



# Patterns of Smoking Among Minnesota's Young Adults

January 2004



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**This report was prepared by:**

Minnesota Department of Health

Blue Cross and Blue Shield of Minnesota

Minnesota Partnership for Action Against Tobacco

University of Minnesota

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**PATTERNS OF SMOKING AMONG MINNESOTA'S YOUNG ADULTS**

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# INTRODUCTION

*Patterns of Smoking Among Minnesota's Young Adults* is one in a series of collaborative research reports about smoking based on the 2003 Minnesota Adult Tobacco Survey. Four organizations — the Minnesota Department of Health, Blue Cross and Blue Shield of Minnesota, the Minnesota Partnership for Action Against Tobacco, and the University of Minnesota — joined together to conduct the Minnesota Adult Tobacco Survey and prepare this report. Other reports in the series explore efforts to quit smoking, and Minnesotans' exposure to and attitudes regarding secondhand smoke.

Our objective is to provide scientifically valid data on adult Minnesotans' knowledge, attitudes, and behaviors concerning smoking in order to support policy development, advocacy, and program planning. Our overarching goals are to help current smokers quit, to prevent more people from starting, and to protect all people by reducing exposure to secondhand smoke.

The Minnesota Adult Tobacco Survey was conducted between November 2002 and June 2003. Findings are based on interviews with 8,821 adults, including 1,205 young adults between 18 and 24 years of age. (See Appendix A for more information on survey methods.) This report focuses on the analysis of young adult interviewees.

## Why Young Adults?

Young adults play a pivotal role in Minnesota's efforts to reduce the immense health and economic burdens caused by tobacco use.<sup>1</sup> National and state studies have shown that 18- to 24-year-olds have the highest smoking rate of any adult age group.<sup>2</sup> There is also evidence that the smoking rate among young adults has increased in recent years.<sup>3</sup> In addition, after being restricted by court settlements from advertising explicitly to children and teens, the tobacco industry has focused much of its advertising and promotional spending on young adults.<sup>4</sup> (See *The tobacco industry targets young adults* on the following pages.)

While the great majority of smokers try their first cigarette before 18 years of age, smoking patterns continue to change and evolve as young people enter adulthood. Many smokers increase the frequency of their smoking between the ages of 18 and 24, moving deeper and deeper into addiction. As one tobacco industry researcher noted, "... the ten years following the teenage years is the period during which average daily consumption per smoker increases to the average adult level."<sup>5</sup> Some people also try smoking for the first time at this age. Efforts to prevent smoking from starting or from escalating into regular use require better knowledge of smoking patterns within the young adult population.

## THE TOBACCO INDUSTRY TARGETS YOUNG ADULTS

The six largest tobacco companies spent \$11.2 billion on advertising and promoting their products in the U.S. during 2001, the last year for which figures are available. Since 1998, the year in which the industry settled lawsuits filed by Minnesota and other states, spending on advertising and promotion of cigarettes has increased by 67 percent. In Minnesota, an estimated \$196 million was spent in 2001 to recruit new smokers, increase consumption, and maintain customer loyalty.

Researchers have begun to study the millions of pages of documents made public as a result of the lawsuits. They have used these documents to show how tobacco industry marketers and strategists view young adults as fitting into their overall marketing efforts. The summary below is drawn primarily from an article by Pamela Ling and Stanton Glantz that appeared in the *American Journal of Public Health*. Their study and other studies of the documents reveal the following:

- 1. *The tobacco industry has conducted extensive research on smoking initiation and consumption from adolescent years well into adulthood.*** Like public health researchers, tobacco industry analysts think of smokers as progressing through several stages, eventually becoming regular, heavy smokers addicted to nicotine.
- 2. *From the perspective of the tobacco industry, the young adult years are critical to the expansion of their markets and sales.*** Tobacco industry researchers and marketers acknowledge that the great majority of smokers try their first cigarette before age 18, but they see the 18- to 24-year-old period as one in which the number of cigarettes smoked per day increases sharply and in which smoking habits become solidified and deeply entrenched.
- 3. *The major life transitions that often occur during young adulthood are seen by the tobacco industry as great opportunities to promote its products.*** Going off to college, entering the military, starting new jobs, moving away from home, dealing with low-paying jobs or unemployment, and struggling with relationships all can be very stressful situations. Documents show that the tobacco industry believes that the drug effects of nicotine are “most rewarding to the individual under stress.” It is eager to offer its products as a quick way to calm nerves and relieve the tensions brought on by these stressful situations. Each transition, life change, or stressful situation offers an opportunity to expand and solidify smoking, and the industry designs promotional campaigns to take advantage of these situations. In addition, nicotine dependence will eventually create its own source of stress, through drug-induced withdrawal symptoms and cravings. Thus, smokers continue to smoke for temporary relief from the stress caused by nicotine withdrawal symptoms and cravings.



**4. *The tobacco industry seeks to exploit these opportunities to increase smoking consumption among young adults by insinuating itself into the fabric of young adult life.*** Heavy emphasis is placed on linking smoking with fun, entertainment, and relaxation. The industry organizes major promotional events at bars and night clubs, sponsors music concerts, gives away tobacco products and tobacco-related merchandise, and has increased its advertising in alternative weekly newspapers that appeal to young audiences.

After describing the industry's view of young adults, Ling and Glantz conclude their analysis as follows: "It is time for the medical and public health communities to ... develop individual and community-wide interventions to block the process of initiating and solidifying smoking among young adults. The same life situations that have proven so fruitful for the tobacco industry are equally promising targets for health interventions."

#### **Sources:**

Data on tobacco industry national advertising and promotion spending is provided by: Federal Trade Commission. *Cigarette Report for 2001*. Washington, D.C. 2003. The estimate for spending in Minnesota is based on Minnesota's share of the U.S. population as of July 1, 2001.

Ling PM, Glantz SA. Why and how the tobacco industry sells cigarettes to young adults: Evidence from industry documents. *American Journal of Public Health*. 2002; 92(6):908-916.

Katz SK, Lavack AM. Tobacco related bar promotions: insights from tobacco industry documents. *Tobacco Control*. 2002; 11(Suppl 1): i92-i101.

Sepe E, Glantz SA. Bar and club promotions in the alternative press: Targeting young adults. *American Journal of Public Health*. 2002; 92(1):75-78.

Campaign for Tobacco-Free Kids. *Tobacco company marketing to college students since the multistate settlement agreement was signed*. Fact sheet, August 20, 2003. Available at <http://www.tobaccofreekids.org>.

## MANY SMOKERS HAVE NOT BEEN RECOGNIZED BY PRIOR RESEARCH

One of the goals of the 2003 Minnesota Adult Tobacco Survey was to obtain a more complete picture of smoking by young adults between the ages of 18 and 24 than has been available in the past. To achieve this goal, it was important to use an approach that would include occasional smokers who are just starting or are still in the early stages of becoming established smokers.

Two major definitions have been used to measure current smoking in the general population. Many studies of adults count individuals as smokers only if they report smoking 100 or more cigarettes in their lifetimes and are still smoking at the present time. Smoking rates reported by the Behavior Risk Factor Surveillance System (BRFSS) and the National Health Interview Survey (NHIS) use this definition.<sup>6</sup> The intent is to focus on people who have gone beyond the beginning or experimental stage of smoking.

Almost all studies of adolescents, on the other hand, use definitions that do not require smoking 100 or more cigarettes in one's lifetime. The most common definition, used in the Youth Tobacco Survey (YTS) and the Youth Risk Behavior Survey (YRBS), states that a current smoker is someone who has smoked on one or more days in the past 30 days.<sup>7</sup> The aim of research on adolescents is to plan for prevention, and it is therefore important to be able to understand and measure the earliest stages of smoking.

Not surprisingly, both adult and adolescent definitions of smoking have been used in studies of young adults. When interviewed for the BRFSS or the NHIS, young adults are defined as smokers if they meet the standard adult definition. But many studies of college students use the adolescent definition, or one of its variations. These include the

National College Youth Risk Behavior Survey, the Monitoring the Future survey, and the University of Minnesota's Core Alcohol and Drug Survey.<sup>8</sup> Because the definitions used in surveying young adults are not always the same, smoking rates may not be comparable.

In the Minnesota Adult Tobacco Survey, for the first time to our knowledge, young adults were asked questions that allow us to measure and compare both definitions. The results are reported in the following section.

After reviewing the scientific literature, we have adopted the standard definition for adolescents as the preferred measure of current smoking among young adults for this report. This definition shows the full range of young adult smoking patterns and enables us to study beginning or infrequent smokers as well as more established smokers.

### COMMON DEFINITIONS OF CURRENT SMOKERS

**ADULTS:** Current smokers are people 18 or older who (1) report smoking 100 or more cigarettes in their lifetime, and (2) report now smoking "every day" or "some days."

**ADOLESCENTS:** Current smokers are young people under 18 who report having smoked on one or more days in the past 30 days.



## PART I: YOUNG ADULTS

### A. NUMBER AND CHARACTERISTICS OF YOUNG ADULT SMOKERS

#### YOUNG ADULTS ARE SMOKING AT EPIDEMIC PROPORTIONS

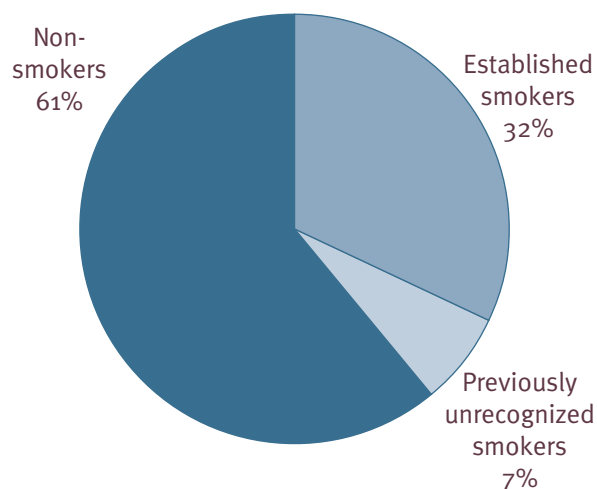
Approximately 178,000 Minnesota young adults between the ages of 18 and 24 smoked cigarettes in the previous month, many more than have been counted in previous surveys. This amounts to 39 percent of all 18- to 24-year-olds in Minnesota.

This total includes 146,000 young adults (32%) who are referred to as “established smokers” in this report (Figure 1). These young adults have smoked at least 100 cigarettes and now smoke every day or some days. They meet the definition of a smoker used in most previous adult studies in Minnesota. The percentage of young adults who are established smokers is twice as high as the percentage of adults 25 and older who are established smokers (32% vs. 16%). (See Part II of this report for comparisons between young adults and older adults.)

The total of young adult smokers also includes another 32,000 people who are referred to as “previously unrecognized smokers” in this report. This group accounts for 7 percent of all young adults and 18 percent of all young adult smokers. These previously unrecognized smokers have smoked in the past 30 days but are not established smokers, primarily because they report, whether correctly or not, that they have smoked fewer than 100 cigarettes in their lifetimes. They would not have been detected by previous general adult surveys. It is important to know more about these less-experienced smokers because it is likely that many will become regular smokers, thereby risking great harm to their health.

Most charts in Part I present data on young adult smokers in general, and on the sub-groups of established smokers and unrecognized smokers. Differences between established and unrecognized smokers, and between all young adult smokers and non-smokers, are statistically significant ( $p < .05$ ) unless otherwise indicated.

**Figure 1. The current smoking rate for Minnesota’s young adults is 39 percent.**



Data Source: 2003 Minnesota Adult Tobacco Survey

#### TYPES OF CURRENT SMOKERS DISCUSSED IN THIS REPORT

**Established smokers:** Report having smoked 100 or more cigarettes in their lifetime and now smoke “every day” or “some days.”

**Previously unrecognized smokers:** Report having smoked cigarettes on one or more of the past 30 days, but do not meet the criteria for established smokers.

**Young Adult (YA) smokers:** Persons between 18 and 24 years of age who are either established smokers or previously unrecognized smokers.

## MOST YOUNG ADULT SMOKERS USE CIGARETTES EVERY DAY

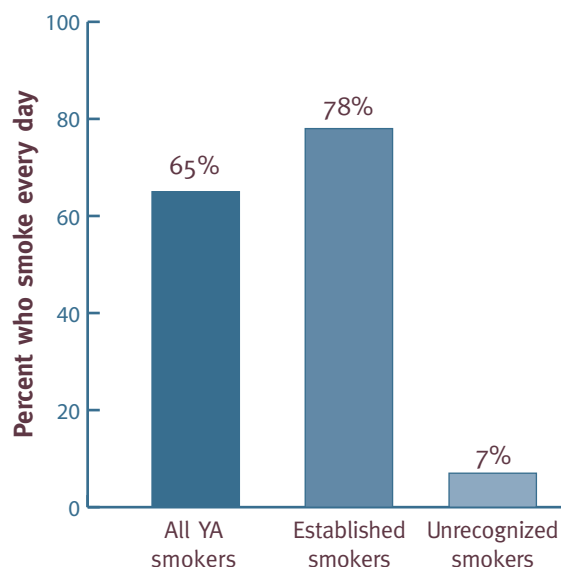
Nearly two-thirds of young adults who smoke (65%) said they smoke every day. At the other extreme, one of every five smokers (19%) reported using cigarettes on only 1-5 days of the previous 30 days. On the days they smoked, young adults averaged 10.1 cigarettes per day. Everyday smokers averaged 13.2 cigarettes per day, while those who smoked on 1-5 days of the past month averaged 2.6 cigarettes on the few days they smoked.

### Established and Unrecognized Smokers

Most of the previously unrecognized smokers use cigarettes very infrequently. Only 7 percent of unrecognized smokers said they smoked every day, while four of every five (78%) smoked on 1-5 days of the previous 30 days.

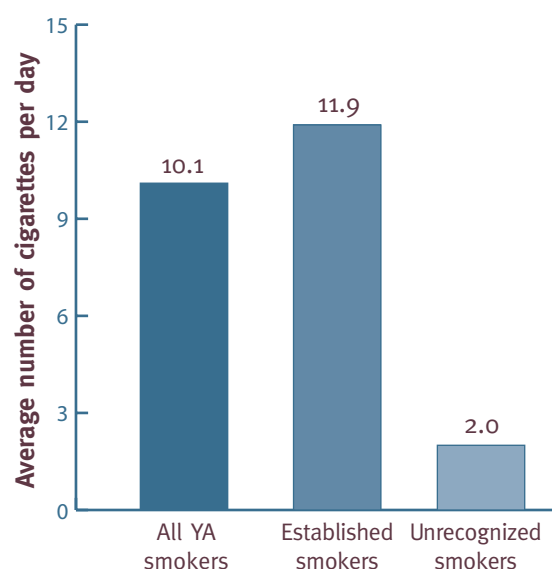
The pattern for established smokers is the mirror image of the pattern for unrecognized smokers. Four of five established smokers (78%) reported smoking everyday, while only 6 percent smoked on just 1-5 days of the previous 30 days (Figure 2). Established smokers also smoke a far greater number of cigarettes, averaging 11.9 cigarettes per day on the days they smoked while the unrecognized smokers averaged 2.0 cigarettes per day on the days they smoked (Figure 3).

**Figure 2. Most established young adult smokers, but very few unrecognized young adult smokers, smoke cigarettes every day.**



Data Source: 2003 Minnesota Adult Tobacco Survey

**Figure 3. Unrecognized young adult smokers smoke fewer cigarettes per day on the days they smoke than established young adult smokers.**



Data Source: 2003 Minnesota Adult Tobacco Survey

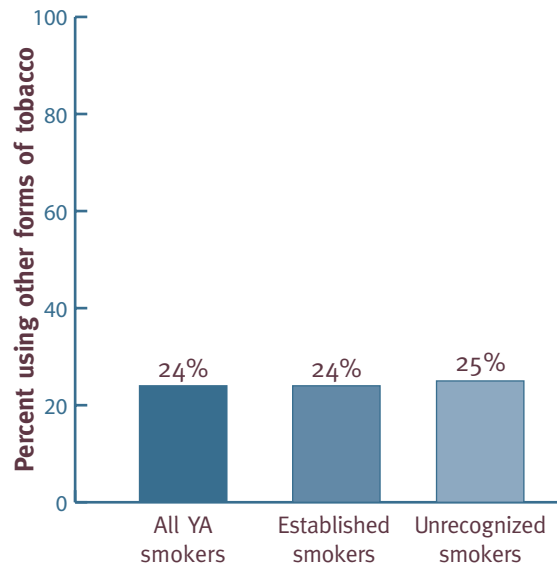
## ONE-FOURTH OF YOUNG ADULT SMOKERS ALSO USE OTHER FORMS OF TOBACCO

Many young adults have not settled on one form of tobacco — 24 percent of those who smoked cigarettes in the past 30 days also used other tobacco products in the past 30 days. Of these, cigars and smokeless tobacco were the most preferred forms of tobacco, used by 14 and 12 percent of smokers respectively.

### Established and Unrecognized Smokers

Even though they smoked cigarettes infrequently, previously unrecognized smokers were just as likely to use other forms of tobacco as were established smokers. (Figure 4: differences are not statistically significant.) This suggests that quite a bit of experimentation with different forms of tobacco takes place, particularly among the unrecognized smokers.

**Figure 4. Unrecognized young adult smokers use other forms of tobacco at the same rate as established young adult smokers.**



Data Source: 2003 Minnesota Adult Tobacco Survey

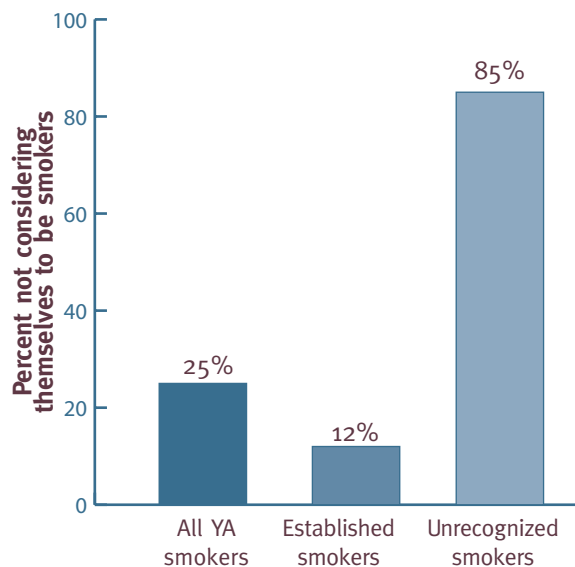
## MANY YOUNG ADULTS WHO SMOKE DO NOT CONSIDER THEMSELVES TO BE SMOKERS

When asked, “Do you consider yourself a smoker?,” one of every four young adults who smoke (25%) answered “no.” The implications of this self-perception are important. Since these young adults do not see themselves as smokers, they may not respond to health information that appears to be directed toward smokers. They may not think that the health warnings about smoking apply to them, or they may believe they already are dealing with those warnings in an appropriate way. In their view, they have not crossed the line that defines a real smoker.

### Established and Unrecognized Smokers

Most of the previously unrecognized smokers (85%) did not think of themselves as smokers, but even 12 percent of established smokers did not describe themselves as smokers (Figure 5).

**Figure 5. Most unrecognized young adult smokers do not consider themselves to be smokers.**



Data Source: 2003 Minnesota Adult Tobacco Survey

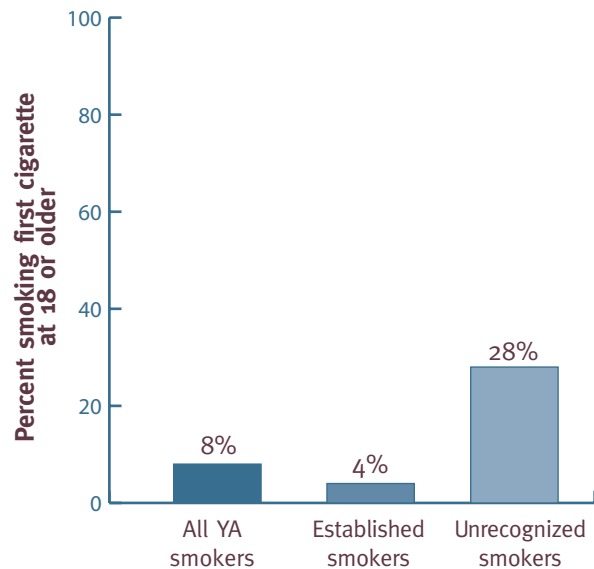
## NOT ALL YOUNG ADULT SMOKERS STARTED SMOKING BEFORE AGE 18

While the great majority of smokers try their first cigarette as children or teens, it is important to recognize that initiation and experimentation with smoking also occurs among young adults. One of every twelve young adult smokers (8%) reported that they did not even try their first cigarette until they were 18 or older. That percentage is likely to grow as never smokers experience opportunities to smoke as they pass through this time in their lives.

### Established and Unrecognized Smokers

Unrecognized smokers tried their first cigarette at an average age of 15.7 years, considerably later than established smokers (13.4 years). In fact, a substantial portion of unrecognized smokers (28%) did not even try their first cigarette until age 18 or older (Figure 6). If the Minnesota Adult Tobacco Survey had focused only on established smokers, it would have missed the emergence of these new first-time smokers within the young adult population.

**Figure 6. More than one-fourth of unrecognized young adult smokers did not try their first cigarette until age 18 or older.**



Data Source: 2003 Minnesota Adult Tobacco Survey

## DEMOGRAPHIC PROFILE OF YOUNG ADULT SMOKERS

In the young adult population, established smokers are somewhat less likely than unrecognized smokers and non-smokers to be enrolled in college, and are more likely to be male. Established smokers are less likely than unrecognized smokers to live in the Twin Cities Metro Area.

	Current young adult smokers			Non-smokers*
	Total smokers	Established smokers	Unrecognized smokers	
Post-secondary education:				
Enrolled in college**	37%	34%	48%	45%
Not enrolled	63%	66%	52%	55%
Total	100%	100%	100%	100%
Gender:				
Male	55%	56%	49%	49%
Female	45%	44%	51%	51%
Total	100%	100%	100%	100%
Region:				
Twin Cities Metro Area***	58%	57%	67%	58%
Minnesota outside Twin Cities Metro Area	42%	43%	33%	42%
Total	100%	100%	100%	100%

Data Source: 2003 Minnesota Adult Tobacco Survey

\* Have not smoked any cigarettes in past 30 days

\*\* Includes graduate schools, four-year colleges, community colleges, and technical colleges

\*\*\* Includes 11 counties making up the Twin Cities Metropolitan Statistical Area: Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Sherburne, Washington, and Wright

## B. THE SOCIAL ENVIRONMENT OF YOUNG ADULT SMOKERS

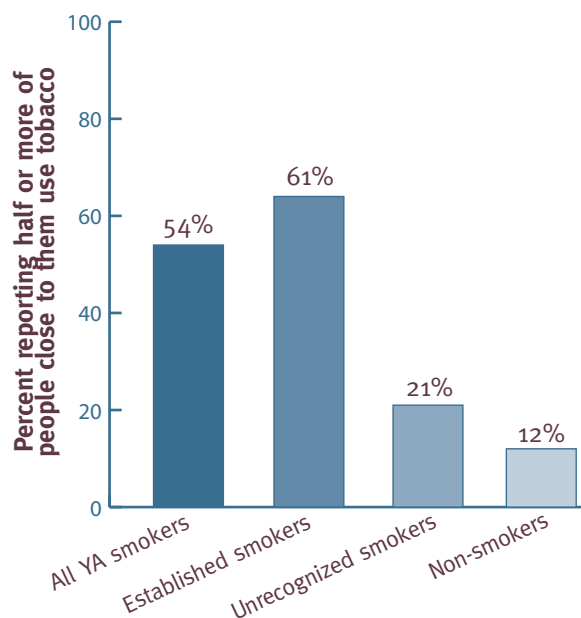
### MOST YOUNG ADULT SMOKERS ARE SURROUNDED BY OTHERS WHO SMOKE

More than three-fourths of all young adult smokers (78%) said that a spouse or someone else close to them smokes or uses tobacco, and 54 percent said that about half or more of the people close to them smoke or use tobacco. Nearly two-thirds of young adult smokers (63%) live with another adult who smokes. As early as middle school, young smokers participate in social groups largely consisting of other smokers.<sup>9</sup> This pattern seems to continue into the young adult years.

#### Established and Unrecognized Smokers and Non-Smokers

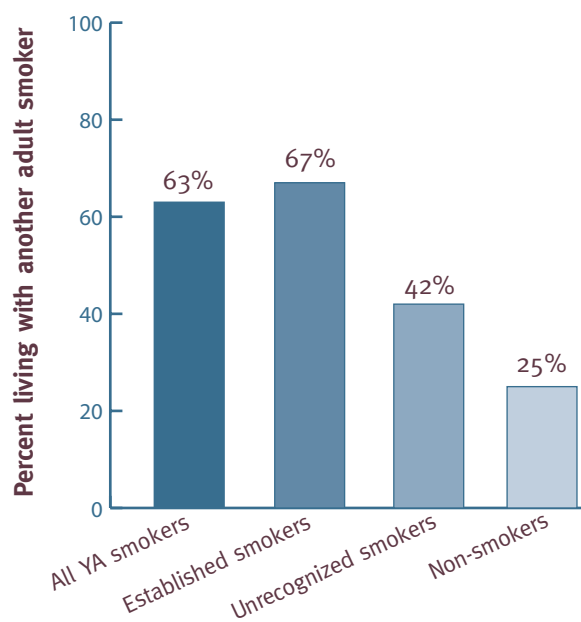
Established smokers are five times as likely as non-smokers to report that half or more of the people close to them smoke or use tobacco, and twice as likely as non-smokers to live with another adult who smokes. Previously unrecognized smokers also have many social contacts with other smokers, though not as many as established smokers have (Figures 7 and 8).

**Figure 7. Most established young adult smokers report that half or more of people close to them smoke or use tobacco.**



Data Source: 2003 Minnesota Adult Tobacco Survey

**Figure 8. Most established young adult smokers live with another adult who smokes.**



Data Source: 2003 Minnesota Adult Tobacco Survey



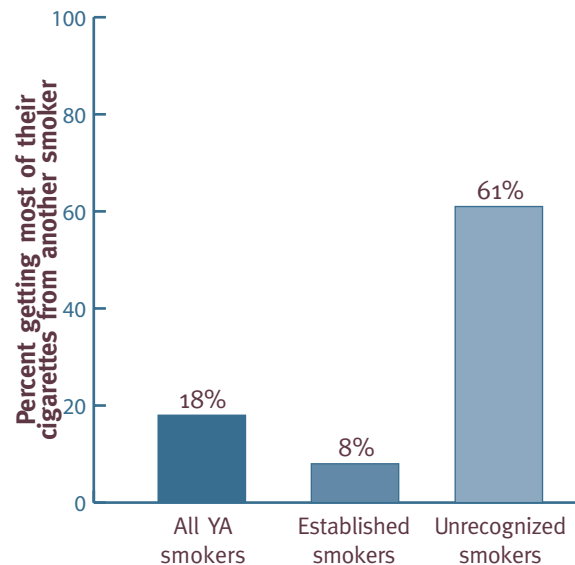
## SHARING CIGARETTES IS COMMON AMONG YOUNG ADULT SMOKERS

Young adult smokers share cigarettes as a common form of social interaction. Nearly three-fourths (71%) said they were offered a cigarette in the past 30 days. Eighty percent said that they gave cigarettes to a friend or acquaintance in the past 30 days. Nearly one in five young adult smokers (18%) reported that they usually obtained most of their cigarettes from other smokers, rather than buying their own.

### Established and Unrecognized Smokers

Social sources of cigarettes are particularly important for previously unrecognized smokers. While almost all established smokers buy their own cigarettes, the majority of unrecognized smokers (61%) get most of their cigarettes from other smokers (Figure 9).

**Figure 9. Most unrecognized young adult smokers usually get their cigarettes from another smoker.**



Data Source: 2003 Minnesota Adult Tobacco Survey

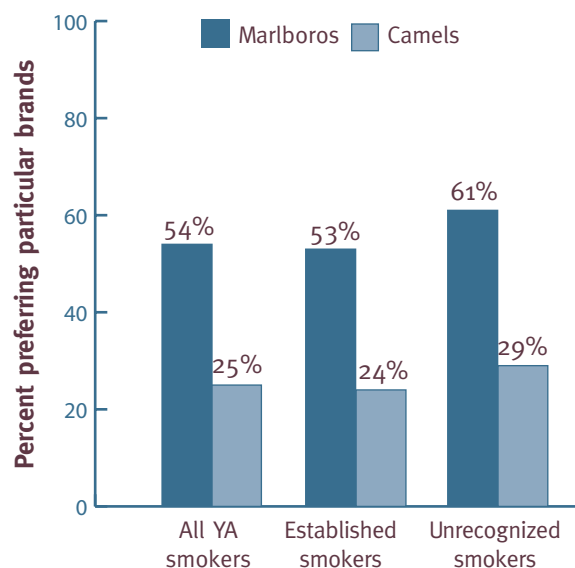
## BRAND PREFERENCES DEMONSTRATE THE IMPACT OF TOBACCO ADVERTISING ON YOUNG ADULTS

More than one-half of young adult smokers (54%) usually smoke Marlboros and one-fourth (25%) usually smoke Camels. These are the same brand preferences reported by Minnesota high school students (54% and 25% respectively, according to the Minnesota Youth Tobacco Survey).<sup>10</sup> These two brands are the most heavily advertised brands in the industry and apparently are successful in reaching teenagers.<sup>11</sup> The dominant position of Marlboros and Camels is formed during the teen years and continues into young adulthood.

### Established and Unrecognized Smokers

Previously unrecognized smokers are just as likely as established smokers to express a preference for Marlboros and Camels. (Figure 10: differences are not statistically significant.)

**Figure 10. Most young adult smokers smoke the most heavily advertised brands.**



Data Source: 2003 Minnesota Adult Tobacco Survey

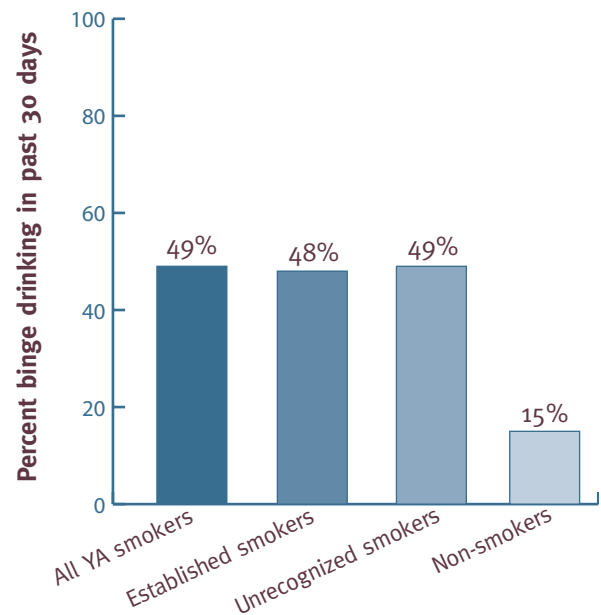
## SMOKING AND DRINKING ARE STRONGLY ASSOCIATED

As is often the case in health behavior surveys, the Minnesota Adult Tobacco Survey found that people who smoke are much more likely than non-smokers to drink alcohol and to engage in binge drinking. Binge drinking is usually defined as having five or more alcoholic drinks in a row on the same occasion. Among young adults, those who smoke were three times more likely than non-smokers to engage in binge drinking. The tobacco industry's increased use of bars and clubs to advertise and promote smoking makes strategic use of the strong relationship between smoking and drinking.<sup>12</sup>

### Established and Unrecognized Smokers

Previously unrecognized smokers were just as likely to engage in binge drinking as established smokers. This finding is consistent with the view that many unrecognized smokers light up primarily in bars or at parties. (Figure 11: differences between established and unrecognized smokers are not statistically significant.)

**Figure 11. Young adult smokers are three times more likely than non-smokers to engage in binge drinking.**



Data Source: 2003 Minnesota Adult Tobacco Survey

## **A CREATIVE APPROACH IN MINNESOTA: A COLLEGE-BASED CAMPAIGN DESIGNED TO HELP YOUNG ADULTS ‘RESIST’ TOBACCO USE**

The American Cancer Society – Midwest Division (ACS) and Blue Cross and Blue Shield of Minnesota (Blue Cross) have partnered to field test anti-tobacco messages on five Minnesota campuses: the University of Minnesota – Twin Cities, Gustavus Adolphus College, St. Cloud State University, Hamline University and University of Minnesota – Duluth.

While a great deal of anti-tobacco advertising targeted to older adults and teens has been developed and evaluated through the years, relatively little is known about which messages and tone appeal to young adults. This project is intended to learn, through field testing, more about what messages work and don't work with this group.

The ACS-Blue Cross campaign was developed by the Minneapolis-based advertising firm Hunt Adkins, and is called “Resist.” The campaign raises questions about students’ most commonly used pro-smoking rationalizations, which were identified during pre-campaign quantitative and qualitative research concluded in 2002. The Resist campaign’s humorous, irreverent messages are being delivered via newspaper ads, a Web site ([weresist.com](http://weresist.com)), and campus leafleting. A winter 2002 pre-campaign student survey will be compared with a spring 2004 post-campaign survey to evaluate effectiveness. The findings from this pilot will be used to inform any future young adult anti-tobacco public education campaigns.

For more information, contact Corinne Ertz at the American Cancer Society at [corinne.ertz@cancer.org](mailto:corinne.ertz@cancer.org) or Janelle Waldock at Blue Cross and Blue Shield of Minnesota at [janelle\\_waldock@bluecrossmn.com](mailto:janelle_waldock@bluecrossmn.com).

## C. CONSEQUENCES OF SMOKING FOR YOUNG ADULTS

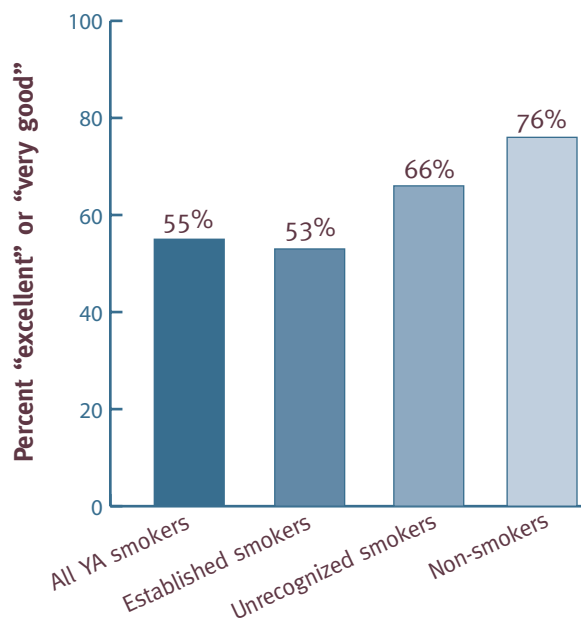
### YOUNG ADULTS WHO SMOKE DO NOT FEEL AS HEALTHY AS NON-SMOKERS

Even at this young age, young adult smokers are less likely than non-smokers to say that their health is “excellent” or “very good,” and are more likely to say that their physical, mental, and emotional health has not been good recently. Only 55 percent of smokers reported that their health was “excellent” or “very good,” compared to 76 percent of non-smokers (Figure 12). The differences are particularly noticeable with mental health. Half of all smokers (50%) said that their mental and emotional health was “not good” on at least three of the past 30 days, compared to one-fourth of non-smokers (26%) (Figure 13).

#### Established and Unrecognized Smokers

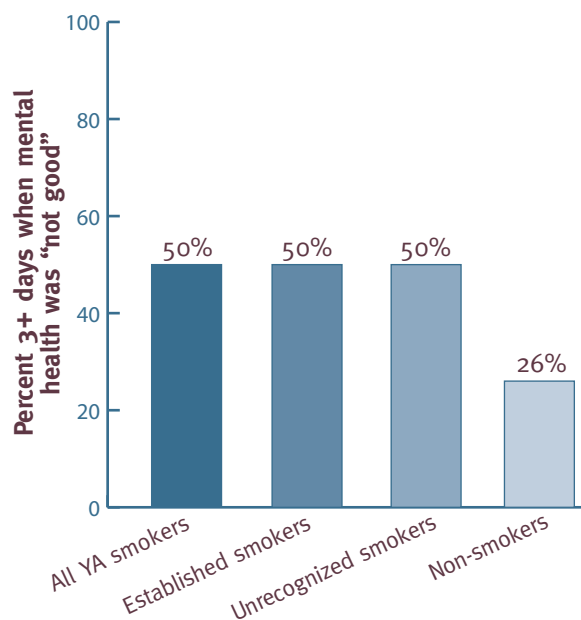
Unrecognized smokers were somewhat more likely to report better general health than were established smokers, but they were just as likely to report having days in which their mental or emotional health was “not good.”

**Figure 12. Young adult smokers are less likely than non-smokers to report “excellent” or “very good” health.**



Data Source: 2003 Minnesota Adult Tobacco Survey

**Figure 13. Young adult smokers were more likely than non-smokers to report their mental health was “not good” on three or more of past 30 days.**



Data Source: 2003 Minnesota Adult Tobacco Survey

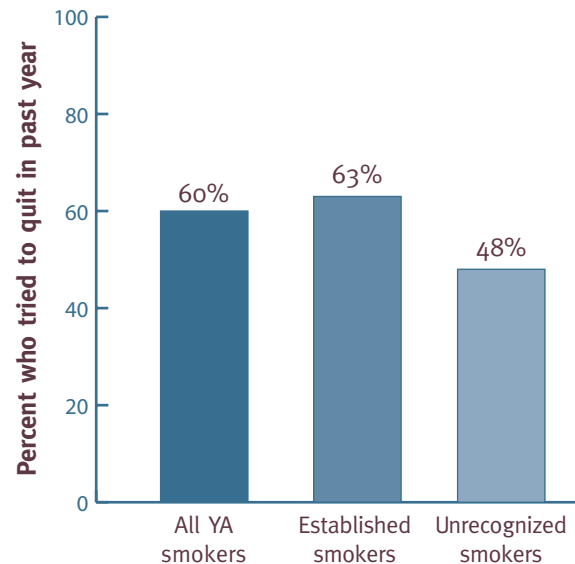
## FORTUNATELY, MANY YOUNG ADULT SMOKERS WANT TO QUIT

More than half of young adults who smoke (60%) report that they stopped smoking for at least one day in the past year because they were trying to quit. Those who were trying to quit averaged three quit attempts in the previous year. For most regular smokers, quitting for good takes great resolve and many attempts. Despite their intentions, young adult smokers are most likely at an early stage of this often-lengthy process.

### Established and Unrecognized Smokers

Unrecognized smokers were less likely than established smokers to report a quit attempt in the past year, though the difference was not statistically significant (Figure 14). Since few smokers in this group actually think of themselves as smokers, they may not see the need to stop smoking or may not think that the concept of quitting applies to them. Nevertheless, nearly half of the unrecognized smokers reported that they had made at least one quit attempt in the last year.

**Figure 14. Most young adult smokers tried to quit in the past year.**



Data Source: 2003 Minnesota Adult Tobacco Survey

## AN ESTIMATED 47,000 YOUNG MINNESOTA ADULTS ALIVE TODAY WILL DIE PREMATURELY FROM CIGARETTE SMOKING

By combining the findings of several major studies, the Centers for Disease Control (CDC) has concluded that nearly one of every three current established smokers dies prematurely from illnesses related to cigarette smoking. Using CDC's model, we estimate that 47,000 young Minnesota adults (18- to 24-years-old) who now smoke will die prematurely because of smoking. This estimate assumes that lifetime adult tobacco use patterns identified by previous research (such as number of years smoked, number of cigarettes per day, current rate of quitting) remain essentially the same and that mortality rates because of smoking remain unchanged.

Source: Based on methodology developed by CDC. See Projected smoking-related deaths among youth—United States. *MMWR*. November 8, 1996. 45(44):971-974.

## PART II: AGE DIFFERENCES AMONG ADULT SMOKERS: COMPARING SMOKING BY YOUNG ADULTS AND OLDER ADULTS

Part I of this report focused exclusively on data from the Minnesota Adult Tobacco Survey that describes young adult smokers 18- to 24-years-old. In Part II, we broaden the focus to look at how the smoking behavior of young adults compares with adults 25 and older. Young adults are a unique group in many respects and public health policies and strategies must take these differences into account.

In Part II, we restrict our discussion to established smokers, that is, those who report that they have smoked at least 100 cigarettes in their lifetime and now smoke “every day” or “some days.” This restriction is necessary because older adults were not asked the additional questions that helped us identify “previously unrecognized” smokers within the young adult population.

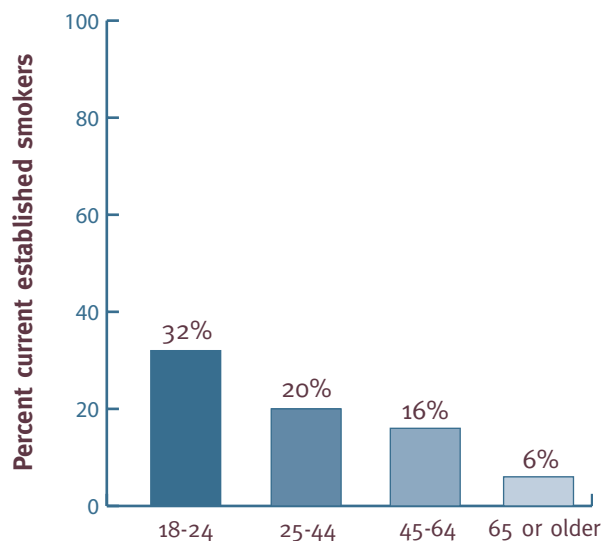
Differences between young adults and older adult age groups are statistically significant ( $p < .05$ ) unless otherwise indicated.

### YOUNG ADULTS HAVE THE HIGHEST SMOKING RATES WITHIN THE ADULT POPULATION

Nearly one-third of young adults (32%) are established current smokers, compared to 6 percent of people 65 and older (Figure 15). One reason why smoking rates may be so high now is that adolescents who experienced very high smoking rates in the 1990s now have become today’s young adults. The Minnesota Student Survey documented sharply increased smoking rates among 9th and 12th grade students throughout the middle and late 1990s, and those youth have aged into the 18- to 24-year-old group.<sup>13</sup>

Another reason for high rates among young adults is that very few young adult smokers have quit. Smoking rates tend to decline within the older age groups, as more and more people feel a greater urgency to quit smoking and finally become successful in their struggle to quit. Among the elderly, smoking rates are also lower in part because many smokers have already died.

**Figure 15. The current smoking rate (established smokers only) is much higher among young adults than among older age groups.**



Data Source: 2003 Minnesota Adult Tobacco Survey



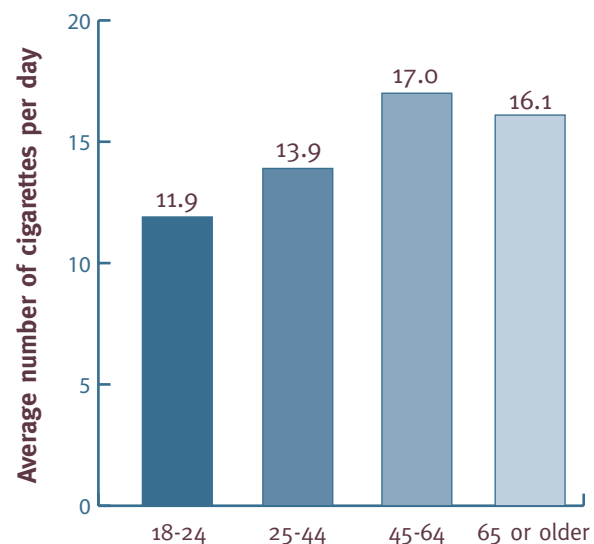
## YOUNG ADULTS DO NOT SMOKE AS MANY CIGARETTES AS OLDER ADULTS, BUT CONSUMPTION MAY INCREASE WITH AGE

Young adults who are established smokers consume an average of 11.9 cigarettes per day on the days they smoke, compared to 17.0 and 16.1 per day for smokers 45-64 and 65 and older respectively (Figure 16).

Young adulthood has typically been a time when smoking becomes more entrenched as a regular part of a person's life. More people who have been occasional smokers become daily smokers, and the number of cigarettes smoked per day increases. Data from the Minnesota Youth Tobacco Survey shows that, among high school students 15-17 years old who are established smokers, only 19 percent report smoking 11 or more cigarettes per day.<sup>14</sup> For young adults participating in the Minnesota Adult Tobacco Survey, the percentage smoking 11 or more per day rises sharply to 42 percent, and for 45- to 64-year-olds it rises further to 62 percent (Figure 17).

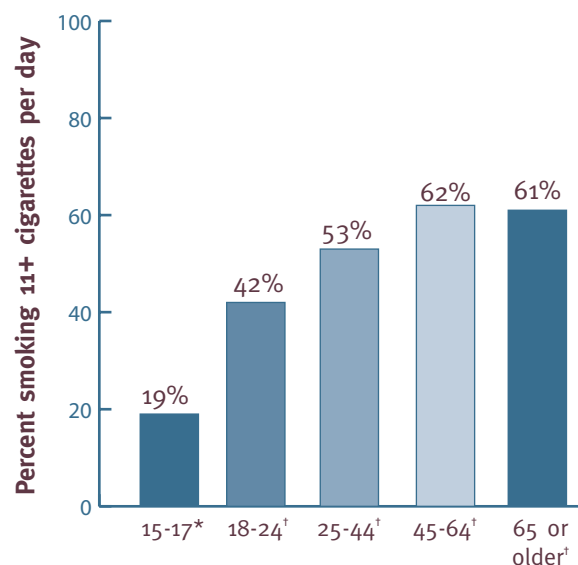
Smoking patterns continue to change as people age. The escalation of the frequency and volume of smoking continues during the young adult years and beyond. If young adults follow in the footsteps of the generations immediately before them, it is likely that the number of cigarettes smoked each day by young adults will continue to grow as they move deeper into addiction.

**Figure 16. Young adult established smokers smoked fewer cigarettes per day (on days they smoked) than did older established smokers.**



Data Source: 2003 Minnesota Adult Tobacco Survey

**Figure 17. The frequency of smoking by established smokers increases throughout adolescence and well into adulthood.**

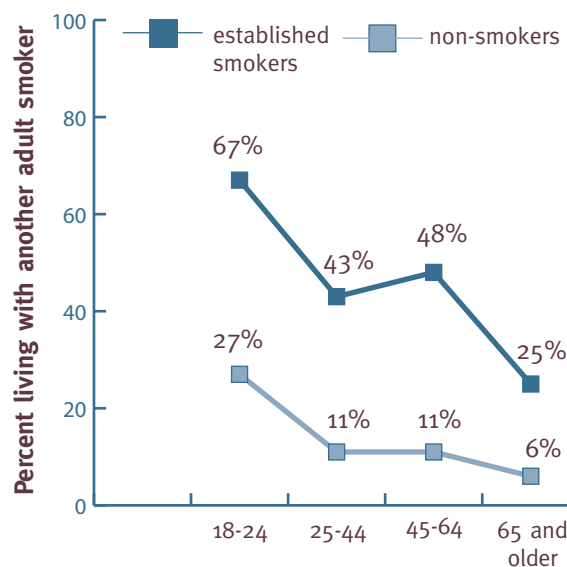


Sources: \*2002 Minnesota Youth Tobacco Survey  
†2003 Minnesota Adult Tobacco Survey

## YOUNG ADULTS ARE MORE LIKELY THAN OLDER ADULTS TO BE SURROUNDED BY PEOPLE WHO SMOKE

Four of every five young adults who are current established smokers (81%) say that a spouse or someone else close to them also uses tobacco, and two-thirds (67%) report they live with another adult who smokes. These indicators of social contact with smokers are far higher among young adults than among adults 25 and older. A similar pattern exists for non-smokers as well, although in general non-smokers are much less likely than smokers to be surrounded by people who smoke. One-fourth of young adults who are not current smokers (27%) live with another adult who smokes, more than twice as many as any other age group (Figure 18). Compared to older adults, young adults have more opportunities to be around smokers and to be involved in social networks in which smoking is prevalent and normal.

**Figure 18. Young adults are more likely than older adults to live with other adult smokers.**

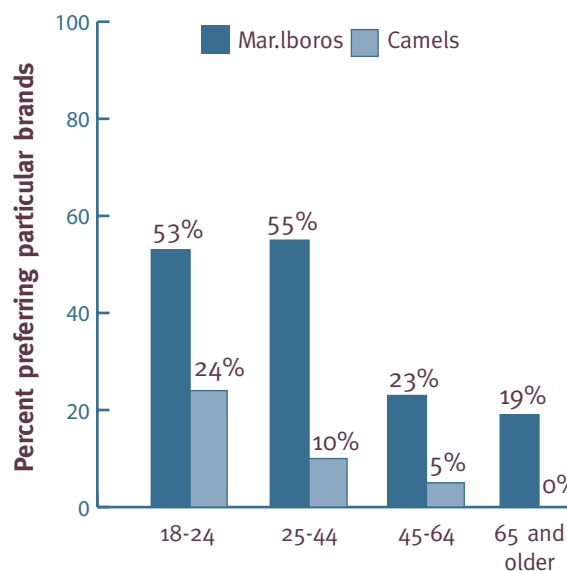


Data Source: 2003 Minnesota Adult Tobacco Survey

## BRAND PREFERENCES DIFFER BETWEEN YOUNGER AND OLDER SMOKERS

As noted earlier in this report, brand preferences for the most heavily advertised brands, such as Marlboro and Camel, are established during middle school and high school and continue into the adult years. The Minnesota Adult Tobacco Survey found that the dominance of these brands was not maintained in the middle-age and older age groups. At age 45 and older, there appears to be a preference for generic cigarettes and other less heavily advertised brands (Figure 19).

**Figure 19. The percent of current established smokers who prefer the most heavily advertised brands declines among older adults.**



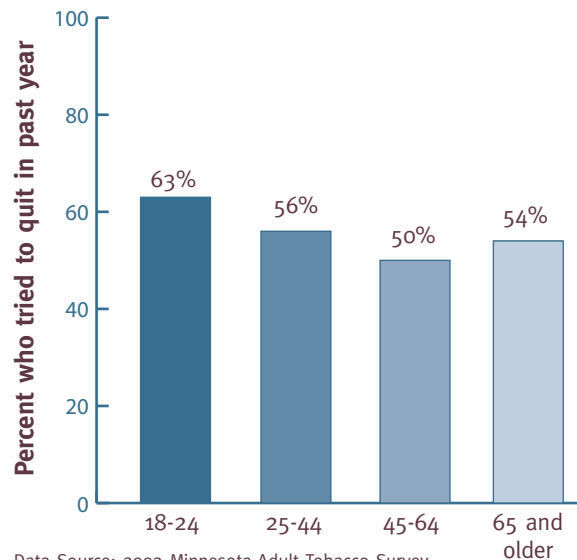
Data Source: 2003 Minnesota Adult Tobacco Survey

## YOUNG ADULT SMOKERS TRY TO QUIT AS OFTEN AS OLDER SMOKERS

Nearly two-thirds (63%) of young adult established smokers reported that they tried to quit at least once in the past year (Figure 20). More than half (56%) said that they were seriously considering quitting within the next six months, a lower percentage than among older adults.

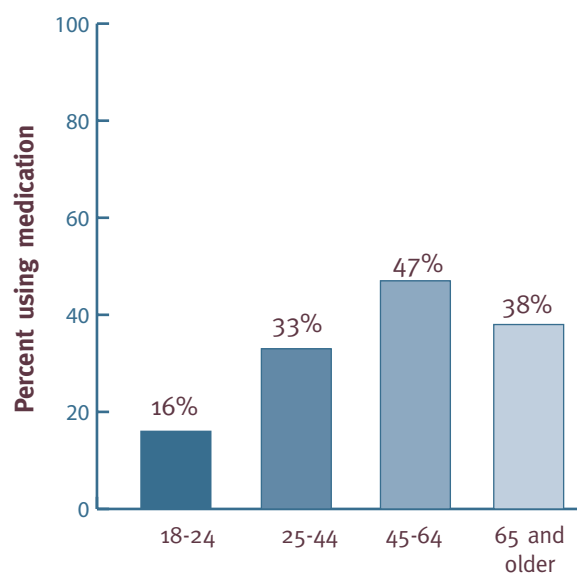
However, young adults who try to quit are much less likely to use medications, such as the nicotine patch or the prescription drug Zyban, to help them quit. While almost half of 45- to 64-year-olds trying to quit (47%) used medications in their last attempt, only 16 percent of young adults who tried to quit used medications (Figure 21). Perhaps many young adults feel confident that they can quit solely by using their will power. Older smokers apparently do not so widely share that confidence.

**Figure 20. Young adult established smokers were just as likely as older established smokers to report trying to quit in the past year.**



Data Source: 2003 Minnesota Adult Tobacco Survey

**Figure 21. Young adults were much less likely than older adults to use medications in their last quit attempt.**



Data Source: 2003 Minnesota Adult Tobacco Survey

## PART III: DISCUSSION

Much of the research on patterns of smoking has focused on adolescents starting to smoke and long-time adult smokers trying to quit. Researchers study adolescents because they want to learn all they can to help prevent children and teens from starting to smoke. Others study middle-aged and older adults because they want to learn all they can to help long-time smokers overcome their addiction and quit. Young adults are sometimes left out of these important research agendas. Yet, this group has not been neglected by the tobacco industry, which aims much of its advertising and promotional spending at young adults. The results of this study should help us revise and sharpen our understanding of young adult smoking in at least two major ways.

First, smoking is more widespread than was previously thought. This was discovered in part because our survey questions enabled us to explore the full range of smoking behavior among young adults. Nearly four of every 10 young adults reported smoking cigarettes in the past 30 days. Moreover, the Minnesota Adult Tobacco Survey identified a group of smokers, named above as “previously

unrecognized smokers,” that would not have been detected by earlier surveys in Minnesota. This group constitutes 7 percent of all young adults and 18 percent of all young adult smokers.

While most previously unrecognized smokers use cigarettes infrequently, there is still cause for concern. Some will remain low-level occasional smokers, and may even stop smoking once they leave college, no longer frequent the bar scene, or change their social environment in other ways. But others will become established smokers who will increase the frequency of their smoking and become addicted. Many young people have underestimated the addictive power of nicotine in the past, and young smokers who do not even see themselves as smokers may be more oblivious to these dangers. Furthermore, as this study shows, young people are often in close social contact with or live with other smokers, making it easier to obtain cigarettes, more tempting to smoke and more difficult to quit. Despite their relatively late start and infrequent use, the potential for unrecognized smokers moving into the addiction phase is substantial.

### PREVIOUSLY UNRECOGNIZED SMOKERS: WHO ARE THEY?

- Most smoke very infrequently, averaging 2 cigarettes per day on the few days that they smoke.
- Nearly all do not consider themselves to be smokers.
- Most did not try their first cigarette until age 16 or older, much later than established smokers.
- Most do not buy their own cigarettes, but usually get cigarettes from another smoker.
- Nearly half engaged in binge drinking in the past 30 days, the same rate as among more established smokers.

Second, young adult smoking patterns are less static and more unsettled than we might have expected. Many teen smokers have not yet progressed to being everyday smokers by the time they reach their 18th birthday.<sup>15</sup> During the young adult years, many smokers are in transition, moving from experimental, to occasional, to frequent, to everyday smoking. The number of cigarettes smoked per day also increases and smoking becomes more solidified. Even among those who were already everyday smokers as teenagers, the number of cigarettes smoked per day tends to rise during the young adult years.

The purpose of this report is to draw the attention of policy makers, the medical and public health

communities, and the general public to the high smoking rates and somewhat unique smoking patterns among young adults in Minnesota. The unsettled nature of young adult smoking patterns means that there are points at which the community can intervene to prevent the steady escalation of smoking that often occurs during these years. Effective strategies to combat the tobacco industry's advertising and promotional resources require solid information. We hope this report contributes to our understanding of cigarette smoking by young adults, raises the awareness of the magnitude of the problem that smoking poses for this population, and serves as a call for additional research and resources to reduce the harm that tobacco causes young adults.

## APPENDIX A:

### A NOTE ON THE SAMPLE AND METHODS USED IN THE MINNESOTA ADULT TOBACCO SURVEY

The Minnesota Adult Tobacco Survey (MATS) was designed to estimate smoking prevalence rates and other tobacco-related attitudes, beliefs and behaviors for a representative sample of adults aged 18 and above living in the State of Minnesota, and for a representative sample of individual adult members of the Blue Cross and Blue Shield of Minnesota (Blue Cross) health plan. In addition, the MATS team sought to gather sufficient information from young adults, aged 18 to 24, to perform a detailed analysis of their attitudes, beliefs, and behaviors regarding smoking.

To accomplish these goals the MATS team set a goal of interviewing 10,000 Minnesota adult residents. Because of the survey's multiple goals, the MATS required a complex sample design, which was devised by researchers from the University of Minnesota School of Public Health. The sample included 5,500 adults from a statewide random digit dial sample (RDD sample), which gave all households in Minnesota with telephones a chance of inclusion in the study. The sample also included 4,500 adults from an enrollee list of Blue Cross members (Blue Cross list sample). The Blue Cross list sample was itself composed of representative random samples from each of four major under-writing pools of Blue Cross members: (1) Senior Medicare supplemental insurance (Medicare), (2) Blue Plus Prepaid Medical Assistance Program enrollees (PMAP), (3) Blue Plus MinnesotaCare enrollees, and (4) those covered through commercially purchased health plans (both self-insured employer plans and fully-insured plans) (Commercial). Self-insured plans, used only by large employers, directly bear the risk of health care costs and are only administered by the health plan. In fully-insured plans the health plan assumes the risk for health care costs on behalf of the employer and subscriber.

The goal of interviewing sufficient numbers of young adults was accomplished by over-sampling this group. The RDD sample used screening during the interview to

make 18- to 24-year-olds more likely to be selected. The Blue Cross list sample was divided into seven strata in order to ensure the selection of a greater number of 18- to 24-year-olds. The seven strata were: (1) Medicare, (2) PMAP over 24 years of age, (3) MinnesotaCare over 24 years of age, (4) Commercial over 24 years of age, (5) 18- to 24-years old PMAP, (6) 18- to 24-years old MinnesotaCare, and (7) 18- to 24-years old Commercial.

The Minnesota Adult Tobacco Survey (MATS) team employed quality control procedures throughout the survey process — including the overall design of the survey, the wording of questions, review of the work of interviewers and coders, and statistical review of reports. Most survey questions were derived from a survey instrument developed by the Centers for Disease Control (CDC), and other questions had been previously tested and used in other large surveys, such as the ongoing California Tobacco Surveys (CTS) and the 1999 Minnesota Adult Tobacco Prevalence Survey. Clearwater Research, Inc., an experienced telephone survey vendor, administered the survey using research quality methods. The University of Minnesota researchers and the MATS team supervised the implementation of the survey. The Clearwater Research interviewers used Computer Assisted Telephone Interviewing (CATI) software to perform data collection accurately and efficiently. The interviewers made at least 15 attempts to reach persons in the sample. Interviews were conducted from November 2002 to June 2003. For the purpose of this study, the Council of American Survey Research Organizations (CASRO) methodology was used to calculate the response rate. The overall response rate for the survey was 56.5 percent.

The MATS team made every effort to ensure the confidentiality of respondents. The survey's design and confidentiality procedures were approved by Institutional Review Boards at the University of



Minnesota and the Minnesota Department of Health. Names or other identifying information were not gathered for the RDD sample, and respondent identifiers in the Blue Cross list sample were not retained. Reports cite only aggregate data.

After completion of all interviews, the data from the subsamples in the complex sample design were merged using standard scientific methods in order to create the final merged sample file. The data in this report are derived from this final merged data set, which consists of 8,821 respondents. The final merged data set includes all of the RDD respondents and the Blue Cross list sample respondents in the MinnesotaCare, Commercial, and Senior strata. The Blue Cross list PMAP respondents were not brought into the final merged data set because the Minnesota PMAP program is only a partial subset of the broader statewide Medical Assistance program. The Medical Assistance program includes some types of enrollees that are not enrolled in the PMAP program. However, the RDD sample does include all types of Medical Assistance program members, including PMAP members, so enrollees of the entire Minnesota Assistance program are represented in the final merged data set.

The MATS data are a highly accurate and detailed representation of the smoking related attitudes, beliefs and behaviors of Minnesota's adult citizens. However, statistics from surveys are always subject to sampling and nonsampling error. All comparisons presented in this report have taken sampling error into account and, unless otherwise noted, are statistically significant at or beyond  $p < .05$ . Statistical tests were computed using t-tests and

standard errors were adjusted for the complex survey design.

Nonsampling errors in surveys may be attributed to a variety of sources, such as how the survey was designed, how respondents interpret questions, how able and willing respondents are to provide correct answers, and how accurately the answers are coded and classified. The MATS team took several steps to minimize nonsampling errors. Following completion of the interviews, post-stratification adjustments were applied, whereby sample estimates are adjusted to independent estimates of the statewide adult population by age, sex, and geographic region. This weighting partially corrects for bias because of minor discrepancies in the representativeness of the sample. Moreover, biases also may be present when people who are missed in the survey differ from those interviewed in ways other than the categories used in weighting. As with most surveys that rely on telephone interviewing, it is likely that racial and ethnic minority communities are under-represented in the survey. All of these considerations affect comparisons across different surveys or data sources. Most of these limitations are inherent in all surveys, but the MATS team made every effort to minimize these limitations through pretesting of the survey questions and other standard techniques.

For more information about the MATS sample design and methods, please contact Michael Davern, Ph.D. at SHADAC in the University of Minnesota's School of Public Health: Email: [daver004@umn.edu](mailto:daver004@umn.edu) and phone (612) 624-4802.

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## COLLABORATING ORGANIZATIONS

THE MINNESOTA DEPARTMENT OF HEALTH works to protect, improve, and maintain the health of all Minnesotans. The Department is creating tobacco-free communities in Minnesota by funding community-based organizations to influence community norms and the social environment of youth through science-based and population-based strategies. These strategies include adopting private and public policies restricting tobacco use, implementing comprehensive school-based tobacco prevention, and reducing youth access to tobacco. The goal of the Minnesota Department of Health is to reduce tobacco use by 25 percent by 2005 and to achieve a social environment in which tobacco use is undesirable, unacceptable, and inaccessible by youth. The Department also conducts research on youth and adult tobacco use through its Center for Health Statistics.

BLUE CROSS AND BLUE SHIELD OF MINNESOTA (Blue Cross), with headquarters in the St. Paul suburb of Eagan, was chartered in 1933 as Minnesota's first health plan and continues to carry out its charter mission today: to promote a wider, more economical and timely availability of health services for the people of Minnesota. Its Center for Tobacco Reduction and Health Improvement was formed in 1998 in the wake of Blue Cross' landmark lawsuit against and settlement with the tobacco industry. The Center works to reduce tobacco use among Blue Cross members, invests in community-wide prevention and treatment efforts for tobacco use and related health risks, and creates new knowledge and models for health improvement. Blue Cross and Blue Shield of Minnesota is an independent licensee of the Blue Cross and Blue Shield Association.

MINNESOTA PARTNERSHIP FOR ACTION AGAINST TOBACCO (MPAAT) is an independent, non-profit organization that improves the health of Minnesota by reducing the harm caused by tobacco. MPAAT serves Minnesota through its grant-making program, QUITPLAN<sup>SM</sup> services to help people stop smoking, and statewide outreach activities. It is funded with 3 percent of the state's tobacco settlement.

THE UNIVERSITY OF MINNESOTA participated in this project through the State Health Access Data Assistance Center (SHADAC), a research and policy center in the School of Public Health. In addition to conducting research on factors contributing to health care coverage and access in the U.S., SHADAC also provides technical assistance to state analysts and policy makers in the areas of survey design and sampling, data collection, and policy development. SHADAC is funded by a grant from The Robert Wood Johnson Foundation.

## REFERENCES

- <sup>1</sup> The Centers for Disease Control and Prevention (CDC) estimates that in 1999 smoking cigarettes caused 5,618 deaths in Minnesota (15% of all deaths) and caused an additional \$2.6 billion in health and lost productivity costs. Minnesota Department of Health. *Smoking-Attributable Mortality and Economic Costs in Minnesota*. Fact sheet. February 28, 2002. Available at <http://www.health.state.mn.us/divs/hpcd/tpc/sammec.pdf>. More detailed calculations can be made at CDC's Web site: <http://apps.nccd.cdc.gov/sammec>.
- <sup>2</sup> For 2002, the median smoking rate for 54 states and territories was 31 percent for young adults, compared to 23 percent for all adults. Centers for Disease Control and Prevention. Behavior Risk Factor Surveillance System. National and state data available on the Web at <http://www.cdc.gov/brfss>. The National Health Interview Survey also found that 18- to 24-year-olds have the highest current smoking rate, although only slightly above 25- to 44-year-olds. See Cigarette smoking among adults—United States, 2001. *MMWR*. October 10, 2003; 52(40):953-956.
- <sup>3</sup> The median smoking rate for 18- to 24-year-olds found by the BRFSS at the national level has increased from 24 percent in 1995 to 31 percent in 2002. In Minnesota, an upward tendency also can be seen. Smoking rates for this age group at the state level can be volatile because of relatively small sample sizes, so it is helpful to combine BRFSS data from several years. The average smoking rate for young adults in Minnesota during 1999-2002 was 32 percent, several percentage points higher than the average rate of 26 percent during 1995-1998. CDC. Behavior Risk Factor Surveillance System. Available on the Web at: <http://www.cdc.gov/brfss>. However, the National Health Interview Survey has not found any increase in the smoking rate for young adults in recent years. Tables of NHIS results for young adults can be found on the Web at: [http://www.cdc.gov/tobacco/research\\_data/adults\\_prev/adstat2.htm](http://www.cdc.gov/tobacco/research_data/adults_prev/adstat2.htm).
- <sup>4</sup> There is much dispute as to how much these restrictions have reduced advertising to children and adolescents under 18. Researchers have found an increase in cigarette advertising in magazines with substantial youth readership. Point-of-sale advertising and price promotions at convenience stores and other outlets potentially reach anyone who enters or walks by a store. Furthermore, many teens watch trends among young adults and aspire to engage in behavior that appears to be common among young adults. Advertising and promotions ostensibly aimed at young adults also will have an impact on many teens.
- <sup>5</sup> Cited in Ling PM, Glantz SA. Why and how the tobacco industry sells cigarettes to young adults: Evidence from industry documents. *American Journal of Public Health*. 2002; 92(6):908-916.
- <sup>6</sup> The BRFSS is conducted by 54 states and territories under the guidance of the Centers for Disease Control and Prevention. Information is available at <http://www.cdc.gov/brfss/>. The NHIS is a long-standing national survey conducted by the National Center for Health Statistics, a branch of CDC. Information is available at <http://www.cdc.gov/nchs/nhis.htm>.
- <sup>7</sup> The Youth Tobacco Survey and Youth Risk Behavior Survey are conducted by participating states under the guidance of the Centers for Disease Control and Prevention. CDC also conducts separate national YTS and YRBS surveys every two years using the same core questions. Results from the YTS are published periodically in the Morbidity and Mortality Weekly Report (MMWR), available at <http://www.cdc.gov/mmwr/>. Information and results from the YRBS are available at <http://www.cdc.gov/nccdphp/dash/yrbs/index.htm>.
- <sup>8</sup> The National College Health Risk Behavior Survey was conducted in 1995 by CDC. See Everett S, Husten C, Kann L, et al. Smoking initiation and smoking patterns among U.S. college students. *Journal of American College Health*. 1999; 48:55-60. The Monitoring the Future survey is a long-standing annual survey of adolescents and young adults. Information is available at <http://www.monitoringthefuture.org>. See also: University of Minnesota, Boynton Health Service. Tobacco use among University of Minnesota students. November 1999.
- <sup>9</sup> Minnesota Department of Health. *Teens and Tobacco in Minnesota: Results from the Minnesota Youth Tobacco Survey*. December 2000. Available at <http://www.health.state.mn.us/divs/hpcd/tpc/TobaccoReports.html>.
- <sup>10</sup> Minnesota Department of Health, Minnesota Youth Tobacco Survey: 2002. Unpublished tables.
- <sup>11</sup> Centers for Disease Control and Prevention (CDC). Changes in the cigarette brand preferences of adolescent smokers—United States, 1989-1993. *MMWR*. August 19, 1994; 43(32):577-581.
- <sup>12</sup> See Katz SK, Lavack AM. Tobacco related bar promotions: insights from tobacco industry documents. *Tobacco Control*. 2002; 11(Suppl 1): i92-i101. See also Sepe E, Glantz SA. Bar and club promotions in the alternative press: Targeting young adults. *American Journal of Public Health*. 2002; 92(1):75-78.
- <sup>13</sup> Minnesota Department of Education and Minnesota Department of Human Services. *Minnesota Student Survey: Key Trends through 2001*. October 2001.
- <sup>14</sup> Minnesota Department of Health. Minnesota Youth Tobacco Survey, 2002. Unpublished tables.
- <sup>15</sup> At the age of 16 or 17, only half (51%) of current smokers report that they smoke everyday or nearly everyday, defined as 20 or more days of the past 30 days. Minnesota Department of Health. Minnesota Youth Tobacco Survey, 2002. Unpublished tables. In contrast, the Minnesota Adult Tobacco Survey found that 70 percent of young adult smokers 18- to 24-years-old reported smoking every day or nearly every day.





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