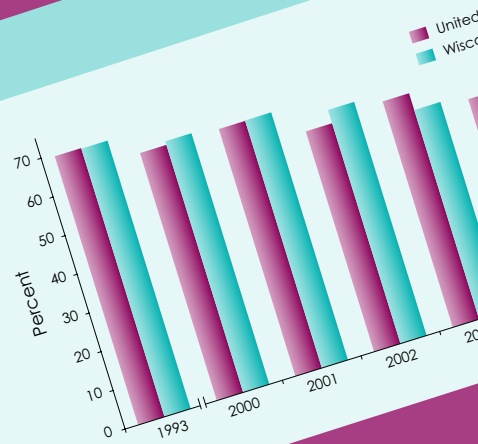
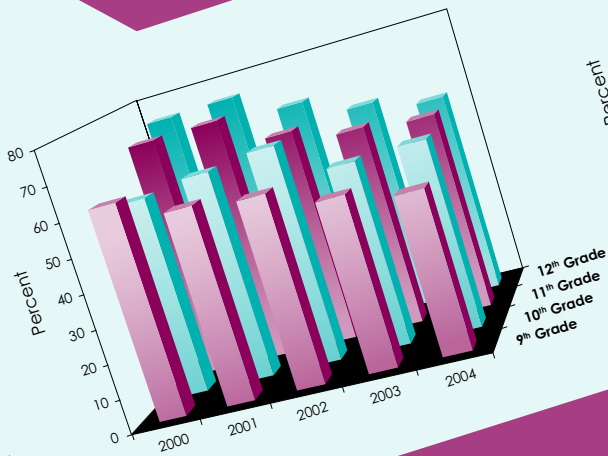


# YOUTH SMOKING IN WISCONSIN:

*An assessment of trends  
in youth smoking through 2004*



**TOBACCO SURVEILLANCE  
& EVALUATION PROGRAM**  
UNIVERSITY OF WISCONSIN  
COMPREHENSIVE CANCER CENTER



**WISCONSIN DEPARTMENT OF  
HEALTH AND FAMILY SERVICES**

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## Executive Summary

The purpose of this report is to assess trends in youth smoking in the state of Wisconsin and the United States over the past decade by gender and grade. Data presented in this report reveal the following major patterns in youth smoking:

### Ever Smoking

- The percent of Wisconsin middle school youth who have ever smoked a cigarette decreased from 39% in 2000 to 29% in 2004.
- The percent of Wisconsin high school youth who have ever smoked a cigarette decreased from 65% in 2000 to 52% in 2004.
- Rates of ever smoking were higher for each successive grade level in school; however, rates declined among all grades (6<sup>th</sup> through 12<sup>th</sup>) between 2000 and 2004.
- Rates of ever smoking were only slightly higher among middle school males (31%) compared to females (27%) in Wisconsin in 2004.
- Rates of ever smoking were similar for high school males (53%) and females (51%) in Wisconsin in 2004.
- Relative declines in the rate of ever smoking between 2000 and 2004 have been similar for Wisconsin and U.S. high school youth.

### Current Smoking

- The percent of Wisconsin middle school youth who reported current smoking decreased from 12% in 2000 to 8% in 2004.
- The percent of Wisconsin high school youth who reported current smoking decreased from 33% in 2000 to 21% in 2004.
- Rates of current smoking were higher for each successive grade level in school; however, rates declined among all grades (6<sup>th</sup> through 12<sup>th</sup>) between 2000 and 2004.
- Rates of current smoking were similar among middle school males (8%) and females (7%) in Wisconsin in 2004.
- Rates of current smoking were similar for high school males (20%) and females (22%) in Wisconsin in 2004.
- Declines in the rate of ever smoking and current smoking appear to be leveling off among middle school youth in Wisconsin during the past year.
- Relative declines in the rate of current smoking between 2000 and 2004 have been slightly greater for Wisconsin high school youth compared to the U.S.

Overall, the findings presented in this report suggest that progress has been made during the first five years of the 21<sup>st</sup> century in decreasing youth experimentation with cigarettes and current smoking. Moreover, rates of current smoking among high school youth have declined in Wisconsin at a slightly greater rate than observed in the U.S. during this same time period. However, the recent stabilization of decline noted among middle school students may be a signal that these encouraging trends may not continue, especially as tobacco control program initiatives have experienced reductions in funding since 2001. This, as well as future reports, are important tools by which to plan and assist public health agencies and advocates in assessing progress toward state and national goals of reduced youth tobacco use in Wisconsin and the United States.

## Introduction

The numerous deleterious health conditions and immense economic burden associated with cigarette smoking have been well documented. Moreover, the status of smoking as the leading *preventable* cause of death in the United States has yet to be surpassed. Accordingly, discouraging experimentation with cigarettes and encouraging cessation of smoking are among public health's top priorities.

A growing concern for the health of our youth was recognized during the 1990's as rates of cigarette smoking were increasing among youth. Among high school students in the United States, the percent who reported current cigarette use increased from 28% in 1991 to 36% in 1997<sup>1</sup>. Increasing rates of youth smoking during the mid to late 1990's were accompanied by increasing rates of smoking among young adults, 18-24 years of age, during the late 1990's to early 2000. Thus, the increasing trend in youth smoking was forewarning of smoking rates among young adults (see Technical notes for definitions of tobacco use).

In response, efforts to reduce youth smoking were stepped up at both the federal and state level. In 1994, both the U.S. Surgeon General and the Institute of Medicine published reports on youth smoking and recommended that programs target youth.<sup>2,3</sup> In 1999, the Centers for Disease Control and Prevention (CDC) published the "best practices" in tobacco control. The CDC recommended that states with comprehensive programs incorporate initiatives aimed at preventing youth from smoking. Specifically, the CDC recommended multiple approaches including price increases through excise taxes, school-based programs, counter-marketing programs, and the enforcement of youth access laws as components of a comprehensive tobacco control program.<sup>4</sup>

The timeline presented highlights key policies implemented and programs funded at the state level as part of the campaign to discourage tobacco use among youth. Wisconsin's intervention efforts have varied over the past fourteen years, beginning with implementation of the ASSIST project. In particular, efforts soared during 2000 and 2001, with the establishment of the Wisconsin Tobacco Control Board and the funding of a \$23 million program, including a statewide media campaign, local community coalitions, as well as various anti-smoking programs. However, beginning in 2002, funding has been reduced – to a current level of \$10 million per year – less than \$2 per capita in the state of Wisconsin. Accordingly, programming has since declined.

State and national public health agencies have set objectives by which to monitor progress made in reducing youth tobacco use. *Healthy People 2010*<sup>5</sup>, the nation's 10-year health plan, set an objective that no more than 16% of youth would use tobacco products by 2010. In Wisconsin, *Healthiest Wisconsin 2010*<sup>6</sup> identified tobacco use as one of the state's main health priorities. Using the 2000 prevalence as a starting point, the state's goal was to reduce tobacco use among youth 20% by 2005. This effectively means that 31% of middle school students would report ever smoking cigarettes, and 26% of high school students would report current cigarette use in 2005. For the long term, the Wisconsin Tobacco Prevention and Control Plan<sup>7</sup> established goals that youth tobacco use would decline 25% by 2010.

Timeline of Tobacco Prevention and Control Efforts in Wisconsin

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Wisconsin tobacco tax (tax per pack of cigarettes)*	\$0.30	\$0.30	\$0.38	\$0.38	\$0.38	\$0.38	\$0.44	\$0.44	\$0.59	\$0.59	\$0.59	\$0.59	\$0.77	\$0.77	\$0.77
Indicates a tax increase occurred during the calendar year.						\$0.44		\$0.59				\$0.77			
Wisconsin tobacco price increases (average price per pack of cigarettes).*	\$1.51	\$1.59	\$1.77	\$1.96	\$1.79	\$1.88	\$2.01	\$2.01	\$2.11	\$2.44	\$3.13	\$3.30	\$3.85	\$3.95	\$4.00
Wisconsin tobacco tax as a percent of price.†	19.9%	18.9%	21.5%	19.4%	21.3%	20.2%	21.9%	21.9%	28.0%	24.2%	18.9%	17.9%	20.0%	19.5%	19.3%
In 1991, it became illegal for people under the age of 18 to possess cigarettes.		●													→
The planning stage for the American Stop Smoking Intervention Study began in 1991. The five-year implementation phase began in 1993.		●	●	●	●	●	●	●	●	●	●	●	●	●	●
In 1996, states were required to compile a list of stores that sell tobacco products and have a plan for unannounced compliance checks.						●									→
In 1997, the Thomas T. Melvin Youth Tobacco Prevention and Education program was funded.								●							→
In 1998, Wisconsin settled a lawsuit against tobacco companies. As part of the settlement, specific marketing and lobbying restrictions were agreed upon.									●						
In 2000, the Wisconsin Tobacco Control Board was established. The Board was funded at \$23 million to develop a comprehensive statewide tobacco control program.											●				
In 2001, the Wisconsin Tobacco Control Board funded a statewide media campaign, community coalitions, a youth-led empowerment movement, a state quitline, as well as programs targeted to pregnant women and ethnic minority populations, and youth ages 18-24.												●			→
In 2002, the Board's funding was reduced to \$13.5M													●		→
In 2003, the Wisconsin Tobacco Control Board was consolidated within the Wisconsin Dept. of Health & Family Services. Tobacco prevention and control programs were funded at \$10M.														●	→
In 2004, tobacco prevention and control programs were funded at \$10M.															●

\* Source: The Tax Burden on Tobacco, Orzechowski and Walker, 2004.

† For years with tax increases, Wisconsin tobacco tax as a percent of price was calculated using the tax in place for the greatest number of months.

The purpose of this report is to examine trends in cigarette use among youth, and to determine how youth smoking rates have changed during the last decade. This report also compares changes in the rate of youth smoking in Wisconsin to those of the United States to assess whether trends in Wisconsin are similar to or different from trends in the U.S. generally. The report's primary data sources are the state and national Youth Tobacco Survey and Youth Risk Behavior Surveillance System (see Technical Notes for a description of these data sources).

Findings presented here are intended to provide a resource document for individuals and organizations responsible for state and local planning, as well as those providing health care for our youth. Further, this report may assist public health agencies in assessing progress toward the overall goal of youth tobacco use reduction.

## Trends in Youth Cigarette Smoking in Wisconsin and the United States

### Experimentation with Cigarettes

#### *Changes in the percent of youth experimenting with cigarettes - United States and Wisconsin*

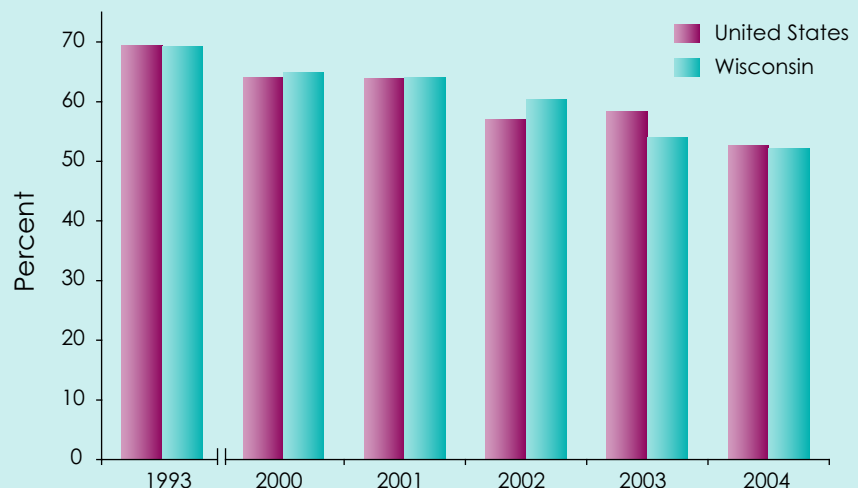
One of the most effective ways to reduce tobacco use in the general public is to avert youth from ever experimenting with tobacco products. Rates of experimentation, defined as rates of ever smoking cigarettes (ever tried cigarette smoking, even one or two puffs), have declined in both the United States and Wisconsin over the past several years (see Technical Notes for tobacco use definitions). This decline indicates that fewer youth are experimenting with cigarette smoking, and in the long-term, these reductions in experimentation during adolescence may translate into lower rates of adult smoking.

The percent of Wisconsin youth who have ever tried a cigarette decreased among both middle and high school students between 2000 and 2004. The percent of middle school students who reported ever having tried a cigarette declined from 39% in 2000 to 29% in 2004 in Wisconsin. The National Youth Tobacco Survey, conducted in 2000 and 2004, reports national rates of ever smoking among middle school students of 36% and 26%, respectively. (see Technical Notes for annotations on various surveys.)

**Figure 1** presents the percent of high school students who have ever smoked in Wisconsin and the United States for 1993, and 2000 to 2004, using data from the Youth Risk Behavior Surveillance System and Youth Tobacco Survey. The percent of Wisconsin high school students who reported ever having tried a cigarette declined from 65% in 2000 to 52% in 2004. Similarly, the percent of high school students throughout the United States who have ever smoked decreased from 64% to 53% during this same period.

In general, Wisconsin has had comparable levels of ever smoking, relative to the national average. Slight differences are observed in 2002, when Wisconsin high school students were more likely to report ever smoking, followed by an inverse in this relationship in 2003 when the national average was greater (**see Table 1**). The relative decline in ever smoking, observed between 2000 and 2004, is similar for the United States and Wisconsin (-17.7 % and -19.7%, respectively). In addition, the ratio of ever smoking in Wisconsin to that of the United States is about 1.00, with the exception of 2002 and 2003, when it is 1.06 and .93, respectively.

**Figure 1**



**Percentage of High School Students Who Have Ever Smoked - Wisconsin and United States, 1993-2004**

Sources: Youth Risk Behavior Surveillance System; Youth Tobacco Survey

**Table 1**

Year	United States			Wisconsin			WI:US Ratio of Ever Smoking
	Ever Smoked (%)	Percent Change		Ever Smoked (%)	Percent Change		
		Year to Year	2000 to 2004		Year to Year	2000 to 2004	
1993 <sup>1</sup>	69.5	-	-	69.3	-	-	
2000 <sup>1</sup>	64.0	- 7.9 <sup>±</sup>	-17.7	64.9	- 6.3 <sup>±</sup>	-19.6	1.01
2001 <sup>1</sup>	63.9	- 0.2		64.0	- 1.4		1.00
2002 <sup>1</sup>	57.0	- 10.8		60.4	- 5.6		1.06
2003 <sup>1</sup>	58.4	2.5		54.1	- 10.4		0.93
2004 <sup>1</sup>	52.7	- 9.8		52.2	- 3.5		0.99

**High School Students Who Ever Smoked Wisconsin and United States, 1993-2004**

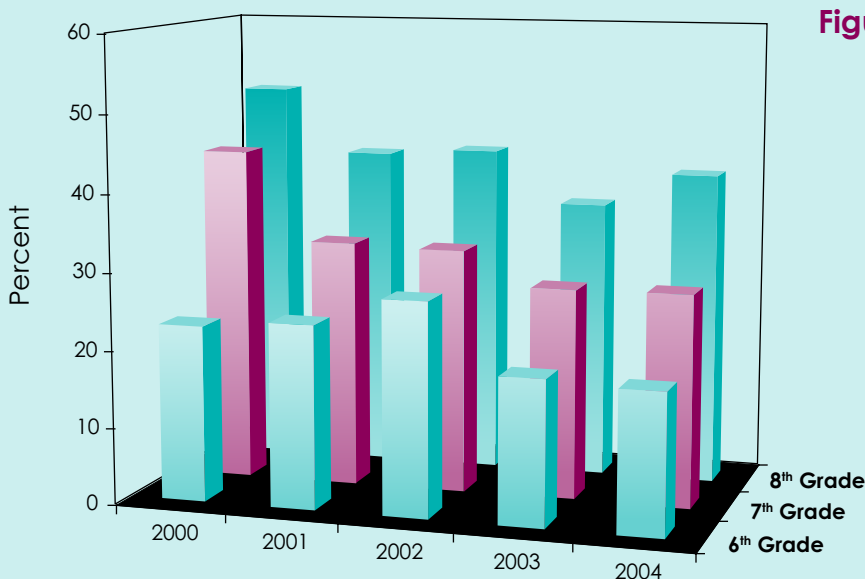
Sources: <sup>1</sup>Youth Risk Behavior Surveillance System; <sup>2</sup>Youth Tobacco Survey

Note: Data not available for 1994-1999; Surveys not conducted in '94, '96, or '98; Question not included in '95, '97, or '99 Wisconsin YRBSS

± Percent change calculated over 7-year span

*Experimentation with cigarettes among Wisconsin youth - by Grade*

Overall, the percent of Wisconsin middle school students who report ever having experimented with cigarettes has declined for all grades. However, the level of reduction has not been consistent across all groups (**Figure 2**). For example, the relative percent decline from 2000 to 2004 was greater among 7<sup>th</sup> graders (37%) than that observed for 6<sup>th</sup> graders (20%) and 8<sup>th</sup> graders (20%). In addition, trends indicate a slight increase in experimentation among the youngest group between 2000 and 2002, while the older grades were experiencing decreases. Most recently, the noted declines have leveled off among 6<sup>th</sup> and 7<sup>th</sup> graders, and experimentation has increased slightly among 8<sup>th</sup> graders (**see Table 2 for data**).

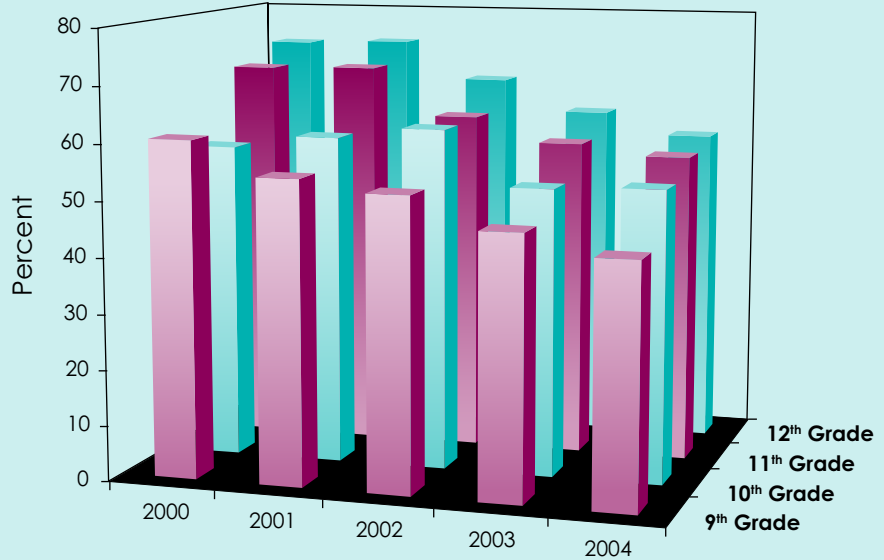


**Figure 2**

**Percentage of Wisconsin Middle School Students Who Have Ever Smoked, by Grade, 2000-2004**

Sources: Youth Risk Behavior Surveillance System; Youth Tobacco Survey

Figure 3



**Percentage of Wisconsin High School Students Who Have Ever Smoked, by Grade, 2000-2004**

Sources: Youth Risk Behavior Surveillance System; Youth tobacco Survey

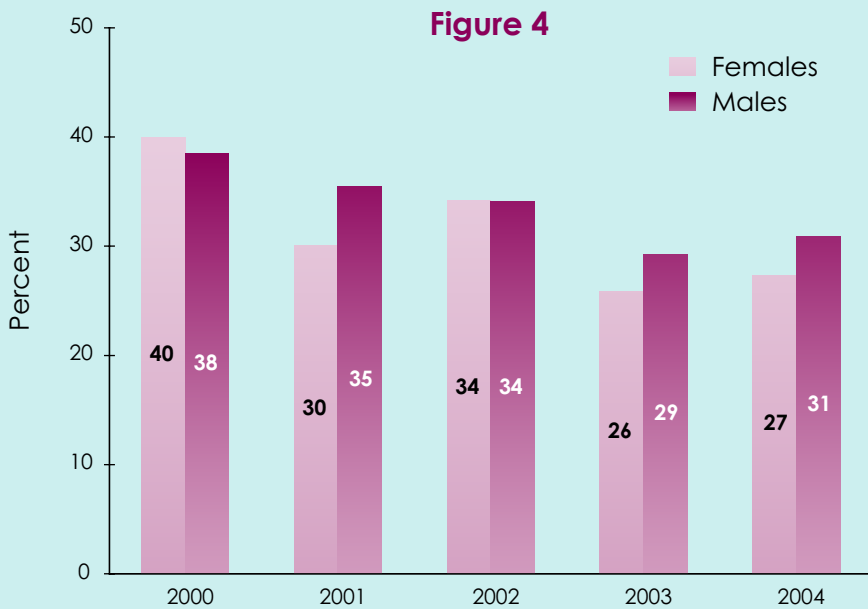
Among Wisconsin high school students, the percent who report ever having experimented with cigarettes has also declined. Figure 3 reveals a generalized downward trend among all four grades. However, the trend noted among 10th graders appears to level off between 2003 and 2004 (see Table 2 for data).

Table 2

Grade	Year				
	2000 <sup>†</sup>	2001 <sup>†</sup>	2002 <sup>†</sup>	2003 <sup>†</sup>	2004 <sup>†</sup>
6 <sup>th</sup>	22.8	23.8	27.6	18.8	18.2
7 <sup>th</sup>	43.6	32.1	31.8	27.3	27.6
8 <sup>th</sup>	50.7	42.3	43.1	36.4	40.8
9 <sup>th</sup>	60.5	54.5	52.5	47.0	43.4
10 <sup>th</sup>	57.0	59.4	61.5	51.7	52.4
11 <sup>th</sup>	69.9	70.3	61.7	57.4	55.6
12 <sup>th</sup>	73.3	73.8	66.9	61.2	57.3

**Percentage of Wisconsin Youth Who Ever Smoked Cigarettes, by Grade, 2000-2004**

Sources: <sup>†</sup>Youth Risk Behavior Surveillance System; <sup>†</sup>Youth Tobacco Survey

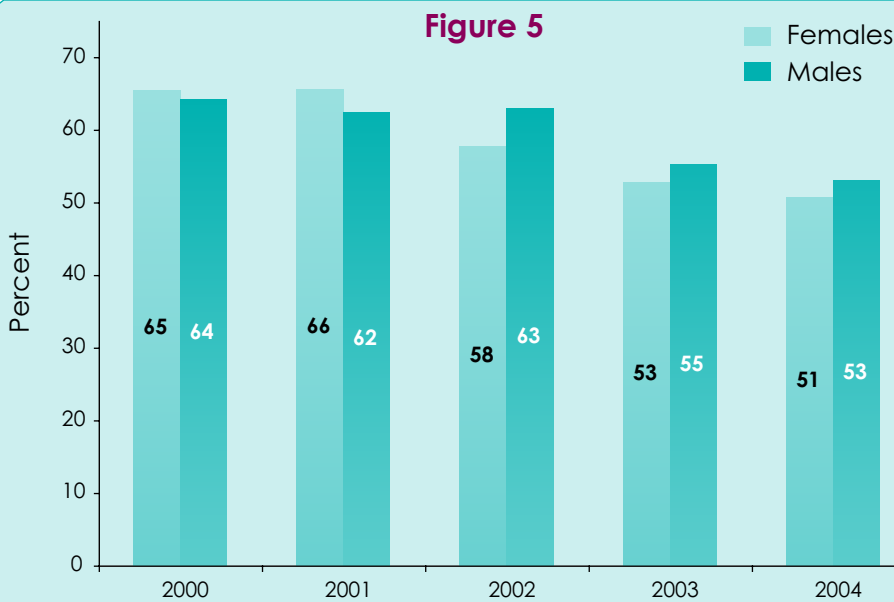


**Percentage of Wisconsin Middle School Students Who Have Ever Smoked, by Gender, 2000-2004**

Sources: Youth Risk Behavior Surveillance System; Youth Tobacco Survey

*Experimentation with cigarettes among Wisconsin youth - by Gender*

Historically, males have reported greater rates of experimentation with cigarettes relative to females. However, social norms with respect to gender have experienced a transitioning over the past several decades and smoking behavior among youths has not been immune. In recent years, experimentation with cigarettes has been fairly similar among Wisconsin males and females, in both middle schools and high schools (**see Figures 4 and 5**), with rates of ever smoking having decreased for both groups between 2000 and 2004.



**Percentage of Wisconsin High School Students Who Have Ever Smoked, by Gender, 2000-2004**

Sources: Youth Risk Behavior Surveillance System; Youth Tobacco Survey

### Current Cigarette Smoking

#### *Changes in the percent of youth currently smoking cigarettes - United States and Wisconsin*

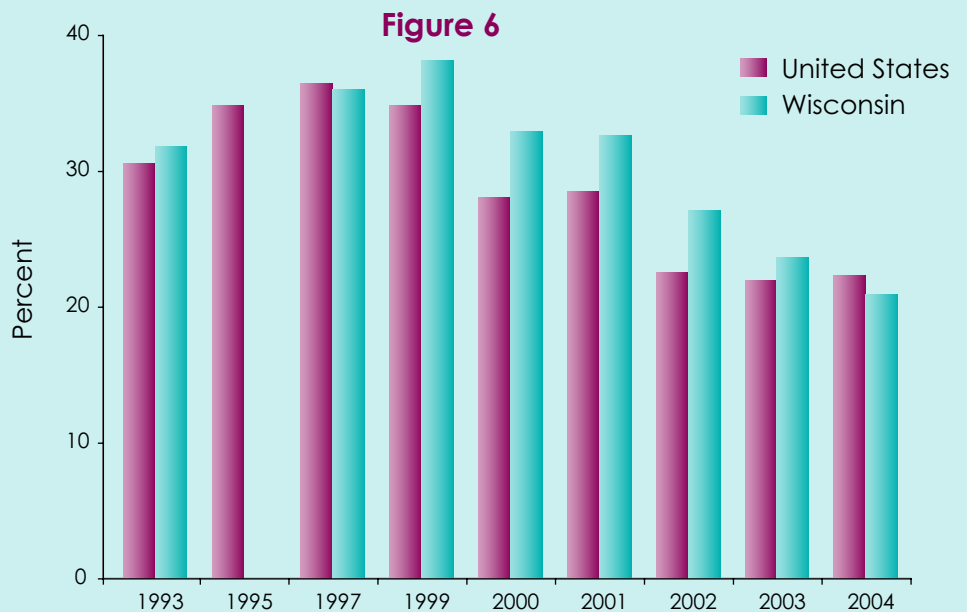
While the percent of youth reporting current cigarette smoking was on an upward trend during the 1990s, progress on efforts to reduce youth smoking have been observed since 2000. Moreover, the percent of students that report being current smokers, defined as having smoked any cigarettes in the past 30 days, has continued on this downward trend in both Wisconsin and the United States.

The percent of Wisconsin youth who report current cigarette smoking has decreased among both middle and high school students between 2000 and 2004. The percent of middle school students who reported current cigarette use declined from 12% in 2000 to 8% in 2004. Similarly, the National Youth Tobacco Survey revealed that 11% and 8% of middle school students across the nation reported current smoking in 2000 and 2004, respectively.

**Figure 6** displays the rates of current smoking among high school students in Wisconsin and United States, from 1993 to 2004. In general, Wisconsin has had higher levels of student smoking, compared to the national average. Notably, while the prevalence of smoking in the United States declined between 1997 and 1999, student smoking in Wisconsin continued to rise and peaked in 1999.

#### Percentage of High School Students Who Have Smoked in Past 30 Days Wisconsin and United States, 1993-2004

Sources: Youth Risk Behavior Surveillance System; Youth Tobacco Survey



**Table 3**

Year	United States			Wisconsin			WI:US Ratio of Prevalence
	Prevalence of Smoking (%)	Percent Change		Prevalence of Smoking (%)	Percent Change		
		Year to Year	2000 to 2004		Year to Year	2000 to 2004	
1993 <sup>†</sup>	30.5	-		31.8	-		1.04
1995 <sup>†</sup>	34.8	14.1		na	-		-
1997 <sup>†</sup>	36.4	4.6		36.0	13.2 ±		.99
1999 <sup>†</sup>	34.8	- 4.4		38.1	5.8		1.09
2000 <sup>†</sup>	28.0	- 19.5	- 20.4	32.9	- 13.6	- 36.5	1.18
2001 <sup>†</sup>	28.5	1.8		32.6	- 0.9		1.14
2002 <sup>†</sup>	22.5	- 21.1		27.1	- 16.9		1.20
2003 <sup>†</sup>	21.9	- 2.7		23.6	- 12.9		1.08
2004 <sup>†</sup>	22.3	1.8		20.9	-11.4		.94

**High School Students  
Who Smoked  
in Past 30 Days  
Wisconsin and  
United States, 1993-2004**

Sources: <sup>†</sup>Youth Risk Behavior Surveillance System; <sup>†</sup>Youth Tobacco Survey  
± Percent change calculated over 4-year span

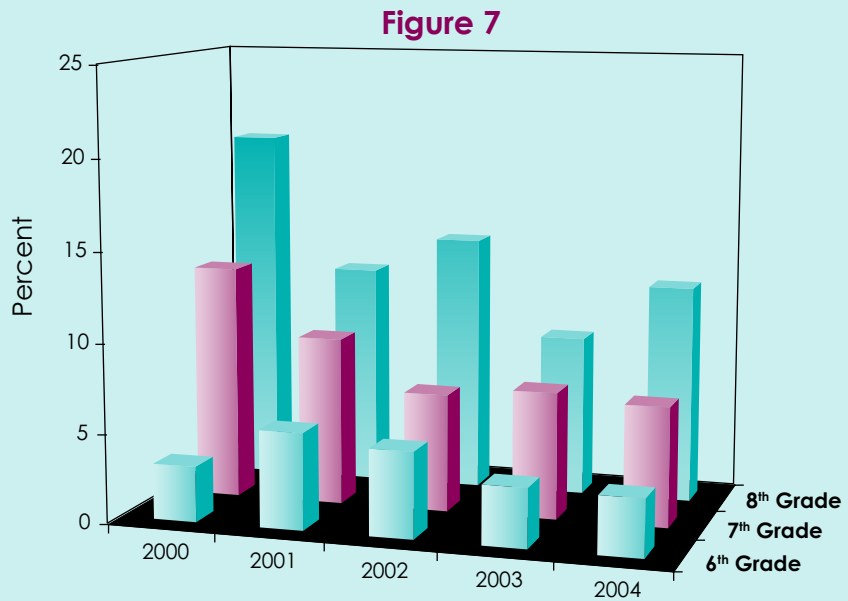
However, rates in Wisconsin began to decline after 1999 and have continued on this downward trend through 2004. Moreover, 2004 was the first year that Wisconsin’s high school youth current smoking prevalence was lower than the national average. **Table 3** reveals that the relative change in smoking prevalence among high school students in Wisconsin was greater than that for the nation between 2000 and 2004 (-36.5% vs. -20.4%, respectively). In addition, while Wisconsin rates were 14-18% higher than those of the nation during 2000-2002, they were 6% lower in 2004.

*Current cigarette smoking among Wisconsin youth – by Grade*

In general, the percent of Wisconsin middle school students who reported being current smokers has declined between 2000 and 2004. However, the trend observed within each grade presents a slightly different pattern (**Figure 7**). Reports of current smoking among 6<sup>th</sup> graders, for example, increased after 2000, before coming back down to essentially the same level (3%) in 2004 as in 2000. Rates of smoking among 7<sup>th</sup> graders decreased between 2000 and 2002, then leveled off at approximately 7%. Comparable to reports of experimentation with cigarettes, the trend in current smoking among 8<sup>th</sup> graders reveals an overall decrease, though, a slight increase is noted between 2003 and 2004.

**Percentage of Wisconsin Middle School Students Who Have Smoked in Past 30 Days, by Grade, 2000-2004**

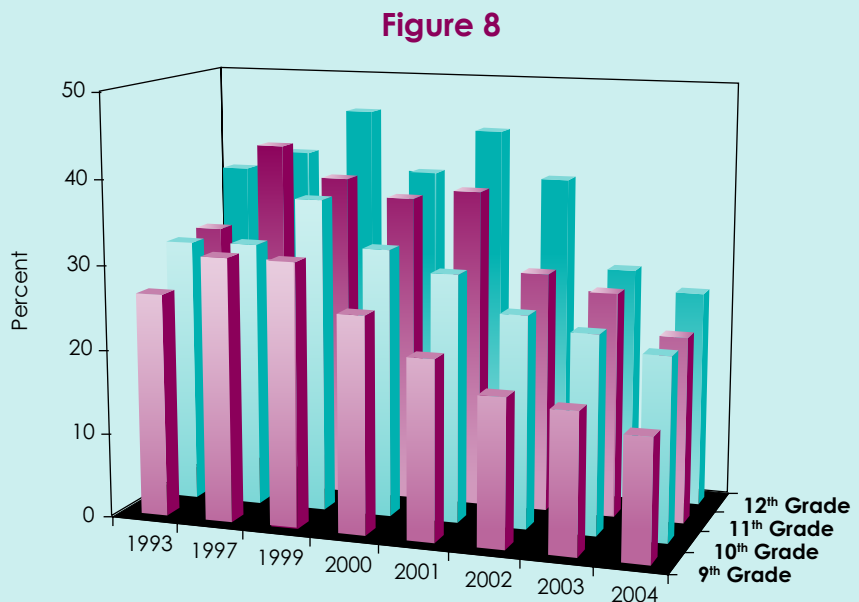
Sources: Youth Tobacco Survey



Among Wisconsin high school students, the percent who reported being current cigarette smokers has declined among all four grades. In particular, **Figure 8** exhibits the peak levels of current smoking that occurred in the late 1990's, followed by the generalized downward trends within each group. (see Table 4 for data)

**Percentage of Wisconsin High School Students Who Have Smoked in Past 30 Days, by Grade, 1993-2004**

Sources: Youth Risk Behavior Surveillance System; Youth Tobacco Survey



**Table 4**

Grade	Year							
	1993 <sup>†</sup>	1997 <sup>†</sup>	1999 <sup>†</sup>	2000 <sup>¶</sup>	2001 <sup>† ¶</sup>	2002 <sup>¶</sup>	2003 <sup>† ¶</sup>	2004 <sup>¶</sup>
6 <sup>th</sup>	na	na	na	3.1	5.4	4.8	3.3	3.2
7 <sup>th</sup>	na	na	na	13.1	9.4	6.6	7.1	6.7
8 <sup>th</sup>	na	na	na	20.0	12.4	14.4	9.0	12.2
9 <sup>th</sup>	26.5	31.3	31.3	25.7	21.3	17.6	16.7	14.5
10 <sup>th</sup>	31.3	31.5	37.2	31.8	29.4	25.2	23.6	21.7
11 <sup>th</sup>	31.7	42.2	38.6	36.6	37.8	28.5	26.7	22.1
12 <sup>th</sup>	38.1	40.4	45.8	38.6	44	38.5	28	25.7

**Percentage of Wisconsin Youth Who Smoked Cigarettes in the Past 30 Days, by Grade, 1993-2004**

Sources: Youth Risk Behavior Surveillance System; Youth Tobacco Survey

*Current cigarette smoking among Wisconsin youth – by Gender*

Consistent with the narrowing of the gender gap in experimentation with cigarettes among youth, reports of current smoking have been similar among males and females. **Figure 9** presents rates of current smoking among middle school students, by gender, for 2000 to 2004. Levels of current smoking have decreased in both groups, and rates have been very similar for males and females. In **Figure 10**, gender comparisons can be examined for high school students over a greater number of years (1993-2004). These data reveal a bit more progress has been made with males, relative to females, given they had a higher peak prevalence of 40% in 1997, and the lowest level of current smoking (20%) in 2004.

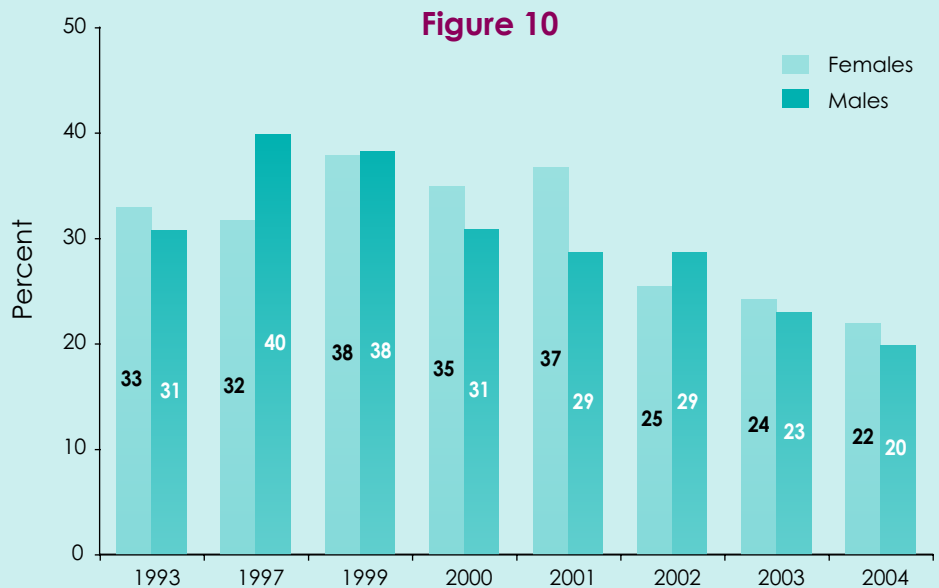
**Percentage of Wisconsin Middle School Students Who Smoked in the Past 30 Days, by Gender, 2000-2004**

Sources: Youth Tobacco Survey



**Percentage of Wisconsin High School Students Who Smoked in the Past 30 Days, by Gender, 1993-2004**

Sources: Youth Risk Behavior Surveillance System; Youth Tobacco Survey



## Conclusion

Reducing youth cigarette smoking has been a public health goal over the past 15 years, and an increasing health priority in most recent years. The 1990s were marked by an escalating trend in current smoking rates, with more than a third of all high school youth in the United States reporting current cigarette use by 1997, increasing to almost 40% in Wisconsin by 1999. Rates of current cigarette use among this group began their downward trend after 1997 in the U.S., and after 1999 in the state of Wisconsin. By 2004, rates of current smoking among high school youth in the United States was down to 22%, and in Wisconsin it was 21%.

Data on Wisconsin middle school students, with data collection beginning in 2000, also present promising findings. In 2004, the rate of Wisconsin middle school students who reported ever smoking a cigarette was 29%, down from 39% just five years earlier.

These declines indicate that state and national efforts focused at discouraging youth from experimenting with cigarettes, and encouraging those who do smoke cigarettes to quit, have had an impact. It is difficult to identify a single cause of the observed change. It is likely, however, that these declines in cigarette use are the synergistic result of the implementation of comprehensive tobacco control programs in almost every state, including Wisconsin. Components of these programs include cigarette price and tax increases, state and national media campaigns, as well as the efforts put forth by coalitions at the local level.

Despite the reductions in youth smoking rates over the past several years, there is still progress to be made. A majority of high school youth have experimented with cigarettes, and more than one out of five students report current cigarette use. Moreover, the recently observed leveling off of smoking rates among middle school students may suggest that the progress seen over the past decade could be ending. However, further data are needed to confirm the direction of these trends.

Pre-adolescence is a key period during which to impress upon our youth the dangers associated with smoking. State and national data indicate that cigarette smoking generally begins in adolescence, with a narrow window in which a person is vulnerable to smoking initiation.<sup>8</sup> For the majority of smokers, initiation begins between 14 and 15 years of age, and many are regular smokers by age 16

and 17.<sup>3,9</sup> It is therefore imperative that efforts at protecting young people from the ill fate associated with tobacco use be sustained.

With the recent reductions in funding for tobacco control program initiatives, continued monitoring of trends in youth tobacco use and evaluation of progress towards long term goals is crucial. Healthiest Wisconsin's 2005 goals of no more than 31% of middle school students will report ever smoking cigarettes, and only 26% of high school students will report current smoking, by 2005, have been met. Continued comprehensive tobacco control efforts will be required in order to maintain this progress, and to ensure that long term goals will be achieved.

## Technical Notes

### **Youth Risk Behavior Surveillance System** <sup>10, 11, 12</sup>

The Youth Risk Behavior Surveillance System (YRBSS) is conducted as part of a national effort by the U.S. Centers for Disease Control and Prevention to monitor a number of health-risk behaviors, including tobacco use, of the nation's high school students. The YRBSS includes a national school-based survey (the YRBS) conducted by the CDC as well as state and local school-based surveys conducted by education and health agencies. In Wisconsin, the Department of Public Instruction (DPI) has overseen the administration of the YRBS every two years beginning with 1991. The YRBS is administered to students in Wisconsin's public high schools (grades 9-12). Survey procedures were designed to protect the privacy of students by allowing anonymous and voluntary participation.

Sample sizes and response rates may vary from year to year. According to the Centers for Disease Control and Prevention, a response rate of 60% or more is necessary for a sample to be considered representative. It is for this reason, that there are no data for 1995. In the spring of 2003, the Wisconsin Department of Public Instruction, administered the Youth Risk Behavior Survey to 2,121 students in 50 public high schools in Wisconsin, resulting in a response rate of 67%. Survey results were weighted to account for non-response and to be representative of all 9<sup>th</sup> through 12<sup>th</sup> grade public school students in Wisconsin.

### **Youth Tobacco Survey** <sup>13, 14, 15, 16, 17</sup>

The Youth Tobacco Survey (YTS) is a comprehensive measure of youth awareness, attitudes and related behaviors about tobacco among students in grades 6 through 12. The YTS questionnaire was developed based on a collaborative effort of the Centers for Disease Control and Prevention-Office on Smoking and Health (CDC/OSH) and representatives of federal, state and private-sector partners. Data are collected via an anonymous, self-administered survey during the spring of the academic year. At the national level, the YTS was conducted by the American Legacy Foundation in 2000 and 2002. In 2004, it was conducted by the CDC. In Wisconsin, the Department of Health and Family Services (DHFS) has overseen the administration of the YTS since it was first administered during the spring semester of the 1999-2000 academic year to a random sample of public middle and high schools students. The survey has been continued on an annual basis for public middle school students, and on a biennial basis for public high school students (alternating with the YRBSS).

For each survey, a random sample of 50 middle and 50 high schools is chosen from all eligible Wisconsin public middle schools (grades 6, 7, and 8) and high schools (grades 9, 10, 11, and 12). All students in the selected classes are eligible to participate in the survey, and participation is voluntary. In 2004, 84.0% of the sampled high schools, and 87.6% of the sampled students completed the questionnaire for an overall response rate of 73.6% (N=1,443). For middle schools, the overall response rate was 76.5% (N=1,682). Survey results were weighted within each data set to account for non-response and to be representative of the universe of students from which each sample was selected.

## **Youth Smoking Definitions**

### Experimentation (Ever-smoker)

Experimentation was defined as ever smoking a cigarette, even a puff or two. This category included all respondents who answered "Yes" to the following question: "Have you ever tried cigarette smoking, even one or two puffs?"

### Current Smoker

Current smoking was defined as having smoked cigarettes on one or more of the past 30 days. This category included all respondents who reported having smoked cigarettes on one or more days in the following question: "During the past 30 days, on how many days did you smoke cigarettes?"

## **Adult Smoking Definitions**

### Current Smoker

Current smoking was defined as someone who has "smoked at least 100 cigarettes in a lifetime" and reported current smoking either "every day" or "some days".

## Appendix A

95% Confidence Intervals for Percent of Middle School and High School Students Who Have Ever Smoked Cigarettes Wisconsin and United States, 1993-2004										
		Percent (95% Confidence Interval)								
		1993†	1995†	1997†	1999†	2000‡	2001†‡	2002‡	2003†‡	2004‡
MIDDLE SCHOOL										
Wisconsin		na	na	na	na	39.4 (±4.7)	33.0 (±4.5)	34.0 (±4.7)	27.6 (±2.5)	29.3 (±3.9)
United States		na	na	na	na	36.3 (±2.4)	na	33.1 (±2.3)	na	25.9 (±2.7)
HIGH SCHOOL										
Wisconsin		69.3 (±2.8)	na	na	na	64.9 (±4.5)	64.0 (±2.5)	60.4 (±3.7)	54.1 (±3.2)	52.2 (±5.3)
United States		69.5 (±1.4)	71.3 (±1.7)	70.2 (±1.9)	70.4 (±2.9)	64.0 (±2.0)	63.9 (±2.1)	57.4 (±2.1)	58.4 (±3.1)	52.7 (±3.5)

Sources: † Youth Risk Behavior Surveillance System; ‡ Youth Tobacco Survey  
 † ‡ Youth Risk Behavior Surveillance System for High School, Youth Tobacco Survey for Middle School

## Appendix B

95% Confidence Intervals for Percent of Middle School and High School Students Who Smoked Cigarettes in the Past 30 Days, Wisconsin and United States, 1993-2004										
		Percent (95% Confidence Interval)								
		1993†	1995†	1997†	1999†	2000‡	2001†	2002‡	2003†	2004
MIDDLE SCHOOL										
Wisconsin		na	na	na	na	12.2 (±2.2)	9.1 (±2.4)	8.7 (±2.9)	6.6 (±1.6)	7.7 (±1.8)
United States		na	na	na	na	11.0 (±1.2)	na	9.8 (±1.2)	na	8.1 (±1.5)
HIGH SCHOOL										
Wisconsin		31.8 (±2.5)	na	36.0 (±4.5)	38.1 (±3.5)	32.9 (±2.5)	32.6 (±3.2)	27.1 (±4.1)	23.6 (±2.6)	20.9 (±3.7)
United States		30.5 (±1.9)	34.8 (±2.3)	36.4 (±2.3)	34.8 (±2.5)	28.0 (±1.7)	28.5 (±2.0)	22.5 (±1.6)	21.9 (±2.1)	22.3 (±2.7)

Sources: † Youth Risk Behavior Surveillance System; ‡ Youth Tobacco Survey  
 † ‡ Youth Risk Behavior Surveillance System for High School, Youth Tobacco Survey for Middle School

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