percent among Oregon's 8th graders and 61 percent among Oregon's 11th graders.

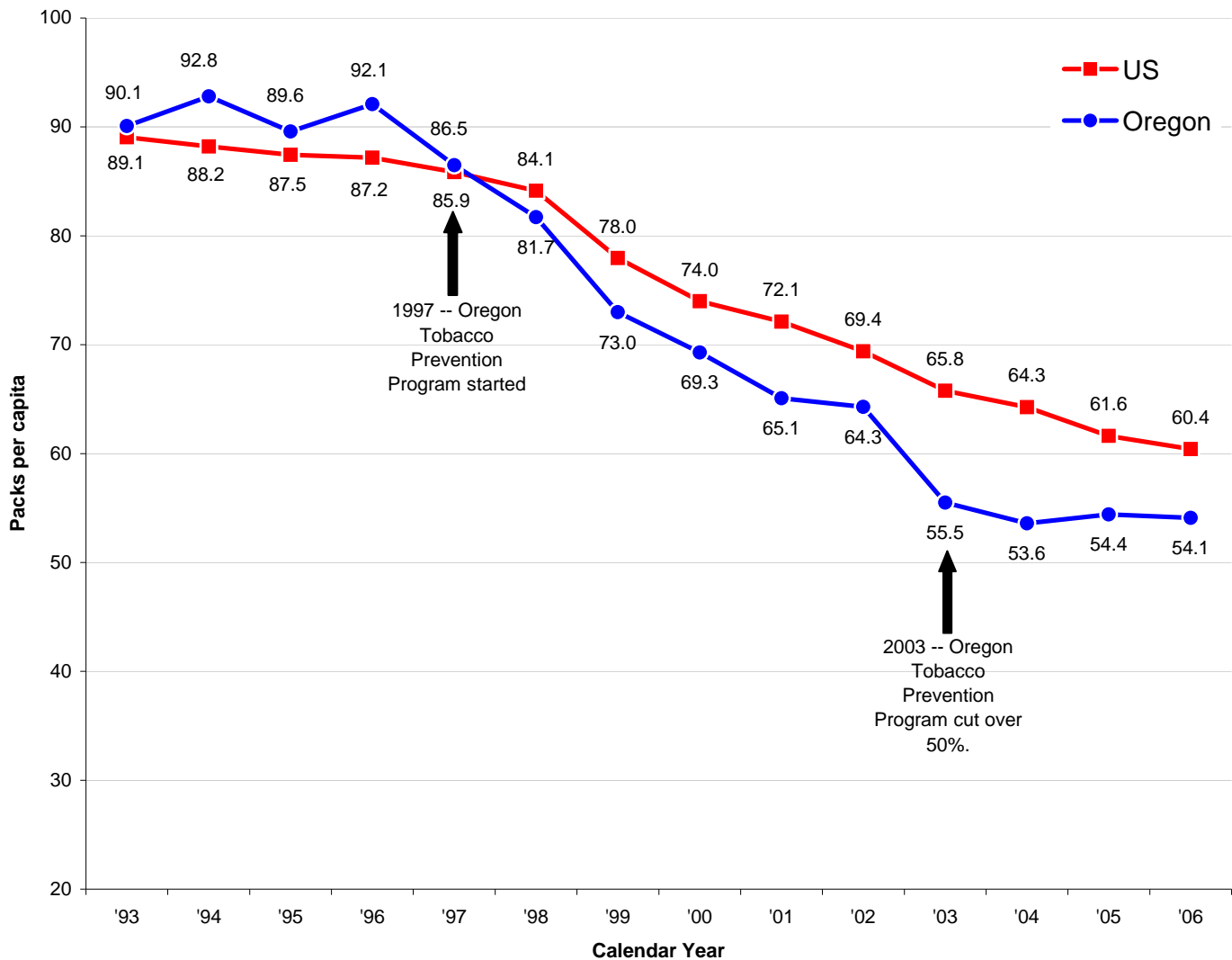
### **Changes in Oregon tobacco use during pregnancy from 1996 to 2005:**

- Since 1996, the percentage of infants born to mothers who smoked while pregnant has decreased 30 percent.
- Due to this decrease in the percentage of mothers who smoked during pregnancy, 17,500 fewer infants were exposed to the effects of prenatal smoking.

# I. Cigarette Consumption

Oregon has had a 41 percent decrease in per capita cigarette consumption from 1996 to 2006. This translates to 2.6 billion fewer cigarettes sold annually in Oregon. During the same period, the nation's cigarette consumption decreased 31 percent.

## Annual Per Capita Cigarette Consumption Oregon vs. US, 1993 to 2006



Sources:

Oregon – Oregon Department of Revenue cigarette tax receipts  
 National – Research Triangle Institute (1993-1998); Orzechowski and Walker (1999-2006)

## II. Tobacco-Related Deaths and Economic Costs

- According to Oregon physician reports through death certificates, tobacco contributed to 6,921 deaths in 2005 (22 percent of all deaths). In addition, there are an estimated 800 deaths caused by secondhand smoke in Oregon annually.

- **Tobacco use costs Oregonians more than \$2.0 billion in 2004:**

Direct medical expenditures	\$1,062,514,221
Indirect costs of lost productivity due to premature death	\$ 1,071,919,000
<b>Total annual economic costs in Oregon due to tobacco</b>	<b>\$2,134,433,221</b>

- Between 1996 and 2006, cigarette consumption in Oregon declined 41 percent. If the same decrease is applied to deaths and costs, for each year we maintain these reductions, 2,800 lives and over \$875 million will be saved in Oregon's future.

Sources:

Deaths – Oregon Death Certificate Statistical File

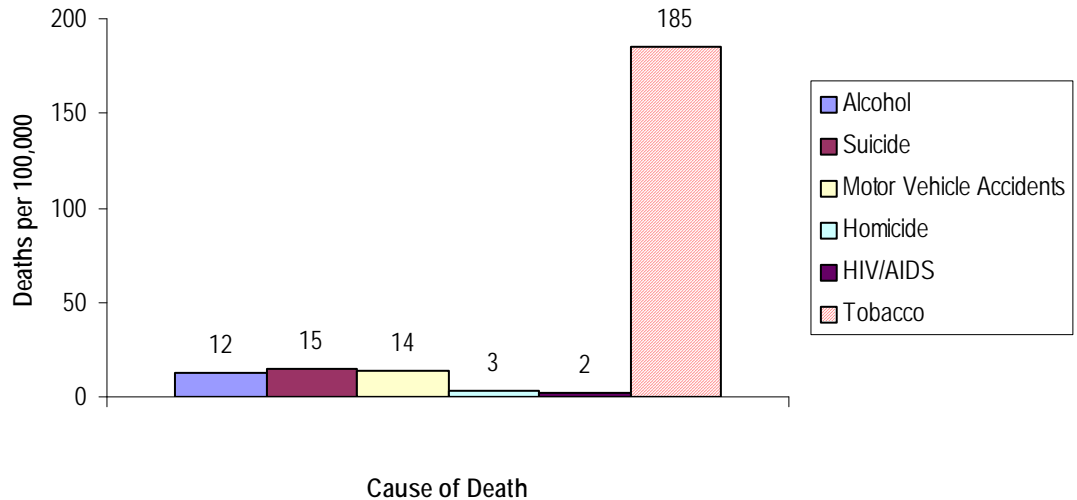
Costs – Smoking-Attributable Morbidity, Mortality and Economic Costs (SAMMEC), Centers for Disease Control and Prevention.

Secondhand smoke deaths – Estimated based on the national estimate of secondhand smoke deaths.

## II. Tobacco-Related Deaths and Economic Costs

Twenty-two percent of all Oregon deaths are attributable to tobacco use. Oregon residents are **four times** more likely to die from tobacco-related causes than from motor vehicle accidents, suicide, AIDS and homicide *combined*.

Select causes of death among Oregon residents, 2000-2004



Tobacco-related deaths are almost always due to one of three causes: cardiovascular diseases, cancers, and respiratory disease.

### Underlying Cause of Tobacco-related Deaths, 2000 - 2004

Cause of Death	Total	Percent
Cardiovascular diseases	2,095	31%
Cancers	1,962	29%
Respiratory diseases	1,478	22%
Other	1,228	18%
<b>Total tobacco deaths</b>	<b>6,763</b>	<b>100%</b>

## II. Tobacco-Related Deaths and Economic Costs

Age-adjusted death rates from tobacco-related causes can be used to compare regional and county effects of tobacco to the state of Oregon. These rates are presented per 100,000 population and use five years of data to ensure sufficient sample size and increase the power of the statistic.

### Tobacco Age-Adjusted Death Rates for Oregon Residents, 2000-2004

Region	Age-adjusted Death Rate	Sign Dif	<u>95% Confidence Interval</u>	
			Lower Bound	Upper Bound
Central Columbia	207.8	+s	190.70	224.97
North Central	256.1	+s	236.11	276.10
Northeastern	190.8		180.35	201.25
Southeastern	180.5		164.46	196.60
<b>Oregon Total</b>	<b>184.8</b>		<b>182.84</b>	<b>186.79</b>

\* Rates based on numerators <20 are not statistically reliable. Rates are presented per 100,000 population, Sign Dif denotes county's or region's age-adjusted rate is significantly higher (+s) or lower (-s) that the state rate. Combined geographic areas are: Central Columbia (Hood River, Wasco & Sherman), Southeastern (Lake, Harney & Malheur), Northeastern (Umatilla, Union, Baker & Wallowa), and North Central (Gilliam, Morrow, Wheeler, Crook & Grant).

As you can see in the above chart, 184 people per 100,000 people in Oregon die from tobacco-related causes. Both the Central Columbia and North Central regions of Oregon have significantly higher tobacco-related death rates than the state as a whole. County-specific tobacco-related death rates can be found on page 6. The regions above do not represent the whole state, but rather aggregate areas of the state where counties may have insufficient data due to smaller populations.

### Note on Age-Adjusting

Age-adjustment is used to control for differences in estimates that are due PURELY to populations having different age distributions. Rates are presented with confidence intervals to demonstrate the power of a point estimate and make comparisons to the state estimates. To better understand the role of confidence intervals and denoting of significant difference, see page 9.

## II. Tobacco-Related Deaths and Economic Costs

### Tobacco Age-Adjusted Death Rates for Oregon Residents, 2000-2004

County of Residence	Age-adjusted Death Rate	Sign Dif	95% Confidence Interval	
			Lower Bound	Upper Bound
Baker	172.2		149.55	198.79
Benton	139.7	-s	127.40	152.85
Clackamas	162.7	-s	156.56	168.92
Clatsop	197.7		179.49	217.45
Columbia	217.7	+s	198.51	238.38
Coos	243.6	+s	229.43	258.74
Crook	269.5	+s	240.67	301.28
Curry	151.3	-s	134.72	171.02
Deschutes	165.6	-s	155.91	175.84
Douglas	224.0	+s	213.00	235.49
Gilliam	163.7		103.00	265.01
Grant	253.2	+s	212.09	303.43
Harney	264.8	+s	219.56	318.74
Hood River	147.7	-s	125.29	173.03
Jackson	173.8		166.31	181.64
Jefferson	223.6	+s	194.21	256.40
Josephine	219.9	+s	208.06	232.53
Klamath	235.5	+s	220.27	251.55
Lake	196.1		159.72	240.68
Lane	177.4		171.30	183.76
Lincoln	231.7	+s	215.31	249.29
Linn	188.5		177.75	199.84
Malheur	152.5	-s	134.51	172.31
Marion	191.5		184.36	198.80
Morrow	254.8	+s	211.55	304.75
Multnomah	198.2	+s	193.22	203.33
Polk	144.2	-s	132.15	157.14
Sherman	232.8		156.43	360.57
Tillamook	198.6		178.47	221.04
Umatilla	205.9	+s	191.26	221.48
Union	164.6		144.10	187.66
Wallowa	196.5		161.16	242.28
Wasco	246.9	+s	222.71	273.53
Washington	140.7	-s	135.16	146.37
Wheeler	227.8		154.33	362.73
Yamhill	198.7		185.39	212.67
<b>Oregon State Total</b>	<b>184.8</b>		<b>182.84</b>	<b>186.80</b>

\* Rates based on numerators <20 are not statistically reliable. Rates are presented per 100,000 population, Sign Dif denotes county's age-adjusted rate is significantly higher (+s) or lower (-s) that the state rate.

## II. Tobacco-Related Deaths and Economic Costs

### Tobacco-related Economic Costs by County\*, 2005

	Direct costs due to medical expenditures (millions)	Indirect costs due to lost productivity (millions)	Total Economic Costs (millions)
Baker	\$6.9	\$7.0	\$13.8
Benton	\$14.8	\$14.9	\$29.7
Clackamas	\$85.7	\$86.4	\$172.1
Clatsop	\$13.1	\$13.2	\$26.3
Columbia	\$14.7	\$14.9	\$29.6
Coos	\$35.4	\$35.7	\$71.1
Crook	\$10.0	\$10.1	\$20.1
Curry	\$9.9	\$9.9	\$19.8
Deschutes	\$34.7	\$35.0	\$69.7
Douglas	\$49.3	\$49.7	\$99.0
Gilliam	\$0.7	\$0.7	\$1.4
Grant	\$4.0	\$4.0	\$8.0
Harney	\$3.5	\$3.6	\$7.1
Hood River	\$5.0	\$5.1	\$10.1
Jackson	\$63.3	\$63.9	\$127.2
Jefferson	\$6.6	\$6.7	\$13.3
Josephine	\$40.1	\$41.4	\$82.4
Klamath	\$28.2	\$28.5	\$56.7
Lake	\$3.2	\$3.3	\$6.5
Lane	\$100.3	\$101.2	\$201.5
Lincoln	\$24.0	\$24.2	\$48.2
Linn	\$36.6	\$36.9	\$73.5
Malheur	\$8.7	\$8.8	\$17.5
Marion	\$87.5	\$88.3	\$175.8
Morrow	\$3.8	\$3.8	\$7.6
Multnomah	\$190.0	\$191.7	\$381.7
Polk	\$17.7	\$17.9	\$35.5
Tillamook	\$12.2	\$12.3	\$24.5
Umatilla	\$22.6	\$22.8	\$45.4
Union	\$7.8	\$7.9	\$15.7
Wallowa	\$3.1	\$3.2	\$6.3
Wasco-Sherman	\$12.8	\$12.9	\$25.7
Washington	\$78.0	\$78.7	\$156.7
Wheeler	\$0.9	\$0.9	\$1.8
Yamhill	\$26.3	\$26.5	\$52.8
<b>Oregon</b>	<b>\$1062.5</b>	<b>\$1071.9</b>	<b>\$2134.4</b>

Sources:

Deaths – Oregon Death Certificate Statistical File

Costs – Smoking-Attributable Morbidity, Mortality and Economic Costs (SAMMEC), Centers for Disease Control and Prevention,

\*Estimates are rounded.

# III. Secondhand Smoke Exposure

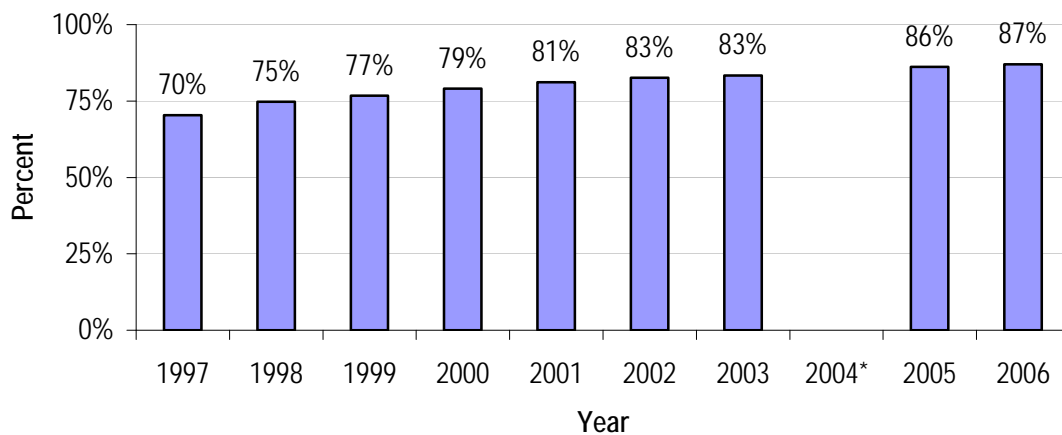
## In the Workplace

Currently, over 95 percent of employees are covered by the Oregon Clean Indoor Air Act, which prohibits smoking in most workplaces. In January 2009, almost all indoor workplaces will be smokefree. Exemptions will include cigar bars and smoke shops that meet certain criteria, and up to 25 percent of sleeping rooms in hotels or motels at the owners' discretion.

## At Home

- Ninety percent of Oregon adults say that no one smoked in their home in the last 30 days.
- Eighty-seven percent say that no one is allowed to smoke anywhere in their home.
- Sixty-two percent of smokers say that no one is allowed to smoke anywhere in their home.

Percentage of Adults Who Do Not Allow Smoking in Their Home



## Attitudes About Secondhand Smoke

- Ninety-four percent of Oregon adults say that secondhand smoke is harmful to one's health.
- Eighty-seven percent of Oregon adults agree that people should be protected from secondhand smoke.

Sources:

Protections for employees – Oregon Department of Human Services and Oregon Employment Department Rules, public opinions – 2006 Oregon Behavioral Risk Factor Surveillance System  
Graph – Oregon Behavioral Risk Factor Surveillance System

\* The question was asked differently in 2004 and is not comparable to the rest of the data points on the graph.

## IV. Adult Cigarette Use

Over half a million (524,000) Oregon adults smoke cigarettes. Adult smoking has decreased 22 percent since 1996. Had this decrease not occurred, today Oregon would have 143,000 additional adult smokers.

### Percentage of Adults Who Smoke by Year, 1993-2006

Year	1993*	1994*	1995*	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Prevalence (%)	22.7	22.3	23.0	23.7	20.9	22.0	21.4	21.0	20.9	21.4	21.1	20.1	18.8	18.6
95% Confidence Interval	21.1-24.3	20.7-24.0	21.3-24.7	22.0-25.4	19.2-22.6	20.8-23.3	20.3-22.5	20.0-22.1	19.8-22.0	20.3-22.6	20.0-22.2	19.0-21.1	18.0-19.6	17.6-19.7

\* The questions used to measure smoking prevalence changed in 1996. As recommended by CDC, smoking prevalence for 1993 to 1995 have been increased by one percentage point to account for the difference.

### Note About Confidence Intervals

The prevalence data in this section come from a telephone survey of Oregon adults. When data are collected from a representative sample of people, rather than by speaking with each and every Oregonian, the resulting measures are *estimates*.

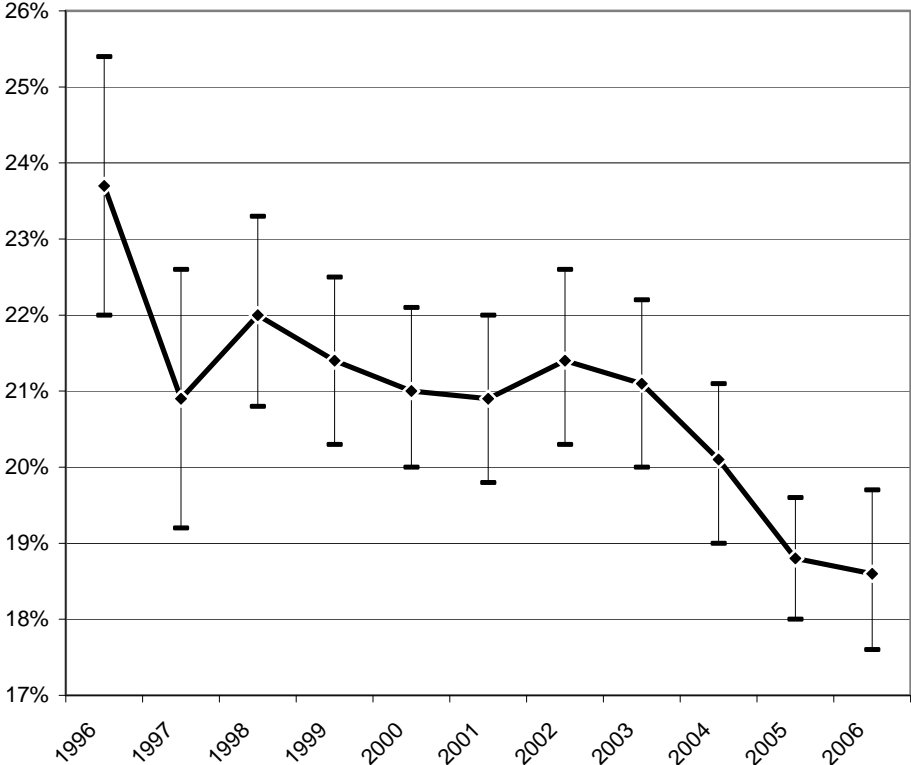
When looking at an estimate, it is helpful to know its level of precision. A confidence interval (CI) is one way of measuring the precision, or the margin of error, for an estimate. In Oregon Tobacco Facts, we chose to use 95 percent confidence intervals, which is a standard measure of precision used by scientists. In general, when a large number of people are counted, the resulting estimate is relatively precise (and has a narrower confidence interval). On the other hand, estimates based on few people have larger confidence intervals and increased variability.

When comparing two estimates (for example, 1996 and 2006 prevalence estimates of adults who smoke), confidence intervals can tell us whether there exists a “statistically significant” difference. In general, if there is no overlap between two confidence intervals, then we can say that a significant difference exists. For example, in the table above there is no overlap between the confidence intervals for 1996 and 2006 adult smoking prevalence estimates. In other words, the difference in prevalence between the two years is statistically significant. A graph depicting this follows on page 10.

## IV. Adult Cigarette Use

The following graph shows the prevalence estimates and confidence intervals depicted in the table on page 9. The estimates are represented by the points; the confidence intervals are represented by the vertical bars. Once again, note that there is no overlap between the confidence intervals for 1996 and 2006, which indicates that the difference in estimates between the years is significant.

**Percentage of Adults Who Smoke by Year  
with 95% Confidence Intervals, 1996-2006**



**Percentage of Adults Who Smoke by Gender, 2005 & 2006**

Sex	2005 Prevalence (95% Confidence Interval)	2006 Prevalence (95% Confidence Interval)
Male	20.6% (19.3 – 21.9)	20.1% (18.5 – 21.9)
Female	17.0% (16.0 – 17.9)	17.2% (15.9 – 18.4)
All adults	18.8% (18.0 – 19.6)	18.6% (17.6 – 19.7)

## IV. Adult Cigarette Use

### Smoking Prevalence by County, 2002 - 2005

County	Current Smoker (%)	Sign Dif**	95% Confidence Interval	
			Lower Bound (%)	Upper Bound (%)
<b>Oregon State Total</b>	<b>20.4</b>		<b>19.8</b>	<b>20.9</b>
Baker	23.0		16.6	31.0
Benton	13.0	-S	10.4	16.1
Clackamas <sup>1</sup>	17.9	-S	16.2	19.7
Clatsop <sup>1</sup>	25.5		20.7	31.0
Columbia	25.9	+S	21.4	31.0
Coos	27.0	+S	23.0	31.4
Crook	25.8		18.2	35.1
Curry	26.3		18.7	35.6
Deschutes	17.7		15.3	20.5
Douglas	26.6	+S	23.5	30.0
Gilliam/Wheeler*	18.8		6.6	43.3
Grant	13.9		7.3	24.7
Harney	28.6		18.8	41.0
Hood River	13.7		9.0	20.4
Jackson	24.5	+S	22.0	27.0
Jefferson	18.8		13.2	26.1
Josephine	28.1	+S	24.0	32.7
Klamath	23.7		20.1	27.7
Lake	22.4		14.9	32.3
Lane	20.8		19.0	22.7
Lincoln	30.0	+S	24.7	35.9
Linn	24.7	+S	21.6	28.0
Malheur	15.0		10.9	20.2
Marion	20.6		18.7	22.7
Morrow	20.5		13.6	29.7
Multnomah	21.2		20.0	22.5
Polk	17.9		14.6	21.7
Tillamook	24.2		18.3	31.4
Umatilla	26.2	+S	22.5	30.3
Union	19.9		14.7	26.4
Wallowa <sup>1</sup>	9.7	-S	4.5	19.7
Wasco/Sherman	21.8		15.7	29.5
Washington	14.7	-S	13.4	16.2
Yamhill	20.1		16.8	23.9
Tri-County	18.4	-S	17.6	19.3
Willamette Valley	20.5		19.4	21.5
Northern Coast	27.0	+S	23.8	30.4
Southern Oregon	26.1	+S	24.5	27.7
Eastern/Central Oregon	20.5		19.1	22.0

\*A four-year sample was used to increase sample size and provide county-specific estimates, however, the Gilliam/Wheeler estimate should be interpreted with caution due to small sample size.

\*\*Sign Dif denotes the significant differences if a county's prevalence is significantly higher (+s) or lower (-s) that the state prevalence.

<sup>1</sup>Because the confidence intervals of the Oregon state total were similar to Clackamas, Clatsop and Wallowa counties, further statistical testing was needed to determine difference.

Source:

Oregon Behavioral Risk Factor Surveillance System

## IV. Adult Cigarette Use

### Percentage of Adults Who Smoke by Age, 2005 & 2006

Age group	2005 Prevalence (95% Confidence Interval)	2006 Prevalence (95% Confidence Interval)
18-24 years old	26.6% (23.2 – 30.3)	21.6% (17.4 – 26.4)
25-34 years old	22.7% (20.6 – 25.0)	24.0% (21.1 – 27.2)
35-44 years old	20.4% (18.6 – 22.3)	20.6% (18.4 – 23.1)
45-54 years old	18.6% (17.1 – 20.2)	20.3% (18.3 – 22.4)
55-64 years old	16.2% (14.8 – 17.7)	15.2% (13.7 – 17.0)
65 years or older	8.1% (7.2 – 9.1)	8.1% (7.0 – 9.2)

### Percentage of Adults Who Smoke by Level of Education, 2005 & 2006

Highest Level of Education	2005 Prevalence (95% Confidence Interval)	2006 Prevalence (95% Confidence Interval)
Did not graduate from high school	31.2% (28.1 – 34.5)	30.0% (25.9 – 34.5)
High school graduate or GED	24.9% (23.3 – 26.6)	25.4% (23.3 – 27.6)
College 1-3 years	20.2% (18.7 – 21.8)	19.8% (18.0 – 21.7)
College graduate	7.9% (7.0 – 8.8)	8.4% (7.2 – 9.8)

### Percentage of Adults Who Smoke by Household Income, 2005 & 2006

Income	2005 Prevalence (95% Confidence Interval)	2006 Prevalence (95% Confidence Interval)
Less than \$15,000	33.0% (29.6 – 36.7)	36.1% (31.6 – 40.9)
\$15,000-24,999	28.0% (25.8 – 30.2)	29.3% (26.3 – 32.5)
\$25,000-49,999	20.3% (18.9 – 21.9)	19.2% (17.3 – 21.2)
\$50,000 or more	11.2% (10.1 – 12.4)	11.2% (9.7 – 12.8)

## IV. Adult Cigarette Use

### Percentage of Adults Who Smoke by Health Insurance Status, 2005 & 2006

Health Insurance Status	2005 Prevalence (95% Confidence Interval)	2006 Prevalence (95% Confidence Interval)
Oregon Health Plan/Medicaid	35.2% (31.7 – 38.7)	35.6% (30.9 – 40.7)
Private Insurance	16.4% (15.6 – 17.3)	15.9% (14.8 – 17.0)
Uninsured	29.3% (27.1 – 31.7)	32.5% (29.5 – 35.7)

### Percentage of Adults Who Smoke by Race/Ethnicity, 2004-2005

Race/Ethnicity	2004-2005 Prevalence (95% Confidence Interval)
African American	29.9% (22.9 – 37.9)
American Indian	38.3% (32.2 – 44.8)
Asian/Pacific Islander	9.8% (6.9 – 13.6)
Hispanic/Latino	14.0% (11.4 – 17.2)
White	20.2% (19.5 – 21.0)

Note: the racial categories of White, African American, Asian/Pacific Islander and American Indian do not include respondents of Hispanic ethnicity.

### Percentage of Adults Who Smoke by Sexual Orientation, 2005 & 2006

Sexual Orientation	2005 Prevalence (95% Confidence Interval)	2006 Prevalence (95% Confidence Interval)
Gay or lesbian	25.3% (18.4 – 33.7)	23.0% (15.0 – 33.6)
Bisexual	25.3% (18.7 – 33.3)	33.4% (23.8 – 44.5)
Not gay, lesbian, or bisexual	18.5% (17.6 – 19.3)	18.4% (17.4 – 19.5)

## IV. Adult Cigarette Use

### Percentage of Adults Who Smoke by Region, 2005 & 2006

Region	2005 Prevalence (95% Confidence Interval)	2006 Prevalence (95% Confidence Interval)
Tri-County	16.8% (15.6 – 18.1)	17.0% (15.4 – 18.7)
Willamette Valley	18.3% (16.9 – 19.9)	17.6% (15.8 – 19.5)
Northern Coast	30.3% (25.1 – 36.1)	20.5% (15.5- 26.5)
Southern Oregon	23.2% (20.8 – 25.8)	25.0% (21.7 – 28.6)
Eastern/Central Oregon	18.7% (16.7 – 20.9)	19.5% (16.8 – 22.5)

Regions

Tri-County:	Clackamas, Multnomah, Washington
Willamette Valley:	Benton, Columbia, Lane, Linn, Marion, Polk, Yamhill
Northern Coast:	Clatsop, Lincoln, Tillamook
Southern Oregon:	Coos, Curry, Douglas, Jackson, Josephine
Eastern/Central Oregon:	Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler

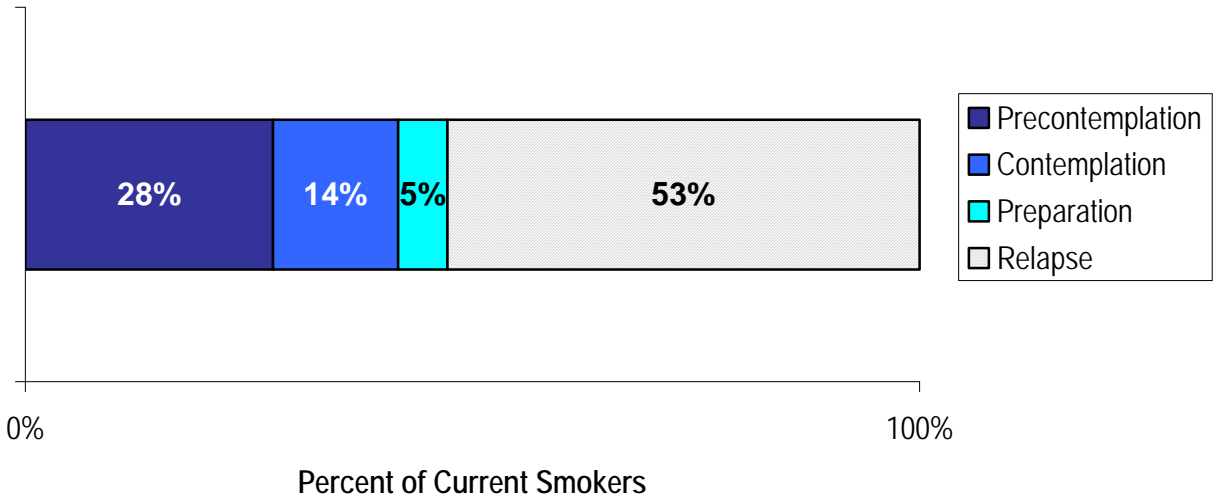
## V. Adult Quit Patterns

Quitting smoking is a complicated, nonlinear process for many people. A person often plans to quit, and then may quit for some period of time, before relapsing and starting the process again. The average person makes two to three serious quit attempts before achieving lasting success.<sup>1</sup>

In his book, Changing for good: the revolutionary program that explains the six stages of change, James Prochaska highlights the stages of quitting using the Transtheoretical Model.<sup>2</sup> According to this model, smokers who do not want to quit are in the pre-contemplation phase. Those planning to quit in the next six months are contemplating, while those planning to quit in the next 30 days are in the preparation stage of change. Each stage of change is influenced by social and environmental factors that help an individual quit.

In Oregon, 73 percent of current adult smokers want to quit smoking. The diagram below depicts smokers who have relapsed separate from those who have never made a quit attempt to better depict the quitting process.

Stages of change among current smokers in Oregon, 2002-2005



<sup>1</sup> *You Can Quit Smoking: Consumer Guide*. U.S. Department of Health and Human Services, Public Health Service. June 2000.

<sup>2</sup> Prochaska, James O. *Changing for good: the revolutionary program that explains the six stages of change and teaches you how to free yourself from bad habits*. New York: W. Morrow, 1994.

## V. Adult Quit Patterns

### Quitting Smoking – 2006

- Seventy-three percent of current smokers say that they want to quit.
- Forty-eight percent have stopped smoking for one day or longer in the past year in an attempt to quit.
- Forty-three percent of smokers are planning to quit within the next 30 days.
- Fifty-seven percent of smokers were advised to quit smoking during their last healthcare visit.
- Nineteen percent of smokers say that their health insurance will help cover the cost of smoking cessation programs, 31 percent say it does not cover smoking cessation programs, and 50 percent say they don't know.

## VI. Adult Use of Smokeless Tobacco

In 2006, 93,000 Oregon adults used smokeless tobacco.

### Percentage of Adults Who Use Smokeless Tobacco by Age and Gender, 2005 & 2006

Age Group	2005 Prevalence (95% Confidence Interval)			2006 Prevalence (95% Confidence Interval)		
	Male	Female	Total	Male	Female	Total
18-24 years old	8.3%	0.0%	4.2%	9.8%	0.3%	5.2%
25-34 years old	8.2%	0.1%	4.3%	9.7%	0.3%	5.2%
35-44 years old	10.3%	0.3%	5.4%	8.9%	0.2%	4.7%
45-54 years old	4.5%	0.1%	2.2%	4.3%	0.1%	2.2%
55-64 years old	2.3%	0.0%	1.1%	3.1%	0.0%	1.5%
65 years or older	2.1%	0.0%	0.9%	2.3%	0.1%	1.1%
All adults (95% Confidence Interval)	6.1% (5.4 – 7.0)	0.1% (0.1 – 0.2)	3.1% (2.7 – 3.6)	6.5% (5.5 – 7.6)	0.2% (0.1 – 0.4)	3.3% (2.8 – 3.9)

### Percentage of Adult Males Who Use Smokeless Tobacco by Race/Ethnicity, 2004-2005

Race/Ethnicity	2004-2005 Prevalence (95% Confidence Interval)
African American	4.8% (1.3 – 15.9)
American Indian	8.3% (4.4 – 15.1)
Asian/Pacific Islander	3.8% (1.4 – 10.0)
Hispanic/Latino	2.6% (1.4 – 4.8)
White	6.9% (6.2 – 7.7)

Note: the racial categories of White, African American, Asian/Pacific Islander and American Indian do not include respondents of Hispanic ethnicity.

## VI. Adult Use of Smokeless Tobacco

### Percentage of Adult Males Who Use Smokeless Tobacco by Region, 2005 & 2006

Region	2005 Prevalence (95% Confidence Interval)	2006 Prevalence (95% Confidence Interval)
Tri-County	3.4% (2.6 – 4.4)	4.1% (3.0 – 5.7)
Willamette Valley	5.5% (4.3 – 7.1)	5.3% (3.8 – 7.3)
Northern Coast	9.5% (5.4 – 16.2)	7.6% (3.4 – 16.3)
Southern Oregon	6.9% (4.8 – 10.0)	11.4% (7.7 – 16.4)
Eastern/Central Oregon	13.1% (10.5 – 16.2)	11.8% (8.8 – 15.6)
All Adult Males	6.1% (5.4 – 7.0)	6.5% (5.5 – 7.6)

Regions

Tri-County: Clackamas, Multnomah, Washington  
 Willamette Valley: Benton, Columbia, Lane, Linn, Marion, Polk, Yamhill  
 Northern Coast: Clatsop, Lincoln, Tillamook  
 Southern Oregon: Coos, Curry, Douglas, Jackson, Josephine  
 Eastern/Central Oregon: Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler

### Percentage of Adult Males Who Use Smokeless Tobacco by Year, 1994-2006

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Prevalence (%)	8.0	6.8	9.3	7.0	7.0	7.1	6.4	6.0	5.3	5.9	6.8	6.1	6.5
95% Confidence Interval	6.4-9.8	5.4-8.5	7.7-11.2	5.7-8.6	5.9-8.2	6.1-8.1	5.4-7.5	4.8-7.4	4.4-6.2	5.0-7.0	5.8-8.0	5.4-7.0	5.5-7.6

## VI. Adult Cigar Smoking

Nearly 141,000 Oregon adults smoked cigars in the past 30 days.

### Percentage of Adults Who Smoked Cigars in the Past 30 Days by Age and Gender, 2005 & 2006

Age Group	2005 Prevalence (95% Confidence Interval)			2006 Prevalence (95% Confidence Interval)		
	Male	Female	Total	Male	Female	Total
18-34 years old	11.6%	1.2%	6.6%	11.6%	4.6%*	8.2%
35-54 years old	8.3%	1.4%	4.8%	9.4%	1.1%	5.2%
55 years or older	3.4%	0.3%	1.7%	2.6%	0.3%	1.3%
All adults (95 % Confidence Intervals)	7.9% (6.1 – 10.1)	1.0% (0.5 – 2.1)	4.5% (3.5 – 5.7)	8.1% (6.1 – 10.6)	1.9% (1.0 – 3.6)	5.0% (3.9 – 6.5)

\* This point estimate is based on small numbers and may not be reliable.

### Percentage of Adult Males Who Smoked Cigars in the Past 30 Days by Region, 2005 & 2006

Region	2005 Prevalence (95% Confidence Interval)	2006 Prevalence** (95% Confidence Interval)
Tri-County	6.4% (4.2 – 9.5)	5.6% (3.5 – 8.8)
Willamette Valley	11.1% (7.4 – 16.1)	8.6% (5.1 – 14.1)
Northern Coast	3.0% (0.4 – 17.8)	9.1% (2.6 – 27.1)
Southern Oregon	4.9% (2.3 – 10.0)	13.2% (6.8 – 24.2)
Eastern/Central Oregon	8.1% (4.5 – 14.1)	9.3% (4.8 – 17.1)
All Adult Males	7.9% (6.1-10.0)	8.1% (6.1 – 10.6)

\*\* In 2006, cigar use was only asked on one survey, compared with four surveys in 2005.

Regions

Tri-County:	Clackamas, Multnomah, Washington
Willamette Valley:	Benton, Columbia, Lane, Linn, Marion, Polk, Yamhill
Northern Coast:	Clatsop, Lincoln, Tillamook
Southern Oregon:	Coos, Curry, Douglas, Jackson, Josephine
Eastern/Central Oregon:	Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler

## VIII. Youth Cigarette Use

Since 1996, cigarette smoking has declined 59 percent among Oregon’s 8<sup>th</sup> graders, and 46 percent among Oregon’s 11<sup>th</sup> graders. Without these reductions, Oregon would have roughly 38,000 additional young smokers today. Still, an estimated 37,000 Oregon youth smoked in 2005.

### Percentage of Youth Who Smoked Cigarettes in the Past 30 Days by Grade and Gender, 2005 & 2006

Grade	2005 Prevalence (95% Confidence Interval)			2006 Prevalence (95% Confidence Interval)		
	Male	Female	Total	Male	Female	Total
8 <sup>th</sup> Grade	8.4% (7.4 – 9.5)	11.3% (10.1 – 12.5)	9.8% (9.1 – 10.6)	7.5% (6.0 – 9.3)	9.9% (8.3 – 11.9)	8.7% (7.6 – 10.0)
11 <sup>th</sup> Grade	16.6% (15.2 – 18.1)	17.2% (15.9 – 18.6)	16.9% (15.9 – 17.9)	15.9% (13.7 – 18.3)	14.9% (12.8 – 17.3)	15.4% (13.9 – 17.1)

2006 data by sub-populations (region and race/ethnicity) are not presented due to small sample sizes and high variability between years.

### Percentage of Youth Who Smoked Cigarettes in the Past 30 Days by Grade and Region, 2005

Region	2005 Prevalence (95% Confidence Interval)	
	8 <sup>th</sup> Grade	11 <sup>th</sup> Grade
Tri-County	8.9% (7.7 – 10.2)	15.3% (13.6 – 17.2)
Willamette Valley	9.0% (7.8 – 10.4)	14.8% (13.2 – 16.5)
Northern Coast	13.5% (8.6 – 20.3)	23.6% (17.1 – 31.7)
Southern Oregon	9.5% (8.0 – 11.2)	20.2% (17.9 – 22.6)
Eastern/Central Oregon	14.2% (11.8 – 17.0)	22.0% (19.9 – 24.3)
Statewide	9.8% (9.1 – 10.6)	16.9% (15.9 – 17.9)

Regions: Tri-County (Clackamas, Multnomah, Washington); Willamette Valley (Benton, Columbia, Lane, Linn, Marion, Polk, Yamhill); Northern Coast (Clatsop, Lincoln, Tillamook); Southern Oregon (Coos, Curry, Douglas, Jackson, Josephine); Eastern/Central Oregon (Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler)

## VIII. Youth Cigarette Use

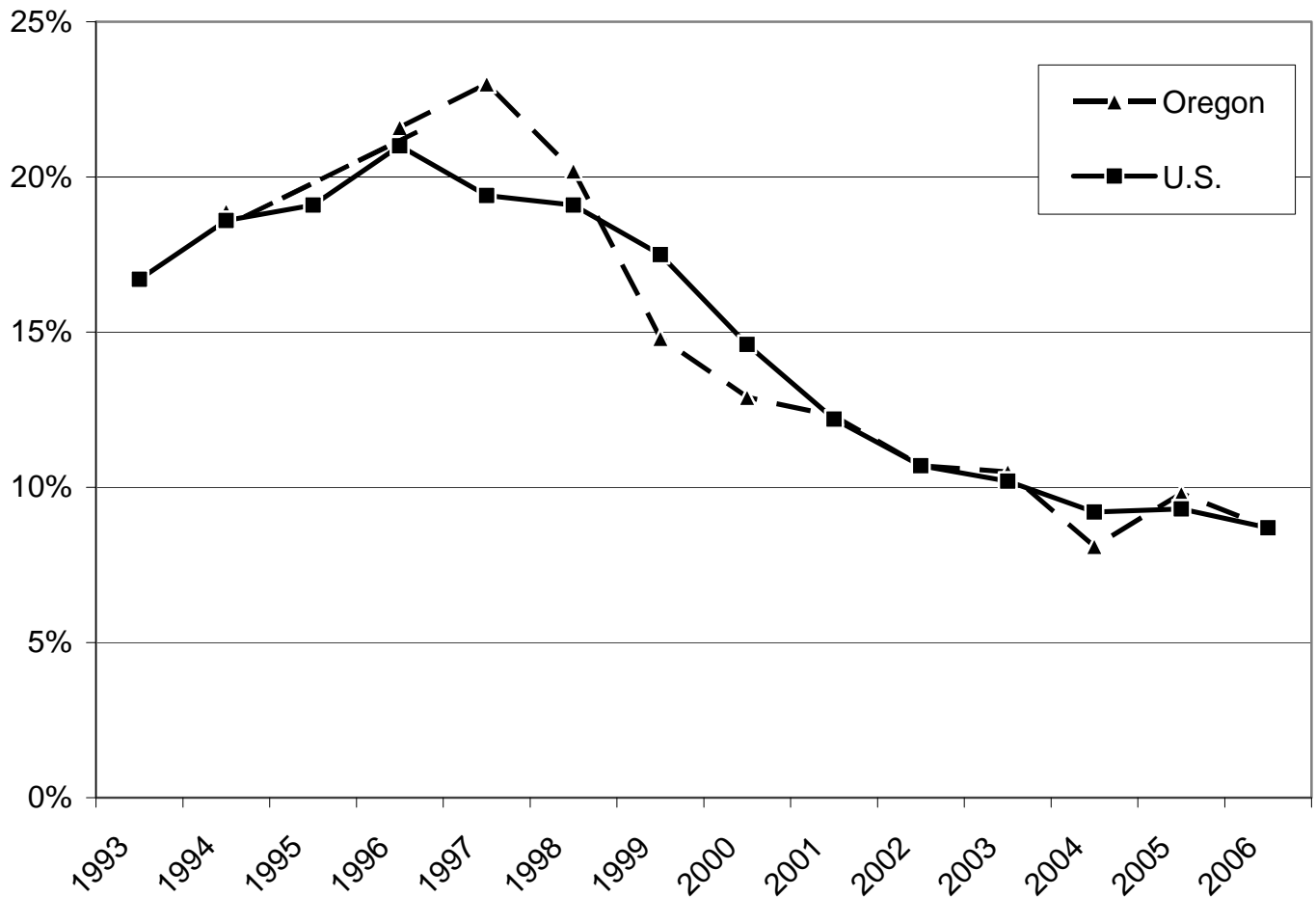
**Percentage of Youth Who Smoked Cigarettes in the Past 30 Days by Race/Ethnicity, 2005**

Race/Ethnicity	2005 Prevalence (95% Confidence Interval)	
	8 <sup>th</sup> Grade	11 <sup>th</sup> Grade
African American	14.8% (10.0 – 21.5)	19.6% (12.7 – 28.9)
American Indian	17.5% (13.9 – 21.8)	21.3% (16.8 – 26.7)
Asian	4.3% (2.3 – 7.5)	11.2% (7.9 – 15.6)
Latino(a)	9.9% (8.1 – 12.0)	11.9% (9.6 – 14.7)
Pacific Islander	10.6% (5.7 – 19.0)	19.6% (13.3 – 28.1)
White	9.6% (8.8 – 10.6)	18.1% (17.0 – 19.2)
Statewide	9.8% (9.1 – 10.6)	16.9% (15.9 – 17.9)

Respondents were asked "How do you describe yourself (select one or more responses)".  
Students were counted in each category they chose.

# VIII. Youth Cigarette Use

**8<sup>th</sup> Graders – Oregon vs. U.S.  
Percentage Who Smoke Cigarettes by Year, 1993-2006**



Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
U.S. (%)	21.0	19.4	19.1	17.5	14.6	12.2	10.7	10.2	9.2	9.3	8.7
Oregon (%)	21.6	23.0	20.2	14.8	12.9	12.3	10.7	10.5	8.1	9.8	8.7
95% Confidence Interval	N/A	N/A	N/A	N/A	N/A	11.1 – 13.6	9.7 – 11.9	9.5 – 11.7	7.5 – 8.8	9.1 – 10.6	7.6 – 10.0

Sources:

U.S. – The Monitoring the Future Study, University of Michigan

Oregon – Oregon Health Teens Survey, Public School Drug Use Survey, Youth Risk Behavior Survey

# VIII. Youth Cigarette Use

11<sup>th</sup> Graders – Oregon vs. U.S.  
Percentage Who Smoke Cigarettes by Year,  
1993-2006



Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
U.S. (%)	N/A	36.6	N/A	36.0	N/A	29.8	N/A	23.6	N/A	24.3	N/A
Oregon (%)	27.6	24.4	31.7	26.3	22.3	19.6	19.9	18.7	16.5	16.9	15.4
95% Confidence Interval	N/A	N/A	N/A	N/A	N/A	17.9 – 21.4	18.3 – 21.7	17.0 – 20.4	15.4 – 17.6	15.9 – 17.9	13.9 – 17.1

Sources:

U.S. – Youth Risk Behavior Survey -2005 data from CDC MMWR June 9, 2006 vol. 55 no. SS-5

Oregon – Oregon Health Teens Survey, Oregon Public School Drug Use Survey, and Oregon Youth Risk Behavior Survey

## IX. Youth Smokeless Tobacco Use

Since 1996, smokeless tobacco use has declined 56 percent among Oregon's 8th graders and 61 percent among Oregon's 11th graders. Absent these decreases, today Oregon would have about 20,000 additional youth who used chewing tobacco in 2006. As with adults, smokeless tobacco use is more common among young males than young females.

### Percentage of Youth Who Used Smokeless Tobacco in the Past 30 Days by Grade and Gender 2005 & 2006

Grade	2005 Prevalence (95% Confidence Interval)			2006 Prevalence (95% Confidence Interval)		
	Male	Female	Total	Male	Female	Total
8 <sup>th</sup> Grade	4.6% (3.9 – 5.4)	1.5% (1.1 – 1.9)	3.0% (2.6 – 3.5)	4.6% (3.4 – 6.2)	1.3% (0.7 – 2.5)	3.0% (2.2 – 3.9)
11 <sup>th</sup> Grade	13.1% (11.9 – 14.3)	2.0% (1.6 – 2.7)	7.5% (6.8 – 8.2)	10.2% (8.4 – 12.3)	1.0% (0.5 – 1.8)	5.6% (4.6 – 6.7)

2006 data by sub-populations (region and race/ethnicity) are not presented due to small sample sizes and high variability between years.

### Percentage of Male Youth Who Used Smokeless Tobacco in the Past 30 Days by Race/Ethnicity, 2005

Race/Ethnicity	2005 Prevalence (95% Confidence Interval)	
	8 <sup>th</sup> Grade	11 <sup>th</sup> Grade
African American	4.5% (2.0 – 10.0)	8.0% (4.1 – 15.1)
American Indian	8.3% (5.1 – 13.2)	16.1% (11.4 – 22.3)
Asian	0.9% (0.2 – 4.2)	6.6% (3.6 – 11.8)
Latino(a)	1.6% (0.8 – 3.3)	6.4% (4.3 – 9.4)
Pacific Islander	6.1% (1.9 – 17.4)	13.1% (6.9 – 23.4)
White	5.0% (4.2 – 6.0)	14.4% (13.1 – 15.9)
Statewide	4.6% (3.9 – 5.4)	13.1% (11.9 – 14.3)

Respondents were asked "How do you describe yourself (select one or more responses)".  
Students were counted in each category they chose.

## IX. Youth Smokeless Tobacco Use

### Percentage of Male Youth Who Used Smokeless Tobacco in the Past 30 Days by Grade and Region, 2005

Region	2005 Prevalence (95% Confidence Interval)	
	8 <sup>th</sup> Grade	11 <sup>th</sup> Grade
Tri-County	2.8% (1.9 – 4.1)	9.6% (7.8 – 11.9)
Willamette Valley	5.0% (3.7 – 6.8)	11.2% (9.4 – 13.4)
Northern Coast	1.5% (0.2 – 9.7)	20.4% (12.3 – 31.8)
Southern Oregon	6.6% (5.0 – 8.7)	16.4% (13.6 – 19.5)
Eastern/Central Oregon	7.3% (5.3 – 9.9)	23.6% (20.4 – 27.0)
Statewide	4.6% (3.9 – 5.4)	13.1% (11.9 – 14.3)

#### Regions

Tri-County:	Clackamas, Multnomah, Washington
Willamette Valley:	Benton, Columbia, Lane, Linn, Marion, Polk, Yamhill
Northern Coast:	Clatsop, Lincoln, Tillamook
Southern Oregon:	Coos, Curry, Douglas, Jackson, Josephine
Eastern/Central Oregon:	Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler

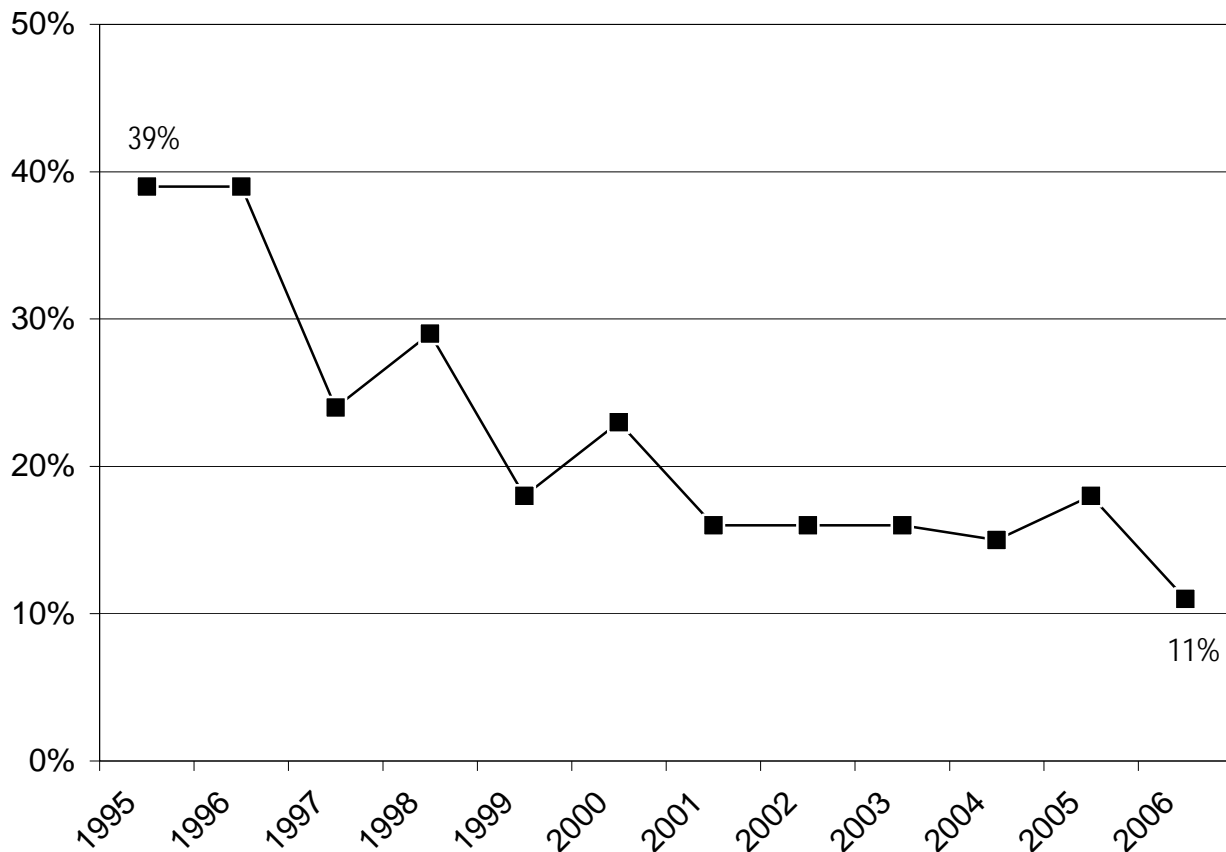
### Percentage of 8<sup>th</sup> and 11<sup>th</sup> Grade Males Who Used Smokeless Tobacco in the Past 30 Days, by Year, 1993-2006

Grade	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
8 <sup>th</sup> (%)	N/A	N/A	N/A	N/A	3.9	3.3	3.9	3.9	4.6	4.6
95% Confidence Interval	N/A	N/A	N/A	N/A	2.9 – 5.3	2.5 – 4.6	3.0 – 5.3	3.3 – 4.7	3.9 – 5.4	3.4 – 6.2
11 <sup>th</sup> (%)	22	N/A	16	16	8.7	11.4	10.4	10.6	13.1	10.2
95% Confidence Interval	N/A	N/A	N/A	N/A	7.1 – 10.6	9.4 – 13.8	8.7 – 12.4	9.4 – 12.0	11.9 – 14.3	8.4 – 12.3

## X. Youth Access to Tobacco

Since 1996, the percentage of retailers who sold cigarettes to minors has fallen 72 percent. Enforcement of Oregon’s minimum tobacco purchase age still requires more effort. In 2006, nearly one in nine attempts by a minor to purchase cigarettes was successful.

**Percentage of Retailers Who Sold to Minors  
by Fiscal Year, Oregon, 1995-2006**



Fiscal Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Sales to Minors (%)	39	39	24	29	18	23	16	16	16	15	18	11

## X. Youth Access to Tobacco

### Percentage of Retailers that Sold to Minors in Oregon by Region, Fiscal Year 2004-2005

Region	Prevalence
Multnomah	11%
Clackamas & Washington Counties	24%
Willamette Valley & Central/North Coast	21%
Southern Oregon	10%
Eastern/Central Oregon	25%

**Regions:**

Will. Valley & C./N. Coast: Southern Oregon: Eastern/Central:	Benton, Clatsop, Columbia, Lane, Lincoln, Linn, Marion, Polk, Tillamook, Yamhill Coos, Curry, Douglas, Jackson, Josephine, Klamath Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler
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### Percentage of Retailers that Sold to Minors in Oregon by Type of Store, Fiscal Year 2004-2005

Type of Store	Prevalence
Grocery Stores	9%
Markets/Small Grocery Stores	27%
Mini Marts	7%
Mini Marts with Gas Station	21%
Drug Stores	13%
Department Stores	24%
Tobacco Shops	40%
Other	36%

Source:

Oregon Sales to Minors Inspection Results (Synar), Department of Human Services  
 – confidence intervals are not available for this dataset.

## X. Youth Access to Tobacco

### Percentage of Youth Smokers Who Obtained Cigarettes from Various Sources Within the Past 30 Days by Grade, 2005

Source	8th Grade	11th Grade
Grocery stores	15%	22%
Vending machines	7%	2%
Convenience stores	20%	36%
Drug stores	8%	8%
Gas stations	17%	34%
Friends over 18	61%	77%
Friends under 18	69%	52%
Taking from home without permission	46%	15%
Obtaining from a parent	18%	16%
Obtaining from a brother or sister	27%	19%
From the Internet	3%	2%
From people selling on the street	12%	5%

\*Students were allowed to select all that apply

- Ninety-seven percent of Oregon adults say that it is important for communities to keep stores from selling tobacco to minors.
- Sixty-four percent of Oregon adults say the cigarette companies deliberately advertise and promote cigarettes to encourage youth under 18 to smoke.

Sources:

Youth – 2005 Oregon Healthy Teens Survey

Adults – 2006 Oregon Behavioral Risk Factor Surveillance System

## **XI. Tobacco Use During Pregnancy**

In 2005, 5,643 infants in Oregon were born to mothers who used tobacco during pregnancy. Each of these pregnancies costs an average of \$749 more than a birth to a non-smoking woman.\* Thus, Oregon's neonatal healthcare costs were increased by nearly \$4.2 million for births to women who smoked during pregnancy in 2005.

### **Percentage of Infants Born to Mothers Who Used Tobacco During Pregnancy by Mother's Age, 2005**

<b>Age Group</b>	<b>Prevalence</b>
Less than 18 years old	16%
18-19 years old	22%
20-24 years old	19%
25-29 years old	11%
30 years and older	7%
Overall	12%

### **Percentage of Infants Born to Mothers Who Used Tobacco During Pregnancy by Mother's Education, 2005**

<b>Mother's Highest level of Education Completed</b>	<b>Prevalence</b>
Did not graduate from high school	20%
High school graduate or GED	18%
Some college	10%
College graduate	2%

Source:

Oregon Birth Certificate Statistical File

\* Cost estimates are based on MCH SAMMEC using the probability of admission to neonatal intensive care at the time of birth

## XI. Tobacco Use During Pregnancy

### Percentage of Infants Born to Mothers Who Used Tobacco During Pregnancy by Mother's Race/Ethnicity, 2005

Mother's Race/Ethnicity	Prevalence
African American	19%
American Indian	24%
Asian/Pacific Islander	4%
Hispanic/Latina	3%
White	15%

Note: The racial categories of White, African American, Asian/Pacific Islander and American Indian do not include respondents of Hispanic ethnicity.

### Percentage of Infants Born to Mothers Who Used Tobacco During Pregnancy by Method of Payment for Health Care, 2005

Type of Insurance	Prevalence
Medicaid/Oregon Health Plan	21%
Private insurance	6%
Self-pay/Uninsured	12%

## XI. Tobacco Use During Pregnancy

One way to look at the prevalence of smoking during pregnancy is to calculate age-adjusted rates of tobacco use among women who gave birth to a live infant. These rates are presented per 1,000 live births and use five years of data to ensure sufficient sample size and increase the power of the statistic. These adjusted rates allow for better comparisons between regions or counties to the overall Oregon rate of tobacco use during pregnancy among women who gave birth to a live infant.

### Age-Adjusted Rate of Maternal Tobacco Use Among Live Births in Oregon, 2000-2004

Region	Age-adjusted Rate of Maternal Tobacco Use	Sign Dif	<u>95% Confidence Interval</u>	
			Lower Bound	Upper Bound
Central Columbia	87.0	-s	72.44	101.60
North Central	111.9		91.51	132.37
Northeastern	129.4		80.14	178.63
Southeastern	73.5	-s	59.95	87.00
Oregon Total	108.9		103.20	114.53

Combined geographic areas are: Central Columbia (Hood River, Wasco & Sherman), Southeastern (Lake, Harney & Malheur), Northeastern (Umatilla, Union, Baker & Wallowa), and North Central (Gilliam, Morrow, Wheeler, Crook & Grant).

Rates are per 1,000 live births.

Sign. Dif: denotes county's age-adjusted rate is significantly higher (+s) or lower (-s) than the state rate.

Adjusted to the US Standard million for 9 age groups (10-14, 15-17, 18-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49).

As you can see in the above chart, 109 infants per 1,000 live births in Oregon are born to women that smoked. Southeastern Oregon and the Central Columbia Valley have a significantly lower rate of tobacco use during pregnancy than the state as a whole, denoted by -s. North Central and Northeastern Oregon do not have significantly different rates of tobacco use during pregnancy due to large confidence intervals that encompass the overall Oregon rate. The regions above do not represent the whole state, but rather aggregate areas of the state where counties may have insufficient data due to smaller populations. County-specific rates of tobacco use during pregnancy can be found on page 32.

Source:

page 31

Oregon Birth Certificate Statistical File. Rates are per 1,000 live births. Sign. Dif: denotes county's age-adjusted rate is significantly higher (+s) or lower (-s) than the state rate. Counties with fewer than 20 births are not reported.

# XI. Tobacco Use During Pregnancy

## Age-Adjusted Rate of Maternal Tobacco Use Among Live Births in Oregon, 2000-2004

95% Confidence Interval

County of Residence	Age-adjusted Rate of Maternal Tobacco Use	Sign Dif	Lower Bound	Upper Bound
Baker	139.9	+s	115.19	164.65
Benton	69.6	-s	38.91	100.31
Clackamas	108.7		87.36	129.95
Clatsop	201.9		99.50	304.23
Columbia	135.9	+s	117.02	154.79
Coos	197.0	+s	136.61	257.45
Crook	114.8		86.87	142.68
Curry	208.0		34.26	381.66
Deschutes	144.9		61.79	228.08
Douglas	226.3	+s	167.25	285.40
Gilliam	*		*	*
Grant	84.9		30.26	139.51
Harney	127.4		89.15	165.73
Hood River	46.2	-s	31.75	60.57
Jackson	120.5		96.13	144.95
Jefferson	91.6		61.42	121.73
Josephine	200.1	+s	141.58	258.59
Klamath	165.0	+s	126.10	203.96
Lake	154.2		91.13	217.21
Lane	118.4		84.02	152.70
Lincoln	194.9		91.19	298.64
Linn	200.7	+s	123.49	277.91
Malheur	54.9	-s	40.18	69.58
Marion	91.6		77.97	105.19
Morrow	99.1		64.90	133.34
Multnomah	105.0		94.31	115.67
Polk	89.2	-s	76.57	101.85
Sherman	*		*	*
Tillamook	119.4		91.70	147.05
Umatilla	105.3		76.16	134.54
Union	132.9		59.16	206.73
Wallowa	190.1		25.64	354.51
Wasco	126.7		99.37	154.11
Washington	56.1	-s	44.00	68.11
Wheeler	*		*	*
Yamhill	100.0		66.82	133.17
<b>Oregon Total</b>	<b>108.9</b>		<b>103.20</b>	<b>114.53</b>

Source:

page 32

Oregon Birth Certificate Statistical File. Rates are per 1,000 live births. Sign. Dif: denotes county's age-adjusted rate is significantly higher (+s) or lower (-s) than the state rate. Counties with fewer than 20 births are not reported.

## XI. Tobacco Use During Pregnancy

### Percentage of Infants Born to Mothers Who Used Tobacco During Pregnancy by County of Residence, 2005

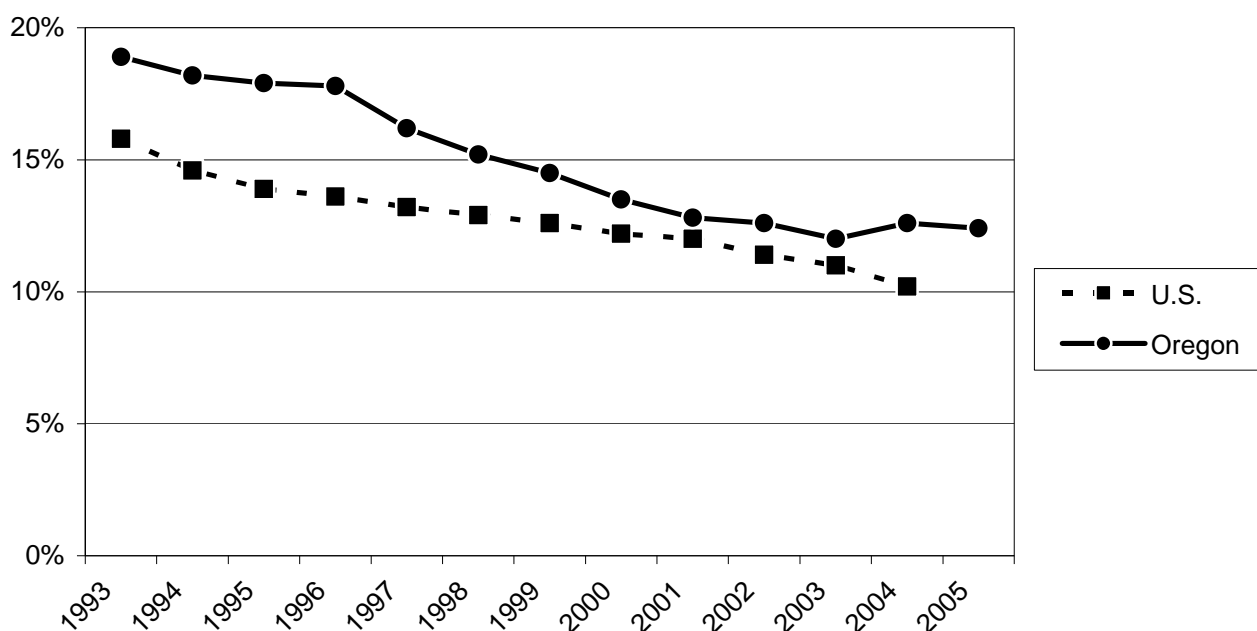
	<u>Number</u>	<u>Percent</u>	<u>All Births</u>
Baker	50	30.3%	165
Benton	64	8.2%	789
Clackamas	380	10.1%	3,780
Clatsop	87	21.5%	411
Columbia	115	22.5%	514
Coos	140	22.6%	623
Crook	41	18.6%	221
Curry	27	23.7%	143
Deschutes	199	11.2%	1,783
Douglas	259	23.9%	1,094
Gilliam	*	*	*
Grant	6	10.5%	57
Harney	17	27.0%	66
Hood River	13	4.6%	290
Jackson	299	13.7%	2,221
Jefferson	34	11.1%	317
Josephine	171	21.7%	794
Klamath	185	22.9%	810
Lake	14	20.3%	71
Lane	550	15.8%	3501
Lincoln	92	22.4%	418
Linn	250	18.4%	1,361
Malheur	24	5.5%	444
Marion	498	10.6%	4,713
Morrow	14	9.3%	156
Multnomah	1,111	11.6%	9,596
Polk	98	12.0%	828
Sherman	*	*	*
Tillamook	46	17.2%	273
Umatilla	147	14.4%	1,068
Union	63	19.3%	327
Wallowa	13	22.0%	61
Wasco	44	15.2%	290
Washington	451	6.0%	7,533
Wheeler	*	*	*
Yamhill	137	12.0%	1,150
<b>Oregon</b>	<b>5,643</b>	<b>12.4%</b>	<b>47,675</b>

\*Confidentiality policies do not allow reporting of analyses based on fewer than 20 births within the county.  
Table excludes cases where tobacco use has not been reported.

# XI. Tobacco Use During Pregnancy

Since 1996, the percentage of infants born to mothers in Oregon who smoked while pregnant has decreased 30 percent. Due to this decrease in the percentage of mothers who smoked during pregnancy, 17,500 fewer infants were exposed to the effects of prenatal smoking. Nationwide, the percentage of children born to a mother who smoked during pregnancy decreased 25% from 1996 to 2004.

**Percentage of Infants Born to Mothers Who Used Tobacco During Pregnancy, Oregon vs. U.S., 1993-2005**

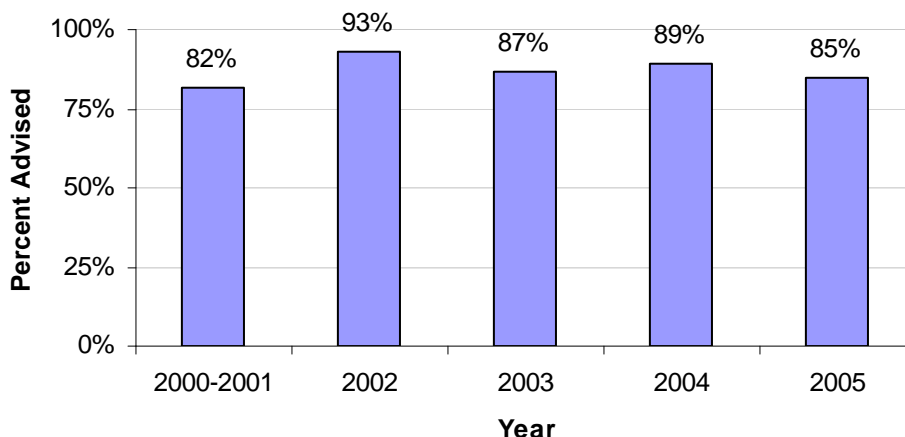


Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Nation	15.8%	14.6%	13.9%	13.6%	13.2%	12.9%	12.6%	12.2%	12.0%	11.4%	11.0%	10.2%	N/A
Oregon	18.9%	18.2%	17.9%	17.8%	16.2%	15.2%	14.5%	13.5%	12.8%	12.6%	12.0%	12.6%	12.4%

# XI. Tobacco Use During Pregnancy

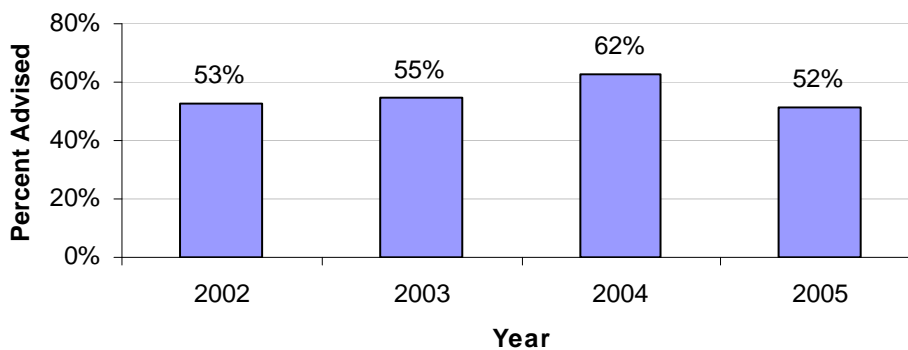
The harmful effects of tobacco use and exposure during pregnancy, to both mother and infant, have been well documented in the literature.\* Despite this, not all Oregon doctors or other healthcare workers advise pregnant women to quit smoking or educate pregnant women on the harmful effects of secondhand smoke exposure. In 2005, only 85 percent of pregnant women who smoked report being advised to quit by their doctor or other healthcare worker.

**Percentage advised to quit among women who smoked while pregnant, 2000-2005**



Secondhand smoke exposure to the baby, both in the womb and as a young child, has been associated with negative health effects: birth and delivery problems, low birth weight, abnormal blood pressure, colic, SIDS, respiratory disorders, and various health problems in adulthood.\* In 2005, only 51.5 percent of pregnant women who gave birth to a live infant report having been advised about the harm of secondhand smoke by their doctor or other health care worker. Women who smoked while pregnant were more likely to be advised about the harm of secondhand smoke (77 percent) compared with non-smokers (48 percent).

**Oregon pregnant women advised about the harm of secondhand smoke, 2002-2005**



Source:

2005 Pregnancy Risk Assessment Monitoring System

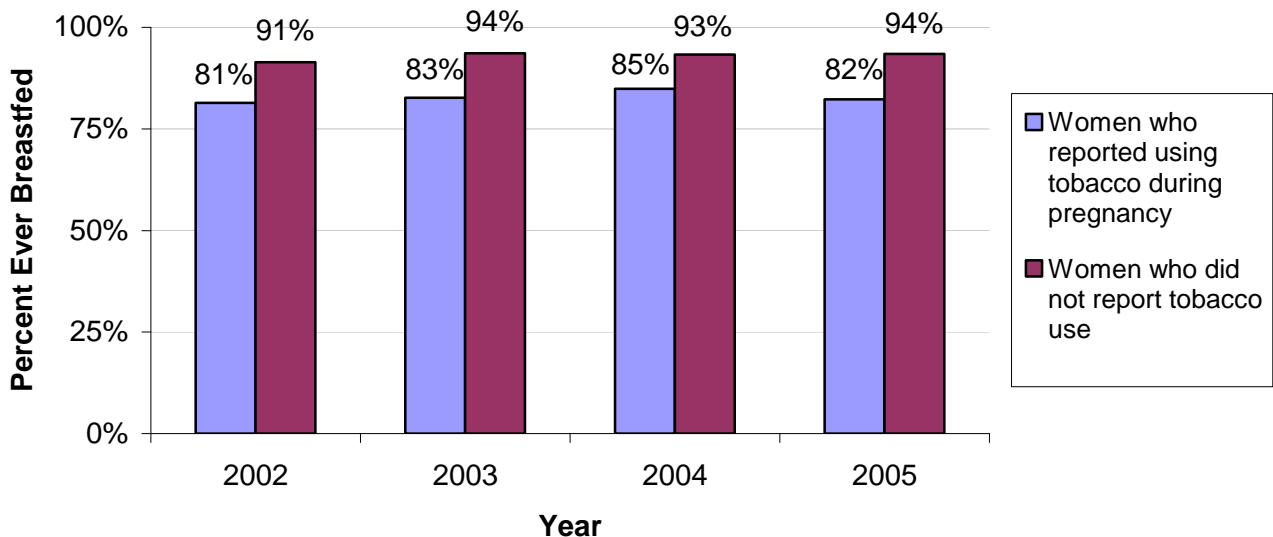
\* 2006 Surgeon General's Report: The health consequences of involuntary exposure to tobacco smoke

Campaign for Tobacco Free Kids, <http://tobaccofreekids.org/research/factsheets/pdf/0007.pdf>

## XI. Tobacco Use During Pregnancy

Babies born to Oregon women who smoked while pregnant are almost *twice* as likely to be born with low birth weight compared with babies born to women who did not smoke during their pregnancy. In addition, women who smoke during pregnancy are less likely to ever breastfeed their babies.

**Oregon women who report ever breastfeeding their infant**



Breastfeeding is healthy for both mother and child. Breast milk delivers antibodies preventing infection to the infant and reduces a mother's risk of developing ovarian and breast cancer. Smoking, which causes side effects, should not prevent a mother from breastfeeding, as breast milk is the most complete nutritional support for infants available. If quitting is not an option, limiting the number of cigarettes smoked per day and smoking after breastfeeding reduces nicotine exposure to the infant while still providing support to the infant's immune system.\*

Source:

2005 Pregnancy Risk Assessment Monitoring System

\* U.S. Department of Health and Human Services. *HHS Blueprint for Action on Breastfeeding*, U.S. Department of Health and Human Services, Office on Women's Health, 2000.

## **APPENDIX: Data Sources**

### **A. Surveys**

#### **Behavioral Risk Factor Surveillance System**

The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing random-digit dialed telephone survey of adults concerning health-related behaviors. The BRFSS was developed by the Centers for Disease Control and Prevention (CDC) and is conducted in all states in the U.S. Each year, between 5,000 and 15,000 adult Oregonians are interviewed. The BRFSS includes questions on health behavior risk factors such as seat belt use, diet, weight control, tobacco and alcohol use, physical activity, preventive health screenings, and use of preventive and other health care services. The data are weighted to represent all adults aged 18 years and older. A core set of questions is asked annually, and other topics are surveyed on a rotating basis.

Data presented by race/ethnicity are from a combined 2004 and 2005 file, which includes additional surveys among African Americans, American Indians, and Asian/Pacific Islanders. The additional surveys were done to ensure that there would be a minimum of 250 surveys for each racial/ethnic group. Data for each racial/ethnic group were weighted to represent the group's population by age and gender. Percentages presented have been age-adjusted, so they will not be affected by differences in the age distribution between the various groups.

All data presented are standardized to the year 2000 U.S. population by specific age groups. This allows for direct comparison between years of data and allows for the assessment of significant change while controlling for the effects of age on certain health conditions in the population.

#### **Oregon Healthy Teens Survey**

Since 2000, the Youth Risk Behavior Survey and the Oregon Public School Drug Use Survey have been combined into a single annual survey, Oregon Healthy Teens (OHT). Surveys are administered annually to nearly one-half of Oregon's 8<sup>th</sup> and 11<sup>th</sup> graders. OHT collected information from about 30,000 Oregon adolescents in 2005.

Participating students came from 248 schools in 34 counties. Each year a random sampling process is used to select districts within counties and schools within districts for participation. Data are weighted to more accurately represent the Oregon school-aged population.

#### **Youth Risk Behavior Survey**

The Youth Risk Behavior Survey (YRBS) was developed by the CDC and was administered in a sample of Oregon schools every other year from 1991 to 2000. The sample size varied between 1,600 and 32,000, and the final data were weighted to

## **APPENDIX: Data Sources**

more accurately represent the Oregon high school population. The questionnaire assessed behavioral risks among Oregon high school students (grades 9 through 12) in the areas of vehicle safety, weapon carrying and violence, tobacco use, alcohol use, other drug use, sexual activity and pregnancy, HIV knowledge and attitudes, eating behaviors, nutrition, physical activity, and access to health care including use of school-based health centers. A sample of middle school students (grades 6 through 8) was added in 1997.

### **Oregon Public School Drug Use Survey**

This anonymous survey was administered every other year from 1986-2000 by the Addictions and Mental Health Division (AMHD) of the Oregon Department of Human Services through the Oregon public school system. It was patterned after ongoing national surveys of the National Institute on Drug Abuse and included eighth and eleventh graders since 1986; a sixth grade sample was added in 1994. Schools were randomly sampled using a cluster sample design and in 2000 included over 15,000 students. The questionnaire assessed community characteristics, tobacco use, drug use, alcohol use, drug/alcohol use in student's peer and family network, refusal skills, susceptibility to future use, and attitudes toward school and family.

### **B. Vital Statistics Data**

One method to present vital statistics data uses rates per specific populations to determine risk. In this report, rates of maternal tobacco use during pregnancy among women who gave birth to a live infant and overall tobacco-related death rate are age-adjusted. Age-adjustment is used to control for differences that are due purely to populations having different age distributions. For example, maternal data was adjusted to reflect the rate among women of reproductive age, adjusting for the fact that younger women are more likely to be pregnant than older women. Rates are adjusted to the year 2000 US Standard million for 9 age groups for birth rates representing women of reproductive age (12-14, 15-17, 18-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49) and 11 age groups for death rates (1, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+).

### **Birth Certificate Statistical File**

Data from the Birth Certificate Statistical File are coded from birth certificates collected by the State Registrar and represent all births occurring in Oregon and all births occurring out-of-state to Oregon residents. This database includes parental demographic information, conditions of the newborn, congenital anomalies, medical factors of pregnancy, method of delivery, complications of labor and delivery, smoking, drinking, or illicit drug use during pregnancy, antenatal and intrapartum procedures, and payor source. The birth data analyzed for this report consist of births

## **APPENDIX: Data Sources**

to Oregon residents and exclude missing and unknown values.

### **Death Certificate Statistical File**

The Death Certificate Statistical File includes all deaths occurring in Oregon and deaths occurring out-of-state to Oregon residents. Data are obtained from death certificates that are collected by the State Registrar. The data are used to examine trends in mortality and causes of death. Variables in this database include cause of death, date and place of death, decedent demographic information, whether the death was related to tobacco use, and county, place, and date of injury (if applicable). The mortality data analyzed for this report consist of deaths of Oregon residents.

### **C. Other**

#### **Oregon Department of Revenue Cigarette Tax Receipts**

Data on the number of cigarettes smoked by Oregonians are estimated based on tobacco tax revenue collected by the Oregon Department of Revenue. The Department of Revenue's Monthly Receipt Statements include data on tax collections derived from sales of cigarettes. The number of packs of cigarettes sold is calculated by dividing the cigarette tax receipts by the tax rate per pack. The number of packs per capita is calculated by dividing the total number of cigarettes packs sold by the population estimate for Oregon.

#### **Smoking-Attributable Morbidity, Mortality and Economic Costs (SAMMEC)**

SAMMEC is a computer software program developed by the CDC to calculate several measures of the impact of cigarette smoking for the entire U.S. and for each state. Using state-specific data on smoking prevalence, overall mortality rates, and population data, SAMMEC generates the number of deaths and death rates due to smoking, years of life lost due to premature death from cigarette smoking, and lost productivity (earnings) due to illness and premature death from smoking-related diseases.

Neonatal healthcare costs associated with a mother smoking during pregnancy are reported in the Maternal and Child Health (MCH) SAMMEC. Neonatal healthcare costs are assigned using private health insurance claims to assess the probability of admission to a neonatal care unit among infants whose mother's smoked during pregnancy. The most recent state-specific MCH SAMMEC were reported in a 2004 CDC Morbidity and Mortality Report using 1996 dollar amounts. The smoking-attributable expenditures (SAEs) were adjusted using the Not Seasonally Adjusted U.S. city average Medical Care CPI (All Urban Consumers) published by the U.S. Department of Labor Bureau of Labor Statistics, calculating the applicable inflation rate from the end of 1996 to the end of 2005.

## **APPENDIX: Data Sources**

### **Tobacco Sales to Minors Inspection Reports (Synar)**

In July 1992, Congress enacted the Alcohol, Drug Abuse and Mental Health Administration Act, which includes an amendment aimed at decreasing access to tobacco products among youth under 18. Named for its sponsor, Congressman Mike Synar, the regulation requires states to enact and enforce laws prohibiting any manufacturer, retailer, or distributor from selling or distributing tobacco products to individuals under 18. In addition, the regulation requires that each state annually conduct random, unannounced inspections of a sample of tobacco vendors to assess their compliance with state law.

Oregon has conducted these inspections annually since 1994. The sample size has ranged from 352 in 1995 to 860 in 2004. Retired state police accompanied by a teen “buyer” conduct the inspections. Purchase attempts are recorded in a database which includes the following variables: county, region, inspection data, type of business, type of access of tobacco product, type of purchase attempted, whether age and/or ID was requested, results, whether illegal vending machine present, whether signs are posted for minimum age requirements, and whether single cigarettes are available.

### **Oregon Pregnancy Risk Assessment Monitoring System (PRAMS)**

Oregon PRAMS, the Pregnancy Risk Assessment Monitoring System, is a surveillance project of the Oregon Office of Family Health. Oregon PRAMS has collected a stratified random sample of birth certificates annually since 1998. PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. Surveys are sent to women who gave birth to a live infant shortly after birth. The 2005 PRAMS dataset was collected for live births in 2005.